IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

THE STATE OF TEXAS, Plaintiff	)	
VS.	)	CIVIL ACTION NO. 5-96CV91
THE AMERICAN TOBACCO COMPANY ET AL Defendants	)	

ORAL DEPOSITION
OF
CECIL R. REYNOLDS

(ACCOMPANIES VIDEOTAPE)

SEPTEMBER 19, 1997

COPY

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

THE STATE OF TEXAS, Plaintiff, VS. THE AMERICAN TOBACCO COMPANY, et al, Defendants.	)	NO. 5-96-CV91 JUDGE DAVID FOLSOM MAGISTRATE JUDGE WENDELL C. RADFORD JURY

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VIDEOTAPED ORAL DEPOSITION OF CECIL R. REYNOLDS

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ANSWERS AND DEPOSITION OF CECIL R. REYNOLDS, a witness called by the PLAINTIFF, taken before D'ANDRA FISHER, Certified Court Reporter for the State of Texas, on September 19, 1997, beginning at 10:16 a.m. and ending at 4:15 p.m., at the offices of Maroney, Crowley, Bankston, Richardson & Hull, 701 Brazos, Suite 1500, Austin, Texas 78701, pursuant to the Federal Rules of Civil Procedure.

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LEGAL MEDIA

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(Deposition Exhibits Nos. 1 and
(2 marked for identification.

CECIL C. REYNOLDS, Ph.D.,
was called as a witness and, having been first duly sworn, testified as follows:

EXAMINATION

BY MR. HYDE:

Q. Good morning. Would you please state your name.
A. Cecil R. Reynolds.
Q. And that's Dr. Reynolds; is that correct?
A. Yes.
Q. What is your home address?
A. Route 3, Box 390, Bastrop, Texas, 78602-9507.
Q. And what is your telephone number?
A. 512-321-4785.
Q. Dr. Reynolds, what is your age?
A. Gosh, you had to ask hard questions right away. 45.
Q. Dr. Reynolds, you understand you're under oath to tell the truth today?
A. Yes.
Q. At any time I ask you a question that you don't

understand, will you tell me that so that I can rephrase my question?

A. To the best of my ability I will.

Q. Have you brought with you today a report that you generated in this lawsuit?

A. Yes.

Q. And is that report the one that we've had marked as Exhibit 2?

A. Yes, I believe it is.

Q. Do you want to look through it and check?

A. That looks like a copy, yes.

Q. Do you have any other documents that were provided to you by any of the Defendants or their lawyers relative to this lawsuit?

A. Yes, I do.

Q. Would you identify those, please.

A. I have depositions of Robert Woody, Robert Arrington, Robert Carpenter, and Percy, I'm not sure how to pronounce his last name, it's either Lucke, and several exhibits to those depositions. I have Woody Exhibit 7, Woody Exhibit 12, Woody Exhibit 2. The exhibit number on this one is illegible, but it's an exhibit to Arrington.

Q. Would you read the title of that document,

please.

A. "Tree-based Risk Factor Analysis of Preterm Delivery in Small for Gestational Age Birth." And I have Woody Exhibit 20.

Q. Have the lawyers for the Defendants or the Defendants themselves, any representatives of the Defendants, provided you with any internal tobacco documents concerning the health hazards associated with cigarette smoking?

A. No.

Q. Have you been provided any documents concerning any risk analysis concerning health effects of cigarette smoking?

A. Well, not anything that's not published in the literature. I mean, some of these documents, I think, deal with those issues that I just named. So obviously, I have, but nothing that has not been published in the literature.

Q. Have you been provided with any internal tobacco industry documents concerning smoking and its effect on pregnant women or the fetuses or babies?

A. No, I don't believe so. Nothing I would recognize as an internal document and nothing that I have any reason to suspect is an internal

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document.

Q. Now, I understand that you've testified in approximately 100 court appearances; is that correct?

A. Over the years probably. Maybe more, maybe a little less. I don't keep count.

Q. And you've also appeared in approximately 100 depositions and civil lawsuits; is that correct?

A. Again, over -- since I started doing this around 1977, I don't keep track. I think that's a reasonable guess, but it is a guess.

Q. It's your best estimate. Is that a fair statement?

A. Again, with the qualification that it is -- I'm not even sure I'd call it an estimate. I think guess is probably better, but it's my best.

Q. Well, you testified in the lawsuit involving the Attorney General of the State of Mississippi that you thought you testified in approximately 100 civil cases by deposition. Do you recall that testimony?

A. I don't recall that exact number, but I recall giving that testimony and being asked. And I believe I qualified it also saying that that was -- that I don't keep count and that's not an

exact number, but it's not an unreasonable number.

Q. And in the civil cases in which you testify, I think you've testified before that 60 to 70 percent of the time that you've been called as a witness you've been called by the lawyers who represent the defense; is that correct?

A. I think that's a reasonable estimate, yes.

Q. And primarily those cases involve personal injury or medical malpractice; is that correct?

A. Yes.

Q. Are there any other documents that you've reviewed in preparation for your deposition today other than Exhibit 2 and the documents you told me little about a little bit earlier in the deposition?

A. No.

Q. Now, I understand that you started to testify in tobacco cases or you were contacted to be an expert in tobacco cases through a service that provides expert witnesses and that's a service operated by Dr. Saul Wilen; is that correct?

A. I'm not sure if Dr. Wilen will agree with your characterization of his service, but I think he does assist people in locating expert witnesses,

yes.

Q. Well, that's your understanding of how you were contacted by lawyers who represent the tobacco companies, that was through TASA, the firm owned by Dr. Wilen; is that correct?

A. I don't know that Dr. Wilen has any relationship with TASA whatsoever.

Q. Okay. Well, let's go back here. Let's see if we can get this straight. How were you contacted the first time to be an expert witness to be called on behalf of the lawyers who represent tobacco companies?

A. I believe it was via a telephone call from Dr. Saul Wilen.

Q. And who is Dr. Saul Wilen?

A. Dr. Wilen has a company called Medical Horizons. Again, I don't know of any affiliation they have with TASA.

Q. What is your understanding as to what Medical Horizons? What their function is?

A. As I understand their function, it is multifaceted. They deal with a variety of consulting concerns in the healthcare field in health economics with managed care companies, with providers of care. They have a section of

the company that deals with litigation. And I guess I would characterize it as litigation support in some way helping locate information and analyze problems.

Q. They help locate expert witnesses for litigation purposes, correct?

A. That's part of what they do, yes.

Q. Now, the first time that you were contacted by the tobacco lawyers, that was approximately October or November of 1996; is that correct?

A. Yes.

Q. Who was the first lawyer that you spoke with from the tobacco companies?

A. I believe it was Mike Nims.

Q. Mr. Nims is the lawyer who represents RJR, correct?

A. Yes. I think he's one of them. I don't know he's the lawyer that's represents them.

Q. He's one of them. Now, you've been -- strike that. You've testified by way of deposition in the Mississippi tobacco litigation involving the Attorney General of the State of Mississippi; is that correct?

A. Yes.

Q. You were also retained as an expert witness

object behalf of the Defendants, the tobacco companies, in the attorney general's case in Florida; is that correct?

A. Yes.

Q. And just so I'm clear, in the Mississippi tobacco litigation you were retained by the tobacco company lawyers; is that correct?

A. Well, we probably get into problems of semantics. I'm not sure actually if I'm retained technically by the lawyers or by the tobacco company, or if I'm hired by Medical Horizons. I'm really not sure on a technical basis how that would -- the correct way to answer that. I'm not trying to be elusive.

Q. Let's see if we can figure this out.

A. Okay.

Q. Okay. The truth of the matter is, that you were called upon to be an expert witness on behalf of the tobacco companies; is that correct?

A. I think so, yes.

Q. Well, is there any doubt in your mind with respect to that question and that answer whether or not you were retained by the tobacco companies in the State of Mississippi litigation? Is there any question in your mind

whatsoever?
A. No. Not in that sense, no.
Q. So the right answer to my question would be, yes, I was retained as an expert witness on behalf of the tobacco companies in the State of Mississippi tobacco litigation. That's true, isn't it?
A. Yes, I think so.
Q. Now, the third state in which you've been retained on behalf of the lawyers who represent the tobacco companies is the State of Texas litigation involving tobacco; is that correct?
A. Yes.
Q. Now, have you been retained in any other states where the attorney general of that state is suing the tobacco companies?
A. No.
Q. Not been contacted at all; is that correct?
A. No. I've had no discussions or contact regarding any other state.
Q. So as it stands now, there have been three trial dates associated with attorney general tobacco litigation cases. And in all three of those cases where there have been firm trial dates and the cases were ready to go to trial, you have

named as an expert witness on behalf of the tobacco companies; is that correct?

A. Yes, I believe so.

Q. What are your charges today for your time?

A. $300 per hour.

Q. What are your charges when reviewing literature and conducting research per hour?

A. $200.

Q. Now, what are your charges if the work requires you to work after 5:00 o'clock on week or on weekends?

A. I charge time and a half. So it would be 150 percent of whatever rate was being applied.

Q. So that I understand this, you charge a premium when you have to work past 5:00 o'clock or on weekends or when you're under oath; is that correct?

A. Yes.

Q. And your normal charge is $200 an hour and that goes up to $300 when those premiums are charged; is that correct?

A. Well, I think I can state it for you maybe a little more accurately. I charge $200 an hour for my regular time. Any time for deposition or court room testimony I charge $300 an hour. The

only variation in those charges is if for the convenience of the client I am asked to work after 5:00 o'clock on weekends or State of Texas or federal holidays. Then whichever one of those rates is being applied is multiplied by 1.5.

Q. So that if you give a deposition on a weekend, then your rate will be $450 an hour?

A. Yes.

Q. Per hour.

A. If it's for the convenience of the client. If it's for my convenience, I would not add a premium.

Q. How many hours did you spend approximately working in the Mississippi tobacco litigation case?

A. I really don't know.

Q. Well, you testified in your deposition -- at the time of your deposition that you thought you spent about 60 to 70 hours. Do you recall that testimony?

A. I don't recall those specific numbers. But if that's what I said back then, that was probably a reasonable estimate about that time.

Q. You don't have any reason to quarrel with that

right now, do you?
A. No.
Q. Now, what I'm trying to ask you is, all things considered when that case ended, about how many hours of your time did you spend working on the Mississippi tobacco litigation project?
A. I really don't know.
Q. Well, you've got to have some idea.
A. Well, again, if you want me to speculate, I'm not sure how long after that the case settled. I could have had another 20 or 25 hours in it.
Q. So all total your best estimate if you added up the range would be somewhere between 85 and maybe 100 hours of time that you spent in the Mississippi tobacco litigation. That's a fair estimate based on your personal knowledge, isn't it?
A. I think it's a reasonable estimate. I wouldn't hold it out to be precise.
Q. But it's reasonable?
A. It's reasonable.
Q. Now, approximately how many hours did you spend working as an expert witness on behalf of the Defendant tobacco companies in the Florida tobacco litigation case, your best estimate

based on personal knowledge?
A. I would estimate in the Florida case probably somewhere in the range of 100 to maybe 120 hours.
Q. And were you deposed in that case?
A. No.
Q. Now, in this case, the State of Texas versus the various tobacco companies, approximately how many hours have you spent working on this lawsuit?
A. Again, I would have to estimate that. I couldn't tell you exactly. I know it's actually -- even though I haven't been working on it as long, it's been much more intense. I would say close to 150 hours.
Q. Have you sent any invoices to any of the lawyers representing the tobacco companies as of today?
A. No.
Q. When do you plan to do that?
A. Never.
Q. You're never going to send them an invoice?
A. I don't send them an invoice.
Q. What do you send them?
A. I don't send them anything?
A. They just pay you?

A. No.
Q. What happens?
A. I call my hours in to Saul Wilen on a weekly or biweekly basis.
Q. And then Mr. Wilen, you assume, calls the tobacco company or sends them some type of bill or invoice and then you're somehow reimbursed eventually; is that correct?
A. Yes.
Q. What percentage of your charges does Mr. Wilen get to keep, if any?
A. As far as I know, he doesn't keep any of what I charge. I don't know -- I don't know how he handles his business. I get paid what I charge.
Q. The money that you receive from testifying in these tobacco litigation cases, that's personal income to you; is that correct?
A. Yes.
Q. Have you been retained in any other litigation involving tobacco other than the three cases we've already talked about? In other words, have you been retained in any individual personal injury lawsuits involving tobacco?
A. No.
Q. Now, you work at Texas A&M University; is that

correct?

A. Yes.

Q. What is your position there?

A. I'm a tenured professor.

Q. In what area?

A. I'm a professor of Educational Psychology and also a professor in Neuroscience.

Q. I'm, sorry the other one was what?

A. Neuroscience.

Q. And your salary is, I guess, paid by the State of Texas; is that correct?

A. Yes.

Q. The Texas A&M University system pays you?

A. Actually, I think our checks are cut by the State.

Q. Dr. Reynolds, what is your annual salary with Texas A&M?

A. It's about 77,000.

Q. What percentage of your total income is derived from being an expert witness?

A. Well, it varies a great deal from year to year. I think this year it may be 35 percent. Depending on how all of this plays out, it could be a little higher.

Q. Could be as high as 50 percent, I would take it.

Since how you spent 150 hours this year on the Texas tobacco case, I assume you're going to be spending a fair amount of time -- additional time on this case before you testify. That's a fair assumption, isn't it?

A. I think it's a reasonable one. So I'm saying it could end up being higher this year.

Q. And if one assumes that you've worked approximately 150 hours already as a reasonable estimate that that would be at least $30,000 approximately that you've charged so far to be an expert in this case; is that correct?

A. Yes.

Q. And when were you first contacted to be an expert for the tobacco companies in the State of Texas case?

A. Well, I was contacted about that -- I think the first discussion we ever had about that may have been in December or January.

Q. And where did you have this conversation?

A. I don't really know. It very well could have been a telephone conversation with Mr. Nims.

Q. Well --

A. I don't recall the very first contact. I just know there was a conversation somewhere back

there about it.
Q. Have you gone anywhere to meet Mr. Nims to have a meeting concerning the tobacco litigation case?
A. Yes.
Q. Where have you gone to meet him?
A. We met in San Antonio at Mr. Wilen's office -- Dr. Wilen's office.
Q. Have you met him anywhere else?
A. Well, we met here in Austin yesterday. We met at a hotel in San Antonio just prior to the day before my Mississippi deposition.
Q. At Texas A&M how much time do you actually spend working for the university system? What is hours per week, how much do you spend?
A. I haven't ever written it down. I really don't know.
Q. Well, your best approximate.
A. A lot. I think anywhere from 40 to 60 hours a week probably.
Q. So it's fair to say that the most financially lucrative work you do on an hourly basis is testifying as an expert witness. That's true, isn't it?
A. I think so, yes.

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Q. What were you asked to do by the lawyers representing the tobacco companies as it concerns this case, the case in the State of Texas?

A. Well, I think that's changed a little bit over time. I think initially we were considering the relationship between smoking and neurodevelopmental disorders more generally, and that narrowed to looking at birth weight and any relationship with smoking to very low birth weight and with an eye toward that leading to neonatal intensive care unit admissions. There were some discussions, and I'm actually not entirely certain where we are with this part, about whether I would be asked to give any testimony about my knowledge of the Texas Medicaid population generally and specifically Medicaid patients that I may see and treat.

Q. Anything else?

A. I don't recall anything else, no.

Q. And as we sit here today, you realize that you're testifying or have been retained by lawyers against the State of Texas?

A. Well, I understand that the testimony that I'm going to give is considered to be adverse to the

State of Texas, yes, and that the lawyers who are defending the lawsuit who are adverse to the State of Texas, as we discussed it, have retained me through Dr. Wilen's office.

Q. Now, you're originally from North Carolina; is that correct?

A. Yes.

Q. In fact, you worked at least two summers cropping tobacco in the tobacco fields; is that correct?

A. Yes. Not the entire summers, but I've gotten that sticky stuff all over me.

Q. Have you written any peer-reviewed articles that concerns tobacco-related issues?

A. No.

Q. Prior to 1977, had you ever conducted any original research concerning tobacco-related illnesses or diseases?

A. No.

Q. Have you ever made any speeches, lectures, public statements concerning the health effects of cigarette smoking or tobacco?

A. No.

Q. And the first study that you've conducted, which we've had marked as Exhibit 2, was after you

were retained as an expert on behalf of the tobacco companies as it relates to tobacco-related issues; is that correct?

A. Well, this is not the first study, no.

Q. No, that's not what I asked, though.

A. You said the first study which is what we've had marked.

Q. No --

A. Yes, you did.

Q. No, I said tobacco-related issues.

A. Yes. Yes. You said this was the first study of tobacco-related issues, and what I'm telling you is it's not.

Q. Okay. What I want to know is this: Can you point me to one study that's been conducted by Dr. Reynolds that specifically discusses tobacco prior to the time that you were retained by the lawyers who represent the tobacco companies? Can you tell me what that article is?

A. No, there's not one.

Q. There's not a study either, is there?

A. No.

Q. So my question that -- and if there's a misunderstanding, we'll just work this out, okay?

A. Okay.
Q. Because remember when we started I said if you don't understand a question, you tell me that and I'll rephrase it.
A. Okay. Well, I thought I understood your question.
Q. Well, let's make sure now.
A. Okay.
Q. Okay. The first time you conducted a study concerning tobacco-related illnesses or injuries or disease was after you were retained by the lawyers who represent the tobacco companies; is that correct?
A. Yes.
Q. Would it be fair to say you don't consider yourself to be an expert in tobacco-related diseases and illnesses?
A. Well, I do some in some areas, yes.
Q. Do you recall in your deposition taken April 10th, 1997 -- and I'll let you read it before I ask you a question. You recall giving that deposition, correct?
A. Yes.
Q. I'm going to show you, and please look at, if you would, Lines 9 through 13 on Page 27.

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A. Okay. I remember this. And I was assuming that you were using "disease" in a little different terminology. So I would still stand by that statement and we can qualify my answer as necessary.

Q. On April 10th, 1997 you were asked, "Would it be fair to say that you would not consider yourself an expert in tobacco-related diseases?" And would you read your answer which you gave on line 12, please.

A. Uh-huh. "It depends on how you define diseases, I think. As I think of disease, I would say no."

Q. Are you a medical doctor?

A. No.

Q. And it's fair to say you have no professional experience in OB/Gyn; is that correct?

A. Yes.

Q. Do you have any experience in neonatal care?

A. No.

Q. You received your Bachelor's of Art in Psychology in 1975; is that correct?

A. Yes.

Q. Did you receive that from any university in Texas?

A. No.
Q. Where did you receive that degree?
A. University of North Carolina, Wilmington campus.
Q. You have a Master's of Education; is that correct?
A. Yes.
Q. And what is that degree in?
A. Psychometrics.
Q. And where did you get -- receive that degree?
A. University of Georgia.
Q. And you have a Ph.D.; is that correct?
A. Yes.
Q. And what is that degree in?
A. It's in Educational Psychology with a Major in school Psychology, a Minor in Statistics and Clinical Neuropsychology.
Q. And what year did you receive that degree?
A. 1978.
Q. And what from what University?
A. University of Georgia.
Q. Do you have a degree in epidemiological?
A. No.
Q. Do you have a degree in biostatistics?
A. No.
Q. Do you consider yourself to be an

epidemiologist?
A. No.
Q. Do you consider yourself to be a biostatistician?
A. No.
Q. Are you a member of any society dedicated to the science of epidemiological?
A. No.
Q. You are a member of the -- let me see if I get this -- somewhere I have your CV. It's the APA. What is that?
A. The American Psychological Association.
Q. How long have you been a member of the American Psychological Association?
A. I think I was a student member beginning around 1975 and was a full member beginning in either late '78 or early '79 and was awarded fellow status about 1983.
Q. What does it mean to be a fellow of the American Psychology Association?
A. The American Psychological Association.
Q. Oh, psychological, I'm sorry.
A. It means that the work you've done up to that date has been reviewed by a fellows committee, which is a committee of peers who have already

achieved fellow status, who essentially certify that your work is outstanding in the field and is above and beyond what is typically done and warrants the granting of special status in the association.

Q. So you think a lot of your membership with the APA; is that correct?

A. Well, yeah, I would say so.

Q. And do you participate in any APA meetings or --

A. Yes, quite frequently. I served as president of one of the divisions of the association and I'm president-elect of another division.

Q. So you're an officer of that organization?

A. Yes.

Q. Well, have you ever read any position statements by the APA concerning tobacco?

A. No.

Q. Did you ever think it was important what the APA might think about the health hazards of tobacco?

A. Well, the APA doesn't think. The APA is a group of individuals. The APA has no thoughts. It's an association. And it adopts position statements by majority vote of a counsel which represents many different facets of the organization. And that's how those position

statements come into being. It's very much a political process at that level of the counsel voting so there's much disagreement within the association regarding any of those statements as far as I know, regardless of the area that they are in.

Q. Well, have you ever taken the time to determine the position statements or resolutions that the APA has adopted concerning tobacco-related issues?

A. No.

Q. Even though you're president and president-elect, you've not taken the time to see what the APA has adopted; is that correct?

A. Well, I thought I said no. Was there something that you didn't understand?

Q. Well, I'm asking. Even as president, you haven't done it; is that correct? I mean, you're an officer.

A. Well, if I haven't done it, I haven't done it as anything. Wouldn't that be correct?

(Deposition Exhibit No. 3
(was marked for identification.)

Q. I'm going to show you what's been marked as Exhibit 3. It's entitled "APA Resolution on

Tobacco and Smoking." "The counsel of representatives of the American Psychological Association approve the following resolutions." I'm going to ask have you ever seen that document before?

A. No, I have not.

Q. The document states, "Whereas, tobacco is a legally available consumer product that is demonstrably harmful to health when used as intended," that's the first statement. Do you agree with that statement?

A. I'm sorry?

Q. Do you agree with the statement at the very top where it starts "whereas"? Tell me if you agree or disagree with that.

A. "Tobacco is legally available product" (reading inaudibly). I think in general I would agree with it.

Q. You agree that it's demonstrably harmful to health when used as intended? Do you agree with that statement?

A. Yes.

Q. It says, "Whereas, tobacco is an established risk factor for morbidity and mortality." Do you agree with that statement?

A. I think it's a risk factor, yes.
Q. "Whereas" -- next states, "Whereas, more than 1,000,000 teenagers begin smoking each year, a rate of approximately 3,000 per day which has not declined appreciably over the last decade, and 90 percent of young smokers report that they begin regular smoking before age 18." Do you agree with that statement?
A. I don't have any opinion on that statement. I don't really know.
Q. Well, do you have a personal opinion. Not a professional opinion, but a personal opinion concerning the validity of that statement?
A. Well, I don't. They are quoting very specific numbers which I don't know the source of.
Q. As we sit here today, do you have any reason to disagree with that statement?
A. No. I said I have no opinion on that statement.
Q. That's just something you've never researched in your work since you've been working on behalf or been retained by the tobacco companies, you haven't researched how many teenagers start smoking. Is that a fair statement?
A. Yes.
Q. Even though you understand that it's a

significant health risk, that is starting to smoke as a teenager and continuing to smoke through a lifetime, you recognize that as a potential problem, don't you?

A. Yes.

Q. "Whereas, psychological scientists study human and animal behavior and our research domain encompasses the full spectrum of issues related to tobacco usual including how people decide whether or not to use tobacco products and what are the different factors that enter into their decision such as cultural factors, minors access to tobacco products, tobacco industry advertising, cost, psychopharmacological aspects of nicotine (i.e. understanding modes of addiction and what changes it causes in the central nervous system), identifying ways to prevent people from engaging in the risk-taking behaviors such as tobacco use, identifying effective community interventions for bringing about widespread changes in behavior, and treating tobacco addiction individually and within the community." Is that something that psychologists like you do?

A. Well, I don't do all of those things. But yes,

psychologists do these things.
Q. Well, you do some of those things?
A. Yes.
Q. So you have some professional experience with regard to addictions and those type of matters, correct?
A. Yes.
Q. Have you attempted to determine whether or not nicotine is addictive?
A. No.
Q. Have you attempted to determine what effects nicotine has on the central nervous system?
A. No.
Q. Have you attempted to determine ways in which people can prevent -- or people are prevented from engaging in risk-taking behaviors such as tobacco use?
A. No.
Q. Have you in your practice attempted to identify effective community interventions to bring about widespread changes in behavior associated with tobacco products?
A. No.
Q. Have you in any way in your practice attempted to treat someone with tobacco addiction?

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A. No.
Q. You certainly agree that tobacco is addictive?
A. No.
Q. You've never seen any literature to indicate that tobacco or the components in tobacco are addictive?
A. Yes, I've seen literature that argues that.
Q. Well, what studies have you, Dr. Reynolds, performed concerning that issue whether or not tobacco or any of the components of tobacco are addictive?
A. None.
Q. So as we sit here today, you can't say one way or the other based on your personal research whether tobacco is addictive. Is that true?
A. That's true.
Q. Is it just something that doesn't interest you?
A. It doesn't interest me enough to devote the kind of time that I feel I would need to devote to studying that issue to make that determination.
Q. Have you sent any letters, reports, memorandums or anything to the API concerning tobacco or tobacco use?
A. Do you mean the APA?
Q. I do, and let me ask that question again.

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A. I think we can assume you meant APA unless you want to --

Q. Well, just to be fair in case -- just for the record.

A. Okay.

Q. Have you sent any memos, documents of any kind to the APA concerning tobacco use, addiction and other illnesses related to smoking?

A. No.

Q. What divisions of the APA do you belong to?

A. I belong to Division 1, which is the division of general psychology. I'm president of Division 5, which is the division of evaluation and measurement statistics. I'm also a fellow of Division 1 and Division 5. I'm a fellow of Division 15, which is educational psychology. I'm a fellow of Division 16, which is school psychology. And I'm a fellow of Division 40, which is clinical neuropsychology and also president-elect of the division of clinical neuropsychology.

MR. NIMS: Can we take a java break?

MR. HYDE: We can.

(RECESS 11:02 - 11:09.)

BY MR. HYDE:

Q. Dr. Reynolds, I'd like to show you again Exhibit 3, the APA resolution on tobacco and smoking. I'd like for you to take a second and read the last paragraph that starts "Therefore, be it resolved." You don't need to read it out loud, just read it. I have a question or two for you about it.

A. Okay.

Q. For the record and on the record, do you agree with the last paragraph of the APA resolution which we've had marked Exhibit 3?

A. I would say I have some qualified agreement with that. I have not read the document "Healthy People 2,000, National Health Promotion and Disease Prevention Objectives for the Nation" so I don't know if I would agree with supporting everything that's in that document. I would say that the things that are noted in here specifically, the Numbers 1 and 2, I would agree with.

Q. Is there anything that on its face in that last paragraph of Exhibit 3, the APA resolution, that you disagree with for the record?

A. No.

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Q. What is relative risk? What does that mean to you?
A. It means -- relative risk would refer to increasing the probability of some occurrence or being associated with it or quite possibly you could use the presence of something to make better than chance predictions about the presence of something else.
Q. In other words, a relative risk that exceeds one, that is the beginning of a positive association with whatever you're proving in you're hypothesis of statistics; is that correct?
A. Yes, that's reasonable.
Q. And on the other hand, if when you're looking at the number one in context of a relative risk, if the number is below one, you would begin to see maybe the beginning of a negative association between whatever you're studying, whatever is in your hypothesis; is that correct?
A. Yes. You can set it at one and move around. You could use a different set of numbers, but that one works.
Q. I mean, it could be 100 as well?
A. Yes.

Q. And what is an odds ratio?
A. An odds ratio is related to relative risk and would tell you more directly the odds of this happening if this is present.
Q. And using relative risk and odds ratio, that's one method of a statistical analysis for trying to prove or disprove a hypothesis; is that correct?
A. Yes.
Q. Did you in your report in this case, the report which has been marked as Exhibit 2, did you attempt to use odds ratio or relative risk?
A. No.
Q. You used regression analysis in your report; is that correct?
A. Primarily, yes.
Q. Well, based on your knowledge, what are the limitations associated with using regression analysis?
A. Regression depends in part on the distribution of the underlying variables. And to the extent that they deviate substantially from normality, regression may not be a good approach. You may have lesser or greater associations detected than are accurate. There are some limitations

in that one needs large sample sizes if you have particularly large numbers of variables. Kind of a working rule is that you would need at least 10 subjects in your pool for every variable that you enter into it in order to have reasonably stable results, and there's some arguments that even if you have that 10 to one ratio that if your total sample size is less than 2,000, it's not a good idea to generalize outside of your sample.

Q. Well, repeat that. Not -- if you have a sample size of less than 2,000 --

A. Of less than 2,000 total, it may not be appropriate to generalize outside of your sample because your parameter estimates may have too much error associated with them. That gets debated a lot. But generally people are fairly comfortable doing regression if they have a 10 to one ratio of subjects to variables.

Q. Now, for instance, just so that I understand what you're referring to. If you're looking at 50 variables, then you should multiply 50 times 10 and have a sample size of 500 or you might have a potential source of error in your regression analysis. Is that a fair statement?

A. Yes. You would with a smaller sample size then you might -- you would typically overestimate the relationship. Regression is a very powerful technique and as your subject to variable ratio declines, the probability of finding relationships that aren't real increases.

Q. Now, in Exhibit 2 did you anywhere in this document discuss any of the limitations associated with regression analysis?

A. No.

Q. Are there any other limitations of regression analysis that you're familiar with?

A. Well, it depends on the circumstances of the analysis. Certainly there can be others, but the shape of the distributions having -- you need to have at least one continuous variable if you're looking at the regression between two variables for regression to work very well. Again, if you have large sample sizes, you overcome most of the limitations. Most of them are associated with poorly shaped distributions and small sample sizes and large numbers of variables. So in this particular case we didn't consider that very much because of the enormous sample sizes we had.

Q. So that I'm clear again, I just want to make sure, that one of potential errors in using regression analysis is that of having a small sample size?

A. That places great limitations on your ability to generalize outside of your sample because regression requires -- it requires large samples because it takes advantage of every potential relationship that is available in the data. And you can by random chance have what are referred to as correlated error variances which creates spurious relationships. The smaller your sample size, the more likely you are to have correlated error variances which the regression technique would assume were real relationships and not relationships based on error.

Q. You call those correlated error --

A. Variances. And those are a problem in small samples because they are chance relationships that in regression appear to be real if you have a small sample size.

Q. And those correlated error variances, they may be on one side or the other of an association. In other words, they may show a positive association and maybe an error, or they may show

a negative association and be an error; is that true?

A. Yes. The -- I just want to just correct a little bit of what you said from a technical perspective. The correlated error variances are on -- have to be on both variables. That's why they are correlated. The error variances are working in tandem in some way. But they may work to -- actually, correlated error variances increase the magnitude of the relationship. It may increase it in a positive direction or it may increase it in a negative direction, but correlated error variances work to increase the size of the relationship, not to decrease the size of the relationship.

Q. And most scientists would agree that small sample size in using regression analysis is a potential source of error in the analysis. Most scientists agree to that, correct?

A. I believe they would, yeah.

Q. Now, going back a little bit, let's talk about statistical significance. What does that mean to you?

A. Well, statistical significance refers to the outcome of a statistical analysis whereby

tradition, if you will, in the field we have agreed that if something reaches a certain level of probability of occurrence in a test statistic which comes out of a statistical analysis like a correlational value or a T from a T test or an F from an F test, whatever you name the particular statistic, if it has a certain likelihood of probability of occurrence that's not due to chance or random factors, you call it significant. That essentially is taken to mean that if you were to conduct that study in another sample, you should get findings that tend in the same direction, given if your samples are comparable and if your samples are representative of the population. That allows you, then, to infer that the relationship exists in the population from which you have sampled.

Q. And what is a confidence -- strike that. What is a confidence interval?

A. A confidence interval in general terms -- again, it may vary depending on the particular statistic you're looking at. A confidence interval refers to the likelihood essentially or probability that if you repeated this study in a sample that was similar and appropriately drawn,

and all those kind of things, that the parameters that you've estimated would in the second study essentially fall within this same range. And you can calculate those that are based on the standard error of the statistic that you're interested in in conjunction with a multiplier taken from any table in the normal curve and you can determine do you want to be 68 percent confident or 95 percent confident or 99 percent, and so on.

Q. For instance, when you say if you want a P level of.05, does that mean that 95 percent of the time you will fall within the confidence interval of whatever you're studying?

A. No.

Q. Okay. Well, how is it -- explain where I'm wrong.

A. Well, you're mixing concepts so it's not --

Q. Okay. What is a P level? What does that mean?

A. Well, P is that probability value that I mentioned earlier that tells you the probability that essentially this finding -- this particular statistic, this value that you calculated through your analysis is, in fact, a finding that is based on chance, on random error in the

data, typically on sampling error, or it is something that would occur again. It doesn't tell you anything about the magnitude of the effect or if the numbers will be exactly the same. It tells you that essentially the direction of the finding would be the same or not.

Q. To be 95 percent confident that your results are not random but will most likely fall within the certain interval, what do you call that P .05 or what does that mean?

A. Well, usually we -- again, you keep mixing some terminology here that's -- with intervals -- and confidence intervals and P valves really relate to different things. The P value is a probability value and we traditionally use a P value of less than or equal to .05, which again tells you something about the acceptability in the scientific community of whether or not this finding can be generalized outside of your sample. Now --

Q. Well, let me stop you.

A. Well, I wanted to get back into the confidence interval.

Q. Okay.

A. The confidence interval will tell you whether or not the particular number that you got would fall within a particular range.
Q. Is it typical for statisticians such as yourself to use a 95 percent confidence level?
A. Well, it depends on what we're describing whether we would use a 95 percent confidence level or not. In clinical diagnostic work, some people use a 68 percent confidence interval. Some have argued that 85 percent is the best to use. Some people argue 90 percent, some 95. In more purely research settings it is more common that people will use a 95 percent confidence interval, but there is no set standard for a confidence interval.
Q. What do you use typically as a P level?
A. Well, a P level is not a confidence interval.
Q. Okay. Well, okay. Let's go back, then.
A. Okay. A P value again depends on what you're doing. Sometimes we use .05, sometimes .01, sometimes .001 or beyond.
Q. What do you typically use?
A. I don't typically use any one of those. It depends on the circumstances of the particular research.

Q. What is an Alpha error?
A. Gosh, I hadn't thought about Alpha-type errors in that terminology for a long time. I believe Alpha is the probability of rejecting a null hypothesis which, in fact, it's true.
Q. When you talk about statistical studies, what does bias mean?
A. Bias refers to a systematic error in the estimation of some parameter or value in the context of the study.
Q. And that's basically a methodological error, correct?
A. Well, it's not methodological error.
Q. It may be?
A. It may be. You're not always sure how bias may be introduced into your numbers. But bias refers to systematic error as opposed to random error. There's random error in virtually everything we do.
Q. And how would you describe methodologic -- I can't even say the word right now -- methodological error? How would you describe that?
A. Well, if it's something you did in the data collection that caused these statistical values

that you collected error in a particular direction more often than in another direction, that would be a methodological error that would introduce bias into your parameter estimates.

Q. Methodological errors, bias, those are all potential errors in any epidemiological or statistical survey, correct?

A. Yes.

Q. Including the one that you conducted in this case?

A. Potentially, yes.

Q. When we refer to quality control in a statistical analysis, what does that mean to you, Dr. Reynolds?

A. Well, it would -- to me quality control in a statistical analysis would have to do with the data entry, that the data was entered accurately, that we were dealing with the numbers that were actually collected as part of the data.

Q. Well, is that important to have quality control on the data that's entered into an analysis?

A. Well, the quality of the data always influences the quality of what comes out of analysis. You know, if you have garbage in, you get garbage

out. There's no way to fix that. So if you collected some value for a data point on a variable and it was nine and the person who entered it into the computer entered seven, that's going to be error. That typically is thought of as random error, the person -- people who make those kind of mistakes don't tend to make them in the same direction every time so it's random error and it tends to, as random error does, reduce the relationships that are found.

Q. It's important to have data entered accurately in any statistical analysis. Do you agree with that statement?

A. Yes.

Q. And if you don't enter it accurately, then that is a source of random error. Do you agree with that?

A. I think I said that.

Q. So you agree with it?

A. Yes.

Q. Do you believe that quality control in a statistical analysis is an important aspect of the statistical analysis?

A. Well, it's an importance precursor to the

statistical analysis and the lesser the quality of the data, the less likely you'll be able to discover the relationships that exist.

Q. Now, when you mean precursor -- what do you mean by it's an important precursor?

A. Well, it should happen before you do the analyses. The data needs to be input accurately before you conduct the analysis. It's not a part of the analysis typically.

Q. Well, is there also quality control procedures or methods that are used after data is entered for the statistical analysis?

A. There can be. You can go back and if you see strange things in your data, it's a good idea to go back and look and see well, where did this come from? Why is this here? This doesn't make sense, I need to go back to the original data and see if it's been entered accurately.

Q. Lack of a quality control program or procedure in a statistical analysis is a potential source of error for the statistical analysis. Do you agree?

A. Yes.

Q. Should every statistical analysis have some type of quality control check or quality control

procedures?
A. Well, there ought to be some, yes.
Q. When I talk about statistical power, what does that mean to you, Dr. Reynolds?
A. Power is the ability to detect an effect that exists.
Q. And is it fair to say that statistical power increases as the size of the cohort or the size of whatever you're measuring increases?
A. If you hold everything else constant, simply increasing the sample size will increase the power, yes.
Q. So it's fair to say that the more sample size you have, more than likely the more statistical power you have and the more accurate the results will be as a general rule?
A. That's the general belief, yes.
Q. Now, in your report Exhibit 2 occasionally you refer to risk factors, correct?
A. Yes.
Q. What is a risk factor to you?
A. I would consider a risk factor to be something that's associated with some undesirable outcome.
Q. Something associated with an undesirable act, did you say?

A. Outcome.
Q. Outcome. A risk factor is something associated with an undesirable outcome. That's your definition, correct?
A. Yes.
Q. Now, when you say something is associated with something else, you know, A is associated with B, what does that mean in your mind?
A. Well, it means you can use knowledge about one to predict the presence or absence of another at a rate greater than chance.
Q. As it relates to the word "cause," how do you define the word cause when examining whether something causes something? Statistically how do you use the word "cause"?
A. Well, cause is not something that statistics can answer for you. Cause is an inference that a researcher draws through the analysis of experimental data typically where you introduce something and you see if whatever you're interested in that composes -- comprises the dependent variable is altered by the introduction of that. And if it changes and you have the proper controls and when you don't introduce it, you don't see the effect, then you

would infer reasonably that there was a cause.
Q. Are you a toxicologist?
A. No.
Q. In your work as an expert retained by the lawyers who represent the tobacco companies, you have examined certain associations or risk factors or causes relative to smoking; is that correct? And I'm talking about the causes of diseases or outcomes which are not desirable.
A. Well, I have looked at the purported relationships between smoking and various outcomes related to children.
Q. Do you smoke tobacco?
A. No.
Q. Have you ever smoked tobacco?
A. Over my lifetime I've probably smoked five or six cigarettes, maybe as many an 10 but I don't think so.
Q. And during what part of your life did you smoke these cigarettes?
A. Well, I think probably while I was in college.
Q. I suppose you were just experimenting with tobacco?
A. Yeah, that's my interpretation.
Q. I suppose one of the reasons that you were

experimenting with tobacco was it was kind of an in thing or cool thing. Do you agree?

A. Well, I would say it was probably because I had a lot of friends that smoked and they seemed to enjoy it so like a lot of things in college, you see your friends and they seem like they enjoy something, you try it and see.

Q. Well, you say maybe your tobacco -- your efforts to attempt to smoke was as a result of peer pressure. That had something to play -- something to do with it, correct?

A. Well, I think it's reasonable to think of that as peer pressure in a way. I saw my friends doing it and I don't remember any of them ever acting in a coercive manner about it, but I think the pressure was subtle. Yes, I think that's reasonable.

Q. Does anyone in your immediate family smoke?

A. My stepson smokes.

Q. How long has your stepson been smoking?

A. I think he's been smoking about a year and a half or so, maybe two years. I'm not exactly sure when he started.

Q. Have you suggested that he should not smoke cigarettes?

A. Well, I have expressed my wish that he not smoke. I've not told him don't smoke.
Q. And why you've made the suggestion is because you recognize that smoking tobacco poses a risk of harm to your son -- your stepson, correct?
A. No. Not exactly, no. It might be better if you just want to ask me why, rather than tell me why.
Q. Well, I'm -- in my mind I'm trying to understand that one thing you recognize that smoking tobacco products poses a risk of harm to those people who smoke. That's true, isn't it?
A. I think it does, yes. And I agree with that as one part of it. But you were stating that that was why I did it.
Q. And I don't mean to infer that. One reason you don't want your stepson to smoke is because you recognize it is a risk of harm to his health?
A. Yes.
Q. And I suppose another reason you don't -- why you don't want him to smoke is because it's just something that, you know, you find somewhat offensive?
A. Yes.
Q. The cigarette smoke?

A. Yes.
Q. Now, you recognize, do you not, that smoking causes lung cancer?
A. Well, say that I believe it does, but I have not undertaken any independent study of that. But I believe from the media and just my general reading I believe that it does. But I want to be clear that I've not undertaken any kind of evaluation of the methodology or research approaches to that to attempt to determine whether or not, in fact, that is true.
Q. Well, starting about last October or November you started getting involved as an expert witness in cases involving tobacco, correct?
A. Yes.
Q. Now, in that time have you attempted to determine what the health effects are from smoking tobacco?
A. I have attempted to determine what a specific class of effects are.
Q. Well, generally speaking you're aware that tobacco smoke -- smoking causes heart disease, correct?
A. Again, I would give the same answer I gave to the lung cancer question. My general belief is

that it does, but I have not undertaken any independent examination of that research literature to try and make my own determination about the research methods and whether or not, in fact, that is really an appropriate conclusion to be drawn. But I generally accept that it does.

Q. Okay. And do you generally accept that cigarette smoking causes chronic obstructive pulmonary disease or emphasema?

A. With the same qualifications that I've made to the prior answers, yes.

Q. And you understand that smoking tobacco products causes hypertension and strokes?

A. That I don't really know. I don't have that understanding, no.

Q. That's just something you've never looked at?

A. Well, I won't say I've never looked at it and I've never read anything in the newspaper about it, but I don't recall reading anything that I thought was especially convincing. So I don't -- I don't have a good sense of that one.

Q. The lawyers for the tobacco companies haven't requested you to examine the scientific studies or medical literature concerning whether or not

smoking causes hypertension or whether it causes strokes; is that correct?

A. That's correct.

Q. And you've not taken it upon yourself to do that?

A. That's correct.

Q. Are you aware that cigarette smoking causes renal disease?

A. No.

Q. You've not researched that area; is that correct?

A. That's correct.

Q. Have you attempted to determine whether cigarette smoking causes bladder cancer?

A. No.

Q. That again is another area that you've not attempted to research; is that correct?

A. That's correct.

Q. And no one from the tobacco companies has suggested that you investigate that; is that correct?

A. That's correct.

Q. Have you attempted to determine how many Americans each year die from a smoking-related illness?

A. No.
Q. Have you attempted to determine how many citizens of the State of Texas die each year from a smoking-related illness?
A. No.
Q. Do you agree that maternal cigarette smoking during pregnancy is a cause of low birth weight babies?
A. No.
Q. Do you agree that maternal cigarette smoking during pregnancy is a risk factor for low birth weight babies?
A. That would depend upon whether or not one attempts to define smoking in an isolated sense where you're only considering smoking and no other behaviors that may be associated with smoking. If that is the case, then I would say no. If you use smoking as a collective variable that may be associated with many other factors in a person's life that may also be correlated with smoking, then I would say yes.
Q. Well, let's take that and break it down to a couple of questions here. As it relates to maternal cigarette smoking by itself alone during pregnancy, is smoking a risk factor for

low birth weight babies?

A. No.

Q. But in connection with some other risk factors or some other agents or lifestyle, then cigarette smoking is a risk factor when it's maternal cigarette smoking and that is a risk factor for low birth weight babies. Is that true?

A. No.

Q. What about that is incorrect?

A. It's not the smoking that is the risk factor. It happens that smoking is associated with other things that people do. Smoking doesn't necessarily cause those people to do those things. Smoking, for example, is associated with having fewer prenatal visits to your OB/Gyn. I don't have any model or any reason to believe that smoking causes that, but that is associated with lower birth weight babies. So I think there are other risk factors in people's lives who choose to smoke while they are pregnant and do not follow the advice of their obstetricians to stop. I think they also engage in other behaviors that are risky and that you can use smoking if you choose to in some way to

kind of index that. And that if you use it, as I said, as a collective variable in that sense, in your analyses it may turn out to be a risk factor. If you just looked at smoking even as a component of that, you break smoking out, smoking is not independently associated with low birth weight infants.

Q. Certainly you're aware that there are studies that indicate smoking is a risk factor relative to low birth weight babies?

A. Well, studies do not indicate that. The interpretation of the researchers who conduct those studies are that smoking is a risk factor. There's always a researcher who makes an interpretation or another person who interprets results. Statistics don't necessarily indicate something that specific. Statistics provide an intelligent researcher with a basis for drawing an inference about what it means. I think the studies you're referring to, I think the inferences that are made within those studies are that smoking is a risk factor.

Q. Okay. Well, let's ask it this way: You're aware that there are researchers who have interpreted their studies such that cigarette --

maternal cigarette smoking is a risk factor for low birth weight babies. That's correct?

A. Yes.

Q. And you have read studies where the researcher has interpreted the data such that maternal smoking during pregnancy is a cause of low birth weight babies. That's true, too, isn't it?

A. Yes.

Q. And I take it between you and these other researchers there's just a difference of opinion where reasonable minds can differ. Is that your opinion?

A. I think it's more than that. I think their data sources and methods of control are inadequate. I think we disagree about that probably. I don't think it's just an academic disagreement and I think that the analyses that we've done would not support those conclusions.

Q. There's been at least a dozen or more other studies where the researchers have interpreted their data to indicate that maternal cigarette smoking during pregnancy is either a risk factor or a cause of low birth weight babies, correct?

A. Yes.

Q. And you, based on your one study, say no, that's

not right and these other 12 people are just wrong; is that right?

A. No. Based upon my reading of large numbers of studies related to this area, my knowledge of research methods, my knowledge of the etiology of various neurodevelopmental disorders which I do treat in my clinical practice and teach the treatment and diagnosis of at Texas A&M University, as well as the study that we have done which has a sample size that exceeds the combined sample size of every other study that you will find, I believe, you may uncover some that I'm not aware of, I wouldn't hold myself out to be perfect and have found absolutely everything, but everything that we've seen particularly with reference to the State of Texas, I would base my opinion on all of those things.

Q. You keep saying "we." Who are you talking about? We as in you and the tobacco lawyers or we as in who?

A. Well, I would say we would include myself and Dr. Stone who's name is also on this report.

Q. And Dr. Stone, were you paying for his time to work on this study?

A. No.
Q. I take it that the lawyers representing the tobacco companies were paying Dr. Stone to work on this study?
A. Dr. Stone is an employee of a company called Metrica and I think he's paid by Metrica. I don't know what his arrangements are with the tobacco industry.
Q. Have you ever worked on a study with Dr. Stone before you did this report on behalf of the tobacco company lawyers?
A. I had worked with him on similar analyses that we were doing in Mississippi and in Florida, but not prior to that, no.
Q. So you've worked with Dr. Stone on two other occasions and both of those concerning -- concerned tobacco litigation where you were retained by the tobacco company lawyers; is that correct?
A. Yes.
Q. Do you agree that maternal cigarette smoking during pregnancy is a cause of abruptio placenta?
A. No.
Q. Do you agree that maternal cigarette smoking

during pregnancy is a risk factor for abruptio placenta?

A. No.

Q. Are you aware of any studies where the researcher interpreted the data and concluded that maternal cigarette smoking during pregnancy is either a cause or a risk factor for abruptio placenta?

A. Yes.

Q. Do you agree that maternal smoking during pregnancy is associated with abruptio placenta?

A. Again, if we are solely talking about cigarette smoking, I would say no.

Q. Have you examined the average hospital stay for a baby whose mother and the baby obviously were involved in an abruptio placenta?

A. No.

Q. Have you attempted to determine the average hospital cost associated with abruptio placenta?

A. No.

Q. Have you attempted to determine by examining any hospital records, Medicaid records, physician records the cost associated with low birth weight babies?

A. No.

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Q. Have you attempted to determine the average hospital stay associated with a low birth weight baby?
A. No.
Q. Do you agree that maternal cigarette smoking during pregnancy causes placentae praevia?
A. No.
Q. Do you agree that maternal cigarette smoking during pregnancy is a risk factor for placenta praevia?
A. Again, with regard to all of these when we talk about cigarette smoking, if I'm understanding that we are restricting it to cigarette smoking and not the other kinds of perhaps correlated risks that we've talked about, I would say no.
Q. Well, when we talk about correlated risk, are you familiar with what's known in toxicology as synergism?
A. Yes.
Q. Have you attempted to look at synergism between any of the components in tobacco smoke and let's say any of the risk factors associated with low birth weight babies?
A. No.
Q. In your report is there a specific analysis

concern abruptio placenta specifically?
A. Well, not limited to that, no.
Q. In your report Exhibit 2 is there a specific analysis concerning placenta praevia?
A. Not limited just to that, no.
Q. Have you attempted to determine the average cost associated with placenta praevia?
A. No.
Q. Have you attempted to determine the average hospital stay associated with placenta praevia?
A. No.
Q. Have you reviewed any Medicaid, hospital or physician's billing records concerning placenta praevia?
A. No.
Q. I'm trying to figure out the fastest way to do this because I've got a list of those types of questions about risk factors and causes, and so let me see if we can get an agreement here.
A. Okay.
Q. What if I go through this question and list a bunch of occurrences or outcomes, and if you just say risk factor, cause or nothing or no?
A. Okay.
Q. Something like that. Would that be --

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A. I could also perhaps make a suggestion to you.
Q. Go ahead, let's make it.
A. If nobody hits me with anything. I have not examined any hospital billings, records, attempted to determine any cost of anything with regard to this lawsuit. If that helps you with some of those.
Q. I think what I can do is ask that in one big -- a couple of questions and get that taken care of. Have you attempted to examine the cost of any procedures or outcomes -- let's don't do it that way either. Have you reviewed any Medicaid records concerning cost of treatment of Medicaid patients particularly Medicaid mothers and babies?
A. No.
Q. Have you attempted to analyze the hospital stays for any Medicaid mothers or babies?
A. No.
Q. Have you looked at any billing records, hospital records, physician's records concerning cost of services associated with Medicaid or Medicaid babies or mothers?
A. Not -- no, not with regard to this lawsuit.
Q. Okay. Have you attempted to look at any

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hospital cost whatsoever associated with the births of babies in Texas?

A. No.

Q. Have you attempted to look at any information or documents concerning the average hospital stays for -- and the length of those stays for any mothers or babies born in the State of Texas?

A. No.

Q. Have you looked at any of the billing records, hospital records, doctor's records or like concerning any birth in the State of Texas?

A. No.

Q. That saved a little time.

A. Can we go off the record for just a moment?

Q. Sure.

(At this time there was a
(discussion off the record.
(RECESS 12:00 - 12:57)

Q. Dr. Reynolds, do you have an opinion as to whether maternal smoking during pregnancy is a cause or a risk factor for ectopic pregnancies?

A. Yes.

Q. What is your opinion?

A. It is not.

Q. Have you read any studies where the researcher

has interpreted the data to suggest that ectopic pregnancies is an outcome related to maternal smoking?

A. I'm not sure if I've read specific research papers on that topic or if I've read it in books, but I have read that.

Q. And those are studies in which the researcher has concluded that ectopic pregnancies are an outcome associated with or caused by maternal cigarette smoking?

A. I think I have seen that in the literature. I couldn't tell you specifically study. And as I said, I'm not sure with ectopic pregnancy if I've read a specific study of that or if I read that in a general review where they attributed that to someone.

Q. And the basis of your opinion is the report that you generated relative to this lawsuit; is that correct?

A. The basis of my opinion is as I stated it previously.

Q. Well, did you state an opinion as it relates to ectopic pregnancies?

A. No.

Q. Okay. Then what is the basis of your opinion?

A. It is based upon all of my knowledge and reading of the literature that I have done, my background, training, education, my diagnostic work with children, in addition to the studies that I have done.
Q. Well, what about it? What about your practice causes you to be involved in ectopic pregnancies?
A. Well, I see children with variety of neurodevelopmental disorders.
Q. I'm sorry, but that's not the question I asked. The question I asked was, what about your practice concerns ectopic pregnancies particularly?
A. Nothing.
Q. Do you have an opinion as to whether maternal cigarette smoking is associated with or causes spontaneous abortion?
A. Yes.
Q. What is your opinion?
A. I don't know of any specific association.
Q. What research have you done in that regard?
A. I've not done any.
Q. Do you have an opinion as to whether maternal cigarette smoking during pregnancy either causes

or is a risk factor for premature rupture of membrane or PROM?

A. Yes.

Q. What is your opinion?

A. It does not.

Q. And is the basis of your opinion your report that you generated in this lawsuit?

A. In part.

Q. Have you read any studies where the researchers have interpreted their data to suggest or they suggest that maternal cigarette smoking during pregnancy is a cause of P-R-O-M, PROM?

A. I don't recall a specific study, no.

Q. You understand that PROM is a relatively serious condition to the mother and the baby?

A. Yes.

Q. And I take it that your practice you do not specifically concern yourself with program?

A. No.

Q. Is that correct?

A. That's correct.

Q. Do you have an opinion as to whether maternal cigarette smoking during pregnancy is a risk factor or causes congenital limb reduction in babies?

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A. Yes.
Q. What is your opinion?
A. I have no reason to believe that it does.
Q. And other than your study that you produced pursuant to this lawsuit, what other data can you point me to that supports your opinion in that regard?
A. I can't point you to any other specific data.
Q. So the basis of your opinion is your study?
A. And my reading and general knowledge of the literature, yes.
Q. But that's not general knowledge that you can point me to today; is that correct?
A. Well --
Q. You can't point me to a textbook or anything like that, can you?
A. To a textbook that what?
Q. Concerning PROM and whether or not it's related to --
A. I'm sorry, I thought you were asking me -- you were asking me about congenital limb reduction.
Q. I'm sorry. I'm sorry. I skipped one, you're right. I apologize. Let's go back.

Can you point me to one textbook or one article that supports your opinion that

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cigarette smoking -- maternal cigarette smoking during pregnancy is not a risk factor concerning congenital limb reduction?

A. No.

Q. Or a cause of congenital limb reduction?

A. No.

Q. Do you have an opinion as to whether maternal cigarette smoking during pregnancy is a risk factor or a cause of perinatal mortality?

A. No.

Q. So I'm correct, you have no opinion with regard to perinatal mortality and cigarette smoking?

A. Well, my opinion would be I don't know so I would equate that with having no opinion.

Q. Fair enough. Do you have an opinion as to whether maternal cigarette smoking during pregnancy is a risk factor or a cause of mental retardation in children?

A. Yes.

Q. What is your opinion?

A. It is not.

Q. And what is the basis of your opinion?

A. My reading of the literature, my general knowledge of mental retardation, as well as the studies that I have done related to mental

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retardation.

Q. Now, the study that you have done concerning mental retardation where you have examined cigarette smoking in the mother, is the only study that's been conducted by you, is that Exhibit 2, your report in this case?

A. No.

Q. What other study have you performed concerning mental retardation and its association with cigarette smoking?

A. In the context of the Mississippi and Florida cases, we were looking at Mississippi and Florida data that will relates in part to that question. In addition to -- it's not independent studies of data, but looking very hard at the published research that deals with that question and studying that research very carefully and looking at those research designs.

Q. Okay. Well, let's break that up a little bit. One of the studies or one of your methods of research concerning the association between cigarette smoking and mental retardation, and that's maternal cigarette smoking during pregnancy, was through your work as an expert called upon by the Defendants, the tobacco

companies, in Mississippi and Florida; is that correct?

A. Yes.

Q. Is that the first time you examined whether or not there was an association between maternal smoking during pregnancy being associated with mental retardation either as a risk factor or as a cause?

A. Yes. It was the first time I had examined that issue, yes.

Q. How many years have you been working as a psychologist?

A. About 20.

Q. 20. So for approximately 19 and a half years the subject of maternal smoking during pregnancy and whether or not that was a risk factor or a cause for cigarettes -- strike that. During the first 19 years of your practice as a psychologist, you did not examine whether or not maternal smoking during pregnancy was a cause or a risk factor for mental retardation; is that correct?

A. That's correct, I did not examine that issue.

Q. Are you aware of any articles published in the scientific and medical literature that concern

maternal cigarette smoking during pregnancy being a cause or a risk factor for mental retardation?

A. Yes.

Q. And what study is that, sir?

A. Well, there are a number that have looked at that. I can't give you a list of names of articles.

Q. Well, you're familiar with the study by Dr. Drews entitled "The relationship between etiopathic mental retardation and maternal smoking during pregnancy." You're aware of that article, correct?

A. Yes.

Q. Well, what study did you perform specifically concerning cigarette smoking of the mother during pregnancy and whether or not that was a risk factor in mental retardation?

A. Only the study of the studies that have been done.

Q. You reviewed the literature?

A. Yes.

Q. There's no original research by you concerning mental retardation and maternal cigarette smoking; is that correct?

A. Well, people would think that reviewing that literature constitutes original work on my part. So to the extent that reviewing that in the way I reviewed it is original, I would say yes.
Q. Well, original in the sense that you collected data and analyzed that data. Based on your own collection of data, you've not done that, correct?
A. That's correct.
Q. Do you have an opinion whether maternal cigarette smoking during pregnancy is a risk factor or a cause for behavioral problems in children?
A. Yes.
Q. What is your opinion?
A. There is no evidence to say that it is.
Q. What original research conducted by you, and I'm talking about collecting data, have you done with respect to maternal cigarette smoking during pregnancy and children with behavioral problems, what have you done originally?
A. None.
Q. What article can you point me to that supports your opinion that maternal cigarette smoking during pregnancy is not a risk factor in

behavioral problems in children?
A. none.
Q. Are you aware of any relationship stated in any articles scientific literature concerning maternal cigarette smoking during pregnancy and behavioral problems in children?
A. Yes.
Q. What article are you aware of?
A. One that Ben Lahey was a co-author on that was published earlier this year.
Q. Do you know Dr. Lahey?
A. Yes, I do.
Q. Have you talked with Dr. Lahey about the article?
A. No.
Q. Do you disagree with Dr. Lahey?
A. Well, I have not read the actual article. I'm in the process of obtaining that. It's not in a journal that I subscribe to. I've read a summary of it. And it appears that -- from the summary that they drew a causal conclusion based on data that would not support drawing causal conclusion. So if, in fact, that's true, then I would disagree with him, yes.
Q. But all you've seen is just a summary. You've

not looked at the entire study?
A. I think that's what I said.
Q. Well, how long have you known about this study?
A. Just a few weeks.
Q. In a few weeks you couldn't go to a computer and get that article off the computer or at the library at Texas A&M University?
A. That's right. I haven't had time to do it.
Q. But I take it because you're aware of the summary that somebody gave it to you that someone at least thought that that was a relevant issue relative to your opinions in this lawsuit, correct?
A. I thought it was relevant. I asked for it and I thought I was being sent a copy of the study, and I was not. I was sent a copy of the summary so now I have to go get the study.
Q. And you knew you were being supposed here by the State of Texas and you didn't read the article; is that correct?
A. I'm not sure those -- you're linking up a compound there that's unrelated.
Q. Well, you knew you were going to be deposed and you decided not to even go get the article?
A. No, I didn't decide not to go get the article.

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I told you I have decided to go get the article. I haven't had time to do it. I don't know how else to explain that to you.

Q. Do you have an opinion whether or not maternal cigarette smoking during pregnancy is a cause or a risk factor for uterine bleeding?

A. Yes.

Q. What is your opinion?

A. I don't believe that it's causal or associated with it.

Q. And what is the basis of your opinion?

A. My general reading of the literature and the analyses that we've done.

Q. What specific articles can you point me to in the scientific and medical literature that support your opinion?

A. I can't point you to a specific one.

Q. And the studies that you're referring to are again the studies that you conducted since being retained by the lawyers for the tobacco industry; is that correct?

A. Yes.

Q. Any others?

A. No.

Q. You've got your report in front of you, the

report which has been marked as Exhibit 2?
A. Yes.
Q. Exhibit 2, your report -- strike that. Your report entitled "Final Report of the Analysis of Natality and the Relationship of Smoking to Birth Weight," this report was written by you and Dr. Stone, correct?
A. Yes.
Q. We've had this marked as Exhibit 2, correct?
A. Yes.
Q. And you made this for the purpose of litigation, this lawsuit?
A. Yes.
Q. You indicated that you and Dr. Brice Stone had worked together in the Mississippi and Florida tobacco litigation lawsuits -- or strike that. You and Dr. Stone had worked on two or occasions, that being the Florida and Mississippi tobacco lawsuits, correct?
A. Yes.
Q. How did you come to know Dr. Brice Stone?
A. I was introduced to him by Dr. Wilen.
Q. And where does Dr. Stone reside to the best of your knowledge?
A. In San Antonio.

Q. And where does he work?
A. At this company called Metrica, as far as I know. The same place I told you he worked earlier today.
Q. What is Metrica to your knowledge?
A. It's a consulting firm that primarily does government contract work, I think. I'm not entirely certain of that.
Q. What is Dr. Stone's educational background to the best of your knowledge?
A. I believe Dr. Stone has a Ph.D. in Econometrics.
Q. What is econometrics?
A. I understand it to be the mathematical study and modeling of economic impact or economic models of most anything you want to model economically.
Q. As it relates to your report which has been marked as Exhibit 2, what economic data did you use in the development of this report?
A. None.
Q. What did Dr. Brice Stone do relative to the report which has been marked Exhibit 2?
A. Dr. Stone ran the specific statistical analyses.
Q. In other words, he had the data and you told him how you wanted it ciphered or figured, and then he ran this information on a computer. Is that

a fair statement?

A. Not entirely. I gave him the data. He had a computer system available to him that would handle that size of a data set. We discussed the analyses that were necessary to address the various questions, discussed various ways to do that and settled on methods for doing that. And then he would cause the analysis program to be executed on the computer screen.

Q. Did you try to run the data on any computer that you owned?

A. No.

Q. Now, you indicated that with respect to Dr. Stone that you and he both worked together in Florida and Mississippi tobacco litigation. I want to know what you did with each other. What did you-all do?

A. Similar things to what we did here. We looked at the natality data set for Mississippi and for Florida and we jointly designed the data analyses and carried those out and prepared summary tables and analytical tables of all of those data.

Q. Did you prepare a report in either of those cases where you attached those findings from

your tables or from that data?
A. No.
Q. But you had it somewhere, you just didn't produce it, correct?
A. We did not ever prepare a final report, no.
Q. So you had a draft report that had your findings from Mississippi and Florida concerning natality data, but it wasn't produced because it wasn't in final form; is that right?
A. No.
Q. Well, what's wrong with what I said?
A. Well, in Mississippi I don't think we ever actually got to what I would consider a narrative report stage. We had all the tables made up and the statistical tables and things like that were ready. The case settled before we could write a report and it was no longer necessary to do that.

In the Florida case we -- I don't even -- I wouldn't consider what we had to be a draft. It was a partial draft. And we had summary tables and statistical runs and those kind of things put together. But once the case settled there was no need to continue with that.

Q. For Mississippi you had the tables made up from

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the natality data, and in Florida you had the tables made up and you had a partial draft. Is that a fair statement?

A. Yes.

Q. Well, I take it that in Texas you made the tables first, and then you put together a partial draft or a draft of the report which has been marked as Exhibit 2; is that correct?

A. Yes.

Q. Well, after you put together your tables, did you pass those tables by any of the tobacco lawyers who retained you in this matter?

A. No. I didn't pass them by them, no.

Q. Did you show them to them?

A. Yes.

Q. When did you show them these tables from the State of Texas concerning the natality data? And I'm talking about the tobacco lawyers. When did you show them the data?

A. I'm not sure. It was sometime in August.

Q. Who did you show them to specifically?

A. To Mr. Nims.

Q. Where did you show them to him? Where were you at when you showed him these data?

A. I'm not sure if we had those at a meeting in

San Antonio or if we mailed them to him. I really don't remember.

Q. And what tables did you send Mr. Nims, the lawyer from R. J. Reynolds?

A. It would have been tables that are included in this report.

Q. And did he send you back some information or a letter or a memo or anything?

A. No.

Q. Did he write on any of the reports and send them back to you, any of the tables?

A. No.

Q. Did he discuss them with you over the telephone?

A. Yes.

Q. Well, what did you-all talk about?

A. Well, he wanted me to tell him what I thought they meant and I -- you know, that's what I did so.

Q. Then you wrote a draft; is that correct?

A. Dr. Stone and I wrote a draft together.

Q. And I take it that you passed the draft by Mr. Nims, too; is that correct?

A. Well, I don't like the connotation of passed it by.

Q. You gave him a copy of the draft. Is that a

fair statement?
A. I don't know for sure if Mr. Nims ever saw a draft report of this or not.
Q. Okay. Did you send any law firm or person a draft of your report which has been marked Exhibit 2?
A. No.
Q. Well, now I'm confused because I thought for a second you said, well, I may have, and now you're saying no.
A. No, I said I don't know if he saw one. I did not send one to anybody.
Q. Okay. So you wrote -- you and Dr. Stone wrote a draft of your report which is Exhibit 2. That much we've established, correct?
A. Yes
Q. Well, after you wrote the draft, what did you next do? I mean, I want to know the next thing you did after you had this draft completed.
A. Oh, the next thing I did was sit down and go through it and rewrite it.
Q. Did you talk with anyone after you wrote the draft concerning your rewrite of Exhibit 2, your report in this matter?
A. Yes.

Q. Who?
A. Dr. Stone.
Q. Anybody else other than Dr. Stone?
A. I talked to Dr. Robert Brown about looking at it and commenting on it, but I did not get his comments back before the report had to be produced.
Q. Who is Dr. Robert Brown?
A. Dr. Brown is a developmental psychobiologist at the University of North Carolina in Wilmington.
Q. Is he an expert that is retained by the tobacco companies?
A. That's not entirely clear to me. I think he's being paid for some of his time through Medical Horizons. I don't know if he's being paid by the tobacco companies or not.
Q. Well, why would Medical Horizons pay Dr. Brown to look at your study?
A. Well, I don't know if he got paid to look at my study or not, actually.
Q. How did you know to talk to Dr. Brown?
A. He was one of my professors and I hold his opinions in high regard and hold my years of debating with him research design issues and things like that in quite a bit of regard, and I

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was interested in his opinion.
Q. But it's your understanding that Medical Horizons may have paid Dr. Brown for his work in reviewing your study?
A. They may have. I don't know.
Q. You didn't ask Dr. Brown?
A. No. I asked him if he would look at it and he said he would, but he didn't have time to look at it before the report had to be produced.
Q. Did any neonatologist review your report, Exhibit 2, prior to its becoming a final report?
A. Not to my knowledge. They didn't review with it with my knowledge or consent.
Q. Did any physician review your report, Exhibit 2, prior to it becoming a final report?
A. Not that I know about.
Q. Okay. Since writing your final report, has any physician including a neonatologist reviewed your report and provided comments back to you?
A. No, not -- no, nobody has provided any comments back to me. If somebody has reviewed it, I don't know. I don't know who it's been sent to.
Q. In other words, you've not asked any physician to review Exhibit 2, your report, in this matter?

A. That's right.
Q. Do you recall the results from the Mississippi and Florida natality data?
A. The general results. I couldn't recall specific numbers and things like that for you.
Q. And did you ever write those in any kind of article or report?
A. Not yet.
Q. Your report, Exhibit 2, was designed by you and Dr. Stone; is that correct?
A. Yes.
Q. Did anybody assist you in the design of your our report which has been marked as Exhibit 2?
A. Nobody assisted me. Whether or not any of Dr. Stone's people who work for him at Metrica assisted him or not, I couldn't tell you. But nobody assisted me, no.
q. Did you make some type of written proposal concerning your report which has been marked Exhibit 2 prior to you starting work on this study?
A. No.
Q. So I take it you talked to somebody at Mr. Nims' law firm or Mr. Nims himself and you told him, "Here's my idea for a study," and he says, "Get

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with it." Is that what happened?
A. That's reasonable, yeah.
Q. And he said, "The checkbook is open, go for it, spend what you need to." Is that what he said?
A. No.
Q. What did he say about economic considerations?
A. He didn't say anything.
Q. So he didn't tell you, "Hey, look, I'd like for you to come under, you know, 50,000 or 30,000 or $100,000 in writing this report?" He didn't suggest what a budget would be, correct?
A. That's correct.
Q. Now, when you do work at Texas A&M University don't you do things by budgets?
A. Well, the work I do there -- no, I just I teach my classes. I supervise dissertations, I advice students, I do all the things that faculty do that the only budget I have there is for some professional travel. That's the only budget I manage and it's not enough to pay for hardly anything to so I end up paying for most of that myself anyway.
Q. There's a department that you work in that has a budget and they have to stay within that budget, correct?

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A. Well, they have a budget. Whether or not they have to stay within it or not is a big can of worms.
Q. Well, that's the goal, correct?
A. I don't think so it is. I think the goal is always to go over budget within the department because that's the only way you can get the dean to this increase the budget.
Q. Well, as a citizen of the State of Texas, I'm proud of that. Now, let's go back to this. When studies are performed at Texas A&M, isn't it a usual practice for there to be a budget?
A. Well, it depends. I do a lot of studies where I have no budget. If you're doing a government contract or grant, then usually there's a specific budget. And if you go outside of that, you have to absorb those costs or find ways to do it without spending money.
Q. But that wasn't a concern with you concerning your report in this lawsuit, correct?
A. Yes.
Q. And typically in any kind of research work there's always a proposal so that you can get funds to do a research project, correct?
A. No.

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Q. I said typically. That's incorrect?
A. Well, it really depends. If you're seeking funding from a grant or contract source, then yes, that is typical. I have data bases that I do research out of that don't require any specific budget or proposal other than what I have in my head and I don't have to ask anybody anything. I do what I wanted to do with it.
Q. Is it your testimony today that you have no description or proposal concerning the study that you conducted in this lawsuit that was funded by the tobacco companies?
A. That's absolutely accurate, yes.
Q. Typically -- and I'll see if you agree with me on this -- a researcher makes a hypothesis, gathers data, analyzes the data to see whether or not the hypothesis is true or false. Is that a fair statement?
A. No.
Q. What's not fair about that statement? What's incorrect about it?
A. Well, first of all, you don't ever know if a hypothesis is true or false, and that's not what you're doing in much of your work. If you're doing an exploratory study, you don't go

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into it if you're doing it the way you ought to do with it with a preconceived idea about how it's going to turn out. In fact, much of the research, I think, in this particular area is done exactly as you described. I think most of these researchers, as we've noted, go into these studies assuming that smoking has these effects and they set out to prove it. And sure enough, that's what they say they've done. I don't think that that's good science.

I think you go into it with an open mind and you have ideas about it. But in this particular study which is an exploratory study you don't say, "I'm going to go in and show that." What you're going to do is go in and see what's there.

Q. Do you remember what the question I asked you was that you just answered?

A. I remember parts of it.

Q. Okay.

A. Do you remember?

Q. Yeah, I do remember. I'm just trying to figure out what part was responsive to my question.

A. Okay, good.

Q. Well, will you agree with me typically that a

researcher will establish quality control procedures at the beginning of the research?

A. Well, tell me what you think quality control procedures are, maybe I can answer your question better.

Q. To make sure that the data that you're inputting is good data and make sure that the data is inputted correctly?

A. Yes.

Q. That's something that should be done, correct?

A. Yes.

Q. Did you do that? Did you institute some type of quality control program concerning the data that was inputted and the quality of input of that data?

A. No, I did not.

Q. Did Dr. Stone do that?

A. I couldn't tell you.

Q. So as we sit here today, that would be a potential source of error because you did not nor to your knowledge did Dr. Stone establish quality control procedures for your study. That's a potential source of error, isn't it?

A. Well, I know that the data were read directly from the discs provided by the U.S. government.

And if those discs are inaccurate, then that would be a problem, yes.

Q. It's a potential source of error, that was my question. You agree with that?

A. Yes.

Q. Other than Mr. Nims, who else approved, to your knowledge, you going forward with your study in this tobacco lawsuit?

A. No one that I know of.

Q. Did you discuss this with anyone from any tobacco company?

A. I think there was another attorney present at one discussion that I had with Mr. Nims.

Q. Do you recall his name?

A. I think it was Mark Hull. I wouldn't -- I wouldn't tell you absolutely for sure that's who it was, but I think it was Mark Hull.

Q. Now, you selected the data sets that were to be analyzed in your study; is that correct?

A. Yes.

Q. You selected where the data came from?

A. Yes.

Q. What options did you have to look at when selecting the data that you eventually used in your study which has been marked Exhibit 2?

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A. There were no other options that I know of. This is the only data set like this that I know exists.
Q. When did you receive the natality data that you used in Exhibit 2 to your report in this matter?
A. I couldn't tell you exactly. I think it was around June, but I really don't know for certain.
Q. June of 1997?
A. Yes.
Q. And if I'm correct, you limited the data to natality data from 1989 through 1993; is that correct?
A. No.
Q. Okay. Tell me what the data sets were that you used.
A. 1989 for 1993.
Q. How is that different from the question I asked?
A. You said I limited these data selection to that. I didn't limit it. That's the only data that's available. They haven't input the data past 1993 yet and the federal government hasn't yet made that available.
Q. Well, did you --
A. As soon as they make it available -- we have

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attempted to get that. We asked for all the data that were available. This is what the U.S. government said was available. They said that sometime this year they hope to have additional years available and as soon as they have that available, it's my intention to get that and run the same types of analyses on the more recent data.

Q. Well, did you attempt to use data from 1988 or 1987?

A. Well, we asked and they did not have data on smoking, at least that's what they told us and I assume they were telling the truth.

MR. HYDE: Ms. Court Reporter, I'm going to have you mark as the next two exhibits this information in front of you.

(Deposition Exhibits Nos. 4 and (5 marked for identification.

BY MR. HYDE:

Q. Now, the data that you received, this natality data, that came from where?

A. From the Department of Health and Human Services in Washington. I'd have to go back and look to see the specific office, but I believe we ordered it through the National Center for

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Health Statistics.
Q. The DHHS is the Department of Health and Human Services?
A. Yes.
Q. And the NCHS is what?
A. National Center for Health Statistics, which I believe is a -- is somewhere within DHHS. It's possible I'm wrong about that. They may be a separate entity under National Institutes of Health, but I'm not sure the tree.
Q. When we refer to natality data in your report, can we agree that we're talking about the Department of Health and Human Services or the National Center for Health Statistics data, natality data?
A. Yes.
Q. So when I talk about natality data, we're always going to be talking about the same information, okay?
A. Well, if we assume, then, that we're going to be talking about the data that were supplied to us through the National Center for Health Statistics.
Q. And you received that data on CDs or compact discs; is that correct?

A. Yes.
Q. And it's with those discs that you then performed your statistical analysis or manipulation of data, correct?
A. Yes.
Q. As it concerns the State of Texas, did you look at any specific birth certificates that concerned births between the years 1989 and 1993?
A. No.
Q. Did you look at any medical or hospital records concerning any births in Texas that occurred between the years 1989 and 1993?
A. No.
Q. Exhibit 2, your study in this lawsuit, do you consider it to be a mortality study?
A. Not really.
Q. Have you attempted to calculate an SMR for infant deaths of women who smoked during pregnancy as it concerns the years 1989 through 1993?
A. No.
Q. Did you review the introductory material to the natality data that you received from the government?

A. Some of it. I don't know if I even have all of the introductory material.
Q. Well, let's talk about what some you did look at. Can you recall what you looked at? I'm talking about the introductory data of the natality -- the introductory remarks in the natality data CD discs?
A. Well, I think I read that, yeah.
Q. For what year?
A. I don't know.
Q. Well, you say you think. Do you know for sure or are you guessing?
A. Well, I know I didn't read it year by year. I thought there was a general description of it and that was what -- that was what I looked at.
Q. Well, didn't the discs come in five different discs?
A. No.
Q. One disc?
A. Two.
Q. Two discs. You're certain of that?
A. Yes. I know what they sent me. I don't know how it comes now, but it came in two when they sent it to me.
Q. Do you recall reading whether or not there were

any limitations concerning the natality data that you used in your study?

A. No.

Q. Did you review any technical articles that were recommended in the introduction of the natality data concerning any analysis of that data?

A. No.

Q. Doctor, I've got in front of you the introductory portion concerning the 1989 data, and I've had that marked as Exhibit 4. Do you see that, sir?

A. Uh-huh.

Q. Yes?

A. Yes. I'm sorry.

Q. In the first section of that document it says -- it's entitled "Chapter 1, Introduction." Do you see that, sir?

A. Yes.

Q. I'm going to try not to get this out of order. Would you turn with me, please, to Page 5.

MR. NIMS: Do you have a copy I can look at?

MR. HYDE: It was so voluminous that I didn't bring it, and I apologize for that. I really do, I mean, quite

frankly.

MR. NIMS: I understand. I'd like to go ahead and look. But before you answer the question, I'd like a second just to see what you're about to be asked about because I haven't seen it.

BY MR. HYDE:

Q. Actually, I'd like for to you turn to Page 6, if you would, that's the page of interest. Do you see that, sir?

A. Yes.

Q. Look under, please, where it says "Demographic and Medical Classification." Do you see that?

A. Yes.

Q. Would you please read the second sentence of that chapter on the record?

A. Of the paragraph?

Q. Yes, sir.

A. "While not absolutely essential to the proper interpretation of the data for a number of general applications, these documents should nevertheless be studied carefully prior to any detailed analysis of demographic or medical (especially multiple cause data variables."

Q. And then below that between A and K they list

a number of articles, do they not?
A. Yes, they do.
Q. And none of those articles did you review?
A. That's correct.
Q. And yet, you were doing a multiple cause type analysis, were you not?
A. Well, you might characterize it that way.
Q. Well, might you characterize it that way?
A. I don't think you can analyze cause or prove cause from these date. You can look to see if there's reason to suspect cause.
Q. Well, that's what you were trying to do is do a study concerning cause or no cause, right?
A. Well, again, you cannot determine cause from these data. You can determine no cause or suspicions of cause. You can't show causality from correlational data.
Q. Would you characterize your study that you conducted in this lawsuit as an analysis of demographic or medical data variables?
A. Yes.
Q. Now, we're looking at the 1989 information right now, correct?
A. Yes.
Q. I want to draw you -- talk about something here.

One of the issues that you looked at concerning the 1989 data was whether or not women who were pregnant smoked cigarettes; is that correct?

A. Yes.

Q. In the 1989 data, what percentage of women smoked cigarettes in the State of Texas who were pregnant?

A. I can't tell you exact number from this. I can tell you that across the years it averaged about 10 percent. From reading this chart it likes like it was close to that, from Figure 1. But I'd have to go back and pull the exact number out of the data set.

Q. In Texas concerning the Texas data in 1989, do you know whether or not Texas did not report who all smoked during pregnancy, what women smoked?

A. Well, it was coded in the data set for Texas so --

Q. Well, okay. Go ahead, I'm sorry.

A. So that would be the source of that.

Q. In Chapter 7 under Classification of Data on Page 16, would you please turn on that. And I think what it likes like the front page, it likes like this and it's Chapter 7,

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Classification of Data.

A. Okay. Whoops, Classification of Data.

Q. There's a number of Classification of Data.

A. Yeah, there's a lot of Chapter 7s there.

Q. Keep going. It's the thick one.

A. Okay.

Q. There it is right there. Okay. And what you're holding, I want to have that marked as 4-A, please, that section.

(Deposition Exhibit 4-A
(marked for identification.

Q. And I'd like you to turn to Page 16 of that document, and we're going to have that page marked as 4-B.

(Deposition Exhibit 4-B
(marked for identification.

Q. Now, looking at Exhibit 4-B, that's a table entitled "Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989." Is that a correct reading?

A. Yes.

Q. Now, looking at the State of Texas, it says there were 307,664 births in 1989; is that correct?

A. Yes.
Q. Now, when it comes over here to tobacco use, it has a 5/33. Do you know what that means?
A. Well, let's see. It would appear to indicate 33 percent of those records did not have smoking data recorded.
Q. Well, prior to coming in here today, did you know that the 1989 natality data for the State of Texas that 33.1 percent of the birth certificates did not have any reference to smoking? Did you know that?
A. I didn't know the precise number, no.
Q. Well, did you even have an idea that 33 percent or one-third of the birth certificates in the State of Texas was not coded for smoking?
A. Again, I did not know the exact number, no. I knew that it was certainly less than 100.
Q. But that's a pretty big difference between 99.9 percent and let's say 66 or -- well, 66.9 percent. That's a pretty significant difference, isn't it?
A. Yeah.
Q. Did you take that into account in any way in your study?
A. No, we took into account the total sample size

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that we're dealing with.

Q. But my question was very specific.

A. Okay.

Q. Did you take into account the fact that 33.1 percent of the birth certificates from the State of Texas in 1990 in the natality data that you used there was no mention of smoking? Did you take that into consideration concerning your report?

A. No.

Q. And you didn't mention it in your report, correct?

A. That's correct.

MR. NIMS: For the record, I believe you said 1990 in the question. I assume you meant 1989.

MR. HYDE: Okay. I want to make sure -- thank you, counsel, for that.

THE WITNESS: Yeah, we're discussing '89.

BY MR. HYDE:

Q. Yeah, we are discussing 1989. So unfortunately, I must labor you with this question again.

As it concerns your study, your analysis of the natality data, did you take into

consideration that for 1989 that 33.1 percent of the birth certificates in the natality data did not specify tobacco use?

A. No.

Q. Nowhere is that written in your report, correct?

A. Yes.

Q. Do you recognize that would be a possibly source of error in your study?

A. Yes, it would.

Q. Did you attempt to determine what percentage of the natality data of the birth certificates of birth data contained information concerning the amount or the number of cigarettes that the pregnant woman was smoking during the period 1989?

A. No.

Q. So as it relates to 1989 data, you have no information concerning the level or the amount of cigarettes that any one pregnant woman smoked during that time period, correct?

A. No.

Q. Well, how is that incorrect?

A. Well, you asked if we attempted to determine that percentage.

Q. Did you?

A. Originally I said no, we didn't. And then you said we had no information about how much they smoked.
Q. Well, we know --
A. Those are different things.
Q. Okay. We know you don't have how many cigarettes any expectant mother smoked in 1989 for at least 33.1 percent of those pregnant mothers. We know that much, correct?
A. Yes.
Q. Now, for the other approximately 66 percent, as we sit here today, can you tell me how many cigarettes the average mother smoked?
A. No, I can't tell you off the top of my head.
Q. Is it in your data?
A. Well, I believe it's in the data set. I don't think it's in the report anywhere.
Q. I'm sorry, is it in your report?
A. No.
Q. Anywhere in your report, Exhibit 2, have you attempted to look at a dose/response relationship between adverse birth outcomes and cigarettes smoking?
A. I don't believe that's in here, no.
Q. Okay. Doctor, so we don't get things out of

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order, I'd like to, to the best of our ability, and I've got some of those little blue sticker things here so the court reporter can find those pages, what I'd like to do is try to put that 1989 data back together with your assistance. All you've got to do is mark that first page there.

MR. HYDE: That will help you, won't it?

COURT REPORTER: Very much so.

THE WITNESS: And I think all of this is.

MR. HYDE: Yeah, it all just turns over.

BY MR. HYDE:

Q. What chapter is that, sir?

A. This is Chapter 1.

Q. Okay. Now go right behind there.

A. Okay.

Q. I think we've got a full set of data here now as I presented it to you, correct?

A. I think so.

Q. A little bit bigger batch right now. This is the 1993 introductory material to the natality

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data.

MR. HYDE: Mr. Nims, would you like to see the 1989 data while we're sitting here?

MR. NIMS: Yes.

MR. HYDE: I apologize once again.

BY MR. HYDE:

Q. Now, specifically as to 1993 data, do you specifically recall examining the introductory material for the 1993 natality data?

A. No.

Q. Before we get on with that, I guess we ought to go over your report a little bit. Let me just kind of hold that right here.

In Exhibit 2, your report in this lawsuit, you use the natality data and you set up certain variables and you did some type of the statistical analysis using regression analysis techniques, correct?

A. Primarily, yes.

Q. Now, one of the things that you did, and I'm looking at Page 1 of your report, you divided infants into three groups. And those three groups are low low birth weight, low birth

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weight, and normal birth weight; is that correct?

A. Yes.

Q. Now, in any other study have you ever seen any division along the guidelines that you set up in your study?

A. Yes.

Q. What study is that, sir?

A. Well, I can't tell you the name of it. We've seen that in multiple places and that was why we decided to do it this way. In particular, there was some breakdowns used in some of the previous Plaintiff's reports in this case that broke it out that way in their expert reports, so we felt that was an appropriate way to respond.

Q. In the medical and scientific literature, can you point me to one scientific study concerning low birth weight babies that segregate infants by the divisions that you have made? Can you point me to one study?

A. Not off the top of my head, no.

Q. Now, you reported on Page 1 of your report that "On average approximately 10 percent of mothers reported smoking during pregnancy for each year examined"; is that correct?

A. Yes.
Q. Now, you're aware, are you not, that the surgeon general has reported that up to 25 percent of pregnant women smoke during pregnancy?
A. I've seen that number, yes.
Q. One reason your estimate may be lower than the us surgeon general's estimate is that because Texas, at least in 1989, didn't report smoking status for a third of the pregnant women, correct?
A. Yes, that's one possibility.
Q. Another possibility may be that women don't own up to the fact that they smoke during pregnancy, correct?
A. Yes.
Q. What other potential reasons did you examine for why you reported a 10 percent smoking rate amongst Texas pregnant women as compared to the general national average of approximately 25 percent as reported by the U.S. Surgeon General? What did you do?
A. Well, we did not investigate that. We took the data that we had and that's what the data told us.
Q. And when looking at the numbers that you looked

at, approximately 300,000 births a year each year during that time period and comparing that to the national data, didn't that ever cause you concern that maybe there was a fundamental methodological error associated with this data?

A. No, it occurred to me there may be one with the surgeon general's data. The 25 percent figure to me seems much too high.

Q. So you didn't consider that it's possibly an error in the data that you're using or an error in the way that you're using the data, that didn't even pop up as a possibility in your mind; is that correct?

A. Well, that cropped up as possibilities to us all the way through this and that's why typically these analyses were replicated to see if we got the same numbers.

Q. Did you attempt to look at any one year versus another where the level of smoking amongst women reported in Texas on those birth certificate information cards or whatever was filled out, did you attempt to look at well, maybe 1993 has 95 percent completion rate or 98 percent completion rate on that smoking section versus the 66 from 1989? Did you try to stratify what

years had more effective or more effective reporting of cigarette smoking amongst the pregnant women?

A. No.

Q. You could have done that, couldn't you?

A. Sure, there's a lot of things you could do.

Q. But you didn't?

A. Nope.

Q. And that's why it's a potential source of error in your report, correct?

A. No.

Q. What other reason can you give besides the U.S. Surgeon General is wrong as to why there is a difference between the reported level of smoking in pregnant mothers between Texas as compared to the United States in general?

A. Well, I haven't seen that figure being current for these years. My sense is that that's probably an earlier figure, but I don't know that for sure. But that would be one of the first things I'd want to look at.

And secondly, the demographic makeup of Texas varies significantly from the demographics of the United States at large. And attempting to provide a summary statistic as to the

frequency of smoking by pregnant women in the United States as a whole is not very meaningful.

Q. You're familiar, are you not, with the ACOG Technical Bulletin entitled "Smoking and Women's Health" by Hellerstein and Sachs 1996 article?

A. You'll have to show it to me. No, I've not read this particular ACOG.

Q. ACOG stands for what? American College of --

A. American College of Obstetricians and Gynecologists, yeah.

Q. May I see it.

MR. HYDE: I'll go ahead and have this marked.

(Deposition Exhibit No. 6
(marked for identification.

Q. This a 1996 bulletin and it states on Page 1 "Between 19 and 30 percent of pregnant women continue to smoke putting themselves and their fetuses at risk for a number of adverse reproductive events." My question is, do you have any reason to disagree with the number 19 to 30 percent of pregnant women continue to smoke?

A. No, I don't have any particular reason to disagree with it.

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Q. Again, that's substantially less than what the numbers were reported in Texas, correct?
A. Yes.
Q. In your report?
A. Yes.
Q. Well, how did you come up with that 10 percent number? How did you do that?
A. It came out of the data set.
Q. Well, we'll look at the 1993 data set here a minute and I want to see where you can find that, okay. Because we know we've already looked at 1991 and we know the potential error exists there, so we'll get to that in a second. I'm sorry, '89.

Now, going on to Page 2 of your report -- and again, your table at the top says that -- or indicates, correct me if I'm wrong, "Approximately 25,000 mothers smoke during their pregnancy"; is that correct?
A. I think so, that's looks like a reasonable interpretation of that table.
Q. Well, you did the table, didn't you?
A. Well, it's a figure and you're reading a graph here that doesn't have a particularly precise, well-defined point.

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Q. So it's somewhat imprecise even in your own mind, correct?
A. Well, in looking at that figure, yes. It's there to give you a general representation.
Q. Okay. Well, look -- you've got a ton of data in your report attached to it. Would you find me the page that discusses how many women per year smoke cigarettes when they are pregnant?
A. I don't believe that's discussed.
Q. So the only thing that you point me to now is this table?
A. Yes.
Q. Now, your next table says "Table 2. Average Birth Weight for Smokers Versus Nonsmokers." Just reading that title would indicate to me that you're weighing smokers and nonsmokers. Is that how it reads to you?
A. Well, not in the context of this report, no, that's not how it reads to me at all.
Q. Well, I'm just talking about the title. It's somewhat imprecise, don't you agree? You could have improved that?
A. Not in the context of this report. I think it's real clear what that means and I'd be happy to explain to you what that is if you're having

trouble understanding it.

Q. Let me see if I can -- what it really means is the average birth weight for the babies of smokers versus nonsmokers. Is that more precise and correct?

A. Yes.

Q. Now, in looking at Table 2, I see that you have an asterisk for each of those five years; is that correct?

A. Yes.

Q. And from reading this, it indicates that the "Difference in birth weight for mothers who are smokers -- for the babies of mothers who are smokers versus nonsmokers is statistically significant at the 99 percent level"; is that correct?

A. Yes.

Q. So babies whose mothers smoked according to your study weigh less than babies from mothers who didn't smoke, and that's based on your statistically significant sample results, correct?

A. I would say the way you've stated it is probably not accurate and it's misleading. I would say that the average weight of babies born to

mothers who smoke during pregnancy is significantly lower than the average weight of babies born to women who don't smoke during pregnancy.

Q. That's approximately a 200-gram difference?

A. Approximately.

Q. I think you said it in your first sentence, and I want to know if that's still correct, "The average birth weight of infants of smoking mothers was approximately 200 grams less than that of nonsmokers." That's what you wrote, correct?

A. Yes.

Q. And you still believe that to be true?

A. Yeah.

Q. Now, let's go over to the next page, Table 3, please. Now, Table 3 is entitled "Number of Births by Birth Weight Group." Is that a correct reading?

A. Yes.

Q. And in that table you have data from 1989, 1990, 1991, 1992 and 1993; is that correct?

A. Yes.

Q. And then you and your assistant or partner divided the total number of births and

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classified them into three different groups, that being low low birth weight, low weight births, and normal weight births; is that correct?

A. Yes.

Q. Now, let's just take one year, 1993. I've got a piece of paper here. How many births were there in the State of Texas in 1993?

A. Well, that I can't tell you.

Q. Why can't you tell me?

A. Well, because we may not have every last single birth in here. I can tell you how many of the births we have data on.

Q. Okay. How many births in the State of Texas during the 1989 through 1993 that you have data for were there? 1993 only.

A. Oh, okay. Because you changed it and said '89 through '93.

Q. But I'm only interested in -- do you understand I'm only interested in how many births you have data for in 1993.

A. Not how many -- not having a calculator, I won't be able to do this exactly, but I what say 298,841. That's not right.

Q. No, that doesn't appear to be right.

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A. No, 300. What am I doing wrong?
Q. Well, let's see if we can come to this agreement.
A. Really I think I've aligned these numbers wrong.
Q. And to be fair to you, Doctor, I want to make sure that you have time to do this right. You're not under pressure.
A. Oh, yeah.
Q. This isn't a math quiz.
A. How about 308,841.
Q. Well, I added it up. I got 308,851.
A. -51.
Q. And I think if you add it up, I think mine is right.
A. Yeah, you're right. You're right.
Q. So as we sit here today, you, Dr. Reynolds, for the year 1993 have data on 308,851 births in the State of Texas?
A. According to the data set that the federal government provided, yeah.
Q. That's the data you used?
A. That's what we found, yes.
Q. Okay. Now, why don't we come over here and let's look at Table 8. Are we there?
A. Yes.

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Q. Now, as I see it, this is a table that says "Birth Weights Among Diseased Versus Nondiseased Mothers (1993)," correct?
A. Yes.
Q. So you're again looking at 1993?
A. Yes.
Q. So all the data that would be there would either be diseased or nondiseased related births of the mothers -- I mean, not of the mothers but of the infants?
A. Yes.
Q. Okay. Would you add up, please, the number of diseased and the number of nondiseased for 1993.
A. It's not fair to say numbers when somebody is adding.
Q. Okay. So the question is clear, I want to have a question and you can have all the time.
A. Okay.
Q. Looking at Table 8, would you give me the total number of births in 1993, please.
A. We'll have to check our math again. It looks like about 325,461.
Q. Yeah, I think we need to because I added it up and had someone else add it up and it came to 326,241.

A. Okay. I've been using a calculator too long.
Q. Something comes to mind when comparing these because what you're comparing is total number of births in both Table 3 and Table 8 in 1993, and one number comes out to 308,851 and the other number is 326,241. As we sit here today, can you tell me why there's a difference?
A. The only reason I can think of why they would be discrepant would be that if some mothers obviously got counted twice if they had multiple problems.
Q. Either you're diseased or you're nondiseased as it relates to this table, correct? So all total births should be included; isn't that right?
A. Yeah.
Q. And the same way in Table 3, all total -- you represent that all total births in 1993, whether they are low low, low, or normal, and that came up the 308,000. So we're looking at a difference of approximately 16,000 births. And is it fair to say as we sit here, you don't know for a fact why there's that difference in 16,000 births between those two tables?
A. Yeah, I can't tell you as I sit here today.
Q. So you recognize that as a potential source of

error in your study, don't you?
A. Potentially, yes.
Q. Now, would you look with me, please, at Table 9. Now, in that table again dealing with 1993, you have the total number of births and those amongst mothers with or without medical or physical complications. So therefore, when you add up all these births, it should add up to be the same as what you represented in Table 3, and I'll tell you that it doesn't do so. Would you again recognize that as a potential source of error in your study?
A. Yes.
Q. And I also represent to you that in Table 10 that when you add up all of the births represented in Table 10, that that also is not the same as the total number that you represented were the total number of births in Table 3. And do you recognize that as a potential source of error in your study?
A. Yes.
Q. Well, we talked earlier about how important quality control procedures are and you said it would be a potential source of error if you didn't have quality control. This is an example

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of not having proper quality control procedures, isn't it, because you didn't add up all the births of 1993. They should have added up whether they are in one table or another when you're looking at the total, correct?

A. Well, not necessarily. It may be a source of error. We have to go through and look at -- I'd have to go back and see how people got deleted and what kind of missing values created that, and then I can answer about is it or isn't it. But the question maybe it is, absolutely. It very well may be.

Q. Let me ask you: Is today the first day you recognize that your numbers didn't add up concerning the total number of 1993 births?

A. Yes, it's the first time I've looked at that total.

Q. Let's -- if you would, please, turn to Table 4. Are you there?

A. Yep.

Q. Now, that is a table that's titled "Average Weight for Low, Low Birth Weight Infants of Smokers Versus Nonsmokers." That's a correct reading, isn't it?

A. Yes.

Q. Well, let's just look at 1993 data alone, okay. Can we look at that for one second?
A. Uh-huh, yes.
Q. How many babies whose mothers smoked during pregnancy does your number represent? I mean, what I'm trying to get to and I'm saying it probably imprecise in your terms, but what's the population of babies whose mothers smoked who are in the low low birth weight category for 1993?
A. Well, I can't tell you from this table.
Q. Well, can you tell me from the data set?
A. It should be approximately 3,577.
Q. 3,577 babies?
A. Yes, approximately.
Q. That's the total number of low low birth weight babies; is that correct?
A. Well, on which there were no missing values of relevance.
Q. Where did you get that number from?
A. Well, Table 3 gives you the low low births -- the number of births by weight group by year.
Q. Okay. Doctor, let me get my red pen out so I can make sure I follow you here. Okay. So that we're both on the same page on this hymnal, in

1993 -- and we're singing from the same verse and song, and all that. In 1993 there were 3,577 low low birth weight babies; is that correct?

A. Yes.

Q. Now, as I'm looking at the total number of births in 1993, that is approximately 1.1 percent of all births in the State of Texas, correct, approximately?

A. If you've calculated that out.

Q. Approximately?

A. Okay.

Q. Do you agree with that?

A. Okay.

Q. Now, what you then did, if I'm correct, is you said okay, if I'm right on the 10 percent of mothers smoked, if you're right about that, that would mean now that the total number of low low birth weight babies whose mothers smoked, that number would be somewhere around 350, 360 babies; is that correct?

A. That sounds reasonable.

Q. Well, now we talked earlier about statistical power, didn't we?

A. Yes.

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Q. Now, when you start looking at a population of 308,000 babies and now you're studying statistically 350 or 360 babies, don't you think you lost some statistical power in your analysis? Don't you agree with me on that?
A. Well, that's not all the babies we were studying, though. We were also studying the low birth and normal.
Q. But let's talk about the low low birth weight babies. Don't you agree with me you don't have the statistical power that you really need to analyze those babies?
A. No.
Q. You don't agree with me?
A. No.
Q. Even though you agreed earlier that as your population -- as you get more population in your study group, the more power. Well, the inverse is also true, isn't it?
A. Yes.
Q. But as we sit here today in front of the judge and jury, you won't agree with me that your statistical power is significantly less when comparing low low birth weight babies and normal weight babies, or will you agree with me?

A. That's not the question you asked me earlier. You asked me if it was inadequate.
Q. Well, answer the question I just asked.
A. Certainly it's less. But in my opinion it's more than adequate.
Q. It's less. How much less in importance? Can you quantify that?
A. It's possible to do that.
Q. Did you do that?
A. No.
Q. So you have not attempted to determine the statistical power of examining low low birth weight babies whose mothers smoked. That's correct, isn't it? If you don't understand, tell me and I'll rephrase my question.
A. Well, the question doesn't really make any sense to me the way you stated it, so I think you will have to restate it.
Q. That's fair enough, Doctor. My question in basic terms is this: When studying the babies who are low low birth weight whose mothers smoked, you're looking at a very small population as compared to the normal birth weight babies. That you'll agree with?
A. Yes.

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Q. And you do not have near the significance -- statistical significant power -- strike that. Do you not have the statistical power in examining babies who are low low birth weight whose mothers who smoked as compared to normal births at normal weights. That's correct, isn't it?

A. Yes.

Q. And you'll agree with me that given the substantial difference in statistical power that that is a potential source of error in your study when looking at low low birth weight babies. You'll agree with that, won't you?

A. Well, let me think for just a minute about your phrasing. I think it is a potential source of error in our conclusions, yes.

Q. Doctor --

MR. GIBLIN: Do you want to take a two-minute, three-minute break?

MR. HYDE: Yeah.

(RECESS 2:36 - 2:47)

BY MR. HYDE:

Q. Doctor, Exhibit 5 is the natality data that you received from the U.S. government and that you used in your study; is that correct?

A. Well, I think this is some documentation related to it. I don't think it's the actual data.
Q. Okay, fair enough. But now -- and this is 1993, this information, correct?
A. Yes.
Q. And so I be precise, I want to make sure that I've got this right. And that is, what we've in front of you now which we've had marked at Exhibit 5 is the introductory and explanatory information associated with the 1993 natality data that you used; is that correct?
A. Yes.

(Deposition Exhibit 5-A
(marked for identification.

Q. Now, what we've had marked as Exhibit 5-A is Chapter 7 entitled "Quality of Data"; is that correct?
A. Yes.
Q. For the record, would you please read the second paragraph that starts off "Most of the factors." Would you read that in the record, please.
A. "Most of the these factors limiting the use of data arise from imperfections in the original records or from the impracticability of tabulating these data in very detailed

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categories. These limitations should not be ignored, but their existence does not lessen the value of the data for most general purposes."

Q. You, indeed, tabulated this natality data in very detailed categories, didn't you?

A. Some are very detailed, yes.

Q. And you understand that there are certain factors that limit the use of this data in that way, don't you?

A. Yes.

Q. And did you take that into consideration relative to your study?

A. Well, in general we did. We didn't go through specifically and account for all of those. We took the data set as the best known source.

Q. Did you attempt to identify all factors that would limit the use of the data because of imperfections in the data relative to the use in very detailed categories such as you used this data for in your report?

A. No.

Q. I'd like for to you turn to Page 3 of Exhibit 5-A and the second full paragraph that starts with "When the number of events is small." Would you please read that sentence and

the following sentence into the record, please.

A. "When the number of events is small (fewer than 100) and the probability of such an event is small, considerable caution must be observed in interpreting the conditions described by the figures. Events of rare nature may be assumed to follow a Poisson probability distribution. For this distribution, a simple approximation may be used to estimate the errors as follows:"

Q. Out of the 1993 low low birth weight babies, how many cases of abruptio placenta occurred in that group of babies?

A. I can't tell you off the top of my head.

Q. Wouldn't you think in your own mind that when you have a population of 350 babies whose mothers smoked during pregnancy, that the likelihood is that you would have significantly less than 100 instances of abruptio placenta within that population?

A. Particularly if it's not related to smoking, yeah.

Q. Well, that's not my question. My question was specific. Wouldn't you expect a very small number, most likely less than 100, instances where there were births from mothers who smoked

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during pregnancy and that there was an abruptio placenta?

A. Yes.

Q. So when trying to perform some type of calculation when there's more than likely less than 100 events, you must exercise considerable caution, correct?

A. Yes.

Q. What considerable caution per the instructions of the U.S. government did you use with respect to that estimation or calculation?

A. Well, far more than I think the other studies have used significantly smaller samples. In taking into account our general knowledge of the statistics and how regression estimates are used and having such a large data set to begin with, the specific cell sizes certainly are relevant to that question. There's no doubt about that. But this is essentially for the State of Texas population data and not sample data. So you have to ask the question is there a relationship or not. And you can't manufacture cases of abruptio or other low incidence disturbances of pregnancy. You have to take how many you have.

MR. HYDE: Like Mr. Nims,

I have this urge to want to object to responsiveness, which I can't do. But my question --

MR. NIMS: And if you did, I'd say I thought it was responsive, which I can't do.

MR. HYDE: Yeah.

THE WITNESS: And I don't get to say, right.

BY MR. HYDE:

Q. Yeah. My point is, sir, you recognize that for instances and conditions such as placenta praevia, abruptio placenta, those would be so few of number in the low low birth weight category that you have a significant chance of random error, correct, in the low low birth weight?

A. You mean in whether or not those orders occur?

Q. Yes, sir.

A. No. Either they had abruptio or not. I don't think there's much error in that. I don't think a physician would err in that diagnosis very much.

Q. Or that there's statistical significance pursuant to your analysis?

A. With small sample sizes when you get down that size, the error is in overestimating the relationship, not in underestimating it. So we did run the danger of overestimating the relationship, yes.

Q. Okay. Show me in the low low birth weight babies how many instances of abruptio placenta there were.

A. I can't show that you sitting here today. It's calculable from the database.

Q. Well, how do you propose to do that at the time of trial?

A. Well, if someone asks me to do it at the time of trial, if I've done it by then, I'll show it to them.

Q. Have you done that for any condition associated with low low birth weight babies, that is whether it's placenta praevia, abruptio placenta, anything? Have you tried to calculate the incidence or the causal connection between smoking and nonsmoking mothers?

A. Well, we have looked at the causal connection, yes, and we don't find a relationship that would lead us to believe that there's anything there that's causal.

Q. Did you do that with low low birth weight babies?
A. Yes.
Q. With that very small cell size you did that, correct?
A. Even though it created the risk of overestimating the relationship of smoking of those disorders, yes, we did it.
Q. What precautions did you take to ensure validity of your statistics and numbers?
A. Well, we calculated them using a standard canned program that's available commercially and that everybody uses in reviews so we know that the calculations were valid. With regard to our interpretation of the data, since we did not find a relationship, we could not have overestimated it. And the danger in small sample sizes in regression is the overestimation of relationships, not the underestimation. So it would be a much greater problem had we found a relationship, it would have been much more difficult to interpret. But since there was not one, there was no danger of having overestimated it.
Q. Even when looking at low low birth weight

babies, the total population for 1993, your statistical power is significantly less than looking at the entire population of babies that were born in 1993. That's true, isn't it?

A. Yes.

Q. Let's look at Page 6. Do you see that, sir?

A. Yes.

Q. Would you read the last sentence on Page 6. Would you read it for the record, please.

A. "Thus, mothers who have a disease or medical risk factor such as diabetes, hypertension, acute or chronic lung disease, genital herpes, renal disease, et cetera, exhibit a significantly higher proportion of low low weight births and a large proportion of low weight births compared to mothers who are not identified as having such diseases."

Q. Would you find in the data in front of you Chapter 7, Classification of Data. Would you find that, please.

A. Does that come before or after the one that we were just looking at?

Q. It comes after I believe. I tell you what, let's just leave it where it was.

A. Okay.

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Q. What does that say, Classification of Data?
A. Yeah.
MR. HYDE: Okay. Let's have that marked mark 5-B.
(Deposition Exhibit 5-B
(marked for identification.
Q. Are you looking at Exhibit 5-B?
A. Yes.
Q. Is it titled Chapter 7, Classification of Data, and this is from the 1993 natality data that you used?
A. Yes.
Q. Correct?
A. Yes.
Q. Okay. Now, in your report you state as you read, "Thus mothers who have a disease or medical risk factor such as diabetes, hypertension, acute and chronic lung disease, genital herpes" -- is that right, genital herpes?
A. Yes.
Q. Well, would you turn with me, please, to Page 25. Do you see that Number 5 at the bottom there?
A. Yes.

Q. It states, "Texas does not report genital herpes and uterine bleeding"; is that correct?
A. Yes, that's what it says.
Q. Well, how could you make any interpretation concerning disease or medical risk in Texas if Texas doesn't report genital herpes?
A. Because we collapsed those diseases for that sentence. We collapsed across all the diseases that were listed.
Q. That's somewhat imprecise, then, isn't it?
A. Yes.
Q. That's a potential source of error, isn't it?
A. Well, it's not because there would have been no cases counted as having it if it's not reported, so it would have no effect -- no net effect on the data one way or the other.
Q. Why didn't you even report in your study that genital herpes is a disease or medical risk when you have no data in Texas to support your opinion?
A. Because it's on the list of diseases -- on the master list of the data set.
Q. It has no significance to you in the State of Texas, does it?
A. It has no effect of the data; therefore, it has

no effect on -- there's no significance to it, no.

Q. All things considered, it shouldn't even be there, then, in your report?

A. You're right. We probably should delete that.

Q. Well, let's go to that sentence, "Thus mothers who have a disease or medical risk such as diabetes and hypertension," again you've not studied the medical literature to determine whether smoking has an effect on a mother such as to cause hypertension, correct?

A. Well, I've read a good bit of that literature, yes.

Q. But you've formed no opinions?

A. I don't -- as I said, I don't believe it does, I believe, earlier was what I said.

Q. We'll see when we get your testimony. I don't want to try to rehash it now.

A. Okay.

Q. But you can certainly see at least smoking is a risk factor in hypertension. You'll agree with that statement?

A. No, I don't believe I agree with that.

Q. The next one says acute and chronic lung disease. You agree that smoking is a cause of

chronic lung disease?
A. I think it is, yeah.
Q. So one of the diseases that effects pregnancy is a disease that actually effects the mother, that being chronic lung disease and that's effected by cigarettes, correct?
A. Yes.
Q. Is that a potential source of error in your study?
A. I don't think so.
Q. Well, have you examined what the effect is of cigarette smoking on mothers who have developed chronic lung disease and that how that effects babies?
A. Well, I don't believe this age group is in the age group that would have chronic lung disease associated with smoking as I understand that literature, but I'm not going to hold myself out to be an expert on smoking lung disease. But --
Q. Because you're not, correct?
A. Yeah, because I'm not. But my general understanding of it is that in this age group chronic lung disease would not be associated with smoking.
Q. I think we established you're not an expert in

that regard?

A. That's right. And if I'm wrong about that, I'm sure you'll bring that up later.

Q. Well, let's go to the next page, Page 7. It says, "Table 9 presents the number of low, low birth -- low, low weight births and low birth weights which occur with mothers who had medical or physical complications during labor or delivery such as excessive bleeding." Is that a correct reading up to that point?

A. Yes.

Q. Now, also looking at that same table, you see Page 25 on Exhibit 5-B?

A. Yes.

Q. Texas does not report, at least in 1993, uterine bleeding, correct?

A. That's what it says.

Q. Did you take that into consideration when you were doing your study?

A. Yes, it would have washed out of the data. If it's not reported, it's not included.

Q. Another potential source of error, correct?

A. No. It has no effect on the data if it's not included in the data set.

Q. You can't attribute -- well, what can you

attribute to excessive bleeding as it relates to births in the State of Texas?

A. Nothing.

Q. Do you recognize that placenta praevia may be a cause of excessive bleeding?

A. It may be, I don't know.

Q. Do you know if abruptio placenta is a cause of excessive bleeding?

A. I assume there would be excessive bleeding associated with that.

Q. Do you know that?

A. I don't know, but --

Q. Premature rupture of membrane, is that a cause of uterine bleeding?

A. Well, all of those things are going to result in uterine bleeding. I don't know if it's coded separately.

Q. But on any of those you had no data as it relates to excessive bleeding?

A. Not to the bleeding component. Not to the uterine bleeding, no.

Q. Well, shouldn't you have taken out the word "excessive bleeding" if Texas doesn't report uterine bleeding?

A. It's there as an example.

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Q. Well, I understand that. But it's an example that doesn't mean anything because Texas doesn't report that data, correct?
A. Well, I would disagree with you it doesn't mean anything. It's given as an example of a complication that could occur during labor or deliver.
Q. But it's a complication that's not reported in the State of Texas; therefore, you have no data on that point, correct?
A. That's right.
Q. Are you working on any other similar reports in any other lawsuits involving tobacco?
A. Not at this time, no.
Q. Well, when you say not at this time, I mean, I'm not talking about this week or last week. I'm talking about in a general sense has anyone contacted you to do this kind of work in the future?
A. No.
Q. Let's look at the low -- hold on, I want to make sure I've got the term right. Low weight births, do you see that, sir, on Table 3?
A. Yes.
Q. And for instance, in 1993 there were 17,577 low

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weight births in the State of Texas, correct?
A. Uh-huh, yes.
Q. That's what you have data on?
A. Yes.
Q. Now, when I was trying to figure out what percentage of the low weight births are in the study from 1989 to 1993, in that category of low weight births that came to about 5.6 percent. Do you have any reason to disagree with that?
A. No, I didn't sit here and calculate it, but --
Q. That looks about right, doesn't it?
A. -- that looks about right.
Q. Now, when comparing normal weight births to low weight births, you'll agree with me that the statistical power is significantly greater when looking at normal weight births as compared to low weight births for statistical analysis in your study?
A. Yes.
Q. Well, will you look at Tables 8, 9 and 10 -- well, strike that. Okay, let's skip that.

As it relates to mothers who smoke during pregnancy, whether they had low low weight babies, low weight babies, or normal weight

babies, did you attempt to correlate the amount a mother smoked with any particular undesirable outcome?

A. Yes.

Q. What did you do?

A. Just what you said. We correlated the number of cigarettes they smoked and it didn't effect the outcome of the analysis.

Q. Where is your data points on that particular point where you say here is a mother who smoked two packs per day, here's a mother who smoked one pack, here's a mother who smoked five cigarettes, here's a mother who didn't smoke at all, and where did you do some type of comparison amongst those different types of groups?

A. They are on the data discs.

Q. Well, but I'm asking where in your report?

A. We didn't put it in here because it didn't have any effect. It didn't alter our conclusions one way or another.

Q. Where in your report does it say you did that?

A. Well, it doesn't, I don't think.

Q. So by looking at this report, you can't tell that you've tried to look at any dose/response

relationship between cigarettes and undesirable outcomes; is that true?

A. I don't think you can do that by looking at this, no.

Q. And so when that was done, whatever the results were, that information was kept in your head and Dr. Stone's head; is that true, as to your analysis of the data?

A. For the most part, yeah. There may be a copy of that analysis somewhere. I don't have one.

Q. But your interpretation of that analysis is not in report, but it's in your head and you're just by the way, there's no causal relationship. That's what you're telling me, right?

A. Well, since you brought it up, yes.

Q. Well, didn't you think it was something you'd want to put in your report?

A. Well, we thought the issue was smoking or not smoking so that's what the report addressed.

Q. Let's look at Page 11, please. On the bottom paragraph it states, "The model which best fits this type of analysis is the logit model" --

A. Logit.

Q. Oh, excuse me. "Logit model for a zero/one dependent variable (Maddala, 1983)."

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A. Maddala.
Q. What are the limitations of Maddala?
A. I think they are fairly significant. I don't like the Maddala stuff very much myself. It's an attempt to calculate the regression-type analyses wherein you have all of your data being categorical and there's not a really terrific solution for that. But if you choose to look at this as categorical or classification data only where you don't have any continuous variables, then the best model we have is the logit model. It has a lot of limitations I think. It loses too much data. It's very imprecise in that regard.
Q. And knowing this, you still used this model even though you know it's imprecise and you have the ability to lose data?
A. Yes. It's the best model that you can apply to that kind of categorical data so we used it. If you wanted to recast this, this is just kind of an additional analysis that if you want to look at the classification in birth weight categories without looking at birth weight as a continuous variable, then I think this is the best way to do that. But it's not, you know, an extremely

precise way of doing it, it just happens to be the best way we know of.

MR. HYDE: Why don't we take a second and get that exhibit off for one second, get it rounded it up.

(Off-the-record discussion)

Q. Doctor, going to Exhibit 6, the ACOG Technical Bulletin "Smoking and Women's Health," Table 1. I'd like to show you the -- I'd like to show you this table, and ask if you've seen it before?

A. I don't think I've seen this particular ACOG Technical Bulletin.

Q. May I see it, please. I want to see if I can -- see if we have an understanding as it concerns relative risk. In the section that deals in Table 1 of Exhibit 6 abruptio placenta, it shows a relative risk of 1.5, the confidence interval 1.1 - 1.2. A 1.5 relative risk, does that mean in 150 births where the mother smoked during pregnancy that 50 -- I don't mean births, I mean abruptio placentas that 50 of those abruptio placentas, according to this study, would be caused as a result of cigarette smoking?

A. I don't think that's what it means, no.

Q. What do you think it means when you have a

relative risk of 1.5 concerning maternal smoking and abruptio placenta?

A. And you have 150 births?

Q. 150 births.

A. Well, let's see. What it means is that in this particular study women who smoked were 50 percent more likely to have abruptio than those who didn't.

Q. And that is statistically --

A. So I'd have to calculate that back from that, but it's not quite the number that you came up with.

Q. Well, let's look at it this way: When you have the lower boundary of the confidence interval being 1.1 and the relative risk being 1.5, that indicates statistical significance, correct?

A. Well, no. You can't determine statistical significance from confidence intervals. The concepts are independent of one another. This confidence interval tells you that in this particular study the relative risk is -- within the 95 percent confidence interval is somewhere between about .04 -- .03 to .04 to, what, 2.6, 2.7, somewhere in there. And the actual calculated relative risk was 1.5. But that

doesn't tell you the --

Q. But it's statistically significant?

A. But relative risk is not a statistic that is statistically significant or not. It is a calculated value that is not -- there's not a significance test, I don't believe, associated with relative risk. It simply is a way of describing a phenomenon within a sample. And what it means is that in this particular sample women who smoked were half again as likely as those who didn't to have abruptio placenta.

Q. Have you ever performed a study using relative risk for odds ratios?

A. No.

Q. Do you consider yourself to be an expert in conducting tests where you're looking for relative risk or odds ratios?

A. No.

Q. Have you reviewed the Nye report from 1980 concerning maternal smoking and abruptio placenta?

A. I do recognize that as one I've read, yes.

Q. Do you have any criticisms as we sit here today of that report?

A. I'm sure I have quite a few that I've had of

a lot of these. Most of them are simply correlational in nature and are inadequate to infer causality.

Q. In your report you don't address Nye's report from 1980, do you?

A. No.

Q. As matter of fact, in any of the studies referenced in Table 1 of Exhibit 6, do you reference any of those studies in your report?

A. No.

Q. Do you have any specific criticisms of any of those studies listed on Table 1 in Exhibit 6 as we sit here today based on your recollection of those studies?

A. I do not have specific criticisms of each of those as we sit here today, no.

Q. Doctor, is it just your position that because you looked at the natality data with some other expert who has been retained by the tobacco companies that the study that you-all put together is so much more accurate and precise as compared to the other researchers who have been researching this subject area for 10 or 20 years; is that your position?

A. Well, with regard to the State of Texas in

particular, I think that our conclusions are more sound and deal with much larger sample sizes that are specific to the State of Texas. I think doing analyses across states and within the United States which is a very, very diverse country is not as accurate, no.

Q. Well, don't you have -- well, let's look at it this way: Is it your position that you and Dr. Stone are just smarter or brighter than these other researchers?

A. No.

Q. Are you telling the jury that you and Dr. Stone are just smarter and are more informed on all the issues associated with maternal smoking and these outcomes that are life threatening to these mothers?

A. No.

Q. Is it your position that you've spent more time than these other researchers researching the areas concerning maternal smoking and adverse outcomes of babies?

A. No.

Q. Have you contacted any journals concerning publishing any of your work concerning maternal cigarette smoking and these outcomes that we've

discussed today?
A. No.
Q. That's probably imprecise so let me ask a little more directly. Do you have any plans -- immediate plans for publishing a paper concerning the adverse effects associated with maternal smoking?
A. Yes.
Q. What are your plans?
A. Well, I have several. One is to rework this new journal article format and submit it to a referee journal that's reputable in the field. In addition, I'm in the process of preparing a methodological review of the studies that have been done related to this. And when I finish that, I'll be submitting that to a referee journal also.
Q. I suppose one thing you're going to do is kind of clean up those differences in math in the births concerning 1993, correct?
A. Well, if they need cleaning up, then I will clean them up.
Q. What journal are you going to send this to?
A. I haven't decided yet.
Q. Well, in your universe of thinking, what journal

do you think you're going to send it to or which ones?

A. Well, it depends on whether or not we decide to include any additional information on neurodevelopmental disorders or not. If we do, we'll probably send it to a neuropsychology journal. If not, we'll probably send it to one of the epidemiological journals or public health journals. But I haven't made a decision about that.

Q. Do you plan on informing that journal that the funds used to pay you and the costs associated with the study were derived from the lawyers who represent the tobacco companies? Are you going to tell the journal that?

A. I don't think I would phrase it exactly that way, but there would be a footnote presented in the article as is customary citing the funding source. I don't think I would cite it as the lawyers who represent.

Q. But in reality, that's who funded you?

A. Well, I would assume it's the lawyers' clients, but I don't know that for sure

Q. Okay. It's either one of two groups. Either it's the lawyers who represent the tobacco

companies, they funded you, or it's the tobacco companies themselves who funded you; is that correct?

A. I believe so, yeah.

Q. And you're going to put that in a footnote in any article that you attempt to have published in any journal; is that correct?

A. Anytime that that work received -- any of that work was reimbursed or paid for by anyone other than Texas A&M University or my private clinical practice or Metrica, yes.

Q. Again, do you know what Metrica is precisely?

A. I only know what I've already explained to you.

Q. Let's turn, please, to Page 12. Are you there?

A. Yes.

Q. You state in the last sentence, "In fact, very few birth weights of clinical concern appear in infants of nondiseased mothers"; is that correct?

A. Yes.

Q. The fact is, you don't know how many babies in the State of Texas required additional hospitalization because of some undesirable outcome; is that correct?

A. Yes.

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Q. Now, if a baby weighs 2,550 grams, do you know whether that baby is of clinical concern to a neonatologist or a pediatrician?
A. That is insufficient information on which to know.
Q. In other words, you don't have the data?
A. If the only thing you know is the weight of 2,550 grams, then you don't know if there are going to be special concerns or not. I don't think that's sufficient information to know.
Q. What do you need to know?
A. I think you have to know more about the baby's health status.
Q. How did you come up with this statement without having that data, the statement being "In fact, very few birth weights of clinical concern appear in infants of nondiseased mothers." How do you know that?
A. Because we're talking about here birth weight only. And if there are other things wrong with the infant, they may be a matter of clinical concern at any birth weight. But if you solely look at the fact of birth weight alone, the medical literature that I have read would indicate that solely based on birth weight,

there are, in fact, very few children born at those weights that are not born to diseased mothers.

Q. Given that you're not a medical doctor, what literature can you point me to that supports your opinion?

A. I would send you to general textbooks in the field that are used in medical schools, which is where I went, to see if that was accurate.

Q. Where did you reference those medical books in your study?

A. I didn't.

Q. But you listed other references, but you didn't list any medical references, correct?

A. Yes.

Q. Well, tell me the ones -- as we sit here today, tell me the medical references that you reviewed that supports your statement that you make on the last sentence on Chapter 12 of your report.

A. I can't tell you the names of them.

Q. Who can tell me the names of them?

A. Well, I could tell you later. I could go look.

Q. Well, isn't it appropriate that you list the references that you rely upon to make statements in a report? Isn't that customary?

A. Well, if they are specific, but I read a lot of things. And I don't reference every single thing that I read, particularly when they are things that are believed to be more general knowledge when you read them in textbooks.
Q. In your practice, do you concern yourself with the birth weight of babies?
A. When I see them later in life, I inquire about things like birth weight and pregnancy complications, delivery complications.
Q. But you don't study those issues?
A. In my clinical practice where I treat children?
Q. Yes, sir.
A. No.
Q. There's no neonatologist or pediatrician who you can point me to who you've spoken with who agrees with the statement that you make in the last sentence on Page 12 of your report, correct?
A. That's correct.
Q. If a baby who falls in the normal birth weight category is born but weighs approximately 200 grams below the typical or normal birth weight, you don't know what procedures are taken by physicians with respect to treatment of that

baby, correct?

A. Well, you've mixed a couple of concepts in your question.

Q. Can you answer that question, please?

A. I can't answer that question.

Q. Okay. Why can't you answer the question?

A. Because you've asked two different questions. You've said 200 grams below typical birth weight, which I would interpret to mean average, and then you said normal, which is considered to be a range and not an average. So I was simply going to ask you to clarify which it is you were referring to. If you're referring to the mean birth weight or the range of normality of birth weight.

Q. For babies of -- in the normal weight category who are 200 grams less than the average birth weight, do you know what special procedures or precautions are taken by physicians treating those babies?

A. I have not seen anything in any of my reading in the medical literature to indicate that a child who is born 200 grams below the average birth weight at full term requires any special procedures.

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Q. So your answer is no special procedures?
A. None that I know of. If there are some, I don't know about them.
Q. And you haven't asked anybody, have you?
A. I have read in the medical literature to ascertain whether or not that is appropriate.
Q. That's not the question I asked. The question I asked: You have not asked anything about those special procedures?
A. Well, actually, I have. I've not asked any pediatricians or neonatologists.
Q. And -- well, just so I understand this. You can't -- who did you ask?
A. I asked Dr. Wilen.
Q. Who?
A. Dr. Wilen.
Q. Who is Dr. Wilen?
A. I think we've been over that.
Q. Oh, oh, the doctor who has the firm that provides names for expert witnesses. That Dr. Wilen, correct?
A. That's your characterization of his firm. It's the doctor who operates Medical Horizons Unlimited, yes.
Q. Now, what kind of doctor is Dr. Wilen?

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A. I believe he's a pulmonary specialist.
Q. Does he treat children or adults?
A. I don't think he treats anybody right now, but he did treat neonates and children and adults, yes.
Q. When is the last time Dr. Wilen treated a neonate to your knowledge?
A. I don't know.
Q. And for all you know, he's left the medical field to go into a medical/legal field; is that correct?
A. For all I know, yes. I'm not sure what all he does.
Q. You can't point me to any medical books specifically, you didn't talk to a physician who is a neonatologist or a pediatrician, you can't point me to any specific articles that support your last sentence in your report that's on Page 12, can you?
A. No. No. But I believe as I sit here today that that sentence is accurate and I will stand by it.

MR. HYDE: Why don't we take a five-minute break, we may not have much longer.

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(RECESS 3:39 - 3:53)

Q. Doctor, April 10th, 1997 was the date that you gave a deposition in San Antonio, and that was in the case involving the State of Mississippi versus the various tobacco companies. You recall that deposition, correct?

A. Yes. That date sounds accurate. I will trust you on that.

Q. I'm going to ask you to review Pages 33 through 35 before I ask you some questions on it. Do you recall that deposition testimony?

A. Yes.

Q. And the deposition that you gave April 10th, 1997, that was your first deposition involving tobacco, correct?

A. Was it April 7th or April 10th? I thought you said April 7th earlier, or maybe that's irrelevant.

Q. Well, let's clear it up here. It says here Deposition of Cecil R. Reynolds, date Thursday, April 10th, 1997. Does that sound correct when you gave your deposition?

A. Yes, it does.

Q. And that was the deposition involving the State of Mississippi versus the tobacco companies,

correct?

A. Yes.

Q. And that was your first deposition that you gave in a tobacco lawsuit; is that correct?

A. Yes.

Q. Now, April 10th, 1997, you stated that cigarette smoking was a risk factor in low birth weight in children, didn't you?

A. Yes.

Q. On Page 34, you stated that cigarette smoking during pregnancy is a risk factor in abruptio placenta; is that correct?

A. Yes.

Q. On that same page of the deposition transcript you stated that cigarette smoking is a risk factor for placenta praevia, correct?

A. Yes.

Q. On Page 35 of your deposition you stated that cigarette smoking is a risk factor in congenital limb reduction, correct?

A. Yes.

Q. And as we sit here today, you've changed your opinions as compared to the testimony that you gave five months ago; is that correct?

A. Yes.

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Q. And the basis of your change in your opinion is the study that you conducted that was funded by tobacco companies or tobacco lawyers, correct?
A. In part, yes.
Q. Now, do you recall who Dr. Carpenter is?
A. He is one of the defense experts who was deposed not too long ago. I don't remember if he's a neonatologist or pediatric neurologist. I don't recall exactly which one he is.
Q. But you knew that Dr. Carpenter was designated as an expert witness on behalf of the tobacco companies, correct?
A. Yes, I think I already said that.
Q. And you read his deposition?
A. Yes.
Q. Now, in Dr. Carpenter's deposition, didn't he testify that maternal smoking is a cause of abruptio placenta, PROM, premature rupture of membranes, and other birth complications? Didn't he testify to that?
A. Well, I know that he testified that it was a cause of some. I don't remember the specific names in his deposition that he said this one, this one, this one.
Q. Are you here today to say that Dr. Carpenter

doesn't know what he's talking about with respect to those issues?

A. I wouldn't phrase it that way, no.

Q. Are you here to say that Dr. Carpenter is wrong?

A. Yes.

Q. Now, as a psychologist, you're involved in treating teenagers and the like; is that correct?

A. Yes.

Q. And I take it that you treat teenagers for addiction on occasion; is that correct?

A. I do not, no.

Q. Have you ever?

A. No, not treatment. I have -- I do primarily diagnostic work. And I was head of psychology at a psychiatric hospital for some years that had an adolescent substance abuse unit and was part of the teams and sort of interacted with a lot of treatment, but my primary role was in diagnostic work.

Q. Have you treated any teenagers who smoke cigarettes?

A. I'm sure I have.

Q. As a psychologist, what factors influence children to smoke?

A. That's a very general question. I think the number of children who smoke is probably small enough that we don't know. I think adolescents are influenced primarily by their peer group and by their parents. If their parents smoke, they are more likely to smoke. If they are in a peer group that smokes, they are more likely to smoke. There's some indication that lowered IQ even and low socioeconomic status, some of those things also may be related to that. Whether that's causal or not, we don't know.

Q. Of course, you recognize that there's plenty of doctors and lawyers and judges and professors whose children smoke. You're aware of that, correct?

A. Yes.

Q. You're not saying it's because they have low IQs, are you?

A. No, I didn't say it was for any specific person. We're talking about things that are associated with it. And if you were to look, if you were to go back to one of these odds ratio statistics, I think you would find that having an IQ below 100 would increase the odds of, yeah.

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Q. One reason adolescent -- a teenager would smoke would be to enhance the self-esteem of that teenager or adolescent, correct? It looks cool.
A. If they are in a peer group where that is considered in that way, yes.
Q. Well, you've dealt with teenagers in high school who have been subjected to peer pressure and smoked, correct?
A. I'm sure I have.
Q. And you know that cigarette smoking has been portrayed in the movies as being cool or an in thing to do, correct?
A. In some, yes.
Q. And certainly you're aware that the tobacco companies have targeted adolescents for cigarette smoking, correct?
A. Well, I read that in the popular media. But beyond that, I don't have any knowledge of.
Q. Well, you don't have any reason to disagree with that, do you?
A. I don't have any reason to agree or disagree. All I'm telling you is I read it in the popular media. That's the extent of my knowledge about that.
Q. With your stepson smoking, you haven't done

anything more to research that issue of why adolescents smoke; is that correct?

A. No, that's correct.

Q. You agree that using movies and stars like John Travolta and Sylvester Stalone, that that's an effective way to promote the use of cigarettes amongst adolescents?

A. I don't know if it is or not.

Q. Hadn't studied that neither, huh?

A. No.

Q. Doctor, do you study things in a vacuum and only things you get paid for, or do you study things that may be of a health concern to the general public?

A. Well, I study a great number of things that may or may not be of a health concern to the general public. I study a lot of things. And I have limited time, I can't study everything. I study things that pique my interest more than others.

Q. Well, do you have an opinion whether tobacco companies should advertise in such a way as to attract adolescents to become smokers?

A. Yes.

Q. What's your opinion?

A. My opinion is that they should not purposely

attempt to attract underage individuals to smoke.

Q. I was looking at the Austin American Statesman today and there was an article entitled "Morales: Tobacco ploy targeted kids." Did you have an opportunity to read that today in the paper?

A. I did read that many today.

Q. What did you think of the tobacco companies having root beer-flavored cigarettes or considering root beer-flavored cigarettes to attract adolescents or teenagers? Do you think that's a good idea?

A. Well, do I think it's a good idea? No. And my reading of it is that they didn't do it either; that they considered doing it and they had the good sense not to.

Q. Would you ever suggest to anyone that they intentionally try to have adolescents start smoking?

A. No.

Q. If the evidence is that the tobacco companies deliberately designed a study to attract teenagers to smoke, is that inappropriate in your mind?

A. Is the evidence inappropriate or is the fact that they did it inappropriate?
Q. The fact that they did it.
A. I would find that very inappropriate. I would go beyond that. I think when I was asked that in my Mississippi deposition that you have over there that I described as despicable behavior and I would stand by that description.
Q. As a psychologist, do you have an opinion concerning the tobaccos if they even considered to manufacture and sell root beer-flavored cigarettes to teenagers whether that's inappropriate?
A. Well, for an individual person in there to have come up with that idea -- to have ideas is neither appropriate nor inappropriate. I think in rejecting that idea the company acted appropriately. I don't think having an idea should be characterized as appropriate or inappropriate.
Q. And once again, I hope this is the final question. You have not reviewed any tobacco company internal documents concerning advertisements aimed at teenagers, correct?

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A. That is correct.
Q. Have you --
A. That must have been the wrong answer.
Q. No. For the record, have you reviewed any tobacco company internal documents concerning any subject?
A. I have reviewed absolutely nothing that to the best of my ability I could have recognized or would characterize as an internal tobacco company document, nor have I requested any.
Q. Don't you care to know what research was conducted by the tobacco companies concerning cigarette smoking and low birth weight babies?
A. I am interested in seeing peer-reviewed research in that area. I am interested in anything that's been done that I can evaluate properly. Anything that they have done in-house like that that is done using sound scientific principles, sure, I'd like to see it.
Q. But you just haven't?
A. I have not seen it.
Q. Have you asked the lawyers who represent the tobacco companies if they have any such documents?

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A. No.

MR. HYDE: I think that's all the questions we have.

MR. NIMS: You're done.

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CHANGES TO DEPOSITION

No erasures or obliterations of any kind are to be made to the original testimony as transcribed by the deposition officer. Any changes in form or substance which the witness desires to make shall be furnished to the deposition officer by the witness, together with a statement of the reasons given by the witness for making such changes.

Please enter the page number, line number, and the reason for such change or correction.

Page/Line	Correction	Reason for Correction

_____
CECIL R. REYNOLDS

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WITNESS' SIGNATURE

STATE OF _____)

COUNTY OF _____)

I HEREBY CERTIFY that I have read the foregoing deposition and that this deposition, together with my corrections, is a true record of my testimony given at this deposition.

_____
CECIL R. REYNOLDS

SUBSCRIBED AND SWORN TO BEFORE ME this the _____ day of _____, 19_____.

_____
Notary Public in and for
State of _____

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REPORTER'S CERTIFICATE

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

THE STATE OF TEXAS, Plaintiff	)	NO. 5-96-CV91
	)	JUDGE DAVID FOLSOM
VS.	)	MAGISTRATE JUDGE WENDELL C. RADFORD
THE AMERICAN TOBACCO COMPANY, et al	)	JURY

* * * * * * * * * * * * * * * * *

VIDEOTAPED ORAL DEPOSITION OF CECIL R. REYNOLDS

* * * * * * * * * * * * * * * * *

I, D'ANDRA FISHER, Certified Court Reporter for the State of Texas, do hereby certify that the facts stated by me in the caption hereof are true; that the said witness did make the above and foregoing answers in response to questions propounded as shown; that I did, in shorthand, report said proceedings, and that the above and foregoing typewritten pages contain a full, true and correct computer-aided transcription of my shorthand notes taken on said occasion.

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I further certify that I am not in any capacity a regular employee of the party in whose behalf this deposition is taken, nor in the regular employ of any attorney of record; and I certify that I am not interested in the cause, nor a kin or counsel to either of the parties.

D'Andra Fisher

D'ANDRA FISHER, CSR
Certified Court Reporter
For the State of Texas
CSR No. 4869
Expiration Date: 12-31-97

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Job No. 107,270

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

THE STATE OF TEXAS, Plaintiff	)	
VS.	)	CIVIL ACTION NO. 5-96CV91
THE AMERICAN TOBACCO COMPANY ET AL Defendants	)	

ORAL DEPOSITION
OF
CECIL R. REYNOLDS

SEPTEMBER 19, 1997

EXHIBIT VOLUME

(EXHIBITS 1 - 6 OF 6)

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IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

THE STATE OF TEXAS,	§	NO. 5:96CV91
	§	
Plaintiff,	§	
	§	JUDGE DAVID FOLSOM
v.	§	
	§	
THE AMERICAN TOBACCO COMPANY, et al.,	§	MAGISTRATE JUDGE WENDELL C. RADFORD
	§	
Defendants.	§	JURY

AMENDED NOTICE OF ORAL AND VIDEO DEPOSITION OF CECIL REYNOLDS ON SEPTEMBER 19, 1997

TO: Harold Waldrop, Administrative Liaison Counsel for Defendants
Atchley, Russell, Waldrop & Hlavinka, L.L.P.
1710 Moore's Lane
Texarkana, TX 77503

PLEASE TAKE NOTICE that, under Fed. R .Civ. P. 30, Plaintiff, State of Texas, will take the oral and video deposition of Cecil Reynolds on Friday, September 19, 1997, at 9:00 a.m. at Maroney, Crowley, Bankston, Richardson & Hull, L.L.P., 701 Brazos, Austin, Texas 78701. The deposition will continue from day to day until completed.

1. The deposition will be taken before a court reporter appointed or designated under Fed. R. Civ. P. 28. All parties are invited to attend and cross-examine.

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Reynolds
Exhibit No. 1
9-19-97
D'Andra Fisher

Respectfully submitted,

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By: _____
GRANT KAISER, BY PERMISSION OF
Walter Umphrey, Attorney-in-Charge

CERTIFICATE OF SERVICE

I hereby certify compliance with Fed. R. Civ. P. 5 and the Case Management Order of November 5, 1996, that a true and correct copy of the foregoing document has been sent by overnight delivery service (with diskette) and facsimile on September 15, 1997, to the following:

Howard Waldrop, Esquire
Atchley, Russell, Waldrop & Hlavinka, L.L.P.
1710 Moores Lane
P. O. Box 5517
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903-792-8246
903.792.5801

GRANT KAISER

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Final Report of the Analysis of Natality and the Relationship of Smoking to Birth Weight

By

Dr. Cecil Reynolds
and
Dr. Brice M. Stone

Data for infants in the state of Texas were examined for the years 1989 through 1993 to determine if maternal smoking factors relate to birth weight. The data were obtained from the U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Health Statistics. Particular series used for each year are detailed in Attachment 1.

Several variables were created using the data contained in the natality series. Infants were divided into three groups based upon birth weight for analysis, Table 1. The groups were created as follows:

Table 1. Birth Weight Groups

	Birth Weight (in grams)
Low, Low Birth Weight	1,500g or less
Low Birth Weight	greater than 1,500g to 2,500g
Normal Birth Weight	greater than 2,500g

Variables were also created for smoking and alcohol use during pregnancy, as well as for diseases or other complications which the mother of the infant identified. Demographic information concerning the mother was also used to create variables, such as age, race, education, income, and amount of prenatal care. All variables used in the analysis are detailed in Attachment 2.

Descriptive Statistics

Birth weight for infants of smokers versus non-smokers were compared for the years 1989 through 1993 (Attachment 3 contains the output from the statistical program used to produce the descriptive statistics). Smokers are identified using the variable DTOBACCO (smoked during pregnancy). On average approximately 10% of mothers

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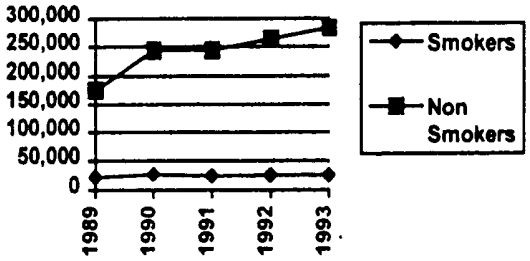
Reynolds
Exhibit No. 2
9-19-97
D'Andra Fisher

reported smoking during pregnancy for each year examined. The number of smokers and non-smokers from the natality data is presented graphically in Figure 1.

Figure 1. Number of Smokers & Non Smokers



Average birth weight for smokers versus non-smokers was then compared. This comparison is presented in Table 2.

Table 2. Average Birth Weight for Smokers versus Non-smokers

	Smokers	*Non-smokers*
1989*	3.146g	3.355g
1990*	3,152g	3.349g
1991*	3,150g	3,340g
1992*	3.145g	3.347g
1993*	3.138g	3.334g

* Difference in average birth weight for smokers versus non-smokers is statistically significant at the 99% level (Mendenhall and Scheaffer, 1973).

The average birth weight of infants of smoking mothers was approximately 200g less than that of non-smokers. The average birth weight of all smokers was still within the normal birth weight range of greater than 2,500 grams. However, the association between smoking and birth weight was found to be discontinuous by birth weight group, i.e., the approximately 200 gram difference was not distributed evenly across birth weight groups directly or as a proportion of weight. Average length of gestation was also examined for smokers and nonsmokers. It was found that 39 weeks was the average gestation for all mothers, smokers and non-smokers.

The next analysis centered on the differences for smokers and non-smokers for infants in each of the three birth weight groups created. Table 3 presents the numbers of births by birth weight group for each year 1989 through 1993.

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Table 3. Number of Births by Birth Weight Group

	Low, Low Weight Births	*Low Weight Births*	*Normal Weight Births*
1989	2,012	11,020	184,527
1990	2,836	15,041	253,106
1991	2,808	15,402	250,842
1992	3,134	16,186	269,521
1993	3,577	17,597	287,677

As Table 3 shows, low, low weight births are only a small portion of the number of births in the state of Texas each year. Low weight births represent a slightly larger portion of the births each year. Most births are in the normal birth weight group.

The first birth weight group examined was the low, low birth weight infant group. Table 4 presents the average birth weight for infants in this group for smokers versus non-smokers.

Table 4. Average Weight for Low, Low Birth Weight Infants of Smokers versus Non-smokers

	Smokers	*Non-smokers*
1989	1.030g	1.012g
1990*	1.053g	1.010g
1991	1.035g	1.026g
1992	1.011g	1.026g
1993*	1.041g	1.002g

* Difference in average birth weight for smokers versus non-smokers is statistically significant at the 99% level (Mendenhall and Scheaffer, 1973).

Table 4 shows that in all years except 1992, for low, low birth weight infants (<=1500g), infants of smokers tended to weigh slightly more than infants of non-smokers. However, only two of the differences in average birth weight between smokers and non-smokers for low, low birth weight infants were statistically significant at the 99% confidence level.

Next, average birth weights for infants in the low birth weight category were compared for smokers and non-smokers for each year. Table 5 contains these results.

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Table 5. Average Weight for Low Birth Weight Infants of Smokers versus Non-smokers

	Smokers	*Non-smokers*
1989	2,198g	2,190g
1990	2,198g	2,197g
1991	2,192g	2,192g
1992*	2,200g	2,183g
1993	2,202g	2,190g

* Difference in average birth weight for smokers versus non-smokers is statistically significant at the 99% level (Mendenhall and Scheaffer, 1973).

As Table 5 shows, there was little difference in the average birth weight for smokers and non-smokers in the low birth weight group. In fact, infants of smokers had slightly higher birth weights than infants of non-smokers. The difference in average birth weights for 1992 was statistically significant at the 99% level, with infants of smokers being 17g heavier on average than infants of non-smokers.

The same comparison was then performed for normal birth weight infants. Table 6 presents the average birth weight for infants of smokers versus non-smokers in the normal birth weight group.

Table 6. Average Weight for Normal Birth Weight Infants of Smokers versus Non-smokers

	Smokers	*Non-smokers*
1989*	3,287g	3,441g
1990*	3,292g	3,436g
1991*	3,292g	3,430g
1992*	3,285g	3,438g
1993*	3,282g	3,427g

* Difference in average birth weight for smokers versus non-smoker is statistically significant at the 99% level (Mendenhall and Scheaffer, 1973

Results for the normal birth weight group were quite different from those of the lower birth weight groups. Infants of smokers weighed less on average each year from 1989 to 1993. The differences in average birth weight between smokers and non-smokers was statistically significant each year. However, the average birth weight for smokers still exceeded the normal birth weight threshold of 2,500 grams.

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Similar analyses were performed for smokers who use alcohol versus non-smokers who use alcohol, smokers with no alcohol use versus non-smokers with no alcohol use, and for smokers with alcohol use versus non-smokers with no alcohol use. These analyses yielded similar results to those presented above. Statistical output used in all analyses is provided in Attachment 3.

Differences between birth weight of infants for smokers and non-smokers occur primarily in the normal birth weight group. Essentially no difference in average birth weight was found for infants of smokers and non-smokers in the low, low birth weight and low birth weight groups. Even though a difference was found in the average birth weight of infants of smokers and non-smokers in the normal birth weight group, the average birth weight of smokers' infants was still significantly above the 2,500 gram cutoff for normal weight births.

Tobacco and Pregnancy Related Diseases

An analysis was performed to determine the simple two-way association between pregnancy related diseases which were reported in the natality data (see Attachment 1) and tobacco and alcohol use of the pregnant mother. The simple correlations for 1989 through 1993 are presented in Table 7 (Greene, 1990). See Attachment 4 for additional correlations for alcohol and alcohol and tobacco combined for all years. As the simple correlations in Table 7 suggest, little, if any, association exists between tobacco use of the pregnant mother and the diseases identified in the natality data for Texas. The diseases are comprised of three types: disease or medical risk factors of the mother (e.g., diabetes, hypertension, acute or chronic lung disease), medical or physical complications of labor or delivery (e.g., excessive bleeding, cord prolapse, dysfunctional labor), and abnormal complications of the new born (e.g., fetal alcohol syndrome, meconium aspiration syndrome, seizures, anemia). See Attachment 2 for a detailed list.

All of the simple correlations in Table 7 are below 0.07 which indicates a very small correlation between tobacco use and the various diseases and complications. These low simple correlations suggest no evidence of causality. On average across the five years, the simple correlations barely average above 0.01. Over 65 percent of the simple correlations have a value below 0.01. Thus, tobacco does not appear to be a significant influence on the diseases and/or complications which the mother has during pregnancy, labor, or delivery.

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Table 7. Simple Correlations Between DTOBACCO and Disease Variables from the Natality Data, 1993

Disease	*1989*	*1990*	*1991*	*1992*	*1993*
danemia	0.0135	0.0195	0.0138	0.0180	0.0231
dcardiac	0.0040	0.0030	0.0040	0.0013	0.0019
dlung	0.0138	0.0137	0.0148	0.0173	0.0177
ddiabete	-0.0083	0.0005	0.0015	0.0000	-0.0030
dhydra	0.0046	0.0088	0.0073	0.0093	0.0100
dhemo	0.0017	0.0027	0.0015	-0.0004	-0.0012
dphyper	-0.0151	-0.0110	-0.0120	-0.0129	-0.0107
dchyper	0.0003	0.0020	-0.0005	0.0035	-0.0002
declamp	-0.0091	-0.0050	-0.0057	-0.0016	-0.0022
dincervi	0.0040	-0.0011	0.0020	-0.0002	-0.0015
dpre4000	-0.0037	0.0008	-0.0033	-0.0030	0.0054
dpreterm	0.0393	0.0440	0.0306	0.0359	0.0347
drenal	0.0083	0.0081	0.0081	0.0103	0.0039
drh	0.0084	0.0104	0.0108	0.0147	0.0132
dothermr	0.0515	0.0629	0.0512	0.0560	0.0623
dmecon	0.0216	0.0267	0.0193	0.0266	0.0278
drupture	0.0180	0.0209	0.0100	0.0195	0.0181
dabrupti	0.0174	0.0172	0.0167	0.0139	0.0227
dpreplac	0.0050	0.0059	0.0060	0.0066	0.0117
dexcebld	-0.0001	0.0023	0.0007	-0.0005	0.0051
dseizure	-0.0011	-0.0025	-0.0006	-0.0005	0.0007
dprecip	0.0143	0.0208	0.0154	0.0196	0.0186
dprolong	0.0015	0.0023	0.0043	0.0036	0.0018
ddysfunc	-0.0101	-0.0072	-0.0043	-0.0051	-0.0033
dcord	0.0036	0.0084	0.0075	0.0031	0.0047
dotherlb	0.0111	0.0150	0.0077	0.0080	0.0107
dalcosyn	0.0045	0.0064	0.0080	0.0125	0.0119
dvenl30	0.0055	0.0122	0.0046	0.0026	0.0008
dven30m	0.0107	0.0142	0.0145	0.0121	0.0104
dnseiz	-0.0010	0.0018	0.0022	0.0025	0.0013
dotherab	0.0261	0.0296	0.0250	0.0159	0.0170

Low, Low Weight and Low Weight Births Among Mothers with Diseases and Medical or Physical Complications During Labor or Delivery

An additional analysis was performed to determine if diseases or medical risk factors of the mother and medical or physical complications during labor or delivery contribute to low, low weight births and low weight births. Table 8 presents the number of low, low weight and low weight births which occur with mothers having a disease or diseases versus mothers who do not have a disease for the year 1993. Attachment 5 provides the results of tabulations for all years. The percentage of mothers with low, low weight births who have a disease represent 51.94 percent of the total low, low weight births in 1993. This percentage drops significantly for low weight births, 39.72 percent. Thus, mothers who have a disease or medical risk factor such as diabetes, hypertension, acute or chronic lung disease, genital herpes, renal disease, etc., exhibit a significantly

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higher proportion of low, low weight births and a large proportion of low weight births compared to mothers who are not identified as having such diseases.

Table 8. Birth Weights Among Diseased versus Non-Diseased Mothers (1993)

Birth Weight Category	*Diseased Number*	*Diseased Percent*	*Non-Diseased Number*	*Non-Diseased Percent*
Low, Low	2,157	51.94	1,996	48.06
Low	7,531	39.72	11,431	60.28
Normal	60,140	19.84	242,986	80.16

Table 9 presents the number of low, low weight births and low weight births which occur with mothers who had medical or physical complications during labor or delivery such as excessive bleeding, cord prolapse, dysfunctional labor, seizures, abruptio placenta, placenta previa, etc. Table 9 presents the numbers for year 1993 while Attachment 5 provides the results for all years. The percentage of mothers with low, low weight births who had medical or physical complications during labor or delivery represent over 24 percent of the total low, low weight births in 1993. This percentage drops nearly half for low weight births, 15.55 percent. Thus, mothers who had medical or physical complications during labor or delivery compose a high percentage of low, low and low weight births compared to mothers who are not identified as having such labor or delivery complications.

Table 9. Birth Weights Among Mothers with Medical or Physical Complications During Labor or Delivery (1993)

Birth Weight Category	*Problem Number*	*Problem Percent*	*Non-Problem Number*	*Non-Problem Percent*
Low, Low	1,000	24.08	3,153	75.92
Low	2,948	15.55	16,014	84.45
Normal	30,503	10.06	272,623	89.94

If the diseases of the of the mother are considered in conjunction with mothers who had medical or physical complications during labor or delivery, the numbers and percentage are quite large. Table 10 presents these figures for the year 1993. For low, low weight births in 1993, over 60 percent of the births were from mothers that either had a disease or medical or physical complications during labor or delivery. For low weight births in 1993, over 46 percent of the births were from mothers that either had a disease or medical or physical complications during labor or delivery. Thus, diseases of the

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mother or complications during labor or delivery appear to account for a substantial part of the low, low weight births and low weight births in the state of Texas.

Table 10. Birth Weights Among Mothers with Disease and Medical or Physical Complications During Labor or Delivery (1993)

Birth Weight Category	*Mothers' With Number*	*Mothers' With Percent*	*Mothers' Without Number*	*Mothers' Without Percent*
Low, Low	2,498	60.15	1,655	39.85
Low	8,818	46.50	10,144	53.50
Normal	81,465	26.87	221,661	73.13

Regression Analysis of Birth Weight

Explanatory equations were developed to explain the variation in the birth weight of infants in the natality data sets. Equations were developed for each birth weight group for each year 1989 through 1993 for the state of Texas. Birth weight was used as the dependent variable in the analysis. Three sets of equations were developed for each year, a low, low birth weight equation, a low birth weight equation, and a normal birth weight equation. Equations were estimated using ordinary least squares (regression) given the continuous nature of the dependent variable (Greene, 1990 and Kmenta, 1971). Variables in the equation included conditions which could have affected the mother during the pregnancy, as well as demographic information concerning the mother. Tobacco and alcohol were included in the equations as dichotomous variables (zero/one for no/yes responses). In addition, tobacco was intersected with four other variables: DALCOHOL, GESTAT, DECLAMP, and DINCERVI. Thus, the relationship of tobacco to birth weight must be considered directly, through DTOBACCO, and indirectly, through the interactions. All variables are defined in Attachment 2. The regression equation results are presented in Attachment 6.

Low, Low Birth Weight Equations

Of the four equations estimated for each year, numerous variables were statistically significant at the 99% level in most equations and years. Variables which were tended to be significant and associated with a decreased birth weight in the low, low birth weight group included: the mother being black; the mother having twins, triplets, or quadruplets; and the mother having various [illegible] conditions such as hydramnios/oligohydramnios, chronic hypertension, pregnancy-associated hypertension, eclampsia, incompetent cervix, abruptio placenta, excessive bleeding, seizures during labor, or dysfunctional labor. Conditions affecting the infant such as congenital

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abnormalities also decreased the birth weight of an infant in the low, low weight birth group. Variables which tended to increase birth weight within the low, low birth weight group included infant being male, longer gestation periods, increased number of prenatal visits, and the earlier prenatal care began in the pregnancy.

Variables were included in the equation to account for the use of tobacco and alcohol during the pregnancy. Though alcohol use was not significant in most equations in this birth weight group, the association of alcohol and birth weight was consistently negative. The direct relationship of tobacco use with birth weight during pregnancy was associated with higher birth weights when statistically significant. The indirect relationships of tobacco use with birth weight through gestation, alcohol, eclampsia, and incompetent cervix were mixed, at best, and rarely statistically significant. Tobacco and alcohol use together tended to increase the birth weight of the child.

To clarify the meaning of these analyses, partial correlations (Judge, Griffiths, Hill, Lutkepohl, and Tsoung-Chao, 1985) were calculated by year to determine the independent contribution of each available variable with and without specification of interaction terms (see Attachment 7). These results show that tobacco use via smoking is of very little to no consequence in the low, low and the low birth weight groups, but is more often associated with the low end weight in the range of birth weights greater than 2,500 grams, the normal birth weight category.

Low Birth Weight Equations

Somewhat different results were seen with the low birth weight equations. Variables which tended to be significant and associated with a decreased birth weight included: the mother being black; the mother having a high school education or less; the mother having twins, triplets, quadruplets or a previous preterm or small for gestational age infant; and the mother having various medical conditions such as, cardiac disease, hydramnios/oligohydramnios, chronic hypertension, pregnancy-associated hypertension, eclampsia, premature rupture of membrane, abruptio placenta, placenta previa, or precipitous labor. Conditions affecting the infant such as congenital abnormalities also decreased the birth weight of an infant in the low weight birth group.

Other variables which tended to be statistically significant included the intersection of the variable for a mother between age 16 and 40 and the length of gestation. This intersection variable tended to increase the birth weight of the infant in the low birth weight group. Variables which also tended to increase the birth weight of an infant in the low birth weight group included the infant being male, longer gestation periods, increased number of prenatal visits, the earlier prenatal care began in the pregnancy, the mother being married, the number of other children the mother has had, and the mother having dysfunctional labor.

Variables were also included again in the equations to account for the use of tobacco and alcohol during the pregnancy. Alcohol use was not statistically significant in

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the equations for the low birth weight group. Results with tobacco use were mixed. The direct relationship of tobacco use with birth weight was positive and statistically significant for three of the five years. Tobacco and alcohol use together (intersection) were not statistically significant, though tended to exhibit a negative association with birth weight. Tobacco use and gestation period together (intersection) was negative and statistically significant for three of the five years. Tobacco use together with incompetent cervix and eclampsia exhibited mixed results.

The partial correlations (Judge, et al., 1985) were calculated by year to determine the independent contribution of each available variable with and without specification of interaction terms (see Attachment 7). Tobacco use was shown to exhibit very little to no consequence in the low, low and the low birth weight groups, but is more often associated with the low end weight in the range of birth weights greater than 2,500 grams, the normal birth weight category.

Normal Birth Weight Equations

The regression equations for the normal birth weight group were quite different from those of the low and low, low birth weight groups. Variables which tended to be significant and associated with a decrease in birth weight for the normal birth weight group included: the mother being black, Asian or Hispanic; the mother having a high school education or less; the mother having twins, triplets, quadruplets or a previous preterm or small for gestational age infant. Many of the medical conditions and risk factors which could affect the mother were statistically significant and associated with decreased birth weight. Conditions affecting the infant such as congenital abnormalities also were associated with decreased birth weights.

Variables which tended to be associated with increased birth weights included the infant being male, longer gestation periods, increased number of prenatal visits, the earlier prenatal care began in the pregnancy, the mother being married, the number of other children the mother has had, the mother having had a previous infant over 4,000 grams, and the mother having dysfunctional or prolonged labor or diabetes.

Alcohol use was occasionally statistically significant and associated with decreased birth weights for the normal birth weight group. The direct relationship of tobacco with birth weight was positive and statistically significant across years. The indirect relationship of tobacco use, in conjunction with alcohol, on birth weight was statistically insignificant, while the interaction with gestation period was statistically significant and negative across all years. Tobacco use together with incompetent cervix and eclampsia were statistically insignificant.

Interaction of Tobacco and Gestation

The interaction of tobacco use with gestation provides an interesting mathematical result. The partial derivative of birth weight with respect to tobacco use provides the

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opportunity to determine when during the gestation period that the positive direct relationship of tobacco use with birth weight is overcome by the negative indirect relationship of tobacco use, in conjunction with gestation period, on birth weight. Simply stated mathematically,

$$y = a + (b * DTOBACCO) + (c * DTOBBACO * GESTAT)$$

Thus, the first derivative with respect to DTOBACCO can be written as

$$\frac{\partial y}{\partial DTOBACCO} = b + (c * GESTAT)$$

If the above first derivative is set to zero and solved for GESTAT, the resulting value represents the gestation period at which the direct relationship of tobacco use on birth weight is offset by the interaction of tobacco use and gestation period.

$$GESTAT = \frac{-b}{c}$$

For example, if b is equal to 215.9117 and c is equal to -8.0293, the offset occurs at 26.8906 weeks of gestation. This would imply that the net relationship of tobacco use on birth weight prior to 26.8906 weeks results in a positive contribution to birth weight. The net relationship of tobacco use on birth weight would not become negative (reducing the birth weight of the child) until after the 26th week of gestation.

DTOBACCO and DTOBGEST were not statistically significant in any of the low, low birth weight equations. In the regression equations for low weight births, DTOBACCO and DTOBGEST were statistically significant in two of the five years resulting in offset periods during the 34.89th and 35.29th weeks of gestation. The offset period ranges from 16 to 23 weeks for the normal birth weight group, though the issue is of minimal concern since the birth weights are normal.

Analysis of Probability of Birth Weight Type

One methodology for analyzing the relationship of tobacco smoking on birth weights of live births is to develop an explanatory equation or model which explains the variation in the probability of being a low, low weight birth versus a non-low, low weight births. This type of analysis can be applied to the other two classifications of birth weights: low weight births and normal weight births.

The model which bests fits this type of analysis is the logit model for a zero/one dependent variable (Maddala, 1983). In the case of low, low weights births, the dependent variable is assigned the value of one if the birth weight falls in the range of the

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low, low weight birth and zero otherwise. The explanatory variables are the same factors which were used in the regression analysis of the birth weights within birth weight groups. See Attachment 8 for the results of the logit analysis.

The mathematics presented above concerning the interaction of tobacco use and gestation period apply similarly for the logit analysis, with the exception that a negative sign for DTOBACCO implies that the net relationship of tobacco use on the probability of being a low, low weight birth is negative until the offset period is reached. DTOBBACO and DTOBGEST were statistically significant in four of the five years (exception. 1992). The offset period ranges from a low of 26.91 in 1989 to a high of 29.38 in 1991. Thus, tobacco use does not increase the probability of being a low, low weight birth until the gestation period is beyond the 26th week period.

Conclusions

Several conclusions can be drawn from the analyses performed using the natality data. One is that tobacco use does not appear to be associated with low and low, low weight births in infants. It appears from the analysis that other conditions, primarily gestation and medical conditions and risks associated with the mother appear to be the greatest determinant of the infant's birth weight. In addition. these conditions do not appear to be associated with tobacco use.

These findings, especially when gestational period is considered, demonstrate a lack of association of smoking during pregnancy to weight reductions in infants that are known to be of any clinical concern. A plot of the interactions found would indicate, consistent with NIDA reports. that any association of smoking with lowered birth weight occurs after the fifth month of pregnancy (20th+ week of gestation). In fact. very few birth weights of clinical concern appear in infants of non-diseased mothers.

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Greene, William H. (1990). *Econometric Analysis*. Prentice Hall. Englewood Cliffs, New Jersey.

Judge, George G., Griffiths, W.E., Hill, R. Carter, Lutkepohl, Helmut, and Lee, Tsoung-Chao. (1985). *The Theory and Practice of Econometrics*. John Wiley and Sons, Inc. New York.

Kmenta, Jan. (1971). *Elements of Econometrics*. MacMillan Publishing co., Inc. New York.

Maddala, G.S. (1983). *Limited Dependent and Qualitative Variables in Econometrics*. Econometric Society Monographs. Cambridge University Press. Cambridge, England.

Mendenhall, Wendall and Scheaffer, Richard L. (1973). *Mathematical Statistics with Applications*. Duxbury Press. North Scituate, Massachusetts.

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Attachment 1
Sources of Natality Data

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Sou[illegible]s of the Natality Data:

1993 Natality Data Set CD-ROM
Series 21, No.3
US Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Health Statistics

Issued February 1997

1992 Natality Data Set CD-ROM
Series 21, No.2
US Department of Health and Human Services
Public Health Service
Centers for Disease Control and Prevention
National Center for Health Statistics

Issued October 1996

1991 Birth Cohort Linked Birth/Infant Death Data Set CD-ROM
Series 20, No.7
U[illegible]partment of Health and Human Services
P[illegible]Health Service
Centers for Disease Control and Prevention
National Center for Health Statistics

Issued May 1996

1990 Birth Cohort Linked Birth/Infant Death Data Set
CD-ROM Series 20, No.6
US Department of Health and Human Services
Public Health Service
Centers for Disease Control and Prevention
National Center for Health Statistics

Issued May 1996

1989 Birth Cohort Linked Birth Infant Death Data Set
CD-ROM Series 20, No.8
US Department of Health and Human Services
Public Health Service
Centers for Disease Control and Prevention
National Center for Health Statistics

Issued June 1996

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Attachment 2
Variable Definitions

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Identification of Variables Created:

estat:
efinition: GESTATION - DETAIL IN WEEKS
alues: 17-47= weeks of gestation, 99= Unknown

ed.
efinition: MEDIAN INCOME
alues:

previst:
efinition: TOTAL NUMBER OF PRENATAL VISITS
alues: 00= No prenatal visits, 01-48= Stated number of visits, 49= 49 or more visits, 99= Unknown or not stated

onpre:
efinition: DETAIL MONTH OF PREGNANCY PRENATAL CARE BEGAN
alues: 00= No prenatal care, 01= 1st month, 02= 2nd month, 03= 3rd month, 04= 4th month, 05= 5th month, 06= 6th
onth, 07= 7th month, 08= 8th month, 09= 9th month, 99= Unknown or not stated

ivord9:
efinition: LIVE BIRTH ORDER RECODE
alues: 1= First Child, 2= Second Child, 3= Third Child, 4= Fourth Child

male:
efinition: MALE GENDER
alues: 1=male, 0=not male
male = 0 if csex <3
male = 1 if csex==1

danemia:
definition: ANEMIA (HCT.<30/HGB.<10)
values: 1= anemia, 0= no anemia
danemia = 0 if anemia <3
danemia = 1 if anemia==1

dcardiac:
definition: CARDIAC DISEASE
values: 1= cardiac disease, 0= no cardiac disease
dcardiac = 0 if cardiac <3
dcardiac = 1 if cardiac==1

dlung:
definition: ACUTE OR CHRONIC LUNG DISEASE
values: 1= lung disease, 0= no lung disease
dlung = 0 if lung <3
dlung = 1 if lung==1

dtobacco:
definition: TOBACCO USE DURING PREGNANCY
values: 1= tobacco use, 0= no tobacco use
dtobacco = 0 if tobacco <3
dtobacco = 1 if tobacco==1

dalcohol:
definition: ALCOHOL USE DURING PREGNANCY
values: 1= alcohol use, 0= no alcohol use
dalcohol = 0 if alcohol <3
dalcohol = 1 if alcohol==1

dtobalco:
definition: INTERSECTION OF ALCOHOL USE AND TOBACCO USE DURING PREGNANCY
values: 1= use during pregnancy, 0= no use during pregnancy
dtobalco = dtobacco*dalcohol if tobacco <3 & alcohol <3

ddiabete:
definition: DIABETES
values: 1=diabetes, 0= no diabetes
ddiabete = 0 if diabetes <3
ddiabete = 1 if diabetes==1

dherpes:
definition: GENITAL HERPES
values: 1=herpes, 0=no herpes

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dherpes = 0 if herpes <3
dherpes = 1 if herpes==1

icigdri:
definition: INTERSECTION OF DRINK5 AND CIGAR (AVERAGE NUMBER OF DRINKS PER WEEK AND AVERAGE NUMBER OF CIGARETTES PER DAY)
values: 0 to 388
icigdri = cigar*drink5 if cigar !=99 & drink5 !=5 & cigar !=. & drink5 !=.

dhydra:
definition: HYDRAMNIOS/OLIGOHYDRAMNIOS
values: 1= hydramnios, 0= no hydramnios
dhydra = 0 if hydra <3
dhydra = 1 if hydra==1

dhemo:
definition: HEMOGLOBINOPATHY
values: 1= hemoglobinopathy, 0= no hemoglobinopathy
dhemo = 0 if hemo <3
dhemo = 1 if hemo==1

dchyper:
definition: HYPERTENSION, CHRONIC
values: 1= hypertension, 0= no hypertension
dchyper = 0 if chyper <3
dchyper = 1 if chyper==1

dphyper:
definition: HYPERTENSION, PREGNANCY-ASSOCIATED
values: 1= hypertension, 0= no hypertension
dphyper = 0 if phyper <3
dphyper = 1 if phyper==1

declamp:
definition: ECLAMPSIA
values: 1= eclampsia, 0= no eclampsia
declamp = 0 if eclamp <3
declamp = 1 if eclamp==1

dincervi:
definition: INCOMPETENT CERVIX
values: 1= incompetent, 0= not incompetent
dincervi = 0 if incervix <3
dincervi = 1 if incervix==1

drenal:
definition: RENAL DISEASE
values: 1= renal disease, 0= no renal disease
drenal = 0 if renal <3
drenal = 1 if renal==1

drh:
definition: RH SENSITIZATION
values: 1= rh sensitization, 0= no rh sensitization
drh = 0 if rh <3
drh = 1 if rh==1

duter:
definition: UTERINE BLEEDING
values: 1= bleeding, 0= no bleeding
duter = 0 if uterine <3
duter = 1 if uterine==1

dpre4000:
definition: PREVIOUS INFANT 4000+ GRAMS
values: 1= previous infant 4000+ grams, 0= no previous infant 4000+ grams
dpre4000 = 0 if pre4000 <3
dpre4000 = 1 if pre4000==1

preterm:
definition: PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT
values: 1= preterm, 0= no preterm
dpreterm = 0 if preterm <3
dpreterm = 1 if preterm==1

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dother:
definition: OTHER MEDICAL RISK FACTORS
values: 1= other risk, 0= no other risk
dother = 0 if othermr <3
dother = 1 if othermr==1

dmar:
definition: MARITAL STATUS OF MOTHER
values: 1= married, 0= not married
ddmar = 0 if dmar <3
ddmar = 1 if dmar==1

dedcol:
definition: EDUCATION OF MOTHER, college
values: 1= college, 0= other education level
dedcol = 0 if dmeduc !=99 & dmeduc !=.
dedcol = 1 if dmeduc>12

dgramsch:
definition: EDUCATION OF MOTHER, grammer school
values: 1= grammer school, 0= other education level
dgramsch = 0 if dmeduc !=99 & dmeduc !=.
dgramsch = 1 if dmeduc>0 & dmeduc<9

dsomhs:
definition: EDUCATION OF MOTHER, some high school
values: 1= some high school, 0= other education level
dsomhs = 0 if dmeduc !=99 & dmeduc !=.
dsomhs = 1 if dmeduc>8 & dmeduc<12

dhsg:
definition: EDUCATION OF MOTHER, high school graduate
values: 1= high school graduate, 0= other education level
dhsg = 0 if dmeduc !=99 & dmeduc !=.
dhsg = 1 if dmeduc==12

dblack:
definition: RACE OF MOTHER, Black
values: 1= black, 0= not black
dblack = 0 if mrace4 <5
dblack = 1 if mrace4==2

damind:
definition: RACE OF MOTHER, American Indian
values: 1= American Indian, 0= not American Indian
damind = 0 if mrace4 <5
damind = 1 if mrace4==4

dasia:
definition: RACE OF MOTHER, Asian/Pacific Islander
values: 1= Asian/Pacific Islander, 0= not Asian/Pacific Islander
dasia = 0 if mrace4 <5
dasia = 1 if mrace4==3

dfedcol:
definition: EDUCATION OF FATHER, college
values: 1= college, 0= other education level
dfedcol= 0 if feduc6 <6
dfedcol= 1 if feduc6==4 & feduc6 <6
dfedcol= 1 if feduc6==5 & feduc6 <6

dtwin:
definition: TWIN
values: 1= twins  0= not twins
dtwin = 0 if dplural !=9 & dplural !=.
dtwin = 1 if dplural==2

dtriple:
definition: TRIPPLET
values: 1= triplets, 0= not triplets
dtriple = 0 if dplural !=9 & dplural !=.
dtriple = 1 if dplural==3

dquad:
definition: QUADRUPLET
```

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values: 1= quadruplets, 0= not quadruplets
dquad = 0 if dplural !=4 & dplural !=.
dquad = 1 if dplural==4

dlwbirwt:
definition: LOW LOW BIRTHWEIGHT
values: 1= low low birth weight, 0= not low low birth weight
dlwbirwt = 0 if dbirwt !=9999 & dbirwt !=.
dlwbirwt = 1 if dbirwt<1500

dmdbirwt:
definition: LOW BIRTHWEIGHT
values: 1= low birth weight, 0= not low birth weight
dmdbirwt = 0 if dbirwt !=9999 & dbirwt !=.
dmdbirwt = 1 if dbirwt>=1500 & dbirwt<2500

dnlbirwt:
definition: NORMAL BIRTHWEIGHT
values: 1= normal birth weight, 0= not normal birth weight
dnlbirwt = 0 if dbirwt !=9999 & dbirwt !=.
dnlbirwt = 1 if dbirwt>2500

dhispani:
definition: HISPANIC ORIGIN OF MOTHER
values: 1= Hispanic origin, 0= not Hispanic origin
dhispani = 0 if hispr2 <3
dhispani = 1 if hispr2==2

dinadcar:
definition: ADEQUACY OF CARE (KESSNER INDEX), Inadequate
values: 1= inadequate, 0= not inadequate
dinadcar = 0 if adequacy !=4 & adequacy !=.
dinadcar = 1 if adequacy==3

dintecar:
definition: ADEQUACY OF CARE (KESSNER INDEX), Intermediate
values: 1= intermediate, 0= not intermediate
dintecar = 0 if adequacy !=4 & adequacy !=.
dintecar = 1 if adequacy==2

drupture:
definition: PREMATURE RUPTURE OF MEMBRANE (>12 HOURS)
values: 1= rupture, 0= no rupture
drupture=0 if rupture <3
drupture=1 if rupture==1

dabrupti:
definition: ABRUPTIO PLACENTA
values: 1= abruptio, 0= no abruptio
dabrupti=0 if abruptio <3
dabrupti=1 if abruptio==1

dpreplac:
definition: PLACENTA PREVIA
values: 1= previa, 0= not previa
dpreplac=0 if preplac <3
dpreplac=1 if preplac==1

dexecebld:
definition: OTHER EXCESSIVE BLEEDING
values: 1= excessive bleeding, 0= no excessive bleeding
dexcebld=0 if excebld <3
dexcebld=1 if excebld==1

dseizure:
definition: SEIZURES DURING LABOR
values: 1= seizures, 0= no seizures
dseizure=0 if seizure <3
dseizure=1 if seizure==1

dprecip:
definition: PRECIPITOUS LABOR (<3 HOURS)
values: 1= precipitous, 0= not precipitous
dprecip=0 if precip <3

dprecip=1 if precip==1

dprolong:
definition: PROLONGED LABOR (>20 HOURS)
values: 1= prolonged, 0= not prolonged
[redacted]
dprolong=1 if prolong==1

ddysfunc:
definition: DYSFUNCTIONAL LABOR
values: 1= dysfunctional, 0= not dysfunctional
ddysfunc=0 if dysfunc <3
ddysfunc=1 if dysfunc==1

dcord:
definition: CORD PROLAPSE
values: 1= prolapse, 0= no prolapse
dcord=0 if cord <3
dcord=1 if cord==1

danesthe:
definition: ANESTHETIC COMPLICATIONS
values: 1= complications, 0= no complications
danesthe=0 if anesthe <3
danesthe=1 if anesthe==1

ddistres:
definition: FETAL DISTRESS
values: 1= distress, 0= no distress
ddistres=0 if distress <3
ddistres=1 if distress==1

dciggest:
definition: INTERSECTION OF CIGAR AND GESTAT (AVERAGE NUMBER OF CIGARETTES PER DAY AND GESTATION)
values: 0 to 4559
dciggest = cigar*gestat if cigar !=99 & gestat !=99 & cigar !=. & gestat !=.

[redacted]gest:
definition: INTERSECTION OF DRINK5 AND GESTAT (AVERAGE NUMBER OF DRINKS PER WEEK AND GESTATION)
values: 0 to 188
ddrigest = drink5*gestat if drink5 !=5 & gestat !=99 & drink5 !=. & gestat !=.

dincgest:
definition: INTERSECTION OF DINCERVI AND GESTAT (INCOMPENTENT CERVIX AND GESTATION)
values: 0 to 47
dincgest = dincervi*gestat if gestat !=99 & incervix <3 & gestat !=. & incervix !=.

dtobgest:
definition: INTERSECTION OF DTOBACCO AND GESTAT (USE OF TOBACCO DURING PREGNANCY AND GESTATION)
values: 0 TO 47
dtobgest = dtobacco*gestat if tobacco <3 & gestat !=99 & gestat !=.

idricig:
definition: INTERSECTION OF DRINK5 AND CIGAR (AVERAGE NUMBER OF DRINKS PER WEEK AND AVERAGE NUMBER OF CIGARETTES PER DAY)
values: 0 TO 388
idricig = drink5*cigar if drink5 !=5 & cigar !=99 & drink5 !=. & cigar !=.

idridiab:
definition: INTERSECTION OF DRINK5 AND DDIABETE (AVERAGE NUMBER OF DRINKS PER WEEK AND DIABETES)
values: 0 TO 4
idridiab = drink5*ddiabete if drink5 !=5 & diabetes !=9 & diabetes !=. & drink5 !=.

dmage16:
definition: MOTHERS AGE, LESS THAN 16
values: 1= age less than 16, 0= not less than 16
dmage16 =0 if dmage !=99 & dmage !=.
dmage16 =1 if dmage <16

[redacted]g1640:
definition: MOTHERS AGE, GREATER THAN OR EQUAL TO SIXTEEN AND LESS THAN OR EQUAL TO FORTY
values: 1= age >=16 and <=40, 0= age NOT >=16 and NOT <=40
dmag1640 =0 if dmage !=99 & dmage !=.
dmag1640 =1 if dmage >=16 & dmage <=40

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[redacted]
definition: INTERSECTION OF DMAG16 AND GESTAT (MOTHERS AGE LESS THAN 16 AND GESTATION)
values: 1= age <16 at gestation, 0= age NOT <16 at gestation
dmag16gs =dmage16*gestat if gestat !=99 & gestat !=.

[redacted]
inition: INTERSECTION OF DMAG1640 AND GESTAT (MOTHERS AGE >=16 & <=40 AND GESTATION)
values: 1= age >=16 and <=40 at gestation, 0= age NOT >=16 and NOT <=40 at gestation
dm1640gs =dmag1640*gestat if gestat !=99 & gestat !=.

incblack:
definition: INTERSECTION OF MEDINC AND DBLACK (MEDIAN INCOME BY COUNTY AND BLACK)
values: 0 to largest median income
incblack =medinc*dblack if medinc !=. & dblack !=.

dmarried:
definition: MARITAL STATUS
values: 1= married, 0= not married
dmarried =0 if dmar !=9 & dmar !=.
dmarried =1 if dmar ==1

incmarrd:
definition: INTERSECTION OF MEDINC AND DMARRIED (MEDIAN INCOME BY COUNTY AND MARITAL STATUS)
values: 0 to largest median income
incmarrd =medinc*dmarried if medinc !=. & dmarried !=.

dnoeduc:
definition: EDUCATION OF MOTHER, NONE
values: 1= no education, 0= other education level
dnoeduc =0 if dmeduc !=99 & dmeduc !=.
dnoeduc =1 if dmeduc ==00

delem:
definition: EDUCATION OF MOTHER, ELMENTARY
values: 1= elementary education, 0= other education level
delem =0 if dmeduc !=99 & dmeduc !=.
delem =1 if dmeduc >=1 & dmeduc<=8

hsg:
definition: EDUCATION OF MOTHER, HIGH SCHOOL
values: 1= high school education, 0= other level of education
dfhsg =0 if feduc6 !=6 & feduc6 !=.
dfhsg=1 if feduc6 ==3

dfsomhs:
definition: EDUCATION OF MOTHER, SOME HIGH SCHOOL
values: 1= some high school education, 0= other level of education
dfsomhs =0 if feduc6 !=6 & feduc6 !=.
dfsomhs =1 if feduc ==2

dfsmcol:
definition: EDUCATION OF FATHER, SOME COLLEGE
values: 1= some college education, 0= other level of education
dfsmcol =0 if feduc6 !=6 & feduc6 !=.
dfsmcol =1 if feduc6 ==4

dfblack:
definition: RACE OF FATHER, BLACK
values: 1= black, 0= not black
dfblack =0 if frace !=99 & frace !=.
dfblack =1 if frace ==2

dfamind:
definition: RACE OF FATHER, AMERICAN INDIAN
values: 1= American Indian, 0= not American Indian
dfamind =0 if frace !=99 & frace !=.
dfamind =1 if frace==3

asia:
inition: RACE OF FATHER, ASIAN/PACIFIC ISLANDER
values: 1= Asian/Pacific Islander, 0= not Asian/Pacific Islander
dfasia =0 if frace !=99 & frace !=.
dfasia =1 if frace >=4 & frace<=68

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[redacted]

dfhispan:
definition: RACE OF FATHER, HISPANIC
values: 1= Hispanic origin, 0= not of Hispanic origin
dfhispan =0 if orracef !=9 & orracef !=.
dfhispan =1 if orracef >=1 & orracef<=5

[redacted]

ialcdiab:
definition: INTERSECTION OF DALCOHOL AND DDIABETE (ALCOHOL USE DURING PREGNANCY AND DIABETES)
values: 1= diabetic and use of alcohol, 0= not(diabetic and use of alcohol)
ialcdiab =dalcohol*ddiabete

itobeclm:
definition: INTERSECTION OF DTOBACCO AND DECLAMP (TOBACCO USE DURING PREGNANCY AND ECLAMPSIA)
values: 1= eclampsia and use of tobacco, 0= not(eclanpsia and use of tobacco)
itobeclm =dtobacco*declamp

ialceclm:
definition: INTERSECTION OF DALCOHOL AND DECLAMP (ALCOHOL USE DURING PREGNANCY AND ECLAMPSIA)
values: 1= eclampsia and use of alcohol, 0= not(eclampsia and use of alcohol)
ialceclm =dalcohol*declamp

itobincv:
definition: INTERSECTION OF DTOBACCO AND DINCERVI (TOBACCO USE DURING PREGNANCY AND INCOMPETENT CERVIX)
values: 1= incompetent cervix and use of tobacco, not(incompetent cervix and use of tobacco)
itobincv =dtobacco*dincervi

iprtmage:
definition: INTERSECTION OF DPRETERM AND DMAGE (PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT AND MOTHERS AGE)
values: 0 to 49
iprtmage =dpreterm*dmage if dmage !=99 & dmage !=.

dothermr:
definition: OTHER MEDICAL RISK FACTORS
values: 1= other risk factors, 0= no other risk factors
dothermr =0 if othermr <=2
dothermr=1 if othermr ==1

dmecon:
definition: MECONIUM, MODERATE/HEAVY
values: 1= meconium, 0= no meconium
dmecon =0 if meconium <3
dmecon =1 if meconium ==1

dotherlb:
definition: OTHER COMPLICATION OF LABOR AND/OR DELIVERY
values: 1= other complications, 0= no other complications
dotherlb =0 if otherlb <3
dotherlb =1 if otherlb==1

dalcosyn:
definition: FETAL ALCOHOL SYNDROME
values: 1= fetal alcohol syndrome, 0= no fetal alcohol syndrome
dalcosyn =0 if alcosyn <3
dalcosyn =1 if alcosyn ==1

dvenl30:
definition: ASSISTED VENTILATION, LESS THAN 30 MINUTES
values: 1= assisted <30 min., 0= other level of assistance
dvenl30 =0 if venl30 <3
dvenl30 =1 if venl30 ==1

dven30m:
definition: ASSISTED VENTILATION, 30 MINUTES OR MORE
values: 1= assisted 30+ min, 0= other level of assistance
dven30m =0 if ven30m <3
dven30m =1 if ven30m ==1

dnseiz:
definition: SEIZURES
values: 1= seizures, 0= no seizures
dnseiz =0 if nseiz <3
dnseiz =1 if nseiz ==1

dotherab:

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definition: OTHER ABNORMAL CONDITIONS OF THE NEWBORN
values: 1= other conditions present, 0= no other conditions present
dotherab =0 if otherab <3
dotherab =1 if otherab ==1

dinadqcr:
definition: ADEQUACY OF CARE RECODE (KESSNER INDEX), INADEQUATE
values: 1= adequate care, 0= other level of care
dinadqcr =0 if adequacy !=4 & adequacy !=.
dinadqcr =1 if adequacy ==1

dintercr:
definition: ADEQUACY OF CARE RECODE (KESSNER INDEX), INTERMEDIATE
values: 1= intermediate care, 0= other level of care
dintercr =0 if adequacy !=4 & adequacy !=.
dintercr =1 if adequacy ==2

dpops1:
definition: PMSA/MSA POPULATION SIZE, Based on 1990 Census county population counts, Area of 250,000 or more
values: 1= population >250,000, 0= other population size
dpops1 =0 if popsmas <3 & popsmas !=.
dpops1 =1 if popsmas ==1

dpops2:
definition: PMSA/MSA POPULATION SIZE, Based on 1990 Census county population counts, Area of 100,000 to 250,000
values: 1= population 100,000 to 250,000, 0= other population size
dpops2 =0 if popsmas <3 & popsmas !=.
dpops2 =1 if popsmas ==2

icigeclm:
definition: INTERSECTION OF CIGAR AND DECLAMP (AVERAGE NUMBER OF CIGARETTES PER DAY AND ECLAMPSIA)
values: 0 to 97
icigeclm = cigar*declamp if cigar !=99 & cigar !=. & eclamp !=. & eclamp<3

idrieclm:
definition: INTERSECTION OF DRINK5 AND DECLAMP (AVERAGE NUMBER OF DRINKS PER WEEK AND ECLAMPSIA)
values: 0 to 4
idrieclm = drink5*declamp if drink5 !=5 & drink5 !=. & eclamp !=. & eclamp<3

icigincv:
definition: INTERSECTION OF CIGAR AND DINCERVI (AVERAGE NUMBER OF CIGARETTES PER DAY AND INCOMPETENT CERVIX)
values: 0 to 4
icigincv = cigar*dincervi if cigar !=99 & cigar !=. & incervix !=. & incervix<3

ddisease:
definition: binary indicator of disease variables
values: 1= yes disease variables, 0= no disease variables
ddisease = 1 if danemia ==1 | dcardiac ==1 | dlung ==1 | ddiabete ==1 | dherpes ==1 | dhydra ==1 | dhemo ==1 | dchyper ==1 | dphyper ==1 | declamp ==1 | dincervi ==1 | drenal ==1 | drh ==1 | duter ==1 | dpre4000 ==1 | dpreterm ==1 | dother ==1

disdeliv:
definition: binary indicator of dysfunctional delivery variables
values: 1= yes dysfunctional delivery variables, 0= no dysfunctional delivery variables
disdeliv =1 if drupture ==1 | dabrupti ==1 | dpreplac ==1 | dexcebld ==1 | dseizure ==1 | dprecip ==1 | dprolong ==1 | ddysfunc ==1 | dcord ==1 | danesthe ==1 | ddistres ==1

sum:
definition: binary indicator of disdeliv and ddisease
values: 1= yes dysfunctional delivery and disease variables, 0= no dysfunctional delivery and disease variables
sum =1 if disdeliv ==1 | ddisease ==1

Attachment 3
Descriptive Statistics

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```
. use e:/texas/tx93_natality

. **     Texas 1993

. **     All Infants

. sum dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  308851    3317.828    579.9879       227       6804

.
. sum dbirwt if dtobacco ==1 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   26071    3138.297    587.6923       255       5443

. sum dbirwt if dtobacco ==0 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  282780     3334.38    576.4653       227       6804

. ttest dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =   282780
                                                  1: Number of obs =    26071

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |   3334.38    1.084049   3075.86    0.0000       3332.255    3336.505
       1 |  3138.297    3.639747    862.23    0.0000       3131.163    3145.431
---------+--------------------------------------------------------------------
    diff |  196.0824    3.737353   52.4656    0.0000       188.7573    203.4075
------------------------------------------------------------------------------
Degrees of freedom: 308849

                    Ho: mean(0) - mean(1) = diff = 0

      Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
        t =  52.4656                 t =  52.4656                 t =  52.4656
    P < t =   1.0000         P > |t| =   0.0000         P > t =   0.0000

.
.
. * Low, Low Weight Birth Group
.
. sum dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    3577     1006.38    321.2339       227       1500

.
. sum dbirwt if dtobacco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |     424    1040.767    310.0552       255       1500

. sum dbirwt if dtobacco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
```

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```
dbirwt |   3153   1001.756   322.4756      227

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

sample t test with equal variances
                                               1: Number of obs =       424

------------------------------------------------------------------------------
Variable |       Mean    Std. Err.          t      P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  1001.756    5.742949    174.432    0.0000       990.4961    1013.017
       1 |  1040.767    15.05761     69.119    0.0000       1011.169    1070.364
---------+--------------------------------------------------------------------
    diff | -39.01009    16.60587   -2.34917    0.0189      -71.56802   -6.452157
------------------------------------------------------------------------------
Degrees of freedom: 3575

                     Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0            Ha: diff ~= 0              Ha: diff > 0
       t =  -2.3492            t =  -2.3492               t =  -2.3492
   P < t =   0.0094      P > |t| =   0.0189           P > t =   0.9906

.
. sum dbirwt if dtobalco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean   Std. Dev.       Min        Max
---------+-----------------------------------------------------
  dbirwt |      83    1061.217   295.3977        482       1490

. sum dbirwt if dtobalco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean   Std. Dev.       Min        Max
---------+-----------------------------------------------------
  dbirwt |    3494    1005.078   321.7477        227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobalco)

Two-sample t test with equal variances         0: Number of obs =      3494
                                               1: Number of obs =        83

------------------------------------------------------------------------------
Variable |       Mean    Std. Err.          t      P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  1005.078    5.443196    184.648    0.0000       994.4057     1015.75
       1 |  1061.217    32.42411    32.7293    0.0000        996.715    1125.719
---------+--------------------------------------------------------------------
    diff | -56.13902    35.66897   -1.57389    0.1156      -126.0726    13.79456
------------------------------------------------------------------------------
Degrees of freedom: 3575

                     Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0            Ha: diff ~= 0              Ha: diff > 0
       t =  -1.5739            t =  -1.5739               t =  -1.5739
   P < t =   0.0578      P > |t| =   0.1156           P > t =   0.9422

.
.
. * Low Birth Weight Group
.
. sum dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & gest
> at!=99 & nprevist!=99

Variable |     Obs        Mean   Std. Dev.       Min        Max
---------+-----------------------------------------------------
  dbirwt |   17597    2191.649    262.759       1503       2500

.
. sum dbirwt if dtobacco ==1 & dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alc
```

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```
> ohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2572    2202.261    262.0185      1503       2500

hol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   15025    2189.832    262.8512      1503       2500

. ttest dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & ge
> stat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =    15025
                                                  1: Number of obs =     2572

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  2189.832    2.144385   1021.19   0.0000       2185.629    2194.035
       1 |  2202.261    5.166501   426.258   0.0000        2192.13    2212.392
---------+--------------------------------------------------------------------
    diff | -12.42874    5.606422  -2.21688   0.0266      -23.41788   -1.439599
------------------------------------------------------------------------------
Degrees of freedom: 17595

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  -2.2169                 t =  -2.2169                 t =  -2.2169
   P < t =   0.0133         P > |t| =   0.0266         P > t =   0.9867


.
.
   ** Normal birth weight group

. sum dbirwt if dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  287677    3415.456    449.5499      2501       6804

.
. sum dbirwt if dtobacco ==1 & dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   23075    3281.172    426.4874      2505       5443

. sum dbirwt if dtobacco ==0 & dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  264602    3427.167    449.6087      2501       6804

. ttest dbirwt if dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & alcohol !=9 & g
> estat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =   264602
                                                  1: Number of obs =    23075

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  3427.167    .8740538      3921   0.0000       3425.454     3428.88
       1 |  3281.172    2.807601   1168.67   0.0000       3275.669    3286.675
---------+--------------------------------------------------------------------
    diff |  145.9944    3.073743   47.4973   0.0000       139.9699    152.0188
------------------------------------------------------------------------------
```

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Degrees of freedom: 287675

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0	Ha: diff ~= 0	Ha: diff > 0
t = 47.4973	t = 47.4973	t = 47.4973
P < t = 1.0000	P > |t| = 0.0000	P > t = 0.0000

.
.
.
. **** Gestation
.
. sum gestat if dbirwt !=9999 & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	308851	38.93926	2.585882	17	47

.
. sum gestat if dtobacco ==1 & dbirwt !=9999 & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	26071	38.92225	2.844556	17	47

. sum gestat if dtobacco ==0 & dbirwt !=9999 & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	282780	38.94082	2.560718	17	47

. ttest gestat if dbirwt !=9999 & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by(dtobacco)

ample t test with equal variances

0: Number of obs = 282780
1: Number of obs = 26071

Variable	Mean	Std. Err.	t	P>|t|	[95% Conf.	Interval]
0	38.94082	.0048155	8086.63	0.0000	38.93139	38.95026
1	38.92225	.0176172	2209.34	0.0000	38.88772	38.95678
diff	.0185725	.0167371	1.10966	0.2671	-.0142317	.0513767

Degrees of freedom: 308849

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0	Ha: diff ~= 0	Ha: diff > 0
t = 1.1097	t = 1.1097	t = 1.1097
P < t = 0.8664	P > |t| = 0.2671	P > t = 0.1336

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. ore 0

. log close

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[redacted]

Texas 1992

All Infants

```
. sum dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  288841    3329.224    578.7884       227       7683

. sum dbirwt if dtobacco ==1 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   25955    3145.209    584.7107       255       5755

. sum dbirwt if dtobacco ==0 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  262886    3347.393    575.0162       227       7683

. ttest dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

Two-sample t test with equal variances              0: Number of obs =   262886
                                                    1: Number of obs =    25955

------------------------------------------------------------------------------
   able |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
--------+---------------------------------------------------------------------
      0 |  3347.393    1.121492   2984.77   0.0000       3345.194    3349.591
      1 |  3145.209    3.629364   866.601   0.0000       3138.095    3152.323
--------+---------------------------------------------------------------------
   diff |  202.1837    3.746949   53.9596   0.0000       194.8398    209.5276
------------------------------------------------------------------------------
Degrees of freedom: 288839

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  53.9596                 t =  53.9596                  t =  53.9596
   P < t =   1.0000         P > |t| =   0.0000          P > t =   0.0000

. * Low, Low Weight Birth Group
. sum dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    3134    1023.927    316.1654       227       1500

. sum dbirwt if dtobacco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
   birwt |     377    1010.897    316.4476       255       1485

. sum dbirwt if dtobacco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99
```

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```
Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2757    1025.708    316.1425       227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

Two-sample t test with equal variances              0: Number of obs =      2757
                                                    1: Number of obs =       377

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  1025.708    6.020943   170.357   0.0000       1013.902    1037.514
       1 |  1010.897    16.29788   62.0263   0.0000       978.8501    1042.943
---------+--------------------------------------------------------------------
    diff |  14.81183    17.36176    .85313   0.3937      -19.22974     48.8534
------------------------------------------------------------------------------
Degrees of freedom: 3132

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =   0.8531                 t =   0.8531                 t =   0.8531
   P < t =   0.8032       P > |t| =   0.3937         P > t =   0.1968

.
. sum dbirwt if dtobalco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |      61    1037.426    302.4918       255       1474

. sum dbirwt if dtobalco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    3073    1023.659    316.4722       227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobalco)

Two-sample t test with equal variances              0: Number of obs =      3073
                                                    1: Number of obs =        61

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  1023.659    5.708924   179.309   0.0000       1012.465    1034.852
       1 |  1037.426     38.7301    26.786   0.0000       959.9545    1114.898
---------+--------------------------------------------------------------------
    diff | -13.76759    40.88642  -.336728   0.7363      -93.93448     66.3993
------------------------------------------------------------------------------
Degrees of freedom: 3132

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  -0.3367                 t =  -0.3367                 t =  -0.3367
   P < t =   0.3682       P > |t| =   0.7363         P > t =   0.6318

.
.
. * Low Birth Weight Group
.
. sum dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & gest
> at!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   16186    2186.076    266.3421      1501       2500

.
```

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[redacted] tobacco !=9 & alc

[redacted]

Variable	Obs	Mean	Std. Dev.	Min	Max
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

. sum dbirwt if dtobacco ==0 & dbirwt >1500 & dbirwt<=2500 & tobacco !=9 & alc
> ohol !=9 & gestat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
dbirwt	13639	2183.42	267.6764	1501	2500

. ttest dbirwt if dbirwt >1500 & dbirwt<=2500 & tobacco !=9 & alcohol !=9 & ge
> stat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances

0: Number of obs = 13639
1: Number of obs = 2547

Variable	Mean	Std. Err.	t	P>|t|	[95% Conf.	Interval]
0	2183.42	2.292022	952.617	0.0000	2178.927	2187.912
1	2200.303	5.125394	429.294	0.0000	2190.253	2210.353
diff	-16.88335	5.747798	-2.93736	0.0033	-28.14967	-5.617029

Degrees of freedom: 16184

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0	Ha: diff ~= 0	Ha: diff > 0
t = -2.9374	t = -2.9374	t = -2.9374
P < t = 0.0017	P > |t| = 0.0033	P > t = 0.9983

.

.

** Normal birth weight group

. sum dbirwt if dbirwt > 2500 & dbirwt!=9999 & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
dbirwt	269521	3424.682	451.8851	2501	7683

.

. sum dbirwt if dtobacco ==1 & dbirwt > 2500 & dbirwt!=9999 & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
dbirwt	23031	3284.643	428.3754	2505	5755

. sum dbirwt if dtobacco ==0 & dbirwt > 2500 & dbirwt!=9999 & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
dbirwt	246490	3437.767	451.8086	2501	7683

. ttest dbirwt if dbirwt > 2500 & dbirwt!=9999 & tobacco !=9 & alcohol !=9 & g
> estat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances

0: Number of obs = 246490
1: Number of obs = 23031

Variable	Mean	Std. Err.	t	P>|t|	[95% Conf.	Interval]
0	3437.767	.9100281	3777.65	0.0000	3435.983	3439.55
1	3284.643	2.822722	1163.64	0.0000	3279.11	3290.176
diff	153.1236	3.099644	49.4004	0.0000	147.0483	159.1988

51710 6313

Degrees of freedom: 269519

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0 Ha: diff ~= 0 Ha: diff > 0

t = [illegible]

P < t = 1.0000 P > |t| = 0.0000 P > t = 0.0000

. **** Gestation

. sum gestat if dbirwt !=9999 & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	288841	39.01387	2.562525	17	47

. sum gestat if dtobacco ==1 & dbirwt !=9999 & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	25955	38.97453	2.860975	18	47

. sum gestat if dtobacco ==0 & dbirwt !=9999 & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	262886	39.01775	2.531123	17	47

. ttest gestat if dbirwt !=9999 & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by(dtobacco)

-sample t test with equal variances

0: Number of obs = 262886
1: Number of obs = 25955

Variable	Mean	Std. Err.	t	P>|t|	[95% Conf.	Interval]
0	39.01775	.0049366	7903.74	0.0000	39.00807	39.02742
1	38.97453	.0177584	2194.71	0.0000	38.93973	39.00934
diff	.0432163	.0166724	2.59208	0.0095	.0105388	.0758938

Degrees of freedom: 288839

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0 Ha: diff ~= 0 Ha: diff > 0

t = 2.5921 t = 2.5921 t = 2.5921

P < t = 0.9952 P > |t| = 0.0095 P > t = 0.0048

51710 6314

```
. use d:/texas/tx91_natality
. ** Texas 1991

   All Infants
.
. sum dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt | 269052    3322.819    575.5025       227       6350


. sum dbirwt if dtobacco ==1 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   24907    3149.537    592.8091       270       5897

. sum dbirwt if dtobacco ==0 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  244145    3340.496    570.7592       227       6350

. ttest dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

Two-sample t test with equal variances           0: Number of obs =   244145
                                                 1: Number of obs =    24907

------------------------------------------------------------------------------
riable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
-------+----------------------------------------------------------------------
       0 |  3340.496    1.155125   2891.89   0.0000       3338.232     3342.76
       1 |  3149.537    3.756247    838.48   0.0000       3142.175      3156.9
---------+------------------------------------------------------------------
    diff |  190.9592    3.810341    50.116   0.0000        183.491    198.4274
------------------------------------------------------------------------------
Degrees of freedom: 269050

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
       t =  50.1160                 t =  50.1160                 t =  50.1160
   P < t =   1.0000             P > |t| =   0.0000             P > t =   0.0000


.
. * Low, Low Weight Birth Group
.
. sum dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2808    1026.953    315.1668       227       1500


. sum dbirwt if dtobacco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |     393    1035.137    330.2113       270       1500

. sum dbirwt if dtobacco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99
```

51710 6315

```
Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2415    1025.622    312.7701       227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

Two-sample t test with equal variances          0: Number of obs =      2415
                                                1: Number of obs =       393

------------------------------------------------------------------------------
Variable |      Mean   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  1025.622   6.363128   161.182   0.0000    1013.144    1038.099
       1 |  1035.137   16.65696   62.1445   0.0000    1002.389    1067.886
---------+--------------------------------------------------------------------
    diff | -9.515872   17.14501  -.555023   0.5789   -43.13397    24.10222
------------------------------------------------------------------------------
Degrees of freedom: 2806

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  -0.5550                 t =  -0.5550                 t =  -0.5550
   P < t =   0.2895       P > |t| =   0.5789         P > t =   0.7105

.
. sum dbirwt if dtobalco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |      63    1034.619    325.5559       356       1474

. sum dbirwt if dtobalco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2745    1026.777    314.9834       227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobalco)

Two-sample t test with equal variances          0: Number of obs =      2745
                                                1: Number of obs =        63

------------------------------------------------------------------------------
Variable |      Mean   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  1026.777   6.011965   170.789   0.0000    1014.989    1038.566
       1 |  1034.619   41.01618   25.2247   0.0000    952.6289    1116.609
---------+--------------------------------------------------------------------
    diff | -7.841634   40.16724  -.195225   0.8452   -86.60194    70.91867
------------------------------------------------------------------------------
Degrees of freedom: 2806

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  -0.1952                 t =  -0.1952                 t =  -0.1952
   P < t =   0.4226       P > |t| =   0.8452         P > t =   0.5774

.
.
. * Low Birth Weight Group
.
. sum dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & gest
> at!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   15402    2192.184    262.9784      1503       2500

.
```

51710 6316

```
. sum dbirwt if dtobacco ==1 & dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alc
> ohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2410    2192.003    262.2091      1503       2500

. sum dbirwt if dtobacco ==0 & dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alc
> ohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   12992    2192.218    263.131       1503       2500

. ttest dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & ge
> stat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =    12992
                                                  1: Number of obs =     2410

------------------------------------------------------------------------------
Variable |       Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |   2192.218    2.308522    949.62    0.0000       2187.693    2196.743
       1 |   2192.003    5.341204   410.395    0.0000       2181.529    2202.477
---------+--------------------------------------------------------------------
    diff |   .2146608    5.832789   .036802    0.9706      -11.21829    11.64762
------------------------------------------------------------------------------
Degrees of freedom: 15400

                    Ho: mean(0) - mean(1) = diff = 0

      Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
        t =   0.0368                 t =   0.0368                 t =   0.0368
    P < t =   0.5147       P > |t| =   0.9706         P > t =   0.4853


.
.* Normal birth weight group

. sum dbirwt if dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  250842    3417.942    450.937       2502       6350

.
. sum dbirwt if dtobacco ==1 & dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   22104     3291.53   432.3616       2502       5897

. sum dbirwt if dtobacco ==0 & dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  228738    3430.157   450.8182       2502       6350

. ttest dbirwt if dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & alcohol !=9 & g
> estat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =   228738
                                                  1: Number of obs =    22104

------------------------------------------------------------------------------
Variable |       Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |   3430.157    .9426106      3639    0.0000        3428.31    3432.005
       1 |    3291.53    2.908116   1131.84    0.0000        3285.83     3297.23
---------+--------------------------------------------------------------------
    diff |   138.627    3.164149   43.8118    0.0000       132.4254    144.8287
```

51710 6317

Degrees of freedom: 250840

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0 [illegible] Ha: diff ~= 0 [illegible] Ha: diff > 0

t = 43.8118 [illegible] t = 43.8118 [illegible] t = 43.8118

P < t = 1.0000 P > |t| = 0.0000 P > t = 0.0000

. **** Gestation

. sum gestat if dbirwt !=9999 & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	269052	39.0101	2.607694	17	47

. sum gestat if dtobacco ==1 & dbirwt !=9999 & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	24907	38.97507	2.895858	17	47

. sum gestat if dtobacco ==0 & dbirwt !=9999 & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable	Obs	Mean	Std. Dev.	Min	Max
gestat	244145	39.01367	2.576465	17	47

. ttest gestat if dbirwt !=9999 & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> ist!=99, by(dtobacco)

Two-sample t test with equal variances

0: Number of obs = 244145
1: Number of obs = 24907

Variable	Mean	Std. Err.	t	P>|t|	[95% Conf.	Interval]
0	39.01367	.0052144	7481.98	0.0000	39.00345	39.02389
1	38.97507	.0183492	2124.08	0.0000	38.9391	39.01103
diff	.038605	.0173455	2.22565	0.0260	.0046082	.0726017

Degrees of freedom: 269050

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0 Ha: diff ~= 0 Ha: diff > 0

t = 2.2256 t = 2.2256 t = 2.2256

P < t = 0.9870 P > |t| = 0.0260 P > t = 0.0130

51710 6318

[redacted]

```
. *  All Infants
.
. sum dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  270983    3329.345    575.1231       227       8136

.
. sum dbirwt if dtobacco ==1 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   27058    3152.383    590.3265       255       8100

. sum dbirwt if dtobacco ==0 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  243925    3348.975     570.038       227       8136

. ttest dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =   243925
                                                  1: Number of obs =    27058

------------------------------------------------------------------------------
variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  3348.975    1.154186   2901.59   0.0000       3346.713    3351.238
       1 |  3152.383     3.58876   878.405   0.0000       3145.349    3159.418
---------+--------------------------------------------------------------------
    diff |   196.592     3.66576   53.6292   0.0000       189.4072    203.7767
------------------------------------------------------------------------------
Degrees of freedom: 270981

                    Ho: mean(0) - mean(1) = diff = 0

      Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
        t =  53.6292                 t =  53.6292                 t =  53.6292
    P < t =   1.0000         P > |t| =   0.0000         P > t =   0.0000


.
.
. * Low, Low Weight Birth Group
.
. sum dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2836    1016.489    325.8132       227       1500

.
. sum dbirwt if dtobacco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

  riable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |     437    1053.076    312.544       255       1495

. sum dbirwt if dtobacco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99
```

51710 6319

```
Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2399    1009.824     327.796       227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobalco)

Two-sample t test with equal variances              0: Number of obs =      2399
                                                    1: Number of obs =       437

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |   1009.824    6.692502   150.889   0.0000       996.7004    1022.948
       1 |   1053.076    14.95101   70.4351   0.0000       1023.691    1082.461
---------+--------------------------------------------------------------------
    diff |  -43.25142    16.92946  -2.5548   0.0107      -76.44672   -10.05612
------------------------------------------------------------------------------
Degrees of freedom: 2834

                    Ho: mean(0) - mean(1) = diff = 0

      Ha: diff < 0           Ha: diff ~= 0              Ha: diff > 0
        t =  -2.5548              t =  -2.5548              t =  -2.5548
    P < t =   0.0053       P > |t| =   0.0107        P > t =   0.9947

.
. sum dbirwt if dtobalco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |      78    1048.744    305.6621       284       1474

. sum dbirwt if dtobalco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2758    1015.577    326.3707       227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobalco)

Two-sample t test with equal variances              0: Number of obs =      2758
                                                    1: Number of obs =        78

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |   1015.577    6.214613   163.418   0.0000       1003.391    1027.762
       1 |   1048.744    34.60942   30.3023   0.0000       979.8274     1117.66
---------+--------------------------------------------------------------------
    diff |  -33.16709    37.41052  -.886571   0.3754      -106.5217    40.18751
------------------------------------------------------------------------------
Degrees of freedom: 2834

                    Ho: mean(0) - mean(1) = diff = 0

      Ha: diff < 0           Ha: diff ~= 0              Ha: diff > 0
        t =  -0.8866              t =  -0.8866              t =  -0.8866
    P < t =   0.1877       P > |t| =   0.3754        P > t =   0.8123

.
.
. * Low Birth Weight Group
.
. sum dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & gest
> at!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   15041    2197.415    260.0939      1502       2500
```

51710 6320

[redacted]

```
. sum dbirwt if dtobacco ==0 & dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alc
> ohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   12480    2197.295    260.9281        1502       2500

. ttest dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & ge
> stat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =    12480
                                                  1: Number of obs =     2561

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  2197.295    2.335682   940.751   0.0000       2192.716    2201.873
       1 |  2198.005    5.059427   434.438   0.0000       2188.084    2207.926
---------+--------------------------------------------------------------------
    diff | -.7101344    5.642487  -.125855   0.8998       -11.7701    10.34983
------------------------------------------------------------------------------
Degrees of freedom: 15039

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  -0.1259                 t =  -0.1259                 t =  -0.1259
   P < t =   0.4499       P > |t| =   0.8998         P > t =   0.5501


*  Normal birth weight group
.
. sum dbirwt if dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  253106    3422.526    451.8394        2501       8136

.
. sum dbirwt if dtobacco ==1 & dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   24060    3292.099    432.0167        2507       8100

. sum dbirwt if dtobacco ==0 & dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  229046    3436.227    451.6917        2501       8136

. ttest dbirwt if dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & alcohol !=9 & g
> estat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =   229046
                                                  1: Number of obs =    24060

------------------------------------------------------------------------------
riable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  3436.227    .9438018   3640.84   0.0000       3434.377    3438.077
       1 |  3292.099    2.785177   1182.01   0.0000        3286.64    3297.558
---------+--------------------------------------------------------------------
```

51710 6321

```
    diff |   144.1277    3.048723    47.2748   0.0000    138.1522    150.1031
------------------------------------------------------------------------------
Degrees of freedom: 253104

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  47.2748                 t =  47.2748                 t =  47.2748
   P < t =   1.0000         P > |t| =   0.0000         P > t =   0.0000

.
.
.
. **** Gestation
.
. sum gestat if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  gestat |  270983    39.06559    2.648105         17         47

.
. sum gestat if dtobacco ==1 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  gestat |   27058    39.01585     2.95187         17         47

. sum gestat if dtobacco ==0 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  gestat |  243925    39.07111    2.612182         17         47

. ttest gestat if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by(dtobacco)

Two-sample t test with equal variances           0: Number of obs =   243925
                                                 1: Number of obs =    27058

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  39.07111     .005289   7387.21   0.0000       39.06074    39.08147
       1 |  39.01585    .0179452   2174.16   0.0000       38.98068    39.05103
---------+--------------------------------------------------------------------
    diff |  .0552531    .0169677   3.25637   0.0011       .0219969    .0885093
------------------------------------------------------------------------------
Degrees of freedom: 270981

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =   3.2564                 t =   3.2564                 t =   3.2564
   P < t =   0.9994         P > |t| =   0.0011         P > t =   0.0006

.
.
.
```

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```
. set more 1
. set matsize 300
    Respondents to smoking question
.
. use e:/texas/tx89_natality
.
. **     Texas 1989
.
.
. *  All Infants
.
. sum dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  197559    3331.014    576.6786       227       8136

.
. sum dbirwt if dtobacco ==1 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   22287    3145.518    592.6515       227       6591

. sum dbirwt if dtobacco ==0 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  175272    3354.601     570.31       227       8136

. ttest dbirwt if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

Two-sample t test with equal variances            0: Number of obs =   175272
                                                  1: Number of obs =    22287

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  3354.601    1.362244   2462.56   0.0000       3351.931    3357.271
       1 |  3145.518    3.969845   792.353   0.0000       3137.737    3153.299
---------+--------------------------------------------------------------------
    diff |  209.0829    4.074041   51.3208   0.0000       201.0978    217.0679
------------------------------------------------------------------------------
Degrees of freedom: 197557

                    Ho: mean(0) - mean(1) = diff = 0

      Ha: diff < 0           Ha: diff ~= 0              Ha: diff > 0
        t =  51.3208            t =  51.3208               t =  51.3208
    P < t =   1.0000        P > |t| =   0.0000         P > t =   0.0000


.
. * Low, Low Weight Birth Group
.
. sum dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2012    1014.952    321.3894       227       1500

.
. sum dbirwt if dtobacco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99
```

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[redacted]

```
Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |     349    1027.966    331.4838       227       1480

. sum dbirwt if dtobacco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    1663    1012.221    319.2653       227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobacco)

Two-sample t test with equal variances           0: Number of obs =      1663
                                                 1: Number of obs =       349

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  1012.221    7.828987   129.291   0.0000        996.865    1027.576
       1 |  1027.966    17.74392   57.9334   0.0000       993.0668    1062.864
---------+--------------------------------------------------------------------
    diff | -15.74493     18.9243  -.831995   0.4055      -52.85823    21.36837
------------------------------------------------------------------------------
Degrees of freedom: 2010

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  -0.8320                 t =  -0.8320                 t =  -0.8320
   P < t =   0.2028       P > |t| =   0.4055       P > t =   0.7972

.
. sum dbirwt if dtobalco ==1 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

    able |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |      60    1021.617    331.7513       255       1480

. sum dbirwt if dtobalco ==0 & dbirwt <=1500  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    1952    1014.747    321.1511       227       1500

. ttest dbirwt if dbirwt <=1500  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by (dtobalco)

Two-sample t test with equal variances           0: Number of obs =      1952
                                                 1: Number of obs =        60

------------------------------------------------------------------------------
Variable |      Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  1014.747    7.268913   139.601   0.0000        1000.491    1029.003
       1 |  1021.617    42.82891   23.8534   0.0000        935.9162    1107.317
---------+--------------------------------------------------------------------
    diff |  -6.86974    42.13423  -.163044   0.8705      -89.50108    75.76161
------------------------------------------------------------------------------
Degrees of freedom: 2010

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  -0.1630                 t =  -0.1630                 t =  -0.1630
   P < t =   0.4353       P > |t| =   0.8705       P > t =   0.5647

.
. * Low Birth Weight Group
.
```

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```
. sum dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & gest
> at!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   11020    2191.773    262.6971      1503       2500

. sum dbirwt if dtobacco ==1 & dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alc
> ohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    2171    2198.215    256.9869      1503       2500

. sum dbirwt if dtobacco ==0 & dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alc
> ohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |    8849    2190.141    264.0495      1503       2500

. ttest dbirwt if dbirwt >1500 & dbirwt<=2500  & tobacco !=9 & alcohol !=9 & ge
> stat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances          0: Number of obs =     8849
                                                1: Number of obs =     2171

------------------------------------------------------------------------------
Variable |       Mean    Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |   2190.141    2.806973    780.25    0.0000       2184.639    2195.644
       1 |   2198.215    5.515452   398.556    0.0000       2187.399    2209.031
---------+--------------------------------------------------------------------
    diff |  -8.073736    6.291151  -1.28335    0.1994      -20.40552    4.258048
------------------------------------------------------------------------------
Degrees of freedom: 11018

                 Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff ~= 0                 Ha: diff > 0
       t =  -1.2833                 t =  -1.2833                 t =  -1.2833
   P < t =   0.0997         P > |t| =   0.1994         P > t =   0.9003


. ** Normal birth weight group

. sum dbirwt if dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  184527    3424.305    453.9733      2501       8136


. sum dbirwt if dtobacco ==1 & dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |   19767    3286.946    434.8457      2505       6591

. sum dbirwt if dtobacco ==0 & dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & al
> cohol !=9 & gestat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  dbirwt |  164760    3440.785    453.4285      2501       8136

. ttest dbirwt if dbirwt > 2500 & dbirwt!=9999  & tobacco !=9 & alcohol !=9 & g
> estat!=99 & nprevist!=99, by (dtobacco)

Two-sample t test with equal variances          0: Number of obs =   164760
                                                1: Number of obs =    19767
```

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```
[redacted]
ariable |       Mean   Std. Err.      t    P>|t|    [95% Conf. Interval]
---------+--------------------------------------------------------------
       0 |  3440.785   1.117047   3080.17   0.0000    3438.595   3442.974
       1 |  3286.946   3.092892   1062.74   0.0000    [redacted]
---------+--------------------------------------------------------------
    diff |  153.8382   3.398341   45.2686   0.0000    147.1776   160.4989
------------------------------------------------------------------------------
egrees of freedom: 184525

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
       t =  45.2686                 t =  45.2686                 t =  45.2686
   P < t =   1.0000         P > |t| =   0.0000         P > t =   0.0000


. **** Gestation
.
. sum gestat if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & nprev
> ist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  gestat |  197559    39.08962    2.653507        17         47

.
. sum gestat if dtobacco ==1 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> tat!=99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  gestat |   22287    39.05003    2.969098        18         47

. s[redacted]estat if dtobacco ==0 & dbirwt !=9999  & tobacco !=9 & alcohol !=9 & ges
> [redacted]99 & nprevist!=99

Variable |     Obs        Mean    Std. Dev.       Min        Max
---------+--------------------------------------------------------
  gestat |  175272    39.09466    2.610611        17         47

. ttest gestat if dbirwt !=9999  & tobacco !=9 & alcohol !=9 & gestat!=99 & npr
> evist!=99, by(dtobacco)

Two-sample t test with equal variances          0: Number of obs =    175272
                                                1: Number of obs =     22287

------------------------------------------------------------------------------
Variable |      Mean   Std. Err.      t    P>|t|    [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |  39.09466   .0062357   6269.48   0.0000    39.08244   39.10688
       1 |  39.05003   .0198884   1963.46   0.0000    39.01105   39.08901
---------+--------------------------------------------------------------------
    diff |  .0446294   .0188704   2.36505   0.0180    .0076439    .081615
------------------------------------------------------------------------------
Degrees of freedom: 197557

                    Ho: mean(0) - mean(1) = diff = 0

     Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
       t =   2.3650                 t =   2.3650                 t =   2.3650
   P < t =   0.9910         P > |t| =   0.0180         P > t =   0.0090

.
.
```

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Attachment 4
Simple Correlations

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```
[illegible] 1993
do c:\temp\speccorr\acr.do

. corr dtobacco dtobalco dalcohol danemia [illegible]
> [illegible] dpre4000 [illegible]
> upture dabrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord
> dotherlb dalcosyn dven130 dven30m dnseiz dotherab if dbirwt !=9999
(obs=311969)
```

	dtobacco	dtobalco	dalcohol	danemia	dcardiac	dlung	ddiabete
dtobacco	1.0000						
dtobalco	0.2944	1.0000					
dalcohol	0.2030	0.7399	1.0000				
danemia	0.0231	0.0106	0.0147	1.0000			
dcardiac	0.0019	-0.0018	0.0012	0.0149	1.0000		
dlung	0.0177	0.0074	0.0090	0.0206	0.0323	1.0000	
ddiabete	-0.0030	-0.0036	-0.0030	0.0098	0.0078	0.0078	1.0000
dhydra	0.0100	0.0058	0.0051	0.0089	0.0118	0.0082	0.0287
dhemo	-0.0012	-0.0016	-0.0022	0.0291	0.0024	0.0091	0.0054
dphyper	-0.0107	-0.0053	-0.0025	0.0132	0.0094	0.0140	0.0401
dchyper	-0.0002	0.0017	0.0017	0.0061	0.0171	0.0106	0.0578
declamp	-0.0022	-0.0003	-0.0008	0.0155	0.0084	0.0039	0.0040
dincervi	-0.0015	0.0015	0.0008	0.0036	0.0068	0.0038	0.0091
dpre4000	0.0054	-0.0018	0.0042	0.0428	0.0151	0.0086	0.0404
dpreterm	0.0347	0.0150	0.0123	0.0177	0.0072	0.0065	0.0068
drenal	0.0039	0.0029	0.0030	0.0295	0.0136	0.0136	0.0088
drh	0.0132	0.0060	0.0087	0.0058	0.0108	0.0048	0.0098
dothermr	0.0623	0.0483	0.0495	0.0546	0.0247	0.0313	0.0240
dmecon	0.0278	0.0186	0.0165	0.0118	0.0047	0.0095	0.0103
drupture	0.0181	0.0102	0.0116	0.0106	0.0028	0.0023	0.0052
dabrupti	0.0227	0.0106	0.0104	0.0184	0.0003	0.0013	0.0056
dpreplac	0.0117	0.0008	0.0019	0.0134	0.0071	0.0004	0.0025
dexcebld	0.0051	0.0052	0.0021	0.0249	0.0084	0.0074	0.0095
dseizure	0.0007	0.0020	0.0005	0.0003	0.0022	-0.0010	-0.0012
dprecip	0.0186	0.0148	0.0152	0.0080	0.0069	0.0146	0.0082
long	0.0018	-0.0001	0.0002	0.0044	0.0015	0.0054	0.0006
func	-0.0033	-0.0039	-0.0022	0.0089	0.0071	0.0050	0.0211
dcord	0.0047	0.0001	0.0019	-0.0006	-0.0027	0.0020	0.0084
dotherlb	0.0107	0.0058	0.0103	0.0221	0.0125	0.0105	0.0183
dalcosyn	0.0119	0.0437	0.0615	-0.0011	-0.0004	-0.0004	-0.0012
dven130	0.0008	0.0005	0.0005	0.0045	0.0080	0.0085	0.0250
dven30m	0.0104	0.0124	0.0115	0.0143	0.0109	0.0125	0.0116
dnseiz	0.0013	0.0007	0.0013	0.0013	0.0029	0.0029	-0.0004
dotherab	0.0170	0.0249	0.0256	0.0113	0.0093	0.0093	0.0667

	dhydra	dhemo	dphyper	dchyper	declamp	dincervi	dpre4000
dhydra	1.0000						
dhemo	0.0082	1.0000					
dphyper	0.0284	0.0026	1.0000				
dchyper	0.0279	0.0121	-0.0140	1.0000			
declamp	0.0077	0.0052	0.0736	0.0252	1.0000		
dincervi	0.0085	-0.0008	0.0029	0.0048	0.0005	1.0000	
dpre4000	0.0078	0.0072	0.0028	0.0060	0.0031	0.0007	1.0000
dpreterm	0.0092	0.0025	0.0037	0.0135	0.0007	0.0576	0.0042
drenal	0.0046	0.0032	0.0116	0.0237	0.0016	0.0035	0.0105
drh	0.0056	0.0034	0.0051	0.0047	0.0047	0.0064	0.0099
dothermr	0.0483	0.0121	0.0413	0.0251	0.0199	0.0301	0.0062
dmecon	0.0133	0.0012	0.0066	0.0030	-0.0023	-0.0041	0.0079
drupture	0.0118	0.0016	0.0027	0.0037	-0.0001	0.0111	-0.0004
dabrupti	0.0113	-0.0012	0.0164	0.0031	0.0112	0.0088	0.0021
dpreplac	0.0093	-0.0010	-0.0005	0.0009	0.0031	0.0017	0.0047
dexcebld	0.0098	0.0015	0.0142	0.0108	0.0101	0.0045	0.0205
dseizure	0.0021	-0.0004	0.0238	0.0071	0.1098	-0.0008	-0.0019
dprecip	0.0042	0.0003	-0.0054	0.0072	-0.0022	0.0083	0.0208
dprolong	0.0005	-0.0012	0.0065	0.0060	0.0009	-0.0015	0.0046
ddysfunc	0.0173	0.0027	0.0601	0.0149	0.0184	0.0006	-0.0018
dcord	0.0078	0.0056	0.0077	-0.0009	0.0037	0.0007	0.0031
herlb	0.0316	0.0031	0.0467	0.0147	0.0200	0.0095	-0.0026
dalcosyn	0.0043	-0.0001	0.0011	-0.0006	-0.0004	-0.0003	-0.0007
dven130	0.0127	0.0020	0.0318	0.0126	0.0100	0.0139	0.0000
dven30m	0.0358	0.0029	0.0323	0.0178	0.0251	0.0279	0.0046

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[redacted]

[redacted]	0.0036	0.0070	1.0000				
[redacted]	0.0531	0.0165	0.0121	1.0000			
[redacted]	-0.0011	0.0014	0.0045	0.0320	1.0000		
[redacted]	0.0230	0.0023	0.0074	0.0832	0.0029	1.0000	
[redacted]	0.0205	0.0005	0.0031	0.0381	0.0022	0.0092	1.0000
[redacted]	0.0059	0.0002	0.0022	0.0303	0.0071	0.0036	0.0385
dexcebld	0.0057	0.0077	0.0036	0.0305	0.0119	0.0064	0.0323
dseizure	0.0003	-0.0008	-0.0014	0.0109	0.0000	0.0000	0.0062
dprecip	0.0379	0.0042	0.0022	0.0399	0.0143	0.0022	0.0106
dprolong	0.0026	0.0064	0.0049	0.0128	0.0084	0.0416	-0.0005
ddysfunc	-0.0026	0.0097	0.0077	0.0182	0.0308	0.0432	-0.0070
dcord	0.0019	-0.0009	0.0037	0.0091	0.0101	0.0057	-0.0017
dotherlb	0.0086	0.0045	0.0270	0.0988	0.0558	0.0278	0.0237
dalcosyn	-0.0006	-0.0003	-0.0005	0.0102	0.0082	0.0091	0.0061
dvenl30	0.0059	-0.0010	0.0067	0.0323	0.0760	0.0162	0.0263
dven30m	0.0415	0.0070	0.0105	0.0771	0.0128	0.0573	0.0791
dnseiz	0.0054	-0.0007	-0.0012	0.0094	0.0068	0.0068	0.0195
dotherab	0.0209	0.0027	0.0278	0.1123	0.0255	0.0626	0.0394

	dpreplac	dexcebld	dseizure	dprecip	dprolong	ddysfunc	dcord
dpreplac	1.0000						
dexcebld	0.0412	1.0000					
dseizure	0.0019	0.0040	1.0000				
dprecip	-0.0033	0.0223	-0.0025	1.0000			
dprolong	-0.0019	0.0115	-0.0013	-0.0084	1.0000		
ddysfunc	-0.0066	0.0054	-0.0027	-0.0320	0.0101	1.0000	
dcord	0.0046	0.0090	-0.0010	-0.0036	0.0023	0.0154	1.0000
dotherlb	0.0072	0.0288	0.0029	-0.0070	0.0137	0.0694	0.0114
dalcosyn	-0.0004	-0.0005	-0.0001	-0.0010	-0.0005	-0.0018	-0.0004
dvenl30	0.0209	0.0025	0.0017	0.0010	0.0040	0.0176	0.0046
[redacted]	0.0289	0.0180	0.0132	0.0126	0.0088	0.0027	0.0182
[redacted]	0.0025	0.0020	-0.0003	-0.0021	0.0020	-0.0025	0.0139
[redacted]	0.0194	0.0177	0.0057	0.0192	0.0063	0.0100	0.0128

	dotherlb	dalcosyn	dvenl30	dven30m	dnseiz	dotherab
dotherlb	1.0000					
dalcosyn	0.0028	1.0000				
dvenl30	0.0493	-0.0009	1.0000			
dven30m	0.0404	0.0049	-0.0097	1.0000		
dnseiz	0.0124	-0.0001	0.0188	0.0505	1.0000	
dotherab	0.1034	0.0076	0.0140	0.0977	0.0201	1.0000

.

end of do-file

. log close

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> rupture dabrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord
> dotherlb dalcosyn dven130 dven30m dnseiz dotherab if dbirwt !=9999
(obs=265669)

	dtobacco	dtobalco	dalcohol	danemia	dcardiac	dlung	ddiabete
dtobacco	1.0000						
dtobalco	0.2974	1.0000					
dalcohol	0.2054	0.7440	1.0000				
danemia	0.0180	0.0106	0.0124	1.0000			
dcardiac	0.0013	-0.0013	0.0024	0.0200	1.0000		
dlung	0.0173	0.0059	0.0075	0.0130	0.0201	1.0000	
ddiabete	0.0000	-0.0019	-0.0002	0.0119	0.0106	0.0088	1.0000
dhydra	0.0093	0.0032	0.0048	0.0093	0.0040	0.0106	0.0216
dhemo	-0.0004	0.0012	0.0008	0.0131	-0.0012	-0.0011	0.0026
dphyper	-0.0129	-0.0018	-0.0006	0.0169	0.0027	0.0058	0.0395
dchyper	0.0035	0.0024	0.0032	0.0056	0.0086	0.0093	0.0526
declamp	-0.0016	-0.0010	-0.0007	0.0203	0.0052	0.0099	0.0065
dincervi	-0.0002	-0.0017	-0.0013	0.0083	0.0037	0.0000	0.0056
dpre4000	-0.0030	0.0015	0.0040	0.0365	0.0152	0.0058	0.0407
dpreterm	0.0359	0.0159	0.0110	0.0155	0.0045	0.0151	0.0069
drenal	0.0103	0.0037	0.0050	0.0377	0.0037	0.0363	0.0093
drh	0.0147	0.0052	0.0087	0.0206	0.0031	0.0035	0.0071
dothermr	0.0560	0.0453	0.0487	0.0449	0.0210	0.0211	0.0332
dmecon	0.0266	0.0184	0.0175	0.0130	0.0029	0.0131	0.0132
drupture	0.0195	0.0069	0.0077	0.0096	0.0046	0.0017	0.0071
dabrupti	0.0139	0.0067	0.0078	0.0152	0.0001	0.0088	0.0025
dpreplac	0.0066	0.0006	0.0034	0.0163	0.0018	-0.0010	0.0113
dexcebld	-0.0005	-0.0002	0.0001	0.0297	0.0111	0.0131	0.0096
dseizure	-0.0005	-0.0019	-0.0025	0.0038	-0.0010	-0.0010	-0.0034
[illegible]recip	0.0196	0.0091	0.0067	0.0095	0.0062	0.0020	0.0023
[illegible]long	0.0036	0.0011	0.0001	0.0104	-0.0016	0.0043	-0.0010
ddysfunc	-0.0051	-0.0015	0.0002	0.0058	0.0028	0.0046	0.0224
dcord	0.0031	-0.0001	0.0011	-0.0005	-0.0014	0.0002	0.0056
dotherlb	0.0080	0.0029	0.0091	0.0197	0.0080	0.0088	0.0180
dalcosyn	0.0125	0.0321	0.0306	0.0041	-0.0004	-0.0004	-0.0015
dven130	0.0026	0.0076	0.0087	0.0241	0.0037	0.0134	0.0180
dven30m	0.0121	0.0062	0.0063	0.0177	0.0074	0.0080	0.0083
dnseiz	0.0025	0.0008	-0.0003	-0.0013	0.0037	0.0086	0.0120
dotherab	0.0159	0.0225	0.0225	0.0111	0.0140	0.0103	0.0416

	dhydra	dhemo	dphyper	dchyper	declamp	dincervi	dpre4000
dhydra	1.0000						
dhemo	0.0022	1.0000					
dphyper	0.0260	0.0019	1.0000				
dchyper	0.0129	0.0140	-0.0144	1.0000			
declamp	0.0084	-0.0014	0.0909	0.0341	1.0000		
dincervi	0.0077	-0.0010	0.0049	0.0039	0.0092	1.0000	
dpre4000	0.0051	-0.0008	-0.0012	0.0071	-0.0036	0.0064	1.0000
dpreterm	0.0129	0.0088	0.0070	0.0118	0.0027	0.0515	0.0299
drenal	0.0040	-0.0012	0.0107	0.0183	0.0174	0.0037	-0.0002
drh	0.0085	-0.0017	0.0076	-0.0015	0.0065	0.0012	0.0183
dothermr	0.0430	0.0069	0.0355	0.0268	0.0312	0.0237	0.0044
dmecon	0.0113	0.0046	0.0082	0.0045	0.0009	-0.0016	0.0067
drupture	0.0122	-0.0032	-0.0026	0.0057	0.0012	0.0141	0.0002
dabrupti	0.0080	-0.0016	0.0167	0.0141	0.0062	0.0114	0.0044
dpreplac	0.0052	-0.0013	-0.0029	0.0077	0.0021	0.0050	0.0036
dexcebld	0.0026	0.0107	0.0213	0.0083	0.0119	0.0120	0.0116
dseizure	0.0008	-0.0005	0.0205	0.0007	0.0967	-0.0008	-0.0020
dprecip	-0.0041	-0.0002	-0.0087	0.0035	-0.0045	0.0053	0.0055
dprolong	0.0019	0.0053	0.0052	0.0083	-0.0018	-0.0013	-0.0022
[illegible]sfunc	0.0143	0.0030	0.0664	0.0119	0.0204	0.0060	-0.0033
[illegible]dcord	0.0043	0.0015	0.0032	0.0032	0.0063	0.0027	0.0013
dotherlb	0.0254	0.0025	0.0403	0.0136	0.0220	0.0114	-0.0042
dalcosyn	-0.0007	-0.0002	0.0009	-0.0007	-0.0005	-0.0004	-0.0009
dven130	0.0064	0.0000	0.0274	0.0143	0.0197	0.0126	-0.0060
dven30m	0.0337	0.0079	0.0309	0.0132	0.0236	0.0340	0.0025

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[redacted]

	dpreterm	drenal	drh	dothermr	dmecon	drupture	dabrupti
dpreterm	1.0000						
[redacted]							
drh	0.0064	0.0042	1.0000				
dothermr	0.0486	0.0226	0.0078	1.0000			
dmecon	0.0000	0.0097	0.0047	0.0426	1.0000		
drupture	0.0274	0.0041	0.0053	0.0804	-0.0029	1.0000	
dabrupti	0.0198	0.0013	0.0010	0.0400	0.0014	0.0188	1.0000
dpreplac	0.0104	0.0033	-0.0016	0.0248	-0.0071	0.0025	0.0324
dexcebld	0.0121	0.0160	-0.0003	0.0251	0.0120	0.0174	0.0393
dseizure	0.0046	-0.0010	-0.0014	0.0118	0.0004	0.0016	0.0014
dprecip	0.0409	0.0058	-0.0007	0.0285	0.0113	-0.0022	0.0059
dprolong	0.0018	0.0066	0.0023	0.0105	0.0102	0.0413	-0.0024
ddysfunc	-0.0065	0.0029	0.0033	0.0181	0.0300	0.0373	-0.0042
dcord	0.0029	0.0027	-0.0001	0.0103	0.0078	0.0029	0.0044
dotherlb	0.0012	0.0108	0.0111	0.1075	0.0619	0.0309	0.0227
dalcosyn	-0.0008	-0.0004	-0.0006	0.0069	0.0060	0.0089	-0.0006
dven130	0.0095	0.0361	0.0071	0.0657	0.0602	0.0129	0.0228
dven30m	0.0354	0.0180	0.0085	0.0875	0.0201	0.0535	0.0818
dnseiz	0.0037	0.0037	0.0020	0.0125	0.0114	0.0046	0.0123
dotherab	0.0131	0.0080	0.0182	0.1017	0.0201	0.0667	0.0396

	dpreplac	dexcebld	dseizure	dprecip	dprolong	ddysfunc	dcord
dpreplac	1.0000						
dexcebld	0.0384	1.0000					
dseizure	0.0025	0.0045	1.0000				
dprecip	-0.0056	0.0139	-0.0030	1.0000			
dprolong	-0.0036	0.0132	0.0004	-0.0124	1.0000		
ddysfunc	-0.0059	0.0082	0.0007	-0.0344	0.0382	1.0000	
dcord	0.0035	-0.0015	0.0022	-0.0011	-0.0016	0.0099	1.0000
dotherlb	0.0062	0.0210	0.0058	-0.0193	0.0053	0.0754	0.0228
dalcosyn	-0.0005	-0.0006	-0.0002	0.0018	-0.0007	-0.0002	-0.0005
dven130	0.0117	0.0129	0.0025	0.0003	-0.0001	0.0131	0.0042
dven30m	0.0228	0.0096	0.0099	0.0121	0.0036	-0.0015	0.0165
dnseiz	-0.0009	0.0094	-0.0003	0.0038	-0.0014	-0.0012	0.0070
dotherab	0.0146	0.0178	0.0013	0.0064	0.0025	0.0129	0.0111

	dotherlb	dalcosyn	dven130	dven30m	dnseiz	dotherab
dotherlb	1.0000					
dalcosyn	0.0022	1.0000				
dven130	0.0475	-0.0010	1.0000			
dven30m	0.0502	0.0101	-0.0093	1.0000		
dnseiz	0.0105	-0.0001	0.0059	0.0570	1.0000	
dotherab	0.1002	0.0069	0.0041	0.1109	0.0243	1.0000

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end of do-file

. log close

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. *Texas Natality 1991
do c:\temp\epecoorr\ecn.do

corr dtobacco dtobalco dalcohol danemia dcardiac dlung ddiabete dhydra dhemo
hyper dchyper declamp dincervi dpre4000 dpre
> rupture dabrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord
> dotherlb dalcosyn dven130 dven30m dnseiz dotherab if dbirwt !=9999
(obs=223676)

| dtobacco dtobalco dalcohol danemia dcardiac dlung ddiabete
---|---|---|---|---|---|---|---|
dtobacco| 1.0000
dtobalco| 0.2903 1.0000
dalcohol| 0.2102 0.7723 1.0000
danemia| 0.0138 0.0091 0.0107 1.0000
dcardiac| 0.0040 0.0037 0.0013 0.0103 1.0000
dlung| 0.0148 0.0060 0.0069 0.0102 0.0150 1.0000
ddiabete| 0.0015 -0.0051 -0.0055 0.0113 0.0087 0.0071 1.0000
dhydra| 0.0073 0.0023 0.0021 0.0068 0.0096 0.0098 0.0280
dhemo| 0.0015 0.0028 0.0037 0.0079 0.0021 -0.0012 -0.0013
dphyper| -0.0120 -0.0026 -0.0013 0.0153 0.0052 0.0109 0.0403
dchyper| -0.0005 -0.0006 -0.0007 0.0045 0.0184 0.0128 0.0460
declamp| -0.0057 -0.0020 -0.0004 0.0138 -0.0012 0.0028 0.0086
dincervi| 0.0020 -0.0035 -0.0036 -0.0040 0.0055 0.0010 0.0064
dpre4000| -0.0033 -0.0016 0.0002 0.0238 0.0086 0.0062 0.0299
dpreterm| 0.0306 0.0194 0.0187 0.0231 0.0065 0.0185 -0.0006
drenal| 0.0081 0.0056 0.0067 0.0291 0.0207 0.0211 0.0026
drh| 0.0108 0.0000 0.0045 0.0104 -0.0006 0.0045 0.0061
dothermr| 0.0512 0.0393 0.0405 0.0482 0.0266 0.0249 0.0282
dmecon| 0.0193 0.0089 0.0097 0.0174 0.0104 0.0072 0.0121
drupture| 0.0100 0.0086 0.0068 0.0089 0.0030 0.0078 0.0012
dabrupti| 0.0167 0.0061 0.0069 0.0150 0.0012 0.0003 0.0013
dpreplac| 0.0060 0.0069 0.0070 0.0153 0.0009 -0.0004 0.0092
dexcebld| 0.0007 0.0001 0.0015 0.0241 0.0033 0.0058 0.0070
dseizure| -0.0006 -0.0022 -0.0013 0.0042 0.0027 0.0032 -0.0016
precip| 0.0154 0.0059 0.0053 0.0092 0.0102 0.0050 0.0044
long| 0.0043 -0.0023 -0.0039 0.0155 0.0017 0.0014 0.0017
ysfunc| -0.0043 -0.0046 -0.0015 0.0154 0.0032 0.0018 0.0160
dcord| 0.0075 0.0007 0.0051 0.0029 0.0086 0.0011 0.0035
dotherlb| 0.0077 0.0027 0.0092 0.0186 0.0026 0.0119 0.0175
dalcosyn| 0.0080 0.0307 0.0268 0.0008 0.0081 -0.0005 0.0009
dven130| 0.0046 0.0073 0.0073 0.0271 0.0041 0.0065 0.0210
dven30m| 0.0145 0.0050 0.0050 0.0108 0.0048 0.0149 0.0089
dnseiz| 0.0022 0.0060 0.0037 0.0058 -0.0009 -0.0008 0.0014
dotherab| 0.0250 0.0295 0.0309 0.0135 0.0064 0.0125 0.0279

| dhydra dhemo dphyper dchyper declamp dincervi dpre4000
---|---|---|---|---|---|---|---|
dhydra| 1.0000
dhemo| 0.0003 1.0000
dphyper| 0.0187 -0.0005 1.0000
dchyper| 0.0135 0.0065 -0.0141 1.0000
declamp| 0.0066 -0.0016 0.0727 0.0291 1.0000
dincervi| -0.0011 0.0032 0.0067 0.0017 0.0058 1.0000
dpre4000| 0.0045 0.0007 -0.0021 0.0051 -0.0026 0.0010 1.0000
dpreterm| 0.0139 0.0014 0.0022 0.0089 0.0020 0.0451 0.0429
drenal| 0.0159 0.0054 0.0101 0.0169 0.0162 -0.0019 0.0046
drh| 0.0024 -0.0019 0.0074 0.0025 0.0061 0.0008 0.0125
dothermr| 0.0347 0.0018 0.0354 0.0210 0.0209 0.0149 0.0057
dmecon| 0.0127 -0.0013 0.0096 0.0019 0.0043 -0.0043 0.0101
drupture| 0.0037 0.0006 0.0000 0.0000 0.0021 0.0066 -0.0005
dabrupti| 0.0051 -0.0018 0.0159 0.0060 0.0070 0.0048 0.0014
dpreplac| 0.0067 0.0016 -0.0015 0.0047 0.0012 -0.0021 0.0041
dexcebld| 0.0081 -0.0017 0.0208 0.0090 0.0144 0.0093 0.0107
dseizure| 0.0061 -0.0007 0.0194 0.0030 0.1010 -0.0009 -0.0005
dprecip| -0.0046 0.0009 -0.0044 0.0068 -0.0020 0.0048 0.0158
dprolong| 0.0009 -0.0003 0.0176 0.0101 -0.0011 -0.0003 -0.0004
sfunc| 0.0203 -0.0033 0.0622 0.0188 0.0139 0.0055 -0.0049
dcord| 0.0080 -0.0016 0.0061 0.0039 0.0034 0.0039 0.0023
dotherlb| 0.0268 -0.0052 0.0457 0.0145 0.0311 0.0094 -0.0044
dalcosyn| 0.0050 -0.0003 0.0003 0.0046 -0.0006 -0.0004 -0.0011
dven130| 0.0065 0.0000 0.0221 0.0110 0.0268 0.0140 -0.0050
dven30m| 0.0297 0.0053 0.0248 0.0230 0.0218 0.0263 0.0012

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dnseiz	-0.0014	-0.0005	-0.0022	0.0048	0.0030	0.0055	0.0019
dotherab	0.0242	0.0011	0.0259	0.0162	0.0190	0.0083	0.0058

	dpreterm	drenal	drh	dothermr	dmecon	drupture	dabrupti
dpreterm	1.0000						
drenal	0.0166	1.0000					
drh	0.0059	0.0020	1.0000				
dothermr	0.0318	0.0380	0.0178	1.0000			
dmecon	0.0004	0.0163	0.0008	0.0517	1.0000		
drupture	0.0057	0.0066	0.0009	0.0224	0.0042	1.0000	
dabrupti	0.0166	0.0011	0.0056	0.0298	0.0034	0.0064	1.0000
dpreplac	0.0049	0.0077	-0.0013	0.0314	-0.0074	-0.0027	0.0352
dexcebld	0.0109	0.0108	0.0012	0.0278	0.0140	0.0104	0.0362
dseizure	-0.0021	0.0065	0.0010	0.0126	0.0018	-0.0015	0.0042
dprecip	0.0348	0.0073	0.0041	0.0329	0.0159	-0.0041	0.0030
dprolong	0.0046	0.0038	-0.0010	0.0207	0.0120	0.0434	-0.0012
ddysfunc	-0.0064	0.0060	0.0027	0.0347	0.0276	0.0361	-0.0052
dcord	0.0049	-0.0012	-0.0017	0.0108	0.0111	0.0049	0.0035
dotherlb	0.0088	0.0106	0.0108	0.1160	0.0513	0.0254	0.0238
dalcosyn	-0.0009	-0.0005	0.0053	0.0116	-0.0007	0.0054	-0.0007
dven130	0.0139	0.0496	0.0247	0.0729	0.0938	0.0144	0.0170
dven30m	0.0284	0.0074	0.0104	0.0562	0.0165	0.0251	0.0710
dnseiz	0.0011	-0.0009	-0.0013	0.0123	0.0083	0.0091	0.0207
dotherab	0.0066	0.0115	0.0204	0.0835	0.0238	0.0483	0.0402

	dpreplac	dexcebld	dseizure	dprecip	dprolong	ddysfunc	dcord
dpreplac	1.0000						
dexcebld	0.0396	1.0000					
dseizure	0.0022	0.0201	1.0000				
dprecip	-0.0039	0.0131	0.0007	1.0000			
dprolong	-0.0024	0.0103	0.0025	-0.0116	1.0000		
ddysfunc	-0.0076	0.0036	-0.0044	-0.0288	0.0610	1.0000	
dcord	0.0028	0.0017	-0.0014	-0.0012	0.0010	0.0078	1.0000
dotherlb	0.0048	0.0201	0.0082	-0.0120	0.0106	0.0749	0.0167
dalcosyn	-0.0006	-0.0007	0.0169	-0.0015	-0.0009	0.0009	-0.0006
dven130	0.0056	0.0110	0.0093	0.0009	0.0003	0.0235	0.0102
dven30m	0.0218	0.0141	0.0145	0.0064	0.0038	0.0021	0.0154
dnseiz	0.0078	0.0028	-0.0005	0.0008	0.0071	-0.0017	0.0113
dotherab	0.0177	0.0097	0.0038	-0.0036	0.0068	0.0148	0.0143

	dotherlb	dalcosyn	dven130	dven30m	dnseiz	dotherab
dotherlb	1.0000					
dalcosyn	0.0039	1.0000				
dven130	0.0418	0.0026	1.0000			
dven30m	0.0520	0.0174	-0.0076	1.0000		
dnseiz	0.0118	-0.0002	0.0109	0.0882	1.0000	
dotherab	0.1204	0.0057	0.0044	0.0655	0.0178	1.0000

.
end of do-file

. log close

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. *Texas Natality 1990
. do c:\temp\epeccorr\scr.do

. corr dtobacco dtobalco dalcohol danemia dcardiac dlung ddiabete dhydra dhemo
(dphyper dchyper declamp dincervi dpre4000 dpreterm
 drupture dabrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord
 dotherlb dalcosyn dven130 dven30m dnseiz dotherab if dbirwt !=9999
(obs=252758)
```

	dtobacco	dtobalco	dalcohol	danemia	dcardiac	dlung	ddiabete
dtobacco	1.0000						
dtobalco	0.3196	1.0000					
dalcohol	0.2271	0.7637	1.0000				
danemia	0.0195	0.0163	0.0153	1.0000			
dcardiac	0.0030	0.0004	0.0036	0.0166	1.0000		
dlung	0.0137	0.0111	0.0114	0.0213	0.0310	1.0000	
ddiabete	0.0005	-0.0005	-0.0009	0.0084	0.0095	0.0084	1.0000
dhydra	0.0088	0.0033	0.0021	0.0078	0.0078	0.0103	0.0250
dhemo	0.0027	-0.0004	-0.0001	0.0196	-0.0010	0.0071	-0.0019
dphyper	-0.0110	-0.0044	-0.0039	0.0195	0.0085	0.0092	0.0330
dchyper	0.0020	0.0029	0.0020	0.0035	0.0158	0.0121	0.0523
declamp	-0.0050	-0.0038	-0.0020	0.0092	0.0029	-0.0019	0.0115
dincervi	-0.0011	0.0005	-0.0017	0.0053	0.0046	-0.0022	0.0131
dpre4000	0.0008	0.0008	0.0020	0.0373	0.0065	0.0119	0.0394
dpreterm	0.0440	0.0134	0.0119	0.0252	0.0234	0.0284	0.0162
drenal	0.0081	0.0063	0.0102	0.0152	0.0083	0.0211	0.0090
drh	0.0104	0.0008	0.0007	0.0280	0.0098	0.0170	0.0081
dothermr	0.0629	0.0416	0.0393	0.0517	0.0283	0.0322	0.0307
dmecon	0.0267	0.0141	0.0142	0.0156	0.0076	0.0038	0.0101
drupture	0.0209	0.0123	0.0145	0.0110	0.0059	0.0070	0.0037
dabrupti	0.0172	0.0070	0.0076	0.0172	0.0013	0.0111	0.0064
dpreplac	0.0059	0.0022	0.0006	0.0196	0.0032	0.0004	0.0055
dexcebld	0.0023	-0.0014	-0.0024	0.0296	0.0073	0.0090	0.0043
dseizure	-0.0025	-0.0023	-0.0017	0.0026	0.0027	-0.0010	-0.0010
dprecip	0.0208	0.0100	0.0099	0.0083	0.0067	0.0091	0.0054
dprolong	0.0023	0.0000	-0.0013	0.0150	0.0034	0.0057	0.0074
ysfunc	-0.0072	-0.0038	-0.0018	0.0157	0.0013	0.0095	0.0178
dcord	0.0084	0.0057	0.0068	0.0093	0.0013	0.0000	0.0036
dotherlb	0.0150	0.0054	0.0083	0.0367	0.0083	0.0131	0.0214
dalcosyn	0.0064	0.0248	0.0310	0.0027	-0.0006	-0.0005	0.0027
dven130	0.0122	0.0076	0.0064	0.0291	0.0004	0.0037	0.0178
dven30m	0.0142	0.0078	0.0060	0.0164	0.0058	0.0093	0.0086
dnseiz	0.0018	0.0040	0.0042	0.0042	-0.0011	-0.0011	0.0031
dotherab	0.0296	0.0267	0.0269	0.0172	0.0059	0.0120	0.0375

	dhydra	dhemo	dphyper	dchyper	declamp	dincervi	dpre4000
dhydra	1.0000						
dhemo	0.0008	1.0000					
dphyper	0.0263	0.0004	1.0000				
dchyper	0.0217	0.0151	0.0484	1.0000			
declamp	0.0181	0.0043	0.0898	0.0330	1.0000		
dincervi	0.0037	-0.0010	0.0065	0.0003	0.0178	1.0000	
dpre4000	0.0056	0.0017	0.0024	0.0076	-0.0028	-0.0016	1.0000
dpreterm	0.0264	0.0018	0.0065	0.0150	0.0010	0.0514	0.0231
drenal	0.0071	-0.0010	0.0106	0.0248	0.0144	0.0031	0.0086
drh	0.0038	0.0036	0.0065	0.0021	0.0077	0.0054	0.0147
dothermr	0.0599	0.0176	0.0254	0.0306	0.0290	0.0257	0.0170
dmecon	0.0194	0.0095	0.0063	0.0074	0.0054	-0.0054	0.0076
drupture	0.0116	-0.0014	0.0028	-0.0003	0.0025	0.0118	0.0020
dabrupti	0.0183	0.0012	0.0124	0.0057	0.0061	0.0120	-0.0005
dpreplac	0.0083	0.0057	-0.0017	0.0009	0.0026	0.0018	0.0084
dexcebld	0.0070	-0.0013	0.0165	0.0082	0.0106	0.0075	0.0041
dseizure	0.0006	-0.0005	0.0250	0.0050	0.0813	-0.0011	-0.0005
dprecip	-0.0018	0.0063	-0.0084	0.0044	-0.0023	0.0075	0.0102
dprolong	0.0128	0.0031	0.0184	0.0085	0.0079	0.0003	0.0002
ddysfunc	0.0166	0.0021	0.0669	0.0213	0.0281	0.0094	0.0030
dcord	0.0115	-0.0012	0.0112	0.0010	0.0048	0.0041	-0.0015
therlb	0.0301	0.0072	0.0530	0.0170	0.0249	0.0103	0.0081
dalcosyn	0.0035	-0.0002	0.0036	-0.0009	0.0043	-0.0006	-0.0012
dven130	0.0220	0.0028	0.0188	0.0114	0.0403	0.0035	-0.0048
dven30m	0.0383	0.0033	0.0220	0.0085	0.0205	0.0348	-0.0004

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dnseiz	0.0111	-0.0005	[illegible]	0.0066	[illegible]	[illegible]	0.0026
dotherab	0.0336	0.0033	[illegible]	0.0125	0.0219	0.0085	0.0061

	dpreterm	drenal	drh	dotherar	dmecon	drupture	dabrupti
dpreterm	1.0000						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
drh	0.0087	0.0022	1.0000				
[illegible]rmr	0.0661	0.0302	0.0231	1.0000			
dmecon	-0.0002	0.0050	0.0011	0.0458	1.0000		
drupture	0.0273	0.0071	0.0017	0.0776	-0.0040	1.0000	
dabrupti	0.0185	0.0051	-0.0007	0.0387	0.0003	0.0173	1.0000
dpreplac	0.0051	0.0019	-0.0003	0.0336	-0.0083	0.0085	0.0536
dexcebld	0.0107	0.0103	0.0037	0.0341	0.0099	0.0056	0.0418
dseizure	0.0032	-0.0010	-0.0016	0.0135	0.0019	-0.0030	0.0087
dprecip	0.0513	0.0038	0.0046	0.0405	0.0114	-0.0036	0.0028
dprolong	0.0075	0.0015	0.0041	0.0283	0.0193	0.0646	-0.0014
ddysfunc	-0.0053	0.0074	0.0125	0.0279	0.0262	0.0446	-0.0046
dcord	0.0074	0.0028	-0.0009	0.0250	0.0120	0.0050	0.0090
dotherlb	0.0157	0.0071	0.0125	0.1090	0.0446	0.0197	0.0260
dalcosyn	-0.0012	-0.0005	-0.0009	0.0050	0.0139	0.0062	0.0040
dven130	0.0101	0.0120	0.0404	0.0618	0.0755	0.0160	0.0323
dven30m	0.0339	0.0039	0.0080	0.0822	0.0136	0.0511	0.0765
dnseiz	0.0045	0.0061	-0.0017	0.0214	0.0139	0.0096	0.0056
dotherab	0.0241	0.0160	0.0082	0.0900	0.0174	0.0494	0.0432

	dpreplac	dexcebld	dseizure	dprecip	dprolong	ddysfunc	dcord
dpreplac	1.0000						
dexcebld	0.0502	1.0000					
dseizure	-0.0012	0.0043	1.0000				
dprecip	-0.0045	0.0055	0.0014	1.0000			
dprolong	-0.0018	0.0184	0.0027	-0.0104	1.0000		
ddysfunc	-0.0091	0.0081	0.0060	-0.0287	0.0928	1.0000	
dcord	0.0002	-0.0007	-0.0013	-0.0031	0.0027	0.0134	1.0000
dotherlb	0.0101	0.0263	0.0054	-0.0089	0.0228	0.0724	0.0306
dalcosyn	-0.0006	-0.0007	-0.0003	-0.0015	0.0033	-0.0014	-0.0007
dven130	0.0063	0.0157	0.0103	0.0053	0.0038	0.0203	0.0128
[illegible]n30m	0.0422	0.0127	0.0121	0.0131	0.0091	0.0003	0.0124
[illegible]seiz	0.0047	0.0038	-0.0005	0.0009	0.0045	0.0014	0.0184
dotherab	0.0271	0.0123	0.0000	0.0037	0.0083	0.0130	0.0364

	dotherlb	dalcosyn	dven130	dven30m	dnseiz	dotherab
dotherlb	1.0000					
dalcosyn	0.0016	1.0000				
dven130	0.0505	0.0017	1.0000			
dven30m	0.0489	0.0123	-0.0088	1.0000		
dnseiz	0.0102	0.0143	0.0034	0.0677	1.0000	
dotherab	0.1178	0.0100	0.0128	0.0957	0.0441	1.0000

.
end of do-file

. log close

51710 6335

Texas Natality 1989

do c:\temp\speccorr\acr.do

```
. corr dtobacco dtobalco dalcobol danemia dcardiac dlung ddiabete dhydra dhemo
  dphyper dchyper declamp [illegible]
  rupture dabrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord
>  dotherlb dalcosyn dven130 dven30m dnseiz dotherab if dbirwt !=9999
(obs=183800)
```

	dtobacco	dtobalco	dalcohol	danemia	dcardiac	dlung	ddiabete
dtobacco	1.0000						
dtobalco	0.3297	1.0000					
dalcohol	0.2229	0.7428	1.0000				
danemia	0.0135	0.0124	0.0130	1.0000			
dcardiac	0.0040	0.0040	0.0063	0.0050	1.0000		
dlung	0.0138	0.0071	0.0094	0.0123	0.0307	1.0000	
ddiabete	-0.0083	-0.0069	-0.0054	0.0023	0.0058	0.0139	1.0000
dhydra	0.0046	0.0002	-0.0011	0.0072	0.0127	0.0022	0.0304
dhemo	0.0017	0.0035	0.0026	0.0335	0.0075	-0.0011	0.0054
dphyper	-0.0151	-0.0031	-0.0030	0.0153	0.0060	0.0078	0.0298
dchyper	0.0003	0.0024	0.0022	0.0041	0.0239	0.0183	0.0502
declamp	-0.0091	-0.0044	-0.0049	0.0087	-0.0007	0.0052	0.0096
dincervi	0.0040	-0.0023	-0.0039	0.0022	0.0011	0.0020	0.0012
dpre4000	-0.0037	-0.0007	-0.0004	0.0152	0.0023	0.0094	0.0368
dpreterm	0.0393	0.0194	0.0126	0.0152	0.0081	0.0181	0.0096
drenal	0.0083	0.0077	0.0066	0.0288	0.0082	0.0163	0.0105
drh	0.0084	0.0006	0.0090	0.0136	0.0098	0.0064	0.0050
dothermr	0.0515	0.0461	0.0493	0.0322	0.0199	0.0197	0.0198
dmecon	0.0216	0.0156	0.0122	0.0124	0.0020	0.0068	0.0046
drupture	0.0180	0.0129	0.0149	0.0155	0.0020	0.0036	0.0068
dabrupti	0.0174	0.0079	0.0053	0.0219	0.0002	0.0012	0.0037
dpreplac	0.0050	0.0026	0.0018	0.0268	-0.0013	-0.0007	0.0081
dexcebld	-0.0001	0.0007	-0.0006	0.0366	0.0044	0.0044	0.0032
dseizure	-0.0011	-0.0025	-0.0017	0.0050	-0.0012	-0.0010	0.0015
dprecip	0.0143	0.0107	0.0110	0.0051	0.0030	0.0062	-0.0012
dprolong	0.0015	-0.0006	0.0020	0.0081	0.0069	0.0054	0.0084
ddysfunc	-0.0101	-0.0011	0.0014	0.0083	0.0041	0.0074	0.0231
dcord	0.0036	-0.0035	-0.0006	0.0098	0.0055	0.0031	0.0032
dotherlb	0.0111	0.0099	0.0125	0.0287	0.0118	0.0140	0.0222
dalcosyn	0.0045	0.0065	0.0100	0.0130	-0.0006	-0.0006	0.0010
dven130	0.0055	-0.0003	-0.0008	0.0079	0.0076	0.0150	0.0130
dven30m	0.0107	0.0046	0.0066	0.0183	0.0098	0.0151	0.0059
dnseiz	-0.0010	0.0072	0.0068	-0.0022	0.0030	-0.0011	0.0006
dotherab	0.0261	0.0288	0.0236	0.0142	0.0097	0.0127	0.0563

	dhydra	dhemo	dphyper	dchyper	declamp	dincervi	dpre4000
dhydra	1.0000						
dhemo	0.0045	1.0000					
dphyper	0.0195	0.0005	1.0000				
dchyper	0.0214	0.0164	0.0497	1.0000			
declamp	0.0117	0.0020	0.0824	0.0244	1.0000		
dincervi	0.0071	0.0035	-0.0001	-0.0011	0.0028	1.0000	
dpre4000	0.0125	-0.0025	0.0026	0.0128	-0.0059	0.0042	1.0000
dpreterm	0.0181	0.0086	0.0074	0.0138	-0.0028	0.0797	0.0101
drenal	0.0143	0.0209	0.0095	0.0276	0.0039	-0.0028	0.0034
drh	0.0011	0.0104	0.0035	0.0034	0.0105	0.0039	0.0040
dothermr	0.0447	0.0077	0.0189	0.0205	0.0227	0.0296	0.0132
dmecon	0.0131	0.0042	0.0069	0.0027	0.0042	-0.0033	0.0107
drupture	0.0111	0.0014	0.0013	0.0061	-0.0019	0.0241	0.0023
dabrupti	0.0142	0.0050	0.0203	0.0052	0.0120	0.0214	0.0004
dpreplac	0.0095	-0.0013	-0.0010	0.0013	0.0005	0.0046	0.0018
dexcebld	0.0043	-0.0017	0.0123	0.0027	-0.0004	0.0155	0.0129
dseizure	0.0017	-0.0005	0.0201	0.0038	0.1242	-0.0011	-0.0023
dprecip	0.0007	0.0019	-0.0111	-0.0021	-0.0038	0.0003	0.0138
dprolong	0.0052	0.0031	0.0154	0.0074	0.0061	0.0045	0.0106
ddysfunc	0.0176	0.0018	0.0656	0.0210	0.0158	0.0027	0.0044
dcord	0.0054	-0.0013	0.0064	0.0000	0.0059	0.0044	0.0040
dotherlb	0.0350	0.0049	0.0407	0.0231	0.0206	0.0166	0.0110
dalcosyn	0.0051	-0.0003	0.0001	-0.0011	0.0128	-0.0006	-0.0013
dven130	0.0285	0.0034	0.0174	0.0124	0.0169	0.0111	0.0067
dven30m	0.0402	0.0043	0.0262	0.0122	0.0205	0.0408	0.0023

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	dpreterm	drenal	drh	dthermr	dmecon	drupture	dabrupti
dpreterm	1.0000						
drenal	[illegible]						
drh	0.0043	0.0100	1.0000				
thermr	0.0578	0.0299	0.0203	1.0000			
dmecon	-0.0048	0.0066	0.0029	0.0245	1.0000		
drupture	0.0307	0.0084	0.0012	0.0856	-0.0059	1.0000	
dabrupti	0.0218	0.0087	0.0018	0.0491	0.0003	0.0169	1.0000
dpreplac	0.0146	-0.0031	-0.0003	0.0370	-0.0111	0.0053	0.0576
dexcebld	0.0027	0.0031	-0.0007	0.0239	0.0053	0.0128	0.0231
dseizure	-0.0023	0.0036	-0.0013	0.0032	-0.0022	-0.0014	0.0020
dprecip	0.0457	0.0032	0.0041	0.0296	0.0141	-0.0020	0.0043
dprolong	0.0044	0.0038	0.0051	0.0198	0.0214	0.0697	-0.0001
ddysfunc	-0.0061	-0.0001	0.0108	0.0310	0.0327	0.0501	-0.0071
dcord	0.0051	0.0004	0.0011	0.0126	0.0073	0.0048	0.0076
dotherlb	0.0208	0.0124	0.0175	0.1081	0.0350	0.0206	0.0246
dalcosyn	-0.0013	0.0078	-0.0007	0.0083	0.0027	0.0044	-0.0009
dven130	0.0156	0.0066	0.0118	0.0445	0.0429	0.0168	0.0218
dven30m	0.0369	0.0125	0.0055	0.0808	0.0097	0.0597	0.0832
dnseiz	0.0125	0.0030	-0.0014	0.0155	0.0143	0.0090	0.0240
dotherab	0.0271	0.0101	0.0121	0.0967	0.0224	0.0544	0.0413

	dpreplac	dexcebld	dseizure	dprecip	dprolong	ddysfunc	dcord
dpreplac	1.0000						
dexcebld	0.0388	1.0000					
dseizure	-0.0012	0.0020	1.0000				
dprecip	-0.0053	0.0005	0.0006	1.0000			
dprolong	-0.0010	0.0172	0.0008	-0.0132	1.0000		
ddysfunc	-0.0084	0.0068	-0.0003	-0.0342	0.1080	1.0000	
dcord	-0.0016	-0.0003	0.0032	-0.0049	-0.0033	0.0053	1.0000
dotherlb	0.0046	0.0272	0.0019	-0.0071	0.0210	0.0752	0.0213
dalcosyn	0.0074	-0.0009	-0.0003	0.0016	-0.0011	0.0006	-0.0007
dven130	0.0103	0.0064	0.0039	0.0111	0.0045	0.0153	0.0119
dven30m	0.0375	0.0175	0.0049	0.0092	0.0033	-0.0012	0.0328
dnseiz	-0.0013	0.0079	-0.0005	0.0016	0.0054	0.0033	0.0146
dotherab	0.0253	0.0091	0.0056	0.0018	0.0087	0.0076	0.0102

	dotherlb	dalcosyn	dven130	dven30m	dnseiz	dotherab
dotherlb	1.0000					
dalcosyn	0.0056	1.0000				
dven130	0.0739	0.0093	1.0000			
dven30m	0.0576	0.0166	-0.0070	1.0000		
dnseiz	0.0130	-0.0003	0.0136	0.0838	1.0000	
dotherab	0.1018	0.0140	0.0342	0.0647	0.0209	1.0000

.

end of do-file

. log close

51710 6337

Attachment 5
Tabulations

51710 6338

*Texas Natality 1993

. do c:\temp\spectab\stab.do

.

. tab ddisease if dlwbirwt ==1

ddisease	Freq.	Percent	Cum.
0	1996	48.06	48.06
1	2157	51.94	100.00
Total	4153	100.00	

. tab ddisease if dmdbirwt ==1

ddisease	Freq.	Percent	Cum.
0	11431	60.28	60.28
1	7531	39.72	100.00
Total	18962	100.00	

. tab ddisease if dnlbirwt ==1

ddisease	Freq.	Percent	Cum.
0	242986	80.16	80.16
1	60140	19.84	100.00
Total	303126	100.00	

. tab disdeliv if dlwbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	3153	75.92	75.92
1	1000	24.08	100.00
Total	4153	100.00	

. tab disdeliv if dmdbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	16014	84.45	84.45
1	2948	15.55	100.00
Total	18962	100.00	

. tab disdeliv if dnlbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	272623	89.94	89.94
1	30503	10.06	100.00
Total	303126	100.00	

. tab sum if dlwbirwt ==1

sum	Freq.	Percent	Cum.
0	1655	39.85	39.85
1	2498	60.15	100.00
Total	4153	100.00	

. tab sum if dmdbirwt ==1

sum	Freq.	Percent	Cum.
0	10144	53.50	53.50
1	8818	46.50	100.00

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Total	18962	100.00

. tab sum if dnlbfrwt ==1

sum	Freq.	Percent	Cum.
0	221661	73.13	73.13
1	81465	26.87	100.00
Total	303126	100.00	

.
end of do-file

. log close

51710 6340

*Texas Natality 1992

. do c:\temp\spectab\stab.do

. tab ddisease if dlwbirwt ==1

ddisease	Freq.	Percent	Cum.
0	1980	51.97	51.97
1	1830	48.03	100.00
Total	3810	100.00	

. tab ddisease if dmdbirwt ==1

ddisease	Freq.	Percent	Cum.
0	11584	61.63	61.63
1	7212	38.37	100.00
Total	18796	100.00	

. tab ddisease if dnlbirwt ==1

ddisease	Freq.	Percent	Cum.
0	244137	80.71	80.71
1	58340	19.29	100.00
Total	302477	100.00	

. tab disdeliv if dlwbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	2928	76.85	76.85
1	882	23.15	100.00
Total	3810	100.00	

. tab disdeliv if dmdbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	15907	84.63	84.63
1	2889	15.37	100.00
Total	18796	100.00	

. tab disdeliv if dnlbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	272602	90.12	90.12
1	29875	9.88	100.00
Total	302477	100.00	

. tab sum if dlwbirwt ==1

sum	Freq.	Percent	Cum.
0	1694	44.46	44.46
1	2116	55.54	100.00
Total	3810	100.00	

tab sum if dmdbirwt ==1

sum	Freq.	Percent	Cum.
0	10368	55.16	55.16
1	8428	44.84	100.00

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Total	10796	100.00	

```
. tab sum if dnlbirwt ==1
```

sum	Freq.	Percent	Cum.
0	222989	73.72	73.72
1	79488	26.28	100.00
Total	302477	100.00	

```
.
end of do-file

. log close
```

51710 6342

*Texas Natality 1991

. do c:\temp\spectab\stab.do

. tab ddisease if dmdbirwt ==1

ddisease	Freq.	Percent	Cum.
0	2623	71.90	71.90
1	1025	28.10	100.00
Total	3648	100.00	

. tab ddisease if dmdbirwt ==1

ddisease	Freq.	Percent	Cum.
0	13943	73.48	73.48
1	5032	26.52	100.00
Total	18975	100.00	

. tab ddisease if dnlbirwt ==1

ddisease	Freq.	Percent	Cum.
0	247470	82.65	82.65
1	51956	17.35	100.00
Total	299426	100.00	

. tab disdeliv if dlwbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	2737	75.03	75.03
1	911	24.97	100.00
Total	3648	100.00	

. tab disdeliv if dmdbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	15982	84.23	84.23
1	2993	15.77	100.00
Total	18975	100.00	

. tab disdeliv if dnlbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	270808	90.44	90.44
1	28618	9.56	100.00
Total	299426	100.00	

. tab sum if dlwbirwt ==1

sum	Freq.	Percent	Cum.
0	1976	54.17	54.17
1	1672	45.83	100.00
Total	3648	100.00	

. tab sum if dmdbirwt ==1

sum	Freq.	Percent	Cum.
0	11864	62.52	62.52
1	7111	37.48	100.00

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Total | 18975 100.00

. tab sum if dnlbirwt ==1

sum	Freq.	Percent	Cum.
0	226956	75.80	75.80
1	72470	24.20	100.00
Total	299426	100.00	

.

end of do-file

. log close

. do c:\temp\spectab\stab.do

. tab ddisease if dlwbirwt ==1

ddisease	Freq.	Percent	Cum.
0	1885	50.56	50.56
1	1843	49.44	100.00
Total	3728	100.00	

. tab ddisease if dmdbirwt ==1

ddisease	Freq.	Percent	Cum.
0	11423	61.94	61.94
1	7020	38.06	100.00
Total	18443	100.00	

. tab ddisease if dnlbirwt ==1

ddisease	Freq.	Percent	Cum.
0	244948	81.97	81.97
1	53893	18.03	100.00
Total	298841	100.00	

. tab disdeliv if dlwbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	2857	76.64	76.64
1	871	23.36	100.00
Total	3728	100.00	

. tab disdeliv if dmdbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	15753	85.41	85.41
1	2690	14.59	100.00
Total	18443	100.00	

. tab disdeliv if dnlbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	270742	90.60	90.60
1	28099	9.40	100.00
Total	298841	100.00	

. tab sum if dlwbirwt ==1

sum	Freq.	Percent	Cum.
0	1668	44.74	44.74
1	2060	55.26	100.00
Total	3728	100.00	

. tab sum if dmdbirwt ==1

sum	Freq.	Percent	Cum.
0	10340	56.06	56.06
1	8103	43.94	100.00

Total	18443	100.00	

```
tab sum if dnlbirwt ==1
```

sum	Freq.	Percent	Cum.
0	225489	75.45	75.45
1	73352	24.55	100.00
Total	298841	100.00	

```
nd of do-file

 log close
```

51710 6346

. do c:\temp\spectab\stab.do

. tab ddisease if dlwbirwt ==1

ddisease	Freq.	Percent	Cum.
0	2296	62.60	62.60
1	1372	37.40	100.00
Total	3668	100.00	

. tab ddisease if dmdbirwt ==1

ddisease	Freq.	Percent	Cum.
0	12414	68.86	68.86
1	5613	31.14	100.00
Total	18027	100.00	

. tab ddisease if dnlbirwt ==1

ddisease	Freq.	Percent	Cum.
0	249553	85.89	85.89
1	41004	14.11	100.00
Total	290557	100.00	

. tab disdeliv if dlwbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	2998	81.73	81.73
1	670	18.27	100.00
Total	3668	100.00	

. tab disdeliv if dmdbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	15719	87.20	87.20
1	2308	12.80	100.00
Total	18027	100.00	

. tab disdeliv if dnlbirwt ==1

disdeliv	Freq.	Percent	Cum.
0	267241	91.98	91.98
1	23316	8.02	100.00
Total	290557	100.00	

. tab sum if dlwbirwt ==1

sum	Freq.	Percent	Cum.
0	2096	57.14	57.14
1	1572	42.86	100.00
Total	3668	100.00	

. tab sum if dmdbirwt ==1

sum	Freq.	Percent	Cum.
0	11565	64.15	64.15
1	6462	35.85	100.00

Total	18027	100.00

```
. tab sum if dnlbirwt ==1
```

sum	Freq.	Percent	Cum.
0	233290	80.29	80.29
1	57267	19.71	100.00
Total	290557	100.00	

```
.
end of do-file

. log close
```

Attachment 6
Regressions

51710 6349

```
. *Texas Natality 1993
. do c:\temp\regress\normal93.do

. set more 1
```


51710 6350

```
. *regress normal weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried i
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdi dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> vi itobincv dpre4000 dpreterm iprtmage drenal drh dot
> brupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dvenl30 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 &
>  dbirwt >2500 & gestat !=99 & nprevist !=99

  Source |       SS       df       MS              Number of obs =  276038
---------+------------------------------           F( 61,275976) =  773.27
   Model |  8.1407e+09     61  133453376            Prob > F      =  0.0000
Residual |  4.7629e+10275976  172583.225            R-squared     =  0.1460
---------+------------------------------           Adj R-squared =  0.1458
   Total |  5.5769e+10276037  202036.263            Root MSE      =  415.43

------------------------------------------------------------------------------
  dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |    133.0092   52.44014     2.536   0.011       30.228    235.7905
dtobgest |   -7.847828   1.329338    -5.904   0.000    -10.45329   -5.242363
dtobalco |    25.80044   14.09411     1.831   0.067    -1.823625    53.4245
dalcohol |   -34.3272   10.00732    -3.430   0.001    -53.94128   -14.71313
   dmale |    114.9259   1.583806    72.563   0.000     111.8217    118.0302
  gestat |    56.26505   4.947243    11.373   0.000     46.56859    65.96151
dmag16gs |   -21.94082   5.722994    -3.834   0.000    -33.15773    -10.7239
dm1640gs |   -8.170298    4.96079    -1.647   0.100    -17.89331    1.552716
 dmage16 |    825.0273   223.0968     3.698   0.000     387.7637    1262.291
dmag1640 |     326.889   193.3022     1.691   0.091    -51.97802    705.7561
nprevist |    4.432942   .2726333    16.260   0.000     3.898588    4.967296
  monpre |     .001891   .5853861     0.003   0.997     -1.14545    1.149232
  dblack |   -163.9367   2.743825   -59.748   0.000    -169.3145   -158.5589
  damind |   -190.1944   5.308123   -35.831   0.000    -200.5982   -179.7906
   dasia |    62.89647   17.42433     3.610   0.000     28.74526    97.04768
dhispani |   -72.19024   2.003678   -36.029   0.000    -76.11739   -68.26309
 dmarried |    35.04726   2.380278    14.724   0.000     30.38199    39.71254
  ivord9 |    35.92974   .6680055    53.787   0.000     34.62047    37.23901
 dnoeduc |    2.190783   11.39234     0.192   0.848    -20.1379    24.51946
   delem |   -32.04037   3.192338   -10.037   0.000    -38.29726   -25.78347
  dsomhs |   -59.30108   2.454612   -24.159   0.000    -64.11206   -54.49011
    dhsg |   -33.37996   2.015894   -16.558   0.000    -37.33106   -29.42886
   dtwin |   -483.9191   7.746367   -62.470   0.000    -499.1017   -468.7364
 dtriple |   -553.0157   115.2804    -4.797   0.000    -778.9621   -327.0692
   dquad |   (dropped)
 danemia |   -7.092083   5.311623    -1.335   0.182    -17.50272    3.318553
 dcardiac |   -48.05108   15.37631    -3.125   0.002    -78.18823   -17.91393
   dlung |    -13.9164   15.77432    -0.882   0.378    -44.83363    17.00084
 ddiabete |    91.78983   4.906269    18.709   0.000     82.17367     101.406
 ialcdiab |   -.9976343    44.8632    -0.022   0.982    -88.92828    86.93301
  dhydra |   -104.0792   9.912734   -10.500   0.000    -123.5079   -84.65055
   dhemo |   -66.35614   43.35537    -1.531   0.126    -151.3315    18.6192
  dphyper |    -57.3396   4.767314   -12.028   0.000    -66.68341   -47.9958
  dchyper |   -78.42107   10.94444    -7.165   0.000    -99.87188   -56.97026
  declamp |   -60.26734   17.08968    -3.527   0.000    -93.76264   -26.77204
 itobeclm |    106.7567   65.69599     1.625   0.104    -22.00568    235.519
 ialceclm |   (dropped)
  dincervi |   -27.09111   22.31674    -1.214   0.225    -70.83131    16.64909
 itobincv |   -133.3897   80.37707    -1.660   0.097    -290.9265    24.14719
 dpre4000 |    341.6149   8.139209    41.972   0.000     325.6623    357.5676
 dpreterm |   -262.2253    51.6958    -5.072   0.000    -363.5477   -160.903
 iprtmage |    2.721597   1.842568     1.477   0.140    -.8897867    6.332981
   drenal |   -40.11754   18.63755    -2.153   0.031    -76.64663   -3.588453
      drh |   -11.54943   10.74845    -1.075   0.283    -32.61609    9.517227
 dothermr |   -35.32374   2.550192   -13.851   0.000    -40.32205   -30.32544
   dmecon |    53.73773   3.584833    14.990   0.000     46.71155    60.7639
 drupture |   -100.0188   6.964446   -14.361   0.000    -113.5689   -86.36863
 dabrupti |   -154.3206   14.98243   -10.300   0.000    -183.6857   -124.9554
 dpreplac |    -158.226   15.63091   -10.123   0.000    -188.8621   -127.5898
 dexcebld |    68.96488   12.85507     5.365   0.000     43.7693    94.16047
 dseizure |   -88.71259   47.30151    -1.875   0.061    -181.4222    3.997066
  dprecip |   -69.00385   6.336434   -10.890   0.000    -81.42309   -56.58462
 dprolong |    23.57773   12.25185     1.924   0.054    -.4355554    47.59101
 ddysfunc |    121.9387   3.33723     36.539   0.000     115.3978    128.4796
```

51710 6351

dcord	6.324807	15.55712	0.407	0.684	-24.16673	36.81634
dotherlb	23.07141	2.594225	8.893	0.000	17.9888	28.15402
dalcohyn	-83.99218	157.2095	-0.534	0.593	-392.1186	224.1342
dven130	-4.820996	6.940038	-0.695	0.487	-18.42328	8.781288
dven30m	-74.732	15.55676	-4.804	0.000	-105.2228	-44.24118
dhospiz	-114.1315	54.2671	-2.103	0.035	-220.4815	-7.781439
dr ab	55.39779	4.788203	11.570	0.000	[illegible]	[illegible]
di cr	-3.63352	4.19533	-0.866	0.386	-11.85625	4.589212
dintercr	-5.2853	3.357896	-1.574	0.115	-11.86668	1.296084
_cons	1086.317	192.8279	5.634	0.000	708.3792	1464.254

51710 6352

```
. *Texas Natality 1993
. do c:\temp\regress\low93.do

. set more 1

. set linesize 300
```

51710 6353

```
. *regress low weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried 1
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete dalcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 &
>  dbirwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99

  Source |       SS       df       MS              Number of obs =   16732
---------+------------------------------           F( 62, 16669) =   85.99
   Model |  279786886     62  4512691.71           Prob > F      =  0.0000
Residual |  874753304  16669  52477.8513           R-squared     =  0.2423
---------+------------------------------           Adj R-squared =  0.2395
   Total |  1.1545e+09  16731  69006.0481           Root MSE      =  229.08

------------------------------------------------------------------------------
  dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   26.24178   59.04289     0.444   0.657    -89.48856    141.9721
dtobgest |  -.9103508   1.609753    -0.566   0.572    -4.065638    2.244937
dtobalco |  -33.92244   26.93538    -1.259   0.208    -86.71865    18.87377
dalcohol |   14.50218   23.42057     0.619   0.536    -31.40462    60.40897
   dmale |   1.484968   3.57552     0.415   0.678     -5.52343    8.493367
  gestat |   30.60439   6.059891     5.050   0.000     18.72636    42.48242
dmag16gs |    2.13946   6.945588     0.308   0.758    -11.47463    15.75355
dm1640gs |   2.513612   6.081013     0.413   0.679    -9.405819    14.43304
 dmage16 |  -51.91396   251.4308    -0.206   0.836     -544.745    440.9171
dmag1640 |   -88.2898   220.4698    -0.400   0.689     -520.434    343.8544
nprevist |   2.986814   .5230127     5.711   0.000     1.961654    4.011975
  monpre |   4.906934   1.181323     4.154   0.000     2.591415    7.222452
  dblack |  -13.24411   5.212063    -2.541   0.011     -23.4603   -3.027908
  damind |   15.16762   11.95212     1.269   0.204    -8.259814    38.59505
   dasia |  -28.67239   44.25807    -0.648   0.517    -115.4229    58.07812
dhispani |   8.752061   4.703289     1.861   0.063    -.4668855    17.97101
dmarried |   7.662079   4.637857     1.652   0.099    -1.428613    16.75277
   ivord9 |   4.476645   1.40675     3.182   0.001     1.719265    7.234026
  dnoeduc |  -30.79044   23.5416    -1.308   0.191    -76.93448    15.35359
   delem |   -34.0352   7.263568    -4.686   0.000    -48.27257   -19.79784
  dsomhs |  -19.04941   5.40708     -3.523   0.000    -29.64786   -8.45096
    dhsg |  -17.26726   4.686463    -3.684   0.000    -26.45323    -8.0813
   dtwin |   -55.0484   4.987831   -11.037   0.000    -64.82508   -45.27172
 dtriple |  -159.6928   20.66012    -7.730   0.000    -200.1888   -119.1967
   dquad |  -261.5601   96.78452    -2.702   0.007     -451.268   -71.85214
 danemia |    18.2868   10.80861     1.692   0.091    -2.89923    39.47283
dcardiac |   29.40186   32.60303     0.902   0.367    -34.50355    93.30727
   dlung |   29.63453   31.3437      0.945   0.344    -31.80245    91.07152
ddiabete |   18.76889   11.18494     1.678   0.093    -3.154786    40.69256
ialcdiab |   102.6651   95.45568     1.076   0.282     -84.4382    289.7683
  dhydra |  -62.58634   11.72614    -5.337   0.000    -85.57082   -39.60185
  dhemo  |  -44.78493    76.7141    -0.584   0.559    -195.1527    105.5829
 dphyper |  -64.20278   6.859838    -9.359   0.000    -77.64879   -50.75676
 dchyper |  -51.40277   15.96666    -3.219   0.001    -82.69912   -20.10642
 declamp |  -42.36292   17.56558    -2.412   0.016    -76.79332    -7.93251
itobeclm |   5.132492   54.53758     0.094   0.925     -101.767     112.032
ialceclm |  (dropped)
dincervi |  -35.18088   31.94904    -1.101   0.271    -97.8044     27.44264
itobincv |  -40.70427   136.2696    -0.299   0.765    -307.8071    226.3985
dpre4000 |   32.14383   32.41603     0.992   0.321    -31.39503    95.6827
dpreterm |  -48.02896   52.29875    -0.918   0.358    -150.5401    54.48214
iprtmage |   .5919363   1.875007     0.316   0.752    -3.083276    4.267149
  drenal |   -30.7352   32.92024    -0.934   0.351    -95.26237    33.79197
     drh |   61.80575   24.05393     2.569   0.010     14.6575     108.954
dothermr |  -11.31217   4.166623    -2.835   0.005    -19.9792    -3.64515
  dmecon |  -11.38835   10.34536    -1.101   0.271    -31.66635    8.889658
drupture |  -28.73875   7.573686    -3.795   0.000    -43.58397   -13.89352
dabrupti |  -89.11991   12.84319    -6.939   0.000    -114.2939    -63.94589
 dpreplac |   14.63351   17.8476     0.820   0.412    -20.34968    49.6167
  xcebld |   32.91331   20.95134     1.571   0.116    -8.153535    73.98016
 dseizure |  -54.80623   47.13159    -1.163   0.245    -147.1892    37.57669
  dprecip |   1.512477   11.10582     0.136   0.892    -20.25611    23.28106
 dprolong |   65.85504   27.95872     2.355   0.019     11.05298    120.6571
 ddysfunc |  -1.065597   9.463938    -0.113   0.910    -19.61592    17.48473
```

51710 6354

dcord	26.11942	25.76551	1.014	0.311	-24.38372	76.62256
dotherlb	-26.05204	4.865263	-5.355	0.000	-35.58047	-16.52361
dalcoeym	29.76279	132.8806	0.224	0.823	-230.6971	290.2228
dven130	-17.38692	11.26394	-1.544	0.123	-39.46544	4.691609
dven30d	-91.03901	10.43345	-8.726	0.000	-111.4898	-70.58833
dnseiz	30.34962	54.42854	0.558	0.577	-76.3361	137.0353
[illegible]	[illegible]	[illegible]	-15.372	[illegible]	[illegible]	[illegible]
dqcr	-9.165505	7.911619	-1.158	0.247	-24.67312	6.342109
tercr	-7.747926	6.470912	-1.197	0.231	-20.4316	4.935749
_cons	1094.912	220.006	4.977	0.000	663.6767	1526.147

51710 6355

```
. *Texas Nathlity 1993
. do c:\temp\regress\lowlow93.do

. set more 1

. matsize 300
```

```
. * regress low birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm
> l itobincv dpre4000 dpreterm iprtmage drenal drh dothermr
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 &
>  dbirwt <=1500 & gestat !=99 & nprevist !=99

  Source |       SS       df       MS              Number of obs =    3368
---------+------------------------------           F( 62,  3305) =   44.94
   Model |  158002875     62  2548433.46           Prob > F      =  0.0000
Residual |  187429186   3305  56710.7976           R-squared     =  0.4574
---------+------------------------------           Adj R-squared =  0.4472
   Total |  345432061   3367  102593.425           Root MSE      =  238.14

------------------------------------------------------------------------------
  dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |    249.3798   82.65475     3.017   0.003     87.32016    411.4395
dtobgest |   -8.816105   2.841591    -3.103   0.002    -14.38756   -3.244649
dtobalco |   -70.48588   59.25341    -1.190   0.234     -186.663     45.6912
dalcohol |    87.18133   50.96178     1.711   0.087    -12.73851    187.1012
   dmale |    36.61874   8.310465     4.406   0.000     20.32456    52.91292
  gestat |    37.41828   9.133606     4.097   0.000     19.51019    55.32638
dmag16gs |    10.20064   11.39042     0.896   0.371    -12.13234    32.53363
dm1640gs |    10.49705   9.165537     1.145   0.252    -7.473656    28.46775
 dmage16 |   -169.0998   320.4379    -0.528   0.598    -797.3765    459.1769
dmag1640 |   -244.2177   261.1472    -0.935   0.350    -756.2443    267.8088
nprevist |    3.285151   1.188089     2.765   0.006     .9556865    5.614615
  monpre |    2.929192   3.035747     0.965   0.335    -3.022942    8.881326
  dblack |   -20.49867   11.29438    -1.815   0.070    -42.64337    1.646021
  damind |   -43.43007   31.45338    -1.381   0.167    -105.1001    18.23999
   dasia |   -61.23864   138.2693    -0.443   0.658    -332.3408    209.8635
dhispani |   -22.21463   11.27198    -1.971   0.049     -44.3154   -.1138653
dmarried |    8.454852   10.70464     0.790   0.430    -12.53354    29.44324
   ivord9 |    3.019622   3.195567     0.945   0.345    -3.245868    9.285111
  dnoeduc |     -161.4   51.22265    -3.151   0.002    -261.8313   -60.96866
   delem |    22.60439   17.76986     1.272   0.203    -12.23665    57.44544
  dsomhs |    14.69591   12.46362     1.179   0.238    -9.741283    39.13311
    dhsg |   -.2969096   10.84832    -0.027   0.978    -21.56701    20.97319
   dtwin |   -32.69162   11.13893    -2.935   0.003    -54.53153   -10.85171
  dtriple |   -69.41832   32.80069    -2.116   0.034      -133.73   -5.106594
   dquad |     41.9716   99.15321     0.423   0.672    -152.4363    236.3795
  danemia |   -5.926591   24.81656    -0.239   0.811    -54.58398     42.7308
 dcardiac |    95.67399   67.67317     1.414   0.158    -37.01157    228.3595
   dlung |    54.78082   60.56225     0.905   0.366    -63.96249    173.5241
 ddiabete |    54.80114   31.23118     1.755   0.079    -6.433272    116.0356
 ialcdiab |   -292.3872   243.1721    -1.202   0.229    -769.1704     184.396
  dhydra |   -113.5297   22.06356    -5.146   0.000    -156.7893   -70.27008
   dhemo |   -163.9802   109.9696    -1.491   0.136    -379.5957    51.63524
  dphyper |    34.86543    15.8832     2.195   0.028     3.723525    66.00734
  dchyper |   -65.87358   25.16389    -2.618   0.009     -115.212   -16.53518
  declamp |   -35.47324   36.11774    -0.982   0.326    -106.2886    35.34216
 itobeclm |    166.1009    144.537     1.149   0.251    -117.2901    449.4919
 ialceclm |  (dropped)
 dincervi |   -54.22445   27.99296    -1.937   0.053    -109.1097    .6608358
 itobincv |    60.57298   124.7365     0.486   0.627    -183.9957    305.1417
 dpre4000 |    13.80715   51.85794     0.266   0.790    -87.86977    115.4841
 dpreterm |    142.6468   91.22375     1.564   0.118    -36.21397    321.5075
 iprtmage |   -4.036183   3.148526    -1.282   0.200    -10.20944    2.137074
   drenal |    28.80654    67.9983     0.424   0.672    -104.5165    162.1296
      drh |    57.42809   52.99141     1.084   0.279    -46.47122    161.3274
 dothermr |    5.25935   9.814794     0.710   0.478    -11.92365    23.54237
   dmecon |   -37.84381   29.34855    -1.289   0.197    -95.38698    19.69936
 drupture |    43.55868   12.67051     3.438   0.001     18.71583    68.40152
 dabrupti |   -1.192808   17.89709    -0.067   0.947    -36.28331    33.89769
 dpreplac |   -31.99727   32.26189    -0.992   0.321    -95.25258    31.25804
    cebld |   -48.17361   33.02728    -1.459   0.145    -112.9296    16.58238
  dseizure |    31.82163   79.57446     0.400   0.689    -124.1986    187.8418
   dprecip |    12.73973   22.31006     0.571   0.568     -31.0032    56.48267
  dprolong |    125.3525   55.35601     2.264   0.024     16.81703    233.8881
  ddysfunc |    35.09136   29.85217     1.176   0.240    -23.43926    93.62198
```

51710 6357

dcord	-79.18593	49.49801	-1.600	0.110	-176.2350	17.[illegible]
dother[illegible]	-7.444987	10.10102	-0.73[illegible]	0.461	-27.24987	12.[illegible]
dalcosym[illegible]	112.5498	172.1763	0.654	0.513	-225.0332	450.1328
dven130	52.95146	22.86706	2.316	0.021	8.116437	97.78649
dve[illegible]30m	-.9709783	11.49286	-0.084	0.933	-23.50481	21.[illegible]
dnseis[illegible]	60.87837	138.4817	0.440	0.660	-210.6403	332.[illegible]
d[illegible]	-28.13513	9.317[illegible]	-3.020	[illegible]	[illegible]	[illegible]
[illegible]gcr	3.679788	16.3581	0.225	0.822	-28.39325	35.75283
d[illegible]ercr	6.185485	15.47358	0.400	0.689	-24.15329	36.52426
_cons	-146.4986	260.9168	-0.561	0.575	-658.0734	365.0761

51710 6358

```
. *Texas Natality 1992
. do c:\temp\regress\normal99.do

. set more 1

. set matsize 300
```

```
. *regress normal weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon dru
> upti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 &
>  dbirwt >2500 & gestat !=99 & nprevist !=99

  Source |       SS       df       MS              Number of obs =  234357
---------+------------------------------           F( 61,234295) =  652.19
   Model |  6.9263e+09     61  113546272            Prob > F      =  0.0000
Residual |  4.0790e+10234295  174098.82            R-squared     =  0.1452
---------+------------------------------           Adj R-squared =  0.1449
   Total |  4.7717e+10234356  203608.21            Root MSE      =  417.25

------------------------------------------------------------------------------
  dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   216.8678   55.29141     3.922   0.000      108.498    325.2375
dtobgest |  -9.998072   1.400658    -7.138   0.000    -12.74333   -7.252818
dtobalco |  -20.69331   14.82509    -1.396   0.163    -49.7501    8.363482
dalcohol |  -.9615394   10.64448    -0.090   0.928    -21.82444   19.90136
   dmale |   115.1094   1.726657    66.666   0.000     111.7252   118.4936
  gestat |   43.00349    5.27736     8.149   0.000        32.66   53.34698
dmag16gs |  -13.72889   6.121532    -2.243   0.025    -25.72693   -1.730844
dm1640gs |   5.706199   5.291107     1.078   0.281    -4.664233   16.07663
 dmage16 |    520.784   239.3286     2.176   0.030     51.70625   989.8618
dmag1640 |  -208.9735   206.7109    -1.011   0.312    -614.1216   196.1745
nprevist |   5.166563   .2969243    17.400   0.000     4.584599   5.748527
  monpre |  -.7546646   .6242575    -1.209   0.227    -1.978193   .4688639
  dblack |  -161.2579   2.936727   -54.911   0.000    -167.0138   -155.502
  damind |  -189.3012   5.943265   -31.851   0.000    -200.9499  -177.6526
   dasia |   .8106132   19.00834     0.043   0.966    -36.44525   38.06647
dhispani |  -68.60882    2.19798   -31.214   0.000     -72.9168  -64.30084
dmarried |   31.74167   2.591166    12.250   0.000     26.66305   36.82028
    ord9 |    40.7543   .7638822    53.352   0.000     39.25711   42.25149
   educ |  -59.27401   13.78856    -4.299   0.000    -86.29923  -32.24879
  delem |  -40.88463   3.500186   -11.681   0.000     -47.7449  -34.02435
  dsomhs |  -61.95506     2.691   -23.023   0.000    -67.22935  -56.68077
   dhsg |  -30.61633   2.193729   -13.956   0.000    -34.91598  -26.31668
  dtwin |  -502.7576   8.799644   -57.134   0.000    -520.0046  -485.5105
 dtriple |  -754.0332   139.1627    -5.418   0.000    -1026.788  -481.2779
  dquad |  (dropped)
 danemia |   6.073855   5.554856     1.093   0.274    -4.813519   16.96123
dcardiac |  -48.95661   17.57351    -2.786   0.005    -83.40024  -14.51298
  dlung |  -14.86503   19.07909    -0.779   0.436    -52.25955   22.52949
ddiabete |   85.39325   5.276003    16.185   0.000     75.05242   95.73408
ialcdiab |   30.99066   42.70439     0.726   0.468    -52.70884   114.6901
  dhydra |  -88.98632   12.32706    -7.219   0.000     -113.147  -64.82559
   dhemo |  -33.10273    36.7672    -0.900   0.368    -105.1655   38.96004
 dphyper |  -47.94062     5.1941   -9.230   0.000    -58.12092  -37.76032
 dchyper |  -50.79496   11.61476    -4.373   0.000    -73.55958  -28.03033
 declamp |  -30.66002   18.47515    -1.660   0.097    -66.87083   5.550795
itobeclm |  -3.300365   64.94493    -0.051   0.959    -130.5907     123.99
ialceclm |  (dropped)
dincervi |  -68.46265   25.36006    -2.700   0.007    -118.1677  -18.75758
itobincv |  -21.27912   88.95159    -0.239   0.811    -195.6219   153.0637
dpre4000 |   299.7161   8.625092    34.749   0.000     282.8111    316.621
dpreterm |  -286.5055   54.76646    -5.231   0.000    -393.8463  -179.1646
iprtmage |   4.240946   1.985631     2.136   0.033     .3491602   8.132732
  drenal |  -68.53941   19.01396    -3.605   0.000    -105.8063  -31.27255
     drh |  -7.473453   12.10522    -0.617   0.537    -31.19936   16.25246
dothermr |  -26.60914   2.732001    -9.740   0.000    -31.96379  -21.25449
   dmecon |   48.24896   3.956948    12.193   0.000     40.49345   56.00448
drupture |  -84.31802   7.503103   -11.238   0.000    -99.02391  -69.61213
dabrupti |  -167.9816   16.88847    -9.947   0.000    -201.0826  -134.8806
dpreplac |  -143.1472   18.63718    -7.681   0.000    -179.6756  -106.6188
   ebld |   68.76629   13.94633     4.931   0.000     41.43183   96.10074
   izure |  -81.07854   47.06981    -1.723   0.085    -173.3341   11.17707
 dprecip |  -61.99977   6.229973    -9.952   0.000    -74.21036  -49.78918
dprolong |   22.59352   10.10826     2.235   0.025     2.781595   42.40545
ddysfunc |   118.1101   3.716655    31.779   0.000     110.8256   125.3947
```

51710 6360

dcord	22.29014	15.87279	1.404	0.160	-8.820111	53.40039
otherlb	25.24479	2.809176	8.987	0.000	19.73887	[illegible]
[illegible]	87.02033	147.5996	0.590	0.555	[illegible]	[illegible]
dvenl30	14.47804	8.155865	1.775	0.076	-1.507239	30.46333
dven30m	-78.22551	16.47045	-4.749	0.000	-110.5072	-45.94385
[illegible]	-56.74822	61.65996	-0.920	0.357	[illegible]	[illegible]
[illegible]erab	51.31256	4.936627	[illegible]	[illegible]	[illegible]	[illegible]
adqcr	-3.78621	4.501003	-0.841	0.400	-12.60806	5.03564
dintercr	-6.212987	3.523048	-1.764	0.078	-13.11807	.6920965
_cons	1589.898	206.2391	7.709	0.000	1185.675	1994.122

51710 6361

```
. *Texas Natality 1992
. do "c:\tesg\tregress\low93.do
. set more 1
. set matsize 300
```

51710 6362

```
. *regress low weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm
> dincervi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon dr
> upti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 &
>  dbirwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99

  Source |       SS       df       MS              Number of obs =   13871
---------+------------------------------           F( 62, 13808) =   70.26
   Model |  237340880     62  3828078.71           Prob > F      =  0.0000
Residual |  752271272  13808  54480.8279           R-squared     =  0.2398
---------+------------------------------           Adj R-squared =  0.2364
   Total |  989612152  13870  71349.1097           Root MSE      =  233.41

------------------------------------------------------------------------------
  dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   94.71999   62.65694     1.512   0.131    -28.09611    217.5361
dtobgest |  -2.777781   1.707999    -1.626   0.104     -6.12569    .5701286
dtobalco |  -4.541063   27.16003    -0.167   0.867    -57.77841    48.69628
dalcohol |   13.59901   22.80617     0.596   0.551    -31.10418    58.30219
   dmale |   10.14552   4.009519     2.530   0.011     2.286318    18.00472
  gestat |   16.94064   7.027407     2.411   0.016     3.165968    30.71531
dmag16gs |   12.33755   7.998149     1.543   0.123     -3.33991    28.01501
dm1640gs |   15.50762    7.04067     2.203   0.028     1.706955    29.30829
 dmage16 |  -375.766   286.9884    -1.309   0.190    -938.3022    186.7703
dmag1640 |  -529.5142   252.9521    -2.093   0.036    -1025.335   -33.69381
nprevist |   3.463999   .5930418     5.841   0.000     2.301557    4.626441
  monpre |   3.546832    1.28896     2.752   0.006     1.020295     6.07337
  dblack |  -18.73317   5.728752    -3.270   0.001     -29.9623   -7.504038
  damind |    34.3349   13.55074     2.534   0.011     7.773607    60.89618
   dasia |   54.54382   42.16645     1.294   0.196    -28.10815    137.1958
dhispani |   2.390529   5.314088     0.450   0.653    -8.025805    12.80686
dmarried |  -4.511852   5.218018    -0.865   0.387    -14.73988    5.716172
   ord9 |   2.453153   1.646016     1.490   0.136    -.7732615    5.679568
   duc |  -3.66131   26.42608    -0.139   0.890    -55.46002     48.1374
  delem |  -16.75854   8.374614    -2.001   0.045    -33.17391   -.3431558
  dsomhs |  -19.79929   6.100305    -3.246   0.001    -31.75672   -7.841868
    dhsg |  -16.93851   5.296625    -3.198   0.001    -27.32061   -6.556404
   dtwin |  -60.95528   5.671333   -10.748   0.000    -72.07186   -49.83869
 dtriple |  -188.0528   25.55556    -7.359   0.000    -238.1452   -137.9604
   dquad |  -312.8319   135.0433    -2.317   0.021     -577.535   -48.12876
 danemia |   2.220669   11.96876     0.186   0.853    -21.23972    25.68106
dcardiac |   18.76245   35.60513     0.527   0.598    -51.02844    88.55334
   dlung |   53.40806   35.42921     1.507   0.132      -16.038    122.8541
ddiabete |   16.80332   12.47538     1.347   0.178    -7.650108    41.25675
ialcdiab |    170.717    97.4837     1.751   0.080    -20.36427    361.7983
  dhydra |   -67.5424    14.2782    -4.730   0.000    -95.52961   -39.55519
   dhemo |  -110.7255      53.83    -2.057   0.040    -216.2396   -5.211376
 dphyper |  -61.15667   7.572786    -8.076   0.000    -76.00036   -46.31298
 dchyper |  -61.78815   15.83483    -3.902   0.000    -92.82656   -30.74974
 declamp |   -47.5927   19.20911    -2.478   0.013    -85.24515    -9.94024
itobeclm |  -8.014507   61.71091    -0.130   0.897    -128.9763    112.9472
ialceclm |  (dropped)
dincervi |  -68.10733   34.03182    -2.001   0.045    -134.8143   -1.400342
itobincv |   208.6122   101.5367     2.055   0.040     9.586492     407.638
dpre4000 |  -36.09383   36.60867    -0.986   0.324    -107.8518    35.66413
dpreterm |   11.30573   52.57535     0.215   0.830    -91.74908    114.3605
iprtmage |  -1.024749   1.948068    -0.526   0.599    -4.843227    2.793729
  drenal |  -32.34237   31.35173    -1.032   0.302    -93.79601    29.11128
     drh |  -69.43926   32.95053    -2.107   0.035    -134.0268   -4.851747
dothermr |  -7.865138   4.634363    -1.697   0.090    -16.94917    1.218792
  dmecon |   3.763043   11.30619     0.333   0.739    -18.39862     25.9247
drupture |  -18.99865   8.550988    -2.222   0.026    -35.75975   -2.237556
dabrupti |  -44.90244   13.88475    -3.234   0.001    -72.11844   -17.68644
dpreplac |   .2244267   20.38092     0.011   0.991    -39.72495     40.1738
   bld |  -9.822262   26.42118    -0.372   0.710    -61.61136    41.96683
   ure |  -149.1091   57.52589    -2.592   0.010    -261.8677   -36.35057
 dprecip |  -23.19722   11.01778    -2.105   0.035    -44.79357   -1.600873
dprolong |  -24.85424   23.41186    -1.062   0.288    -70.74466    21.03618
ddysfunc |   27.33445   11.02823     2.479   0.013     5.717625    48.95128
```

51710 6363

dcord	-88.13526	29.71141	-2.966	0.003	-146.3737	-29.89687
dotherlb	-16.03344	5.335883	-3.005	0.003	-26.49249	-5.57438
dalcosyn	-18.83649	88.94604	-0.212	0.832	-191.1831	155.5103
dvenl30	-33.46707	13.0134	-2.572	0.010	-58.97509	-7.959043
dven30m	-85.02855	11.51609	-7.383	0.000	-107.6017	-62.45548
dnseiz	52.31507	65.15792	0.803	0.422	-75.40331	180.0334
dotherab	-94.74395	5.996272	[illegible]	[illegible]	[illegible]	[illegible]
dqcr	-5.167713	8.854907	-0.584	0.559	-22.52453	12.18911
ercr	-11.58272	7.038279	-1.646	0.100	-25.3787	2.213263
_cons	1565.154	252.5564	6.197	0.000	1070.109	2060.199

51710 6364

```
. *Texas Natality 1992
. do c:\temp\regress\lowlow93\do

. set more 1

. set matsize 300
```

51710 6365

```
. * regress low low weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 &
>  dbirwt <=1500 & gestat !=99 & nprevist !=99

      Source |       SS       df       MS              Number of obs =    2684
-------------+------------------------------           F( 61,  2622) =   31.77
       Model |  110111235     61  1805102.21           Prob > F      =  0.0000
    Residual |  148956337   2622   56810.197           R-squared     =  0.4250
-------------+------------------------------           Adj R-squared =  0.4117
       Total |  259067571   2683  96558.9159           Root MSE      =  238.35

------------------------------------------------------------------------------
      dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    dtobacco |   -155.728   96.52917    -1.613   0.107    -345.0091     33.553
    dtobgest |   5.641662   3.365312     1.676   0.094    -.9572741    12.2406
    dtobalco |     15.297   61.92684     0.247   0.805    -106.1334    136.7274
    dalcohol |  -31.35465   49.53793    -0.633   0.527     -128.492    65.78274
       dmale |   29.01724   9.382062     3.093   0.002     10.62024    47.41423
      gestat |   66.97468   15.83106     4.231   0.000     35.93205    98.01732
    dmag16gs |    -26.8963   17.56747    -1.531   0.126     -61.3438    7.551197
    dm1640gs |  -23.51589   15.85935    -1.483   0.138    -54.61399    7.582218
     dmage16 |   737.4729   472.3801     1.561   0.119    -188.8026    1663.748
    dmag1640 |   656.7118   419.0287     1.567   0.117    -164.9486    1478.372
    nprevist |   2.028338   1.178313     1.721   0.085    -.2821801    4.338856
      monpre |   5.966145   3.256908     1.832   0.067    -.4202242    12.35251
      dblack |   7.955509   12.52432     0.635   0.525    -16.60304    32.51406
      damind |  -11.52301   34.39995    -0.335   0.738    -78.97681    55.93079
       dasia |  -70.59659   99.53949    -0.709   0.478    -265.7805    124.5873
    dhispani |   12.53156   12.81884     0.978   0.328     -12.6045    37.66762
    dmarried |  -1.947726   11.87556    -0.164   0.870    -25.23414    21.33869
     livord9 |  -3.749942   3.999664    -0.938   0.349    -11.59276    4.092876
    dnoeduc  |  -60.60571   49.33213    -1.229   0.219    -157.3396    36.12814
      delem  |  -13.55794   20.55811    -0.659   0.510     -53.8697    26.75383
      dsomhs |   25.10782   14.40326     1.743   0.081    -3.135088    53.35074
        dhsg |  -.6241178   12.11521    -0.052   0.959    -24.38045    23.13221
       dtwin |   27.75343   12.81274     2.166   0.030     2.629329    52.87753
     dtriple |  -1.735719   32.78412    -0.053   0.958    -66.02108    62.54964
       dquad |  -280.5589   108.1264    -2.595   0.010    -492.5806   -68.53719
     danemia |  -23.92106   27.94952    -0.856   0.392     -78.7264    30.88429
    dcardiac |  -12.90576   88.12916    -0.146   0.884    -185.7155     159.904
       dlung |  -145.0719   60.27607    -2.407   0.016    -263.2654   -26.87846
    ddiabete |   46.18283   33.21688     1.390   0.165    -18.95112    111.3168
    ialcdiab |  (dropped)
     dhydra  |  -54.45451   28.62243    -1.903   0.057    -110.5794    1.670326
      dhemo  |   55.94957   142.3854     0.393   0.694    -223.2496    335.1487
     dphyper |  -23.10295   17.79756    -1.298   0.194    -58.00163    11.79573
     dchyper |  -11.63856   31.38045    -0.371   0.711    -73.17152    49.89439
     declamp |   54.81138   41.82417     1.311   0.190    -27.20033    136.8231
    itobeclm |  -38.95955   117.9541    -0.330   0.741    -270.2521     192.333
    ialceclm |  (dropped)
    dincervi |  -46.17598   35.89748    -1.286   0.198    -116.5662    24.21427
    itobincv |  -138.3548   127.6097    -1.084   0.278    -388.5808    111.8712
    dpre4000 |   44.38483    65.0283     0.683   0.495    -83.12715    171.8968
    dpreterm |   28.12918   110.7178     0.254   0.799    -188.9739    245.2322
    iprtmage |   .2877199   4.135431     0.070   0.945    -7.821318    8.396758
      drenal |  -36.33552   57.40698    -0.633   0.527    -148.9031    76.23203
         drh |   17.79122   98.22958     0.181   0.856    -174.8241    210.4066
    dothermr |   31.02005   10.34882     2.997   0.003     10.72736    51.31273
      dmecon |  -54.33944   32.20868    -1.687   0.092    -117.4964    8.817557
    drupture |  -6.427284   15.05003    -0.427   0.669    -35.93843    23.08386
    dabrupti |   21.38803    19.8116     1.080   0.280    -17.45993    60.23599
    dpreplac |   30.09687   38.41564     0.783   0.433    -45.23117    105.4249
    dexcebld |  -16.40184   37.83625    -0.433   0.665    -90.59376    57.79009
    dseizure |  -35.87314   111.2801    -0.322   0.747    -254.0788    182.3325
     dprecip |  -41.50865   23.15811    -1.792   0.073    -86.91867    3.901363
    dprolong |   -44.5745   70.15553    -0.635   0.525    -182.1403     92.9913
    ddysfunc |  -19.59415   32.37402    -0.605   0.545    -83.07537    43.88707
```

51710 6366

dcord	5.943077	42.5458	0.140	0.889	-77.48367	89.36983
dotherlb	-8.145916	10.92491	-0.746	[illegible]	-29.56828	[illegible]
dalcohyn	370.912	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
dvenl30	55.45491	27.31732	2.030	0.042	1.88923	109.0206
dven30	1.655002	12.8414	0.129	0.897	-23.5253	[illegible]
dnseiz	-95.05053	68.16981	-1.394	0.163	-228.7226	[illegible]
d[illegible]ab	-11.95695	10.36831	-1.153	[illegible]	[illegible]	[illegible]
d[illegible]cr	-50.84597	16.88231	-3.012	0.003	-83.94996	-17.74198
dintercr	-37.34595	16.3661	-2.282	0.023	-69.43772	-5.25418
_cons	-884.4038	417.925	-2.116	0.034	-1703.9	-64.90761

51710 6367

```
. *Texas Natality 1991
. do c:\temp\regress\normal89.do

. set more 1

. set matsize 300
```

```
*regress normal weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried
> dlivord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm
> dabrupti dpreplac dexcebld dseizure dprecip dprolong
alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 &
dbirwt >2500 & gestat !=99 & nprevist !=99
```

Source	SS	df	MS		
Model	5.4420e+09	61	89212800.5	Number of obs	= 199570
Residual	3.4877e+10	199508	174814.415	F(61,199508)	= 510.33
				Prob > F	= 0.0000
				R-squared	= 0.1350
				Adj R-squared	= 0.1347
Total	4.0319e+10	199569	202029.649	Root MSE	= 418.11

dbirwt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
dtobacco	130.2584	58.71082	2.219	0.027	15.1866	245.3302
dtobgest	-7.366303	1.486224	-4.956	0.000	-10.27927	-4.45334
dtobalco	19.75506	16.82286	1.174	0.240	-13.21735	52.72747
dalcohol	-17.08334	12.55081	-1.361	0.173	-41.68262	7.515935
dmale	114.2629	1.874656	60.951	0.000	110.5886	117.9371
gestat	45.70518	5.998823	7.619	0.000	33.94764	57.46273
dmag16gs	-11.3069	6.883176	-1.643	0.100	-24.79776	2.183962
dm1640gs	-.4824478	6.01422	-0.080	0.936	-12.27017	11.30528
dmage16	352.7135	269.1922	1.310	0.190	-174.8968	880.3237
dmag1640	-11.73958	235.2289	-0.050	0.960	-472.7825	449.3033
nprevist	5.337488	.3305235	16.149	0.000	4.68967	5.985306
monpre	1.840971	.6598015	2.790	0.005	.5477762	3.134166
dblack	-154.2964	3.174309	-48.608	0.000	-160.5179	-148.0748
damind	243.2651	21.47198	11.329	0.000	201.1806	285.3497
dasia	-185.6974	6.721956	-27.625	0.000	-198.8722	-172.5225
dhispani	-70.77374	2.371027	-29.849	0.000	-75.4209	-66.12659
dmarried	45.09465	2.761554	16.329	0.000	39.68208	50.50723
dlivord	9.585691	.3956084	24.230	0.000	8.810308	10.36107
dnoeduc	-19.32366	14.77526	-1.308	0.191	-48.2828	9.635483
delem	-18.81689	3.760454	-5.004	0.000	-26.18729	-11.44649
dsomhs	-59.65267	2.913218	-20.477	0.000	-65.36251	-53.94283
dhsg	-28.1247	2.39076	-11.764	0.000	-32.81054	-23.43887
dtwin	-485.8135	9.992447	-48.618	0.000	-505.3984	-466.2285
dtriple	-589.6805	241.4163	-2.443	0.015	-1062.851	-116.5104
dquad	(dropped)					
danemia	2.595584	5.970731	0.435	0.664	-9.106904	14.29807
dcardiac	-43.55027	19.7411	-2.206	0.027	-82.24236	-4.858189
dlung	-39.13625	22.33164	-1.753	0.080	-82.90572	4.633214
ddiabete	93.30013	5.961996	15.649	0.000	81.61476	104.9855
ialcdiab	64.95299	59.42495	1.093	0.274	-51.51848	181.4245
dhydra	-92.94354	14.1756	-6.557	0.000	-120.7274	-65.15972
dhemo	16.06384	34.27495	0.469	0.639	-51.11423	83.24191
dphyper	-48.62904	5.533198	-8.789	0.000	-59.47398	-37.78411
dchyper	-61.53769	13.16581	-4.674	0.000	-87.34236	-35.73302
declamp	-82.86721	18.87162	-4.391	0.000	-119.8551	-45.87928
itobeclm	94.70735	77.49437	1.222	0.222	-57.17974	246.5945
ialceclm	(dropped)					
dincervi	-111.5355	29.00164	-3.846	0.000	-168.378	-54.69298
itobincv	.4699879	91.96826	0.005	0.996	-179.7856	180.7256
dpre4000	360.0856	9.51415	37.847	0.000	341.4381	378.7331
dpreterm	-286.1284	60.26568	-4.748	0.000	-404.2477	-168.0091
iprtmage	4.515196	2.165544	2.085	0.037	.2707824	8.75961
drenal	-89.43595	21.19591	-4.219	0.000	-130.9794	-47.89248
drh	17.25373	13.38258	1.289	0.197	-8.9758	43.48326
dothermr	-11.46618	3.063039	-3.737	0.000	-17.47947	-5.452902
dmecon	54.46641	4.213362	12.910	0.000	46.19754	62.73528
drupture	-70.47926	8.091179	-8.711	0.000	-86.33778	-54.62075
dabrupti	-162.6379	17.72537	-9.175	0.000	-197.3792	-127.8966
dpreplac	-142.5969	19.64405	-7.259	0.000	-181.0988	-104.095
dexcebld	58.02548	15.74597	3.685	0.000	27.16376	88.8872
dseizure	-30.2829	44.69048	-0.678	0.498	-117.8752	57.30936
dprecip	-46.76039	6.94826	-6.730	0.000	-60.37882	-33.14197
dprolong	31.98291	11.47073	2.788	0.005	9.500555	54.46527
ddysfunc	97.60873	3.984484	24.497	0.000	89.79924	105.4182
dcord	-.6703781	16.73781	-0.040	0.968	-33.47609	32.13533

51710 6369

dotherlb	8.968593	3.086409	2.906	0.004	2.919307	15.01788
dalcoeyn	48.83716	101.445	0.481	0.630	-149.9927	247.667
dvan130	-25.79227	9.221775	-2.793	0.005	-43.82671	-7.757784
dvan30m	-98.87025	19.36044	-5.107	0.000	-136.8162	-60.92426
dnseiz	145.3931	57.2945	2.538	0.011	33.09726	257.6889
dotherab	50.67709	5.017083	10.097	0.000	40.82593	60.52825
dqcr	-10.[illegible]	4.[illegible]	-2.121	0.034	-19.[illegible]	-[illegible]
rcr	-14.37744	3.71339	-3.872	0.000	-21.6556	-7.099288
_cons	1572.045	234.6746	6.699	0.000	1112.089	2032.002

51710 6370

```
. *Texas Natality 1991
. do c:\temp\regress\low89.do

. set more 1

. matsize 300
```

51710 6371

```
. *regress low weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> itobincv dpre4000 dpreterm iprtmage drenal dth dothermr dmecon drupture d
> dpti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> aicosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 &
> dbirwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99

  Source |       SS       df       MS              Number of obs =   10508
---------+------------------------------           F( 62, 10445) =   45.33
   Model |  144050316     62  2323392.20           Prob > F      =  0.0000
Residual |  535364355  10445  51255.5629           R-squared     =  0.2120
---------+------------------------------           Adj R-squared =  0.2073
   Total |  679414671  10507  64663.0504           Root MSE      =  226.40

------------------------------------------------------------------------------
  dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   281.0797   68.58308     4.098   0.000     146.6438    415.5157
dtobgest |  -8.055334   1.853512   -4.346   0.000    -11.68857   -4.422095
dtobalco |  -19.05103    33.5387   -0.568   0.570    -84.79328    46.69123
dalcohol |   27.04794   29.31512    0.923   0.356     -30.4153    84.51118
   dmale |  -2.637085   4.464902   -0.591   0.555    -11.38915    6.114977
  gestat |   18.51199   7.953499    2.328   0.020     2.921614    34.10237
dmag16gs |   6.084869   9.107188    0.668   0.504    -11.76696     23.9367
dm1640gs |   10.69903   7.974821    1.342   0.180    -4.933143     26.3312
 dmage16 |  -200.8001   333.3494   -0.602   0.547    -854.2287    452.6285
dmag1640 |  -377.3486   292.3711   -1.291   0.197    -950.4518    195.7545
nprevist |    2.63452   .6897257    3.820   0.000     1.282526    3.986514
  monpre |   5.085252    1.33491    3.809   0.000     2.468573     7.70193
  dblack |  -17.30679   6.347598   -2.727   0.006    -29.74929   -4.864284
  damind |   79.70833   55.39345    1.439   0.150    -28.87342    188.2901
   dasia |  -.9251093   14.80161   -0.063   0.950    -29.93909    28.08887
dhispani |   1.779296     5.8994    0.302   0.763    -9.784656    13.34325
dmarried |   10.88385   5.684973    1.914   0.056    -.2597864    22.02748
     ord |   .8543347   .9158826    0.933   0.351    -.9409702     2.64964
   dnoduc |  -5.439714   34.35154   -0.158   0.874     -72.7753    61.89587
   delem |  -20.30394   9.068187   -2.239   0.025    -38.07932   -2.528565
  dsomhs |  -8.599746   6.737218   -1.276   0.202    -21.80598    4.606488
    dhsg |  -11.38194   6.016409   -1.892   0.059    -23.17525    .4113685
   dtwin |   -56.2532   6.421621   -8.760   0.000     -68.8408   -43.66559
 dtriple |  -219.3448   27.82469   -7.883   0.000    -273.8865   -164.8031
   dquad |  -428.6169   226.6081   -1.891   0.059     -872.812    15.57816
 danemia |   28.27494   12.61875    2.241   0.025     3.539774     53.0101
dcardiac |   55.73828   41.01586    1.359   0.174    -24.66064    136.1372
   dlung |  -15.89598   35.69179   -0.445   0.656     -85.8587    54.06674
ddiabete |   22.28372   14.73625    1.512   0.131    -6.602144    51.16959
ialcdiab |   229.3802   132.5597    1.730   0.084    -30.46217    489.2226
  dhydra |  -80.44191    17.9429   -4.483   0.000    -115.6134   -45.2704
   dhemo |  -180.6076   75.72729   -2.385   0.017    -329.0475   -32.16762
 dphyper |  -58.31328   8.078044   -7.219   0.000    -74.14779   -42.47877
 dchyper |  -92.36345   19.32422   -4.780   0.000    -130.2426   -54.48429
 declamp |  -68.32301   21.10676   -3.237   0.001    -109.6963   -26.94973
itobeclm |   75.98492   78.54004    0.967   0.333    -77.96857    229.9384
ialceclm |  (dropped)
dincervi |   -55.8664   38.54821   -1.449   0.147    -131.4283    19.69545
itobincv |   18.81306   100.5661    0.187   0.852    -178.3157    215.9418
dpre4000 |  -51.84453   38.49955   -1.347   0.178     -127.311    23.62195
dpreterm |  -93.35658   64.33803   -1.451   0.147    -219.4714    32.75825
iprtmage |   3.176711   2.382666    1.333   0.182     -1.49377    7.847193
  drenal |  -22.22483   35.24166   -0.631   0.528    -91.30523    46.85556
     drh |   58.53889    37.9705    1.542   0.123    -15.89054    132.9683
dothermr |  -19.24384   5.674318   -3.391   0.001    -30.36659   -8.121092
  dmecon |  -4.28148   12.45901   -0.344   0.731    -28.70352    20.14056
drupture |  -22.07221   11.40065   -1.936   0.053    -44.41966    .2752393
dabrupti |  -60.52435   16.59138   -3.648   0.000    -93.04662   -28.00207
 dpreplac |   3.829394   21.45855    0.178   0.858    -38.23346    45.89224
    dexcebld |   7.42185   32.90428    0.226   0.822    -57.07683    71.92053
dseizure |   42.71571   50.77126    0.841   0.400    -56.80566    142.2371
 dprecip |  -.8176014   13.42795   -0.061   0.951    -27.13896    25.50375
dprolong |   20.96138    28.5504    0.734   0.463    -35.00286    76.92562
ddysfunc |   27.27325   11.38156    2.396   0.017     4.963214    49.58328
```

51710 6372

dcord	35.30177	31.90355	1.107	0.269	-27.23529	97.83882
dotherlb	-29.48226	5.941275	-4.962	0.000	-41.1283	-17.83622
[illegible]	31.38023	80.91198	0.388	0.698	-127.2147	189.9912
dvenl30	-13.82638	15.18495	-0.911	0.363	-43.59177	15.93902
dven30m	-115.9604	14.62156	-7.931	0.000	-144.6215	-87.29936
[illegible]	-98.43002	58.90634	-1.671	[illegible]	-213.8977	17.03766
[illegible]	-70.41211	6.63254	-10.616	[illegible]	[illegible]	[illegible]
dqcr	8.534215	9.951323	0.858	0.391	-10.97228	28.04071
[illegible]ercr	8.469953	7.517245	1.127	0.260	-6.265283	23.20519
_cons	1525.684	291.8469	5.228	0.000	953.6086	2097.76

51710 6373

as Natality 1991
:\temp\regress\iowlow89.do

more 1

matr… 300

51710 6374

```
. * regress low low weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture
> dabrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  dbirwt <=1500 & gestat !=99 & nprevist !=99

  Source |       SS       df       MS              Number of obs =    1531
---------+------------------------------           F( 58,  1472) =   20.99
   Model |  68539482.1     58  1181715.21           Prob > F      =  0.0000
Residual |  82867494.0   1472  56295.8519           R-squared     =  0.4527
---------+------------------------------           Adj R-squared =  0.4311
   Total |  151406976   1530  98958.8079           Root MSE      =  237.27

------------------------------------------------------------------------------
  dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |  -69.40182   104.0522    -0.667   0.505    -273.5082    134.7046
dtobgest |   1.217122   3.520908     0.346   0.730    -5.689409    8.123653
dtobalco |   48.39783   84.60526     0.572   0.567    -117.5619    214.3575
dalcohol |   -35.2248    71.2485    -0.494   0.621    -174.9842    104.5346
   dmale |   21.26819   12.40962     1.714   0.087    -3.074237    45.61061
  gestat |   48.45657   15.23874     3.180   0.002     18.56461    78.34852
dmag16gs |   -4.47616   17.45041    -0.257   0.798    -38.70649    29.75417
dm1640gs |  -6.565153   15.32683    -0.428   0.668    -36.62992    23.49961
 dmage16 |   96.01048   501.1763     0.192   0.848    -887.0852    1079.106
dmag1640 |   132.0489    444.513     0.297   0.766    -739.8976    1003.995
nprevist |   2.678212   1.984074     1.350   0.177    -1.213702    6.570125
  monpre |   1.769616   3.994237     0.443   0.658    -6.065387    9.604618
  dblack |   -33.9023   17.02972    -1.991   0.047    -67.30741   -.4971997
  damind |  -26.48003     100.96    -0.262   0.793    -224.5208    171.5607
   dasia |  -24.46747   50.35042    -0.486   0.627    -123.2337    74.29875
dhispani |  -48.59814   17.01459    -2.856   0.004    -81.97357   -15.22271
 dmarried |   16.25524   15.31208     1.062   0.289    -13.78058    46.29106
  livord |  -1.684498   5.180148    -0.325   0.745    -11.84576    8.476761
 dnoeduc |   34.03048   71.26121     0.478   0.633    -105.7539    173.8148
   delem |   14.88708   25.63945     0.581   0.562    -35.40668    65.18084
  dsomhs |   39.02839    19.4102     2.011   0.045     .9537919      77.103
    dhsg |    7.79128   16.78716     0.464   0.643    -25.13802    40.72058
   dtwin |   16.28035   18.01791     0.904   0.366    -19.06316    51.62386
 dtriple |   5.823753   49.30066     0.118   0.906    -90.88328    102.5308
   dquad |  (dropped)
 danemia |   45.99569    36.5849     1.257   0.209    -25.76842    117.7598
dcardiac |  -6.875803   101.8324    -0.068   0.946    -206.6278    192.8762
   dlung |  -220.1172   146.4459    -1.503   0.133    -507.3822    67.14771
ddiabete |   51.85417   51.02606     1.016   0.310    -48.23738    151.9457
ialcdiab |  (dropped)
  dhydra |  -5.922691   47.39407    -0.125   0.901     -98.8898    87.04442
   dhemo |   153.6169   169.3734     0.907   0.365     -178.622    485.8558
 dphyper |  -2.541407   21.77292    -0.117   0.907    -45.25066    40.16785
 dchyper |  -23.62003   36.90807    -0.640   0.522    -96.01804    48.77799
 declamp |   74.44243   46.54936     1.599   0.110    -16.86771    165.7526
itobeclm |  (dropped)
ialceclm |  (dropped)
 dincervi |   -53.5604   45.74056    -1.171   0.242     -143.284    36.16323
itobincv |   171.0193    147.803     1.157   0.247    -118.9077    460.9462
dpre4000 |  -82.35719   121.4756    -0.678   0.498     -320.641    155.9266
dpreterm |   8.888783   143.3718     0.062   0.951     -272.346    290.1236
iprtmage |   .3977333   5.546378     0.072   0.943    -10.48191    11.27738
  drenal |  -172.7526   91.23891    -1.893   0.058    -351.7247    6.219539
     drh |  -61.57208   113.4709    -0.543   0.587     -284.154    161.0098
dothermr |   15.43622   14.19023     1.088   0.277    -12.39901    43.27145
  dmecon |  -40.22724   53.03911    -0.758   0.448    -144.2675    63.81304
drupture |   41.22189   24.59584     1.676   0.094    -7.024746    89.46853
dabrupti |   1.455379   25.78722     0.056   0.955    -49.12823    52.03898
 dpreplac |  -14.45669   42.22489    -0.342   0.732    -97.28406    68.37067
dexcebld |  -105.2317   54.93882    -1.915   0.056    -212.9984    2.535028
dseizure |   -43.7556   92.82188    -0.471   0.637    -225.8328    138.3216
 dprecip |   50.41233   32.54311     1.549   0.122    -13.42349    114.2481
dprolong |   56.30873   69.77357     0.807   0.420    -80.55749    193.1749
ddysfunc |   18.58069   44.61694     0.416   0.677    -68.93886    106.1002
```

51710 6375

dcord	82.64213	73.50925	1.124	0.261	-61.55191	226.8362
dotherlb	-9.15427	14.00549	-0.654	0.513	-36.62712	[illegible]
dalcosyn	(dropped)					
dvenl30	-21.4712	38.32586	-0.560	0.575	-96.65032	53.70792
dven30m	-32.06226	17.81228	-1.800	0.072	-67.00242	[illegible]
dnseis	-208.891	80.29211	-2.608	[illegible]	[illegible]	[illegible]
d[illegible]rab	-19.83878	13.73374	-1.445	[illegible]	[illegible]	[illegible]
d[illegible]jcr	-20.09112	23.77351	-0.845	0.398	-66.72468	26.54244
din[illegible]ercr	35.99526	20.08685	1.792	0.073	-3.406636	75.39715
_cons	-319.0988	443.3124	-0.720	0.472	-1188.69	550.4925

51710 6376

```
. *Texas Natality 1990
. do "c:\temp\regress\normal99.do
. set more 1
. set matsize 300
```

51710 6377

```
. regress normal weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> iabet ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialcec
> vi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon dr
> brupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 &
> dbirwt >2500 & gestat !=99 & nprevist !=99
```

Source	SS	df	MS
Model	6.3468e+09	62	102368182
Residual	3.9515e+10224713	175848.082	
Total	4.5862e+10224775	204035.935	

Number of obs	= 224776
F(62,224713)	= 582.14
Prob > F	= 0.0000
R-squared	= 0.1384
Adj R-squared	= 0.1382
Root MSE	= 419.34

dbirwt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
dtobacco	193.8285	52.04868	3.724	0.000	91.81441	295.8426
dtobgest	-8.773906	1.316314	-6.666	0.000	-11.35385	-6.193963
dtobalco	-14.08753	13.71274	-1.027	0.304	-40.96415	12.78908
dalcohol	3.359956	10.05543	0.334	0.738	-16.34843	23.06834
dmale	117.9344	1.771721	66.565	0.000	114.4619	121.4069
gestat	52.3016	5.759827	9.080	0.000	41.01248	63.59071
dmag16gs	-17.61392	6.605436	-2.667	0.008	-30.56041	-4.667438
dm1640gs	-8.156022	5.773011	-1.413	0.158	-19.47098	3.158932
dmage16	588.9044	257.5295	2.287	0.022	84.15329	1093.656
dmag1640	288.8817	224.8712	1.285	0.199	-151.8602	729.6236
nprevist	4.864735	.3075519	15.818	0.000	4.261942	5.467529
monpre	.2810052	.6243812	0.450	0.653	-.942766	1.504776
dblack	-150.178	3.012638	-49.849	0.000	-156.0827	-144.2733
damind	200.5895	19.42329	10.327	0.000	162.5203	238.6586
dasia	-181.3836	6.706332	-27.047	0.000	-194.5278	-168.2394
dhispani	-63.86699	2.25236	-28.356	0.000	-68.28155	-59.45242
dmarried	45.03536	2.67765	16.819	0.000	39.78723	50.28349
livord	7.264463	.3326241	21.840	0.000	6.612528	7.916398
dnoeduc	-12.99906	13.6738	-0.951	0.342	-39.79936	13.80123
delem	-12.52294	3.61456	-3.465	0.001	-19.60739	-5.438499
dsomhs	-59.8834	2.776389	-21.569	0.000	-65.32505	-54.44175
dhsg	-27.98909	2.231328	-12.544	0.000	-32.36243	-23.61574
dtwin	-469.5714	8.819002	-53.245	0.000	-486.8564	-452.2864
dtriple	-231.6227	209.6982	-1.105	0.269	-642.6258	179.3804
dquad	-289.6674	419.3761	-0.691	0.490	-1111.634	532.299
danemia	5.289081	5.953198	0.888	0.374	-6.379034	16.9572
dcardiac	-13.45004	18.574	-0.724	0.469	-49.8546	22.95452
dlung	-40.39673	19.29431	-2.094	0.036	-78.21309	-2.580375
ddiabete	89.60802	5.951258	15.057	0.000	77.94371	101.2723
ialcdiab	-31.45831	44.17911	-0.712	0.476	-118.0482	55.13161
dhydra	-83.66106	12.89283	-6.489	0.000	-108.9307	-58.39144
dhemo	6.508615	43.77631	0.149	0.882	-79.29184	92.30907
dphyper	-40.22065	5.212135	-7.717	0.000	-50.4363	-30.005
dchyper	-47.4153	11.72405	-4.044	0.000	-70.39413	-24.43647
declamp	-71.19116	15.48463	-4.598	0.000	-101.5406	-40.84168
itobeclm	32.81702	56.80587	0.578	0.563	-78.52103	144.1551
ialceclm	(dropped)					
dincervi	-29.52454	21.71673	-1.360	0.174	-72.08878	13.0397
itobincv	23.3237	80.9127	0.288	0.773	-135.2631	181.9105
dpre4000	386.0803	8.589108	44.950	0.000	369.2458	402.9147
dpreterm	-206.5706	50.68202	-4.076	0.000	-305.9061	-107.2352
iprtmage	1.08087	1.811494	0.597	0.551	-2.469612	4.631352
drenal	-80.06143	19.85559	-4.032	0.000	-118.9779	-41.14498
drh	-5.366577	11.75089	-0.457	0.648	-28.39801	17.66486
dothermr	-38.7753	2.887734	-13.428	0.000	-44.43528	-33.11542
dmecon	51.6553	3.939188	13.113	0.000	43.93459	59.376
drupture	-99.39312	7.500197	-13.252	0.000	-114.0933	-84.69292
dabrupti	-159.1606	15.55344	-10.233	0.000	-189.645	-128.6763
dpreplac	-134.308	18.14333	-7.403	0.000	-169.8585	-98.74752
dexcebld	66.63484	14.35971	4.640	0.000	38.49018	94.7795
dseizure	-79.31313	44.34191	-1.789	0.074	-166.2221	7.595886
dprecip	-57.23368	7.127216	-8.030	0.000	-71.20284	-43.26452
dprolong	24.06615	11.13827	2.161	0.031	2.235438	45.89687
ddysfunc	98.72109	3.752957	26.305	0.000	91.36539	106.0768

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dcord	-35.074	15.31594	-2.290	0.022	-65.09285	-5.055147
dotherlb	8.474114	3.037217	2.790	0.005	2.521247	14.42698
dalcosyn	-76.96217	93.81822	-0.820	0.412	-260.0439	106.9191
dven130	1.389915	8.500359	0.164	0.870	-15.27057	18.0504
dven30m	-72.01153	16.28806	-4.421	0.000	-103.9357	-40.08736
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]erab	35.77511	[illegible]	[illegible]	0.000	[illegible]	[illegible]
dqcr	-6.179863	4.590482	-1.346	0.178	-15.17709	2.817364
dintercr	-13.96627	3.492832	-3.999	0.000	-20.81213	-7.12041
_cons	1322.528	224.4328	5.893	0.000	882.6456	1762.411

51710 6379

. *Texas Natality 1990

. do c:\temp\regress\low89.do

. set more 1

. regress low weight birth estimates

. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv [illegible]
> upti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 &
> dbirwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99

Source	SS	df	MS		
Model	195690668	61	3208043.73	Number of obs	= 12924
Residual	673780872	12862	52385.3889	F(61, 12862)	= 61.24
				Prob > F	= 0.0000
				R-squared	= 0.2251
				Adj R-squared	= 0.2214
Total	869471540	12923	67280.9363	Root MSE	= 228.88

dbirwt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
dtobacco	69.07725	59.14336	1.168	0.243	-46.8525	185.007
dtobgest	-2.197242	1.61687	-1.359	0.174	-5.366547	.972062
dtobalco	-47.13993	28.18021	-1.673	0.094	-102.3773	8.097469
dalcohol	29.4152	24.49237	1.201	0.230	-18.59348	77.42387
dmale	-4.021847	4.078317	-0.986	0.324	-12.01595	3.972258
gestat	19.1404	7.231357	2.647	0.008	4.965868	33.31493
dmag16gs	2.896328	8.112357	0.357	0.721	-13.0051	18.79775
dm1640gs	9.469907	7.249043	1.306	0.191	-4.739293	23.67911
dmage16	-80.91172	287.3737	-0.282	0.778	-644.2068	482.3833
dmag1640	-306.5955	256.6496	-1.195	0.232	-809.6668	196.4759
nprevist	3.115639	.6138641	5.075	0.000	1.912374	4.318904
monpre	.6078394	1.211618	0.502	0.616	-1.767111	2.98279
dblack	-16.63172	5.777877	-2.879	0.004	-27.95721	-5.306223
damind	48.68296	44.15382	1.103	0.270	-37.86507	135.231
dasia	-5.886588	14.33967	-0.411	0.681	-33.99447	22.22129
dhispani	4.284247	5.35806	0.800	0.424	-6.218345	14.78684
dmarried	5.346556	5.273493	1.014	0.311	-4.990273	15.68339
[illegible]vord	.2095695	.6599962	0.318	0.751	-1.084121	1.50326
[illegible]educ	-28.40979	26.96335	-1.054	0.292	-81.26196	24.44238
delem	-3.457822	8.318198	-0.416	0.678	-19.76272	12.84708
dsomhs	-1.759909	6.205857	-0.284	0.777	-13.92431	10.40449
dhsg	-10.40666	5.381403	-1.934	0.053	-20.95501	.1416843
dtwin	-58.62651	5.830474	-10.055	0.000	-70.0551	-47.19791
dtriple	-190.8285	28.67354	-6.655	0.000	-247.0329	-134.6241
dquad	(dropped)					
danemia	22.36598	11.77127	1.900	0.057	-.7074566	45.43942
dcardiac	-29.15977	34.74164	-0.839	0.401	-97.25855	38.93901
dlung	-42.21577	33.96562	-1.243	0.214	-108.7934	24.36189
ddiabete	22.08618	12.8576	1.718	0.086	-3.116622	47.28898
ialcdiab	-48.00606	74.75621	-0.642	0.521	-194.5393	98.52721
dhydra	-98.28206	14.03402	-7.003	0.000	-125.7908	-70.77329
dhemo	7.535254	69.2254	0.109	0.913	-128.1568	143.2273
dphyper	-54.92359	7.719375	-7.115	0.000	-70.05471	-39.79247
dchyper	-26.0714	16.96695	-1.537	0.124	-59.32914	7.18634
declamp	-61.06656	17.30503	-3.529	0.000	-94.98699	-27.14613
itobeclm	158.2113	63.84936	2.478	0.013	33.05708	283.3655
ialceclm	(dropped)					
dincervi	15.38495	29.43152	0.523	0.601	-42.3052	73.0751
itobincv	38.0254	79.21137	0.480	0.631	-117.2406	193.2914
dpre4000	43.11381	38.41406	1.122	0.262	-32.18344	118.4111
dpreterm	-3.109839	47.06573	-0.066	0.947	-95.36565	89.14597
iprtmage	-.3293773	1.754423	-0.188	0.851	-3.768306	3.109552
drenal	20.55832	34.98686	0.588	0.557	-48.02113	89.13776
drh	17.85938	25.88117	0.690	0.490	-32.87155	68.5903
dothermr	-14.11251	4.676451	-3.018	0.003	-23.27905	-4.94597
dmecon	-24.2608	10.99883	-2.206	0.027	-45.82014	-2.701465
drupture	-19.62504	8.726194	-2.249	0.025	-36.72968	-2.520409
dabrupti	-66.68813	13.69511	-4.869	0.000	-93.53258	-39.84368
[illegible]preplac	-19.83345	19.18686	-1.034	0.301	-57.44254	17.77565
[illegible]ebld	-49.59861	28.04981	-1.768	0.077	-104.5804	5.383173
[illegible]eizure	-75.45223	54.62897	-1.381	0.167	-182.5331	31.62867
dprecip	4.169191	13.01635	0.320	0.749	-21.34479	29.68318
dprolong	35.11638	23.307	1.507	0.132	-10.5688	80.80156
ddysfunc	.8711272	10.71915	0.081	0.935	-20.14	21.88225

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dcord	-62.41971	27.41237	-2.277	0.023	-116.152	-8.687396
otherlb	-26.02483	5.421215	-4.801	0.000	-36.65121	-15.39844
alcsyn	-251.9371	86.81531	-2.902	0.004	-422.108	-81.76618
dven130	-46.89566	12.76119	-3.675	0.000	-71.90949	-21.88184
dven30m	-112.5603	12.29358	-9.155	0.000	-136.6475	-88.47309
dnseix	22.95893	45.32883	0.506	0.613	-65.89229	111.8102
oth	[illegible]					
in	-4.291365	8.921352	-0.481	0.631	-21.77854	13.19581
inter	-10.31741	6.859884	-1.504	0.133	-23.7638	3.128981
_cons	1504.693	256.3334	5.870	0.000	1002.242	2007.145

51710 6382

```
*Texas Natality 1990
do c:\temp\regress\lowlow89.do

set more 1
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51710 6383

. regress low low weight birth estimates

. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialteclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> [illegible]
> lcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
> dbirwt <=1500 & gestat !=99 & nprevist !=99

Source	SS	df	MS		
Model	108740713	60	1812345.21	Number of obs	= 2360
Residual	139887177	2299	60846.9668	F(60, 2299)	= 29.79
				Prob > F	= 0.0000
Total	248627890	2359	105395.46	R-squared	= 0.4374
				Adj R-squared	= 0.4227
				Root MSE	= 246.67

dbirwt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
dtobacco	99.24484	89.87074	1.104	0.270	-76.99135	275.481
dtobgest	-3.479705	3.062463	-1.136	0.256	-9.485184	2.525774
dtobalco	70.48516	71.20467	0.990	0.322	-69.14694	210.1173
dalcohol	-8.087685	63.1333	-0.128	0.898	-131.8919	115.7165
dmale	-10.35663	10.31403	-1.004	0.315	-30.58239	9.86914
gestat	63.61389	13.48063	4.719	0.000	37.17842	90.04937
dmag16gs	-12.29908	15.33442	-0.802	0.423	-42.36981	17.77166
dm1640gs	-18.85603	13.50501	-1.396	0.163	-45.33931	7.627248
dmage16	289.0595	422.584	0.684	0.494	-539.6262	1117.745
dmag1640	482.9716	369.3597	1.308	0.191	-241.3415	1207.285
nprevist	1.802355	1.402555	1.285	0.199	-.9480508	4.552761
monpre	5.49737	3.316894	1.657	0.098	-1.007047	12.00179
dblack	-13.86425	13.96532	-0.993	0.321	-41.25019	13.5217
damind	41.08215	181.955	0.226	0.821	-315.731	397.8953
dasia	-11.54232	47.13986	-0.245	0.807	-103.9834	80.89878
dhispani	-16.6162	13.91111	-1.194	0.232	-43.89583	10.66344
dmarried	-14.75934	13.49739	-1.093	0.274	-41.22768	11.70899
dlivord	.1129465	1.698881	0.066	0.947	-3.218552	3.444445
dnoeduc	37.19347	70.33009	0.529	0.597	-100.7236	175.1105
delem	29.6973	21.65629	1.371	0.170	-12.77061	72.16521
dsomhs	17.13838	15.91573	1.077	0.282	-14.07231	48.34906
dhsg	1.730341	13.30723	0.130	0.897	-24.36508	27.82576
dtwin	-11.40033	13.67895	-0.833	0.405	-38.22471	15.42404
dtriple	43.89782	43.39672	1.012	0.312	-41.20298	128.9986
dquad	(dropped)					
danemia	20.37517	26.66804	0.764	0.445	-31.92075	72.67109
dcardiac	-1.615052	88.7322	-0.018	0.985	-175.6186	172.3885
dlung	23.75758	78.61261	0.302	0.763	-130.4014	177.9166
ddiabete	-26.69991	37.84496	-0.706	0.481	-100.9137	47.51391
ialcdiab	(dropped)					
dhydra	-53.1663	23.76629	-2.237	0.025	-99.77192	-6.560692
dhemo	-368.5413	247.8889	-1.487	0.137	-854.6504	117.5679
dphyper	-5.073745	19.17993	-0.265	0.791	-42.68552	32.53803
dchyper	.5034427	35.49087	0.014	0.989	-69.09402	70.1009
declamp	17.67275	38.36028	0.461	0.645	-57.55162	92.89711
itobeclm	27.98812	102.667	0.273	0.785	-173.3415	229.3178
ialceclm	(dropped)					
dincervi	-45.1899	33.67827	-1.342	0.180	-111.2329	20.85306
itobincv	-88.74018	88.68228	-1.001	0.317	-262.6458	85.16543
dpre4000	7.81814	124.6542	0.063	0.950	-236.6283	252.2646
dpreterm	247.741	116.5838	2.125	0.034	19.12066	476.3613
iprtmage	-8.354139	4.183208	-1.997	0.046	-16.55739	-.1508845
drenal	29.28846	73.64595	0.398	0.691	-115.131	173.7079
drh	-23.61663	102.11	-0.231	0.817	-223.854	176.6207
dothermr	2.533012	11.18421	0.226	0.821	-19.39919	24.46521
dmecon	-41.38172	37.53084	-1.103	0.270	-114.9796	32.21613
drupture	18.76023	16.18923	1.159	0.247	-12.98679	50.50724
dabrupti	18.26339	21.05109	0.868	0.386	-23.01772	59.54451
dpreplac	-8.551607	31.52869	-0.271	0.786	-70.37925	53.27604
dexcebld	-12.49777	39.3944	-0.317	0.751	-89.75003	64.7545
seizure	-61.15259	88.65261	-0.690	0.490	-235	112.6948
dprecip	42.11559	27.29121	1.543	0.123	-11.40237	95.63355
dprolong	-8.633503	55.13879	-0.157	0.876	-116.7605	99.49345
ddysfunc	23.86631	36.95533	0.646	0.518	-48.60296	96.33557
dcord	36.8089	48.52002	0.759	0.448	-58.33868	131.9565

51710 6384

dotherlb	-23.31188	11.60536	-2.009	0.045	-46.06994	-.5538119
dwlcoeyu	40.26329	126.6678	0.318	0.751	-208.6584	289.1849
dven130_	2.412526	21.95966	0.110	0.756	-54.41732	59.55237
dven30m	27.02879	14.51121	1.863	0.063	-1.427638	55.48522
dnseiz	65.38481	63.05364	1.037	0.300	-58.46313	189.0328
dotherab	-19.33948	10.96253	-1.764	0.078	-40.83696	2.158002
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
tercr	23.26297	17.14708	1.357	0.175	-10.36239	56.88833
_cons	-756.5455	368.7123	-2.052	0.040	-1479.589	-33.50202

51710 6385

```
. *Texas Natality 1989
. do c:\temp\regress\normal89.do

. set more 1

. set matsize 300
```

51710 6386

```
. *regress normal weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs [illegible]
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani [illegible]
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung [illegible]
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm [illegible]
> rvi itobincv dpre4000 dpreterm iprtmage drenal [illegible]
  brupti dpreplac [illegible] dprecip [illegible]
  cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 &
> dbirwt >2500 & gestat !=99 & nprevist !=99

   Source |       SS       df       MS                  Number of obs =  164286
---------+------------------------------               F( 62,164223) =  452.01
    Model |  4.9347e+09    62  79591340.4               Prob > F      =  0.0000
 Residual |  2.8917e+10164223  176081.738               R-squared     =  0.1458
---------+------------------------------               Adj R-squared =  0.1455
    Total |  3.3851e+10164285  206052.497               Root MSE      =  419.62

------------------------------------------------------------------------------
   dbirwt |      Coef.   Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 dtobacco |   114.1585   57.42524      1.988   0.047       1.606236    226.7107
 dtobgest |  -7.131929    1.45079     -4.916   0.000      -9.975446   -4.288413
 dtobalco |    12.2994   14.11367      0.871   0.384      -15.36308    39.96188
 dalcohol |  -.0506292   10.02029     -0.005   0.996      -19.69018    19.58892
    dmale |   118.3024   2.074345     57.031   0.000       114.2367     122.368
   gestat |   51.21825   6.435352      7.959   0.000        38.6051     63.8314
 dmag16gs |  -27.07449   7.367082     -3.675   0.000      -41.51382   -12.63517
 dm1640gs |  -7.618455   6.448872     -1.181   0.237       -20.2581    5.021195
  dmage16 |   951.4538   287.5208      3.309   0.001       387.9193    1514.988
 dmag1640 |   260.7604   251.5794      1.036   0.300      -232.3297    753.8505
 nprevist |   5.456453   .3544769     15.393   0.000       4.761685     6.15122
   monpre |   .8974366   .7020192      1.278   0.201      -.4785059    2.273379
   dblack |  -154.2512   3.545157    -43.510   0.000      -161.1996   -147.3028
   damind |   196.9269   26.75472      7.360   0.000       144.4882    249.3655
    dasia |  -177.3682   7.923247    -22.386   0.000      -192.8976   -161.8388
 dhispani |  -65.94471   2.641803    -24.962   0.000      -71.12259   -60.76684
 dmarried |   47.79099   3.050489     15.667   0.000       41.81209    53.76988
  dlivord |   12.77653   .5321595     24.009   0.000       11.73351    13.81955
  dnoeduc |  -14.62913   15.65016     -0.935   0.350       -45.3031    16.04484
    delem |  -12.06311   4.268099     -2.826   0.005       -20.4285   -3.697733
   dsomhs |  -52.53037   3.263014    -16.099   0.000       -58.9258   -46.13493
     dhsg |  -25.50196   2.613445     -9.758   0.000      -30.62425   -20.37966
    dtwin |  -469.0409   10.44821    -44.892   0.000      -489.5192   -448.5626
  dtriple |  -537.8257    148.453     -3.623   0.000      -828.7904    -246.861
    dquad |  -26.92816   158.6132     -0.170   0.865      -337.8067    283.9504
  danemia |   2.187686   6.868896      0.318   0.750       -11.2752    15.65057
 dcardiac |  -33.59652   19.45454     -1.727   0.084        -71.727    4.533959
    dlung |  -25.08015   21.93785     -1.143   0.253      -68.07787    17.91756
 ddiabete |   70.60893   6.678962     10.572   0.000       57.51831    83.69955
 ialcdiab |  -18.62262   48.48358     -0.384   0.701      -113.6494    76.40415
   dhydra |  -65.13362    14.8939     -4.373   0.000      -94.32535   -35.94189
    dhemo |  -7.003132   47.28798     -0.148   0.882      -99.68654    85.68028
  dphyper |  -45.32791   5.739233     -7.898   0.000      -56.57669   -34.07914
  dchyper |  -17.85235   12.22811     -1.460   0.144      -41.81918    6.114483
  declamp |  -67.76412   18.09605     -3.745   0.000       -103.232   -32.29626
 itobeclm |    28.8678   74.33222      0.388   0.698      -116.8217    174.5573
 ialceclm |  (dropped)
 dincervi |  -82.04109   25.05879     -3.274   0.001      -131.1558   -32.92642
 itobincv |   83.46905      72.63      1.149   0.250      -58.88418    225.8223
 dpre4000 |    406.594    9.36412     43.420   0.000       388.2406    424.9475
 dpreterm |  -305.7128   54.73502     -5.585   0.000      -412.9923   -198.4334
 iprtmage |   4.779135   1.970252      2.426   0.015       .9174832    8.640788
   drenal |   2.909169   19.94693      0.146   0.884      -36.18638    42.00472
      drh |  -25.34085    16.8637     -1.503   0.133      -58.39334    7.711638
 dothermr |  -43.70419   3.443197    -12.693   0.000      -50.45278    -36.9556
   dmecon |   47.34389   4.313906     11.091   0.000       39.38873    56.29905
 drupture |  -92.05046   7.859069    -11.713   0.000      -107.4541   -76.64685
 dabrupti |   -163.113   17.75569     -9.187   0.000      -197.9137   -128.3122
 dpreplac |  -115.4507   21.46633     -5.378   0.000      -157.5242   -73.37715
 dexcebld |   66.51903   14.82215      4.488   0.000       37.46794    95.57012
 dseizure |  -55.77812   54.55443     -1.022   0.307      -162.7036    51.14739
  dprecip |  -64.36343    7.58578     -8.485   0.000      -79.23139   -49.49546
 dprolong |   12.32949   11.23897      1.097   0.273      -9.698645    34.35762
 ddysfunc |   106.0596   4.246967     24.973   0.000       97.73567    114.3836
    dcord |  -11.61287   18.65366     -0.623   0.534      -48.17364    24.94789
```

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dotherlb	16.8868	3.717784	4.542	0.000	9.60002	24.17357
dalcdyn	-191.974	99.04161	-1.938	0.053	-386.0934	2.145403
dven60	7.984263	12.72639	0.627	0.530	-17.0816	32.96308
dven30m	-60.72362	20.74142	-2.928	0.003	-101.3764	-20.07088
dnselz	-67.64952	51.71755	-1.308	0.191	-169.0148	33.71577
dotherab	57.05569	5.297403	10.771	0.000	46.67283	67.43848
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ercr	-16.24406	3.949907	-4.113	0.000	-23.98579	-8.502324
_cons	1357.682	251.1082	5.407	0.000	865.5151	1849.848

51710 6388

```
. *Texas Natality 1989
. do c:\temp\regress\low89.do

. set more 1

. set matsize 300
```

51710 6389

```
. *regress low weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs [illegible]
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani [illegible]
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage [illegible]drh dothermr dmecon [illegible]
> [illegible]brupti dpreplac [illegible] ddysfunc dcord [illegible]
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 &
> dbirwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99
```

Source	SS	df	MS		
Model	155172581	61	2543812.80	Number of obs =	9535
Residual	495554724	9473	52312.3323	F(61, 9473) =	48.63
				Prob > F =	0.0000
				R-squared =	0.2385
				Adj R-squared =	0.2336
Total	650727305	9534	68253.3359	Root MSE =	228.72

dbirwt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
dtobacco	192.5661	64.74743	2.974	0.003	65.64725	319.4849
dtobgest	-5.547037	1.764012	-3.145	0.002	-9.004878	-2.089196
dtobalco	-5.720965	28.15244	-0.203	0.839	-60.90577	49.46384
dalcohol	.2212557	24.28222	0.009	0.993	-47.37711	47.81962
dmale	6.877839	4.730079	1.454	0.146	-2.39413	16.14981
gestat	24.59714	8.197704	3.000	0.003	8.527887	40.6664
dmag16gs	1.376751	9.314474	0.148	0.882	-16.88161	19.63512
dm1640gs	5.552966	8.218745	0.676	0.499	-10.55754	21.66347
dmage16	-86.13974	333.5606	-0.258	0.796	-739.9901	567.7106
dmag1640	-217.8107	293.7971	-0.741	0.458	-793.716	358.0945
nprevist	4.420094	.6999953	6.314	0.000	3.047953	5.792235
monpre	-1.56646	1.367169	-1.146	0.252	-4.246405	1.113485
dblack	-8.002589	6.64837	-1.204	0.229	-21.03482	5.02964
damind	-17.13889	60.03396	-0.285	0.775	-134.8183	100.5405
dasia	8.873589	17.29105	0.513	0.608	-25.02058	42.76776
dhispani	1.242208	6.267052	0.198	0.843	-11.04256	13.52697
dmarried	4.646168	6.069033	0.766	0.444	-7.250437	16.54277
dlivord	2.678803	1.115498	2.401	0.016	.4921877	4.865418
dnoeduc	-32.72959	32.51826	-1.006	0.314	-96.47236	31.01317
delem	9.334354	9.982943	0.935	0.350	-10.23435	28.90306
dsomhs	-2.784557	7.277374	-0.383	0.702	-17.04977	11.48066
dhsg	-2.656329	6.278042	-0.423	0.672	-14.96264	9.649979
dtwin	-62.8215	6.716617	-9.353	0.000	-75.98751	-49.65549
dtriple	-195.8203	32.09513	-6.101	0.000	-258.7336	-132.907
dquad	(dropped)					
danemia	6.383871	12.72751	0.502	0.616	-18.56478	31.33252
dcardiac	-28.14139	33.32152	-0.845	0.398	-93.45872	37.17593
dlung	135.1766	39.00067	3.466	0.001	58.72691	211.6263
ddiabete	-3.039789	14.71106	-0.207	0.836	-31.87663	25.79705
ialcdiab	-44.04114	89.36271	-0.493	0.622	-219.2112	131.1289
dhydra	-39.0167	17.89694	-2.180	0.029	-74.09853	-3.934871
dhemo	8.012937	81.11312	0.099	0.921	-150.9862	167.012
dphyper	-52.18574	8.494183	-6.144	0.000	-68.83616	-35.53532
dchyper	-40.56073	16.80434	-2.414	0.016	-73.50084	-7.620618
declamp	6.468441	20.27648	0.319	0.750	-33.2778	46.21468
itobeclm	-129.373	69.53157	-1.861	0.063	-265.6698	6.923745
ialceclm	(dropped)					
dincervi	-57.68418	31.40837	-1.837	0.066	-119.2513	3.882961
itobincv	20.49511	71.01467	0.289	0.773	-118.7089	159.6991
dpre4000	51.13923	34.46315	1.484	0.138	-16.41594	118.6944
dpreterm	-20.03278	53.26369	-0.376	0.707	-124.441	84.37548
iprtmage	-.5345646	1.95287	-0.274	0.784	-4.362609	3.29348
drenal	-55.49408	31.5515	-1.759	0.079	-117.3418	6.353633
drh	5.254538	36.99777	0.142	0.887	-67.26901	77.77809
dothermr	-25.88219	5.390566	-4.801	0.000	-36.44886	-15.31553
dmecon	-30.02855	12.04818	-2.492	0.013	-53.64557	-6.411527
drupture	-21.81467	9.243852	-2.360	0.018	-39.9346	-3.694739
dabrupti	-59.04928	15.45373	-3.821	0.000	-89.3419	-28.75665
dpreplac	.528879	20.98337	0.025	0.980	-40.60303	41.66078
dexcebld	17.29366	28.04639	0.617	0.538	-37.68328	72.27059
dazure	-126.6543	82.06026	-1.543	0.123	-287.51	34.20138
drecip	-3.611345	13.91845	-0.259	0.795	-30.89449	23.6718
dprolong	37.85869	27.71335	1.366	0.172	-16.46541	92.18279
ddysfunc	29.50127	11.8605	2.487	0.013	6.252159	52.75039
dcord	-6.418642	31.65099	-0.203	0.839	-68.46137	55.62409

51710 6390

dotherlb	-40.5436	6.295125	-6.440	0.000	-52.88339	-28.2038
dalcosyd	144.3941	94.34471	1.530	0.126	-40.54176	329.33
dven180	-68.06634	17.4471	-3.661	0.000	[illegible]	[illegible]
dven30m	-109.3087	13.70411	-7.976	0.000	-136.1717	-82.44575
dnseiz	-79.81412	57.484132	-1.388	0.165	-192.4953	32.86709
dotherah	-81.4991	6.370495	-12.793	0.000	[illegible]	[illegible]
[illegible]qcr	-27.83702	10.2205	-2.724	0.006	[illegible]	[illegible]
rcr	-13.02016	7.710859	-1.689	0.091	-28.1351	2.094772
_cons	1354.512	293.3083	4.618	0.000	779.5653	1929.459

51710 6391

```
. *Texas Natality 1989
. do c:\temp\regress\lowlow89.do

. set more 1

. matsize 300
```

51710 6392

```
. * regress low low weight birth estimates
. regress dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gsta
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialodiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm
> vi itobincv dpre4000 dpreterm iprtmage drenal drh dother
  brupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  dbirwt <=1500 & gestat !=99 & nprevist !=99

  Source |       SS       df       MS              Number of obs =    1688
---------+------------------------------           F( 61,  1626) =   20.98
   Model |  76608579.1     61  1255878.35           Prob > F      =  0.0000
Residual |  97349310.4   1626  59870.4246           R-squared     =  0.4404
---------+------------------------------           Adj R-squared =  0.4194
   Total |  173957890   1687   103116.71           Root MSE      =  244.68

------------------------------------------------------------------------------
  dbirwt |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   -20.6577   98.93708    -0.209   0.835    -214.7152    173.3999
dtobgest |   .9771594   3.367128     0.290   0.772    -5.627206    7.581524
dtobalco |   92.65351   71.15281     1.302   0.193    -46.90732    232.2143
dalcohol |  -113.8651   59.07065    -1.928   0.054    -229.7277    1.997495
   dmale |   25.19074   12.12949     2.077   0.038     1.399665    48.98182
  gestat |  -15.49724   22.90961    -0.676   0.499    -60.43269    29.43822
dmag16gs |   59.37707    25.0484     2.370   0.018     10.24654    108.5076
dm1640gs |   56.55504   22.88838     2.471   0.014     11.66122    101.4489
 dmage16 |  -1976.181   798.0923    -2.476   0.013    -3541.579   -410.784
dmag1640 |  -1978.448    747.381    -2.647   0.008    -3444.379   -512.5165
nprevist |   3.879107   1.694424     2.289   0.022      .555622    7.202591
  monpre |   5.534012   3.781737     1.463   0.144    -1.883577    12.9516
  dblack |  -33.16445   16.47581    -2.013   0.044    -65.4805    -.8484045
  damind |   47.56062   137.0046     0.347   0.729    -221.1635    316.2848
   dasia |  -22.19058   59.86832    -0.371   0.711    -139.6177    95.23657
dhispani |   -42.2216   16.32931    -2.586   0.010    -74.25031   -10.19289
dmarried |  -12.82876   15.50888    -0.827   0.408    -43.24824    17.59072
  livord |   5.566953   5.128363     1.086   0.278    -4.49194     15.62585
 noeduc  |   83.08768   65.92269     1.260   0.208    -46.21467     212.39
   delem |   33.71109   27.30652     1.235   0.217    -19.84858    87.27075
  dsomhs |   39.10705   18.22511     2.146   0.032     3.359894    74.85421
    dhsg |   9.928956   16.04139     0.619   0.536      -21.535    41.39291
   dtwin |   1.794438   16.89693     0.106   0.915    -31.34761    34.93649
 dtriple |  -43.31219   42.88109    -1.010   0.313    -127.4202    40.7958
   dquad |   192.2152   131.1116     1.466   0.143    -64.9502    449.3806
 danemia |   23.77691   29.82106     0.797   0.425    -34.71484    82.26865
dcardiac |   194.4799   89.38643     2.176   0.030     19.15526    369.8046
   dlung |  -9.223902   115.1367    -0.080   0.936    -235.0558    216.608
ddiabete |   4.442264   43.70745     0.102   0.919    -81.28658    90.17111
ialcdiab |  (dropped)
  dhydra |  -43.81316   29.77483    -1.471   0.141    -102.2142    14.58791
   dhemo |   201.4792   125.3487     1.607   0.108    -44.38279    447.3411
 dphyper |   14.73518   22.78089     0.647   0.518    -29.9478     59.41815
 dchyper |  -46.05921   41.74926    -1.103   0.270    -127.9472    35.82879
 declamp |   82.20324   41.64756     1.974   0.049     .5147062    163.8918
itobeclm |  -315.0737   110.4884    -2.852   0.004    -531.7882   -98.35914
ialceclm |  (dropped)
dincervi |  -135.3678   35.12658    -3.854   0.000    -204.2659   -66.46966
itobincv |   24.04517   88.28493     0.272   0.785     -149.119    197.2093
dpre4000 |   34.03918   88.13219     0.386   0.699    -138.8254    206.9038
dpreterm |   99.88192   128.0395     0.780   0.435    -151.2578    351.0217
iprtmage |  -4.291972   4.704097    -0.912   0.362     -13.5187    4.934757
  drenal |  -106.0984   65.25348    -1.626   0.104    -234.0881    21.89137
     drh |   -66.1363   176.2758    -0.375   0.708    -411.3878    279.6152
dothermr |   25.30503   12.97148     1.951   0.051    -.1375342    50.7476
  dmecon |  -26.06176    41.0131    -0.635   0.525    -106.5058    54.38232
drupture |   4.669643   18.75718     0.249   0.803    -32.12113    41.46042
dabrupti |   51.54672   25.45868     2.025   0.043     1.611466    101.482
dpreplac |  -16.09799   39.43612    -0.408   0.683    -93.44893    61.25295
dexcebld |  -72.44642   42.19797    -1.717   0.086    -155.2145    10.32169
dseizure |   192.6101   103.3034     1.865   0.062    -10.01164    395.2319
 dprecip |   27.92957   31.51143     0.886   0.376     -33.8777    89.73683
dprolong |   65.12264   83.71913     0.778   0.437    -99.08607    229.3314
ddysfunc |  -107.4784   55.70754    -1.929   0.054    -216.7445    1.787665
```

51710 6393

dcord	-29.46542	48.68976	-0.605	0.545	-124.9667	66.03583
dotherlb	6.097628	13.04089	0.441	0.660	-33.2452	21.05938
dalcosyn	6.124675	246.2654	0.025	0.980	-490.1362	477.8869
dven130	32.45317	27.6151	1.175	0.240	-21.71174	86.61808
dven30w	10.25352	15.95957	0.642	0.521	-21.04996	41.55701
dnseis	146.3846	72.32657	2.024	0.043	4.521508	288.2477
[illegible]	[illegible]	[illegible]	4.353	[illegible]	[illegible]	[illegible]
adqcr	-26.1808	22.15069	-1.182	0.237	-69.62771	17.2661
aintercr	-15.85048	19.78931	-0.801	0.423	-54.66571	22.96475
_cons	1801.44	748.2394	2.408	0.016	333.8248	3269.054

51710 6394

[redacted]

Attachment 7
Partial Correlations

51710 6395

```
. *Texas Natality 1993
. do c:\temp\pcorr\pcnorm193.do

. set more 1

. set matsize 300

. * partial correlation of normal weight birth estimates
. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried liv
> ord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 & d
> birwt >2500 & gestat !=99 & nprevist !=99
(obs=276038)

Partial correlation of dbirwt with
Variable |    Corr.     Sig.
---------+------------------
dtobacco |   0.0048    0.011
dtobgest |  -0.0112    0.000
dtobalco |   0.0035    0.067
dalcohol |  -0.0065    0.001
   dmale |   0.1368    0.000
  gestat |   0.0216    0.000
dmag16gs |  -0.0073    0.000
dm1640gs |  -0.0031    0.100
 dmage16 |   0.0070    0.000
dmag1640 |   0.0032    0.091
nprevist |   0.0309    0.000
  monpre |   0.0000    0.997
  dblack |  -0.1130    0.000
  damind |  -0.0680    0.000
   dasia |   0.0069    0.000
dhispani |  -0.0684    0.000
 married |   0.0280    0.000
  vord9  |   0.1019    0.000
dnoeduc  |   0.0004    0.848
   delem |  -0.0191    0.000
  dsomhs |  -0.0459    0.000
    dhsg |  -0.0315    0.000
   dtwin |  -0.1181    0.000
 dtriple |  -0.0091    0.000
   dquad | (dropped)
 danemia |  -0.0025    0.182
dcardiac |  -0.0059    0.002
   dlung |  -0.0017    0.378
ddiabete |   0.0356    0.000
ialcdiab |   0.0000    0.982
  dhydra |  -0.0200    0.000
   dhemo |  -0.0029    0.126
 dphyper |  -0.0229    0.000
 dchyper |  -0.0136    0.000
 declamp |  -0.0067    0.000
itobeclm |   0.0031    0.104
ialceclm | (dropped)
dincervi |  -0.0023    0.225
itobincv |  -0.0032    0.097
dpre4000 |   0.0796    0.000
dpreterm |  -0.0097    0.000
iprtmage |   0.0028    0.140
  drenal |  -0.0041    0.031
     drh |  -0.0020    0.283
dothermr |  -0.0264    0.000
  dmecon |   0.0285    0.000
drupture |  -0.0273    0.000
dabrupti |  -0.0196    0.000
 preplac |  -0.0193    0.000
 xcebld  |   0.0102    0.000
dseizure |  -0.0036    0.061
 dprecip |  -0.0207    0.000
dprolong |   0.0037    0.054
```

51710 6396

ddysfunc	0.0694	0.000
dcord	0.0008	0.684
dotherlb	0.0169	0.000
dalcosyn	-0.0010	0.593
dgenl30	-0.0013	0.487
dven30m	-0.0091	0.000
dnself	-0.0040	0.035
herab	0.0220	0.000
adqcr	-0.0016	0.386
dintercr	-0.0030	0.115

51710 6397

```
. *Texas Natality 1993
. do c:\temp\pcorr\pclow93.do

. set more 1
```

. partial correlation of low weight birth estimates

```
. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried liv
> ord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 & d
> birwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99
(obs=16732)

Partial correlation of dbirwt with
Variable |    Corr.     Sig.
---------+------------------
dtobacco |   0.0034    0.657
dtobgest |  -0.0044    0.572
dtobalco |  -0.0098    0.208
dalcohol |   0.0048    0.536
   dmale |   0.0032    0.678
  gestat |   0.0391    0.000
dmag16gs |   0.0024    0.758
dm1640gs |   0.0032    0.679
 dmage16 |  -0.0016    0.836
dmag1640 |  -0.0031    0.689
nprevist |   0.0442    0.000
  monpre |   0.0322    0.000
  dblack |  -0.0197    0.011
  damind |   0.0098    0.204
   dasia |  -0.0050    0.517
    pani |   0.0144    0.063
     ried |   0.0128    0.099
 livord9 |   0.0246    0.001
 dnoeduc |  -0.0101    0.191
   delem |  -0.0363    0.000
  dsomhs |  -0.0273    0.000
    dhsg |  -0.0285    0.000
   dtwin |  -0.0852    0.000
 dtriple |  -0.0598    0.000
   dquad |  -0.0209    0.007
 danemia |   0.0131    0.091
dcardiac |   0.0070    0.367
   dlung |   0.0073    0.344
ddiabete |   0.0130    0.093
ialcdiab |   0.0083    0.282
  dhydra |  -0.0413    0.000
   dhemo |  -0.0045    0.559
 dphyper |  -0.0723    0.000
 dchyper |  -0.0249    0.001
 declamp |  -0.0187    0.016
itobeclm |   0.0007    0.925
ialceclm |  (dropped)
dincervi |  -0.0085    0.271
itobincv |  -0.0023    0.765
dpre4000 |   0.0077    0.321
dpreterm |  -0.0071    0.358
iprtmage |   0.0024    0.752
  drenal |  -0.0072    0.351
     drh |   0.0199    0.010
dothermr |  -0.0220    0.005
  dmecon |  -0.0085    0.271
drupture |  -0.0294    0.000
   rupti |  -0.0537    0.000
 preplac |   0.0064    0.412
dexcebld |   0.0122    0.116
dseizure |  -0.0090    0.245
 dprecip |   0.0011    0.892
```

51710 6398

dprolong	0.0182	0.019
ddysfunc	-0.0009	0.910
dcoord	0.0079	0.311
dotherlb	-0.0414	0.000
dalcosyn	0.0017	0.823
dven130	-0.0120	0.123
[illegible]	-0.0674	0.000
[illegible]eiz	0.0043	0.577
d[illegible]erab	-0.1182	0.000
dinadqcr	-0.0090	0.247
dintercr	-0.0093	0.231

51710 6399

[redacted]

```
. set more 1
[redacted]

. * partial correlation of low low weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried liv
> ord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 & d
> birwt <=1500 & gestat !=99 & nprevist !=99
(obs=3368)

Partial correlation of dbirwt with
Variable |     Corr.     Sig.
---------+------------------
dtobacco |    0.0524    0.003
dtobgest |   -0.0539    0.002
dtobalco |   -0.0207    0.234
dalcohol |    0.0297    0.087
   dmale |    0.0764    0.000
  gestat |    0.0711    0.000
dmag16gs |    0.0156    0.371
dm1640gs |    0.0199    0.252
 dmage16 |   -0.0092    0.598
dmag1640 |   -0.0163    0.350
nprevist |    0.0480    0.006
  monpre |    0.0168    0.335
  dblack |   -0.0316    0.070
  damind |   -0.0240    0.167
   dasia |   -0.0077    0.658
 dhispani |   -0.0343    0.049
 dmarried |    0.0137    0.430
 livord9 |    0.0164    0.345
 dnoeduc |   -0.0547    0.002
   delem |    0.0221    0.203
  dsomhs |    0.0205    0.238
    dhsg |   -0.0005    0.978
   dtwin |   -0.0510    0.003
 dtriple |   -0.0368    0.034
   dquad |    0.0074    0.672
 danemia |   -0.0042    0.811
dcardiac |    0.0246    0.158
   dlung |    0.0157    0.366
ddiabete |    0.0305    0.079
ialcdiab |   -0.0209    0.229
  dhydra |   -0.0891    0.000
   dhemo |   -0.0259    0.136
 dphyper |    0.0382    0.028
 dchyper |   -0.0455    0.009
 declamp |   -0.0171    0.326
itobeclm |    0.0200    0.251
ialceclm | (dropped)
dincervi |   -0.0337    0.053
itobincv |    0.0084    0.627
dpre4000 |    0.0046    0.790
dpreterm |    0.0272    0.118
iprtmage |   -0.0223    0.200
  drenal |    0.0074    0.672
     drh |    0.0188    0.279
dothermr |    0.0124    0.478
  dmecon |   -0.0224    0.197
drupture |    0.0597    0.001
labrupti |   -0.0012    0.947
dpreplac |   -0.0172    0.321
dexcebld |   -0.0254    0.145
dseizure |    0.0070    0.689
 dprecip |    0.0099    0.568
```

51710 6400

dprolong	0.0394	0.024
ddysfunc	0.0204	0.240
dcoord	0.0238	0.110
dotherlb	-0.0128	0.461
dalcosyn	0.0114	0.513
dvenl30	0.0402	0.021
[illegible]	[illegible]	[illegible]
eiz	0.0076	0.660
dcmerab	-0.0525	0.003
dinadqcr	0.0039	0.822
dintercr	0.0070	0.689

51710 6401

[redacted]

```
. set more 1

[redacted]

. * partial correlation of normal weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried liv
> ord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 & d
> birwt >2500 & gestat !=99 & nprevist !=99
(obs=234357)

Partial correlation of dbirwt with
Variable |    Corr.     Sig.
---------+------------------
dtobacco |   0.0081    0.000
dtobgest |  -0.0147    0.000
dtobalco |  -0.0029    0.163
dalcohol |  -0.0002    0.928
   dmale |   0.1364    0.000
  gestat |   0.0168    0.000
dmag16gs |  -0.0046    0.025
dm1640gs |   0.0022    0.281
 dmage16 |   0.0045    0.030
dmag1640 |  -0.0021    0.312
nprevist |   0.0359    0.000
  monpre |  -0.0025    0.227
  dblack |  -0.1127    0.000
  damind |  -0.0657    0.000
   dasia |   0.0001    0.966
 spani |  -0.0644    0.000
 rried |   0.0253    0.000
livord9 |   0.1096    0.000
 dnoeduc |  -0.0089    0.000
   delem |  -0.0241    0.000
  dsomhs |  -0.0475    0.000
    dhsg |  -0.0288    0.000
   dtwin |  -0.1172    0.000
 dtriple |  -0.0112    0.000
   dquad | (dropped)
 danemia |   0.0023    0.274
dcardiac |  -0.0058    0.005
   dlung |  -0.0016    0.436
ddiabete |   0.0334    0.000
ialcdiab |   0.0015    0.468
  dhydra |  -0.0149    0.000
   dhemo |  -0.0019    0.368
 dphyper |  -0.0191    0.000
 dchyper |  -0.0090    0.000
 declamp |  -0.0034    0.097
itobeclm |  -0.0001    0.959
ialceclm | (dropped)
dincervi |  -0.0056    0.007
itobincv |  -0.0005    0.811
dpre4000 |   0.0716    0.000
dpreterm |  -0.0108    0.000
iprtmage |   0.0044    0.033
  drenal |  -0.0074    0.000
     drh |  -0.0013    0.537
dothermr |  -0.0201    0.000
  dmecon |   0.0252    0.000
drupture |  -0.0232    0.000
   rupti |  -0.0205    0.000
 replac |  -0.0159    0.000
dexcebld |   0.0102    0.000
dseizure |  -0.0036    0.085
 dprecip |  -0.0206    0.000
```

51710 6402

dprolong	0.0046	0.025
ddysfunc	0.0655	0.000
dcard	0.0029	0.160
dotherlb	0.0186	0.000
dalcoeyn	0.0012	0.555
dvenl30	0.0037	0.076
[illegible]	[illegible]	[illegible]
[illegible]iz	-0.0019	0.357
do[illegible]rab	0.0215	0.000
dinadqcr	-0.0017	0.400
dintercr	-0.0036	0.078

51710 6403

Texas Natality 1992

do c:\temp\pcorr\pclow91.do

. set more 1

. set matsize 300

partial correlation of low weight birth estimates

```
. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried liv
> ord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt !=9999 & d
> birwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99
(obs=13871)

Partial correlation of dbirwt with
Variable |    Corr.     Sig.
---------+------------------
dtobacco |   0.0129    0.131
dtobgest |  -0.0138    0.104
dtobalco |  -0.0014    0.867
dalcohol |   0.0051    0.551
   dmale |   0.0215    0.011
  gestat |   0.0205    0.016
dmag16gs |   0.0131    0.123
dm1640gs |   0.0187    0.028
 dmage16 |  -0.0111    0.190
dmag1640 |  -0.0178    0.036
nprevist |   0.0496    0.000
  monpre |   0.0234    0.006
  dblack |  -0.0278    0.001
  damind |   0.0216    0.011
   dasia |   0.0110    0.196
    spani |   0.0038    0.653
    ried |  -0.0074    0.387
 ivord9 |   0.0127    0.136
 dnoeduc |  -0.0012    0.890
   delem |  -0.0170    0.045
  dsomhs |  -0.0276    0.001
    dhsg |  -0.0272    0.001
   dtwin |  -0.0911    0.000
 dtriple |  -0.0625    0.000
   dquad |  -0.0197    0.021
 danemia |   0.0016    0.853
dcardiac |   0.0045    0.598
   dlung |   0.0128    0.132
ddiabete |   0.0115    0.178
ialcdiab |   0.0149    0.080
  dhydra |  -0.0402    0.000
   dhemo |  -0.0175    0.040
 dphyper |  -0.0686    0.000
 dchyper |  -0.0332    0.000
 declamp |  -0.0211    0.013
itobeclm |  -0.0011    0.897
ialceclm | (dropped)
dincervi |  -0.0170    0.045
itobincv |   0.0175    0.040
dpre4000 |  -0.0084    0.324
dpreterm |   0.0018    0.830
iprtmage |  -0.0045    0.599
  drenal |  -0.0088    0.302
     drh |  -0.0179    0.035
dothermr |  -0.0144    0.090
  dmecon |   0.0028    0.739
drupture |  -0.0189    0.026
   rupti |  -0.0275    0.001
   eplac |   0.0001    0.991
dexcebld |  -0.0032    0.710
dseizure |  -0.0221    0.010
 dprecip |  -0.0179    0.035
```

51710 6404

[illegible]	-0.0256	0.003
[illegible]	-0.0219	[illegible]
[illegible]seiz	0.0068	0.422
dothenab	-0.1428	0.000
dinadqcr	-0.0050	0.559
dintercr	-0.0140	0.100

51710 6405

```
. Texas Natality 1989
. do c:\temp\pcorr\pclowlow89.do

. set more 1

. set matsize 300

. * partial correlation of low low weight birth estimates
. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 & d
> birwt <=1500 & gestat !=99 & nprevist !=99
(obs=1688)

Partial correlation of dbirwt with
Variable |     Corr.      Sig.
---------+------------------
dtobacco |   -0.0052    0.835
dtobgest |    0.0072    0.772
dtobalco |    0.0323    0.193
dalcohol |   -0.0477    0.054
   dmale |    0.0514    0.038
  gestat |   -0.0168    0.499
dmag16gs |    0.0587    0.018
dm1640gs |    0.0612    0.014
 dmage16 |   -0.0613    0.013
dmag1640 |   -0.0655    0.008
nprevist |    0.0567    0.022
  monpre |    0.0363    0.144
  dblack |   -0.0499    0.044
  damind |    0.0086    0.729
   dasia |   -0.0092    0.711
dhispani |   -0.0640    0.010
 married |   -0.0205    0.408
dlivord  |    0.0269    0.278
 dnoeduc |    0.0312    0.208
   delem |    0.0306    0.217
  dsomhs |    0.0531    0.032
    dhsg |    0.0153    0.536
   dtwin |    0.0026    0.915
 dtriple |   -0.0250    0.313
   dquad |    0.0363    0.143
 danemia |    0.0198    0.425
dcardiac |    0.0539    0.030
   dlung |   -0.0020    0.936
ddiabete |    0.0025    0.919
ialcdiab | (dropped)
  dhydra |   -0.0365    0.141
   dhemo |    0.0398    0.108
 dphyper |    0.0160    0.518
 dchyper |   -0.0273    0.270
 declamp |    0.0489    0.049
itobeclm |   -0.0705    0.004
ialceclm | (dropped)
dincervi |   -0.0951    0.000
itobincv |    0.0068    0.785
dpre4000 |    0.0096    0.699
dpreterm |    0.0193    0.435
iprtmage |   -0.0226    0.362
  drenal |   -0.0403    0.104
     drh |   -0.0093    0.708
dothermr |    0.0483    0.051
  dmecon |   -0.0158    0.525
drupture |    0.0062    0.803
dabrupti |    0.0501    0.043
 dpreplac |   -0.0101    0.683
dexcebld |   -0.0425    0.086
dseizure |    0.0462    0.062
 dprecip |    0.0220    0.376
dprolong |    0.0193    0.437
```

51710 6406

ddysfunc	-0.0478	0.054
dcord	-0.0150	0.545
dotherlb	-0.0109	0.660
dalcosyn	-0.0006	0.980
dven130	0.0291	0.240
dven30m	0.0159	0.521
dnseiz	-0.0501	0.043
herab	-0.1073	0.000
dqcr	-0.0293	0.237
dintercr	-0.0199	0.423

51710 6407

. Texas Natality 1991
. do c:\temp\pcorr\pcnormal89.do

. set more 1

. matsize 300

. * partial correlation of normal weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 & db
> irwt >2500 & gestat !=99 & nprevist !=99
(obs=199570)

Partial correlation of dbirwt with

Variable	Corr.	Sig.
dtobacco	0.0050	0.027
dtobgest	-0.0111	0.000
dtobalco	0.0026	0.240
dalcohol	-0.0030	0.173
dmale	0.1352	0.000
gestat	0.0171	0.000
dmag16gs	-0.0037	0.100
dm1640gs	-0.0002	0.936
dmage16	0.0029	0.190
dmag1640	-0.0001	0.960
nprevist	0.0361	0.000
monpre	0.0062	0.005
dblack	-0.1082	0.000
damind	0.0254	0.000
dasia	-0.0617	0.000
pani	-0.0667	0.000
ried	0.0365	0.000
dlivord	0.0542	0.000
dnoeduc	-0.0029	0.191
delem	-0.0112	0.000
dsomhs	-0.0458	0.000
dhsg	-0.0263	0.000
dtwin	-0.1082	0.000
dtriple	-0.0055	0.015
dquad	(dropped)	
danemia	0.0010	0.664
dcardiac	-0.0049	0.027
dlung	-0.0039	0.080
ddiabete	0.0350	0.000
ialcdiab	0.0024	0.274
dhydra	-0.0147	0.000
dhemo	0.0010	0.639
dphyper	-0.0197	0.000
dchyper	-0.0105	0.000
declamp	-0.0098	0.000
itobeclm	0.0027	0.222
ialceclm	(dropped)	
dincervi	-0.0086	0.000
itobincv	0.0000	0.996
dpre4000	0.0844	0.000
dpreterm	-0.0106	0.000
iprtmage	0.0047	0.037
drenal	-0.0094	0.000
drh	0.0029	0.197
dothermr	-0.0084	0.000
dmecon	0.0289	0.000
drupture	-0.0195	0.000
rupti	-0.0205	0.000
replac	-0.0162	0.000
dexcebld	0.0083	0.000
dseizure	-0.0015	0.498
dprecip	-0.0151	0.000

dprolong	0.0062	0.005
ddysfunc	0.0548	0.000
dcord	-0.0001	0.968
dotherlb	0.0065	0.004
dalcosyn	0.0011	0.630
dvenl30	-0.0063	0.005
[illegible]	[illegible]	[illegible]
iseiz	0.0057	0.011
dotherab	0.0226	0.000
dinadqcr	-0.0047	0.034
dintercr	-0.0087	0.000

51710 6409

```
. *Texas Natality 1991
. do c:\temp\pcorr\pclow89.do

. set more 1

. matsize 300

. * partial correlation of low weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 & db
> irwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99
(obs=10508)

Partial correlation of dbirwt with
Variable |    Corr.      Sig.
---------+------------------
dtobacco |   0.0401    0.000
dtobgest |  -0.0425    0.000
dtobalco |  -0.0056    0.570
dalcohol |   0.0090    0.356
   dmale |  -0.0058    0.555
  gestat |   0.0228    0.020
dmag16gs |   0.0065    0.504
dm1640gs |   0.0131    0.180
 dmage16 |  -0.0059    0.547
dmag1640 |  -0.0126    0.197
nprevist |   0.0373    0.000
  monpre |   0.0372    0.000
  dblack |  -0.0267    0.006
  damind |   0.0141    0.150
   dasia |  -0.0006    0.950
    pani |   0.0030    0.763
    ried |   0.0187    0.056
 dlivord |   0.0091    0.351
 dnoeduc |  -0.0015    0.874
   delem |  -0.0219    0.025
  dsomhs |  -0.0125    0.202
    dhsg |  -0.0185    0.059
   dtwin |  -0.0854    0.000
 dtriple |  -0.0769    0.000
   dquad |  -0.0185    0.059
 danemia |   0.0219    0.025
dcardiac |   0.0133    0.174
   dlung |  -0.0044    0.656
ddiabete |   0.0148    0.131
ialcdiab |   0.0169    0.084
  dhydra |  -0.0438    0.000
   dhemo |  -0.0233    0.017
 dphyper |  -0.0705    0.000
 dchyper |  -0.0467    0.000
 declamp |  -0.0317    0.001
itobeclm |   0.0095    0.333
ialceclm | (dropped)
dincervi |  -0.0142    0.147
itobincv |   0.0018    0.852
dpre4000 |  -0.0132    0.178
dpreterm |  -0.0142    0.147
iprtmage |   0.0130    0.182
  drenal |  -0.0062    0.528
     drh |   0.0151    0.123
dothermr |  -0.0332    0.001
  dmecon |  -0.0034    0.731
 upture |  -0.0189    0.053
  rupti |  -0.0357    0.000
preplac |   0.0017    0.858
dexcebld |   0.0022    0.822
dseizure |   0.0082    0.400
 dprecip |  -0.0006    0.951
```

51710 6410

dprolong	0.0072	0.463
ddysfunc	0.0234	0.017
dcord	0.0108	0.269
dotherlb	-0.0485	0.000
dalcosyn	0.0038	0.698
dvenl30	-0.0019	0.363
dven30m	-0.0778	0.000
dnseiz	-0.0163	0.095
dotherab	-0.1033	0.000
dinadqcr	0.0084	0.391
dintercr	0.0110	0.260

51710 6411

```
. *Texas Natality 1991
. do c:\temp\pcorr\pclowlow89.do

. set more 1

. set matsize 300

. * partial correlation of low low weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 & d
> birwt <=1500 & gestat !=99 & nprevist !=99
(obs=1531)

Partial correlation of dbirwt with
Variable |     Corr.      Sig.
---------+------------------
dtobacco |   -0.0174     0.505
dtobgest |    0.0090     0.730
dtobalco |    0.0149     0.567
dalcohol |   -0.0129     0.621
   dmale |    0.0446     0.087
  gestat |    0.0826     0.002
dmag16gs |   -0.0067     0.798
dm1640gs |   -0.0112     0.668
 dmage16 |    0.0050     0.848
dmag1640 |    0.0077     0.766
nprevist |    0.0352     0.177
  monpre |    0.0115     0.658
  dblack |   -0.0518     0.047
  damind |   -0.0068     0.793
   dasia |   -0.0127     0.627
 dhispani |   -0.0742     0.004
dmarried |    0.0277     0.289
 dlivord |   -0.0085     0.745
 dnoeduc |    0.0124     0.633
   delem |    0.0151     0.562
  dsomhs |    0.0523     0.045
    dhsg |    0.0121     0.643
   dtwin |    0.0235     0.366
 dtriple |    0.0031     0.906
   dquad | (dropped)
 danemia |    0.0328     0.209
dcardiac |   -0.0018     0.946
   dlung |   -0.0391     0.133
ddiabete |    0.0265     0.310
ialcdiab | (dropped)
  dhydra |   -0.0033     0.901
   dhemo |    0.0236     0.365
 dphyper |   -0.0030     0.907
 dchyper |   -0.0167     0.522
 declamp |    0.0416     0.110
itobeclm | (dropped)
ialceclm | (dropped)
dincervi |   -0.0305     0.242
itobincv |    0.0301     0.247
dpre4000 |   -0.0177     0.498
dpreterm |    0.0016     0.951
iprtmage |    0.0019     0.943
  drenal |   -0.0493     0.058
     drh |   -0.0141     0.587
dothermr |    0.0283     0.277
  dmecon |   -0.0198     0.448
drupture |    0.0436     0.094
  rupti |    0.0015     0.955
dpreplac |   -0.0089     0.732
dexcebld |   -0.0499     0.056
dseizure |   -0.0123     0.637
 dprecip |    0.0403     0.122
```

51710 6412

dprolong	0.0210	0.420
ddysfunc	0.0109	0.677
dcord	0.0293	0.261
dotherlb	-0.0170	0.513
dalcosyn	(dropped)	
dvenl30	-0.0146	0.575
d 0m	-0.0469	0.072
lz	-0.0678	0.009
dotnerab	-0.0376	0.149
dinadqcr	-0.0220	0.398
dintercr	0.0467	0.073

51710 6413

. *Texas Natality 1990
. do c:\temp\pcorr\pcnormal89.do

. set more 1

. set matsize 800

partial correlation of normal weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 & db
> irwt >2500 & gestat !=99 & nprevist !=99
(obs=224776)

Partial correlation of dbirwt with

Variable	Corr.	Sig.
dtobacco	0.0079	0.000
dtobgest	-0.0141	0.000
dtobalco	-0.0022	0.304
dalcohol	0.0007	0.738
dmale	0.1391	0.000
gestat	0.0192	0.000
dmag16gs	-0.0056	0.008
dm1640gs	-0.0030	0.158
dmage16	0.0048	0.022
dmag1640	0.0027	0.199
nprevist	0.0333	0.000
monpre	0.0009	0.653
dblack	-0.1046	0.000
damind	0.0218	0.000
dasia	-0.0570	0.000
spani	-0.0597	0.000
rried	0.0355	0.000
ılivord	0.0460	0.000
dnoeduc	-0.0020	0.342
delem	-0.0073	0.001
dsomhs	-0.0455	0.000
dhsg	-0.0265	0.000
dtwin	-0.1116	0.000
dtriple	-0.0023	0.269
dquad	-0.0015	0.490
danemia	0.0019	0.374
dcardiac	-0.0015	0.469
dlung	-0.0044	0.036
ddiabete	0.0317	0.000
ialcdiab	-0.0015	0.476
dhydra	-0.0137	0.000
dhemo	0.0003	0.882
dphyper	-0.0163	0.000
dchyper	-0.0085	0.000
declamp	-0.0097	0.000
itobeclm	0.0012	0.563
ialceclm	(dropped)	
dincervi	-0.0029	0.174
itobincv	0.0006	0.773
dpre4000	0.0944	0.000
dpreterm	-0.0086	0.000
iprtmage	0.0013	0.551
drenal	-0.0085	0.000
drh	-0.0010	0.648
dothermr	-0.0283	0.000
dmecon	0.0277	0.000
drupture	-0.0279	0.000
rupti	-0.0216	0.000
eplac	-0.0156	0.000
dexcebld	0.0098	0.000
dseizure	-0.0038	0.074
dprecip	-0.0169	0.000

51710 6414

dprolong	0.0046	0.031
ddysfunc	0.0554	0.000
dcord	-0.0048	0.022
dotherlb	0.0059	0.005
dalcosyn	-0.0017	0.412
[illegible]	0.0003	0.870
[illegible]	-0.0093	0.000
[illegible]iz	-0.0004	0.856
dotherab	0.0164	0.000
dinadqcr	-0.0028	0.178
dintercr	-0.0084	0.000

51710 6415

```
. *Texas Natality 1990
. do c:\temp\pcorr\pclow89.do

. set more 1

. set matsize 300

. partial correlation of low weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 & db
> irwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99
(obs=12924)

Partial correlation of dbirwt with
Variable |    Corr.     Sig.
---------+------------------
dtobacco |   0.0103    0.243
dtobgest |  -0.0120    0.174
dtobalco |  -0.0147    0.094
dalcohol |   0.0106    0.230
   dmale |  -0.0087    0.324
  gestat |   0.0233    0.008
dmag16gs |   0.0031    0.721
dm1640gs |   0.0115    0.191
 dmage16 |  -0.0025    0.778
dmag1640 |  -0.0105    0.232
nprevist |   0.0447    0.000
  monpre |   0.0044    0.616
  dblack |  -0.0254    0.004
  damind |   0.0097    0.270
   dasia |  -0.0036    0.681
  dhispani |   0.0071    0.424
  dmarried |   0.0089    0.311
 dlivord |   0.0028    0.751
 dnoeduc |  -0.0093    0.292
   delem |  -0.0037    0.678
  dsomhs |  -0.0025    0.777
    dhsg |  -0.0170    0.053
   dtwin |  -0.0883    0.000
 dtriple |  -0.0586    0.000
   dquad | (dropped)
 danemia |   0.0168    0.057
dcardiac |  -0.0074    0.401
   dlung |  -0.0110    0.214
ddiabete |   0.0151    0.086
ialcdiab |  -0.0057    0.521
  dhydra |  -0.0616    0.000
   dhemo |   0.0010    0.913
 dphyper |  -0.0626    0.000
 dchyper |  -0.0135    0.124
 declamp |  -0.0311    0.000
itobeclm |   0.0218    0.013
ialceclm | (dropped)
dincervi |   0.0046    0.601
itobincv |   0.0042    0.631
dpre4000 |   0.0099    0.262
dpreterm |  -0.0006    0.947
iprtmage |  -0.0017    0.951
  drenal |   0.0052    0.557
     drh |   0.0061    0.490
dothermr |  -0.0266    0.003
  dmecon |  -0.0194    0.027
 drupture |  -0.0198    0.025
  drupti |  -0.0429    0.000
 dpreplac |  -0.0091    0.301
dexcebld |  -0.0156    0.077
dseizure |  -0.0122    0.167
 dprecip |   0.0028    0.749
```

51710 6416

dprolong	0.0133	0.132
ddyafunc	0.0007	0.935
dcord	-0.0201	0.023
dotherlb	-0.0423	0.000
dalcosyn	-0.0256	0.004
dvgal30	-0.0324	0.000
[illegible]0m	-0.0805	0.000
[illegible]iz	0.0045	0.613
dotherab	-0.1385	0.000
dinadqcr	-0.0042	0.631
dintercr	-0.0133	0.133

51710 6417

```
. *Texas Natality 1990
. do c:\temp\pcorr\pclowlow89.do

. set more 1

. matsize 300

. * partial correlation of low low weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 & d
> birwt <=1500 & gestat !=99 & nprevist !=99
(obs=2360)

Partial correlation of dbirwt with
Variable |    Corr.      Sig.
---------+------------------
dtobacco |   0.0230    0.270
dtobgest |  -0.0237    0.256
dtobalco |   0.0206    0.322
dalcohol |  -0.0027    0.898
   dmale |  -0.0209    0.315
  gestat |   0.0979    0.000
dmag16gs |  -0.0167    0.423
dm1640gs |  -0.0291    0.163
 dmage16 |   0.0143    0.494
dmag1640 |   0.0273    0.191
nprevist |   0.0268    0.199
  monpre |   0.0345    0.098
  dblack |  -0.0207    0.321
  damind |   0.0047    0.821
   dasia |  -0.0051    0.807
 dhispani |  -0.0249    0.232
. rried |  -0.0228    0.274
 dlivord |   0.0014    0.947
 dnoeduc |   0.0110    0.597
   delem |   0.0286    0.170
  dsomhs |   0.0225    0.282
    dhsg |   0.0027    0.897
   dtwin |  -0.0174    0.405
 dtriple |   0.0211    0.312
   dquad | (dropped)
 danemia |   0.0159    0.445
dcardiac |  -0.0004    0.985
   dlung |   0.0063    0.763
ddiabete |  -0.0147    0.481
ialcdiab | (dropped)
  dhydra |  -0.0466    0.025
   dhemo |  -0.0310    0.137
 dphyper |  -0.0055    0.791
 dchyper |   0.0003    0.989
 declamp |   0.0096    0.645
itobeclm |   0.0057    0.785
ialceclm | (dropped)
dincervi |  -0.0280    0.180
itobincv |  -0.0209    0.317
dpre4000 |   0.0013    0.950
dpreterm |   0.0443    0.034
iprtmage |  -0.0416    0.046
  drenal |   0.0083    0.691
     drh |  -0.0048    0.817
dothermr |   0.0047    0.821
  dmecon |  -0.0230    0.270
 upture |   0.0242    0.247
 rupti |   0.0181    0.386
dpreplac |  -0.0057    0.786
dexcebld |  -0.0066    0.751
dseizure |  -0.0144    0.490
 dprecip |   0.0322    0.123
```

51710 6418

dprolong	-0.0033	0.876
ddysfunc	0.0135	0.518
dcord	0.0156	0.448
dotherlb	-0.0419	0.045
dalcosyn	-0.0066	0.751
dven130	-0.0065	0.256
dven30m	0.0388	0.063
dnseiz	0.0216	0.300
dotherab	-0.0368	0.078
dinadqcr	0.0298	0.153
dintercr	0.0283	0.175

51710 6419

```
. Texas Natality 1989
. do c:\temp\pcorr\pcnormal89.do

. set more 1

. set matsize 300

* partial correlation of normal weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 & db
> irwt >2500 & gestat !=99 & nprevist !=99
(obs=164286)

Partial correlation of dbirwt with
Variable |     Corr.      Sig.
---------+------------------
dtobacco |     0.0049     0.047
dtobgest |    -0.0121     0.000
dtobalco |     0.0022     0.384
dalcohol |     0.0000     0.996
   dmale |     0.1394     0.000
  gestat |     0.0196     0.000
dmag16gs |    -0.0091     0.000
dm1640gs |    -0.0029     0.237
 dmage16 |     0.0082     0.001
dmag1640 |     0.0026     0.300
nprevist |     0.0380     0.000
  monpre |     0.0032     0.201
  dblack |    -0.1068     0.000
  damind |     0.0182     0.000
   dasia |    -0.0552     0.000
dhispani |    -0.0615     0.000
 arried |     0.0386     0.000
 livord |     0.0591     0.000
dnoeduc |    -0.0023     0.350
   delem |    -0.0070     0.005
  dsomhs |    -0.0397     0.000
    dhsg |    -0.0241     0.000
   dtwin |    -0.1101     0.000
 dtriple |    -0.0089     0.000
   dquad |    -0.0004     0.865
 danemia |     0.0008     0.750
dcardiac |    -0.0043     0.084
   dlung |    -0.0028     0.253
ddiabete |     0.0261     0.000
ialcdiab |    -0.0009     0.701
  dhydra |    -0.0108     0.000
   dhemo |    -0.0004     0.882
 dphyper |    -0.0195     0.000
 dchyper |    -0.0036     0.144
 declamp |    -0.0092     0.000
itobeclm |     0.0010     0.698
ialceclm | (dropped)
dincervi |    -0.0081     0.001
itobincv |     0.0028     0.250
dpre4000 |     0.1065     0.000
dpreterm |    -0.0138     0.000
iprtmage |     0.0060     0.015
 drenal  |     0.0004     0.884
     drh |    -0.0037     0.133
dothermr |    -0.0313     0.000
  dmecon |     0.0274     0.000
drupture |    -0.0289     0.000
dabrupti |    -0.0227     0.000
  eplac  |    -0.0133     0.000
 cebld   |     0.0111     0.000
dseizure |    -0.0025     0.307
 dprecip |    -0.0209     0.000
```

51710 6420

dprolong	0.0027	0.273
ddysfunc	0.0615	0.000
dcord	-0.0015	0.534
dotherlb	0.0112	0.000
dalcosyn	-0.0048	0.053
dvenl30	-0.0015	0.530
en30m	-0.0072	0.003
nseiz	-0.0032	0.191
dotherab	0.0266	0.000
dinadqcr	-0.0063	0.011
dintercr	-0.0101	0.000

51710 6421

```
. *Texas Natality 1989
. do c:\temp\pcorr\pclow89.do

. set more 1

. * matsize 300

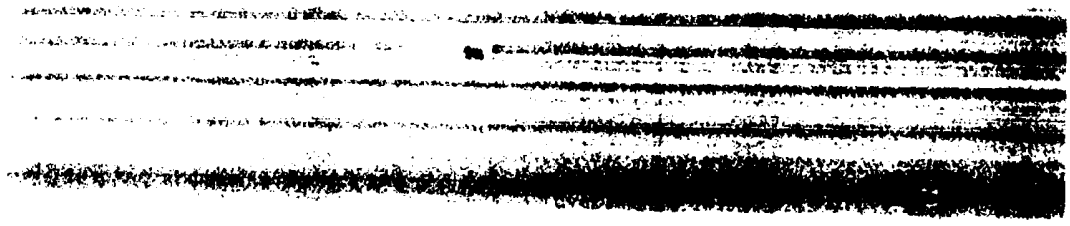
. * partial correlation of low weight birth estimates

. pcorr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
> gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
> vord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
> abete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
> i itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
> rupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
> cosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999 & db
> irwt >1500 & dbirwt <=2500 & gestat !=99 & nprevist !=99
(obs=9535)

Partial correlation of dbirwt with
Variable |     Corr.     Sig.
---------+------------------
dtobacco |    0.0305    0.003
dtobgest |   -0.0323    0.002
dtobalco |   -0.0021    0.839
dalcohol |    0.0001    0.993
   dmale |    0.0149    0.146
  gestat |    0.0308    0.003
dmag16gs |    0.0015    0.882
dm1640gs |    0.0069    0.499
 dmage16 |   -0.0027    0.796
dmag1640 |   -0.0076    0.458
nprevist |    0.0647    0.000
  monpre |   -0.0118    0.252
  dblack |   -0.0124    0.229
  damind |   -0.0029    0.775
   dasia |    0.0053    0.608
 dhispani |    0.0020    0.843
 dmarried |    0.0079    0.444
 dlivord |    0.0247    0.016
 dnoeduc |   -0.0103    0.314
   delem |    0.0096    0.350
  dsomhs |   -0.0039    0.702
    dhsg |   -0.0043    0.672
   dtwin |   -0.0957    0.000
 dtriple |   -0.0626    0.000
   dquad | (dropped)
 danemia |    0.0052    0.616
dcardiac |   -0.0087    0.398
   dlung |    0.0356    0.001
ddiabete |   -0.0021    0.836
ialcdiab |   -0.0051    0.622
  dhydra |   -0.0224    0.029
   dhemo |    0.0010    0.921
  dphyper |   -0.0630    0.000
 dchyper |   -0.0248    0.016
 declamp |    0.0033    0.750
itobeclm |   -0.0191    0.063
ialceclm | (dropped)
dincervi |   -0.0189    0.066
itobincv |    0.0030    0.773
dpre4000 |    0.0152    0.138
dpreterm |   -0.0039    0.707
iprtmage |   -0.0028    0.784
  drenal |   -0.0181    0.079
     drh |    0.0015    0.887
dothermr |   -0.0493    0.000
  dmecon |   -0.0256    0.013
 drupture |   -0.0242    0.018
   rupti |   -0.0392    0.000
dpreplac |    0.0003    0.980
dexcebld |    0.0063    0.538
dseizure |   -0.0159    0.123
 dprecip |   -0.0027    0.795
```

51710 6422

dprolong	0.0140	0.172
ddysfunc	0.0255	0.013
dcord	-0.0021	0.839
dotherlb	-0.0660	0.000
dalcosyn	0.0157	0.126
dven130	-0.0376	0.000
dven30m	-0.0817	0.000
dnseiz	-0.0143	0.165
dherab	-0.1303	0.000
dinadqcr	-0.0280	0.006
dintercr	-0.0173	0.091



51710 6423

'exas Natality 1989
: c:\temp\pcorr\pclowlow89.do

:t more 1

:t m...ize 300

partial correlation of low low weight birth estimates

```
:orr dbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640
: dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried dli
ord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung ddi
ete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dincerv
 itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture dab
pti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb dal
syn dvenl30 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 & d
irwt <=1500 & gestat !=99 & nprevist !=99
s=1688)
```

tial correlation of dbirwt with

iable	Corr.	Sig.
bacco	-0.0052	0.835
bgest	0.0072	0.772
balco	0.0323	0.193
cohol	-0.0477	0.054
dmale	0.0514	0.038
estat	-0.0168	0.499
g16gs	0.0587	0.018
640gs	0.0612	0.014
age16	-0.0613	0.013
g1640	-0.0655	0.008
evist	0.0567	0.022
onpre	0.0363	0.144
black	-0.0499	0.044
amind	0.0086	0.729
dasia	-0.0092	0.711
sp[illegible]	-0.0640	0.010
rr[illegible]	-0.0205	0.408
ivord	0.0269	0.278
oeduc	0.0312	0.208
delem	0.0306	0.217
somhs	0.0531	0.032
dhsg	0.0153	0.536
dtwin	0.0026	0.915
riple	-0.0250	0.313
dquad	0.0363	0.143
nemia	0.0198	0.425
rdiac	0.0539	0.030
dlung	-0.0020	0.936
abete	0.0025	0.919
cdiab	(dropped)	
hydra	-0.0365	0.141
dhemo	0.0398	0.108
hyper	0.0160	0.518
hyper	-0.0273	0.270
eclamp	0.0489	0.049
beclm	-0.0705	0.004
ceclm	(dropped)	
ncervi	-0.0951	0.000
bincv	0.0068	0.785
re4000	0.0096	0.699
reterm	0.0193	0.435
rtmage	-0.0226	0.362
renal	-0.0403	0.104
drh	-0.0093	0.708
thermr	0.0483	0.051
dmecon	-0.0158	0.525
upture	0.0062	0.803
br[illegible]	0.0501	0.043
rep[illegible]	-0.0101	0.683
xcebld	-0.0425	0.086
eizure	0.0462	0.062
precip	0.0220	0.376

51710 6424

dprolong	0.0193	0.437
ddysfunc	-0.0478	0.054
dcord	-0.0150	0.545
dotherlb	-0.0109	0.660
dalcosyn	-0.0006	0.980
dvenl30	0.0291	0.240
d30w	0.0159	0.521
seiz	0.0501	0.043
dotherab	-0.1073	0.000
dinadqcr	-0.0293	0.237
dintercr	-0.0199	0.423

51710 6425

Attachment 8
Logits

51710 6426

```
. *Texas 1989
. [illegible]logit89.do

. set more 1

. set matsize 300

. * low low weight birth estimates
.
. logit dlwbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmagl6gs dml6
> 40gs dmage16 dmagl640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dvenl30 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: ialcdiab~=0 predicts failure perfectly
      ialcdiab dropped and 85 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-9499.8124
Iteration 1:  Log Likelihood =-6578.4027
Iteration 2:  Log Likelihood =-4836.8839
Iteration 3:  Log Likelihood =-4617.0484
Iteration 4:  Log Likelihood = -3791.088
Iteration 5:  Log Likelihood =-3776.7431
Iteration 6:  Log Likelihood =-3776.0984
Iteration 7:  Log Likelihood =-3775.9405
Iteration 8:  Log Likelihood = -3775.862
Iteration 9:  Log Likelihood =-3775.8425
Iteration 10:  Log Likelihood =-3775.8327
Iteration 11:  Log Likelihood =-3775.8302
Iteration 12:  Log Likelihood = -3775.829
Iteration 13:  Log Likelihood =-3775.8284
Iteration 14:  Log Likelihood =-3775.8281
Iteration 15:  Log Likelihood =-3775.8279
Iteration 16:  Log Likelihood =-3618.4522
Iteration 17:  Log Likelihood =-3413.8924
Iteration 18:  Log Likelihood =-3196.7267
Iteration 19:  Log Likelihood = -3151.097
Iteration 20:  Log Likelihood =-3150.3824
Iteration 21:  Log Likelihood =-3150.3815

Logit Estimates                                   Number of obs =  175424
                                                  chi2(61)      =12698.86
                                                  Prob > chi2   =  0.0000
Log Likelihood = -3150.3815                       Pseudo R2     =  0.6684

------------------------------------------------------------------------------
dlwbirwt |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |  -2.120785   .7636876     -2.777   0.005      -3.617585   -.6239849
dtobgest |   .0788002   .0236039      3.338   0.001       .0325373    .1250631
dtobalco |  -.4448163   .4353607     -1.022   0.307      -1.298108    .4084749
dalcohol |   .3609391   .3676751      0.982   0.326      -.3596908    1.081569
   dmale |  -.0951468   .0733972     -1.296   0.195      -.2390027    .0487092
  gestat |  -.3425246   .1044505     -3.279   0.001      -.5472439   -.1378053
dmagl6gs |  -.1493807   .1196251     -1.249   0.212      -.3838415    .0850802
dml640gs |  -.2522622   .1047929     -2.407   0.016      -.4576524    -.046872
 dmage16 |   5.181037    3.95862      1.309   0.191      -2.577716    12.93979
dmagl640 |   8.626238   3.538823      2.438   0.015       1.690273     15.5622
nprevist |  -.0878251   .0117658     -7.464   0.000      -.1108856   -.0647646
  monpre |  -.0907429   .0213784     -4.245   0.000      -.1326438    -.048842
  dblack |   .3710554   .1029365      3.605   0.000       .1693037    .5728072
  damind |   .6270075   .8995939      0.697   0.486      -1.136164    2.390179
   dasia |   .1099306   .3275703      0.336   0.737      -.5320954    .7519567
dhispani |   .1133662   .0981107      1.155   0.248      -.0789272    .3056596
dmarried |   .1316538   .0948108      1.389   0.165      -.0541719    .3174795
 dlivord |  -.1514133   .0312212     -4.850   0.000      -.2126057   -.0902209
 dnoeduc |   .5879247   .4073722      1.443   0.149      -.2105101    1.386359
   delem |  -.1845901   .1615914     -1.142   0.253      -.5013035    .1321233
  dsomhs |  -.0458072   .1139834     -0.402   0.688      -.2692106    .1775961
```

51710 6427

dhsg	-.0858833	.0979774	-0.877	0.381	-.2779155	.106149
dtwin	1.206143	.1049801	11.489	0.000	1.000386	1.411901
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
dquad	3.535966	2.128733	1.661	0.097	-.636275	7.708205
danemia	-.3009826	.1898736	-1.585	0.113	-.6731281	.0711628
dcardiac	.0139507	.5196659	0.027	0.979	-1.004576	1.032477
dlung	.1885594	.5994023	0.315	0.753	-.9862476	1.363366
ddiabete	-.2335381	.2313994	-1.009	0.313	-.6870725	.2199964
dhydra	1.412899	.2062909	6.849	0.000	1.008576	1.817222
dhemo	.4916394	.8231461	0.597	0.550	-1.121697	2.104976
dphyper	.8300631	.1286983	6.450	0.000	.5778192	1.082307
dchyper	.7838332	.2442851	3.209	0.001	.3050432	1.262623
declamp	.8533333	.264103	3.231	0.001	.335701	1.370966
itobeclm	-.5979043	.734147	-0.814	0.415	-2.036806	.8409974
dincervi	.7641722	.3445218	2.218	0.027	.0889219	1.439422
itobincv	-.5647726	.8085573	-0.698	0.485	-2.149516	1.019971
dpre4000	-1.290811	.5763488	-2.240	0.025	-2.420434	-.1611882
dpreterm	-.4181888	.8106179	-0.516	0.606	-2.006971	1.170593
iprtmage	.031015	.0302703	1.025	0.306	-.0283138	.0903437
drenal	-.0489126	.4404772	-0.111	0.912	-.912232	.8144069
drh	-1.129916	.9518094	-1.187	0.235	-2.995429	.7355959
dothermr	.2493821	.0817018	3.052	0.002	.0892494	.4095147
dmecon	-.2837929	.2206197	-1.286	0.198	-.7161995	.1486137
drupture	.1247372	.1328078	0.939	0.348	-.1355613	.3850356
dabrupti	.7329484	.1837341	3.989	0.000	.3728361	1.093061
dpreplac	.2941243	.2775582	1.060	0.289	-.2498798	.8381284
dexcebld	1.024238	.288763	3.547	0.000	.4582731	1.590203
dseizure	1.903873	.7086874	2.686	0.007	.5148717	3.292875
dprecip	-.1886043	.2139188	-0.882	0.378	-.6078774	.2306688
dprolong	-.476925	.4868273	-0.980	0.327	-1.431089	.477239
ddysfunc	-1.168276	.2824681	-4.136	0.000	-1.721903	-.6146483
dcord	.5552038	.3506089	1.584	0.113	-.1319771	1.242385
dotherlb	.5293659	.0891816	5.936	0.000	.3545732	.7041585
dalcosyn	-.1341792	1.203466	-0.111	0.911	-2.492928	2.22457
dven130	.8910382	.1875232	4.752	0.000	.5234994	1.258577
dven30m	1.567653	.1252057	12.521	0.000	1.322254	1.813052
dnseiz	.4116886	.5634135	0.731	0.465	-.6925816	1.515959
dotherab	.7912606	.0863847	9.160	0.000	.6219498	.9605715
dinadqcr	.4655049	.1524257	3.054	0.002	.166756	.7642538
dintercr	.213335	.1199765	1.778	0.075	-.0218145	.4484845
_cons	7.790149	3.533323	2.205	0.027	.8649628	14.71534

Note: 46 failures and 0 successes completely determined.

51710 6428

```
. *logit low weight birth estimates
.
. logit dmdbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts failure perfectly
      dquad dropped and 11 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-36991.911
Iteration 1:  Log Likelihood =-30418.114
Iteration 2:  Log Likelihood =-29010.775
Iteration 3:  Log Likelihood =-28948.802
Iteration 4:  Log Likelihood =-28948.347
Iteration 5:  Log Likelihood =-28948.347

Logit Estimates                                   Number of obs = 175498
                                                  chi2(61)      =16087.13
                                                  Prob > chi2   = 0.0000
Log Likelihood = -28948.347                       Pseudo R2     = 0.2174

------------------------------------------------------------------------------
dmdbirwt |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |  -1.815621   .3230181    -5.621   0.000    -2.448725   -1.182517
dtobgest |   .0653624    .008536     7.657   0.000     .0486322    .0820926
dtobalco |    .045095     .14186     0.318   0.751    -.2329456    .3231355
dalcohol |   .0501301   .1201759     0.417   0.677    -.1854103    .2856705
   dmale |  -.2614199   .0234905   -11.129   0.000    -.3074604   -.2153793
  gestat |  -.3051243   .0464567    -6.568   0.000    -.3961778   -.2140707
dmag16gs |   .1685083   .0506627     3.326   0.001     .0692112    .2678055
dm1640gs |   .0731021   .0465347     1.571   0.116    -.0181042    .1643083
 dmage16 |  -6.330671   1.865828    -3.393   0.001    -9.987627   -2.673715
dmag1640 |  -2.811579   1.711313    -1.643   0.100     -6.16569    .5425317
nprevist |  -.0086576   .0038076    -2.274   0.023    -.0161202   -.0011949
  monpre |  -.0406658   .0069108    -5.884   0.000    -.0542107   -.0271209
  dblack |   .5175046   .0345121    14.995   0.000     .4498622     .585147
  damind |   -.368576   .2873174    -1.283   0.200    -.9317077    .1945557
   dasia |   .5448326   .0836372     6.514   0.000     .3809068    .7087584
dhispani |   .0625394    .031134     2.009   0.045     .0015179    .1235608
dmarried |  -.1405558   .0307933    -4.564   0.000    -.2009096   -.0802021
 dlivord |  -.0530094   .0100359    -5.282   0.000    -.0726795   -.0333394
 dnoeduc |   .1962703   .1620516     1.211   0.226    -.1213449    .5138856
   delem |    .189285   .0496769     3.810   0.000     .0919201    .2866499
  dsomhs |    .260518   .0366808     7.102   0.000     .1886249     .332411
    dhsg |   .1743441   .0313085     5.569   0.000     .1129806    .2357075
   dtwin |    2.18999   .0426875    51.303   0.000     2.106324    2.273656
 dtriple |    1.63987   .2414774     6.791   0.000     1.166583    2.113157
 danemia |  -.0645317   .0680804    -0.948   0.343    -.1979668    .0689034
dcardiac |   .3033679   .1741947     1.742   0.082    -.0380474    .6447832
   dlung |   .2094055   .2004668     1.045   0.296    -.1835023    .6023133
ddiabete |  -.1325421   .0741532    -1.787   0.074    -.2778797    .0127954
ialcdiab |   .0986092   .4583488     0.215   0.830    -.7997378    .9969563
  dhydra |   .5724932   .1060001     5.401   0.000     .3647367    .7802497
   dhemo |  -.1984961   .4422598    -0.449   0.654    -1.065309    .6683172
 dphyper |   .8669702    .044479    19.356   0.000     .7791335    .9548069
 dchyper |    .724275   .0916564     7.902   0.000     .5446318    .9039182
 declamp |   .8072699   .1188484     6.792   0.000     .5743313    1.040208
itobeclm |  -.6665208   .4097643    -1.627   0.104    -1.469644    .1366026
dincervi |  -.3862419   .1958584    -1.972   0.049    -.7701173   -.0023664
itobincv |  -.1014551   .4362748    -0.233   0.816    -.9565379    .7536278
dpre4000 |  -.9260103   .1634699    -5.665   0.000    -1.246405   -.6056153
dpreterm |   1.230589   .3192686     3.854   0.000     .6048343    1.856344
iprtmage |  -.0079651    .011704    -0.672   0.502    -.0308045    .0150742
  drenal |    .187705   .1740155     1.079   0.281    -.1533591    .5287692
     drh |   .0421207   .1823163     0.231   0.817    -.3152127    .3994541
dothermr |   .6585166   .0283601    23.220   0.000     .6029318    .7141015
  dmecon |  -.2830531   .0564229    -4.495   0.000    -.3636399   -.1424661
drupture |    .840307   .0532572    15.778   0.000     .7359249    .9446891
```

51710 6429

dabrupti	.8963951	.0946931	9.466	0.000	.7108001	1.08199
dpreplac	.9037959	.1246832	7.249	0.000	.6594213	1.148171
[illegible]	-.2318402	.1515966	-1.529	[illegible]	[illegible]	[illegible]
dseizure	.0327734	.4294271	0.076	0.939	[illegible]	[illegible]
dprecip	.215691	.0731611	2.948	0.003	.0722979	.3590841
dprolong	-.2002	.1360549	-1.471	0.141	-.4668627	.0664627
ddysfunc	-.3566851	.0564495	-6.319	0.000	-.4673242	-.246046
dcord	-.0245341	.1756945	-0.140	0.889	-.368889	.3198207
dotherlb	.333888	.0338771	9.856	0.000	.2674902	.4002858
dalcosyn	.814464	.6152273	1.324	0.186	-.3913593	2.020287
dven130	.0539629	.1032606	0.523	0.601	-.1484243	.25635
dven30m	-.3731901	.0921241	-4.051	0.000	-.55375	-.1926302
dnseiz	-.1339001	.3602677	-0.372	0.710	-.8400118	.5722115
dotherab	.7783055	.0368918	21.097	0.000	.7059989	.8506121
dinadqcr	-.3840004	.0539704	-7.115	0.000	-.4897805	-.2782203
dintercr	-.1437947	.0397537	-3.617	0.000	-.2217105	-.065879
_cons	8.746238	1.709108	5.117	0.000	5.396447	12.09603

.

51710 6430

```
. *logit normal weight birth estimates
.
. logit dnlbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm1640gs
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-41716.432
Iteration 1:  Log Likelihood =-37555.621
Iteration 2:  Log Likelihood =-32460.474
Iteration 3:  Log Likelihood =-29683.326
Iteration 4:  Log Likelihood =-27033.582
Iteration 5:  Log Likelihood =-26984.217
Iteration 6:  Log Likelihood = -26968.51
Iteration 7:  Log Likelihood =-26962.179
Iteration 8:  Log Likelihood =-26959.329
Iteration 9:  Log Likelihood =-26957.976
Iteration 10:  Log Likelihood =-26957.317
Iteration 11:  Log Likelihood =-26956.991
Iteration 12:  Log Likelihood = -26956.83
Iteration 13:  Log Likelihood =-26956.749
Iteration 14:  Log Likelihood =-26956.709
Iteration 15:  Log Likelihood =-26956.689
Iteration 16:  Log Likelihood =-26956.679
Iteration 17:  Log Likelihood =-26956.674
Iteration 18:  Log Likelihood =-26956.671
Iteration 19:  Log Likelihood = -26956.67
Iteration 20:  Log Likelihood = -26956.67
Iteration 21:  Log Likelihood =-26956.669
Iteration 22:  Log Likelihood =-26947.463
Iteration 23:  Log Likelihood = -26837.02
Iteration 24:  Log Likelihood =  -26793.6
Iteration 25:  Log Likelihood =-26793.439
Iteration 26:  Log Likelihood =-26793.439

Logit Estimates                                   Number of obs = 175509
                                                  chi2(62)      =29845.99
                                                  Prob > chi2   = 0.0000
Log Likelihood = -26793.439                       Pseudo R2     = 0.3577

------------------------------------------------------------------------------
dnlbirwt |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   1.969659    .395229     4.984   0.000     1.195024    2.744293
dtobgest |  -.0722703    .010525    -6.867   0.000    -.0928988   -.0516418
dtobalco |   .0113501   .1445254     0.079   0.937    -.2719146    .2946147
dalcohol |  -.0995502   .1215786    -0.819   0.413    -.3378399    .1387395
   dmale |   .3017024   .0241475    12.494   0.000     .2543741    .3490307
  gestat |    .344695   .0492015     7.006   0.000     .2482617    .4411282
dmag16gs |  -.0572408   .0546497    -1.047   0.295    -.1643522    .0498706
dm1640gs |   .0540589   .0493306     1.096   0.273    -.0426272    .1507451
 dmage16 |   2.087189   2.009023     1.039   0.299    -1.850423    6.024801
dmag1640 |  -2.007716   1.814606    -1.106   0.269    -5.564279    1.548847
nprevist |   .0378026   .0041509     9.107   0.000      .029667    .0459383
  monpre |   .0557101   .0071047     7.841   0.000     .0417851    .0696351
  dblack |  -.5668911   .0353603   -16.032   0.000     -.636196   -.4975862
  damind |   .2153961    .287323     0.750   0.453    -.3477466    .7785388
   dasia |  -.5092698   .0866234    -5.879   0.000    -.6790486   -.3394911
dhispani |   -.064374   .0319855    -2.013   0.044    -.1270644   -.0016837
dmarried |   .1066808   .0316724     3.368   0.001     .044604    .1687575
 dlivord |   .0838107    .010483     7.995   0.000     .0632643    .1043571
 dnoeduc |  -.3183285   .1586294    -2.007   0.045    -.6292364   -.0074206
   delem |  -.1613219   .0511257    -3.155   0.002    -.2615265   -.0611173
   dsomhs |  -.2737674   .0376007    -7.281   0.000    -.3474634   -.2000714
    dhsg |  -.1676943   .0321278    -5.220   0.000    -.2306636   -.1047251
   dtwin |  -2.365121   .0457809   -51.662   0.000     -2.45485   -2.275392
 dtriple |  -4.014869   .4099243    -9.794   0.000    -4.818306   -3.211432
   dquad |  -.4703072   1.528648    -0.308   0.758    -3.466403    2.525789
 danemia |    .088707   .0705628     1.257   0.209    -.0495936    .2270075
dcardiac |  -.2010637   .1823478    -1.103   0.270    -.5584589    .1563314
```

51710 6431

dlung	-.1116421	.2090834	-0.534	0.593	-.521438	.2981538
ddiabete	.3085164	.0781563	3.947	0.000	.155332	.4617
dialoditab	-.0406132	.4897575	-0.083	0.934	-1.00052	.9192939
dhydra	-.9621847	.1049714	-9.169	0.000	-1.168215	-.7567445
dhemo	-.0209853	.4304798	-0.049	0.961	-.8647101	.8227396
dphyper	-.8957417	.0462275	-19.377	0.000	-.9863459	-.8051375
dchyper	-.820862	.0939125	-8.741	0.000	-1.004927	-.6367969
declamp	-.9589254	.1220064	-7.860	0.000	-1.198054	-.7197972
itobeclm	.6076217	.4509554	1.347	0.178	-.2762347	1.491478
dincervi	-.6670563	.1832606	-3.640	0.000	-1.02624	-.3078721
itobincv	.4410573	.4605618	0.958	0.338	-.4616273	1.343742
dpre4000	1.106037	.1740287	6.355	0.000	.7649474	1.447128
dpreterm	-1.120048	.3359355	-3.334	0.001	-1.77847	-.4616268
iprtmage	.0026474	.0122418	0.216	0.829	-.0213461	.0266408
drenal	-.3563422	.1766586	-2.017	0.044	-.7025867	-.0100977
drh	.1770603	.1945269	0.910	0.363	-.2042054	.558326
dothermr	-.649707	.0291432	-22.294	0.000	-.7068266	-.5925873
dmecon	.252618	.0583999	4.326	0.000	.1381563	.3670797
drupture	-.9357153	.0550978	-16.983	0.000	-1.043705	-.8277256
dabrupti	-1.141596	.0989929	-11.532	0.000	-1.335618	-.9475733
dpreplac	-.9385494	.1297999	-7.231	0.000	-1.192953	-.6841462
dexcebld	-.0320612	.1507695	-0.213	0.832	-.3275641	.2634417
dseizure	-.5515819	.4002297	-1.378	0.168	-1.336018	.2328539
dprecip	-.2596655	.0750427	-3.460	0.001	-.4067465	-.1125844
dprolong	.2798416	.1429842	1.957	0.050	-.0004024	.5600855
ddysfunc	.4618062	.0592802	7.790	0.000	.3456191	.5779933
dcord	-.2049763	.1745811	-1.174	0.240	-.547149	.1371965
dotherlb	-.4519447	.0345831	-13.068	0.000	-.5197263	-.384163
dalcosyn	-.8036109	.6595859	-1.218	0.223	-2.096375	.4891537
dven130	-.4399315	.1028918	-4.276	0.000	-.6415957	-.2382672
dven30m	-1.386893	.1001615	-13.847	0.000	-1.583206	-1.19058
dnseiz	.0003912	.3679853	0.001	0.999	-.7208467	.7216291
dotherab	-1.064921	.0374278	-28.453	0.000	-1.138278	-.9915635
dinadqcr	.1122178	.0567923	1.976	0.048	.0009069	.2235286
dintercr	.0176193	.04159	0.424	0.672	-.0638956	.0991342
_cons	-10.39899	1.810594	-5.743	0.000	-13.94769	-6.85029

51710 6432

```
. *Texas 1990
. do c:\temp\logit89a.do

. set more 1

. set matsize 300
. * low low weight birth estimates
.
. logit dlwbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts failure perfectly
      dquad dropped and 1 obs not used

Note: ialcdiab~=0 predicts failure perfectly
      ialcdiab dropped and 104 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-13246.555
Iteration 1:  Log Likelihood =-8104.0972
Iteration 2:  Log Likelihood =-5260.3763
Iteration 3:  Log Likelihood =-5046.9386
Iteration 4:  Log Likelihood =-4466.3599
Iteration 5:  Log Likelihood =-4350.0356
Iteration 6:  Log Likelihood = -4339.407
Iteration 7:  Log Likelihood = -4339.251
Iteration 8:  Log Likelihood = -4339.251

Logit Estimates                                   Number of obs = 239955
                                                  chi2(60)      =17814.61
                                                  Prob > chi2   = 0.0000
Log Likelihood =  -4339.251                       Pseudo R2     = 0.6724

------------------------------------------------------------------------------
dlwbirwt |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |  -1.879859   .6942885    -2.708   0.007    -3.24064    -.5190788
dtobgest |   .0664324    .021527     3.086   0.002     .0242403    .1086246
dtobalco |   1.011152   .4667585     2.166   0.030      .096322    1.925982
dalcohol |  -.8301038   .4171842    -1.990   0.047    -1.647777   -.0124377
   dmale |  -.1904035    .062484    -3.047   0.002    -.3128699   -.0679371
  gestat |  -.5701511   .0907224    -6.285   0.000    -.7479638   -.3923384
dmag16gs |   .1082641   .0997843     1.085   0.278    -.0873095    .3038376
dm1640gs |  -.0306998   .0910611    -0.337   0.736    -.2091763    .1477767
 dmage16 |  -2.736743   3.106124    -0.881   0.378    -8.824634    3.351148
dmag1640 |   1.472636   2.831321     0.520   0.603    -4.076651    7.021922
nprevist |  -.0772711   .0098231    -7.866   0.000     -.096524   -.0580182
  monpre |   -.107919   .0192668    -5.601   0.000    -.1456812   -.0701567
  dblack |   .0941864   .0892314     1.056   0.291     -.080704    .2690767
  damind |  -1.149675   1.017317    -1.130   0.258    -3.143579    .8442293
   dasia |   .1671683   .2543136     0.657   0.511     -.3312772   .6656138
dhispani |   .0066956   .0842498     0.079   0.937     -.158431    .1718223
dmarried |   .1026999   .0825681     1.244   0.214    -.0591306    .2645304
 dlivord |   .0045404   .0115777     0.392   0.695    -.0181515    .0272323
 dnoeduc |  -.9061823   .4290724    -2.112   0.035    -1.747149   -.0652158
   delem |    -.12206   .1293808    -0.943   0.345    -.3756416    .1315217
  dsomhs |  -.2221068   .0981718    -2.262   0.024    -.4145199   -.0296936
    dhsg |  -.0007003   .0818271    -0.009   0.993    -.1610758    .159678
   dtwin |   1.134374   .0911084    12.451   0.000     .9559051    1.312944
 dtriple |    1.75857   .2885481     6.095   0.000     1.193028    2.324114
 danemia |  -.2648989   .1774642    -1.493   0.136    -.6127223    .0829246
dcardiac |  -.8025143   .5296192    -1.515   0.130    -1.840549    .2355203
   dlung |   .0036524   .6307535     0.006   0.995    -1.236603     1.24391
ddiabete |  -.2646786   .2043824    -1.295   0.195    -.6652619    .1359036
  dhydra |   1.352359   .1673634     8.080   0.000     1.024333    1.680385
   dhemo |  -2.143229   2.837927    -0.755   0.450    -7.705463    3.419005
 dphyper |   .9432958   .1099636     8.578   0.000     .7277712     1.15882
 dchyper |   .3995729   .2172962     4.549   0.000     .5626801    1.414466
 declamp |   .7487845   .2293272     3.265   0.001     .2993115    1.198258
```

51710 6433

itobeclm	.8484366	.6843728	1.240	0.215	-.4929094	2.189783
dincervi	.9165154	.3183454	2.879	0.004	.2925699	1.540461
itobincv	-.6712667	.8387146	-0.800	0.424	-2.315117	.9725837
dpre4000	-2.127283	[illegible]	-2.700	[illegible]	[illegible]	[illegible]
dpreterm	-.1638924	.6899685	-0.238	0.812	-1.516206	1.188421
iprtmage	.0134846	.0250885	0.537	0.591	-.0356879	.062657
drenal	-.1123232	.5354767	-0.210	0.834	-1.161838	.9371918
drh	-1.707512	.6140047	-2.781	0.005	-2.910939	-.5040844
dothermr	.3122231	.0697398	4.477	0.000	.1755357	.4489106
dmecon	-.5600027	.2031289	-2.757	0.006	-.958128	-.1618775
drupture	.476409	.1128957	4.220	0.000	.2551376	.6976804
dabrupti	.4242652	.1594277	2.661	0.008	.1117926	.7367378
dpreplac	.2747931	.2255904	1.218	0.223	-.167356	.7169423
dexcebld	.4346666	.27396	1.587	0.113	-.1022852	.9716184
dseizure	.7603037	.5419959	1.403	0.161	-.3019887	1.822596
dprecip	-.2341384	.1897735	-1.234	0.217	-.6060877	.1378109
dprolong	-.0673113	.3623785	-0.186	0.853	-.7775602	.6429375
ddysfunc	-.591201	.1990513	-2.970	0.003	-.9813344	-.2010676
dcord	.2601049	.3254462	0.799	0.424	-.3777579	.8979676
dotherlb	.4040761	.0763871	5.290	0.000	.25436	.5537921
dalcosyn	1.04277	.9481706	1.100	0.271	-.8156102	2.90115
dven130	.6058737	.1626804	3.724	0.000	.287026	.9247215
dven30m	1.109411	.1145897	9.682	0.000	.8848191	1.334002
dnseiz	.2853732	.4754692	0.600	0.548	-.6465294	1.217276
dotherab	1.087978	.0723421	15.039	0.000	.9461899	1.229766
dinadqcr	.3302393	.1305097	2.530	0.011	.074445	.5860337
dintercr	.3026801	.10538	2.872	0.004	.0961392	.5092211
_cons	15.06354	2.822486	5.337	0.000	9.531572	20.59551

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51710 6434

```
. *logit low weight birth estimates
.
. logit dmdbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts failure perfectly
      dquad dropped and 1 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-50256.461
Iteration 1:  Log Likelihood =-41740.555
Iteration 2:  Log Likelihood =-40040.623
Iteration 3:  Log Likelihood =-39933.599
Iteration 4:  Log Likelihood =-39930.719
Iteration 5:  Log Likelihood =-39930.712

Logit Estimates                                   Number of obs = 240059
                                                  chi2(61)      =20651.50
                                                  Prob > chi2   = 0.0000
Log Likelihood = -39930.712                       Pseudo R2     = 0.2055

------------------------------------------------------------------------------
dmdbirwt |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |  -1.712746   .2878231    -5.951  0.000    -2.276869   -1.148624
dtobgest |   .0615939   .0076133     8.090  0.000     .0466721    .0765158
dtobalco |   .2188338   .1405518     1.557  0.119    -.0566427    .4943103
dalcohol |  -.0898507   .1213746    -0.740  0.459    -.3277406    .1480392
   dmale |  -.2920877   .0200606   -14.560  0.000    -.3314058   -.2527696
  gestat |  -.2457863   .0335384    -7.328  0.000    -.3115204   -.1800522
dmag16gs |   .0505526   .0376401     1.343  0.179    -.0232207    .1243259
dm1640gs |   .0131716   .0336312     0.392  0.695    -.0527444    .0790875
 dmage16 |   -1.96152   1.388754    -1.412  0.158    -4.683429    .7603879
dmag1640 |  -.7049137   1.242313    -0.567  0.570    -3.139803    1.729976
nprevist |  -.0109519   .0032957    -3.323  0.001    -.0174113   -.0044924
   monpre |  -.0238148   .0061063    -3.900  0.000    -.0357828   -.0118467
   dblack |   .5109609   .0294252    17.365  0.000     .4532886    .5686333
   damind |  -.4412538   .2136632    -2.065  0.039    -.8600261   -.0224816
    dasia |   .5833497   .0691307     8.438  0.000      .447856    .7188434
dhispani |   .0735293   .0265857     2.766  0.006     .0214224    .1256362
dmarried |  -.1907866   .0265709    -7.180  0.000    -.2428645   -.1387086
  dlivord |  -.0442716   .0083597    -5.296  0.000    -.0606562   -.0278869
 dnoeduc |   .1247675   .1393277     0.895  0.371    -.1483099    .3978449
   delem |   .1709544   .0415617     4.113  0.000     .0894949     .252414
  dsomhs |   .2295024   .0311452     7.369  0.000      .168459    .2905459
    dhsg |   .1389463   .0265931     5.225  0.000     .0868247    .1910679
   dtwin |   2.165893   .0365719    59.223  0.000     2.094213    2.237572
 dtriple |   2.255449   .2220641    10.157  0.000     1.820211    2.690686
 danemia |  -.1626125    .061829    -2.630  0.009    -.2837951     -.04143
dcardiac |  -.0024557   .1858522    -0.013  0.989    -.3667194    .361808
   dlung |  -.0239217   .1818579    -0.132  0.895    -.3803566    .3325132
ddiabete |  -.0142753   .0634693    -0.225  0.822    -.1386728    .1101221
ialcdiab |   .4094744   .3622992     1.130  0.258     -.300619    1.119568
  dhydra |   .8165155   .0834713     9.782  0.000     .6529148    .9801162
   dhemo |   .3294432   .3555314     0.927  0.354    -.3673854    1.026272
  dphyper |   .7571076   .0410956    18.423  0.000     .6765618    .8376534
  dchyper |     .52555   .0912201     5.761  0.000     .3467619     .704338
  declamp |   .9124764   .0979886     9.312  0.000     .7204223    1.104531
itobeclm |  -.6264744   .3533659    -1.773  0.076    -1.319059     .06611
dincervi |  -.3466341   .1805299    -1.920  0.055    -.7004662    .007198
itobincv |  -.8579161   .5224997    -1.642  0.101    -1.881997    .1661644
dpre4000 |   -1.29094   .1799519    -7.174  0.000     -1.64364   -.9382412
 dpreterm |   1.809504   .2868229     6.309  0.000     1.247331    2.371677
iprtmage |  -.0291631   .0106229    -2.745  0.006    -.0499836   -.0083424
   drenal |   .0171803   .1859847     0.092  0.926    -.3473431    .3817037
      drh |   .1666414   .1265943     1.316  0.188    -.0814789    .4147617
 dothermr |    .517758   .0247168    20.948  0.000      .469314    .5662021
   dmecon |  -.3068576   .0515369    -5.954  0.000     -.407868   -.2058473
 drupture |   .7559008    .050411    14.995  0.000      .657097    .8547046
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dabrupti	.7846608	.0853977	9.188	0.000	.6172844	.9520372
dpreplac	.6992001	.1137162	6.149	0.000	.4763204	.9220797
dexcebld	-.5706434	.1511325	-3.776	0.000	-.8668575	-.2744292
dsefzure	.2047576	.0298427	0.687	[illegible]	[illegible]	[illegible]
dprecip	.1057451	.0682423	1.550	0.121	-.0280074	.2394975
dprolong	.0220559	.1195513	0.184	0.854	-.2122603	.2563721
ddysfunc	-.4083156	.0512229	-7.971	0.000	-.5087107	-.3079205
dcord	-.02032	.1491523	-0.136	0.892	-.3126531	.2720131
dotherlb	.2562455	.0287315	8.919	0.000	.1999329	.3125582
dalcosyn	.5204416	.5286032	0.985	0.325	-.5156016	1.556485
dven130	.3566444	.0720852	4.948	0.000	.21536	.4979288
dven30m	-.3016028	.0816843	-3.692	0.000	-.4617012	-.1415045
dnseiz	.1688324	.2904071	0.581	0.561	-.4003551	.73802
dotherab	.7404603	.0323882	22.862	0.000	.6769807	.8039399
dinadqcr	-.3238772	.0467486	-6.928	0.000	-.4155027	-.2322517
dintercr	-.1233625	.0348509	-3.540	0.000	-.1916691	-.0550559
_cons	6.737339	1.24032	5.432	0.000	4.306356	9.168322

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```
. *logit normal weight birth estimates

. logit dnlbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat [illegible]
> 40gs dmage16 [illegible] nprevist monpre [illegible]
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dvenl30 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts success perfectly
      dquad dropped and 1 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:   Log Likelihood =-56880.115
Iteration 1:   Log Likelihood =-51155.267
Iteration 2:   Log Likelihood =-43304.679
Iteration 3:   Log Likelihood =-39055.156
Iteration 4:   Log Likelihood =-36936.816
Iteration 5:   Log Likelihood =-36842.871
Iteration 6:   Log Likelihood =-36813.759
Iteration 7:   Log Likelihood =-36802.114
Iteration 8:   Log Likelihood =-36796.888
Iteration 9:   Log Likelihood =-36794.411
Iteration 10:   Log Likelihood =-36793.205
Iteration 11:   Log Likelihood = -36792.61
Iteration 12:   Log Likelihood =-36792.314
Iteration 13:   Log Likelihood =-36792.167
Iteration 14:   Log Likelihood =-36792.093
Iteration 15:   Log Likelihood =-36792.056
Iteration 16:   Log Likelihood =-36792.038
Iteration 17:   Log Likelihood =-36792.029
Iteration 18:   Log Likelihood =-36792.024
Iteration 19:   Log Likelihood =-36792.022
Iteration 20:   Log Likelihood =-36792.021
Iteration 21:   Log Likelihood =-36792.021
Iteration 22:   Log Likelihood =-36742.222
Iteration 23:   Log Likelihood =-36720.324
Iteration 24:   Log Likelihood =-36652.372
Iteration 25:   Log Likelihood =-36652.214
Iteration 26:   Log Likelihood =-36652.214

Logit Estimates                                    Number of obs =  240059
                                                   chi2(61)      =40455.80
                                                   Prob > chi2   =  0.0000
Log Likelihood = -36652.214                        Pseudo R2     =  0.3556
```

dnlbirwt	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dtobacco	2.295214	.3584535	6.403	0.000	1.592658	2.99777
dtobgest	-.078841	.0095615	-8.246	0.000	-.0975811	-.0601009
dtobalco	-.3435366	.1478617	-2.323	0.020	-.6333401	-.0537331
dalcohol	.1491283	.1283678	1.162	0.245	-.102468	.4007246
dmale	.3667676	.0207059	17.713	0.000	.3261848	.4073503
gestat	.5003294	.0496028	10.087	0.000	.4031097	.597549
dmag16gs	-.1477907	.0541748	-2.728	0.006	-.2539715	-.04161
dm1640gs	-.0846435	.0497008	-1.703	0.089	-.1820553	.0127683
dmage16	5.49343	1.982971	2.770	0.006	1.606877	9.379982
dmag1640	3.281222	1.820132	1.803	0.071	-.2861708	6.848615
nprevist	.040699	.0035938	11.325	0.000	.0336553	.0477428
monpre	.0439739	.0062967	6.984	0.000	.0316325	.0563153
dblack	-.5296154	.0302973	-17.481	0.000	-.588997	-.4702338
damind	.5322356	.2272969	2.342	0.019	.0867419	.9777293
dasia	-.5415241	.0716269	-7.560	0.000	-.6819103	-.4011379
dhispani	-.0577996	.027345	-2.114	0.035	-.1113949	-.0042044
dmarried	.1610578	.0275274	5.851	0.000	.1071051	.2150105
dlivord	.0468296	.0083386	5.616	0.000	.0304861	.063173
dnoeduc	.0127278	.1470734	0.087	0.931	-.2755405	.3009961
delem	-.1444642	.0426965	-3.384	0.001	-.2281478	-.0607806
dsomhs	-.2068059	.0321439	-6.434	0.000	-.2698069	-.143805
dhsg	-.1433381	.0272934	-5.252	0.000	-.1968321	-.0898441
dtwin	-2.368541	.0387742	-61.086	0.000	-2.444537	-2.292545
dtriple	-4.88678	.5415369	-9.024	0.000	-5.948173	-3.825387

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danemia	.1624548	.0635866	2.555	0.011	.0378274	.2870822
dcardiac	.0553345	.1982357	0.279	0.780	-.3332004	.4438693
dlung	.040507	.1880307	0.215	0.829	-.3280265	.4090404
ddiabete	.1782166	.066422	2.683	0.007		
ialcdiab	-.4332336	.3929025	-1.103	0.270	-1.203112	.3366452
dhydra	-1.256484	.0842616	-14.912	0.000	-1.421634	-1.091334
dhemo	-.2702368	.3681741	-0.734	0.463	-.9918448	.4513711
dphyper	-.8041972	.0423576	-18.986	0.000	-.8872166	-.7211777
dchyper	-.6663265	.0920929	-7.235	0.000	-.8468252	-.4858277
declamp	-.9620612	.1021402	-9.419	0.000	-1.162252	-.7618701
itobeclm	.2759898	.354318	0.779	0.436	-.4184608	.9704404
dincervi	-.6065978	.1722631	-3.521	0.000	-.9442272	-.2689683
itobincv	.5712162	.5412743	1.055	0.291	-.4896619	1.632094
dpre4000	1.529692	.1926026	7.942	0.000	1.152198	1.907186
dpreterm	-1.601291	.3069804	-5.216	0.000	-2.202961	-.9996201
iprtmage	.0207874	.0112555	1.847	0.065	-.001273	.0428479
drenal	-.0455369	.1880084	-0.242	0.809	-.4144186	.3233448
drh	-.0251506	.1340214	-0.188	0.851	-.2878277	.2375266
dothermr	-.5461934	.0252655	-21.618	0.000	-.5957128	-.496674
dmecon	.3380653	.0538722	6.275	0.000	.2324776	.4436529
drupture	-.9292922	.051719	-17.968	0.000	-1.03066	-.8279249
dabrupti	-1.157827	.0883247	-13.109	0.000	-1.330941	-.9847142
dpreplac	-.8113265	.1173381	-6.914	0.000	-1.041305	-.5813481
dexcebld	.4133151	.1520154	2.719	0.007	.1153704	.7112599
dseizure	-.3165742	.3082196	-1.027	0.304	-.9206736	.2875251
dprecip	-.1198819	.0707314	-1.695	0.090	-.2585129	.0187492
dprolong	-.0482635	.123573	-0.391	0.696	-.2904621	.1939352
ddysfunc	.4529357	.053015	8.544	0.000	.3490283	.5568432
dcord	-.1002935	.1498141	-0.669	0.503	-.3939237	.1933367
dotherlb	-.3626557	.029278	-12.387	0.000	-.4200395	-.3052719
dalcosyn	-.9631561	.5325662	-1.809	0.071	-2.006967	.0806545
dven130	-.5864868	.0724531	-8.095	0.000	-.7284922	-.4444813
dven30m	-1.163924	.0873826	-13.320	0.000	-1.335191	-.9926573
dnseiz	-.4956281	.2964003	-1.672	0.094	-1.076562	.0853058
dotherab	-1.040913	.0326995	-31.833	0.000	-1.105003	-.9768231
dinadqcr	.0753337	.0493583	1.526	0.127	-.0214068	.1720743
dintercr	-.0184431	.0363456	-0.505	0.614	-.0900711	.0531849
_cons	-16.40439	1.813076	-9.023	0.000	-19.96775	-12.84102

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```
. *Texas 1991
. do c:\temp\logit89a.do

. set matsize 300

. * low low weight birth estimates
.
. logit dlwbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts failure perfectly
      dquad dropped and 1 obs not used

Note: ialcdiab~=0 predicts failure perfectly
      ialcdiab dropped and 54 obs not used

Note: itobeclm~=0 predicts failure perfectly
      itobeclm dropped and 40 obs not used

Note: dalcosyn~=0 predicts failure perfectly
      dalcosyn dropped and 25 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-9055.8327
Iteration 1:  Log Likelihood =-6787.1455
Iteration 2:  Log Likelihood =-4256.0324
Iteration 3:  Log Likelihood =-3996.0171
Iteration 4:  Log Likelihood =-3301.9088
Iteration 5:  Log Likelihood =-3092.1153
Iteration 6:  Log Likelihood =-3068.8212
Iteration 7:  Log Likelihood =-3068.1333
Iteration 8:  Log Likelihood = -3068.132
Iteration 9:  Log Likelihood = -3068.132

Logit Estimates                                   Number of obs = 211489
                                                  chi2(58)      =11975.40
                                                  Prob > chi2   = 0.0000
Log Likelihood =  -3068.132                       Pseudo R2     = 0.6612

------------------------------------------------------------------------------
dlwbirwt |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |  -3.499223   .8394453    -4.168   0.000    -5.144506   -1.853941
dtobgest |   .1191006   .0254625     4.677   0.000     .0691951    .1690061
dtobalco |  -.4743125   .5460148    -0.869   0.385    -1.544482    .5958569
dalcohol |   .4675766   .4730878     0.988   0.323    -.4596585    1.394812
   dmale |  -.2038692   .0756821    -2.694   0.007    -.3522034   -.055535
  gestat |  -.6160984   .1197237    -5.146   0.000    -.8507526   -.3814442
dmag16gs |   .0339095   .1355407     0.250   0.802    -.2317453    .2995644
dm1640gs |   .0047141    .120073     0.039   0.969    -.2306247     .240053
 dmage16 |  -.8361527   4.287219    -0.195   0.845    -9.238948    7.566643
dmag1640 |   .0194788   3.825938     0.005   0.996    -7.479222     7.51818
nprevist |  -.1478902   .0137907   -10.724   0.000    -.1749194   -.120861
  monpre |  -.0847964   .0226871    -3.738   0.000    -.1292622   -.0403306
  dblack |   .1036056   .1085204     0.955   0.340    -.1090905    .3163017
  damind |   .7890131   .6172353     1.278   0.201    -.4207458    1.998772
   dasia |     .27427   .2856636     0.960   0.337    -.2856204    .8341604
dhispani |    .083026   .1021562     0.813   0.416    -.1171966    .2832485
dmarried |  -.0510234   .0964722    -0.529   0.597    -.2401054    .1380586
 dlivord |  -.0413981   .031416     -1.318   0.188    -.1029702    .0201741
 dnoeduc |   .5103711   .4602999     1.109   0.268    -.3918001    1.412542
   delem |  -.1678659   .1572497    -1.068   0.286    -.4761676    .140636
  dsomhs |  -.2430061   .1181309    -2.057   0.040    -.4745383   -.0114739
    dhsg |   .0223787   .1016389     0.220   0.826    -.1768298    .2215872
   dtwin |   1.027803   .1141967     9.000   0.000     .8039819    1.251625
 dtriple |   2.260346   .3495285     6.467   0.000     1.575283     2.94541
 danemia |  -.3166761   .2258021    -1.402   0.161    -.7592402    .125888
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dcardiac	.8195599	.5647966	1.451	0.147	-.2874212	1.926541
dlung	-3.067781	1.416286	-2.168	0.030	-5.84169	[illegible]
ddiabete	-.5308931	.2783493	-1.907	0.056	-1.076448	.0146616
[illegible]	.6435843	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
dhemo	.4688105	.9308016	0.504	0.614	-1.355527	[illegible]
dphyper	1.194717	.1264722	9.446	0.000	.9468361	1.442598
dchyper	1.721915	.2386096	7.216	0.000	1.254248	2.189581
declamp	.6666245	.2916265	2.286	0.022	.0950471	1.238202
dincervi	1.149235	.4594043	2.502	0.012	.248819	2.049651
itobincv	.7498618	1.109279	0.676	0.499	-1.424285	2.924009
dpre4000	-.1815204	.7074005	-0.257	0.797	-1.568	1.204959
dpreterm	-.4827509	1.036534	-0.466	0.641	-2.514319	1.548817
iprtmage	.0320169	.039179	0.817	0.414	-.0447724	.1088063
drenal	-.4561641	.6921939	-0.659	0.510	-1.812839	.900511
drh	-1.515455	.8543835	-1.774	0.076	-3.190016	.1591054
dothermr	.1509489	.0910476	1.658	0.097	-.0275011	.329399
dmecon	-1.141259	.2917691	-3.912	0.000	-1.713116	-.5694026
drupture	.4175191	.1751262	2.384	0.017	.074278	.7607602
dabrupti	.7312065	.1988422	3.677	0.000	.3414829	1.12093
dpreplac	.2323321	.2901484	0.801	0.423	-.3363483	.8010125
dexcebld	.2844156	.4096033	0.694	0.487	-.5183922	1.087223
dseizure	1.217907	.5752259	2.117	0.034	.0904852	2.345329
dprecip	-.0433264	.2179993	-0.199	0.842	-.4705971	.3839444
dprolong	.3493589	.4297628	0.813	0.416	-.4929607	1.191678
ddysfunc	-.4830651	.2287315	-2.112	0.035	-.9313707	-.0347595
dcord	.6540444	.5413109	1.208	0.227	-.4069055	1.714994
dotherlb	.4038716	.0921813	4.381	0.000	.2231996	.5845435
dven130	.3686221	.2404522	1.533	0.125	-.1026556	.8398998
dven30m	1.519321	.1444143	10.521	0.000	1.236274	1.802368
dnseiz	1.206908	.5112385	2.361	0.018	.2048988	2.208917
dotherab	1.04347	.0933381	11.179	0.000	.8605302	1.226409
dinadqcr	.9636607	.1642302	5.868	0.000	.6417755	1.285546
dintercr	.4992615	.1272194	3.924	0.000	.2499159	.748607
_cons	17.09629	3.818475	4.477	0.000	9.612217	24.58036

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```
. *logit low weight birth estimates
.
. logit dmdbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dml6
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts success perfectly
      dquad dropped and 1 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-41740.829
Iteration 1:  Log Likelihood =-35305.659
Iteration 2:  Log Likelihood =-33784.681
Iteration 3:  Log Likelihood =-33696.834
Iteration 4:  Log Likelihood =-33637.999
Iteration 5:  Log Likelihood =-33558.247
Iteration 6:  Log Likelihood =-33491.695
Iteration 7:  Log Likelihood =-33490.273
Iteration 8:  Log Likelihood =-33490.272

Logit Estimates                                   Number of obs = 211608
                                                  chi2(61)      =16501.11
                                                  Prob > chi2   = 0.0000
Log Likelihood = -33490.272                       Pseudo R2     = 0.1977

------------------------------------------------------------------------------
dmdbirwt |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   -2.09269   .3552221    -5.891   0.000    -2.788912   -1.396467
dtobgest |   .0729875   .0093541     7.803   0.000     .0546539    .0913212
dtobalco |   .0866054   .1690694     0.512   0.608    -.2447646    .4179754
dalcohol |   .0689005   .1459081     0.472   0.637    -.2170742    .3548752
   dmale |  -.2565472   .0220451   -11.637   0.000    -.2997549   -.2133395
  gestat |  -.2183206    .039176    -5.573   0.000    -.2951041   -.1415371
dmag16gs |   .0840564    .043609     1.927   0.054    -.0014158    .1695285
dml640gs |  -.0378269   .0392715    -0.963   0.335    -.1147976    .0391439
 dmage16 |  -3.456714    1.63095    -2.119   0.034    -6.653317   -.2601112
dmag1640 |     1.0455   1.468902     0.712   0.477    -1.833495    3.924495
nprevist |  -.0116965   .0037301    -3.136   0.002    -.0190073   -.0043857
  monpre |  -.0316905   .0067322    -4.707   0.000    -.0448854   -.0184956
  dblack |   .6173402   .0324743    19.010   0.000     .5536918    .6809887
  damind |  -1.005699   .2848498    -3.531   0.000    -1.563994   -.4474036
   dasia |   .5929287   .0718171     8.256   0.000     .4521699    .7336876
dhispani |   .1253046   .0292624     4.282   0.000     .0679513    .1826579
dmarried |  -.1423347   .0286869    -4.962   0.000    -.1985599   -.0861095
 dlivord |   -.085553   .0096474    -8.868   0.000    -.1044615   -.0666445
 dnoeduc |   .0120619   .1764702     0.068   0.946    -.3338133    .357937
   delem |   .1804537   .0452581     3.987   0.000     .0917494    .2691581
  dsomhs |    .303472    .033894     8.954   0.000      .237041    .3699031
    dhsg |   .1429319   .0298444     4.789   0.000      .084438    .2014258
   dtwin |   2.406799   .0412082    58.406   0.000     2.326032    2.487565
 dtriple |   2.912688   .2468607    11.799   0.000      2.42885    3.396526
 danemia |  -.0989645   .0649586    -1.524   0.128     -.226281     .028352
dcardiac |   .0706901   .2172271     0.325   0.745    -.3550672    .4964473
   dlung |   .4535585   .1944638     2.332   0.020     .0724164    .8347006
ddiabete |  -.1730495   .0719167    -2.406   0.016    -.3140036   -.0320955
ialcdiab |  -.0699749   .6210993    -0.113   0.910    -1.287307    1.147357
  dhydra |   1.005321   .1005148    10.002   0.000     .8083156    1.202327
   dhemo |   .1140923   .3637344     0.314   0.754    -.5988114    .8269961
  dphyper |   .8834314   .0433435    20.382   0.000     .7984798    .9683829
  dchyper |   .7165449   .1040617     6.886   0.000     .5125876    .9205021
  declamp |   .9129797   .1202945     7.590   0.000     .6772254    1.148734
itobeclm |  -.3056461   .4464758    -0.685   0.494    -1.180723    .5694303
dincervi |  -.1254874   .2363433    -0.531   0.595    -.5987119    .3477369
itobincv |   .0363393   .5711787     0.064   0.949    -1.083144    1.155823
dpre4000 |  -.8395139   .1819355    -4.614   0.000    -1.196101   -.4829269
dpreterm |   .9072395   .3713284     2.443   0.015     .1794432    1.635036
iprtmage |   .0040052   .0136167     0.294   0.769     -.022683    .0306933
  drenal |   .0660186   .1983411     0.333   0.739    -.3227228    .4547601
     drh |  -.4823426   .1959164    -2.462   0.014    -.8663319   -.0983535
```

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dothermr	.2330513	.029858	7.805	0.000	.1745307	.2915719
dmecon	-.3477531	.0588747	-5.907	0.000	-.4631454	-.2323608
drupture	.6897679	.06259	11.020	0.000	[illegible]	[illegible]
dabrupti	.8294005	.1040937	7.968	0.000	[illegible]	[illegible]
dpreplac	.9263358	.123711	7.488	0.000	.6838668	1.168805
dexcebld	-.5036431	.1808404	-2.785	0.005	-.8580838	-.1492024
dseizure	.5660677	.2900256	1.952	0.051	-.002372	1.134508
dprecip	.2934571	.0688017	4.265	0.000	.1586082	.4283059
dprolong	-.161408	.1391095	-1.160	0.246	-.4340576	.1112416
ddysfunc	-.3171468	.0542836	-5.842	0.000	-.4235407	-.2107529
dcord	.2884804	.1647083	1.751	0.080	-.0343418	.6113027
dotherlb	.2142917	.0315199	6.799	0.000	.1525138	.2760696
dalcosyn	1.568289	.5143648	3.049	0.002	.5601526	2.576426
dven130	.4642923	.0821986	5.648	0.000	.303186	.6253987
dven30m	-.0994998	.1011041	-0.984	0.325	-.2976601	.0986605
dnseiz	.4470879	.3511206	1.273	0.203	-.2410959	1.135272
dotherab	.7599529	.0378113	20.099	0.000	.6858442	.8340616
dinadqcr	-.3638151	.0519782	-6.999	0.000	-.4656904	-.2619398
dintercr	-.1582532	.0385993	-4.100	0.000	-.2339064	-.0825999
_cons	5.899855	1.466501	4.023	0.000	3.025566	8.774143

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```
. logit normal weight birth estimates
.
. logit dnlbirwt [illegible]
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani [illegible] d
> livord dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dvenl30 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt != 9999 &
>  gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts failure perfectly
      dquad dropped and 1 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-46197.845
Iteration 1:  Log Likelihood =-44513.717
Iteration 2:  Log Likelihood =-38623.633
Iteration 3:  Log Likelihood =-32822.151
Iteration 4:  Log Likelihood =-31917.964
Iteration 5:  Log Likelihood =-31822.832
Iteration 6:  Log Likelihood =-31793.562
Iteration 7:  Log Likelihood =-31781.874
Iteration 8:  Log Likelihood =-31776.633
Iteration 9:  Log Likelihood =-31774.149
Iteration 10:  Log Likelihood =-31772.939
Iteration 11:  Log Likelihood =-31772.342
Iteration 12:  Log Likelihood =-31772.046
Iteration 13:  Log Likelihood =-31771.898
Iteration 14:  Log Likelihood =-31771.825
Iteration 15:  Log Likelihood =-31771.788
Iteration 16:  Log Likelihood =-31771.769
Iteration 17:  Log Likelihood = -31771.76
Iteration 18:  Log Likelihood =-31771.756
Iteration 19:  Log Likelihood =-31771.753
Iteration 20:  Log Likelihood =-31771.753
Iteration 21:  Log Likelihood =-31771.752
Iteration 22:  Log Likelihood =-31771.752
Iteration 23:  Log Likelihood =-31758.412
Iteration 24:  Log Likelihood =-31728.327
Iteration 25:  Log Likelihood = -31661.35
Iteration 26:  Log Likelihood =-31661.244
Iteration 27:  Log Likelihood =-31661.244

Logit Estimates                                   Number of obs = 211608
                                                  chi2(61)      =29073.20
                                                  Prob > chi2   = 0.0000
Log Likelihood = -31661.244                       Pseudo R2     = 0.3147
```

dnlbirwt	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dtobacco	2.36966	.4162708	5.693	0.000	1.553785	3.185536
dtobgest	-.0823693	.0110519	-7.453	0.000	-.1040306	-.0607079
dtobalco	-.0383128	.1697588	-0.226	0.821	-.3710339	.2944083
dalcohol	-.1202247	.1454891	-0.826	0.409	-.4053782	.1649287
dmale	.2997369	.0223935	13.385	0.000	.2558465	.3436272
gestat	.368249	.047414	7.767	0.000	.2753194	.4611787
dmag16gs	-.0733106	.052313	-1.401	0.161	-.1758422	.0292209
dm1640gs	.0396375	.0475495	0.834	0.405	-.0535578	.1328327
dmage16	3.057217	1.941892	1.574	0.115	-.7488207	6.863256
dmag1640	-1.098226	1.768055	-0.621	0.535	-4.56355	2.367099
nprevist	.0417926	.0039865	10.484	0.000	.0339792	.049606
monpre	.0427696	.0068198	6.271	0.000	.029403	.0561363
dblack	-.6455842	.0329498	-19.593	0.000	-.7101645	-.5810038
damind	.7287752	.2673108	2.726	0.006	.2048557	1.252695
dasia	-.5658595	.0731016	-7.741	0.000	-.709136	-.4225831
dhispani	-.1278157	.0297081	-4.302	0.000	-.1860424	-.0695889
dmarried	.1409227	[illegible]	4.848	0.000	.0833466	.1978988
dlivord	.1083284	.009823	11.029	0.000	.0890756	.1275812
dnoeduc	-.1963478	.1679314	-1.169	0.242	-.5254873	.1327917
delem	-.1791533	.0457063	-3.920	0.000	-.268736	-.0895707
dsomhs	-.2750718	.0344816	-7.977	0.000	-.3426546	-.2074891
dhsg	-.1455099	.0302493	-4.810	0.000	-.2047975	-.0862223

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dtwin	-2.527103	.0434418	-58.172	0.000	-2.612247	-2.441959
dtriple	-6.370851	.7492138	-8.503	0.000	-7.839283	-4.902419
[illegible]	.1685291	.0666475	2.529	0.026	.0179024	[illegible]
dcardiac	-.1645541	.217901	-0.755	0.450	[illegible]	.0689691
dlung	-.3132231	.2055722	-1.524	0.128	-.7161372	.4659848
ddiabete	.3195732	.0747012	4.278	0.000	.1731616	1.467849
ialcdiab	.2036258	.6450236	0.316	0.752	-1.060597	-.8481354
dhydra	-1.052928	.1044879	-10.077	0.000	-1.25772	.6775046
dhemo	-.0411741	.3666795	-0.112	0.911	-.7598528	-.8373351
dphyper	-.923815	.0441232	-20.937	0.000	-1.010295	-.697934
dchyper	-.8988727	.1025216	-8.768	0.000	-1.099811	-.7382668
declamp	-.9788146	.1227307	-7.975	0.000	-1.219362	1.527191
itobeclm	.5976542	.474262	1.260	0.208	-.3318822	-.2717187
dincervi	-.6922748	.2145734	-3.226	0.001	-1.112831	1.481049
itobincv	.4318306	.5353252	0.807	0.420	-.6173876	1.151121
dpre4000	.7995084	.1793977	4.457	0.000	.4478954	-.3743357
dpreterm	-1.124613	.3828016	-2.938	0.003	-1.87489	.0300984
iprtmage	.0026681	.0139953	0.191	0.849	-.0247621	.2882853
drenal	-.1066066	.2014792	-0.529	0.597	-.5014985	1.023893
drh	.6293895	.2012809	3.127	0.002	.2348862	-.2058504
dothermr	-.2650663	.0302127	-8.773	0.000	-.3242822	.5136857
dmecon	.3941527	.0609873	6.463	0.000	.2746198	-.6172985
drupture	-.7396301	.0624152	-11.850	0.000	-.8619616	-1.062218
dabrupti	-1.265695	.1038165	-12.192	0.000	-1.469171	-.6548848
dpreplac	-.904596	.127406	-7.100	0.000	-1.154307	.6994623
dexcebld	.3556039	.1754412	2.027	0.043	.0117456	-.1350249
dseizure	-.7149408	.2958809	-2.416	0.016	-1.294857	-.1907936
dprecip	-.3274709	.0697346	-4.696	0.000	-.4641482	.4320832
dprolong	.1570276	.1403371	1.119	0.263	-.1180281	.470402
ddysfunc	.3613705	.0556293	6.496	0.000	.252339	-.0367722
dcord	-.3569822	.1633755	-2.185	0.029	-.6771922	-.2496552
dotherlb	-.3116035	.0316069	-9.859	0.000	-.3735518	.0718905
dalcosyn	-1.080756	.5880959	-1.838	0.066	-2.233403	-.3430507
dven130	-.5070882	.0836941	-6.059	0.000	-.6711256	-1.291933
dven30m	-1.488451	.1002661	-14.845	0.000	-1.684969	.4268968
dnseiz	-.2509287	.3458357	-0.726	0.468	-.9287543	-.9712444
dotherab	-1.044417	.0373336	-27.975	0.000	-1.117589	.1974807
dinadqcr	.0916693	.0539864	1.698	0.090	-.0141422	.0879063
dintercr	.0099302	.0397844	0.250	0.803	-.0680459	-8.320845
_cons	-11.77868	1.764234	-6.676	0.000	-15.23652	

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```
. *Texas 1992
. do c:\temp\logit1a.do

. set more 1

. set matsize 300

. * low low weight birth estimates
.

Note: 3 failures and 0 successes completely determined.
. logit dlwbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dm16
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried 1
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt != 9999
> & gestat !=99 & nprevist !=99,iterate(50)

Note: ialcdiab~=0 predicts failure perfectly
      ialcdiab dropped and 106 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-14811.667
Iteration 1:  Log Likelihood =-9074.1829
Iteration 2:  Log Likelihood =-6419.3004
Iteration 3:  Log Likelihood = -6361.371
Iteration 4:  Log Likelihood =-6241.7487
Iteration 5:  Log Likelihood =-6241.7476
Iteration 6:  Log Likelihood = -6241.747
Iteration 7:  Log Likelihood =-6241.7467
Iteration 8:  Log Likelihood = -5216.986
Iteration 9:  Log Likelihood =-4997.7609
Iteration 10:  Log Likelihood =-4906.8844
Iteration 11:  Log Likelihood =-4864.5781
Iteration 12:  Log Likelihood = -4864.578
Iteration 13:  Log Likelihood = -4864.578
Iteration 14:  Log Likelihood = -4864.578
Iteration 15:  Log Likelihood = -4864.578
Iteration 16:  Log Likelihood = -4864.578
Iteration 17:  Log Likelihood = -4864.578
Iteration 18:  Log Likelihood = -4864.578
Iteration 19:  Log Likelihood = -4864.578
Iteration 20:  Log Likelihood = -4864.578
Iteration 21:  Log Likelihood =-4836.6204
Iteration 22:  Log Likelihood =-4814.4828
Iteration 23:  Log Likelihood = -4813.511
Iteration 24:  Log Likelihood =-4813.2575
Iteration 25:  Log Likelihood =-4813.2573

Logit Estimates                                   Number of obs = 250806
                                                  chi2(61)      =19996.82
                                                  Prob > chi2   = 0.0000
Log Likelihood = -4813.2573                       Pseudo R2     = 0.6750

------------------------------------------------------------------------------
dlwbirwt |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   .0785329   .8475405     0.093  0.926    -1.582616    1.739682
dtobgest |   .0010619   .0265386     0.040  0.968    -.0509528    .0530766
dtobalco |  -.0805265   .4129159    -0.195  0.845    -.8898267    .7287738
dalcohol |   .1108115   .3305192     0.335  0.737    -.5369942    .7586173
   dmale |  -.2975822   .0592322    -5.024  0.000    -.4136751   -.1814892
  gestat |  -1.008671    .222897    -4.525  0.000    -1.445541    -.571801
dmag16gs |   .4612188   .2279681     2.023  0.043     .0144095    .9080282
dm1640gs |   .3575081     .22298     1.603  0.109    -.0795246    .7945408
 dmage16 |  -13.68124   6.894099    -1.984  0.047    -27.19343   -.1690549
dmag1640 |  -10.21643   6.735294    -1.517  0.129    -23.41936    2.986508
nprevist |  -.0405431   .0086093    -4.709  0.000    -.0574172   -.0236689
  monpre |  -.1206499   .0219624    -5.493  0.000    -.1591123   -.0821875
  dblack |   .3097309   .0833085     3.718  0.000     .1464974    .4729644
  damind |   .0113116   .2244336     0.050  0.960    -.4285702    .4511934
   dasia |   1.139411   .4766391     2.391  0.017     .2052154    2.073606
dhispani |   .1179712   .0794076     1.486  0.137    -.0376648    .2736073
```

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dmarried	.1613058	.0772629	2.088	0.037	.0098733	.3127383
livord9	-.1188461	.0255621	-4.649	0.000	-.1689466	-.0687455
dnoeduc	1.047161	.3651999	2.867	0.004	.3313822	1.762939
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
dsomhs	.1828943	.0912235	2.005	0.045	.0040996	.3616889
dhsg	.2274229	.0777319	2.926	0.003	.0750711	.3797747
dtwin	.9641118	.0836487	11.526	0.000	.8001633	1.12806
dtriple	2.049636	.257383	7.963	0.000	1.545174	2.554097
dquad	.6066748	.968134	0.627	0.531	-1.290833	2.504183
danemia	-.4534095	.176855	-2.564	0.010	-.8000389	-.1067801
dcardiac	-.6166729	.6639454	-0.929	0.353	-1.917982	.684636
dlung	.6449576	.4832212	1.335	0.182	-.3021385	1.592054
ddiabete	-.1594151	.1885263	-0.846	0.398	-.5289199	.2100896
dhydra	.8636301	.1946658	4.436	0.000	.4820922	1.245168
dhemo	-.4531527	.7370187	-0.615	0.539	-1.897683	.9913774
dphyper	.7666292	.1082758	7.080	0.000	.5544126	.9788459
dchyper	.945538	.2033049	4.651	0.000	.5470676	1.344008
declamp	.3389868	.274903	1.233	0.218	-.1998131	.8777867
itobeclm	.8177545	.7293261	1.121	0.262	-.6116984	2.247207
dincervi	.9657205	.3364688	2.870	0.004	.3062537	1.625187
itobincv	-1.227907	1.481722	-0.829	0.407	-4.132028	1.676214
dpre4000	-.2078119	.4116535	-0.505	0.614	-1.014638	.5990141
dpreterm	-.8118156	.7630545	-1.064	0.287	-2.307375	.6837438
iprtmage	.0456714	.0276788	1.650	0.099	-.0085779	.0999208
drenal	.6109738	.3916136	1.560	0.119	-.1565748	1.378522
drh	-.7543481	.6118504	-1.233	0.218	-1.953553	.4448566
dothermr	.2417513	.067097	3.603	0.000	.1102437	.3732589
dmecon	-.4125134	.1986111	-2.077	0.038	-.801784	-.0232428
drupture	.2395847	.1091864	2.194	0.028	.0255832	.4535862
dabrupti	.623071	.15365	4.055	0.000	.3219224	.9242195
dpreplac	.3541373	.2644888	1.339	0.181	-.1642512	.8725258
dexcebld	.1172915	.293739	0.399	0.690	-.4584263	.6930093
dseizure	1.105957	.613319	1.803	0.071	-.0961264	2.30804
dprecip	-.2926348	.1646486	-1.777	0.076	-.6153402	.0300705
dprolong	-.8197538	.477196	-1.718	0.086	-1.755041	.1155331
ddysfunc	-.5325649	.1863233	-2.858	0.004	-.8977518	-.1673779
dcord	.1542049	.3382716	0.456	0.648	-.5087953	.8172049
dotherlb	.4120663	.0732578	5.625	0.000	.2684836	.5556489
dalcosyn	-1.194923	2.10359	-0.568	0.570	-5.317884	2.928037
dven130	.4454779	.1725959	2.581	0.010	.1071961	.7837596
dven30m	.8457755	.1072837	7.884	0.000	.6355033	1.056048
dnseiz	1.699724	.6205075	2.739	0.006	.4835518	2.915897
dotherab	.6470529	.0731469	8.846	0.000	.5036875	.7904181
dinadqcr	.1406485	.121061	1.162	0.245	-.0966268	.3779237
dintercr	.1653778	.1058163	1.563	0.118	-.0420184	.372774
_cons	28.64226	6.738045	4.251	0.000	15.43593	41.84859

Note: 3 failures and 0 successes completely determined.

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```
. *logit low weight birth estimates
.
. logit dmdbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag16gs dml6
> 40gs dmage16 dmag1640 nprevist monpre [illegible]
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dvenl30 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt != 9999
> & gestat !=99 & nprevist !=99,iterate(50)

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-53609.828
Iteration 1:  Log Likelihood =-44135.595
Iteration 2:  Log Likelihood =-42163.862
Iteration 3:  Log Likelihood =-42085.604
Iteration 4:  Log Likelihood =-42084.991
Iteration 5:  Log Likelihood = -42084.99

Logit Estimates                                   Number of obs = 250912
                                                  chi2(62)      =23049.68
                                                  Prob > chi2   = 0.0000
Log Likelihood =  -42084.99                       Pseudo R2     = 0.2150
```

dmdbirwt	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dtobacco	-1.844093	.3036351	-6.073	0.000	-2.439207	-1.248979
dtobgest	.0670885	.0080301	8.355	0.000	.0513497	.0828272
dtobalco	-.0122287	.1372061	-0.089	0.929	-.2811477	.2566904
dalcohol	.1728433	.1142191	1.513	0.130	-.051022	.3967085
dmale	-.286008	.0195304	-14.644	0.000	-.324287	-.2477291
gestat	-.2400546	.0315455	-7.610	0.000	-.3018827	-.1782265
dmag16gs	.0377702	.036242	1.042	0.297	-.0332628	.1088031
dm1640gs	-.0067913	.0316213	-0.215	0.830	-.0687678	.0551852
dmage16	-1.745138	1.344722	-1.298	0.194	-4.380745	.890468
dmag1640	-.0696703	1.175653	-0.059	0.953	-2.373908	2.234567
nprevist	-.0132646	.0031749	-4.178	0.000	-.0194873	-.0070418
monpre	-.0428349	.0062623	-6.840	0.000	-.0551089	-.030561
dblack	.5052963	.0288824	17.495	0.000	.4486879	.5619047
damind	.3964864	.0648835	6.111	0.000	.2693172	.5236557
dasia	.0714111	.2048193	0.349	0.727	-.3300274	.4728495
dhispani	.0565919	.0259233	2.183	0.029	.0057831	.1074007
dmarried	-.1329337	.0259744	-5.118	0.000	-.1838426	-.0820248
livord9	-.0876328	.0086106	-10.177	0.000	-.1045093	-.0707563
dnoeduc	.4077492	.1357477	3.004	0.003	.1416886	.6738098
delem	.2103603	.0402918	5.221	0.000	.1313897	.2893308
dsomhs	.3108649	.0299857	10.367	0.000	.252094	.3696357
dhsg	.1501463	.0258605	5.806	0.000	.0994608	.2008319
dtwin	2.276252	.0352822	64.516	0.000	2.2071	2.345404
dtriple	1.867206	.1864119	10.017	0.000	1.501845	2.232567
dquad	-1.118424	1.043348	-1.072	0.284	-3.163349	.9265005
danemia	-.1865909	.0601023	-3.105	0.002	-.3043892	-.0687925
dcardiac	.1331748	.1834569	0.726	0.468	-.2263941	.4927437
dlung	-.0143153	.1897392	-0.075	0.940	-.3861972	.3575667
ddiabete	-.2029706	.0607364	-3.342	0.001	-.3220119	-.0839294
ialcdiab	-.3830627	.4857752	-0.789	0.430	-1.335165	.5690392
dhydra	.949465	.0813663	11.669	0.000	.7899899	1.10894
dhemo	.4772206	.2994652	1.594	0.111	-.1097205	1.064162
dphyper	.811332	.0400327	20.267	0.000	.7328693	.8897948
dchyper	.82865	.0850793	9.740	0.000	.6618976	.9954024
declamp	.9643341	.1103579	8.738	0.000	.7480367	1.180632
itobeclm	-.4466979	.358655	-1.245	0.213	-1.149649	.2562529
dincervi	-.3408424	.199261	-1.711	0.087	-.7313869	.0497021
itobincv	.1087138	.6030996	0.180	0.857	-1.07334	1.290767
dpre4000	-1.108673	.1698256	-6.528	0.000	-1.441525	-.7758205
dpreterm	.9171159	.3066655	2.991	0.003	.3160625	1.518169
iprtmage	.0051909	.011318	0.459	0.646	-.016992	.0273738
drenal	.2755775	.1620529	1.701	0.089	-.0420401	.5931952
drh	-.2951308	.1555099	-1.898	0.058	-.5999247	.009663
dothermr	.415266	.0240662	17.255	0.000	.3680972	.4624348
dmecon	-.2888239	.0522022	-5.533	0.000	-.3911385	-.1865094
drupture	.7402277	.0492676	15.025	0.000	.643665	.8367904
dabrupti	.8390704	.0875237	9.587	0.000	.6675271	1.010614
dpreplac	.97542	.1142042	8.541	0.000	.7515838	1.199256

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dexcebld	-.4483288	.1485865	-3.017	0.003	-.7395529	-.1571047
dseizure	.4000315	.3053547	1.310	0.190	-.1984527	[illegible]
dprecip	.2990839	.057248	5.224	0.000	[illegible]	[illegible]
dprolong	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ddysfunc	-.4911949	.0520037	-9.445	0.000	-.5931202	-.3892696
dcord	-.1698487	.1637201	-1.037	0.300	-.4907343	.1510368
dotherlb	.1953711	.0276747	7.060	0.000	.1411298	.2496125
dalcosyn	1.250046	.6071083	2.059	0.039	.0601357	2.439957
dven130	.4008405	.0696149	5.758	0.000	.2643978	.5372833
dven30m	-.5124129	.0782981	-6.544	0.000	-.6658744	-.3589513
dnseiz	-.1816088	.4530108	-0.401	0.688	-1.069494	.7062761
dotherab	.845264	.0328857	25.703	0.000	.7808092	.9097189
dinadqcr	-.2820812	.0456515	-6.179	0.000	-.3715564	-.192606
dintercr	-.085458	.0353818	-2.415	0.016	-.1548051	-.016111
_cons	6.741431	1.174067	5.742	0.000	4.440301	9.042561

.
.

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```
. *logit normal weight birth estimates
.
. logit dnlbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmag
> 40gs dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani dmarried 1
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt != 9999
> & gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts failure perfectly
      dquad dropped and 8 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-60978.029
Iteration 1:  Log Likelihood =-52991.563
Iteration 2:  Log Likelihood =-47473.455
Iteration 3:  Log Likelihood =-43594.862
Iteration 4:  Log Likelihood =-40742.354
Iteration 5:  Log Likelihood =-39419.249
Iteration 6:  Log Likelihood =-39132.267
Iteration 7:  Log Likelihood =-39023.682
Iteration 8:  Log Likelihood =-38975.851
Iteration 9:  Log Likelihood =-38953.352
Iteration 10:  Log Likelihood =-38942.434
Iteration 11:  Log Likelihood =-38937.056
Iteration 12:  Log Likelihood =-38934.387
Iteration 13:  Log Likelihood =-38933.057
Iteration 14:  Log Likelihood =-38932.393
Iteration 15:  Log Likelihood =-38932.062
Iteration 16:  Log Likelihood =-38931.896
Iteration 17:  Log Likelihood =-38931.813
Iteration 18:  Log Likelihood =-38931.772
Iteration 19:  Log Likelihood =-38931.751
Iteration 20:  Log Likelihood =-38931.741
Iteration 21:  Log Likelihood =-38931.736
Iteration 22:  Log Likelihood =-38931.733
Iteration 23:  Log Likelihood =-38950.334
Iteration 24:  Log Likelihood =-38787.054
Iteration 25:  Log Likelihood =-38137.456
Iteration 26:  Log Likelihood =-38130.724
Iteration 27:  Log Likelihood =-38130.722

Logit Estimates                                   Number of obs = 250904
                                                  chi2(61)      =45694.61
                                                  Prob > chi2   = 0.0000
Log Likelihood = -38130.722                       Pseudo R2     = 0.3747

------------------------------------------------------------------------------
dnlbirwt |      Coef.   Std. Err.       z     P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |   2.873666   .3818429      7.526   0.000     2.125267    3.622064
dtobgest |  -.0965327   .0101857     -9.477   0.000    -.1164963   -.0765692
dtobalco |   .0326307   .1424188      0.229   0.819    -.2465051    .3117665
dalcohol |  -.2233785   .1185241     -1.885   0.059    -.4556815    .0089244
   dmale |   .3628169   .0202804     17.890   0.000      .323068    .4025658
  gestat |    .453946   .0419508     10.821   0.000      .371724     .536168
dmag16gs |  -.1018224   .0471458     -2.160   0.031    -.1942265   -.0094183
dm1640gs |   .0029912   .0420534      0.071   0.943     -.079432    .0854143
 dmage16 |   4.099739   1.736903      2.360   0.018     .6954722    7.504006
dmag1640 |   .1572687   1.551575      0.101   0.919    -2.883763      3.1983
nprevist |   .0411388   .0034406     11.957   0.000     .0343955    .0478822
  monpre |   .0606715   .0065195      9.306   0.000     .0478936    .0734494
  dblack |  -.5954073   .0299151    -19.903   0.000    -.6540399   -.5367747
  damind |  -.4276857   .0669355     -6.390   0.000    -.5588768   -.2964946
   dasia |  -.0880419   .2084579     -0.422   0.673    -.4966118     .320528
dhispani |  -.0708505   .0268618     -2.638   0.008    -.1234962   -.0182048
dmarried |    .092797   .0270371      3.432   0.001     .0398051    .1457889
 livord9 |   .1216576   .0090028     13.513   0.000     .1040123    .1393028
dnoeduc  |  -.7119283   .1307008     -5.447   0.000    -.9680964   -.4557597
  delem  |  -.2092698   .0417039     -5.018   0.000    -.2910079   -.1275316
  dsomhs |  -.3235023   .0310219    -10.362   0.000    -.3846904   -.2623143
    dhsg |  -.1847687   .0267784     -6.901   0.000    -.2372482   -.1322891
```

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dtwin	-2.466847	.0381907	-64.593	0.000	-2.541689	-2.391
dtriple	-4.900174	.3987681	-12.288	0.000	-5.681745	-4.118603
danemia	.3053749	.0632804	4.826	0.000	.1813476	
dcardiac	.024007	.1963553	0.122	0.903	-.3608424	
dlung	-.2762491	.1810403	-1.526	0.127	-.6310816	.0785834
ddiabete	.3304861	.0633198	5.219	0.000	.2063816	.4545907
ialcdiab	.2500658	.4743078	0.527	0.598	-.6795605	1.179692
dhydra	-1.136057	.0843751	-13.464	0.000	-1.30143	-.9706851
dhemo	-.3120237	.3492115	-0.894	0.372	-.9964657	.3724182
dphyper	-.8245606	.041801	-19.726	0.000	-.9064891	-.7426322
dchyper	-.9515622	.0880672	-10.805	0.000	-1.124171	-.7789538
declamp	-1.025604	.1147397	-8.939	0.000	-1.250489	-.800718
itobeclm	.3076664	.3834212	0.802	0.422	-.4438255	1.059158
dincervi	-.3945335	.1980656	-1.992	0.046	-.782735	-.006332
itobincv	-.0469732	.5774713	-0.081	0.935	-1.178796	1.08485
dpre4000	1.243875	.1802869	6.899	0.000	.8905196	1.597231
dpreterm	-.8531118	.3286451	-2.596	0.009	-1.497244	-.2089793
iprtmage	-.0092123	.0120688	-0.763	0.445	-.0328668	.0144421
drenal	-.3151437	.1686101	-1.869	0.062	-.6456135	.0153261
drh	.4818735	.1675261	2.876	0.004	.1535283	.8102186
dothermr	-.4335714	.0247756	-17.500	0.000	-.4821306	-.3850122
dmecon	.2591146	.0538719	4.810	0.000	.1535276	.3647016
drupture	-.824909	.0514224	-16.042	0.000	-.9256951	-.7241229
dabrupti	-1.244874	.0931051	-13.371	0.000	-1.427357	-1.062391
dpreplac	-.9216157	.1200743	-7.675	0.000	-1.156957	-.6862744
dexcebld	.1668785	.1458856	1.144	0.253	-.119052	.4528089
dseizure	-.3056704	.3226702	-0.947	0.343	-.9380924	.3267516
dprecip	-.3640504	.0596887	-6.099	0.000	-.4810381	-.2470627
dprolong	.0215888	.1190226	0.181	0.856	-.2116912	.2548689
ddysfunc	.5178726	.0538273	9.621	0.000	.4123731	.6233722
dcord	-.0758698	.1645733	-0.461	0.645	-.3984275	.2466879
dotherlb	-.2706993	.0285435	-9.484	0.000	-.3266436	-.214755
dalcosyn	-.7725502	.704754	-1.096	0.273	-2.153843	.6087423
dven130	-.4627793	.0723504	-6.396	0.000	-.6045836	-.3209751
dven30m	-1.204478	.0858144	-14.036	0.000	-1.372672	-1.036285
dnseiz	-.7808493	.3880762	-2.012	0.044	-1.541465	-.0202338
dotherab	-1.207503	.0336776	-35.855	0.000	-1.27351	-1.141496
dinadqcr	.0167587	.0483241	0.347	0.729	-.0779547	.1114721
dintercr	-.0545929	.0372349	-1.466	0.143	-.127572	.0183862
_cons	-14.91872	1.548857	-9.632	0.000	-17.95443	-11.88302

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```
. *Texas 1993
. do c:\temp\logitla.do

. set more 1

. set matsize 300

. * logit low low weight birth estimates
.
. logit dlwbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat dmagl6gs dml6
> 40gs dmagel6 dmagl640 nprevist monpre dblack damind dasia dhispani dmarried l
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt != 9999
> & gestat !=99 & nprevist !=99,iterate(50)

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-18403.319
Iteration 1:  Log Likelihood =-10603.266
Iteration 2:  Log Likelihood =-6823.3902
Iteration 3:  Log Likelihood =-5976.0123
Iteration 4:  Log Likelihood =-5767.4904
Iteration 5:  Log Likelihood =-5743.8276
Iteration 6:  Log Likelihood =-5743.3412
Iteration 7:  Log Likelihood =-5743.3409
Iteration 8:  Log Likelihood =-5743.3409
Iteration 9:  Log Likelihood =-5743.3409
Iteration 10:  Log Likelihood =-5743.3409
Iteration 11:  Log Likelihood =-5743.3409
Iteration 12:  Log Likelihood =-5743.3409
Iteration 13:  Log Likelihood =-5743.3409
Iteration 14:  Log Likelihood =-5743.3409
Iteration 15:  Log Likelihood =-5743.3409
Iteration 16:  Log Likelihood =-5743.3409
Iteration 17:  Log Likelihood =-5743.3409
Iteration 18:  Log Likelihood =-5743.3409
Iteration 19:  Log Likelihood =-5743.3409
Iteration 20:  Log Likelihood =-5743.3409
Iteration 21:  Log Likelihood =-5743.3409
Iteration 22:  Log Likelihood =-5743.3409
Iteration 23:  Log Likelihood =-5743.3409
Iteration 24:  Log Likelihood =-5743.3409
Iteration 25:  Log Likelihood =-5743.3409
Iteration 26:  Log Likelihood =-5743.3409
Iteration 27:  Log Likelihood =-5743.3409
Iteration 28:  Log Likelihood =-5743.3409
Iteration 29:  Log Likelihood =-5743.3409
Iteration 30:  Log Likelihood =-5743.3409
Iteration 31:  Log Likelihood =-5743.3409
Iteration 32:  Log Likelihood =-5743.3409
Iteration 33:  Log Likelihood =-5743.3409
Iteration 34:  Log Likelihood =-5743.3409
Iteration 35:  Log Likelihood =-5743.3409
Iteration 36:  Log Likelihood =-5743.3409
Iteration 37:  Log Likelihood =-5743.3409
Iteration 38:  Log Likelihood =-5743.3409
Iteration 39:  Log Likelihood =-5743.3409
Iteration 40:  Log Likelihood =-5743.3409
Iteration 41:  Log Likelihood =-5743.3409
Iteration 42:  Log Likelihood =-5743.3409
Iteration 43:  Log Likelihood =-5743.3409
Iteration 44:  Log Likelihood =-5743.3409
Iteration 45:  Log Likelihood =-5743.3409
Iteration 46:  Log Likelihood =-5743.3409
Iteration 47:  Log Likelihood =-5743.3409
Iteration 48:  Log Likelihood =-5743.3409
Iteration 49:  Log Likelihood =-5743.3409
Iteration 50:  Log Likelihood =-5743.3409

Logit Estimates, convergence not achieved.
(Estimation stopped after 50 iterations)

Log Likelihood = -5743.3409

Number of obs = 296138
chi2(62)      =25319.96
Prob > chi2   = 0.0000
Pseudo R2     = 0.6879
```

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dlwbirwt	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dtobacco	-2.589688	.7105326	-3.645	0.000	-3.982307	-1.19707
dtobgest	.0890965	.021913	4.066	0.000	.0461479	.1320452
dtobalco	.441158	.4066064	1.085	0.278	-.355776	1.238092
dalcohol	-.090514	.353544	-0.256	0.798	-.7834474	.6024195
dmale	-.1950677	.0542489	-3.596	0.000	-.3013936	-.0887418
gestat	-.6212661	.0742572	-8.366	0.000	-.7668076	-.4757246
dmag16gs	.0045716	.0907889	0.050	0.960	-.1733713	.1825145
dm1640gs	-.0329121	.0745705	-0.441	0.659	-.1790677	.1132434
dmage16	-.8073404	2.880828	-0.280	0.779	-6.45366	4.838979
dmag1640	.8226327	2.421623	0.340	0.734	-3.923661	5.568927
nprevist	-.0970547	.0087513	-11.090	0.000	-.1142069	-.0799024
monpre	-.1511366	.0191444	-7.895	0.000	-.1886589	-.1136144
dblack	.3142729	.0778645	4.036	0.000	.1616612	.4668846
damind	.4697774	.191444	2.454	0.014	.094554	.8450009
dasia	.0726301	.7232914	0.100	0.920	-1.344995	1.490255
dhispani	.0869849	.0729731	1.192	0.233	-.0560397	.2300094
dmarried	-.0244052	.0706705	-0.345	0.730	-.1629168	.1141064
livord9	-.1101694	.0217121	-5.074	0.000	-.1527244	-.0676144
dnoeduc	.0702292	.3556141	0.197	0.843	-.6267617	.7672201
delem	.0512272	.1127849	0.454	0.650	-.1698271	.2722815
dsomhs	.1119098	.0826125	1.355	0.176	-.0500078	.2738275
dhsg	.0816662	.0712257	1.147	0.252	-.0579335	.2212659
dtwin	1.051929	.0768829	13.682	0.000	.9012408	1.202616
dtriple	1.589782	.2301244	6.908	0.000	1.138746	2.040817
dquad	6.57e+07	3308.07	.	0.000	6.57e+07	6.57e+07
danemia	-.5890672	.1748542	-3.369	0.001	-.9317751	-.2463594
dcardiac	.0940224	.4125603	0.228	0.820	-.714581	.9026257
dlung	.3397221	.3993397	0.851	0.395	-.4429694	1.122414
ddiabete	-.3792195	.1756217	-2.159	0.031	-.7234317	-.0350073
ialcdiab	-.4779659	1.156258	-0.413	0.679	-2.74419	1.788258
dhydra	.9605452	.1530608	6.276	0.000	.6605516	1.260539
dhemo	1.252706	.9854077	1.271	0.204	-.6786572	3.18407
dphyper	.9632651	.0985252	9.777	0.000	.7701593	1.156371
dchyper	1.503985	.1771848	8.488	0.000	1.156709	1.851261
declamp	.5678043	.2397298	2.369	0.018	.0979426	1.037666
itobeclm	-.2474577	.7282535	-0.340	0.734	-1.674808	1.179893
dincervi	.703233	.3147875	2.234	0.025	.0862609	1.320205
itobincv	-.6506188	1.554223	-0.419	0.675	-3.696839	2.395601
dpre4000	.2251251	.3291561	0.684	0.494	-.4200091	.8702593
dpreterm	-1.018265	.7171618	-1.420	0.156	-2.423876	.3873465
iprtmage	.0504325	.02504	2.014	0.044	.001355	.0995099
drenal	.5192211	.4516804	1.150	0.250	-.3660563	1.404498
drh	-.5704263	.4167547	-1.369	0.171	-1.38725	.2463979
dothermr	.2796251	.0598144	4.675	0.000	.1623909	.3968592
dmecon	-.4032868	.182403	-2.211	0.027	-.7607901	-.0457836
drupture	.3553164	.0946435	3.754	0.000	.1698184	.5408143
dabrupti	.723999	.1512016	4.788	0.000	.4276492	1.020349
dpreplac	.392381	.2327561	1.686	0.092	-.0638125	.8485745
dexcebld	.0497055	.2740468	0.181	0.856	-.4874164	.5868274
dseizure	.6318477	.5568866	1.135	0.257	-.4596299	1.723325
dprecip	-.2644163	.1619802	-1.632	0.103	-.5818918	.0530591
dprolong	.207163	.3753595	0.552	0.581	-.528528	.9428541
ddysfunc	-.5155543	.166572	-3.095	0.002	-.8420294	-.1890791
dcord	-.5139779	.4136752	-1.242	0.214	-1.324766	.2968106
dotherlb	.273428	.0686443	3.983	0.000	.1388877	.4079683
dalcosyn	-1.364759	2.938073	-0.465	0.642	-7.123276	4.393759
dven130	.421336	.1533658	2.747	0.006	.1207446	.7219274
dven30m	1.15094	.0981685	11.724	0.000	.9585335	1.343347
dnseiz	-1.861553	.9324295	-1.996	0.046	-3.689081	-.0340249
dotherab	.8194526	.0677219	12.100	0.000	.6867201	.9521851
dinadqcr	.897469	.1190543	7.538	0.000	.6641268	1.130811
dinterer	.7403462	.1054222	7.023	0.000	.5337225	.9469699
_cons	17.70206	2.416396	7.326	0.000	12.96602	22.43811

Note: 0 failures and 0 successes completely determined.

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```
. *logit low weight birth estimates
.
. logit dmdbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat [illegible]
> 40ga dmage16 dmag1640 nprevist monpre dblack damind dasia dhispani
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia dcardiac dlung d
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlb d
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr  if dbirwt != 9999
> & gestat !=99 & nprevist !=99,iterate(50)

Note: ialceclm dropped due to collinearity.
Iteration 0:  Log Likelihood =-64273.277
Iteration 1:  Log Likelihood =-53423.458
Iteration 2:  Log Likelihood = -51286.58
Iteration 3:  Log Likelihood =-51145.671
Iteration 4:  Log Likelihood =-51143.649
Iteration 5:  Log Likelihood =-51143.647

Logit Estimates                                   Number of obs = 296138
                                                  chi2(62)      =26259.26
                                                  Prob > chi2   = 0.0000
Log Likelihood = -51143.647                       Pseudo R2     = 0.2043

------------------------------------------------------------------------------
dmdbirwt |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
dtobacco |  -1.628508   .2820721    -5.773   0.000    -2.18136   -1.075657
dtobgest |     .06205   .0074574     8.321   0.000     .0474338   .0766662
dtobalco |   .2806115   .1356614     2.068   0.039     .0147201   .5465029
dalcohol |  -.0607448   .1161038    -0.523   0.601    -.2883041   .1668145
   dmale |  -.2584178   .0176749   -14.621   0.000      -.29306   -.2237756
  gestat |  -.1789961   .0263949    -6.781   0.000    -.2307291   -.1272631
dmag16gs |   .0185283    .030237     0.613   0.540    -.0407351   .0777916
dm1640gs |  -.0570612   .0264617    -2.156   0.031    -.1089252   -.0051972
 dmage16 |  -.9772498   1.126536    -0.867   0.386     -3.18522    1.23072
dmag1640 |   1.772419   .9879753     1.794   0.073    -.1639773   3.708815
nprevist |  -.0087023   .0028648    -3.038   0.002    -.0143172   -.0030874
  monpre |  -.0405829    .005825    -6.967   0.000    -.0519997   -.0291661
  dblack |   .5414534   .0266323    20.331   0.000     .4892551   .5936518
  damind |   .4465818    .057486     7.769   0.000     .3339113   .5592522
   dasia |  -.1707647   .2131655    -0.801   0.423    -.5885615   .2470321
dhispani |    .14821   .0232412     6.377   0.000     .1026581    .193762
dmarried |  -.1366692   .0236347    -5.783   0.000    -.1829924   -.090346
 livord9 |  -.0933443   .0075586   -12.349   0.000    -.1081588   -.0785297
 dnoeduc |   .2675106    .117469     2.277   0.023     .0372756   .4977456
   delem |   .1700309   .0361235     4.707   0.000     .0992301   .2408318
  dsomhs |   .2258535   .0270719     8.343   0.000     .1727934   .2789135
    dhsg |   .1744446   .0232554     7.501   0.000      .128865   .2200243
   dtwin |   2.277022   .0308564    73.794   0.000     2.216544   2.337499
 dtriple |   2.551291    .164922    15.470   0.000      2.22805   2.874532
  dquad  |   1.642755   .6053842     2.714   0.007     .4562235   2.829286
 danemia |  -.1463966   .0559668    -2.616   0.009    -.2560896   -.0367037
dcardiac |  -.0575159   .1671867    -0.344   0.731    -.3851959   .2701641
   dlung |  -.1735687    .161051    -1.078   0.281    -.4892229   .1420855
 ddiabete |   -.152544   .0549165    -2.778   0.005    -.2601785   -.0449096
ialcdiab |  -.5161103   .4644596    -1.111   0.266    -1.426434   .3942137
  dhydra |   .9103223   .0660224    13.788   0.000     .7809209   1.039724
   dhemo |   .0094302   .4114555     0.023   0.982    -.7970078   .8158682
 dphyper |   .7703706   .0366091    21.043   0.000     .6986181   .8421231
 dchyper |   .5487629   .0861605     6.369   0.000     .3798915   .7176344
 declamp |    .886436   .1036863     8.549   0.000     .6832146   1.089657
itobeclm |  -.3566584   .3355947    -1.063   0.288    -1.014412   .3010951
dincervi |  -1.196731   .1960441    -6.104   0.000     -1.58097   -.8124914
itobincv |  -.2763781   .8433162    -0.328   0.743    -1.929248   1.376491
dpre4000 |  -1.020394   .1525956    -6.687   0.000    -1.319476   -.721312
dpreterm |    .900256   .2992997     3.008   0.003     .3136395   1.486873
iprtmage |   .0020534    .010768     0.191   0.849    -.0190514   .0231582
  drenal |   .2641865   .1680143     1.571   0.116    -.0655074   .5938804
     drh |  -.1130242   .1214641    -0.931   0.352    -.3510302   .1250404
dothermr |    .416547   .0219221    19.001   0.000     .3735804   .4595136
  dmecon |  -.3927433   .0486231    -8.077   0.000    -.4880429   -.297443?
drupture |   .7703459   .0443586    17.366   0.000     .6834047   .8572871
dabrupti |   .7793458   .0797886     9.768   0.000     .6229631   .9357285
dpreplac |   .7997544   .0991507     8.066   0.000     .6054225   .9940862
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dexcebld	-.0634745	.120025	-0.529	0.597	-.2987191	.1717701
dseizure	.1478667	.3066038	0.482	0.630	-.4530658	[illegible]
dprecip	.2174081	.0592849	3.667	0.000	.1012117	[illegible]
dprolong	-.0952268	[illegible]	-0.695	0.487	[illegible]	[illegible]
ddysfunc	-.4397282	.0449047	-9.792	0.000	-.5277397	-.3517167
dcord	.1738535	.1441943	1.206	0.228	-.1087621	.4564691
dotherlb	.1943705	.0253822	7.658	0.000	.1446223	.2441186
dalcosyn	-.4704694	.830307	-0.567	0.571	-2.097841	1.156902
dvenl30	.3411353	.0616131	5.537	0.000	.2203758	.4618948
dven30m	-.3632711	.070133	-5.180	0.000	-.5007292	-.225813
dnseiz	.7987199	.3378611	2.364	0.018	.1365244	1.460915
dotherab	.6847494	.0321166	21.321	0.000	.6218019	.7476969
dinadqcr	-.333683	.0417588	-7.991	0.000	-.4155287	-.2518373
dintercr	-.1380244	.0331809	-4.160	0.000	-.2030579	-.072991
_cons	4.502861	.9868698	4.563	0.000	2.568632	6.43709

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. * logit normal weight birth estimates

. logit dnlbirwt dtobacco dtobgest dtobalco dalcohol dmale gestat
> 40gs dmage16 dmag[illegible]
> ivord9 dnoeduc delem dsomhs dhsg dtwin dtriple dquad danemia
> diabete ialcdiab dhydra dhemo dphyper dchyper declamp itobeclm ialceclm dince
> rvi itobincv dpre4000 dpreterm iprtmage drenal drh dothermr dmecon drupture d
> abrupti dpreplac dexcebld dseizure dprecip dprolong ddysfunc dcord dotherlbr
> alcosyn dven130 dven30m dnseiz dotherab dinadqcr dintercr if dbirwt !=9999
> & gestat !=99 & nprevist !=99,iterate(50)

Note: dquad~=0 predicts failure perfectly
      dquad dropped and 12 obs not used

Note: ialceclm dropped due to collinearity.
Iteration 0: Log Likelihood =-73440.731
Iteration 1: Log Likelihood =-63180.745
Iteration 2: Log Likelihood =-55814.563
Iteration 3: Log Likelihood =-48915.137
Iteration 4: Log Likelihood =-46682.874
Iteration 5: Log Likelihood =-46551.152
Iteration 6: Log Likelihood =-46510.651
Iteration 7: Log Likelihood =-46494.487
Iteration 8: Log Likelihood = -46487.24
Iteration 9: Log Likelihood =-46483.807
Iteration 10: Log Likelihood =-46482.135
Iteration 11: Log Likelihood = -46481.31
Iteration 12: Log Likelihood = -46480.9
Iteration 13: Log Likelihood =-46480.696
Iteration 14: Log Likelihood =-46480.594
Iteration 15: Log Likelihood =-46480.543
Iteration 16: Log Likelihood =-46480.518
Iteration 17: Log Likelihood =-46480.505
Iteration 18: Log Likelihood =-46480.499
Iteration 19: Log Likelihood =-46480.495
Iteration 20: Log Likelihood =-46480.494
Iteration 21: Log Likelihood =-46480.493
Iteration 22: Log Likelihood =-46480.493
Iteration 23: Log Likelihood = -46397.56
Iteration 24: Log Likelihood =-46303.302
Iteration 25: Log Likelihood =-46228.447
Iteration 26: Log Likelihood =-46188.536
Iteration 27: Log Likelihood =-46185.247
Iteration 28: Log Likelihood =-46185.145
Iteration 29: Log Likelihood =-46185.145

Logit Estimates

Number of obs = 296126
chi2(61)   =54511.17
Prob > chi2   = 0.0000
Pseudo R2   = 0.3711

Log Likelihood = -46185.145

dnlbirwt	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dtobacco	2.686163	.362777	7.404	0.000	1.975133	3.397193
dtobgest	-.0928718	.0096679	-9.606	0.000	-.1118205	-.0739231
dtobalco	-.3593933	.1399106	-2.569	0.010	-.633613	-.0851735
dalcohol	.0998608	.1194993	0.836	0.403	-.1343535	.3340752
dmale	.3210786	.0183744	17.474	0.000	.2850654	.3570918
gestat	.4457733	.0370015	12.047	0.000	.3732518	.5182948
dmag16gs	-.1140133	.0412513	-2.764	0.006	-.1948643	-.0331622
dm1640gs	.0075428	.0371225	0.203	0.839	-.065216	.0803017
dmage16	4.614534	1.525208	3.026	0.002	1.625181	7.603888
dmag1640	.1215479	1.375081	0.088	0.930	-2.573561	2.816657
nprevist	.0437747	.0031584	13.860	0.000	.0375843	.0499652
monpre	.060134	.0060944	9.867	0.000	.0481892	.0720788
dblack	-.6233358	.0275497	-22.626	0.000	-.6773323	-.5693394
damind	-.4926605	.0590411	-8.344	0.000	-.608379	-.376942
dasia	.2367803	.2194305	1.079	0.281	-.1932957	.6668562
dhispani	-.1479632	.0241944	-6.116	0.000	-.1953833	-.1005431
dmarried	.1261668	.024544	5.140	0.000	.0780615	.1742722
livord9	.1264851	.0079055	16.000	0.000	.1109907	.1419796
dnoeduc	-.310594	.1200563	-2.587	0.010	-.5458999	-.0752881
delem	-.1980401	.0374965	-5.282	0.000	-.2715319	-.1245482
dsomhs	-.2568277	.0281236	-9.132	0.000	-.3119489	-.2017065

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[redacted]

dcardiac	.0856754	.1711805	0.500	0.617	-.2498321	.4211829
dlung	.1716104	.1680613	1.021	0.307	-.1577837	.5010046
ddiabete	.3718331	.058176	6.392	0.000	.2578103	.4858559
ialcdiab	.7278531	.5053976	1.440	0.150	-.262708	1.718414
dhydra	-1.117915	.0692118	-16.152	0.000	-1.253568	-.9822622
dhemo	-.4939859	.387337	-1.275	0.202	-1.253153	.2651807
dphyper	-.8054578	.0380418	-21.173	0.000	-.8800184	-.7308973
dchyper	-.8533226	.0840902	-10.148	0.000	-1.018136	-.6885087
declamp	-.943888	.1095653	-8.615	0.000	-1.158632	-.7291439
itobeclm	.6128037	.3620848	1.692	0.091	-.0968694	1.322477
dincervi	-.1188415	.1887364	-0.630	0.529	-.488758	.251075
itobincv	.1414505	.7055508	0.200	0.841	-1.241404	1.524305
dpre4000	.9748522	.1527613	6.382	0.000	.6754456	1.274259
dpreterm	-.5765239	.3186454	-1.809	0.070	-1.201057	.0480096
iprtmage	-.0158722	.0113961	-1.393	0.164	-.0382081	.0064637
drenal	-.2790844	.1746463	-1.598	0.110	-.6213848	.063216
drh	.1406804	.1259002	1.117	0.264	-.1060795	.3874404
dothermr	-.430617	.0226272	-19.031	0.000	-.4749655	-.3862686
dmecon	.3887443	.0508351	7.647	0.000	.2891094	.4883793
drupture	-.8967588	.0462562	-19.387	0.000	-.9874193	-.8060982
dabrupti	-1.267819	.0831963	-15.239	0.000	-1.430881	-1.104758
dpreplac	-.7076457	.1032577	-6.853	0.000	-.910027	-.5052644
dexcebld	-.1998079	.1195701	-1.671	0.095	-.434161	.0345452
dseizure	-.6058549	.3188553	-1.900	0.057	-1.2308	.01909
dprecip	-.2560139	.0619778	-4.131	0.000	-.3774882	-.1345396
dprolong	.0686007	.1415746	0.485	0.628	-.2088804	.3460818
ddysfunc	.5094658	.0470636	10.825	0.000	.4172227	.6017088
dcord	-.2905678	.1548877	-1.876	0.061	-.5941422	.0130066
dotherlb	-.235966	.026392	-8.941	0.000	-.2876933	-.1842387
dalcosyn	-.0357221	.8536689	-0.042	0.967	-1.708882	1.637438
dven130	-.412987	.0637572	-6.477	0.000	-.5379488	-.2880252
dven30m	-1.27675	.0776896	-16.434	0.000	-1.429019	-1.124482
dnseiz	-.0544615	.3748418	-0.145	0.884	-.7891379	.680215
dotherab	-1.092116	.032874	-33.221	0.000	-1.156548	-1.027684
dinadqcr	-.0382618	.0446159	-0.858	0.391	-.1257073	.0491837
dintercr	-.0833388	.0352377	-2.365	0.018	-.1524033	-.0142742
_cons	-14.76103	1.372001	-10.759	0.000	-17.4501	-12.07195

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APA Resolution on Tobacco and Smoking

The Council of Representatives of the American Psychological Association approved the following resolution:

WHEREAS tobacco is a legally available consumer product that is demonstrably harmful to health when used as intended;

WHEREAS tobacco is an established risk factor for morbidity and mortality;

WHEREAS more than one million teenagers begin smoking each year, a rate of approximately 3,000 per day which has not declined appreciably over the last decade (1), and 90 percent of young smokers report that they become regular smokers before age 18 (2);

WHEREAS psychological scientists study human and animal behavior, and our research domain encompasses the full spectrum of issues related to tobacco use, including: how people decide whether or not to use tobacco products and what are the different factors that enter into that decision (such as cultural factors, minors' access to tobacco products, tobacco industry advertising, cost); psychopharmacological aspects of nicotine, i.e., understanding modes of addiction and what changes it causes in the central nervous system; identifying ways to prevent people from engaging in risk-taking behaviors such as tobacco use; identifying effective community interventions for bringing about widespread changes in behavior; and treating tobacco addiction individually and within the community; and

WHEREAS psychological scientists have contributed substantially to the body of research knowledge in these areas;

THEREFORE, BE IT RESOLVED that the American Psychological Association supports the tobacco and smoking objectives set forth in, "Healthy People 2000 - National Health Promotion and Disease Prevention Objectives for the Nation," and intends to encourage federal, state and local policies to minimize recruitment to, and facilitate abstinence from, the use of tobacco, including but are not limited to: 1) restricting illegal access of youth to tobacco products by supporting a range of direct and indirect mechanisms to discourage use and restrict access; and 2) fostering research on behavioral, psychological, pharmacological, and toxicological components of addiction, smoking prevention and intervention, and smoking cessation methods.

[redacted]

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Reynolds
Exhibit No. 3
9.19.97
D'Andra Fisher

Linked Birth/Infant Death Data Set

Geographic Code Outline

The following pages show the geographic codes used by the Division of Vital Statistics in the processing of vital event data occurring in the United States. For the linked data set, counties and cities with a population of 250,000 or more are identified.

Federal Information Processing Standards (FIPS) State and County Codes: For the 1989 linked file, the county codes and the State code immediately preceding them are FIPS codes. These codes were effective with the 1989 data year and are based on the results of the 1980 Census. County and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. When an event occurs to a nonresident of the United States, residence data are coded only to the "State" level, or to the remainder of the world. For an explanation of FIPS codes, reference should be made to various National Bureau of Standards (NBS) publications.

NCHS State and City Codes: The city codes and the State codes immediately preceding them are NCHS codes. These codes were effective with the 1982 data year and are based on the results of the 1980 Census. Cities are numbered alphabetically within each State. When an event occurs to a nonresident of the United States, residence data are coded only to the "State" level; several western hemisphere countries or the remainder of the world are uniquely identified.

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Chapter 1
Introduction

The Linked Birth/Infant Death Data Set, 1989 Birth Cohort consists of three separate data files. The first file includes linked records of live births and infant deaths for the 1989 birth cohort -- also referred to as the numerator file. The second file is the live birth file for 1989, with a few minor modifications -- referred to as the denominator-plus file. The files are offered as a numerator/denominator data set to give users the means to compute infant mortality rates. The third file contains information from the death certificate for all infant death records which could not be linked to their corresponding birth certificates -- referred to as the unlinked death file.

The 1989 linked file is comprised of deaths to infants born in 1989 who died in 1989 or 1990 before their first birthday. Infant death records were extracted from the 1989 and 1990 National Center for Health Statistics (NCHS) mortality statistical files. Linked birth records were extracted from a denominator file that contained the 1989 NCHS natality statistical file and a small number of late-filed birth certificates. Refer to the Methodology section for a more detailed explanation of records added to the statistical file. The denominator file is not identical with the NCHS natality statistical file.

The linked file of live births and infant deaths includes linked records for births and deaths that occurred in the United States to U.S. residents and to U.S. nonresidents. Excluded are deaths that occurred outside the United States to infants born in the U.S.; deaths that occurred in the United States to foreign-born infants; and births and deaths that occurred outside the United States to U.S. residents.

Sources for denominator data and for birth records included in the numerator file are described in detail in the 1989 Technical Appendix from the Natality Annual Volume; sources for death records included in the numerator file are described in detail in the 1989 Technical Appendix from the Mortality Annual volume, and in the 1990 Addendum. Copies of these Technical Appendices are included on the CD-ROM.

Because of confidentiality concerns, only those counties of 250,000 or more population and only those cities of 250,000 or more population are identified in this data set. The population counts are based on the results of the 1980 census. Users should refer to the geographic code outline in this document for the list of available areas and codes.

In tabulations of linked data and denominator data, events occurring in the United States to U.S. nonresidents are included in tabulations that are by place of occurrence, and excluded from tabulations by place of residence. For linked data, these exclusions are based on the usual place of residence item of the mother. This item is contained in both the denominator file and the birth section of the numerator (linked) file. U.S. nonresidents are identified by a code 4 in location 11 of these files.

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Methodology

The methodology used to create the national file of linked birth and infant death records takes advantage of two existing data sources:

1. State linked files for the identification of linked birth and infant death certificates; and

2. NCHS natality and mortality computerized statistical files, the source of computer records for the two linked certificates.

Virtually all States routinely link infant death certificates to their corresponding birth certificates for legal and statistical purposes. When the birth and death of an infant occur in different States, linking the two records that are filed in different jurisdictions requires State cooperation for the exchange of records. In accordance with the terms of the "Association for Vital Records and Health Statistics Agreement for Administering the Vital Records Exchange System," copies of the records are exchanged by the State of death and State of birth in order to effect a link. In addition, if a third State is identified as the State of residence at the time of birth or death, that State is also sent a copy of the appropriate certificate by the State where the birth or death occurred.

The NCHS natality and mortality files, produced annually, include statistical data from birth and death certificates that are provided to NCHS by States under the Vital Statistics Cooperative Program (VSCP). The data have been coded according to uniform coding specifications, have passed rigid quality control standards, have been edited and reviewed, and are the basis for official U.S. birth and death statistics.

To initiate processing, NCHS obtained computerized linked files from States that had them and extracted only the birth and death certificate numbers for linked records and State and year of occurrence. The States of Arizona and Nevada provided linkage information by posting birth certificate numbers on a computer-generated list of infant death certificate numbers that was provided by NCHS. A file that contained only State-provided identifiers for linked certificates was then matched to the NCHS mortality and natality statistical files. Individual birth and death records were selected from their respective files and linked into a single statistical record, thereby establishing a national linked record file.

After the initial linkage, NCHS returned to the States of death copies or computer lists of unlinked infant death certificates for followup linking. If the birth occurred in a State different from the State of death, the State of birth identified on the death certificate was contacted to obtain the linking birth certificate.

If the linking birth certificate from another State had been renumbered, the State of death requested the original certificate number from the State of birth. If the linked birth certificate had been filed after NCHS closed its statistical files, States provided NCHS a copy of the late-filed birth certificate. These certificates were coded, keyed, processed, added to the

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denominator file and then linked to the infant death record. Approximately 300 late-filed records were added to the denominator.

The birth record in the denominator file includes an item in tape location 1 that identifies whether or not the record is linked to an infant death. This item is included in the denominator record for users who would want to identify individual records for which the infant died in the first year of life, or survived.

Changes Beginning with the 1989 Birth Cohort

Beginning with data for 1989, the U.S. Standard Certificate of Birth was redesigned to add a number of new items and to expand some previously reported items. Items that were added or changed from an open-ended to a checkbox format include: medical risk factors for the pregnancy, smoking, alcohol use, weight gain of the mother during pregnancy, obstetric procedures, complications of labor and/or delivery, method of delivery, abnormal conditions of the newborn, and congenital anomalies of child. An item on clinical estimate of gestation was also added, and the Hispanic-origin reporting area was expanded substantially.

The addition of these new items nearly doubled the record length of the 1989 Natality data tape. Because of this, the linked file record was redesigned beginning with 1989 data to create a more compact record layout while including all of the new information from the expanded birth certificate. In addition, a number of innovations were added to the linked file, primarily to respond to requests from data users.

Selected variables from the numerator file have been added to the denominator file to facilitate processing. These variables are age at death (and recodes), underlying cause of death (and the 61-cause recode), autopsy, and place of accident. These variables are the most widely used variables from the numerator file. With the previous file format it was sometimes necessary to combine the numerator and denominator files when performing certain multivariate statistical techniques. In fact, NCHS received several calls each year asking how best to combine the numerator and denominator files while eliminating duplicate records. Now, when the number of variables required from the numerator file is limited, the denominator file may be used by itself for ease of programming. It is hoped that this small alteration in file structure will make the linked birth/infant death data set more convenient to use.

Infant death identification numbers have been added to both the numerator and denominator files, so that the same infant can be uniquely identified and matched between the two files. These numbers bear no relationship to birth or death certificate numbers, but are sequential numbers created solely for the purpose of identifying records for the same infant between the numerator and denominator files. This innovation will enhance processing of the file, as additional data from the numerator file can now be directly matched and imported into the denominator file.

Other new variables added to the file in 1989 include: exact age at death

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of the infant in days, day of the week of birth and death, and month of the year of birth and death.

Finally, a separate file of infant death records which could not be linked to their corresponding birth records has been added to provide additional information on unlinked records. The unlinked record file uses the same tape layout as the numerator file of linked birth and infant death records. However, except as noted below, tape locations 1-88, reserved for information from the matching birth certificate, are blank since no matching birth certificate could be found for these records. Both race and sex of child (tape locations 209-210 and 77-78, respectively) contain information as reported on the death certificate, rather than the information as reported on the birth certificate as is the case with the linked record file. Also, date of birth as reported on the death certificate is used to generate age at death. This information is used in place of date of birth from the birth certificate, which is not available. The unlinked file has been added to provide additional information on unmatched records so that data users who wish to make adjustments to the data (such as weighting) can do so.

Percent of Records Linked

The 1989 birth cohort linked file includes 38,605 linked records representing 97.4 percent of the infant deaths to the 1989 birth cohort. After followup, records for some 841 infant deaths, or 2.3 percent of the deaths to the birth cohort, remained unlinked and are not included in the linked file data set. Documentation table 6 presents summary information about the unlinked death records. The table shows counts of unlinked records by race and age at death for each State of residence. The user is cautioned in using table 6 that the race and residence items are based on information reported at the time of death; whereas, tables 2-5 present data from the linked file in which the race and residence items are based on information reported at the
time of birth. For more information, see discussions about race and residence in the Classification of Data section of the Natality Technical Appendix and about infant deaths in the Classification of Data section of the Mortality Technical Appendix in this documentation.

While the overall percent linked for infant deaths in the 1989 birth cohort is 97.4%, there are differences in percent linked by certain variables. These differences have important implications for how the data is analyzed.

Table 1 shows the percent of infant deaths linked by State of residence. While most States link a high percentage of infant deaths, linkage rates for some States are well below the national average. Note in particular the percent linked for Louisiana (91.4), Ohio (90.9), and Oklahoma (83.4). When many deaths remain unlinked, infant mortality rates computed for these States are underestimated. Thus, caution must be used in comparing infant mortality rates by State from the linked file.

The percent of infant deaths linked by race and age at death is shown in

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Table 2. The percent linked for black infants is 96.9%, slightly lower than the percent linked for white infants (97.7%). In general, a higher percentage of postneonatal (97.9%), than neonatal deaths (97.1%) are linked, and the percentage for early neonatal deaths (96.9%) is lower still. Again, the lower the percent linked the more likely that infant mortality rates computed for these groups will be slightly underestimated. Also, since most early neonatal deaths are to very low birthweight infants, and since black infants are more likely to be born at very low birthweight, the patterns in percentage linked provide indirect evidence of lower linkage rates for very low birthweight infants. This hypothesis is supported by relatively low infant mortality rates for infants with birthweights under 500 grams for a few States (data not shown). Variations in percent matched by underlying cause of death have also been noted, particularly a slightly lower percent matched for ICD-9 No. 765 - Disorders relating to short gestation unspecified low birthweight (data not shown). So, although the data is generally of good quality, the percent linked should be kept in mind, particularly when investigating infant mortality rates for particular States, race groups, age, or birthweight categories.

Table 1. Percent of infant deaths linked by State of residence: United States, 1989 birth cohort

(For linked infant deaths, State of residence is at the time of birth. For unlinked infant deaths, State of residence is at the time of death.)

United States	97.4%	Montana	98.5%
Alabama	100.0%	Nebraska	99.5%
Alaska	96.3%	Nevada	98.8%
Arizona	99.2%	New Hampshire	100.0%
Arkansas	98.9%	New Jersey	96.8%
California	96.0%	New Mexico	98.3%
Colorado	99.8%	New York	97.9%
Connecticut	98.6%	Upstate	97.9%
Delaware	100.0%	City	97.9%
District of Columbia	96.6%	North Carolina	98.6%
Florida	99.8%	North Dakota	100.0%
Georgia	99.9%	Ohio	90.9%
Hawaii	97.4%	Oklahoma	83.4%
Idaho	99.4%	Oregon	100.0%
Illinois	98.5%	Pennsylvania	95.4%
Indiana	97.3%	Rhode Island	100.0%
Iowa	99.4%	South Carolina	100.0%
Kansas	98.8%	South Dakota	99.1%
Kentucky	98.4%	Tennessee	99.6%
Louisiana	91.4%	Texas	95.6%
Maine	100.0%	Utah	99.3%
Maryland	96.2%	Vermont	100.0%
Massachusetts	99.3%	Virginia	98.0%
Michigan	99.3%	Washington	99.7%
Minnesota	100.0%	West Virginia	98.1%
Mississippi	98.4%	Wisconsin	97.8%
Missouri	99.5%	Wyoming	98.3%

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Table 2. Percent of infant deaths linked by race and age at death: United States, 1989 birth cohort
(Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days, and postneonatal, 28 days through 11 months)

	All races	White	Black
Infant	97.4%	97.7%	96.9%
Total Neonatal	97.1%	97.5%	96.4%
Early Neonatal	96.9%	97.4%	96.0%
Late Neonatal	98.2%	98.2%	98.6%
Postneonatal	97.9%	97.9%	97.7%

Demographic and Medical Classification

The documents listed below describe in detail the procedures employed for demographic classification on both the birth and death records and medical classification on death records. While not absolutely essential to the proper interpretation of the data for a number of general applications, these documents should nevertheless be studied carefully prior to any detailed analysis of demographic or medical (especially multiple cause) data variables. In particular, there are a number of exceptions to the ICD rules in multiple cause-of-death coding which, if not treated properly, may result in faulty analysis of the data.

A. Manual of the International Statistical Classification of Diseases, Injuries, and the Cause-of-Death, Ninth Revision (ICD-9) Volumes 1 and 2.

B. NCHS Instruction Manual Data Preparation Part 2a, Vital Statistics Instructions for Classifying the Underlying Cause-of-Death. Published annually.

C. NCHS Instruction Manual Data Preparation, Part 2b, Vital Statistics Instructions for Classifying Multiple Cause-of-Death. Published annually.

D. NCHS Instruction Manual Data Preparation, Part 2c, Vital Statistics ICD-9 ACME Decision Tables for Classifying Underlying Causes-of-Death. Published annually.

E. NCHS Instruction Manual Data Preparation, Part 2d, Vital Statistics NCHS Procedures for Mortality Medical Data System File Preparation and Maintenance, Effective 1985.

F. NCHS Instruction Manual Data Tabulation, Part 2f, Vital Statistics ICD-9 TRANSAX Disease Reference Tables for Classifying Multiple Causes-of-Death, 1982-88.

G. NCHS Instruction Manual Part 2g, Vital Statistics, Data Entry Instructions for the Mortality Medical Indexing, Classification, and Retrieval system (MICAR). Published

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annually.

H. NCHS Instruction Manual Part 2h, Vital Statistics, Dictionary of Valid Terms for the Mortality Medical Indexing, Classification, and Retrieval System (MICAR). Published annually.

I. NCHS Instruction Manual Data Preparation, Part 3a, Vital Statistics Classification and Coding Instructions for Live Birth Records. Published annually.

J. NCHS Instruction Manual Data Preparation, Part 4, Vital Statistics Demographic Classification and Coding Instructions for Death Records. Published annually.

K. NCHS Instruction Manual Tabulation, Part 11, Vital Statistics Computer Edits for Mortality Data, Effective 1989.

Volumes 1 and 2 of the ICD-9 may be purchased from WHO Publication Center USA, 49 Sheridan Avenue, Albany, New York, 12210. The remaining documents may be requested from the Chief, Data Preparation Branch, Division of Data Processing, National Center for Health Statistics, P.O.Box 12214, Research Triangle Park, North Carolina 27709.

In addition, the user should refer to the Technical Appendices of the Vital Statistics of the United States for information on the source of data, coding procedures, quality of the data, etc. The Technical Appendices for natality and mortality are part of this documentation package.

Cause-of-Death Data

Mortality data are traditionally analyzed and published in terms of underlying cause-of-death. The underlying cause-of-death data are coded and classified as described in the Mortality Technical Appendix. NCHS has augmented underlying cause-of-death data with data on multiple causes reported on the death certificate. The linked file includes both underlying and multiple cause-of-death data.

The multiple cause of death codes were developed with two objectives in mind. First, to facilitate etiological studies of the relationships among conditions, it was necessary to reflect accurately in coded form each condition and its location on the death certificate in the exact manner given by the certifier. Secondly, coding needed to be carried out in a manner by which the underlying cause of death could be assigned through computer applications. The approach was to suspend the linkage provisions of the ICD for the purpose of condition coding and code each entity with minimum regard to other conditions present on the certification. This general approach is hereafter called entity coding.

Unfortunately, the set of multiple cause codes produced by entity coding is not conducive to a third objective -- the generation of person based multiple cause statistics. Person based analysis requires that each

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condition be coded within the context of every other condition on the same certificate and modified or linked to such conditions as provided by ICD-9. By definition, the entity data cannot meet this requirement since the linkage provisions distort the character and placement of the information originally recorded by the certifying physician.

Since the two objectives are incompatible, NCHS has chosen to create from the original set of entity codes a new code set called record axis multiple cause data. Essentially, the axis of classification has been converted from an entity basis to a record (or person) basis. The record axis codes are assigned in terms of the set of codes that best describe the overall medical certification portion of the death certificate.

This translation is accomplished by a computer system called TRANSAX (TRANSLATION OF AXIS) through selective use of traditional linkage and modification rules for mortality coding. Underlying cause linkages which simply prefer one code over another for purposes of underlying cause selection are not included. Each entity code on the record is examined and modified or deleted as necessary to create a set of codes which are free of contradictions and are the most precise within the constraints of ICD-9 and medical information on the record. Repetitive codes are deleted. The process may (1) combine two entity axis categories together to a new category thereby eliminating a contradiction or standardizing the data; or (2) eliminate one category in favor of another to promote specificity of the data or resolve contradictions. The following examples from ICD-9 illustrate the effect of this translation:

Case 1: When reported on the same record as separate entities, cirrhosis of liver and alcoholism are coded to 5715 (cirrhosis of liver without mention of alcohol) and 303 (alcohol dependence syndrome). Tabulation of records with 5715 would on the surface falsely imply that such records had no mention of alcohol. A preferable codification would be 5712 (alcoholic cirrhosis of liver) in lieu of both 5715 and 303.

Case 2: If "gastric ulcer" and "bleeding gastric ulcer" are reported on a record they are coded to 5319 (gastric ulcer, unspecified as acute or chronic, without mention of hemorrhage or perforation) and 5314 (gastric ulcer, chronic or unspecified, with hemorrhage). A more concise codification would be to code 5314 only since the 5314 shows both the gastric ulcer and the bleeding.

A. Entity Axis Codes

The original conditions coded for selection of the underlying cause of death are reformatted and edited prior to creating the public-use tape. The following paragraphs describe the format and application of entity axis data.

FORMAT: Each entity-axis code is displayed as an overall seven byte code with subcomponents as follows:

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1. Line indicator: The first byte represents the line of the certificate on which the code appears. Six lines (1-6) are allowable with the fourth and fifth denoting one or two written in "due to"s beyond the three lines provided in Part I of the U.S. standard death certificate. Line "6" represents Part II of the certificate.

2. Position indicator: The next byte indicates the position of the code on the line, i.e., it is the first (1), second (2), third (3),... eighth (8) code on the line.

3. Nature of injury flag: ICD-9 uses the same series of numbers (800-999) to indicate nature of injury (N codes) and external cause codes (E codes). This flag distinguishes between the two with a one (1) representing nature of injury codes and a zero (0) representing all other cause codes.

4. Cause category: The next four bytes represent the ICD-9 cause code.

A maximum of 20 of these seven byte codes are captured on a record for multiple cause purposes. This may consist of a maximum of 8 codes on any given line with up to 20 codes distributed across three or more lines depending on where the subject conditions are located on the certificate. Codes may be omitted from one or more lines, e.g., line 1 with one or more codes, line 2 with no codes, line 3 with one or more codes.

In writing out these codes, they are ordered as follows: line 1 first code, line 1 second code, etc. ----- line 2 first code, line 2 second code, etc. ----- line 3 ----- line 4 ----- line 5 ----- line 6. Any space remaining in the field is left blank. The specifics of locations are contained in the record layout given later in this document.

EDIT: The original conditions are edited to remove invalid codes, reverify the coding of certain rare causes of death, and assure age/cause and sex/cause compatibility. Detailed information relating to the edit criteria and the sets of cause codes which are valid to underlying cause coding and multiple cause coding are provided in Part II of the NCHS Vital Statistics Instruction Manual Series.

ENTITY AXIS APPLICATIONS: The entity axis multiple cause data is appropriate to analyses which require that each condition be coded as a stand alone entity without linkage to other conditions and or require information on the placement of such conditions in the certificate. Within this framework, the entity data are appropriate to the

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- examination of etiological relationships among conditions, accuracy of certification reporting, and the validity of traditional assumptions in underlying cause selection.

Additionally, the entity data provide in certain categories a more detailed code assignment which is linked out in the creation of record axis data. Where such detail is needed for a study, the user should selectively employ entity data. Finally, the researcher may not wish to be bound by the assumptions used in the axis translation process preferring rather to investigate hypotheses of his own predilection.

By definition, the main limitation of entity axis data is that an entity code does not necessarily reflect the best code for a condition when considered within the context of the medical certification as a whole. As a result certain entity codes can be misleading or even contradict other codes in the record. For example, category 5750 is titled "Acute cholecystitis without mention of calculus". Within the framework of entity codes this is interpreted to mean that the codable entity itself contained no mention of calculus rather than that calculus was not mentioned anywhere on the record. Tabulation of records with a "5750" as a count of persons having acute cholecystitis without mention of calculus would therefore be erroneous. This illustrates the fact that under entity coding the ICD-9 titles cannot be taken literally. The user must study the rules for entity coding as they relate to his/her research prior to utilization of entity data. The user is further cautioned that the inclusion notes in ICD-9 which relate to modifying and combining categories are seldom applicable to entity coding (except where provided in Part 2b of the Vital Statistics Instruction Manual Series).

In tabulating the entity axis data, one may count codes with the resultant tabulation of an individual code representing the number of times the disease(s represented by the code appears in the file. In this kind of tabulation of morbid condition prevalence, the counts among categories may be added together to produce counts for groups of codes. Alternatively, subject to the limitations given above, one may count persons having mention of the disease represented by a code or codes. In this instance it is not correct to add counts for individual codes to create person counts for groups of codes. Since more than one code in the researcher's interest may appear together on the certificate, totaling must account for higher order interactions among codes. Up to 20 codes may be assigned on a record; therefore, a 20-way interaction is theoretically possible. All totaling must be based on mention of one or more of the categories under investigation.

B. Record Axis Codes

The following paragraphs describe the format and application of record-axis data. Part 2f of the Vital Statistics Instruction Manual Series describes the TRANSAX process for creating record axis data from entity axis data.FORMAT Each record in record axis code is displayed in five bytes. Location information is not relevant. The code consists of the following components:

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1. Nature of injury flag: The first byte contains a 0 or 1 with the 1 indicating that the cause is a nature of injury category.

2. Cause category: The next four bytes represent the ICD-9 cause code.

Again, a maximum of 20 codes are captured on a record for multiple cause purposes. The codes are written in a 100-byte field with any unused bytes left blank.

EDIT: The record axis codes are edited for rare causes and age/cause and sex/cause compatibility. Likewise, individual code validity is checked. The valid code set for record axis coding is the same as that for entity coding.

RECORD AXIS APPLICATIONS: The record axis multiple cause data set is the basis for NCHS core multiple cause tabulations. Location of codes is not relevant to this data set and conditions have been linked into the most meaningful categories for the certification. The most immediate consequence for the user is that the codes on the record already represent mention of a disease assignable to that particular ICD-9 category. This is in contrast to the entity code which is assigned each time such a disease is reported on two different lines of the certification. Secondly, the linkage implies that within the constraints of ICD-9 the most meaningful code has been assigned. The translation process creates for the user a data set which is edited for contradictions, duplicate codes, and imprecisions. In contrast to entity axis data, record axis data are classified in a manner comparable to underlying cause of death classification thereby facilitating joint analysis of these variables. Likewise, they are comparable to general morbidity coding where the linkage provisions of ICD-9 are usually utilized. A potential disadvantage of record axis data is that some detail is sacrificed in a number of the linkages.

The user can take the record axis codes as literally representing the information conveyed in ICD-9 category titles. While knowledge of the rules for combining and linking and coding conditions is useful, it is not a prerequisite to meaningful analysis of the data as long as one is willing to accept the assumptions of the axis translation process. The user is cautioned, however, that due to special rules in mortality coding, not all linkage notes in ICD-9 are utilized. (See Part 2f of the Vital Statistics Instruction Manual Series.) The user should proceed with caution in using record axis data to count conditions as opposed to people with conditions since linkages have been invoked and duplicate codes have been eliminated. As with entity data, person based tabulations which combine individual cause categories must take into account the possible interaction of up to 20 codes on a single certificate.

In using the NCHS multiple cause data, the user is urged to review the information in this document and its references. The instructional

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material does change from year to year and revision to revision. The user is cautioned that coding of specific ICD-9 categories should be checked in the appropriate instruction manual. What may appear on the surface to be the correct code by ICD-9 may in fact not be correct as given in the instruction manuals.

If on the surface it is not obvious whether entity axis or record axis data should be employed in a given application, detailed examination of Part 2f of the Vital Statistics Instruction Manual Series and its attachments will probably provide the necessary information to make a decision. It allows the user to determine the extent of the trade-offs between the two sets of data in terms of specific categories and the assumptions of axis translation. In certain situations, a combination of entity and record axis data may be the more appropriate alternative.

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Chapter 2
List of Data Elements and Locations

	Data Items	Denominator-Plus File	Numerator File Birth	Numerator File Death	Unlinked File
1.	General				
a.	Match status	1	1	--	1
b.	Infant death number	2-6	2-6	--	--
c.	Year of birth	7-10	7-10	--	7-10*
d.	Year of death	--	--	487-490	487-490
e.	Resident status	11	11	470	470
f.	Sampling variable	203-204			
2.	Occurrence				
a.	FIPS state	14-15	14-15	471-472	471-472
b.	FIPS county	16-18	16-18	471-475	471-475
3.	Residence				
a.	FIPS state	19-20	19-20	476-477	476-477
b.	FIPS county	19-23	19-23	476-480	476-480
c.	NCHS state	24-25	24-25	481-482	481-482
d.	NCHS city	24-28	24-28	481-485	481-485
4.	Infant				
a.	Age	213-216	--	213-216	213-216+
b.	Race	209-210	209-210	--	209-210*
c.	Sex	77-78	77-78	--	77-78*
d.	Gestation	72-76	72-76	--	--
e.	Birthweight	79-85	79-85	--	--
f.	Plurality	86-87	86-87	--	--
g.	Apgar score	88-91	88-91	--	--
h.	Day of week of birth/death	207	207	493	493
i.	Month of birth/death	69-71	69-71	491-492	491-492
5.	Mother				
a.	Age	29-32	29-32	--	--
b.	Race	35-38	35-38	--	--
c.	Education	39-41	39-41	--	--
d.	Marital status	42-43	42-43	--	--
e.	Place of birth	44-46	44-46	--	--
f.	Hispanic origin	33-34	33-34	--	--
6.	Father				
a.	Age	60-62	60-62	--	--
b.	Race	65-66	65-66	--	--
c.	Education	67-68	67-68	--	--
d.	Hispanic origin	63-64	63-64	--	--

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7.	Pregnancy items				
a.	Interval since last live birth	57-59	57-59	--	--
b.	Month prenatal care began	51-53	51-53	--	--
c.	Number of prenatal visits	54-55	54-55	--	--
d.	Adequacy of care recode	56	56	--	--
e.	Total birth order	47-48	47-48	--	--
f.	Live birth order	49-50	49-50	--	--
8.	Medical and Health Data				
a.	Method of delivery	92-99	92-99	--	--
b.	Medical risk factors	101-117	101-117	--	--
c.	Other risk factors				
	Tobacco	118-121	118-121	--	--
	Alcohol	122-125	122-125	--	--
	Weight gain during pregnancy	126-129	126-128	--	--
d.	Obstetric procedures	130-136	130-136	--	--
e.	Complications of labor and/or delivery	138-153	138-153	--	--
f.	Abnormal conditions of the newborn	155-163	155-163	--	--
g.	Congenital anomalies	165-186	165-186	--	--
h.	Underlying cause of death	219-222	--	219-222	219-222
i.	61 Infant cause recode	223-225	--	223-225	223-225
j.	Multiple conditions	--	--	226-469	226-469
9.	Other items				
a.	Place of delivery	12	12	--	--
b.	Attendant at birth	13	13	--	--
c.	Hospital and patient status	--	--	486	486
d.	Autopsy performed	217	--	--	217
e.	Place of accident	218	--	--	218
f.	Residence reporting flags	187-202	187-202	--	--

* For the unlinked file, these items are from the death certificate. See section on Changes Beginning with 1989 Data for explanation.

+ For the unlinked file, date of birth as reported on the death certificate is used to generate age at death. See section on Changes Beginning with 1989 Data for explanation.

51710 6472

Chapter 3
1989 Birth Cohort
Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
1	[MATCHS]	MATCH STATUS
		1 ... Matched Birth/Infant Death Record
		2 ... Late Filed Matched Birth/Infant Death Record
		3 ... Surviving infant record
		4 ... Unmatched infant death record Note: This code is used in the unlinked record file only.
2-6	[IDNUMBER]	INFANT DEATH NUMBER
		This number uniquely identifies the same infant in the numerator and denominator-plus files.
		Locations 7-212 of the linked file contain data from the Birth Certificate. Locations 213-535 of linked file contain data from the Death Certificate.
		Residence items in the Denominator Record and in the natality section of the Numerator (linked) Record refer to the usual place of residence of the Mother; whereas in the mortality section of the Numerator (Linked) Record, these items refer to the residence of the Decedent.
7-10	[BIRYR]	YEAR OF BIRTH
		1991 ... Born in 1991
11	[RESSTATB]	RESIDENT STATUS - BIRTH
		1 ... RESIDENTS: State and county of occurrence and residence are the same.
		2 ... INTRASTATE NONRESIDENTS: State of occurrence and residence are the same, but county is different.
		3 ... INTERSTATE NONRESIDENTS: State of occurrence and residence are different, but both are in the 50 States and D.C.

51710 6473

1989 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
		4 ... FOREIGN RESIDENTS: State of occurrence is one of the 50 States or the District of Columbia, but place of residence of mother is outside of the 50 States and D.C.
12	[PLDEL]	PLACE OR FACILITY OF DELIVERY
		1 ... Hospital 2 ... Freestanding Birthing Center 3 ... Clinic or Doctor's Office 4 ... A Residence 5 ... Other 9 ... Unknown or Not Stated
13	[BIRATTND]	ATTENDANT AT DELIVERY
		1 ... Doctor of Medicine (M.D.) 2 ... Doctor of Osteopathy (D.O.) 3 ... Certified Nurse Midwife (C.N.M.) 4 ... Other Midwife 5 ... Other 9 ... Unknown or not stated
14-18	[FIPSOCCB]	FEDERAL INFORMATION PROCESSING STANDARDS (FIPS) GEOGRAPHIC CODES (OCCURRENCE) - BIRTH
		Refer to the Geographic Code Outline further back in this document for a detailed list of areas and codes. For an explanation of FIPS codes, reference should be made to various National Institute of Standards and Technology (NIST) publications.
14-15	[STOCFIPB]	STATE OF OCCURRENCE (FIPS) - BIRTH
		01 ... Alabama 02 ... Alaska 04 ... Arizona 05 ... Arkansas 06 ... California 08 ... Colorado 09 ... Connecticut 10 ... Delaware 11 ... District of Columbia 12 ... Florida

51710 6474

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
14-15	[STOCFIPB]	STATE OF OCCURRENCE (FIPS) - BIRTH (Cont'd)
		13 ... Georgia
		15 ... Hawaii
		16 ... Idaho
		17 ... Illinois
		18 ... Indiana
		19 ... Iowa
		20 ... Kansas
		21 ... Kentucky
		22 ... Louisiana
		23 ... Maine
		24 ... Maryland
		25 ... Massachusetts
		26 ... Michigan
		27 ... Minnesota
		28 ... Mississippi
		29 ... Missouri
		30 ... Montana
		31 ... Nebraska
		32 ... Nevada
		33 ... New Hampshire
		34 ... New Jersey
		35 ... New Mexico
		36 ... New York
		37 ... North Carolina
		38 ... North Dakota
		39 ... Ohio
		40 ... Oklahoma
		41 ... Oregon
		42 ... Pennsylvania
		44 ... Rhode Island
		45 ... South Carolina
		46 ... South Dakota
		47 ... Tennessee
		48 ... Texas
		49 ... Utah
		50 ... Vermont
		51 ... Virginia
		53 ... Washington
		54 ... West Virginia
		55 ... Wisconsin
		56 ... Wyoming

51710 6475

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
16-18	[CNTOFIPB]	COUNTY OF OCCURRENCE (FIPS) - BIRTH
		001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. (Note: To uniquely identify a county, both the State and county codes must be used.)
		999 ... County with less than 250,000 population
19-23	[FIPSRESB]	FEDERAL INFORMATION PROCESSING STANDARDS (FIPS) GEOGRAPHIC CODES (RESIDENCE) - BIRTH
		Refer to the Geographic Code Outline further back in this document for a detailed list of areas and codes. For an explanation of FIPS codes, reference should be made to various National Institute of Standards and Technology (NIST) publications.
19-20	STRESFIPB	STATE OF RESIDENCE (FIPS) - BIRTH
		00 ... Foreign residents
		01 ... Alabama
		02 ... Alaska
		04 ... Arizona
		05 ... Arkansas
		06 ... California
		08 ... Colorado
		09 ... Connecticut
		10 ... Delaware
		11 ... District of Columbia
		12 ... Florida
		13 ... Georgia
		15 ... Hawaii
		16 ... Idaho
		17 ... Illinois
		18 ... Indiana
		19 ... Iowa
		20 ... Kansas
		21 ... Kentucky
		22 ... Louisiana
		23 ... Maine
		24 ... Maryland
		25 ... Massachusetts

51710 6476

Item Location	Field Name	Item and Code Outline
		26 ... Michigan
		27 ... Minnesota
		28 ... Mississippi
		29 ... Missouri
		30 ... Montana
		31 ... Nebraska
		32 ... Nevada
		33 ... New Hampshire
		34 ... New Jersey
		35 ... New Mexico
		36 ... New York
		37 ... North Carolina
		38 ... North Dakota
		39 ... Ohio
		40 ... Oklahoma
		41 ... Oregon
		42 ... Pennsylvania
		44 ... Rhode Island
		45 ... South Carolina
		46 ... South Dakota
		47 ... Tennessee
		48 ... Texas
		49 ... Utah
		50 ... Vermont
		51 ... Virginia
		53 ... Washington
		54 ... West Virginia
		55 ... Wisconsin
		56 ... Wyoming
21-23	[CNTYRFPB]	COUNTY OF RESIDENCE (FIPS) - BIRTH
		000 ... Foreign residents
		001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State (Note: To uniquely identify a county, both the State and county codes must be used.)
		999 ... County with less than 250,000 population

51710 6477

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
24-25	[BRSTATE]	STATE RESIDENCE - NCHS CODES - BIRTH
		01 ... Alabama
		02 ... Alaska
		03 ... Arizona
		04 ... Arkansas
		05 ... California
		06 ... Colorado
		07 ... Connecticut
		08 ... Delaware
		09 ... District of Columbia
		10 ... Florida
		11 ... Georgia
		12 ... Hawaii
		13 ... Idaho
		14 ... Illinois
		15 ... Indiana
		16 ... Iowa
		17 ... Kansas
		18 ... Kentucky
		19 ... Louisiana
		20 ... Maine
		21 ... Maryland
		22 ... Massachusetts
		23 ... Michigan
		24 ... Minnesota
		25 ... Mississippi
		26 ... Missouri
		27 ... Montana
		28 ... Nebraska
		29 ... Nevada
		30 ... New Hampshire
		31 ... New Jersey
		32 ... New Mexico
		33 ... New York
		34 ... North Carolina
		35 ... North Dakota
		36 ... Ohio
		37 ... Oklahoma
		38 ... Oregon
		39 ... Pennsylvania
		40 ... Rhode Island
		41 ... South Carolina
		42 ... South Dakota
		43 ... Tennessee
		44 ... Texas
		45 ... Utah
		46 ... Vermont
		47 ... Virginia

51710 6478

Item Location	Field Name	Item and Code Outline
24-25	[BRSTATE]	STATE RESIDENCE - NCHS CODES - BIRTH (Cont'd)
		48 ... Washington 49 ... West Virginia 50 ... Wisconsin 51 ... Wyoming 52-57,59 ... Foreign Residents 52 ... Puerto Rico 53 ... Virgin Islands 54 ... Guam 55 ... Canada 56 ... Cuba 57 ... Mexico 59 ... Remainder of the World
26-28	[CITYRESB]	CITY OF RESIDENCE - NCHS CODES - BIRTH
		A complete list of cities is shown in the Geographic Code Outline further back in this document. 001-nnn ... Cities are numbered alphabetically within each State and identify each city with a population of 250,000 or more in 1980. (Note: To uniquely identify a city, both the State and city codes must be used. State, county and city codes may also be used.) 999 ... Entire county, balance of county, or city less than 250,000 population. ZZZ ... Foreign residents
29	[MAGEFLG]	AGE OF MOTHER FLAG
		This position is flagged whenever age is imputed or the mother's reported age is used. The reported age is used, if valid, when computed age derived from the date of birth is not available or when it is outside the 10-49 code range. Blank ... Not imputed and reported age is not used 1 ... Reported age is used 2 ... Age is imputed

51710 6479

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
30-31	[DMAGE]	AGE OF MOTHER This item is: a) computed using dates of birth of mother and of delivery; b) reported; or c) imputed. This is the age item used in NCHS publications. 10-49 ... Age in single years
32	[MAGER8]	AGE OF MOTHER RECODE 8 1 ... Under 15 years 2 ... 15 - 19 years 3 ... 20 - 24 years 4 ... 25 - 29 years 5 ... 30 - 34 years 6 ... 35 - 39 years 7 ... 40 - 44 years 8 ... 45 - 49 years
33	[ORMOTH]	HISPANIC ORIGIN OF MOTHER Origin is not reported by all areas. See reporting flags. 0 ... Non-Hispanic 1 ... Mexican 2 ... Puerto Rican 3 ... Cuban 4 ... Central or South American 5 ... Other and unknown Hispanic 9 ... Origin unknown or not stated
34	[ORRACEM]	HISPANIC ORIGIN AND RACE OF MOTHER RECODE Origin is not reported by all areas. See reporting flags. 1 ... Mexican 2 ... Puerto Rican 3 ... Cuban 4 ... Central or South American 5 ... Other and unknown Hispanic 6 ... Non-Hispanic White 7 ... Non-Hispanic Black 8 ... Non-Hispanic other races 9 ... Origin unknown or not stated

51710 6480

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
35	[MRACEIMP]	Race of Mother Imputation Flag
		Blank ... Race is not imputed 1 ... Race is imputed
36-37	[MRACE]	RACE OF MOTHER
		Race codes effective with 1989 data differ from previous years. 01 ... White 02 ... Black 03 ... American Indian (includes Aleuts and Eskimos) 04 ... Chinese 05 ... Japanese 06 ... Hawaiian (includes Part-Hawaiian) 07 ... Filipino 08 ... Other Asian or Pacific Islander 09 ... All other Races
38	[MRACE3]	RACE OF MOTHER RECODE
		1 ... White 2 ... Races other than White or Black 3 ... Black
39-40	[DMEDUC]	EDUCATION OF MOTHER DETAIL
		Education is not reported by all areas. See reporting flags. 00 ... No formal education 01-08 ... Years of elementary school 09 ... 1 year of high school 10 ... 2 years of high school 11 ... 3 years of high school 12 ... 4 years of high school 13 ... 1 year of college 14 ... 2 years of college 15 ... 3 years of college 16 ... 4 years of college 17 ... 5 or more years of college 99 ... Not stated

51710 6481

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
41	[MEDUC6]	EDUCATION OF MOTHER RECODE
		Education is not reported by all areas. See reporting flags.
		1 ... 0 - 8 years
		2 ... 9 - 11 years
		3 ... 12 years
		4 ... 13 - 15 years
		5 ... 16 years and over
		6 ... Not stated
42	[DMARIMP]	MARITAL STATUS OF MOTHER IMPUTATION FLAG
		Blank ... Marital status is not imputed
		1 ... Marital status is imputed
43	[DMAR]	MARITAL STATUS OF MOTHER
		1 ... Married
		2 ... Unmarried
44-45	[MPLBIR]	PLACE OF BIRTH OF MOTHER
		01 ... Alabama
		02 ... Alaska
		03 ... Arizona
		04 ... Arkansas
		05 ... California
		06 ... Colorado
		07 ... Connecticut
		08 ... Delaware
		09 ... District of Columbia
		10 ... Florida
		11 ... Georgia
		12 ... Hawaii
		13 ... Idaho
		14 ... Illinois
		15 ... Indiana
		16 ... Iowa
		17 ... Kansas
		18 ... Kentucky
		19 ... Louisiana
		20 ... Maine
		21 ... Maryland
		22 ... Massachusetts
		23 ... Michigan

51710 6482

Item Location	Field Name	Item and Code Outline
44-45	[MPLBIR]	PLACE OF BIRTH OF MOTHER (Cont'd)
		24 ... Minnesota
		25 ... Mississippi
		26 ... Missouri
		27 ... Montana
		28 ... Nebraska
		29 ... Nevada
		30 ... New Hampshire
		31 ... New Jersey
		32 ... New Mexico
		33 ... New York
		34 ... North Carolina
		35 ... North Dakota
		36 ... Ohio
		37 ... Oklahoma
		38 ... Oregon
		39 ... Pennsylvania
		40 ... Rhode Island
		41 ... South Carolina
		42 ... South Dakota
		43 ... Tennessee
		44 ... Texas
		45 ... Utah
		46 ... Vermont
		47 ... Virginia
		48 ... Washington
		49 ... West Virginia
		50 ... Wisconsin
		51 ... Wyoming
		52 ... Puerto Rico
		53 ... Virgin Islands
		54 ... Guam
		55 ... Canada
		56 ... Cuba
		57 ... Mexico
		59 ... Remainder of the world
		99 ... Not Classifiable
46	[MPLBIRR]	PLACE OF BIRTH OF MOTHER RECODE
		1 ... Born in the 50 States and D.C.
		2 ... Born outside the 50 States and D.C.
		3 ... Unknown or not stated

51710 6483

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
47-48	[DTOTORD]	DETAIL TOTAL BIRTH ORDER
		Sum of live birth order and other terminations of pregnancy. If either item is unknown, this item is made unknown.
		01-40 ... Total number of live births and other terminations of pregnancy
		99 ... Unknown
49-50	[DLIVORD]	DETAIL LIVE BIRTH ORDER
		00-31 ... Number of children born alive to mother
		99 ... Unknown
51-52	[MONPRE]	DETAIL MONTH OF PREGNANCY PRENATAL CARE BEGAN
		00 ... No prenatal care
		01 ... 1st month
		02 ... 2nd month
		03 ... 3rd month
		04 ... 4th month
		05 ... 5th month
		06 ... 6th month
		07 ... 7th month
		08 ... 8th month
		09 ... 9th month
		99 ... Unknown or not stated
53	[MPRE5]	MONTH PRENATAL CARE BEGAN RECODE 5
		1 ... 1st Trimester (1st-3rd month)
		2 ... 2nd Trimester (4th-6th month)
		3 ... 3rd Trimester (7th-9th month)
		4 ... No prenatal care
		5 ... Unknown or not stated
54-55	[NPREVIST]	TOTAL NUMBER OF PRENATAL VISITS
		00 ... No prenatal visits
		01-48 ... Stated number of visits
		49 ... 49 or more visits
		99 ... Unknown or not stated

51710 6484

Item Location	Field Name	Item and Code Outline
56	[ADEQUACY]	ADEQUACY OF CARE RECODE (KESSNER INDEX) This code is based on a modified Kessner criterion. Month Prenatal Care Began, Number of Prenatal Visits, and Gestation are the items used to generate this recode. 1 ... Adequate 2 ... Intermediate 3 ... Inadequate 4 ... Unknown
57-59	[DISLLB]	INTERVAL SINCE LAST LIVE BIRTH This item was computed using date of birth of the child and date of last live birth. 777 ... No previous live birth 000 ... Zero months (plural birth) 001-468 ... One - four hundred sixty-eight months 999 ... Unknown
60	[FAGERFLG]	REPORTED AGE OF FATHER USED FLAG This position is flagged whenever the Father's reported age in years is used. The reported age is used, if valid, when age derived from date of birth is not available or when it is less than 10. Blank ... Reported age is not used 1 ... Reported age is used
61-62	[DFAGE]	AGE OF FATHER This item is either computed from date of birth of father and of child or is the reported age. This is the age item used in NCHS publications. 10-98 ... Age in single years 99 ... Unknown or not stated

51710 6485

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
63	[ORFATH]	HISPANIC ORIGIN OF FATHER Origin is not reported by all areas. See reporting flags. 0 ... Non-Hispanic 1 ... Mexican 2 ... Puerto Rican 3 ... Cuban 4 ... Central or South American 5 ... Other and unknown Hispanic 9 ... Origin unknown or not stated
64	[ORRACEF]	HISPANIC ORIGIN AND RACE OF FATHER RECODE Origin is not reported by all areas. See reporting flags. 1 ... Mexican 2 ... Puerto Rican 3 ... Cuban 4 ... Central or South American 5 ... Other and unknown Hispanic 6 ... Non-Hispanic White 7 ... Non-Hispanic Black 8 ... Non-Hispanic other or unknown race 9 ... Origin unknown or not stated
65-66	[FRACE]	RACE OF FATHER Race codes effective with 1989 data differ from previous years. 01 ... White 02 ... Black 03 ... American Indian (includes Aleuts and Eskimos) 04 ... Chinese 05 ... Japanese 06 ... Hawaiian (includes Part-Hawaiian) 07 ... Filipino 08 ... Other Asian or Pacific Islander 09 ... All other races 99 ... Unknown or not stated

51710 6486

Item Location	Field Name	Item and Code Outline
67-68	[DFEDUC]	EDUCATION OF FATHER DETAIL Education is not reported by all areas. See reporting flags. 00 ... No formal education 01-08 ... Years of elementary school 09 ... 1 year of high school 10 ... 2 years of high school 11 ... 3 years of high school 12 ... 4 years of high school 13 ... 1 year of college 14 ... 2 years of college 15 ... 3 years of college 16 ... 4 years of college 17 ... 5 or more years of college 99 ... Not stated
69	[CDOBMIMP]	MONTH OF BIRTH OF CHILD IMPUTATION FLAG Blank ... Month is not imputed 1 ... Month is imputed
70-71	[BIRMON]	MONTH OF BIRTH 01 ... January 02 ... February 03 ... March 04 ... April 05 ... May 06 ... June 07 ... July 08 ... August 09 ... September 10 ... October 11 ... November 12 ... December
72	[GESTFLG]	CLINICAL ESTIMATE OF GESTATION USED OR GESTATION IMPUTED FLAG This position is flagged whenever gestation is imputed or the clinical estimate of gestation is used. It is used whenever gestation could not be computed or when the computed gestation is outside the 17-47 code range.

51710 6487

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
72	[GESTFLG]	CLINICAL ESTIMATE OF GESTATION USED OR GESTATION IMPUTED FLAG (Cont'd) Blank ... Not imputed and the clinical estimate of gestation is not used 1 ... Clinical estimate is used 2 ... Gestation is imputed
73-74	[GESTAT]	GESTATION - DETAIL IN WEEKS This item is: a) computed using dates of birth of child and last normal menses; b) imputed from LMP date; c) the clinical estimate; or d) unknown when there is insufficient data to impute or no valid clinical estimate. This is the gestation item used in NCHS publications. 17-47 ... 17th through 47th week of gestation 99 ... Unknown
75-76	[GESTAT 10]	GESTATION RECODE 10 01 ... Under 20 weeks 02 ... 20 - 27 weeks 03 ... 28 - 31 weeks 04 ... 32 - 35 weeks 05 ... 36 weeks 06 ... 37 - 39 weeks 07 ... 40 weeks 08 ... 41 weeks 09 ... 42 weeks and over 10 ... Not stated
77	[CSEXIMP]	SEX IMPUTATION FLAG Blank ... Sex is not imputed 1 ... Sex is imputed
78	[CSEX]	SEX 1 ... Male 2 ... Female
79-82	[DBIRWT]	BIRTH WEIGHT DETAIL IN GRAMS 0227-8165 ... Number of grams 9999 ... Not stated birth weight

51710 6488

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
83-84	[BIRWT12]	BIRTH WEIGHT RECODE 12
		01 ... 499 grams or less 02 ... 500-999 grams 03 ... 1000-1499 grams 04 ... 1500-1999 grams 05 ... 2000-2499 grams 06 ... 2500-2999 grams 07 ... 3000-3499 grams 08 ... 3500-3999 grams 09 ... 4000-4499 grams 10 ... 4500-4999 grams 11 ... 5000-8165 grams 12 ... Unknown or not stated
85	[BIRWT4]	BIRTH WEIGHT RECODE 4
		1 ... 1499 grams or less 2 ... 1500-2499 grams 3 ... 2500 grams or more 4 ... Unknown or not stated
86	[PLURIMP]	PLURALITY IMPUTATION FLAG
		Blank ... Plurality is not imputed 1 ... Plurality is imputed
87	[DPLURAL]	PLURALITY
		1 ... Single 2 ... Twin 3 ... Triplet 4 ... Quadruplet 5 ... Quintuplet or higher
88-89	[OMAPS]	ONE MINUTE APGAR SCORE
		Apgar score is not reported by all areas. See reporting flags. 00-10 ... A score of 1-11 99 ... Unknown or not stated

51710 6489

Item Location	Field Name	Item and Code Outline
90-91	[FMAPS]	FIVE MINUTE APGAR SCORE Apgar score is not reported by all areas. See reporting flags. 00-10 ... A score of 0-10 99 ... Unknown or not stated
92-186	[MEDINFO]	MEDICAL AND HEALTH DATA Some States do not report an entire item while other States do not report all of the categories within an item. If an item is not reported, it is indicated by code zero in the appropriate reporting flag. If a category within an item is not reported it is indicated by code 8 in the position for that category.
92-99	[DELMETH]	METHOD OF DELIVERY Each method is assigned a separate position, and the code structure for each method (position) is: 1 ... The method was used 2 ... The method was not used 8 ... Method not on certificate 9 ... Method unknown or not stated
92	[VAGINAL]	VAGINAL
93	[VBAC]	VAGINAL BIRTH AFTER PREVIOUS C-SECTION
94	[PRIMAC]	PRIMARY C-SECTION
95	[REPEAC]	REPEAT C-SECTION
96	[FORCEP]	FORCEPS
97	[VACUUM]	VACUUM
98	[R1]	RESERVED POSITION

51710 6490

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
99	[DELMETH5]	METHOD OF DELIVERY RECODE 1 ... Vaginal (excludes Vaginal after previous C-section) 2 ... Vaginal birth after previous C section 3 ... Primary C-section 4 ... Repeat C-Section 5 ... Not stated
100	[R2]	RESERVED POSITION
101-117	[MEDRISK]	MEDICAL RISK FACTORS Each risk factor is assigned a separate position, and the code structure for each risk factor (position) is: 1 ... Factor reported 2 ... Factor not reported 8 ... Factor not on certificate 9 ... Factor not classifiable
101	[ANEMIA]	ANEMIA (HCT.<30/HGB.<10)
102	[CARDIAC]	CARDIAC DISEASE
103	[LUNG]	ACUTE OR CHRONIC LUNG DISEASE
104	[DIABETES]	DIABETES
105	[HERPES]	GENITAL HERPES
106	[HYDRA]	HYDRAMNIOS/OLIGOHYDRAMNIOS
107	[HEMO]	HEMOGLOBINOPATHY
108	[CHYPER]	HYPERTENSION, CHRONIC
109	[PHYPER]	HYPERTENSION, PREGNANCY-ASSOCIATED
110	[ECLAMP]	ECLAMPSIA
111	[INCERVIX]	INCOMPETENT CERVIX
112	[PPB4000]	PREVIOUS INFANT 4000+ GRAMS

51710 6491

Item Location	Field Name	Item and Code Outline
113	[PRETERM]	PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT
114	[RENAL]	RENAL DISEASE
115	[RH]	RH SENSITIZATION
116	[UTERINE]	UTERINE BLEEDING
117	[OTHERMR]	OTHER MEDICAL RISK FACTORS
118-128	[OTHERRSK]	OTHER RISK FACTORS FOR THIS PREGNANCY
118-121	[TOBACRSK]	TOBACCO RISKS
118	[TOBACCO]	TOBACCO USE DURING PREGNANCY 1 ... Yes 2 ... No 9 ... Unknown or not stated
119-120	[CIGAR]	AVERAGE NUMBER OF CIGARETTES PER DAY 00-97 ... As stated 98 ... 98 or more cigarettes per day 99 ... Unknown or not stated
121	[CIGAR6]	AVERAGE NUMBER OF CIGARETTES PER DAY RECODE 0 ... Nonsmoker 1 ... 1-5 cigarettes per day 2 ... 6-10 cigarettes per day 3 ... 11-20 cigarettes per day 4 ... 21-40 cigarettes per day 5 ... 41 or more cigarettes per day 6 ... Unknown or not stated
122-125	[ALCOHRSK]	ALCOHOL
122	[ALCOHOL]	ALCOHOL USE DURING PREGNANCY 1 ... Yes 2 ... No 9 ... Unknown or not stated

51710 6492

Item Location	Field Name	Item and Code Outline
123-124	[DRINK]	AVERAGE NUMBER OF DRINKS PER WEEK
		00-97 ... As stated 98 ... 98 or more drinks per week 99 ... Unknown or not stated
125	[DRINK5]	AVERAGE NUMBER OF DRINKS PER WEEK RECODE
		0 ... Non drinker 1 ... 1 drink per week 2 ... 2 drinks per week 3 ... 3-4 drinks per week 4 ... 5 or more drinks per week 5 ... Unknown or not stated
126-128	[WTGANRSK]	WEIGHT GAIN DURING PREGNANCY
126-127	[WTGAIN]	WEIGHT GAIN
		00-97 ... Stated number of pounds 98 ... 98 pounds or more 99 ... Unknown or not stated
128	[WTGAIN9]	WEIGHT GAIN RECODE
		1 ... Less than 16 pounds 2 ... 16-20 pounds 3 ... 21-25 pounds 4 ... 26-30 pounds 5 ... 31-35 pounds 6 ... 36-40 pounds 7 ... 41-45 pounds 8 ... 46 or more pounds 9 ... Unknown or not stated
129	[R3]	RESERVED POSITION
130-136	[OBSTETRC]	OBSTETRIC PROCEDURES
		Each procedure is assigned a separate position, and the code structure for each procedure position is: 1 ... Procedure reported 2 ... Procedure not reported 3 ... Procedure not on certificate 9 ... Procedure not classifiable

51710 6493

Item Location	Field Name	Item and Code Outline
130	[AMNIO]	AMNIOCENTESIS
131	[MONITOR]	ELECTRONIC FETAL MONITORING
132	[INDUCT]	INDUCTION OF LABOR
133	[STIMULA]	STIMULATION OF LABOR
134	[TOCOL]	TOCOLYSIS
135	[ULTRAS]	ULTRASOUND
136	[OTHEROB]	OTHER OBSTETRIC PROCEDURES
137	[R4]	RESERVED POSITION
138-153	[LABOR]	COMPLICATIONS OF LABOR AND/OR DELIVERY Each complication is assigned a separate position, and the code structure for each complication (position) is: 1 ... Complication reported 2 ... Complication not reported 8 ... Complication not on certificate 9 ... Complication not classifiable
138	[FEBRILE]	FEBRILE (>100 DEGREES F. OR 38 DEGREES C.)
139	[MECONIUM]	MECONIUM, MODERATE/HEAVY
140	[RUPTURE]	PREMATURE RUPTURE OF MEMBRANE (>12 HOURS)
141	[ABRUPTIO]	ABRUPTIO PLACENTA
142	[PREPLACE]	PLACENTA PREVIA
143	[EXCEBLD]	OTHER EXCESSIVE BLEEDING
144	[SEIZURE]	SEIZURES DURING LABOR
145	[PRECIP]	PRECIPITOUS LABOR <3 HOURS
146	[PROLONG]	PROLONGED LABOR >30 HOURS
147	[DYSFUNC]	DYSFUNCTIONAL LABOR

51710 6494

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
148	[BREECH]	BREECH/MALPRESENTATION
149	[CEPHALO]	CEPHALOPELVIC DISPROPORTION
150	[CORD]	CORD PROLAPSE
151	[ANESTHE]	ANESTHETIC COMPLICATIONS
152	[DISTRESS]	FETAL DISTRESS
153	[OTHERLB]	OTHER COMPLICATION OF LABOR AND/OR DELIVERY
154	[R5]	RESERVED POSITION
155-163	[NEWBORN]	ABNORMAL CONDITIONS OF THE NEWBORN Each condition is assigned a separate position, and the code structure for each condition (position) is: 1 ... Condition reported 2 ... Condition not reported 8 ... Condition not on certificate 9 ... Condition not classifiable
155	[NANEMIA]	ANEMIA HCT.>39/HGB.<13)
156	[INJURY]	BIRTH INJURY
157	[ALCOSYN]	FETAL ALCOHOL SYNDROME
158	[HYALINE]	HYALINE MEMBRANE DISEASE
159	[MECONSYN]	MECONIUM ASPIRATION SYNDROME
160	[VENL30]	ASSISTED VENTILATION, LESS THAN 30 MINUTES
161	[VEN30M]	ASSISTED VENTILATION, 30 MINUTES OR MORE
162	[NSEIZ]	SEIZURES
163	[OTHERAB]	OTHER ABNORMAL CONDITIONS OF THE NEWBORN
164	[R6]	RESERVED POSITION

51710 6495

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
165-186	[CONGENIT]	CONGENITAL ANOMALIES Each anomaly is assigned a separate position, and the code structure for each anomaly (position) is: 1 ... Anomaly reported 2 ... Anomaly not reported 8 ... Anomaly not on certificate 9 ... Anomaly not classifiable
165	[ANEN]	ANENCEPHALUS
166	[SPINA]	SPINA BIFIDA/MENINGOCELE
167	[HYDRO]	HYDROCEPHALUS
168	[MICROCE]	MICROCEPHALUS
169	[NERVOUS]	OTHER CENTRAL NERVOUS SYSTEM ANOMALIES
170	[HEART]	HEART MALFORMATIONS
171	[CIRCUL]	OTHER CIRCULATORY/RESPIRATORY ANOMALIES
172	[RECTAL]	RECTAL ATRESIA/STENOSIS
173	[TRACHEO]	TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA
174	[OMPHALO]	OMPHALOCELE/GASTROSCHISIS
175	[GASTRO]	OTHER GASTROINTESTINAL ANOMALIES
176	[GENITAL]	MALFORMED GENITALIA
177	[RENALAGE]	RENAL AGENESIS
178	[UROGEN]	OTHER UROGENITAL ANOMALIES
179	[CLEFTLP]	CLEFT LIP/PALATE
180	[ADACTYLY]	POLYDACTYLY/SYNDACTYLY/ADACTYLY
181	[CLUBFOOT]	CLUB FOOT
182	[HERNIA]	DIAPHRAGMATIC HERNIA

51710 6496

Item Location	Field Name	Item and Code Outline
183	[MUSCULO]	OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES
184	[DOWNS]	DOWN'S SYNDROME
185	[CHROMO]	OTHER CHROMOSOMAL ANOMALIES
186	[OTHERCON]	OTHER CONGENITAL ANOMALIES
187-202	[FLRES]	REPORTING FLAGS FOR PLACE OF RESIDENCE These positions contain flags to indicate whether or not the specified item is included on the birth certificate of the State of residence or of the SMSA of residence. The code structure of each flag (position) is: 0 ... The item is not reported 1 ... The item is reported or partially reported.
187	[FLGORIGM]	ORIGIN OF MOTHER REPORTING FLAG
188	[FLGORIGF]	ORIGIN OF FATHER REPORTING FLAG
189	[FLGMEDUC]	EDUCATION OF MOTHER REPORTING FLAG
190	[FLGFEDUC]	EDUCATION OF FATHER REPORTING FLAG
191	[FLGGESTE]	CLINICAL ESTIMATE OF GESTATION REPORTING FLAG
192	[FLGOMAPS]	1 - MINUTE APGAR SCORE REPORTING FLAG
193	[FLGFMAPS]	5 - MINUTE APGAR SCORE REPORTING FLAG
194	[FLGDELMT]	METHOD OF DELIVERY REPORTING FLAG
195	[FLGMEDRS]	MEDICAL RISK FACTORS REPORTING FLAG
196	[FLGTOBAC]	TOBACCO USE REPORTING FLAG
197	[FLGALCOH]	ALCOHOL USE REPORTING FLAG
198	[FLGWTGN]	WEIGHT GAIN REPORTING FLAG
199	[FLGOBSTR]	OBSTETRIC PROCEDURES REPORTING FLAG
200	[FLGLABOR]	COMPLICATIONS OF LABOR AND/OR DELIVERY REPORTING FLAG

51710 6497

1991 Denominator-Plus Record and Natality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
201	[FLGNEWBR]	ABNORMAL CONDITIONS OF NEWBORN REPORTING FLAG
202	[FLGCONG]	CONGENITAL ANOMALIES REPORTING FLAG
203-204	[SAMPLE]	SAMPLING VARIABLE

This variable is present in the denominator file only. These positions are blank in the numerator and unlinked files. Because of the large size of the denominator file, several data users requested that a utility be made available to allow them to export a sample of denominator records. While more sophisticated sampling programs are planned for future versions of SETS, this simple utility was added to provide some sampling capability now, before the Windows version of SETS is released.

Records are numbered consecutively from 00-99 in a repeating sequence. To select a 1 in 100 sample of records from the denominator file, choose a random number between 00 and 99, and follow the same procedures. If it becomes necessary to sample records from the numerator file, the last two digits of the variable IDNUMBER may be used in a similar fashion.

00-99 Value of sampling variable.

205-206	[R8]	RESERVED POSITIONS
207	[WEEKDAYB]	DAY OF WEEK CHILD BORN

1 ... Sunday
2 ... Monday
3 ... Tuesday
4 ... Wednesday
5 ... Thursday
6 ... Friday
7 ... Saturday

208	[R9]	RESERVED POSITION

51710 6498

1991 Denominator-Plus Record and Mortality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
209-210	[CRACE]	RACE OF CHILD Race codes effective with 1989 data differ from previous years. 01 ... White 02 ... Black 03 ... American Indian (includes Aleuts and Eskimos) 04 ... Chinese 05 ... Japanese 06 ... Hawaiian (includes Part-Hawaiian) 07 ... Filipino 08 ... Other Asian or Pacific Islander 09 ... All other races
211-212	[R10]	RESERVED POSITIONS Locations 213-535 contain data from the Death Certificate. Data in locations 213-225 are included on both the numerator and denominator-plus files. In the denominator-plus file, values are only present for infants who died. For surviving infants, these fields are blank. Data in locations 226-535 are included in the numerator file only. Residence items in the Denominator Record and in the natality section of the Numerator (Linked) Record refer to the usual place of residence of the Mother; whereas in the mortality section of the Numerator (Linked) Record, these items refer to the residence of the Decedent.
213-215	[AGED]	AGE AT DEATH IN DAYS The generated age at death in days is calculated from the date of death on the death certificate minus the date of birth on the birth certificate unless the reported age of death is less that 2 days, than the reported age is used. If the exact date of birth and/or death is unknown, the age is imputed. 001-364 ... Number of days
216	[AGER8]	INFANT AGE RECODE 8 1 ... Under 1 hour 2 ... 1-23 hours 3 ... 1-6 days

51710 6499

1991 Denominator-Plus Record and Mortality Section of Numerator (Linked) Record

Item Location	Field Name	Item and Code Outline
		4 ... 7-27 days (late neonatal) 5 ... 28 days and over (postneonatal)
217	[AUTOPSY]	AUTOPSY PERFORMED 1 ... Yes 2 ... No 8 ... Autopsy performed not on certificate 9 ... Autopsy performed not stated
218	[ACCIDPL]	PLACE OF ACCIDENT FOR CAUSES E850-E869 AND E880-E928 Blank ... Causes other than E850-E869 and E880-E928 0 ... Home 1 ... Farm 2 ... Mine and quarry 3 ... Industrial place and premises 4 ... Place for recreation and sport 5 ... Street and highway 6 ... Public building 7 ... Resident institution 8 ... Other specified places 9 ... Place of accident not specified
219-222	[UCOD]	ICD CODE (9TH REVISION) See the "International Classification of Diseases", 1975 Revision, Volume 1. For injuries and poisoning, the external cause is coded (E800-E999) rather than the Nature of Injury (800-899). These positions do not include the letter E for the external cause of injury. For those causes that do not have a 4th digit, location 222 is blank.
223-225	[UCODR61]	61 INFANT CAUSE RECODE A recode of the ICD cause code into 61 groups for NCHS publications. Further back in this document is a complete list of recodes and the causes included. [illegible] Code range (not inclusive)

Here ends the Denominator-plus file. The layout for the Numerator (Linked) file continues on the next page.

51710 6500

Item Location	Field Name	Item and Code Outline
226-469	[MULTCOND]	MULTIPLE CONDITIONS See the "International Classification of Diseases", 1975 Revision, Volume 1. Both the entity-axis and record-axis conditions are coded according to this revision (9th).
226-227	[EANUM]	NUMBER OF ENTITY-AXIS CONDITIONS 00-20 ... Code range
228-367	[ENTITY]	ENTITY - AXIS CONDITIONS Space has been provided for maximum of 20 conditions. Each condition takes 7 positions in the record. Records that do not have 20 conditions are blank in the unused area. Position 1: Part/line number on certificate 1 ... Part I, line 1 (a) 2 ... Part I, line 2 (b) 3 ... Part I, line 3 (c) 4 ... Part I, line 4 (d) 5 ... Part I, line 5 (e) 6 ... Part II, Position 2: Sequence of condition within part/line 1-7 ... Code range Position 3: Nature of Injury Flag 1 ... Indicates that the code in positions 4-7 is a Nature of Injury code 0 ... All other codes Position 4 - 7:Condition code (ICD 9th Revision) The codes are available online.
228-234		1st Condition
235-241		2nd Condition

51710 6501

Mortality Section of Linked Record

Item Location	Field Name	Item and Code Outline
242-248		3rd Condition
249-255		4th Condition
256-262		5th Condition
263-269		6th Condition
270-276		7th Condition
277-283		8th Condition
284-290		9th Condition
291-297		10th Condition
298-304		11th Condition
305-311		12th Condition
312-318		13th Condition
319-325		14th Condition
326-332		15th Condition
333-339		16th Condition
340-346		17th Condition
347-353		18th Condition
354-360		19th Condition
361-367		20th Condition
368-369	[RANUM]	NUMBER OF RECORD-AXIS CONDITIONS 00-20 ... Code range
370-469	[RECORD]	RECORD - AXIS CONDITIONS Space has been provided for a maximum of 20 conditions. Each condition takes 5 positions in the record. Records that do not have 20 conditions are blank in the unused area. Position 1: Nature of Injury Flag

51710 6502

Mortality Section of Linked Record

Item Location	Field Name	Item and Code Outline
		1 ... Indicates that the code in positions 2-5 is a Nature of Injury code
		0 ... All other codes
		Positions 2-5: Condition code (ICD 9th Revision)
370-374		1st Condition
375-379		2nd Condition
380-384		3rd Condition
385-389		4th Condition
390-394		5th Condition
395-399		6th Condition
400-404		7th Condition
405-409		8th Condition
410-414		9th Condition
415-419		10th Condition
420-424		11th Condition
425-429		12th Condition
430-434		13th Condition
435-439		14th Condition
440-444		15th Condition
445-449		16th Condition
450-454		17th Condition
455-459		18th Condition
460-464		19th Condition
465-469		20th Condition

51710 6503

Item Location	Field Name	Item and Code Outline
470	[RESSTATD]	RESIDENT STATUS - DEATH
		1 ... RESIDENTS: State and county of occurrence and residence are the same.
		2 ... INTRASTATE NONRESIDENTS: State of occurrence and residence are the same, but county is different.
		3 ... INTERSTATE NONRESIDENTS: State of occurrence and residence are different, but both are in the 50 States and D.C.
		4 ... FOREIGN RESIDENTS: 50 States or the District of Columbia, but place of residence of mother is outside of the 50 States and D.C.
471-475	[FIPSOCCD]	FEDERAL INFORMATION PROCESSING STANDARDS (FIPS) GEOGRAPHIC CODES (OCCURRENCE) - DEATH
		Refer to the Geographic Code Outline further back in this document for a detailed list of areas and codes. For an explanation of FIPS codes, reference should be made to various National Institute of Standards and Technology (NIST) publications.
471-472	[STOCFIPD]	STATE OF OCCURRENCE 'FIPS' - DEATH
		01 ... Alabama
		02 ... Alaska
		04 ... Arizona
		05 ... Arkansas
		06 ... California
		08 ... Colorado
		09 ... Connecticut
		10 ... Delaware
		11 ... District of Columbia
		12 ... Florida
		13 ... Georgia
		15 ... Hawaii
		16 ... Idaho
		17 ... Illinois

51710 6504

Mortality Section of Linked Record

Item Location	Field Name	Item and Code Outline
471-472	[STOCFIPD]	STATE OF OCCURRENCE (FIPS) - DEATH (Cont'd)
		18 ... Indiana
		19 ... Iowa
		20 ... Kansas
		21 ... Kentucky
		22 ... Louisiana
		23 ... Maine
		24 ... Maryland
		25 ... Massachusetts
		26 ... Michigan
		27 ... Minnesota
		28 ... Mississippi
		29 ... Missouri
		30 ... Montana
		31 ... Nebraska
		32 ... Nevada
		33 ... New Hampshire
		34 ... New Jersey
		35 ... New Mexico
		36 ... New York
		37 ... North Carolina
		38 ... North Dakota
		39 ... Ohio
		40 ... Oklahoma
		41 ... Oregon
		42 ... Pennsylvania
		44 ... Rhode Island
		45 ... South Carolina
		46 ... South Dakota
		47 ... Tennessee
		48 ... Texas
		49 ... Utah
		50 ... Vermont
		51 ... Virginia
		53 ... Washington
		54 ... West Virginia
		55 ... Wisconsin
		56 ... Wyoming
471-475	[CNTOFIPD]	COUNTY OF OCCURRENCE FIPS - DEATH
		001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. Note: To uniquely identify a county, both the State and county codes must be used.)

51710 6505

Item Location	Field Name	Item and Code Outline
		999 ... County with less than 250,000 population
476-480	[FIPSRESD]	FEDERAL INFORMATION PROCESSING STANDARDS (FIPS) GEOGRAPHIC CODES (RESIDENCE) - DEATH Refer to the Geographic Code Outline further back in this document for a detailed list of areas and codes. For an explanation of FIPS codes, reference should be made to various National Institute of Standards and Technology (NIST) publications.
476-477	[STREFIPD]	STATE OF RESIDENCE (FIPS) - DEATH
		00 ... Foreign residents
		01 ... Alabama
		02 ... Alaska
		04 ... Arizona
		05 ... Arkansas
		06 ... California
		08 ... Colorado
		09 ... Connecticut
		10 ... Delaware
		11 ... District of Columbia
		12 ... Florida
		13 ... Georgia
		15 ... Hawaii
		16 ... Idaho
		17 ... Illinois
		18 ... Indiana
		19 ... Iowa
		20 ... Kansas
		21 ... Kentucky
		22 ... Louisiana
		23 ... Maine
		24 ... Maryland
		25 ... Massachusetts
		26 ... Michigan
		27 ... Minnesota
		28 ... Mississippi
		29 ... Missouri
		30 ... Montana
		31 ... Nebraska
		32 ... Nevada
		33 ... New Hampshire
		34 ... New Jersey
		35 ... New Mexico

51710 6506

Item Location	Field Name	Item and Code Outline
		36 ... New York
		37 ... North Carolina
		38 ... North Dakota
		39 ... Ohio
		40 ... Oklahoma
		41 ... Oregon
		42 ... Pennsylvania
		44 ... Rhode Island
		45 ... South Carolina
		46 ... South Dakota
		47 ... Tennessee
		48 ... Texas
		49 ... Utah
		50 ... Vermont
		51 ... Virginia
		53 ... Washington
		54 ... West Virginia
		55 ... Wisconsin
		56 ... Wyoming
476-480	[CNTYRFPD]	COUNTY OF RESIDENCE (FIPS) - DEATH
		000 ... Foreign residents
		001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State (Note: To uniquely identify a county, both the State and county codes must be used.) A complete list of counties is shown in the Geographic Code Outline further back in this document.
		999 ... County with less than 250,000 population
481-485	[DRSTATE]	STATE OF RESIDENCE - NCHS CODES - DEATH
		01 ... Alabama
		02 ... Alaska
		03 ... Arizona
		04 ... Arkansas
		05 ... California
		06 ... Colorado
		07 ... Connecticut
		08 ... Delaware
		09 ... District of Columbia
		10 ... Florida

51710 6507

Item Location	Field Name	Item and Code Outline
481-482	[DRSTATE]	STATE OF RESIDENCE - NCHS CODES - DEATH (cont'd)
		11 ... Georgia
		12 ... Hawaii
		13 ... Idaho
		14 ... Illinois
		15 ... Indiana
		16 ... Iowa
		17 ... Kansas
		18 ... Kentucky
		19 ... Louisiana
		20 ... Maine
		21 ... Maryland
		22 ... Massachusetts
		23 ... Michigan
		24 ... Minnesota
		25 ... Mississippi
		26 ... Missouri
		27 ... Montana
		28 ... Nebraska
		29 ... Nevada
		30 ... New Hampshire
		31 ... New Jersey
		32 ... New Mexico
		33 ... New York
		34 ... North Carolina
		35 ... North Dakota
		36 ... Ohio
		37 ... Oklahoma
		38 ... Oregon
		39 ... Pennsylvania
		40 ... Rhode Island
		41 ... South Carolina
		42 ... South Dakota
		43 ... Tennessee
		44 ... Texas
		45 ... Utah
		46 ... Vermont
		47 ... Virginia
		48 ... Washington
		49 ... West Virginia
		50 ... Wisconsin
		51 ... Wyoming
		52-57,59,... Foreign Residents
		52 ... Puerto Rico
		53 ... Virgin Islands
		54 ... Guam
		55 ... Canada

51710 6508

Item Location	Field Name	Item and Code Outline
		56 ... Cuba
		57 ... Mexico
		59 ... Remainder of the World
481-485	[CITYRESD]	CITY OF RESIDENCE - NCHS CODES - DEATH
		A complete list of cities is shown in the Geographic Code Outline further back in this document.
		001-nnn ... Cities are numbered alphabetically within each State and identify each city with a population of 250,000 or more in 1980. (Note: To uniquely identify a city, both the State and city codes must be used. State, county and city codes may also be used.)
		999 ... Balance of county
		ZZZ ... Foreign residents
486	[HOSPD]	HOSPITAL AND PATIENT STATUS
		1 ... Hospital, Clinic or Medical Center - Inpatient
		2 ... Hospital, Clinic or Medical Center - Outpatient or admitted to Emergency Room
		3 ... Hospital, clinic or medical center - Dead on arrival
		4 ... Hospital, Clinic or Medical Center - patient status unknown
		5 ... Nursing home
		6 ... Residence
		7 ... Other
		9 ... Place of death unknown
487-490	[DTHYR]	YEAR OF DEATH
		1991 ... Death occurred in 1991
		1992 ... Death occurred in 1992
491-492	[DTHMON]	MONTH OF DEATH
		01 ... January
		02 ... February
		03 ... March

51710 6509

Mortality Section of Linked Record

Item Location	Field Name	Item and Code Outline
491-492	[DTHMON]	MONTH OF DEATH (cont'd)
		04 ... April
		05 ... May
		06 ... June
		07 ... July
		08 ... August
		09 ... September
		10 ... October
		11 ... November
		12 ... December
493	[WEEKDAYD]	DAY OF WEEK OF DEATH
		1 ... Sunday
		2 ... Monday
		3 ... Tuesday
		4 ... Wednesday
		5 ... Thursday
		6 ... Friday
		7 ... Saturday
		9 ... Unknown

51710 6510

Chapter 4
Linked Birth/Infant Death Data Set
Geographic Code Outline - County

Listing of Counties Identified in the Linked Data Set

Vital Statistics Geographic Code Outline Effective With 1989 Data

State	County	State and County Name
01		Alabama
	073	Jefferson
	097	Mobile
02		Alaska
04		Arizona
	013	Maricopa
	019	Pima
05		Arkansas
	119	Pulaski
06		California
	001	Alameda
	013	Contra Costa
	019	Fresno
	029	Kern
	037	Los Angeles
	053	Monterey
	059	Orange
	065	Riverside
	067	Sacramento
	071	San Bernardino
	073	San Diego
	075	San Francisco, coext. with San Francisco city
	077	San Joaquin
	081	San Mateo
	083	Santa Barbara
	085	Santa Clara
	097	Sonoma
	099	Stanislaus
	111	Ventura
08		Colorado
	005	Arapahoe
	031	Denver, coext. with Denver city
	041	El Paso
	059	Jefferson
09		Connecticut
	001	Fairfield

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	003	Hartford
	009	New Haven
10		Delaware
	003	New Castle
11		District of Columbia
	001	District of Columbia
12		Florida
	009	Brevard
	011	Broward
	025	Dade
	031	Duval
	057	Hillsborough
	095	Orange
	099	Palm Beach
	103	Pinellas
	105	Polk
	127	Volusia
13		Georgia
	067	Cobb
	089	De Kalb
	121	Fulton
15		Hawaii
	003	Honolulu
16		Idaho
17		Illinois
	031	Cook
	043	Du Page
	089	Kane
	097	Lake
	163	St. Clair
	197	Will
	201	Winnebago
18		Indiana
	003	Allen
	089	Lake
	097	Marion
19		Iowa
	153	Polk
20		Kansas
	091	Johnson
	173	Sedgwick
21		Kentucky

51710 6512

	111	Jefferson
22		Louisiana
	017	Caddo
	033	East Baton Rouge
	051	Jefferson
	071	Orleans, coext. with New Orleans city
23		Maine
24		Maryland
	003	Anne Arundel
	005	Baltimore
	510	Baltimore city
	031	Montgomery
	033	Prince George's
25		Massachusetts
	005	Bristol
	009	Essex
	013	Hampden
	017	Middlesex
	021	Norfolk
	023	Plymouth
	025	Suffolk
	027	Worcester
26		Michigan
	049	Genesee
	065	Ingham
	081	Kent
	099	Macomb
	125	Oakland
	161	Washtenaw
	163	Wayne
27		Minnesota
	053	Hennepin
	123	Ramsey
28		Mississippi
	049	Hinds
29		Missouri
	095	Jackson
	189	St. Louis
	510	St. Louis city
30		Montana
31		Nebraska
	055	Douglas

51710 6513

32		Nevada
	003	Clark
33		New Hampshire
	011	Hillsborough
34		New Jersey
	003	Bergen
	005	Burlington
	007	Camden
	013	Essex
	017	Hudson
	021	Mercer
	023	Middlesex
	025	Monmouth
	027	Morris
	029	Ocean
	031	Passaic
	039	Union
35		New Mexico
	001	Bernalillo
36		New York
	001	Albany
	005	Bronx borough, Bronx county
	029	Erie
	047	Brooklyn borough, Kings county
	055	Monroe
	059	Nassau
	061	Manhattan borough, New York county
	065	Oneida
	067	Onondaga
	071	Orange
	081	Queens borough, Queens county
	085	Staten Island borough, Richmond county
	087	Rockland
	103	Suffolk
	119	Westchester
37		North Carolina
	081	Guilford
	119	Mecklenburg
	183	Wake
38		North Dakota
39		Ohio
	017	Butler
	035	Cuyahoga
	049	Franklin
	061	Hamilton
	093	Lorain
	095	Lucas
	099	Mahoning
	113	Montgomery

51710 6514

51710 6515

	153	Summit
40		Oklahoma
	109	Oklahoma
	143	Tulsa
41		Oregon
	039	Lane
	051	Multnomah
42		Pennsylvania
	003	Allegheny
	011	Berks
	017	Bucks
	029	Chester
	045	Delaware
	049	Erie
	071	Lancaster
	077	Lehigh
	079	Luzerne
	091	Montgomery
	101	Philadelphia, coext. with Philadelphia city
	129	Westmoreland
	133	York
44		Rhode Island
	007	Providence
45		South Carolina
	019	Charleston
	045	Greenville
	079	Richland
46		South Dakota
47		Tennessee
	037	Davidson
	065	Hamilton
	093	Knox
	157	Shelby
48		Texas
	029	Bexar
	113	Dallas
	141	El Paso
	201	Harris
	215	Hidalgo
	245	Jefferson
	355	Nueces
	439	Tarrant
	453	Travis
49		Utah

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	035	Salt Lake
50		Vermont
51		Virginia
	059	Fairfax
	710	Norfolk city
	810	Virginia Beach city
53		Washington
	033	King
	053	Pierce
	061	Snohomish
	063	Spokane
54		West Virginia
55		Wisconsin
	025	Dane
	079	Milwaukee
	133	Waukesha
56		Wyoming
00	000	Puerto Rico
00	000	Virgin Islands
00	000	Guam
00	000	Canada
00	000	Cuba
00	000	Mexico
00	000	Remainder of World

51710 6517

Chapter 4
Linked Birth/Infant Death Data Set
Geographic Code Outline - City

Listing of Cities Identified in the Linked Data Set

Vital Statistics Geographic Code Outline Effective With 1982 Data

State	City	State and City Name
01		Alabama
	008	Birmingham
02		Alaska
03		Arizona
	011	Phoenix
	016	Tucson
04		Arkansas
05		California
	112	Long Beach
	115	Los Angeles
	146	Oakland
	186	Sacramento
	194	San Diego
	197	San Francisco
	200	San Jose
06		Colorado
	009	Denver
07		Connecticut
08		Delaware
09		District of Columbia
	001	Washington
10		Florida
	033	Jacksonville
	047	Miami
	086	Tampa
11		Georgia
	004	Atlanta
12		Hawaii
	004	Honolulu
13		Idaho

51710 6518

14		Illinois
	032	Chicago
15		Indiana
	027	Indianapolis
16		Iowa
17		Kansas
	033	Wichita
18		Kentucky
	016	Louisville
19		Louisiana
	024	New Orleans
20		Maine
21		Maryland
	003	Baltimore
22		Massachusetts
	012	Boston
23		Michigan
	023	Detroit
24		Minnesota
	035	Minneapolis
	055	St. Paul
25		Mississippi
26		Missouri
	026	Kansas City
	044	St. Louis
27		Montana
28		Nebraska
	011	Omaha
29		Nevada
30		New Hampshire
31		New Jersey
	094	Newark
32		New Mexico
	002	Albuquerque

51710 6519

33		New York
	009	Bronx borough, Bronx county
	010	Buffalo
	043	Brooklyn borough, Kings county
	060	Manhattan borough, New York county
	077	Queens borough, Queens county
	078	Staten Island borough, Richmond county
34		North Carolina
	008	Charlotte
35		North Dakota
36		Ohio
	028	Cincinnati
	030	Cleveland
	032	Columbus
	126	Toledo
37		Oklahoma
	023	Oklahoma City
	031	Tulsa
38		Oregon
	023	Portland
39		Pennsylvania
	096	Philadelphia
	098	Pittsburgh
40		Rhode Island
41		South Carolina
42		South Dakota
43		Tennessee
	026	Memphis
	030	Nashville-Davidson
44		Texas
	009	Austin
	036	Dallas
	047	El Paso
	052	Fort Worth
	066	Houston
	121	San Antonio
45		Utah
46		Vermont
47		Virginia

51710 6520

	021	Norfolk
	032	Virginia Beach
48		Washington
	030	Seattle
49		West Virginia
50		Wisconsin
	032	Milwaukee
51		Wyoming
52	ZZZ	Puerto Rico
53	ZZZ	Virgin Islands
54	ZZZ	Guam
55	ZZZ	Canada
56	ZZZ	Cuba
57	ZZZ	Mexico
59	ZZZ	Remainder of World

51710 6521

Chapter 5

Ninth Revision 61 Causes of Death Adapted for use by DVS

ST: 1 = Subtotal Limited: Sex: 1 = Males; 2 = Females

ength = of Cause Title Age: 1 = 5 & Over; 2 = 10-54;
3 = 28 Days & Over

***** Cause Subtotals are not Identified in this File *****

61 Recode	ST	Limited Sex	Age	Len-gth	Cause Title And ICD-9 Codes Included
010				039	Certain intestinal infections (008-009)
020				020	Whooping cough (033)
030				029	Meningococcal infection (036)
040			3	016	Septicemia (038)
050				024	Viral diseases (045-079)
060				025	Congenital syphilis (090)
070				110	Remainder of infectious and parasitic diseases (001-007,010-032,034-035,037,039-041, *042-*044,080-088,091-139)
080				089	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (140-208)
090				108	Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature (210-239)
100				030	Diseases of thymus gland (254)
110				023	Cystic fibrosis (277.0)
120				052	Diseases of blood and blood-forming organs (280-289)
130				020	Meningitis (320-322)
140				059	Other diseases of nervous system and sense organs (323-389)
150				044	Acute upper respiratory infections (460-465)
160				042	Bronchitis and bronchiolitis (466,490-491)
170	1			033	Pneumonia and influenza (480-487)
180				021	Pneumonia (480-486)
190				017	Influenza (487)
200				061	Remainder of diseases of respiratory system (470-478, 492-519)
210				093	Hernia of abdominal cavity and intestinal obstruction without mention of hernia (550-553,560)
220				075	Gastritis, duodenitis, and noninfective enteritis and colitis (535,555-558)
230				067	Remainder of diseases of digestive system (520-534,536-543,562-579)
240	1			030	Congenital anomalies (740-759)
250				042	Anencephalus and similar anomalies (740)

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260		020	Spina bifida (741)
270		034	Congenital hydrocephalus (742.3)
280		092	Other congenital anomalies of central nervous system and eye (742.0-742.2,742.4-742.9,743)
290		041	Congenital anomalies of heart (745-746)
300		056	Other congenital anomalies of circulatory system (747)
310		050	Congenital anomalies of respiratory system (748)
320		052	Congenital anomalies of digestive system (749-751)
330		056	Congenital anomalies of genitourinary system (752-753)
340		058	Congenital anomalies of musculoskeletal system (754-756)
350		025	Down's syndrome (758.0)
360		043	Other chromosomal anomalies (758.1-758.9)
370		062	All other and unspecified congenital anomalies (744,757,759)
380	1	064	Certain conditions originating in the perinatal period (760-779)
390		091	Newborn affected by maternal conditions which may be unrelated to present pregnancy (760)
400		063	Newborn affected by maternal complications of pregnancy (761)
410		074	Newborn affected by complications of placenta, cord, and membranes (762)
420		069	Newborn affected by other complications of labor and delivery (763)
430		048	Slow fetal growth and fetal malnutrition (764)
440		077	Disorders relating to short gestation and unspecified low birthweight (765)
450		065	Disorders relating to long gestation and high birthweight (766)
460		020	Birth trauma (767)
470	1	047	Intrauterine hypoxia and birth asphyxia (768)
480		051	Fetal distress in liveborn infant (768.2-768.4)
490		032	Birth asphyxia (768.5-768.9)
500		037	Respiratory distress syndrome (769)
510		047	Other respiratory conditions of newborn (770)
520		051	Infections specific to the perinatal period (771)
530		027	Neonatal hemorrhage (772)
540		094	Hemolytic disease of newborn, due to isoimmunization, and other perinatal jaundice (773-774)
550		088	Syndrome of "infant of a diabetic mother" and neonatal diabetes mellitus (775.0-775.1)
560		040	Hemorrhagic disease of newborn (776.0)
570		098	All other and ill-defined conditions originating in the perinatal period (775.2-775.9,776.1-779)

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580	1	053	Symptoms, signs, and ill-defined conditions (780-799)
590		038	Sudden infant death syndrome (798.0)
600		075	Symptoms, signs, and all other ill-defined conditions (780-797,798.1-799)
610	1	041	Accidents and adverse effects (E800-E949)
620		118	Inhalation and ingestion of food or other object causing obstruction of respiratory tract or suffocation (E911-E912)
630		042	Accidental mechanical suffocation (E913)
640		067	Other accidental causes and adverse effects (E800-E910,E914-E949)
650	1	020	Homicide (E960-E969)
660		047	Child battering and other maltreatment (E967)
670		038	Other homicide (E960-E966,E968-E969)
680		027	All other causes (Residual)

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SYMBOLS USED IN TABLES

Symbol	Explanation
---	Data not available
...	Category not applicable
-	Quantity zero
0.0	Quantity more than 0 but less than 0.05
*	Figure does not meet standards of reliability or precision

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Chapter 6

DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE: UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS; EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS; AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION. RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
UNITED STATES.....	1,027	718	641	77	309
WHITE.....	602	405	353	52	197
BLACK.....	386	286	268	18	100
ALABAMA.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
ALASKA.....	4	3	2	1	1
WHITE.....	2	1	1	-	1
BLACK.....	-	-	-	-	-
ARIZONA.....	5	2	2	-	3
WHITE.....	5	2	2	-	3
BLACK.....	-	-	-	-	-
ARKANSAS.....	4	3	2	1	1
WHITE.....	2	1	-	1	1
BLACK.....	2	2	2	-	-
CALIFORNIA.....	194	153	145	8	41
WHITE.....	127	98	92	6	29
BLACK.....	53	43	41	2	10
COLORADO.....	1	-	-	-	1
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
CONNECTICUT.....	6	3	2	1	3
WHITE.....	6	3	2	1	3
BLACK.....	-	-	-	-	-
DELAWARE.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
DISTRICT OF COLUMBIA..	9	4	4	-	5
WHITE.....	3	2	2	-	1
BLACK.....	6	2	2	-	4

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DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
FLORIDA	4	2	1	1	2
WHITE	4	2	1	1	2
BLACK	-	-	-	-	-
GEORGIA	1	-	-	-	1
WHITE	1	-	-	-	1
BLACK	-	-	-	-	-
HAWAII	4	2	-	2	2
WHITE	1	-	-	-	1
BLACK	-	-	-	-	-
IDAHO	1	-	-	-	1
WHITE	1	-	-	-	1
BLACK	-	-	-	-	-
ILLINOIS	33	26	26	-	7
WHITE	13	11	11	-	2
BLACK	20	15	15	-	5
INDIANA	24	14	7	7	10
WHITE	17	10	4	6	7
BLACK	7	4	3	1	3
IOWA	2	2	2	-	-
WHITE	1	1	1	-	-
BLACK	1	1	1	-	-
KANSAS	4	1	1	-	3
WHITE	3	1	1	-	2
BLACK	-	-	-	-	-
KENTUCKY	8	5	5	-	3
WHITE	7	4	4	-	3
BLACK	1	1	1	-	-
LOUISIANA	71	58	56	2	13
WHITE	20	17	16	1	3
BLACK	51	41	40	1	10

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DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
MAINE	-	-	-	-	-
WHITE	-	-	-	-	-
BLACK	-	-	-	-	-
MARYLAND	30	21	16	5	9
WHITE	15	11	7	4	4
BLACK	14	9	8	1	5
MASSACHUSETTS	5	3	2	1	2
WHITE	5	3	2	1	2
BLACK	-	-	-	-	-
MICHIGAN	11	4	1	3	7
WHITE	9	2	-	2	7
BLACK	2	2	1	1	-
MINNESOTA	-	-	-	-	-
WHITE	-	-	-	-	-
BLACK	-	-	-	-	-
MISSISSIPPI	8	1	-	1	7
WHITE	4	-	-	-	4
BLACK	4	1	-	1	3
MISSOURI	4	1	1	-	3
WHITE	1	-	-	-	1
BLACK	3	1	1	-	2
MONTANA	2	-	-	-	2
WHITE	2	-	-	-	2
BLACK	-	-	-	-	-
NEBRASKA	1	-	-	-	1
WHITE	1	-	-	-	1
BLACK	-	-	-	-	-
NEVADA	2	1	-	1	1
WHITE	1	-	-	-	1
BLACK	-	-	-	-	-

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DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
NEW HAMPSHIRE.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
NEW JERSEY.....	37	20	18	2	17
WHITE.....	18	8	6	2	10
BLACK.....	18	11	11	-	7
NEW MEXICO.....	4	3	2	1	1
WHITE.....	4	3	2	1	1
BLACK.....	-	-	-	-	-
NEW YORK.....	29	13	11	2	16
WHITE.....	21	10	8	2	11
BLACK.....	7	3	3	-	4
NEW YORK CITY.....	35	21	16	5	14
WHITE.....	18	12	9	3	6
BLACK.....	16	8	7	1	8
NORTH CAROLINA.....	16	6	6	-	10
WHITE.....	10	2	2	-	8
BLACK.....	6	4	4	-	2
NORTH DAKOTA.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
OHIO.....	147	116	110	6	31
WHITE.....	81	64	61	3	17
BLACK.....	64	50	47	3	14
OKLAHOMA.....	73	39	30	9	34
WHITE.....	52	29	23	6	23
BLACK.....	13	7	6	1	6
OREGON.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-

51710 6529

DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
PENNSYLVANIA.....	78	65	62	3	13
WHITE.....	39	32	30	2	7
BLACK.....	39	33	32	1	6
RHODE ISLAND.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
SOUTH CAROLINA.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
SOUTH DAKOTA.....	1	-	-	-	1
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
TENNESSEE.....	3	3	2	1	-
WHITE.....	2	2	1	1	-
BLACK.....	1	1	1	-	-
TEXAS.....	122	103	92	11	19
WHITE.....	76	63	57	6	13
BLACK.....	45	39	34	5	6
UTAH.....	2	1	-	1	1
WHITE.....	2	1	-	1	1
BLACK.....	-	-	-	-	-
VERMONT.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
VIRGINIA.....	20	14	13	1	6
WHITE.....	8	5	4	1	3
BLACK.....	11	8	8	-	3
WASHINGTON.....	2	1	1	-	1
WHITE.....	2	1	1	-	1
BLACK.....	-	-	-	-	-

51710 6530

DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
WEST VIRGINIA.....	4	3	2	1	1
WHITE.....	4	3	2	1	1
BLACK.....	-	-	-	-	-
WISCONSIN.....	15	1	1	-	14
WHITE.....	13	1	1	-	12
BLACK.....	2	-	-	-	2
WYOMING.....	1	-	-	-	1
WHITE.....	1	-	-	-	1
BLACK.....	-	-	-	-	-
FOREIGN RESIDENTS.....	2	2	2	-	-
WHITE.....	2	2	2	-	-
BLACK.....	-	-	-	-	-

1/ TOTALS FOR GEOGRAPHIC AREAS INCLUDES RACES OTHER THAN WHITE AND BLACK

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Chapter 6

DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE: UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS; EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS; AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION. RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
UNITED STATES.....	1,027	718	641	77	309
WHITE.....	602	405	353	52	197
BLACK.....	386	286	268	18	100
ALABAMA.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
ALASKA.....	4	3	2	1	1
WHITE.....	2	1	1	-	1
BLACK.....	-	-	-	-	-
ARIZONA.....	5	2	2	-	3
WHITE.....	5	2	2	-	3
BLACK.....	-	-	-	-	-
ARKANSAS.....	4	3	2	1	1
WHITE.....	2	1	-	1	1
BLACK.....	2	2	2	-	-
CALIFORNIA.....	194	153	145	8	41
WHITE.....	127	98	92	6	29
BLACK.....	53	43	41	2	10
COLORADO.....	1	-	-	-	1
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
CONNECTICUT.....	6	3	2	1	3
WHITE.....	6	3	2	1	3
BLACK.....	-	-	-	-	-
DELAWARE.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
DISTRICT OF COLUMBIA..	9	4	4	-	5
WHITE.....	3	2	2	-	1
BLACK.....	6	2	2	-	4

51710 6532

DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
FLORIDA.....	4	2	1	1	2
WHITE.....	4	2	1	1	2
BLACK.....	-	-	-	-	-
GEORGIA.....	1	-	-	-	1
WHITE.....	1	-	-	-	1
BLACK.....	-	-	-	-	-
HAWAII.....	4	2	-	2	2
WHITE.....	1	-	-	-	1
BLACK.....	-	-	-	-	-
IDAHO.....	1	-	-	-	1
WHITE.....	1	-	-	-	1
BLACK.....	-	-	-	-	-
ILLINOIS.....	33	26	26	-	7
WHITE.....	13	11	11	-	2
BLACK.....	20	15	15	-	5
INDIANA.....	24	14	7	7	10
WHITE.....	17	10	4	6	7
BLACK.....	7	4	3	1	3
IOWA.....	2	2	2	-	-
WHITE.....	1	1	1	-	-
BLACK.....	1	1	1	-	-
KANSAS.....	4	1	1	-	3
WHITE.....	3	1	1	-	2
BLACK.....	-	-	-	-	-
KENTUCKY.....	8	5	5	-	3
WHITE.....	7	4	4	-	3
BLACK.....	1	1	1	-	-
LOUISIANA.....	71	58	56	2	13
WHITE.....	20	17	16	1	3
BLACK.....	51	41	40	1	10

51710 6533

DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
MAINE	-	-	-	-	-
WHITE	-	-	-	-	-
BLACK	-	-	-	-	-
MARYLAND	30	21	16	5	9
WHITE	15	11	7	4	4
BLACK	14	9	8	1	5
MASSACHUSETTS	5	3	2	1	2
WHITE	5	3	2	1	2
BLACK	-	-	-	-	-
MICHIGAN	11	4	1	3	7
WHITE	9	2	-	2	7
BLACK	2	2	1	1	-
MINNESOTA	-	-	-	-	-
WHITE	-	-	-	-	-
BLACK	-	-	-	-	-
MISSISSIPPI	8	1	-	1	7
WHITE	4	-	-	-	4
BLACK	4	1	-	1	3
MISSOURI	4	1	1	-	3
WHITE	1	-	-	-	1
BLACK	3	1	1	-	2
MONTANA	2	-	-	-	2
WHITE	2	-	-	-	2
BLACK	-	-	-	-	-
NEBRASKA	1	-	-	-	1
WHITE	1	-	-	-	1
BLACK	-	-	-	-	-
NEVADA	1	1	-	1	-
WHITE	1	-	-	-	1
BLACK	-	-	-	-	-

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DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
NEW HAMPSHIRE.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
NEW JERSEY.....	37	20	18	2	17
WHITE.....	18	8	6	2	10
BLACK.....	18	11	11	-	7
NEW MEXICO.....	4	3	2	1	1
WHITE.....	4	3	2	1	1
BLACK.....	-	-	-	-	-
NEW YORK.....	29	13	11	2	16
WHITE.....	21	10	8	2	11
BLACK.....	7	3	3	-	4
NEW YORK CITY.....	35	21	16	5	14
WHITE.....	13	12	9	3	6
BLACK.....	16	8	7	1	8
NORTH CAROLINA.....	16	6	6	-	10
WHITE.....	10	2	2	-	8
BLACK.....	6	4	4	-	2
NORTH DAKOTA.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
OHIO.....	147	116	110	6	31
WHITE.....	81	64	61	3	17
BLACK.....	64	50	47	3	14
OKLAHOMA.....	73	39	30	9	34
WHITE.....	52	29	23	6	23
BLACK.....	13	7	6	1	6
OREGON.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-

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DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
PENNSYLVANIA.....	78	65	62	3	13
WHITE.....	39	32	30	2	7
BLACK.....	39	33	32	1	6
RHODE ISLAND.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
SOUTH CAROLINA.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
SOUTH DAKOTA.....	1	-	-	-	1
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
TENNESSEE.....	3	3	2	1	-
WHITE.....	2	2	1	1	-
BLACK.....	1	1	1	-	-
TEXAS.....	122	103	92	11	19
WHITE.....	76	63	57	6	13
BLACK.....	45	39	34	5	6
UTAH.....	2	1	-	1	1
WHITE.....	2	1	-	1	1
BLACK.....	-	-	-	-	-
VERMONT.....	-	-	-	-	-
WHITE.....	-	-	-	-	-
BLACK.....	-	-	-	-	-
VIRGINIA.....	20	14	13	1	6
WHITE.....	9	6	4	1	3
BLACK.....	11	8	8	-	3
WASHINGTON.....	2	1	1	-	1
WHITE.....	2	1	1	-	1
BLACK.....	-	-	-	-	-

51710 6536

DOCUMENTATION TABLE 6

UNLINKED INFANT DEATHS BY RACE, AGE AT DEATH, AND STATE OF RESIDENCE:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(DATA IN THIS TABLE IS FOR INFANT DEATHS TO THE 1989 BIRTH COHORT
NOT INCLUDED IN THE LINKED FILE BECAUSE THEY WERE NOT LINKED
WITH THEIR CORRESPONDING BIRTH CERTIFICATES. SEE METHODOLOGY SECTION.
RESIDENCE IS OF INFANT DECEDENT; RACE IS FROM DEATH CERTIFICATE.)

AREA AND RACE 1/ OF CHILD	INFANT	NEONATAL			POST NEONATAL
		TOTAL	EARLY	LATE	
WEST VIRGINIA.....	4	3	2	1	1
WHITE.....	4	3	2	1	1
BLACK.....	-	-	-	-	-
WISCONSIN.....	15	1	1	-	14
WHITE.....	13	1	1	-	12
BLACK.....	2	-	-	-	2
WYOMING.....	1	-	-	-	1
WHITE.....	1	-	-	-	1
BLACK.....	-	-	-	-	-
FOREIGN RESIDENTS.....	2	2	2	-	-
WHITE.....	2	2	2	-	-
BLACK.....	-	-	-	-	-

1/ TOTALS FOR GEOGRAPHIC AREAS INCLUDES RACES OTHER THAN WHITE AND BLACK

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Chapter 6

DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND INFANT DEATHS AND INFANT MORTALITY RATES BY AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER FOR 10 MAJOR CAUSES OF INFANT DEATH: UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS; EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS; AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
ALL RACES 1/ ALL BIRTH WEIGHTS						
ALL CAUSES	4,041,146	38,578	24,426	20,128	4,298	14,152
		954.6	604.4	498.1	106.4	350.2
CONGENITAL ANOMALIES (740-759)		7,991	5,793	4,497	1,296	2,198
		197.7	143.4	111.3	32.1	54.4
SUDDEN INFANT DEATH SYNDROME (798.0)		5,569	391	46	345	5,178
		137.8	9.7	1.1	8.5	128.1
PREMATURITY (765)		3,785	3,738	3,696	42	47
		93.7	92.5	91.5	1.0	1.2
RESPIRATORY DISTRESS SYNDROME (769)		3,509	3,286	2,763	523	223
		86.8	81.3	68.4	12.9	5.5
MATERNAL COMPLICATIONS (761)		1,489	1,481	1,472	9	8
		36.8	36.6	36.4	.2	.2
ACCIDENTS (E800-E949)		932	86	35	51	846
		23.1	2.1	.9	1.3	20.9
COMPLICATIONS OF PLACENTA, ETC. (762)		935	927	892	35	8
		23.1	22.9	22.1	.9	.2
INFECTIONS (771)		876	822	479	343	54
		21.7	20.3	11.9	8.5	1.3
HYPOXIA AND ASPHYXIA (768)		698	632	511	121	66
		17.3	15.6	12.6	3.0	1.6
PNEUMONIA AND INFLUENZA 480-487		622	101	37	64	521
		15.4	2.5	.9	1.6	12.9
ALL OTHER CAUSES (RESIDUAL)		1,586	608	384	224	978
		39.2	15.0	9.5	5.5	24.2

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
ALL RACES 1/ LESS THAN 2,500 GRAMS						
ALL CAUSES.....	284,521	22,981	18,397	15,999	2,398	4,584
		8,077.1	6,466.0	5,623.1	842.8	1,611.1
CONGENITAL ANOMALIES (740-759).....		3,938	3,150	2,675	475	788
		1,384.1	1,107.1	940.2	166.9	277.0
SUDDEN INFANT DEATH SYNDROME (798.0).....		1,035	49	6	43	986
		363.8	17.2	2.1	15.1	346.5
PREMATURITY (765).....		3,393	3,349	3,308	41	44
		1,192.5	1,177.1	1,162.7	14.4	15.5
RESPIRATORY DISTRESS SYNDROME (769).....		3,319	3,114	2,614	500	205
		1,166.5	1,094.5	918.7	175.7	72.1
MATERNAL COMPLICATIONS (761).....		1,323	1,318	1,310	8	5
		465.0	463.2	460.4	2.8	1.8
ACCIDENTS (E800-E949)....		152	31	20	11	121
		53.4	10.9	7.0	3.9	42.5
COMPLICATIONS OF PLACENTA, ETC..(762).....		767	762	746	16	5
		269.6	267.8	262.2	5.6	1.8
INFECTIONS (771).....		642	606	336	270	36
		225.6	213.0	118.1	94.9	12.7
HYPOXIA AND ASPHYXIA (768)		342	325	289	36	17
		120.2	114.2	101.6	12.7	6.0
PNEUMONIA AND INFLUENZA (480-487).....		252	48	17	31	204
		88.6	16.9	6.0	10.9	71.7
ALL OTHER CAUSES (RESIDUAL		692	327	222	105	365
		243.2	114.9	78.0	36.9	128.3

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
ALL RACES 1/ 2,500 GRAMS OR MORE						
ALL CAUSES.....	3,751,351	14,399	4,893	3,062	1,831	9,506
		383.8	130.4	81.6	48.8	253.4
CONGENITAL ANOMALIES (740-759).....		3,897	2,498	1,694	804	1,399
		103.9	66.6	45.2	21.4	37.3
SUDDEN INFANT DEATH SYNDROME (798.0).....		4,517	341	40	301	4,176
		120.4	9.1	1.1	8.0	111.3
PREMATURITY (765).....		59	56	55	1	3
		1.6	1.5	1.5	.0	.1
RESPIRATORY DISTRESS SYNDROME (769).....		113	99	81	18	14
		3.0	2.6	2.2	.5	.4
MATERNAL COMPLICATIONS (761).....		23	20	19	1	3
		.6	.5	.5	.0	.1
ACCIDENTS (E800-E949)....		774	52	12	40	722
		20.6	1.4	.3	1.1	19.2
COMPLICATIONS OF PLACENTA, ETC..(762).....		108	105	86	19	3
		2.9	2.8	2.3	.5	.1
INFECTIONS (771).....		218	203	138	65	15
		5.8	5.4	3.6	1.7	.4
HYPOXIA AND ASPHYXIA (768		313	266	190	76	47
		8.3	7.1	5.1	2.0	1.3
PNEUMONIA AND INFLUENZA (480-487		369	53	20	33	316
		9.8	1.4	.5	.9	8.4
ALL OTHER CAUSES (RESIDUAL		868	257	144	113	611
		23.1	6.8	3.8	3.0	16.3

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
ALL RACES 1/ NOT STATED BIRTH WEIGHT						
ALL CAUSES.....	5,274	1,198	1,136	1,067	69	62
		22,715.2	21,539.6	20,231.3	1,308.3	1,175.6
CONGENITAL ANOMALIES (740-759).....		156	145	128	17	11
		2,957.9	2,749.3	2,427.0	322.3	208.6
SUDDEN INFANT DEATH SYNDROME (798.0).....		17	1	-	1	16
		322.3	19.0	-	19.0	303.4
PREMATURITY (765).....		333	333	333	-	-
		6,314.0	6,314.0	6,314.0	-	-
RESPIRATORY DISTRESS SYNDROME (769).....		77	73	68	5	4
		1,460.0	1,384.1	1,289.3	94.8	75.8
MATERNAL COMPLICATIONS (761).....		143	143	143	-	-
		2,711.4	2,711.4	2,711.4	-	-
ACCIDENTS (E800-E949)....		6	3	3	-	3
		113.8	56.9	56.9	-	56.9
COMPLICATIONS OF PLACENTA, ETC..(762).....		60	60	60	-	-
		1,137.7	1,137.7	1,137.7	-	-
INFECTIONS (771).....		16	16	8	8	-
		303.4	303.4	151.7	151.7	-
HYPOXIA AND ASPHYXIA (768)		43	41	32	9	2
		815.3	777.4	606.9	170.6	37.9
PNEUMONIA AND INFLUENZA (480-487		1	-	-	-	1
		19	-	-	-	19
ALL OTHER CAUSES (RESIDUAL)		26	24	18	6	2
		493.0	455.1	341.3	113.8	37.9

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
WHITE, ALL BIRTH WEIGHTS						
ALL CAUSES.....	3,192,457	25,060	15,874	12,985	2,889	9,186
		785.0	497.2	406.7	90.5	287.7
CONGENITAL ANOMALIES (740-759).....		6,209	4,581	3,604	977	1,628
		194.5	143.5	112.9	30.6	51.0
SUDDEN INFANT DEATH SYNDROME (798.0).....		3,780	259	27	232	3,521
		118.4	8.1	.8	7.3	110.3
PREMATURITY (765).....		1,871	1,847	1,826	21	24
		58.6	57.9	57.2	.7	.8
RESPIRATORY DISTRESS SYNDROME (769).....		2,295	2,165	1,812	353	130
		71.9	67.8	56.8	11.1	4.1
MATERNAL COMPLICATIONS (761).....		958	955	947	8	3
		30.0	29.9	29.7	.3	.1
ACCIDENTS (E800-E949)....		589	57	23	34	532
		18.4	1.8	.7	1.1	16.7
COMPLICATIONS OF PLACENTA, ETC..(762).....		637	631	605	26	6
		20.0	19.8	19.0	.8	.2
INFECTIONS (771).....		557	532	331	201	25
		17.4	16.7	10.4	6.3	.8
HYPOXIA AND ASPHYXIA (768)		449	408	331	77	41
		14.1	12.8	10.4	2.4	1.3
PNEUMONIA AND INFLUENZA 480-487		378	60	26	34	318
		11.8	1.9	.8	1.1	9.9
ALL OTHER CAUSES (RESIDUAL)		1,042	424	279	145	618
		32.6	13.3	8.7	4.5	19.4

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
WHITE, LESS THAN 2,500 GRAMS						
ALL CAUSES	182,404	14,075	11,516	10,023	1,493	2,559
		7,716.4	6,313.5	5,494.9	818.5	1,402.9
CONGENITAL ANOMALIES (740-759)		2,996	2,455	2,123	332	541
		1,642.5	1,345.9	1,163.9	182.0	296.6
SUDDEN INFANT DEATH SYNDROME (798.0)		593	26	5	21	567
		325.1	14.3	2.7	11.5	310.8
PREMATURITY (765)		1,681	1,659	1,639	20	22
		921.6	909.5	898.6	11.0	12.1
RESPIRATORY DISTRESS SYNDROME (769)		2,166	2,045	1,711	334	121
		1,187.5	1,121.1	938.0	183.1	66.3
MATERNAL COMPLICATIONS (761)		866	863	856	7	3
		474.8	473.1	469.3	3.8	1.6
ACCIDENTS (E800-E949)		68	18	11	7	50
		37.3	9.9	6.0	3.8	27.4
COMPLICATIONS OF PLACENTA, ETC. (762)		504	501	491	10	3
		276.3	274.7	269.2	5.5	1.6
INFECTIONS (771)		386	370	216	154	16
		211.6	202.8	118.4	84.4	8.8
HYPOXIA AND ASPHYXIA (768)		197	189	169	21	8
		108.0	103.6	92.7	11.5	4.4
PNEUMONIA AND INFLUENZA (480-487)		132	24	9	15	108
		72.4	13.2	4.9	8.2	59.2
ALL OTHER CAUSES (RESIDUAL)		416	208	157	51	208
		228.1	114.0	86.1	28.0	114.0

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
WHITE, 2,500 GRAMS OR MORE						
ALL CAUSES	3,006,374	10,302	3,704	2,354	1,350	6,598
		342.7	123.2	78.3	44.9	219.5
CONGENITAL ANOMALIES (740-759)		3,089	2,010	1,378	632	1,079
		102.7	66.9	45.8	21.0	35.9
SUDDEN INFANT DEATH SYNDROME (798.0)		3,178	232	22	210	2,946
		105.7	7.7	.7	7.0	98.0
PREMATURITY (765)		30	28	27	1	2
		1.0	.9	.9	.0	.1
RESPIRATORY DISTRESS SYNDROME (769)		78	71	55	16	7
		2.6	2.4	1.8	.5	.2
MATERNAL COMPLICATIONS (761)		13	13	12	1	-
		.4	.4	.4	.0	-
ACCIDENTS (E800-E949)		518	37	10	27	481
		17.2	1.2	.3	.9	16.0
COMPLICATIONS OF PLACENTA, ETC. (762)		91	88	72	16	3
		3.0	2.9	2.4	.5	.1
INFECTIONS (771)		162	153	109	44	9
		5.4	5.1	3.6	1.5	.3
HYPOXIA AND ASPHYXIA (768		232	199	166	33	33
		7.7	6.6	4.7	1.1	1.1
PNEUMONIA AND INFLUENZA (480-487)		246	36	15	21	210
		8.2	1.2	.5	.7	7.0
ALL OTHER CAUSES (RESIDUAL)		607	198	110	88	409
		20.2	6.6	3.7	2.9	13.6

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
WHITE, NOT STATED BIRTH WEIGHT						
ALL CAUSES.....	3,679	683	654	608	46	29
		18,564.8	17,776.6	16,526.2	1,250.3	788.3
CONGENITAL ANOMALIES (740-759).....		124	116	103	13	8
		3,370.5	3,153.0	2,799.7	353.4	217.5
SUDDEN INFANT DEATH SYNDROME (798.0).....		9	1	-	1	8
		244.6	27.2	-	27.2	217.5
PREMATURITY (765).....		160	160	160	-	-
		4,349.0	4,349.0	4,349.0	-	-
RESPIRATORY DISTRESS SYNDROME (769)....		51	49	46	3	2
		1,386.2	1,331.9	1,250.3	81.5	54.4
MATERNAL COMPLICATIONS (761)		79	79	79	-	-
		2,147.3	2,147.3	2,147.3	-	-
ACCIDENTS (E800-E949).....		3	2	2	-	1
		81.5	54.4	54.4	-	27.2
COMPLICATIONS OF PLACENTA, ETC (762).....		42	42	42	-	-
		1,141.6	1,141.6	1,141.6	-	-
INFECTIONS (771).....		9	9	6	3	-
		244.6	244.6	163.1	81.5	-
HYPOXIA AND ASPHYXIA (768)		20	20	16	4	-
		543.6	543.6	434.9	108.7	-
PNEUMONIA AND INFLUENZA (480-487).....		-	-	-	-	-
ALL OTHER CAUSES (RESIDUAL)		19	18	12	6	1
		516.4	489.3	326.2	163.1	27.2

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
BLACK, ALL BIRTH WEIGHTS						
ALL CAUSES.....	673,209	11,979	7,711	6,483	1,228	4,268
		1,779.4	1,145.4	963.0	182.4	634.0
CONGENITAL ANOMALIES (740-759).....		1,407	959	708	251	448
		209.0	142.5	105.2	37.3	66.5
SUDDEN INFANT DEATH SYNDROME (798.0).....		1,525	118	19	99	1,407
		226.5	17.5	2.8	14.7	209.0
PREMATURITY (765).....		1,815	1,793	1,772	21	22
		269.6	266.3	263.2	3.1	3.3
RESPIRATORY DISTRESS SYNDROME (769).....		1,108	1,027	878	149	81
		164.6	152.6	130.4	22.1	12.0
MATERNAL COMPLICATIONS (761).....		493	488	487	1	5
		73.2	72.5	72.3	.1	.7
ACCIDENTS (E800-E949)....		294	21	11	10	273
		43.7	3.1	1.6	1.5	40.6
COMPLICATIONS OF PLACENTA, ETC..(762).....		267	265	256	9	2
		39.7	39.4	38.0	1.3	.3
INFECTIONS (771).....		291	263	132	131	28
		43.2	39.1	19.6	19.5	4.2
HYPOXIA AND ASPHYXIA (768		211	190	153	37	21
		31.3	28.2	22.7	5.5	3.1
PNEUMONIA AND INFLUENZA (480-487		211	37	17	20	174
		31.3	5.5	2.5	3.0	25.8
ALL OTHER CAUSES (RESIDUAL		479	167	94	73	312
		71.2	24.8	14.0	10.8	46.3

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
BLACK, LESS THAN 2,500 GRAMS						
ALL CAUSES.....	90,779	8,153	6,298	5,486	812	1,855
		8,981.2	6,937.7	6,043.2	894.5	2,043.4
CONGENITAL ANOMALIES (740-759).....		751	550	438	112	201
		827.3	605.9	482.5	123.4	221.4
SUDDEN INFANT DEATH SYNDROME (798.0).....		412	20	1	19	392
		453.8	22.0	1.1	20.9	431.8
PREMATURITY (765).....		1,625	1,604	1,583	21	21
		1,790.1	1,766.9	1,743.8	23.1	23.1
RESPIRATORY DISTRESS SYNDROME (769).....		1,053	980	835	145	73
		1,160.0	1,079.5	919.8	159.7	80.4
MATERNAL COMPLICATIONS (761).....		424	422	421	1	2
		467.1	464.9	463.8	1.1	2.2
ACCIDENTS (E800-E949)....		75	11	8	3	64
		82.6	12.1	8.8	3.3	70.5
COMPLICATIONS OF PLACENTA, ETC..(762).....		234	232	226	6	2
		257.8	255.6	249.0	6.6	2.2
INFECTIONS (771).....		240	221	111	110	19
		264.4	243.4	122.3	121.2	20.9
HYPOXIA AND ASPHYXIA (768		134	125	112	13	9
		147.6	137.7	123.4	14.3	9.9
PNEUMONIA AND INFLUENZA (480-487).....		109	19	7	12	90
		120.1	20.9	7.7	13.2	99.1
ALL OTHER CAUSES (RESIDUAL		260	112	61	51	148
		286.4	123.4	67.2	56.2	163.0

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
BLACK, 2,500 GRAMS OR MORE						
ALL CAUSES.....	581,035	3,360	976	578	398	2,384
		578.3	168.0	99.5	68.5	410.3
CONGENITAL ANOMALIES (740-759).....		632	388	251	137	244
		108.8	66.8	43.2	23.6	42.0
SUDDEN INFANT DEATH SYNDROME (798.0).....		1,106	98	18	80	1,008
		190.3	16.9	3.1	13.8	173.5
PREMATURITY (765).....		29	28	28	-	1
		5.0	4.8	4.8	-	.2
RESPIRATORY DISTRESS SYNDROME (769).....		30	24	22	2	6
		5.2	4.1	3.8	.3	1.0
MATERNAL COMPLICATIONS (761).....		7	4	4	-	3
		1.2	.7	.7	-	.5
ACCIDENTS (E800-E949)....		217	9	2	7	208
		37.3	1.5	.3	1.2	35.8
COMPLICATIONS OF PLACENTA, ETC..(762).....		16	16	13	3	-
		2.8	2.8	2.2	.5	-
INFECTIONS (771).....		45	36	20	16	9
		7.7	6.2	3.4	2.8	1.5
HYPOXIA AND ASPHYXIA (768		62	52	31	21	10
		10.7	8.9	5.3	3.6	1.7
PNEUMONIA AND INFLUENZA (480-487).....		100	11	3	8	89
		17.2	1.9	.5	1.4	15.3
ALL OTHER CAUSES (RESIDUAL		212	49	27	22	163
		36.5	8.4	4.6	3.8	28.1

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DOCUMENTATION TABLE 5

LIVE BIRTHS BY BIRTH WEIGHT AND RACE OF MOTHER AND
INFANT DEATHS AND INFANT MORTALITY RATES BY
AGE AT DEATH, BIRTH WEIGHT, AND RACE OF MOTHER
FOR 10 MAJOR CAUSES OF INFANT DEATH:
UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS;
EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS;
AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 100,000 LIVE BIRTHS. FOR EACH CAUSE-OF-DEATH CATEGORY
THE NUMBER IS ON THE FIRST LINE AND THE RATE IS ON THE SECOND LINE)

CAUSE OF DEATH, BIRTH WEIGHT, AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
BLACK, NOT STATED BIRTH WEIGHT						
ALL CAUSES.....	1,394	466	437	419	18	29
		33,429.0	31,348.6	30,057.4	1,291.2	2,080.3
CONGENITAL ANOMALIES (740-759).....		24	21	19	2	3
		1,721.7	1,506.5	1,363.0	143.5	215.2
SUDDEN INFANT DEATH SYNDROME (798.0).....		7	-	-	-	7
		502.2	-	-	-	502.2
PREMATURITY (765).....		161	161	161	-	-
		11,549.5	11,549.5	11,549.5	-	-
RESPIRATORY DISTRESS SYNDROME (769)....		25	23	21	2	2
		1,793.4	1,649.9	1,506.5	143.5	143.5
MATERNAL COMPLICATIONS (761)		62	62	62	-	-
		4,447.6	4,447.6	4,447.6	-	-
ACCIDENTS (E800-E949).....		2	1	1	-	1
		143.5	71.7	71.7	-	71.7
COMPLICATIONS OF PLACENTA, ETC (762).....		17	17	17	-	-
		1,219.5	1,219.5	1,219.5	-	-
INFECTIONS (771).....		6	5	1	5	-
		430.4	430.4	71.7	358.7	-
HYPOXIA AND ASPHYXIA (768		15	13	11	2	2
		1,076.0	932.3	787.8	143.5	143.5
PNEUMONIA AND INFLUENZA (480-487).....		1				1
		71.7				71.7
ALL OTHER CAUSES (RESIDUAL		-				-
		502.2	430.4	430.4	-	71.7

1. INCLUDES RACES OTHER THAN WHITE AND BLACK

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Chapter 6

DOCUMENTATION TABLE 4

LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND AGE AT DEATH: UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS; EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS; AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)

(RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
ALL RACES 1/						
TOTAL.(ALL BIRTH WEIGHTS)	4,041,146	38,578	24,426	20,128	4,298	14,152
RATE..		9.5	6.0	5.0	1.1	3.5
< 2,500 GRAMS.....	284,521	22,981	18,397	15,999	2,398	4,584
RATE..		80.8	64.7	56.2	8.4	16.1
< 500 GRAMS.....	5,512	4,977	4,944	4,871	73	33
RATE..		902.9	897.0	883.7	13.2	6.0
500-749 GRAMS.....	9,312	6,280	5,726	5,191	535	554
RATE..		674.4	614.9	557.5	57.5	59.5
750-999 GRAMS.....	10,619	3,143	2,521	1,939	532	622
RATE..		296.0	237.4	187.3	50.1	58.6
1,000-1,249 GRAM..	12,197	1,821	1,335	1,016	319	486
RATE..		149.3	109.5	83.3	26.2	39.8
1,250-1,499 GRAM..	14,258	1,231	865	668	197	366
RATE..		86.3	60.7	46.9	13.8	25.7
1,500-1,999 GRAM..	54,308	2,425	1,497	1,167	330	928
RATE..		44.7	27.6	21.5	6.1	17.1
2,000-2,499 GRAM.....	178,315	3,104	1,509	1,097	412	1,595
RATE..		17.4	8.5	6.2	2.3	8.9
2,500-2,999 GRAMS...	649,012	4,685	1,786	1,162	624	2,899
RATE..		7.2	2.8	1.8	1.0	4.5
3,000-3,499 GRAMS...	1,477,635	5,426	1,689	1,014	675	3,737
RATE..		3.7	1.1	.7	.5	2.5
3,500-3,999 GRAMS...	1,183,054	3,180	1,003	613	390	2,177
RATE..		2.7	.8	.5	.3	1.8
4,000-4,499 GRAMS...	368,154	834	279	173	106	555
RATE..		2.3	.8	.5	.3	1.5
4,500-4,999 GRAMS...	65,196	197	82	52	30	115
RATE..		3.0	1.3	.8	.5	1.8
5,000- GRAMS.....	8,300	77	54	48	6	23
RATE..		9.3	6.5	5.8	.7	2.8
NOT STATED.....	5,274	1,198	1,136	1,067	69	62
RATE..		227.1	215.4	202.3	13.1	11.8

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DOCUMENTATION TABLE 4

LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND AGE AT DEATH: UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS; EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS; AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)
(RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
WHITE						
TOTAL.(ALL BIRTH WEIGHTS)	3,192,457	25,060	15,874	12,985	2,889	9,186
RATE..		7.8	5.0	4.1	.9	2.9
< 2,500 GRAMS.....	182,404	14,075	11,516	10,023	1,493	2,559
RATE..		77.2	63.1	54.9	8.2	14.0
< 500 GRAMS.....	2,970	2,714	2,699	2,660	39	15
RATE..		913.8	908.8	895.6	13.1	5.1
500-749 GRAMS.....	5,214	3,639	3,385	3,072	313	254
RATE..		697.9	649.2	589.2	60.0	48.7
750-999 GRAMS.....	6,159	1,969	1,646	1,326	320	323
RATE..		319.7	267.3	215.3	52.0	52.4
1,000-1,249 GRAM..	7,279	1,211	960	752	208	251
RATE..		166.4	131.9	103.3	28.6	34.5
1,250-1,499 GRAM..	8,770	827	611	487	124	216
RATE..		94.3	69.7	55.5	14.1	24.6
1,500-1,999 GRAM..	34,603	1,662	1,115	888	227	547
RATE..		48.0	32.2	25.7	6.6	15.8
2,000-2,499 GRAM..	117,409	2,053	1,100	838	262	953
RATE..		17.5	9.4	7.1	2.2	8.1
2,500-2,999 GRAMS...	455,051	3,126	1,328	886	442	1,798
RATE..		6.9	2.9	1.9	1.0	4.0
3,000-3,499 GRAMS...	1,152,667	3,841	1,263	770	493	2,578
RATE..		3.3	1.1	.7	.4	2.2
3,500-3,999 GRAMS...	1,005,115	2,459	794	491	303	1,665
RATE..		2.4	.8	.5	.3	1.7
4,000-4,499 GRAMS...	327,570	670	221	141	80	449
RATE..		2.0	.7	.4	.2	1.4
4,500-4,999 GRAMS...	58,747	154	61	34	27	93
RATE..		2.6	1.0	.6	.5	1.6
5,000- GRAMS.....	7,224	52	37	32	5	15
RATE..		7.2	5.1	4.4	.7	2.1
NOT STATED.....	2,073	681	654	608	46	27
RATE..		328.6	315.5	293.3	22.2	13.0

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DOCUMENTATION TABLE 4

LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND AGE AT DEATH: UNITED STATES, 1989 BIRTH COHORT

(INFANT DEATHS ARE UNDER 1 YEAR. NEONATAL DEATHS ARE UNDER 28 DAYS; EARLY NEONATAL, 0-6 DAYS; LATE NEONATAL, 7-27 DAYS; AND POSTNEONATAL, 28 DAYS THROUGH 11 MONTHS)
(RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT AND RACE OF MOTHER	LIVE BIRTHS	INFANT DEATHS	NEONATAL			POST NEO-NATAL
			TOTAL	EARLY	LATE	
BLACK						
TOTAL.(ALL BIRTH WEIGHTS)	673,208	11,979	7,711	6,483	1,228	4,268
RATE..		17.8	11.5	9.6	1.8	6.3
< 2,500 GRAMS.....	90,779	8,153	6,298	5,486	812	1,855
RATE..		89.8	69.4	60.4	8.9	20.4
< 500 GRAMS.....	2,403	2,138	2,122	2,090	32	16
RATE..		889.7	883.1	869.7	13.3	6.7
500-749 GRAMS.....	3,852	2,475	2,189	1,976	213	286
RATE..		642.5	568.3	513.0	55.3	74.2
750-999 GRAMS.....	4,146	1,065	782	590	192	283
RATE..		256.9	188.6	142.3	46.3	68.3
1,000-1,249 GRAM..	4,499	545	333	238	95	212
RATE..		121.1	74.0	52.9	21.1	47.1
1,250-1,499 GRAM..	4,967	363	228	161	67	135
RATE..		73.1	45.9	32.4	13.5	27.2
1,500-1,999 GRAM..	17,745	660	314	225	89	346
RATE..		37.2	17.7	12.7	5.0	19.5
2,000-2,499 GRAM..	53,167	907	330	206	124	577
RATE..		17.1	6.2	3.9	2.3	10.9
2,500-2,999 GRAMS...	159,428	1,349	385	226	159	964
RATE..		8.5	2.4	1.4	1.0	6.0
3,000-3,499 GRAMS...	253,469	1,301	357	205	152	944
RATE..		5.1	1.4	.8	.6	3.7
3,500-3,999 GRAMS...	133,425	542	159	93	66	383
RATE..		4.1	1.2	.7	.5	2.9
4,000-4,499 GRAMS...	29,383	119	46	27	19	73
RATE..		4.0	1.6	.9	.6	2.5
4,500-4,999 GRAMS...	4,578	29	16	15	1	13
RATE..		6.3	3.5	3.3	.2	2.8
5,000+ GRAMS.....	752	20	13	12	1	7
RATE..		26.6	17.3	16.0	1.3	9.3
NOT STATED.....	1,894	466	407	418	18	59
RATE..		334.3	313.6	300.6	12.9	20.8

1/ INCLUDES RACES OTHER THAN BLACK AND WHITE.

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DOCUMENTATION TABLE 3

LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION				
	TOTAL	< 28 WEEKS	28-31 WEEKS	32-35 WEEKS	36 WEEKS
ALL RACES 1/					
TOTAL					
LIVE BIRTHS.....	4,041,146	28,425	49,191	201,550	142,548
INFANT DEATHS.....	38,578	13,685	3,689	3,578	1,397
INF.MORT.RATE.....	9.5	481.4	75.0	17.8	9.8
LESS THAN 2,500 GRAMS					
LIVE BIRTHS.....	284,521	26,109	33,635	82,963	28,136
INFANT DEATHS.....	22,981	13,119	3,473	2,558	595
INF.MORT.RATE.....	80.8	502.5	103.3	30.8	21.1
LESS THAN 500 GRAMS					
LIVE BIRTHS.....	5,512	4,998	202	15	1
INFANT DEATHS....	4,977	4,548	179	15	0
INF. MORT. RATE..	902.9	910.0	886.1	1000.0	-
500-749 GRAMS					
LIVE BIRTHS.....	9,312	7,703	1,028	131	8
INFANT DEATHS....	6,280	5,404	527	60	6
INF. MORT. RATE..	674.4	701.5	512.6	458.0	750.0
750-999 GRAMS					
LIVE BIRTHS.....	10,619	6,494	3,005	469	60
INFANT DEATHS....	3,143	2,184	697	107	8
INF. MORT. RATE..	296.0	336.3	231.9	228.1	133.3
1,000-1,249 GRAMS					
LIVE BIRTHS.....	12,197	3,140	5,870	1,865	184
INFANT DEATHS....	1,821	647	749	238	27
INF. MORT. RATE..	149.3	206.1	127.6	127.6	146.7
1,250-1,499 GRAMS					
LIVE BIRTHS.....	14,258	1,184	7,076	3,866	444
INFANT DEATHS....	1,231	166	569	298	38
INF. MORT. RATE..	86.3	140.2	80.4	77.1	85.6
1,500-1,999 GRAMS					
LIVE BIRTHS.....	54,308	1,487	11,060	24,868	4,277
INFANT DEATHS....	2,425	140	559	884	171
INF. MORT. RATE..	44.7	94.1	50.5	35.5	40.0
2,000-2,499 GRAMS					
LIVE BIRTHS.....	178,315	1,103	5,394	51,749	23,162
INFANT DEATHS....	3,104	30	193	956	345
INF. MORT. RATE..	17.4	27.2	35.8	18.5	14.9
2,500-2,999 GRAMS					
LIVE BIRTHS.....	649,012	1,598	6,006	51,649	30,570
INFANT DEATHS.....	4,685	29	91	554	441
INF.MORT.RATE.....	7.2	18.1	15.2	10.7	9.7

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION				
	TOTAL	< 28 WEEKS	28-31 WEEKS	32-35 WEEKS	36 WEEKS
ALL RACES 1/					
3,000-3,499 GRAMS					
LIVE BIRTHS.....	1,477,635	-	6,407	42,213	42,198
INFANT DEATHS.....	5,426	-	58	287	226
INF.MORT.RATE.....	3.7	-	9.1	6.8	5.4
3,500-3,999 GRAMS					
LIVE BIRTHS.....	1,183,054	-	2,952	19,246	16,884
INFANT DEATHS.....	3,180	-	21	97	89
INF.MORT.RATE.....	2.7	-	7.1	5.0	5.3
4,000-4,499 GRAMS					
LIVE BIRTHS.....	368,154	-	-	4,437	3,875
INFANT DEATHS.....	834	-	-	20	25
INF.MORT.RATE.....	2.3	-	-	4.5	6.5
4,500-4,999 GRAMS					
LIVE BIRTHS.....	65,196	-	-	654	648
INFANT DEATHS.....	197	-	-	7	5
INF.MORT.RATE.....	3.0	-	-	10.7	7.7
5,000+ GRAMS					
LIVE BIRTHS.....	8,300	-	-	129	122
INFANT DEATHS.....	77	-	-	7	0
INF.MORT.RATE.....	9.3	-	-	54.3	-
NOT STATED					
LIVE BIRTHS.....	5,274	718	191	259	115
INFANT DEATHS.....	1,193	537	46	48	16
INF.MORT.RATE.....	227.2	747.9	240.8	185.3	139.1

SEE FOOTNOTES AT END OF TABLE.

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION				
	TOTAL	< 28 WEEKS	28-31 WEEKS	32-35 WEEKS	36 WEEKS
WHITE					
TOTAL					
LIVE BIRTHS.....	3,192,457	15,285	29,010	132,335	101,574
INFANT DEATHS.....	25,060	7,888	2,366	2,409	948
INF.MORT.RATE.....	7.8	516.1	81.6	18.2	9.3
LESS THAN 2,500 GRAMS					
LIVE BIRTHS.....	182,404	14,139	20,370	54,754	18,924
INFANT DEATHS.....	14,075	7,576	2,241	1,745	417
INF.MORT.RATE.....	77.2	535.8	110.0	31.9	22.0
LESS THAN 500 GRAMS					
LIVE BIRTHS.....	2,970	2,690	107	5	1
INFANT DEATHS....	2,714	2,483	96	5	0
INF. MORT. RATE..	913.8	923.0	897.2	1000.0	-
500-749 GRAMS					
LIVE BIRTHS.....	5,214	4,300	579	77	8
INFANT DEATHS....	3,639	3,136	303	34	6
INF. MORT. RATE..	697.9	729.3	523.3	441.6	750.0
750-999 GRAMS					
LIVE BIRTHS.....	6,159	3,664	1,800	292	30
INFANT DEATHS....	1,969	1,340	443	79	6
INF. MORT. RATE..	319.7	365.7	246.1	270.5	200.0
1,000-1,249 GRAMS					
LIVE BIRTHS.....	7,279	1,783	3,574	1,144	101
INFANT DEATHS....	1,211	428	500	166	16
INF. MORT. RATE..	166.4	240.0	139.9	145.1	158.4
1,250-1,499 GRAMS					
LIVE BIRTHS.....	8,770	583	4,520	2,381	313
INFANT DEATHS....	827	98	401	199	23
INF. MORT. RATE..	94.3	168.1	88.7	83.6	73.5
1,500-1,999 GRAMS					
LIVE BIRTHS.....	34,603	641	6,952	16,192	2,798
INFANT DEATHS....	1,662	79	376	620	122
INF. MORT. RATE..	48.0	123.2	54.1	38.3	43.6
2,000-2,499 GRAMS					
LIVE BIRTHS.....	117,409	478	2,838	34,663	15,673
INFANT DEATHS....	2,053	12	122	642	244
INF. MORT. RATE..	17.5	25.1	43.0	18.5	15.6
2,500-2,999 GRAMS					
LIVE BIRTHS.....	455,051	774	2,951	33,401	35,802
INFANT DEATHS.....	3,126	17	52	368	290
INF.MORT.RATE.....	6.9	22.0	17.6	11.0	8.1

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION				
	TOTAL	< 28 WEEKS	28-31 WEEKS	32-35 WEEKS	36 WEEKS
WHITE					
3,000-3,499 GRAMS					
LIVE BIRTHS.....	1,152,667	-	3,622	26,739	30,477
INFANT DEATHS.....	3,841	-	32	183	145
INF.MORT.RATE.....	3.3	-	8.8	6.8	4.8
3,500-3,999 GRAMS					
LIVE BIRTHS.....	1,005,115	-	1,964	13,346	12,614
INFANT DEATHS.....	2,459	-	14	50	62
INF.MORT.RATE.....	2.4	-	7.1	3.7	4.9
4,000-4,499 GRAMS					
LIVE BIRTHS.....	327,570	-	-	3,344	3,088
INFANT DEATHS.....	670	-	-	16	19
INF.MORT.RATE.....	2.0	-	-	4.8	6.2
4,500-4,999 GRAMS					
LIVE BIRTHS.....	58,747	-	-	493	514
INFANT DEATHS.....	154	-	-	5	5
INF.MORT.RATE.....	2.6	-	-	10.1	9.7
5,000+ GRAMS					
LIVE BIRTHS.....	7,224	-	-	95	77
INFANT DEATHS.....	52	-	-	3	0
INF.MORT.RATE.....	7.2	-	-	31.6	-
NOT STATED					
LIVE BIRTHS.....	3,679	372	103	163	78
INFANT DEATHS.....	683	295	27	38	10
INF.MORT.RATE.....	185.6	793.0	262.1	233.1	128.2

SEE FOOTNOTES AT END OF TABLE.

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION				
	TOTAL	< 28 WEEKS	28-31 WEEKS	32-35 WEEKS	36 WEEKS
BLACK					
TOTAL					
LIVE BIRTHS.....	673,208	12,358	18,415	60,210	34,604
INFANT DEATHS.....	11,979	5,428	1,209	1,026	372
INF.MORT.RATE.....	17.8	439.2	65.7	17.0	10.8
LESS THAN 2,500 GRAMS					
LIVE BIRTHS.....	90,779	11,269	12,196	25,169	8,096
INFANT DEATHS.....	8,153	5,190	1,130	716	155
INF.MORT.RATE.....	89.8	460.6	92.7	28.4	19.1
LESS THAN 500 GRAMS					
LIVE BIRTHS.....	2,403	2,185	89	10	-
INFANT DEATHS.....	2,138	1,954	78	10	-
INF. MORT. RATE....	889.7	894.3	876.4	1000.0	-
500-749 GRAMS					
LIVE BIRTHS.....	3,852	3,211	420	49	-
INFANT DEATHS.....	2,475	2,136	208	23	-
INF. MORT. RATE....	642.5	665.2	495.2	469.4	-
750-999 GRAMS					
LIVE BIRTHS.....	4,146	2,643	1,125	158	24
INFANT DEATHS.....	1,065	767	236	22	1
INF. MORT. RATE....	256.9	290.2	209.8	139.2	41.7
1,000-1,249 GRAMS					
LIVE BIRTHS.....	4,499	1,267	2,088	658	77
INFANT DEATHS.....	545	199	223	62	10
INF. MORT. RATE....	121.1	157.1	106.8	94.2	129.9
1,250-1,499 GRAMS					
LIVE BIRTHS.....	4,967	564	2,329	1,325	116
INFANT DEATHS.....	363	60	155	87	13
INF. MORT. RATE....	73.1	106.4	66.6	65.7	112.1
1,500-1,999 GRAMS					
LIVE BIRTHS.....	17,745	807	3,753	7,836	1,333
INFANT DEATHS.....	660	58	163	234	44
INF. MORT. RATE....	37.2	71.9	43.4	29.9	33.0
2,000-2,499 GRAMS					
LIVE BIRTHS.....	53,167	592	2,392	15,133	6,546
INFANT DEATHS.....	907	16	67	278	87
INF. MORT. RATE....	17.1	27.0	28.0	18.4	13.3
2,500 GRAMS AND OVER					
LIVE BIRTHS.....	582,429	764	6,219	35,041	26,508
INFANT DEATHS.....	3,826	238	80	290	217
INF.MORT.RATE.....	6.6	311.5	12.9	8.3	8.2

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION				
	TOTAL	< 28 WEEKS	28-31 WEEKS	32-35 WEEKS	36 WEEKS
BLACK					
3,000-3,499 GRAMS					
LIVE BIRTHS.....	253,469	-	2,484	13,146	9,739
INFANT DEATHS.....	1,301	-	20	90	60
INF.MORT.RATE.....	5.1	-	8.1	6.8	6.2
3,500-3,999 GRAMS					
LIVE BIRTHS.....	133,425	-	866	4,899	3,445
INFANT DEATHS.....	542	-	6	38	19
INF.MORT.RATE.....	4.1	-	6.9	7.8	5.5
4,000-4,499 GRAMS					
LIVE BIRTHS.....	29,383	-	-	846	630
INFANT DEATHS.....	119	-	-	2	6
INF.MORT.RATE.....	4.0	-	-	2.4	9.5
4,500-4,999 GRAMS					
LIVE BIRTHS.....	4,578	-	-	117	110
INFANT DEATHS.....	29	-	-	1	0
INF.MORT.RATE.....	6.3	-	-	8.5	-
5,000+ GRAMS					
LIVE BIRTHS.....	752	-	-	27	31
INFANT DEATHS.....	20	-	-	3	0
INF.MORT.RATE.....	26.6	-	-	111.1	-
NOT STATED					
LIVE BIRTHS.....	1,394	325	84	86	34
INFANT DEATHS.....	466	226	17	8	6
INF.MORT.RATE.....	334.3	695.4	202.4	93.0	176.5

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION					
	TOTAL	37-39 WEEKS	40 WEEKS	41 WEEKS	42 WEEKS OR MORE	NOT STATED
ALL RACES 1/						
TOTAL						
LIVE BIRTHS.....	4,041,146	1,617,847	893,514	571,848	478,267	57,956
INFANT DEATHS.....	38,578	7,442	3,084	1,909	2,187	1,607
INF.MORT.RATE.....	9.5	4.6	3.5	3.3	4.6	27.7
LESS THAN 2,500 GRAMS						
LIVE BIRTHS.....	284,521	74,716	14,884	7,772	10,240	6,066
INFANT DEATHS.....	22,981	1,569	336	205	295	831
INF.MORT.RATE.....	80.8	21.0	22.6	26.4	28.8	137.0
LESS THAN 500 GRAMS						
LIVE BIRTHS.....	5,512	1	5	1	4	285
INFANT DEATHS....	4,977	0	4	1	4	226
INF. MORT. RATE..	902.9	-	800.0	1000.0	1000.0	793.0
500-749 GRAMS						
LIVE BIRTHS.....	9,312	21	5	4	5	407
INFANT DEATHS....	6,280	10	5	1	5	262
INF. MORT. RATE..	674.4	476.2	1000.0	250.0	1000.0	643.7
750-999 GRAMS						
LIVE BIRTHS.....	10,619	139	69	35	38	310
INFANT DEATHS....	3,143	30	11	6	5	95
INF. MORT. RATE..	296.0	215.8	159.4	171.4	131.6	306.5
1,000-1,249 GRAMS						
LIVE BIRTHS.....	12,197	468	122	87	114	347
INFANT DEATHS....	1,821	54	15	8	18	65
INF. MORT. RATE..	149.3	115.4	123.0	92.0	157.9	187.3
1,250-1,499 GRAMS						
LIVE BIRTHS.....	14,258	862	170	108	185	363
INFANT DEATHS....	1,231	84	17	6	13	40
INF. MORT. RATE..	86.3	97.4	100.0	55.6	70.3	110.2
1,500-1,999 GRAMS						
LIVE BIRTHS.....	54,308	8,193	1,316	739	1,189	1,179
INFANT DEATHS....	2,425	433	63	50	57	68
INF. MORT. RATE..	44.7	52.8	47.9	67.7	47.9	57.7
2,000-2,499 GRAMS						
LIVE BIRTHS.....	178,315	65,032	13,197	6,798	8,705	3,175
INFANT DEATHS....	3,104	958	221	133	193	75
INF. MORT. RATE..	17.4	14.7	16.7	19.6	22.2	23.6
2,500-2,999 GRAMS						
LIVE BIRTHS.....	649,012	335,557	99,199	51,116	53,489	9,829
INFANT DEATHS.....	4,685	2,052	609	358	445	106
INF.MORT.RATE.....	7.2	6.3	6.1	7.0	8.3	10.8

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION					
	TOTAL	37-39 WEEKS	40 WEEKS	41 WEEKS	42 WEEKS OR MORE	NOT STATED
ALL RACES 1/						
3,000-3,499 GRAMS						
LIVE BIRTHS.....	1,477,635	672,561	335,927	191,604	166,792	19,933
INFANT DEATHS.....	5,426	2,341	1,109	625	662	118
INF.MORT.RATE.....	3.7	3.5	3.3	3.3	4.0	5.9
3,500-3,999 GRAMS						
LIVE BIRTHS.....	1,183,054	424,306	319,783	217,280	167,882	14,721
INFANT DEATHS.....	3,180	1,122	741	502	545	63
INF.MORT.RATE.....	2.7	2.6	2.3	2.3	3.2	4.3
4,000-4,499 GRAMS						
LIVE BIRTHS.....	368,154	102,149	103,900	84,749	64,465	4,579
INFANT DEATHS.....	834	227	211	162	172	17
INF.MORT.RATE.....	2.3	2.2	2.0	1.9	2.7	3.7
4,500-4,999 GRAMS						
LIVE BIRTHS.....	65,196	15,559	17,300	16,814	13,376	845
INFANT DEATHS.....	197	47	54	30	42	12
INF.MORT.RATE.....	3.0	3.0	3.1	1.8	3.1	14.2
5,000- GRAMS						
LIVE BIRTHS.....	8,300	2,047	1,994	2,130	1,726	152
INFANT DEATHS.....	77	15	12	11	7	25
INF.MORT.RATE....	9.3	7.3	6.0	5.2	4.1	164.5
NOT STATED						
LIVE BIRTHS.....	5,274	952	528	383	297	1,831
INFANT DEATHS.....	1,198	69	12	16	19	435
INF.MORT.RATE.....	227.2	72.5	22.7	41.8	64.0	237.6

SEE FOOTNOTES AT END OF TABLE.

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION					
	TOTAL	37-39 WEEKS	40 WEEKS	41 WEEKS	42 WEEKS OR MORE	NOT STATED
WHITE						
TOTAL						
LIVE BIRTHS.....	3,192,457	1,263,374	735,952	482,819	389,021	43,087
INFANT DEATHS.....	25,060	5,223	2,257	1,428	1,584	958
INF.MORT.RATE.....	7.8	4.1	3.1	3.0	4.1	22.2
LESS THAN 2,500 GRAMS						
LIVE BIRTHS.....	182,404	49,234	9,754	5,110	6,523	3,596
INFANT DEATHS.....	14,075	1,049	222	130	198	497
INF.MORT.RATE.....	77.2	21.3	22.8	25.4	30.4	138.2
LESS THAN 500 GRAMS						
LIVE BIRTHS.....	2,970	-	3	1	4	159
INFANT DEATHS.....	2,714	-	2	1	4	123
INF. MORT. RATE..	913.8	-	666.7	1000.0	1000.0	773.6
500-749 GRAMS						
LIVE BIRTHS.....	5,214	14	2	3	4	227
INFANT DEATHS.....	3,639	7	2	1	4	146
INF. MORT. RATE..	697.9	500.0	1000.0	333.3	1000.0	643.2
750-999 GRAMS						
LIVE BIRTHS.....	6,159	95	49	28	27	174
INFANT DEATHS.....	1,969	20	7	5	3	66
INF. MORT. RATE..	319.7	210.5	142.9	178.6	111.1	379.3
1,000-1,249 GRAMS						
LIVE BIRTHS.....	7,279	287	64	54	73	199
INFANT DEATHS.....	1,211	36	9	3	14	39
INF. MORT. RATE..	166.4	125.4	140.6	55.6	191.8	196.0
1,250-1,499 GRAMS						
LIVE BIRTHS.....	8,770	515	98	64	104	192
INFANT DEATHS.....	827	56	7	6	9	28
INF. MORT. RATE..	94.3	108.7	71.4	93.8	86.5	145.8
1,500-1,999 GRAMS						
LIVE BIRTHS.....	34,603	5,286	848	462	726	698
INFANT DEATHS.....	1,662	303	45	35	36	46
INF. MORT. RATE..	48.0	57.3	53.1	75.8	49.6	65.9
2,000-2,499 GRAMS						
LIVE BIRTHS.....	117,409	43,037	8,690	4,498	5,585	1,947
INFANT DEATHS.....	2,053	627	150	79	126	49
INF. MORT. RATE..	17.5	14.6	17.3	17.6	22.9	25.2
2,500-2,999 GRAMS						
LIVE BIRTHS.....	455,051	229,685	71,237	37,419	37,332	6,450
INFANT DEATHS.....	3,126	1,393	413	246	283	64
INF.MORT.RATE.....	6.9	6.1	5.8	6.6	7.6	9.9

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION					
	TOTAL	37-39 WEEKS	40 WEEKS	41 WEEKS	42 WEEKS OR MORE	NOT STATED
WHITE						
3,000-3,499 GRAMS						
LIVE BIRTHS.....	1,152,667	522,781	268,148	155,390	130,643	14,867
INFANT DEATHS.....	3,841	1,651	809	467	473	81
INF.MORT.RATE.....	3.3	3.2	3.0	3.0	3.6	5.4
3,500-3,999 GRAMS						
LIVE BIRTHS.....	1,005,115	356,472	275,548	190,006	143,073	12,092
INFANT DEATHS.....	2,459	863	579	410	437	44
INF.MORT.RATE.....	2.4	2.4	2.1	2.2	3.1	3.6
4,000-4,499 GRAMS						
LIVE BIRTHS.....	327,570	89,185	93,401	77,105	57,499	3,948
INFANT DEATHS.....	670	192	172	132	138	11
INF.MORT.RATE.....	2.0	2.0	1.8	1.7	2.4	2.8
4,500-4,999 GRAMS						
LIVE BIRTHS.....	58,747	13,626	15,714	15,507	12,160	733
INFANT DEATHS.....	154	33	45	24	37	5
INF.MORT.RATE.....	2.6	2.4	2.9	1.5	3.0	6.8
5,000- GRAMS						
LIVE BIRTHS.....	7,224	1,701	1,723	1,960	1,555	113
INFANT DEATHS.....	52	10	9	9	6	15
INF.MORT.RATE.....	7.2	5.9	5.2	4.6	3.9	132.7
NOT STATED						
LIVE BIRTHS.....	3,679	690	427	322	326	1,288
INFANT DEATHS.....	683	42	8	10	12	241
INF.MORT.RATE.....	185.6	60.9	18.7	31.1	50.8	187.1

SEE FOOTNOTES AT END OF TABLE.

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DOCUMENTATION TABLE 3

LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY
BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE:
UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION					
	TOTAL	37-39 WEEKS	40 WEEKS	41 WEEKS	42 WEEKS OR MORE	NOT STATED
BLACK						
TOTAL						
LIVE BIRTHS..........	673,208	276,461	120,749	68,524	71,296	10,591
INFANT DEATHS........	11,979	1,835	651	380	511	567
INF.MORT.RATE........	17.8	6.6	5.4	5.5	7.2	53.5
LESS THAN 2,500 GRAMS						
LIVE BIRTHS..........	90,779	21,930	4,406	2,320	3,325	2,068
INFANT DEATHS........	8,153	437	88	65	85	287
INF.MORT.RATE........	89.8	19.9	20.0	28.0	25.6	138.8
LESS THAN 500 GRAMS						
LIVE BIRTHS........	2,403	1	2	-	-	116
INFANT DEATHS......	2,138	0	2	-	-	94
INF. MORT. RATE....	889.7	-	1000.0	-	-	810.3
500-749 GRAMS						
LIVE BIRTHS........	3,852	7	2	1	1	161
INFANT DEATHS......	2,475	3	2	0	1	102
INF. MORT. RATE....	642.5	428.6	1000.0	-	1000.0	633.5
750-999 GRAMS						
LIVE BIRTHS........	4,146	40	15	7	9	125
INFANT DEATHS......	1,065	10	1	1	2	25
INF. MORT. RATE....	256.9	250.0	66.7	142.9	222.2	200.0
1,000-1,249 GRAMS						
LIVE BIRTHS........	4,499	159	54	32	36	128
INFANT DEATHS......	545	16	5	5	4	21
INF. MORT. RATE....	121.1	100.6	92.6	156.3	111.1	164.1
1,250-1,499 GRAMS						
LIVE BIRTHS........	4,967	307	63	38	76	149
INFANT DEATHS......	363	27	8	0	4	9
INF. MORT. RATE....	73.1	87.9	127.0	-	52.6	60.4
1,500-1,999 GRAMS						
LIVE BIRTHS........	17,745	2,546	410	241	421	398
INFANT DEATHS......	660	101	15	12	16	17
INF. MORT. RATE....	37.2	39.7	36.6	49.8	[illegible]	[illegible]
2,000-2,499 GRAMS						
LIVE BIRTHS........	53,167	18,870	3,860	2,001	[illegible]	[illegible]
INFANT DEATHS......	907	280	55	47	[illegible]	[illegible]
INF. MORT. RATE....	17.1	14.8	14.2	23.5	[illegible]	[illegible]
2,500-2,999 GRAMS						
LIVE BIRTHS..........	159,428	77,301	22,663	11,255	[illegible]	[illegible]
INFANT DEATHS........	1,349	572	163	91	[illegible]	[illegible]
INF.MORT.RATE........	8.5	7.4	7.2	8.1	[illegible]	14.7

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LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES BY BIRTH WEIGHT, RACE OF MOTHER, AND GESTATIONAL AGE: UNITED STATES, 1989 BIRTH COHORT (RATES ARE PER 1000 LIVE BIRTHS)

BIRTH WEIGHT	GESTATION					
	TOTAL	37-39 WEEKS	40 WEEKS	41 WEEKS	42 WEEKS OR MORE	NOT STATED
BLACK						
3,000-3,499 GRAMS						
LIVE BIRTHS.....	253,469	115,353	51,972	28,149	29,227	3,399
INFANT DEATHS.....	1,301	572	238	129	160	32
INF.MORT.RATE.....	5.1	5.0	4.6	4.6	5.5	9.4
3,500-3,999 GRAMS						
LIVE BIRTHS.....	133,425	50,632	32,653	20,266	19,002	1,662
INFANT DEATHS.....	542	191	123	62	90	13
INF.MORT.RATE.....	4.1	3.8	3.8	3.1	4.7	7.8
4,000-4,499 GRAMS						
LIVE BIRTHS.....	29,383	9,402	7,603	5,453	5,062	387
INFANT DEATHS.....	119	32	28	24	23	4
INF.MORT.RATE.....	4.0	3.4	3.7	4.4	4.5	10.3
4,500-4,999 GRAMS						
LIVE BIRTHS.....	4,578	1,383	1,172	909	820	67
INFANT DEATHS.....	29	9	6	4	3	6
INF.MORT.RATE.....	6.3	6.5	5.1	4.4	3.7	89.6
5,000+ GRAMS						
LIVE BIRTHS.....	752	245	196	121	102	30
INFANT DEATHS.....	20	3	3	2	0	9
INF.MORT.RATE.....	26.6	12.2	15.3	16.5	-	300.0
NOT STATED						
LIVE BIRTHS.....	1,394	215	84	51	47	468
INFANT DEATHS.....	466	19	2	3	6	179
INF.MORT.RATE.....	334.3	88.4	23.8	58.8	127.7	382.5

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK

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Chapter 6
DOCUMENTATION TABLE 2

LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES
BY RACE OF MOTHER, SEX, AND BIRTH WEIGHT OF CHILD:
UNITED STATES, 1989 BIRTH COHORT
(RATES ARE PER 1000 LIVE BIRTHS)

RACE OF MOTHER AND SEX	TOTAL	< 500 GRAMS	500-749 GRAMS	750-999 GRAMS	1000-1249 GRAMS
ALL RACES 1/					
BOTH SEXES					
LIVE BIRTHS.....	4,041,146	5,512	9,312	10,619	12,197
INFANT DEATHS...	38,578	4,977	6,280	3,143	1,821
INF.MORT.RATE...	9.5	902.9	674.4	296.0	149.3
MALE					
LIVE BIRTHS.....	2,069,590	2,686	4,588	5,531	6,221
INFANT DEATHS...	21,834	2,430	3,416	1,924	1,160
INF.MORT.RATE...	10.5	904.7	744.6	347.9	186.5
FEMALE					
LIVE BIRTHS.....	1,971,556	2,826	4,724	5,088	5,976
INFANT DEATHS...	16,744	2,547	2,864	1,219	661
INF.MORT.RATE...	8.5	901.3	606.3	239.6	110.6
WHITE					
BOTH SEXES					
LIVE BIRTHS.....	3,192,457	2,970	5,214	6,159	7,279
INFANT DEATHS...	25,060	2,714	3,639	1,969	1,211
INF.MORT.RATE...	7.8	913.8	697.9	319.7	166.4
MALE					
LIVE BIRTHS.....	1,637,655	1,440	2,597	3,299	3,730
INFANT DEATHS...	14,406	1,315	1,996	1,227	774
INF.MORT.RATE...	8.8	913.2	768.6	371.9	207.5
FEMALE					
LIVE BIRTHS.....	1,554,802	1,530	2,617	2,860	3,549
INFANT DEATHS...	10,654	1,399	1,643	742	437
INF.MORT.RATE...	6.9	914.4	627.8	259.4	123.1
BLACK					
BOTH SEXES					
LIVE BIRTHS.....	673,208	2,403	3,852	4,146	4,499
INFANT DEATHS...	11,979	2,138	2,475	1,065	545
INF.MORT.RATE...	17.8	889.7	642.5	256.9	121.1
MALE					
LIVE BIRTHS.....	341,753	1,181	1,863	2,055	2,279
INFANT DEATHS...	6,563	1,057	1,335	630	348
INF.MORT.RATE...	19.2	895.0	716.6	306.6	152.7
FEMALE					
LIVE BIRTHS.....	331,455	1,222	1,989	2,091	2,220
INFANT DEATHS...	5,416	1,081	1,140	435	197
INF.MORT.RATE...	16.3	884.6	573.2	208.0	88.7

1 INCLUDES RACES OTHER THAN WHITE AND BLACK

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DOCUMENTATION TABLE 2

LIVE BIRTHS, INFANT DEATHS, AND INFANT MORTALITY RATES
BY RACE OF MOTHER, SEX, AND BIRTH WEIGHT OF CHILD:
UNITED STATES, 1989 BIRTH COHORT
(RATES ARE PER 1000 LIVE BIRTHS)

RACE OF MOTHER AND SEX	TOTAL	1250-1499 GRAMS	1500-1999 GRAMS	2000-2499 GRAMS	2500 GRAMS OR MORE	NOT STATED
ALL RACES 1/						
BOTH SEXES						
LIVE BIRTHS	4,041,146	14,258	54,308	178,315	3,751,351	5,274
INFANT DEATHS	38,578	1,231	2,425	3,104	14,399	1,198
INF.MORT.RATE	9.5	86.3	44.7	17.4	3.8	227.2
MALE						
LIVE BIRTHS	2,069,590	7,267	26,838	81,162	1,932,499	2,798
INFANT DEATHS	21,834	729	1,336	1,658	8,464	717
INF.MORT.RATE	10.5	100.3	49.8	20.4	4.4	256.3
FEMALE						
LIVE BIRTHS	1,971,556	6,991	27,470	97,153	1,818,852	2,476
INFANT DEATHS	16,744	502	1,089	1,446	5,935	481
INF.MORT.RATE	8.5	71.8	39.6	14.9	3.3	194.3
WHITE						
BOTH SEXES						
LIVE BIRTHS	3,192,457	8,770	34,603	117,409	3,006,374	3,679
INFANT DEATHS	25,060	827	1,662	2,053	10,302	683
INF.MORT.RATE	7.8	94.3	48.0	17.5	3.4	185.6
MALE						
LIVE BIRTHS	1,637,655	4,552	17,264	53,830	1,549,014	1,929
INFANT DEATHS	14,406	489	922	1,140	6,126	417
INF.MORT.RATE	8.8	107.4	53.4	21.2	4.0	216.2
FEMALE						
LIVE BIRTHS	1,554,802	4,218	17,339	63,579	1,457,360	1,750
INFANT DEATHS	10,654	338	740	913	4,176	266
INF.MORT.RATE	6.9	80.1	42.7	14.4	2.9	152.0
BLACK						
BOTH SEXES						
LIVE BIRTHS	673,208	4,967	17,745	53,167	581,035	1,394
INFANT DEATHS	11,979	363	660	907	3,360	466
INF.MORT.RATE	17.8	73.1	37.2	17.1	5.8	334.3
MALE						
LIVE BIRTHS	341,753	2,419	8,581	23,704	298,920	751
INFANT DEATHS	6,563	215	358	444	1,908	268
INF.MORT.RATE	19.2	88.9	41.7	18.7	6.4	356.9
FEMALE						
LIVE BIRTHS	331,455	2,548	9,164	29,463	282,115	643
INFANT DEATHS	5,416	148	302	463	1,452	198
INF.MORT.RATE	16.3	58.1	33.0	15.7	5.1	307.9

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK

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Chapter 6
DOCUMENTATION TABLE 1

LIVE BIRTHS BY STATE OF OCCURRENCE AND BY STATE OF RESIDENCE
AND INFANT DEATHS BY STATE OF OCCURRENCE AND BY STATE OF RESIDENCE:
1989 BIRTH COHORT

(RESIDENCE AT BIRTH IS OF THE MOTHER. RESIDENCE AT DEATH IS OF THE DECEDENT)

AREA	LIVE BIRTHS		INFANT DEATHS			
			AT BIRTH		AT DEATH	
	OCCURRENCE	RESIDENCE	OCCURRENCE	RESIDENCE	OCCURRENCE	RESIDENCE
UNITED STATES	4,045,881	4,041,146	38,605	38,578	38,605	38,576
ALABAMA	61,914	62,568	761	768	778	765
ALASKA	11,524	11,666	101	103	98	104
ARIZONA	67,290	67,196	610	621	626	623
ARKANSAS	34,618	35,911	338	360	346	362
CALIF.	570,396	570,024	4,691	4,690	4,676	4,670
COLORADO	52,964	52,711	493	466	506	465
CONN.	49,348	49,471	429	425	418	426
DELAWARE	11,369	10,738	138	132	135	134
D.C.	22,220	11,789	408	253	475	259
FLORIDA	192,931	193,137	1,898	1,894	1,901	1,903
GEORGIA	111,359	110,272	1,360	1,361	1,342	1,353
HAWAII	19,428	19,367	153	147	151	147
IDAHO	15,830	15,883	147	162	127	158
ILLINOIS	186,851	190,310	2,089	2,155	2,059	2,162
INDIANA	83,594	83,475	822	851	824	846
IOWA	39,395	39,018	335	333	319	334
KANSAS	37,572	38,738	320	333	303	333
KENTUCKY	52,754	53,430	481	500	467	502
LOUISIANA	73,249	72,752	753	753	758	753
MAINE	16,874	17,466	117	124	113	126
MARYLAND	70,874	78,275	651	767	612	774
MASS.	93,381	91,548	720	704	752	700
MICHIGAN	146,715	148,557	1,604	1,616	1,611	1,624
MINNESOTA	67,255	67,519	473	470	498	472
MISS.	42,309	43,047	477	496	456	499
MISSOURI	79,877	77,880	819	766	886	764
MONTANA	11,432	11,673	116	130	96	131
NEBRASKA	24,517	24,216	206	196	224	194
NEVADA	19,378	19,606	162	161	163	159
NEW HAMP.	17,475	17,809	144	152	133	149

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DOCUMENTATION TABLE 1

LIVE BIRTHS BY STATE OF OCCURRENCE AND BY STATE RESIDENCE
AND INFANT DEATHS BY STATE OF OCCURRENCE AND BY STATE OF RESIDENCE:
1989 BIRTH COHORT

(RESIDENCE AT BIRTH IS OF THE MOTHER. RESIDENCE AT DEATH IS OF THE DECEDENT)

AREA	LIVE BIRTHS		INFANT DEATHS			
			AT BIRTH		AT DEATH	
	OCCURRENCE	RESIDENCE	OCCURRENCE	RESIDENCE	OCCURRENCE	RESIDENCE
NEW JERSEY	118,748	121,842	1,057	1,118	970	1,109
NEW MEXICO	26,937	27,356	227	226	216	235
NEW YORK	292,493	291,450	3,003	2,998	3,005	3,000
UPSTATE	155,240	158,613	1,307	1,339	1,276	1,336
CITY	137,253	132,837	1,696	1,659	1,729	1,664
N. CAROLINA	102,752	102,105	1,120	1,102	1,112	1,101
N. DAKOTA	10,871	9,570	84	77	86	77
OHIO	164,894	163,952	1,503	1,471	1,498	1,466
OKLAHOMA	46,379	47,385	358	368	345	367
OREGON	42,710	41,281	396	367	407	366
PENN.	169,872	168,828	1,667	1,619	1,760	1,622
RHODE ISLAND	15,377	14,768	154	147	152	146
S. CAROLINA	55,115	57,330	692	716	692	716
S. DAKOTA	11,108	11,086	113	114	102	112
TENNESSEE	77,678	73,178	878	779	880	782
TEXAS	312,280	307,665	2,679	2,666	2,688	2,654
UTAH	36,544	35,567	319	285	329	288
VERMONT	8,123	8,494	58	58	57	58
VIRGINIA	94,089	96,798	921	962	905	964
WASHINGTON	74,038	75,368	673	697	673	697
W. VIRGINIA	23,118	22,163	204	207	208	204
WISCONSIN	71,578	72,002	644	653	631	646
WYOMING	6,484	6,901	39	59	35	61
FOREIGN RESIDENTS	...	4,735	...	27	...	29

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Chapter 7
SOURCES OF DATA

Natality statistics

Since 1985 natality statistics for all States and the District of Columbia have been based on information from the total file of records. The information is received on computer data tapes coded by the States and provided to NCHS through the Vital Statistics Cooperative Program. NCHS receives these tapes from the registration offices of all States, the District of Columbia, and New York City. Information for Puerto Rico is also received on computer tapes through the Vital Statistics Cooperative Program. Information for the Virgin Islands and Guam is obtained from microfilm copies of original birth certificates and is based on the total file of records for all years.

Birth statistics presented in this report for years prior to 1951 and for 1955 are based on the total file of birth records. Statistics for 1951-54, 1956-66, and 1968-71 are based on 50-percent samples except for data for Guam and the Virgin Islands, which are based on all records filed. During the processing of the 1967 data the sampling rate was reduced from 50 percent to 20 percent. For details of this procedure and its consequences for the 1967 data see pages 3-9 to 3-11 in volume I of Vital Statistics of the United States, 1967. From 1972 to 1984 statistics are based on all records filed in the States submitting computer tapes and on a 50-percent sample of records in all other States.

Information for years prior to 1970 for Puerto Rico, the Virgin Islands, and Guam is published in the annual vital statistics reports of the Department of Health of the Commonwealth of Puerto Rico, the Department of Public Health of the Virgin Islands, the Department of Public Health and Social Services of the Government of Guam, and in selected Vital Statistics of the United States annual reports.

U.S. natality data are limited to births occurring within the United States, including those occurring to U.S. residents and nonresidents. Births to nonresidents of the United States have been excluded from all tabulations by place of residence beginning in 1970 (for further discussion see "Classification by occurrence and residence"). Births occurring to U.S. citizens outside the United States are not included in any tabulations in this report. Similarly the data for Puerto Rico, the Virgin Islands, and Guam are limited to births registered in these areas.

Standard Certificate of Live Birth

The U.S. Standard Certificate of Live Birth, issued by the Public Health Service, has served for many years as the principal means of attaining uniformity in the content of the documents used to collect information on births in the United States. It has been modified in each State to the extent required by the particular State's needs or by special provisions of the State's vital statistics law. However, most State certificates conform closely in content to the standard certificate.

The first standard certificate of birth was developed in 1900. Since then, it has been revised periodically by the national vital statistics agency through consultation with State health officers and registrars. Federal agencies concerned with vital statistics: national, State, and

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county medical societies; and others working in public health, social welfare, demography, and insurance. This procedure has assured careful evaluation of each item for its current and future usefulness for legal, medical, demographic, and research purposes. New items have been added when necessary, and old items have been modified to ensure better reporting or, in some cases, dropped when their usefulness appeared to be limited.

1989 revision--Effective January 1, 1989, a revised U.S. Standard Certificate of Live Birth (figure 4-A) replaced the 1978 revision. This revision provides a wide variety of new information on maternal and infant health characteristics, representing a significant departure from previous versions in both content and format. The most significant format change was the use of checkboxes to obtain detailed medical and health information about the mother and child. It has been demonstrated that this format produces higher quality and more complete information than do open-ended items.

The reformatted items included "Medical Risk Factors for This Pregnancy," which combines the former items "Complications of Pregnancy" and "Concurrent Illnesses or Conditions Affecting the Pregnancy." "Complications of Labor and/or Delivery" and "Congenital Anomalies of Child" also have been revised from the open-ended format. For each of these items at least 15 specific conditions have been identified.

Several new items have been added to the revised certificate. Included are items to obtain information on tobacco and alcohol use during pregnancy, weight gain during pregnancy, obstetric procedures, method of delivery, and abnormal conditions of the newborn. These items can be used to monitor the health practices of the mother that can affect pregnancy and the use of technology in childbirth, and to identify babies with specific abnormal conditions. When combined with other socioeconomic and health data, these new items will provide a wealth of information relevant to the etiology of low birthweight and other adverse pregnancy outcomes.

Another modification was the addition of an Hispanic identifier for the mother and father. Although NCHS had recommended that States add items to identify the Hispanic or ethnic origin of the newborn's parents concurrent with the 1978 revision of the U.S. Standard Certificate of Live Birth, and reported data from the cooperating States since that year, the item was new to the U.S. Standard Certificate for 1989.

The revised certificate also provides more detail than previously requested on the birth attendant and place of birth. This permits a more in-depth analysis of the number and characteristics of births by attendant and type of facility and a comparison of differences in outcome. For further discussion see individual sections for each item.

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Chapter 7
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Chapter 7
QUALITY OF DATA

Although vital statistics data are useful for a variety of administrative and scientific purposes, they cannot be correctly interpreted unless various qualifying factors and methods of classification are taken into account. The factors to be considered depend on the specific purposes for which the data are to be used. It is not feasible to discuss all the pertinent factors in the use of vital statistics tabulations, but some of the more important ones should be mentioned.

Most of the factors limiting the use of data arise from imperfections in the original records or from the impracticability of tabulating these data in very detailed categories. These limitations should not be ignored, but their existence does not vitiate the value of the data for most general purposes.

Completeness of registration

An estimated 99.2 percent of all births occurring in the United States in 1989 were registered; for white births registration was 99.4 percent complete and for all other births, 98.5 percent complete. These estimates are based on the results of the 1964-68 test of birth-registration completeness according to place of delivery (in or out of hospital) and race and on the 1989 proportions of births in these categories. The primary purpose of the test was to obtain current measures of registration completeness for births in and out of hospital by race on a national basis. Data for States were not available as they had been from the previous birth-registration tests in 1940 and 1950. A detailed discussion of the method and results of the 1964-68 birth-registration test is available

The 1964-68 test has provided an opportunity to revise the estimates of birth-registration completeness for the years since the previous test in 1950 to reflect the improvement in registration. This has been done using registration completeness figures from the two tests by place of delivery and race. Estimates of registration completeness for four groups (based on place of delivery and race) for 1951-65 were computed by interpolation between the test results. (It was assumed that the data from the more recent test are for 1966, the midpoint of the test period.) The results of the 1964-68 test are assumed to prevail for 1966 and later years. These estimates were used with the proportions of births registered in these categories to obtain revised numbers of births adjusted for underregistration for each year. The overall percent of birth-registration completeness by race was then computed. The figures for 1951-68 shown in table 1-3 differ slightly from those shown in annual reports for years prior to 1969.

Data adjusted for underregistration for 1951-59 shown in tables 1-1, 1-4, 1-5, 1-9, 1-10, and 1-11 have been revised to be consistent with the 1964-68 test results and differ slightly from data shown in annual reports for years before 1969. For these years the published number of births and birth rates for both racial groups have been revised slightly downward because the 1964-68 test indicated that previous adjustments to registered births were slightly inflated. Because registration completeness figures by age of mother and by live-birth order are not available from the 1964-68

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test, it must be assumed that the relationships among these variables have not changed since 1950.

Discontinuation of adjustment for underregistration, 1960-- Adjustment for underregistration of births was discontinued in 1960 when birth registration for the United States was estimated to be 99.1 percent complete. This removed a bias introduced into age-specific rates when adjusted births classified by age were used. Age-specific rates are calculated by dividing the number of births to an age group of mothers by the population of women in that age group. Tests have shown that population figures are likely to be understated through census undercounts; these errors compensate for underregistration of births. Adjustment for underregistration of births, therefore, removes the compensating effect of underenumeration, biasing the age-specific rates more than when uncorrected birth and population data are used. (For further details see page 4-11 in the Technical Appendix of volume I, Vital Statistics of the United States, 1963.)

The age-specific rates used in the cohort fertility tables (tables 1-15 through 1-22) are an exception to the above statement. These rates are computed from births corrected for underregistration and population estimates adjusted for underenumeration and misstatement of age. Adjusted birth and population estimates are used for the cohort rates because they are an integral part of a series of rates, estimated with a consistent methodology. It was considered desirable to maintain consistency with respect to the cohort rates, even though it means that they will not be precisely comparable with other rates shown for 5-year age groups.

Completeness of reporting

Interpretation of these data must include evaluation of item completeness. The percent "not stated" is one measure of the quality of the data. Completeness of reporting varies among items and States. See table A for the percent of birth records on which specified items were not stated.

Quality control procedures

States in the Vital Statistics Cooperative Program are required to have an error rate of less than 2.0 percent for each item for 3 consecutive data months during the initial qualifying period. Once a State is qualified, NCHS monitors the quality of data received through independent verification of a sample of records to ensure that the item error rate is not more than approximately 4 percent. In addition, there is verification at the State level before NCHS is sent the data.

After the coding is completed, counts of the taped records are balanced against control totals for each shipment of records from a registration area. Impossible codes are eliminated during the editing processes on the computer and corrected on the basis of reference to the source record or adjusted by arbitrary code assignment. All subsequent operations involved in tabulation and table preparation are verified during computer processing or by statistical clerks.

Small frequencies

The numbers of births reported for an area represent complete counts.

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As such, they are not subject to sampling error, although they are subject to errors in the registration process. However, when the figures are used for analytical purposes, such as the comparison of rates over a period of time or for different areas, the number of events that actually occurred may be considered as one of a large series of possible results that could have arisen under the same circumstances. The probable range of values may be estimated from the actual figures according to certain statistical assumptions.

In general, distributions of vital events may be assumed to follow the binomial distribution. Estimates of standard errors and tests of significance under this assumption are described in most standard statistics texts. When the number of events is large, the relative standard error, expressed as a percent of the number or rate, is usually small.

When the number of events is small (fewer than 100) and the probability of such an event is small, considerable caution must be observed in interpreting the conditions described by the figures. Events of rare nature may be assumed to follow a Poisson probability distribution. For this distribution, a simple approximation may be used to estimate the error as follows:

If N is the number of births and R is the corresponding rate, the chances are 19 in 20 that

1. The "true" number of events lies between

   N - 2√N and N + 2√N

2. The "true" rate lies between

   R - 2(R/√N) and R + 2(R/√N)

If the rate R1 corresponding to N1 events is compared with the rate R2 corresponding to N2 events, the difference between the two rates may be regarded as statistically significant at the 0.05 level if it exceeds

2 x [√ of (R1 squared/N1 + R2 squared/N2)]

For example, suppose that the observed birth rate for area A was 15.0 per 1000 population and that this rate was based on 50 recorded births. Given prevailing conditions, the chances are 19 in 20 that the "true" or underlying birth rate for that area lies between 10.8 and 19.2 per 1000 population. Let it be further proposed that the birth rate for area A of 15.0 per 1000 population is being compared with a rate of 20.0 per 1000 population for area B, which is based on 40 recorded births. Although the difference between the rates for the two areas is 5.0, this difference is less than twice the standard error of the difference

2 x [√ of 15.0 squared/50 + 20.0 squared/40]

of the two rates that is computed to be 7.6. From this, it is concluded that the difference between the rates for the two areas is not statistically significant

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Chapter 7
HISTORY OF BIRTH-REGISTRATION AREA

The national birth-registration area was proposed in 1850 and established in 1915. By 1933 all 48 States and the District of Columbia were participating in the registration system. The organized territories of Hawaii and Alaska were admitted in 1929 and 1950, respectively; data from these areas were prepared separately until they became States--Alaska in 1959 and Hawaii in 1960. Currently the birth-registration system of the United States covers the 50 States, the District of Columbia, the independent registration area of New York City, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands. However, in the statistical tabulations, "United States" refers only to the aggregate of the 50 States (including New York City) and the District of Columbia. Tabulations for Puerto Rico, the Virgin Islands, and Guam are shown separately in section 3 of this volume.

The original birth-registration area of 1915 consisted of 10 States and the District of Columbia. The growth of this area is indicated in table 4-1. This table also presents for each year through 1932 the estimated midyear population of the United States and of those States included in the registration system.

Because of the growth of the area for which data have been collected and tabulated, a national series of geographically comparable data before 1933 can be obtained only by estimation. Annual estimates of births have been prepared by P. K. Whelpton for 1909-34 (4) (table 1-1). These estimates include adjustments for underregistration and for States that were not part of the birth-registration area before 1933.

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Chapter 7
DEFINITION OF LIVE BIRTH

Definition of live birth

Every product of conception that gives a sign of life after birth, regardless of the length of the pregnancy, is considered a live birth. This concept is included in the definition set forth by the World Health Organization (1):

> Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered liveborn.

This definition distinguishes in precise terms a live birth from a fetal death (see the section on fetal deaths in the Technical Appendix of volume II, Vital Statistics of the United States). In the interest of comparable natality statistics, both the Statistical Commission of the United Nations and the National Center for Health Statistics (NCHS) have adopted this definition (2,3).

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Chapter 7
COMPUTATION OF RATES AND OTHER MEASURES

Population bases

The rates shown in this report were computed on the basis of population statistics prepared by the U.S. Bureau of the Census. Rates for 1940, 1950, 1960, 1970, and 1980 are based on the population enumerated as of April 1 in the censuses of those years. Rates for all other years are based on the estimated midyear (July 1) population for the respective years. Birth rates for the United States, individual States, and metropolitan areas are based on the total resident populations of the respective areas. Except as noted these populations exclude the Armed Forces abroad but include the Armed Forces stationed in each area.

The resident population of the birth- and death-registration States for 1900-32 and for the United States for 1900-89 is shown in table 4-1. In addition, the population including Armed Forces abroad is shown for the United States. Table B shows the sources for these populations.

Population estimates for 1981-89--The population of the United States by age, race, and sex for 1989 is shown in table 4-2. The population for each State is shown in table 4-3 and the monthly population figures were published in Current Population Reports, Series P-25, Number 1067. Comparable data for the U.S. population by age, race, and sex and for the State populations for 1981-88, were shown, respectively, in tables 4-2 and 4-3 of Vital Statistics of the United States, volume I, for those years. Comparable monthly population data for 1981-88 were shown in Current Population Reports, Series P-25, Numbers 931, 949, 961, 980, and 1001, 1021, 1023, and 1045. Data by race are consistent with the modified 1980 populations by race.

Populations for 1980-The population of the United States by age, race, and sex, and the population for each State are shown in tables 4-2 and 4-3 of Vital Statistics of the United States, 1980, volume I. The figures by race have been modified as described below. Monthly population figures were published in Current Population Reports, Series P-25, Number 899.

The racial counts in the 1980 census are affected by changes in racial reporting practices, particularly by the Hispanic population, and in coding and classifying racial groups in the 1980 census. One particular change has created a major inconsistency between the 1980 census data and historical data series, including censuses and vital statistics. About 40 percent of the Hispanic population counted in 1980, over 5.8 million persons, did not mark one of the specified races listed on the census questionnaire but marked the "Other" category. In the 1980 census, coding procedures were modified for persons who marked "Other" race and wrote in a national origin destination of a Latin American country or a specific Hispanic origin group in response to the racial question. These persons remained in the "Other" racial category in 1980 census data; in previous censuses and in vital statistics such responses were almost always coded into the "White" category.

To maintain comparability, the "Other" racial category in the 1980 census was reallocated to be consistent with previous procedures. Persons who marked the "Other" racial category and reported any Spanish origin on the Spanish origin question 5,841,648 persons were distributed to white and

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Table B. Sources for resident population and population including Armed Forces abroad: Birth-and death-registration States, 1900-1932, and United States, 1900-1989.

Year	Source
1989	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1057, Mar. 1990.
1988	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1045, Jan. 1990.
1986-87	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1022, Mar. 1988.
1985	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1000, Feb. 1987.
1984	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 985, Apr. 1986.
1983	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 965, Mar. 1985.
1982	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 949, May 1984.
1981	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 929, May 1983.
1980	U.S. Bureau of the Census, U.S. Census of Population: 1980, Number of Inhabitants, PC80-1-A1, United States Summary,1983.
1971-79	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 917, July 1982.
1970	U.S. Bureau of the Census, U.S. Census of Population: 1970, Number of Inhabitants, Final Report PC(1)-A1, United States Summary, 1971.
1961-69	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 519, Apr. 1974.
1960	U.S. Bureau of the Census, U.S. Census of Population: 1960, Number of Inhabitants, PC(1)-A1, United States Summary, 1964.
1951-59	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 310, June 30, 1965
1940-50	U.S. Bureau of the Census, Current Population Reports, Series P-25. No. 499, May 1973
1930-39	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 499, May 1973, and National Office of Vital Statistics, Vital Statistics Rates in the United States, 1900-1940, 1947
1920-29	National Office of Vital Statistics, Vital Statistics Rates in the United States, 1900-1940, 1947
1917-19	Same as for 1930-39.
1900-16	Same as for 1920-29.

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black races in proportion to the distribution of persons of Hispanic origin who reported their race to be white or black. This was done for each age-sex group.

As a result of this procedure, 5,705,155 persons were added to the white population and 135,493 persons to the black population. Persons who marked the "Other" racial category and reported that they were not of Spanish origin (916,338 persons) were distributed as follows: 20 percent in each age-sex group were added to the "Asian and Pacific Islander" category (183,268 persons) and 80 percent were added to the "White" category (733,070 persons). The count of American Indians, Eskimos, and Aleuts was not affected by these procedures. Unpublished tabulation of these modified census counts were obtained from the U.S. Bureau of the Census and used to compute the 1980 rates for this report, except for tables 1-15 through 1-22.

Population estimates for 1971-79--Birth rates for 1971-79 (except those for cohorts of women in tables 1-15 through 1-22) have been revised, based on revised population estimates that are consistent with the 1980 census levels, and thus may differ from rates published in volumes of Vital Statistics of the United States for these years. The 1980 census counted approximately 5.5 million more persons than had earlier been estimated for April 1, 1980 (14). The revised estimates for the United States by age, race, and sex were published by the U.S. Bureau of the Census in Current Population Reports, Series P-25, Number 917. Population estimates by month are based on data published in Current Population Reports, Series P-25, Number 899. Unpublished revised estimates for States were obtained from the U.S. Bureau of the Census.

Population estimates for 1961-69--Birth rates in this volume for 1961-69 (except for those shown in tables 1-5 and 1-6) are based on revised estimates of the population and thus may differ slightly from rates published before 1976. The revised estimates used in computing these rates were published in Current Population Reports, Series P-25, Number 519. The rates shown in tables 1-5 and 1-6 for 1961-64 are based on revised estimates of the population published in Current Population Reports, Series P-25, Numbers 321 and 324 and may differ slightly from rates published in those years.

Population estimates for 1951-59--Final intercensal estimates of the population by age, race, and sex and total population by State for 1951-59 are shown in tables 4-4 and 4-5 of volume I, Vital Statistics of the United States, 1966. Beginning with 1963 these final estimates have been used to compute birth rates for 1951-59 in all issues of Vital Statistics of the United States.

Net census undercounts and overcounts

The U.S. Bureau of the Census has conducted extensive research to evaluate the coverage of the U.S. population (including undercount, overcount, and misstatement of age, race, and sex) in the last five decennial censuses--1950, 1960, 1970, and 1980. These studies provide estimates of the national population that was not enumerated or overenumerated in the respective censuses, by age, race, and sex (15-17). The report for 1980 unpublished data from the Bureau of the Census) includes estimates of net underenumeration and overenumeration for age, sex and racial subgroups of the national population, modified for race consistency with previous population counts as described in the section

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"Populations for 1980."

These studies indicate that there is differential coverage in the censuses among the population subgroups; that is, some age, race, and sex groups are more completely enumerated than others. To the extent that these estimates of overcounts or undercounts are valid, that they are substantial, and that they vary among subgroups and geographic areas, census miscounts can have consequences for vital statistics measures (15). However, the effects of undercounts in the census are reduced to the extent that there is underregistration of births. If these two factors are of equal magnitude, rates based on unadjusted populations are more accurate than those based on adjusted populations because the births have not been adjusted for underregistration.

The impact of net census miscounts on vital statistics measures includes the effects on levels of the rates and effects on differentials among groups.

If adjustments were made for persons who were not counted in the census of population, the size of the denominators would generally increase and the rates would be smaller than without an adjustment. Adjusted rates for 1980 can be computed by multiplying the reported rates by ratios of the 1980 census-level population adjusted for the estimated net census miscounts, which are shown in table C. A ratio of less than 1.0 indicates a net census undercount and would result in a corresponding decrease in the rate. A ratio in excess of 1.0 indicates a net census overcount and would result in a corresponding increase in the rate.

Enumeration of white females in the childbearing ages was at least 99 percent complete for all ages. Among women of races other than white, the undercount ranged up to 4 percent. Generally, females in the childbearing ages were more completely enumerated than males for similar race-age groups.

If vital statistics measures were calculated with adjustments for net census miscounts for each of these subgroups, the resulting rates would have been differentially changed from their original levels; that is, rates for those groups with the greatest estimated overcounts or undercounts would show the greatest relative changes due to these adjustments. Thus the racial differential in fertility between the white and the "All other" population can be affected by such adjustments.

Cohort fertility tables

The various fertility measures shown for cohorts of women in tables 1-15 through 1-22 are computed from births adjusted for underregistration and population estimates corrected for underenumeration and misstatement of age. The data shown in this volume are not consistent with data published in annual reports before 1974. These data use revised population estimates prepared by the U.S. Bureau of the Census and have been expanded to include data for the two major racial groups. Heuser has prepared a detailed description of the methods used in deriving these measures as well as more detailed data for earlier years (18).

Parity distribution--The percent distribution of women by parity (number of children ever born alive to mother) shown in tables 1-17 and 1-21 is derived from cumulative birth rates by order of birth, which are shown in tables 1-16 and 1-20. The percent of zero-parity women is found by subtracting the cumulative first birth rate from 1,000 and dividing by 10

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Table C. Ratio of census-level resident population to resident population adjusted for estimated net census undercount by age, race, and sex: April 1, 1980

Age	All races			White		
	Both Sexes	Male	Female	Both Sexes	Male	Female
All ages	0.9862	0.9763	0.9958	0.9916	0.9839	0.9990
10-14 years	0.9978	0.9982	0.9974	1.0003	1.0008	0.9998
15-19 years	1.0011	0.9983	1.0034	1.0003	0.9976	1.0003
20-24 years	0.9834	0.9706	0.9965	0.9879	0.9769	0.9993
25-29 years	0.9742	0.9581	0.9908	0.9799	0.9673	0.9929
30-34 years	0.9850	0.9683	1.0020	0.9905	0.9778	1.0036
35-39 years	0.9776	0.9597	0.9955	0.9860	0.9730	0.9991
40-44 years	0.9743	0.9549	0.9937	0.9849	0.9706	0.9992
45-49 years	0.9734	0.9538	0.9926	0.9828	0.9690	0.9967
50-54 years	...	0.9638	...	...	0.9755	...
55 years and older	...	0.9865	...	...	0.9875	...
15-44 years	...	...	0.9973	...	...	0.9995
15-54 years	...	0.9683	...	...	0.9770	...

Age	All other					
	Total			Black		
	Both Sexes	Male	Female	Both Sexes	Male	Female
All ages	0.9543	0.9309	0.9765	0.9392	0.9103	0.9669
10-14 years	0.9858	0.9858	0.9859	0.9808	0.9807	0.9816
15-19 years	1.0051	1.0052	1.0055	0.9980	0.9958	1.0001
20-24 years	0.9590	0.9354	0.9819	0.9390	0.9076	0.9696
25-29 years	0.9422	0.9040	0.9786	0.9168	0.8695	0.9628
30-34 years	0.9519	0.9081	0.9931	0.9197	0.8638	0.9735
35-39 years	0.9248	0.8743	0.9736	0.8968	0.8322	0.9588
40-44 years	0.9107	0.8576	0.9614	0.8782	0.8135	0.9401
45-49 years	0.9124	0.8544	0.9669	0.8833	0.8139	0.9497
50-54 years	...	0.8759	...	...	0.8413	...
55 years and older	...	0.9779	...	...	0.9578	...
15-44 years	...	...	0.9848	...	...	0.9712
15-54 years	...	0.9157	...	...	0.8843	...

SOURCE: U.S. Bureau of the Census: Estimates of the population of the United States, by age, sex, and race: 1980 to 1985. Current Population Reports, Series P-25, No. 985. Washington, U.S. Government Printing Office, Apr. 1986.

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The proportions of women at parities one through six are found from the following formula:

$$\text{Percent at N parity} = \frac{(\text{cum. rate, order N}) - (\text{cum. rate, order N+1})}{10}$$

The percent of women at seventh higher parities is found by dividing the cumulative rate for seventh-order births by 10.

Birth probabilities--Shown in tables 1-18 and 1-22, birth probabilities indicate the likelihood that a woman of a certain parity and age at the beginning of the year will have a child during the year. Birth probabilities differ from central birth rates in that the denominator for birth probabilities is specific for parity as well as for age.

Age-sex-adjusted birth rates

The age-sex-adjusted birth rates shown in table 1-4 are computed by the direct method. The age distribution of women aged 10-49 years as enumerated in 1940 and the total population of the United States for that year are used as the standard populations. The birth rates by age of mother and race that are used to compute these adjusted rates are shown in table 1-9. The age-sex-adjusted birth rates show differences in the level of fertility independent of differences in the age and sex composition of the population. It is important not to confuse these adjusted rates with the crude rates shown in other tables.

Total fertility rate

The total fertility rate is the sum of the birth rates by age of mother (in 5-year age groups) multiplied by 5. It is an age-adjusted rate because it is based on the assumption that there are the same number of women in each age group. In table 1-9 the rate of 2,014 in 1989, for example, means that if a hypothetical group of 1,000 women were to have the same birth rates in each age group that were observed in the actual childbearing population in 1989, they would have a total of 2,014 children by the time they reached the end of the reproductive period (taken here to be age 50 years), assuming that all of the women survived to that age.

Intrinsic vital rates

The intrinsic vital rates shown in table 1-6 are calculated from a stable population. A stable population is that hypothetical population, closed to external migration, that would become fixed in age-sex structure after repeated applications of a constant set of age-sex specific birth and death rates. For the mathematical derivation of intrinsic vital rates, see pages 4-13 and 4-14 in the Technical Appendix of volume I, Vital Statistics of the United States, 1962. The technique of calculating intrinsic vital rates is described by Barclay(19).

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Seasonal adjustment of rates

The seasonally adjusted birth and fertility rates shown in table 1-8 are computed from the X-11 variant of Census Method II (20). This method of seasonal adjustment used since 1964 differs slightly from the U.S. Bureau of Labor Statistics (BLS) Seasonal Factor Method, which was used for Vital Statistics of the United States, 1964. The fundamental technique is the same in that it is an adaptation of the ratio-to-moving-average method. Before 1964 the method of seasonal adjustment was based on the X-9 variant and other variants of Census Method II. A comparison of the Census Method II with the BLS Seasonal Factor Method shows the differences in the seasonal patterns of births to be negligible.

Computation of percents, medians, and means

Percent distributions, medians, and means are computed using only events for which the characteristic is reported. The "Not stated" category is subtracted from the total before computation of these measures.

The asterisk (*) indicates that the numerator and/or denominator number is less than 20.

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Chapter 7
CLASSIFICATION OF DATA

One of the principal values of vital statistics data is realized through the presentation of rates that are computed by relating the vital events of a class to the population of a similarly defined class. Vital statistics and population statistics, therefore, must be classified according to similarly defined systems and tabulated in comparable groups. Even when the variables common to both, such as geographic area, age, race, and sex, have been similarly classified and tabulated, differences between the enumeration method of obtaining population data and the registration method of obtaining vital statistics data may result in significant discrepancies.

The general rules used to classify geographic and personal items for live births are set forth in "Vital Statistics Classification and Coding Instructions for Live Birth Records, 1990," NCHS Instruction Manual, Part 3a. The classification of certain important items is discussed in the following pages.

Classification by occurrence and residence

All but three tabulations for States and other areas within the United States are by place of mother's residence. These three tables (1-26, 1-27, and 2-1) show births by place of occurrence. Births to U.S. residents occurring outside this country are not reallocated to the United States. In tabulations by place of residence, births occurring within the United States to U.S. citizens and to resident aliens are allocated to the usual place of residence of the mother in the United States, as reported on the birth certificate. Beginning in 1970 births to nonresidents of the United States occurring in the United States are excluded from these tabulations. From 1966 to 1969 births occurring in the United States to mothers who were nonresidents of the United States were considered as births to residents of the exact place of occurrence; in 1964 and 1965 all such births were allocated to "balance of county" of occurrence even if the birth occurred in a city. The change in coding beginning in 1970 to exclude births to nonresidents of the United States from residence data significantly affects the comparability of data with years before 1970 only for Texas.

For the total United States the tabulations by place of residence and by place of occurrence are not identical. Births to nonresidents of the United States are included in data by place of occurrence but excluded from data by place of residence, as previously indicated.

Residence error--A nationwide test of birth-registration completeness in 1950 provided measures of residence error for natality statistics. According to this test, errors in residence reporting for the country as a whole tend to overstate the number of births to residents of urban areas and to understate the number of births to residents of other areas. This tendency has assumed special importance because of a concomitant development--the increased utilization of hospitals in cities by residents of nearby places--with the result that a number of births are erroneously reported as having occurred to residents of urban areas. Another factor that contributes to this overstatement of urban births is the customary procedure of using "city" addresses for persons living outside the city limits.

Incomplete residence--Beginning in 1973 where only the State of

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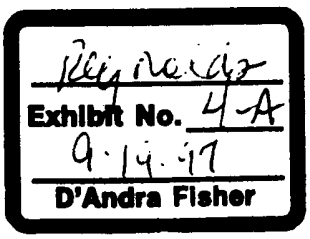

residence is reported with no city or county specified and the State named different from the State of occurrence, the birth is allocated to the largest city of the State of residence. Before 1973 such births were allocated to the exact place of occurrence.

Geographic classification

The rules followed in the classification of geographic areas for live births are contained in the instruction manual mentioned previously. The geographic code structure for 1990 is given in another manual, "Vital Records Geographic Classification, 1982," NCHS Instruction Manual, Part 8.

United States--In the statistical tabulations, "United States" refers only to the aggregate of the 50 States and the District of Columbia. Alaska has been included in the U.S. tabulations since 1959 and Hawaii since 1960.

Standard metropolitan statistical areas--The standard metropolitan statistical areas (SMSA's) used in this report are those established by the U.S. Office of Management and Budget (5) from final 1980 census population counts and used by the U.S. Bureau of the Census except in the New England States.

Except in the New England States, an SMSA is a county or a group of contiguous counties containing either a city of 50,000 with a total metropolitan population of at least 100,000. In addition to the county or counties containing such a city or urbanized area contiguous counties are included in an SMSA if, according to specified criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city or urbanized area (6).

In the New England States the U.S. Office of Management and Budget uses towns and cities rather than counties as geographic components of SMSA's. NCHS cannot, however, use the SMSA classification for these States because its data are not coded to identify all towns. Instead, the New England County Metropolitan Areas (NECMA's) are used. These areas are established by the U.S. Office of Management and Budget (7) and are made up of county units.

Metropolitan and nonmetropolitan counties--Independent cities and counties included in SMSA's or NECMA's are included in data for metropolitan counties; all other counties are classified as nonmetropolitan.

Population-size groups--Beginning in 1982 vital statistics data for cities and certain other urban places have been classified according to the population enumerated in the 1980 Census of Population. Data are available for individual cities and other urban places of 10,000 or more population. Data for the remaining areas not separately identified are shown in the tables under the heading "Balance of area" or "Balance of county." Classification of areas for 1970-81 was determined by the population enumerated in the 1970 Census of Population. As a result of changes in the enumerated population between 1970 and 1980, some urban places identified in previous reports are no longer included, and a number of other urban places have been added.

Urban places other than incorporated cities for which vital statistics data are shown in this report include the following:

Each town in New England, New York, and Wisconsin and each township in Michigan, New Jersey, and Pennsylvania that had

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no incorporated municipality as a subdivision and had either 25,000 inhabitants or more, or a population of 10,000 to 25,000 and a density of 1,000 persons or more per square mile.

Each county in States other than those indicated above that had no incorporated municipality within its boundary and had a density of 1,000 persons or more per square mile. (Arlington County, Virginia, is the only county classified as urban under this rule.)

Each place in Hawaii with 10,000 or more population. (There are no incorporated cities in Hawaii.)

Race or national origin

Beginning with the 1989 data year birth data are tabulated primarily by race of mother. In 1988 and prior years the race or national origin shown in tabulations was that of the newborn child. The race of the child was determined for statistical purposes by an algorithm based on the race of the mother and father as reported on the birth certificate. When the parents were of the same race, the race of the child was the same as the race of the parents. When the parents were of different races and one parent was white, the child was assigned to the race of the other parent. When the parents were of different races and neither parent was white, the child was assigned to the race of the father, with one exception--if either parent was Hawaiian, the child was assigned to Hawaiian. If race was missing for one parent, the child was assigned the race of the parent for whom it was reported. When information on race was missing for both parents, the race of the child was considered not stated and the birth was allocated according to rules discussed on page 4 of the Technical Appendix, volume I, Vital Statistics of the United States, 1988. In 1989 the criteria for reporting the race of the parents did not change and continues to reflect the response of the informant (usually the mother).

The most important factor influencing the decision to tabulate births by race of the mother is the decennial revision of the U.S. Standard Certificate of Live Birth in 1989. This revision includes many more health questions that are directly associated with the mother, including alcohol and tobacco use, weight gain during pregnancy, medical risk factors, obstetric procedures, complications of labor and/or delivery, and method of delivery. Additionally, many of the other items that have been on the birth certificate for more than two decades also relate directly to the mother, for example, marital status, education level, and receipt of prenatal care. It is more appropriate to use the race of the mother than the race of the child in tabulating these items.

A second factor has been the increasing incidence of interracial parentage. In 1989, 3.4 percent of births were to parents of different races, compared with just 1.0 percent in 1968. The majority of these births were to white mothers and fathers of another race. There have been two major consequences of the increasing interracial parentage. One is the effect on birth rates by race. The number of white births under the former procedures has been arbitrarily limited to infants whose parents were both white (or one parent if the race of only one parent was reported). At the

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same time, the number of births of other races has been arbitrarily increased to include all births to white mothers and fathers of other races. Thus, if race of mother had been used, birth rates per 1,000 white women in a given age group would have been higher, while comparable rates for black women and women of other races would have been lower. The other consequence of increasing interracial parentage is the impact on the racial differential in various characteristics of births, particularly in cases where there is generally a large racial disparity, such as the incidence of low birthweight. In this instance, the racial differential is larger when the data are tabulated by race of mother rather than by race of child. The same effect has been noted for characteristics such as nonmarital childbearing, preterm births, late or no prenatal care, and low educational attainment of mother.

The third factor influencing the change is the growing proportion of births with race of father not stated, 15 percent in 1989 compared with 7 percent in 1968. This reflects the increase in the proportion of births to unmarried women; in many cases no information is reported on the father. These births are already assigned the race of the mother on a de facto basis. Tabulating births by race of mother will provide a more uniform approach, rather than a necessarily arbitrary combination of parental races.

The difference in the number of births classified by race of mother rather than by race of child varies among the specific groups, reflecting differences in the extent of mixed parentage. With the new classification by race of mother, the number of births classified as white will go up and the number for all other racial groups will go down. The percent difference in the number of live births by race of mother compared with race of child for 1989 are as follows:

White	1.9
Black	- 5.1
American Indian	-19.9
Chinese	- 6.8
Japanese	-17.8
Hawaiian	-31.0
Filipino	- 5.7
Other Asian or Pacific Islander	- 7.9

This change in the tabulation of births by race presents some problems when analyzing birth data by race, particularly trend data. The problem is likely to be acute for races other than white and black. To facilitate continuity and analysis of the data, key published tables for births in this volume, including all trend tables, show 1989 data for both race of mother and race of child. This makes it possible to distinguish the effects of this change from real changes in the data.

The categories for race or national origin are "White," "Black," "American Indian," "Chinese," "Japanese," "Hawaiian," "Filipino," "Other Asian or Pacific Islander," and "Other." Before 1978 the category "Other Asian or Pacific Islander" was not identified separately but included with "Other" races. The separation of this category allows identification of the category "Asian or Pacific Islander" by combining the new category "Other Asian or Pacific Islander" with Chinese, Japanese, Hawaiian, and Filipino.

White--The category "White" comprises births reported as white and births where race is reported as Hispanic. Before 1964 all births for which

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race or national origin was not stated were classified as white. Beginning in 1964 changes in the procedures for allocating race when race or national origin is not stated have changed the composition of this category. (See discussion on "Race or national origin not stated.")

All other--The category "All other" comprises black, American Indian, Chinese, Japanese, Hawaiian and part-Hawaiian, Filipino, other Asian or Pacific Islander including Asian Indian, and "Other." Aleuts and Eskimos are included in "American Indian."

If the race or national origin of an Asian parent is ill-defined or not clearly identifiable with one of the categories used in the classification (for example, if "Oriental" is entered), an attempt is made to determine the specific race or national origin from the entry for place of birth. If the birthplace is China, Japan, or the Philippines, the race of the parent is assigned to that category. When race cannot be determined from birthplace, it is assigned to the category "Other Asian or Pacific Islander."

Race or national origin not stated--If the race of the mother is not defined or not identifiable with one of the categories used in the classification and the race of the father is known, the race of the father is assigned to the mother. Where information for both parents is missing, the race of the mother is allocated electronically according to the specific race of the mother on the preceding record with a known race of mother. Data for both parents were missing for only 0.3 percent of birth certificates for 1989.

Nearly all statistics by race or national origin for the United States as a whole in 1962 and 1963 are affected by a lack of information for New Jersey, which did not report the race of the parents in those years. Birth rates by race for those years are computed on a population base that excluded New Jersey. For the method of estimating the U.S. population by age, sex, and race excluding New Jersey in 1962 and 1963, see page 4-8 in the Technical Appendix of volume I, Vital Statistics of the United States, 1963. Estimates of births to unmarried mothers by race for the United States, which include special estimates for New Jersey for 1962 and 1963, have been prepared and are shown in table 1-76 of this report.

Age of mother

Beginning in 1989 an item on the birth certificate asks for "Date of Birth." In previous years, "Age (at time of this birth)" was requested. Not all States have revised this item for 1989, and therefore the age of mother either is derived from the reported month and year of birth or coded as stated on the certificate. The age of mother is edited for upper and lower limits. When the age of mother is computed to be under 10 years or 50 years or over, it is considered not stated and is assigned as described below.

Age-specific birth rates shown in this report are based on populations of women by age, prepared by the U.S. Bureau of the Census. In census years the decennial census counts are used. In intercensal years, estimates of the population of women by age are published by the U.S. Bureau of the Census in Current Population Reports.

The 1980 Census of Population derived age in completed years as of April 1, 1980 from the responses to questions on age at last birthday and month and year of birth, with the latter given preference. In the 1960,

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1970, and the 1980 Census of Population, age was also derived from month and year of birth. "Age in completed years" was asked in censuses before 1960. This was nearly the equivalent of the former birth certificate question, which the 1950 test of matched birth and census records confirms by showing a high degree of consistency in reporting age in these two sources (8).

Median age of mother--Median age is the value that divides an age distribution into two equal parts, one-half of the values being less and one-half being greater. Median ages of mothers for 1960 to the present have been computed from birth rates for 5-year age groups rather than from birth frequencies. This method eliminates the effects of changes in the age composition of the childbearing population over time. Changes in the median ages from year to year can thus be attributed solely to changes in the age-specific birth rates.

Not stated date of birth of mother--Beginning in 1964 birth records with date of birth of mother and/or age of mother not stated have had age imputed according to the age of mother from the previous birth record of the same race and total-birth order (total of fetal deaths and live births). (See "Vital Statistics Computer Edits for Natality Data," NCHS Instruction Manual, Part 12, page 9.) In 1963 birth records with age not stated were allocated according to the age appearing on the record previously processed for a mother of identical race and parity (number of live births). For 1960-62 not stated ages were distributed in proportion to the known ages for each racial group. Before 1960 this was done for age-specific birth rates but not for the birth frequency tables, which showed a separate category for age not stated.

Age of father

Age of father is derived from the reported date of birth or coded as stated on the birth certificate. If the age is under 10 years, it is considered not stated and grouped with those cases for which age is not stated on the certificate. Information on age of father is often missing on birth certificates of children born to unmarried mothers, greatly inflating the number of "not stated" in all tabulations by age of father. In computing birth rates by age of father, births tabulated as age of father not stated are distributed in the same proportions as births with known age within each 5-year-age classification of the mother. This procedure is done separately by race. The resulting distributions are summed to form a composite frequency distribution that is the basis for computing birth rates by age of father. This procedure avoids the distortion in rates that would result if the relationship between age of mother and age of father were disregarded.

Live-birth order and parity

Live-birth order and parity classifications shown in this volume refer to the total number of live births the mother has had including the 1989 birth. Fetal deaths are excluded. Live-birth order indicates what number the present birth represents; for example, a baby born to a mother who has had two previous live births (even if one or both are not now living) has a live-birth order of three. Parity indicates how many live births a mother has had. Before delivery a mother having her first baby has a parity of zero

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and a mother having her third baby has a parity of two. After delivery the mother of a baby who is a first live birth has a parity of one and the mother of a baby who is a third live birth has a parity of three.

Live-birth order and parity are determined from two items on the birth certificate, "Live births--now living" and "Live births--now dead."

Not stated birth order--Before 1969 if both of these items were blank, the birth was considered a first birth. Beginning in 1969, births for which the pregnancy history items were not completed have been tabulated as live-birth order not stated. As a result of this revised procedure, 22,686 births in 1969 that would have been assigned to the "First birth order" category under the old rules were assigned to the "Not stated" category.

All births tabulated in the "Not stated birth order" category are excluded from the computation of percents. In computing birth rates by live-birth order, births tabulated as birth order not stated are distributed in the same proportion as births of known live-birth order.

Date of last live birth

The date of last live birth was added to the U.S. Standard Certificate of Live Birth in 1968 for the purpose of providing information on child spacing. The interval since the last live birth is the difference between the date of last live birth and the date of present birth. For an interval to be computed, both the month and year of the last live birth must be valid. This interval is computed only for events to mothers who have had at least one previous live birth.

Births for which the interval since last live birth is not stated are excluded from the computation of percents and means.

Zero interval--An interval of zero months since the last live birth indicates the second born of a set of twins, the second or third born of a set of triplets, and so forth. Births with an interval of zero months are excluded from the computation of mean intervals.

Educational attainment

Data on the educational attainment of both parents were collected beginning in 1968 and tabulated for publication in 1969 for the first time. In 1990 data on education were obtained from 48 States, New York City, and the District of Columbia as indicated in table A.

The educational attainment of either parent is defined as "the number of years of school completed." Only those years completed in "regular" schools are counted, that is, a formal educational system of public schools or the equivalent in accredited private or parochial schools. Business or trade schools, such as beauty and barber schools, are not considered "regular" schools for the purposes of this item. No attempt has been made to convert years of school completed in foreign school systems, ungraded school systems, and so forth, to equivalent grades in the American school system. Such entries are included in the category "Not stated."

Persons who have completed only a partial year in high school or college are tabulated as having completed the highest preceding grade. For those certificates on which a specific degree is stated, years of school completed is coded to the level at which the degree is most commonly attained; for example, persons reporting B.A., A.B., or B.S. degrees are

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considered to have completed 16 years of school.

Education not stated--The category "Not stated" includes all records in reporting areas for which there is no information on years of school completed as well as all records for which the information provided is not compatible with coding specifications.

Births tabulated as education not stated are excluded from the computations of percents.

Marital status

Beginning with 1980 data, national estimates of births to unmarried women are derived from two sources. In 1989 marital status was reported directly on the birth certificates of 44 States and the District of Columbia. In the remaining six States, which lack such an item (California, Connecticut, Michigan, Nevada, New York, and Texas), marital status is inferred from a comparison of the child's and parents' surnames. This procedure represents a substantial departure from the method used before 1980 to prepare national estimates of births to unmarried women, which assumed that the incidence of births to unmarried women in States with no direct question on marital status was the same as the incidence in reporting States in the same geographic division.

The current method uses related information on the birth certificate to improve the quality of national data on this topic, as well as to provide data for the individual nonreporting States. Beginning in 1980 a birth in a nonreporting State is classified as occurring to a married woman if the parents' surnames are the same, or if the child's and father's surnames are the same and the mother's current surname cannot be obtained from the informant item of the birth certificate. A birth is classified as occurring to an unmarried woman if the father's name is missing, if the parents' surnames are different, or if the father's and child's surnames are different and the mother's current surname is missing.

Because of the continued substantial increases in nonmarital childbearing throughout the 1980's, the data have been intensively evaluated in each year, 1985-89. There has been continuing concern that the current method might overstate the number of births to unmarried women because it incorporates data based on a comparison of surnames. This is because births to women who have retained their maiden surname as their legal surname after marriage would be classified as nonmarital births. The evaluation included comparisons of trends in all measures of births to unmarried mothers in States with a marital status item on the birth certificate and those States providing inferential data based on the comparison of surnames. Comparisons were made for white and black births separately and by age of mother. The results for years 1985-88 were remarkably similar for both data sets. Nonmarital births increased at virtually the same rate for white and black women and for the various age-of-mother groups. For 1989 however, the results of the evaluation have been generally similar in both the reporting States and the States using inferential data, nonmarital births have increased at a slightly faster rate in the States with a marital status item on the birth certificate than in the States providing inferential data. This pattern was observed for both white and black births.

No adjustments are made during the data processing for errors in the reporting of marital status on the birth records of the 44 reporting States and the District of Columbia because the extent of this reporting proble

Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989

[By place of residence]

Area	Number of births	Place of birth	Attendant at birth	Mother's birth-place	Father's age
Total of reporting areas 1/	4,040,958	0.1	0.2	0.2	16.3
Alabama	62,568	-	0.1	0.1	29.8
Alaska	11,666	0.0	.4	.9	14.5
Arizona	67,196	.0	1.8	.2	19.4
Arkansas	35,911	.0	.3	.5	18.1
California	569,992	.0	.0	.1	6.8
Colorado	52,711	.0	-	.0	19.7
Connecticut	49,464	.0	.1	.8	11.9
Delaware	10,730	.0	.4	.0	27.9
D.C.	11,789	.0	14.1	.5	63.1
Florida	193,131	.6	.0	.2	17.9
Georgia	110,272	.0	.0	.1	18.1
Hawaii	19,367	-	.0	.1	10.6
Idaho	15,883	.0	.0	.2	9.1
Illinois	190,308	.0	.1	.1	14.8
Indiana	83,469	.0	.5	.4	19.6
Iowa	39,018	.0	.0	.1	15.3
Kansas	38,737	-	.0	.0	10.2
Kentucky	53,424	.0	.0	.2	21.7
Louisiana	72,752	-	.0	.0	29.5
Maine	17,466	.0	.0	.1	13.5
Maryland	78,265	.0	3.7	.7	6.0
Massachusetts	91,523	.0	.1	.0	13.5
Michigan	148,520	.2	.2	.2	24.6
Minnesota	67,518	.0	.0	.1	10.2
Mississippi	43,047	.0	.0	.1	30.5
Missouri	77,872	.0	.0	.2	24.4
Montana	11,678	.0	.0	.0	11.1
Nebraska	24,216	.0	.0	.0	12.1
Nevada	19,606	-	.0	.3	19.9
New Hampshire	17,809	.0	.0	-	9.0
New Jersey	121,841	.3	.3	.0	13.6
New Mexico	27,353	-	.0	.8	25.2
New York	291,449	.0	.3	.2	19.1
N. Carolina	102,105	-	.0	.0	18.4
N. Dakota	9,570	-	-	.0	8.6
Ohio	163,962	.0	.1	.3	19.8
Oklahoma	47,385	.0	.0	.1	17.1
Oregon	41,281	.0	.0	.0	19.1

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989
[By place of residence]

Area	Number of births	Place of birth	Attendant at birth	Mother's birth-place	Father's age
Total of reporting areas 1/	4,040,958	0.1	0.2	0.2	16.3
Pennsylvania	168,803	.0	.0	.4	6.3
Rhode Island	14,768	-	-	.1	13.9
S. Carolina	57,330	-	.0	.2	29.3
S. Dakota	11,086	.0	.0	.1	12.4
Tennessee	73,178	-	.0	.1	21.0
Texas	307,664	.1	.2	.2	19.3
Utah	35,567	-	.0	.1	8.6
Vermont	8,494	-	.1	.4	5.0
Virginia	96,798	.0	.4	.2	23.9
Washington	75,360	.0	.5	.7	19.7
West Virginia	22,163	-	.1	.4	21.3
Wisconsin	72,002	.0	.0	.0	18.4
Wyoming	6,901	.0	-	.2	10.9
Puerto Rico	66,558	-	.3	.1	1.3
Virgin Islands	2,276	.1	5.4	.2	30.2
Guam	3,535	-	.1	.3	24.4

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989
[By place of residence]

Area	Number of births	Hispanic Origin		Educational attainment		Live-birth order
		Mother	Father	Mother	Father	
Total of reporting areas 1/	4,040,958	1.9	15.6	3.6	19.0	0.6
Alabama	62,568	0.2	29.9	1.1	31.2	0.3
Alaska	11,666	.1	11.8	1.5	14.8	.1
Arizona	67,196	.4	22.7	4.0	26.1	.1
Arkansas	35,911	.8	18.4	1.7	19.2	.4
California	569,992	.5	3.0	1.4	5.7	.1
Colorado	52,711	.1	20.6	.9	20.4	.1
Connecticut	49,464	9.4	19.1	14.2	23.8	9.2
Delaware	10,730	.1	28.4	.3	29.3	.1
D.C.	11,739	.4	63.3	.6	63.7	.3
Florida	193,131	.3	19.4	.9	20.5	.2
Georgia	110,272	.6	19.5	.7	20.5	.1
Hawaii	19,367	.0	10.4	.2	10.8	.0
Idaho	15,883	.3	9.1	2.3	11.6	.2
Illinois	190,308	1.6	7.4	.5	13.5	.1
Indiana	83,469	.4	16.8	.8	18.8	.2
Iowa	39,018	.1	16.7	.3	18.3	.1
Kansas	38,737	1.3	11.8	.3	10.9	.0
Kentucky	53,424	.8	22.7	.6	22.2	.2
Louisiana	72,752	...	...	.3	29.9	.1
Maine	17,466	5.8	19.2	.4	14.4	.1
Maryland	78,265	3.1	7.2	4.1	11.4	1.8
Massachusetts	91,523	1.1	13.0	.7	13.1	.4
Michigan	148,520	4.8	29.3	.5	25.3	.1
Minnesota	67,518	8.5	17.9	5.1	17.7	1.1
Mississippi	43,047	1.0	31.5	.3	31.3	.0
Missouri	77,872	.2	18.5	.9	21.4	.0
Montana	11,678	4.2	15.3	.7	12.0	.1
Nebraska	24,216	1.2	13.3	.1	12.3	.0
Nevada	19,606	.1	19.9	.6	20.4	.2
New Hampshire	17,309	...	...	.7	9.9	.1
New Jersey	121,841	.2	11.8	6.6	19.4	1.2
New Mexico	27,353	.0	24.0	3.3	28.4	1.1
New York	291,449	3.5	19.6	3/ 6.2	3/ 27.7	2.4
N. Carolina	102,105	.2	18.2	.1	18.4	.1
N. Dakota	9,570	.6	10.3	.1	9.9	.0
Ohio	168,952	.1	12.9	.7	13.8	.2
Oklahoma	47,335	...	...	5.4	23.2	4.9
Oregon	41,281	.1	14.3	1.7	19.2	.1

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989

[By place of residence]

Area	Number of births	Hispanic Origin		Educational attainment		Live-birth order
		Mother	Father	Mother	Father	
Total of reporting areas 1/	4,040,958	1.9	15.6	3.6	19.0	0.6
Pennsylvania	168,803	.1	1.9	1.5	5.6	.1
Rhode Island	14,768	4/ 19.2	4/ 30.0	1.6	15.2	1.0
S. Carolina	57,330	.1	28.1	1.6	30.3	.0
S. Dakota	11,086	.1	13.9	.2	14.0	.0
Tennessee	73,178	.0	20.9	.4	21.2	.0
Texas	307,664	.2	19.8	5/ 24.8	5/ 39.7	.1
Utah	35,567	.1	7.2	.7	9.2	.9
Vermont	8,494	12.6	15.6	1.6	6.8	3.1
Virginia	96,798	5/ 23.3	5/ 41.4	.5	24.4	.2
Washington	75,360	2.5	10.2	...	...	.0
West Virginia	22,163	.9	21.2	.6	21.4	.2
Wisconsin	72,002	.1	14.1	.1	20.1	.0
Wyoming	6,901	.4	11.1	1.0	11.8	.3
Puerto Rico	66,558	...	...	.2	1.7	.0
Virgin Islands	2,276	6.0	29.0	1.3	25.5	.6
Guam	3,535	.7	25.3	.8	25.6	.2

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989

[By place of residence]

Area	Number of births	Interval since last live birth	Length of Gestation	Month prenatal care began	Number of pre-natal visits	Birth weight
Total of reporting areas 1/	4,040,958	4.9	1.4	2.1	2.8	0.1
Alabama	62,568	1.3	0.2	1.3	1.3	0.1
Alaska	11,666	2.5	.6	1.1	1.0	.2
Arizona	67,196	3.7	.3	1.5	2.7	.1
Arkansas	35,911	2.7	.8	3.7	5.5	.1
California	569,992	.8	2/ 4.3	.7	2.1	.0
Colorado	52,711	1.0	.1	.6	.9	.0
Connecticut	49,464	15.4	9.2	11.3	13.0	.1
Delaware	10,730	1.5	.3	.3	.5	.0
D.C.	11,789	1.5	.9	.7	1.4	.2
Florida	193,131	1.2	.4	.9	1.4	.1
Georgia	110,272	1.7	.4	1.4	2.0	.1
Hawaii	19,367	.5	.5	7.4	6.9	.1
Idaho	15,883	5.5	1.3	3.3	4.5	.1
Illinois	190,308	.9	.1	.8	1.2	.1
Indiana	83,469	1.8	.4	2.7	2.4	.1
Iowa	39,018	.9	.2	.9	1.5	.1
Kansas	38,737	.7	.2	.2	.6	.0
Kentucky	53,424	1.6	.3	.8	1.4	.2
Louisiana	72,752	.5	2/ 4.2	1.3	1.7	.1
Maine	17,466	1.7	.1	1.6	1.3	.1
Maryland	78,265	6.9	4.2	7.8	14.4	.3
Massachusetts	91,523	1.4	.5	1.2	1.5	.2
Michigan	148,520	3.3	.1	1.4	2.6	.2
Minnesota	67,518	1.8	3.4	8.4	8.3	.1
Mississippi	43,047	.3	.3	.7	2.0	.1
Missouri	77,872	1.2	.3	1.2	2.5	.1
Montana	11,678	2.1	.1	.7	.6	.0
Nebraska	24,216	.5	2/ 2.5	.3	.2	.0
Nevada	19,606	1.5	.3	.7	1.2	.1
New Hampshire	17,809	1.1	.2	1.4	1.6	.2
New Jersey	121,841	7.6	.7	.2	1.5	.2
New Mexico	27,353	6.2	.8	7.1	6.7	.3
New York	291,449	19.8	.4	5.4	4.0	.2
N. Carolina	102,105	.3	.1	.3	.3	.1
N. Dakota	9,570	.6	.1	1.5	1.3	.0
Ohio	163,952	3.5	3.5	1.3	2.5	.1
Oklahoma	47,385	6.4	6.4	10.2	9.8	.1
Oregon	41,281	1.1	1.1	.2	.2	.1

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989
[By place of residence]

Area	Number of births	Interval since last live birth	Length of Gestation	Month prenatal care began	Number of pre-natal visits	Birth weight
Total of reporting areas	4,040,958	4.9	1.4	2.1	2.8	0.1
Pennsylvania	168,803	5.3	.2	1.9	1.9	.1
Rhode Island	14,768	2.3	.8	1.9	2.0	.9
S. Carolina	57,330	.6	.3	.5	.4	.1
S. Dakota	11,086	.4	.2	.6	.6	.1
Tennessee	73,178	.5	.2	1.2	1.0	.1
Texas	307,664	5/ 17.1	1.7	2.3	3.6	.2
Utah	35,567	6.7	.4	2.6	2.3	.2
Vermont	8,494	6.2	.6	4.8	4.3	.3
Virginia	96,798	3.5	.2	.7	1.3	.3
Washington	75,360	6.3	1.7	4.9	5.7	.3
West Virginia	22,163	1.5	.7	5.7	7.2	.0
Wisconsin	72,002	1.4	.1	.2	.2	.0
Wyoming	6,901	2.3	.1	1.6	1.6	.0
Puerto Rico	66,558	1.4	2/ 3.2	.8	.3	.1
Virgin Islands	2,276	2.4	1.6	1.6	2.3	.4
Guam	3,535	1.7	.6	1.1	1.8	.6

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989
[By place of residence]

Area	Number of births	Apgar score		Medical risk factors	Tobacco use	Alcohol use	Weight gain
		1-minute	5-minute				
Total of reporting areas 1/	4,040,958	0.9	0.9	6.1	7.9	8.2	17.4
Alabama	62,568	0.7	0.7	1.0	1.1	1.3	9.3
Alaska	11,666	1.2	1.2	.1	1.5	1.9	6.6
Arizona	67,196	.7	.7	.8	2.1	2.5	12.7
Arkansas	35,911	3.9	4.0	2.1	2.7	2.9	14.3
California	569,992	...	...	.1	...	...	...
Colorado	52,711	.5	.5	1.1	4.9	5.3	14.8
Connecticut	49,464	7.6	7.6	20.2	24.0	26.0	50.6
Delaware	10,730	.5	.5	1.7	1.4	3.1	3.2
D.C.	11,789	.2	.2	4/ 16.9	4/ 16.8	4/ 16.9	4/ 17.8
Florida	193,131	.6	.6	1.6	.5	.5	5.7
Georgia	110,272	.5	.6	2.2	1.6	1.8	21.7
Hawaii	19,367	.7	.7	.4	2.0	2.2	15.4
Idaho	15,883	.6	.6	2.8	4.5	6.1	16.3
Illinois	190,308	.4	.4	3.5	2.1	2.0	10.4
Indiana	83,469	1.1	1.1	1.4	...	.8	3.3
Iowa	39,018	.3	.3	2.3	2.6	2.8	5.5
Kansas	38,737	.9	.8	7/ 1.1	.9	.9	1.2
Kentucky	53,424	.6	.6	7.4	5.7	5.9	13.6
Louisiana	72,752	.9	.9	...	...	...	...
Maine	17,466	.6	.9	.1	3.9	4.0	10.2
Maryland	78,265	1.3	1.3	30.8	27.3	28.3	38.8
Massachusetts	91,523	.4	.5	1.2	.3	.3	4.8
Michigan	148,520	.6	.5	6.9	2.5	2.8	10.6
Minnesota	67,518	2.3	2.3	8.1	10.0	11.4	38.2
Mississippi	43,047	.7	.8	1.6	1.9	2.0	11.8
Missouri	77,872	.6	.5	.4	.5	.5	2.6
Montana	11,678	.4	.4	.2	.8	1.0	3.9
Nebraska	24,216	.3	.3	...	...	...	...
Nevada	- 19,606	2.1	2.1	.0	1.5	1.7	7.5
New Hampshire	17,809	.7	.5	.2	.4	1.0	2.6
New Jersey	121,841	.5	.5	1.9	11.6	12.0	24.7
New Mexico	27,353	3.5	3.6	1.0	7.2	7.7	15.4
New York	291,449	1.0	1.0	10/ 3.5	...	...	24.9
N. Carolina	102,105	.7	.8	.2	.6	1.1	5.2
N. Dakota	9,570	.4	.4	2.7	1.3	2.0	3.4
Ohio	163,952	.6	.6	.5	1.3	1.5	4.6
Oklahoma	47,385	...	...	...	...	...	...
Oregon	41,281	.7	.7	2.5	1.1	1.3	4.7

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989

[By place of residence]

Area	Number of births	Apgar score		Medical risk factors	Tobacco use	Alcohol use	Weight gain
		1-minute	5-minute				
Total of reporting areas 1/	4,040,958	0.9	0.9	6.1	7.9	8.2	17.4
Pennsylvania	168,803	.5	.5	.3	1.5	1.7	8.5
Rhode Island	14,768	.9	.9	18.2	4/ 14.8	4/ 14.8	4/ 17.8
S. Carolina	57,330	.5	.5	.5	.6	.7	4.5
S. Dakota	11,086	.4	.4	8.8	...	...	9.4
Tennessee	73,178	.4	.4	1.8	2.2	2.4	18.2
Texas	307,664	...	...	5&1 33.7	5/ 33.1	5/ 34.7	5/ 47.3
Utah	35,567	.5	.5	1.8	.3	.3	2.7
Vermont	8,494	.8	.8	7.3	8.7	13.5	15.9
Virginia	96,798	.8	.9	25.0	5/ 25.8	5/ 26.2	5/ 32.7
Washington	75,360	1.2	1.2	14.1	12.8	17.8	26.8
West Virginia	22,163	.4	.4	1.1	3.3	4.4	20.5
Wisconsin	72,002	.5	.5	.2	.3	.3	1.5
Wyoming	6,901	.4	.4	1.2	2.0	2.0	3.6
Puerto Rico	66,558	.4	.4	1.1	.9	1.0	18.4
Virgin Islands	2,276	5.3	5.1	33.6	32.7	33.3	41.4
Guam	3,535	1.2	1.0	2.0	1.4	1.9	2.6

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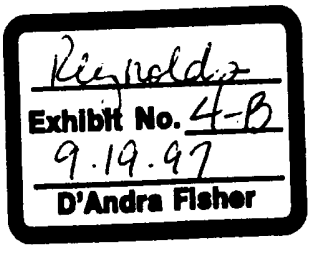

Table A. Percent of Birth Records on Which Specified [illegible] Were Not Stated, United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989

[By place of residence]

Area	Number of Births	Obstetric procedures	Complications of labor and/or delivery	Method of delivery	Abnormal conditions of newborn	Congenital anomalies
Total of reporting areas 1/	4,040,958	5.5	6.0	4.7	6.6	7.1
Alabama	62,568	0.5	1.1	0.5	1.0	1.0
Alaska	11,666	.1	.1	.7	.1	.2
Arizona	67,196	.7	.9	.6	1.3	1.7
Arkansas	35,911	2.0	2.1	2.4	4.7	2.0
California	569,992	.1	.1	.3	.2	.2
Colorado	52,711	1.0	1.1	.8	1.4	1.5
Connecticut	49,464	18.6	20.3	17.1	27.3	29.8
Delaware	10,730	1.1	1.7	2.5	1.2	.7
D.C.	11,789	4/ 16.1	4/ 16.8	4/ 22.1	4/ 18.5	4/ 18.7
Florida	193,131	1.6	1.5	.9	2.0	1.5
Georgia	110,272	.1	.1	.3	.1	.1
Hawaii	19,367	.1	.1	.0	.1	.1
Idaho	15,883	2.8	2.9	1.3	4.9	4.9
Illinois	190,308	6/ 2.8	3.7	2.0	4.3	4.6
Indiana	83,469	.5	.4	.4	.4	.3
Iowa	39,018	2.2	2.2	2.3	2.3	2.3
Kansas	38,737	.9	.9	2.6	1.0	1.1
Kentucky	53,424	4.6	7.1	4.7	7.1	6.5
Louisiana	72,752	...	...	...	...	...
Maine	17,466	.1	.1	.6	.1	.1
Maryland	78,265	26.3	30.4	...	37.0	38.3
Massachusetts	91,523	1.2	1.2	1.1	8/ 1.3	1.4
Michigan	148,520	2.8	6.4	1.2	8.6	8.6
Minnesota	67,518	4.5	7.0	4.1	12.3	13.0
Mississippi	43,047	1.5	1.5	1.3	2.3	2.3
Missouri	77,872	.2	.2	.4	.4	.3
Montana	11,678	.1	.1	.4	.1	.1
Nebraska	24,216	...	...	...	...	...
Nevada	19,606	.0	9/ 9.6	...	.1	.1
New Hampshire	17,809	.2	.2	.3	.1	.2
New Jersey	121,841	2.0	1.9	1.8	2.7	5.1
New Mexico	27,353	.8	.9	1.0	.9	...
New York	291,449	4.3	11/ 4.0	1.5	12/ 3.0	...
N. Carolina	102,105	.2	13/ .2	.7	.2	.3
N. Dakota	9,570	1.1	2.2	1.2	3.0	2.9
Ohio	163,952	.3	.5	.5	.9	.7
Oklahoma	47,385	...	...	...	...	...
Oregon	41,281	1.1	.1	.2	.1	.1

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Table A. Percent of Birth Records on Which Specified [illegible] for States

United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1989

[By place of residence]

Area	Number of Births	Obstetric procedures	Complications of labor and/or delivery	Method of delivery	Abnormal conditions of newborn	Congenital anomalies
Total of reporting areas 1/	4,040,958	5.5	6.0	4.7	6.6	7.1
Pennsylvania	168,803	.3	.3	.5	.7	1.2
Rhode Island	14,768	4/ 18.4	4/ 18.1	4/ 18.0	4/ 24.1	4/ 24.0
S. Carolina	57,330	.4	.4	.6	.3	.4
S. Dakota	11,086	7.9	8.6	7.8	11.4	11.3
Tennessee	73,178	1.7	1.8	1.7	1.8	1.8
Texas	307,664	5/ 32.4	5&15/ 32.7	5/ 31.7	5&16/ 33.5	5/ 33.8
Utah	35,567	.3	2.8	.4	1.9	2.2
Vermont	8,494	7.8	7.5	.7	11.9	11.9
Virginia	96,798	5/ 24.6	5/ 25.5	5/ 25.7	5/ 25.5	5/ 25.4
Washington	75,360	12.5	13.4	10.5	17.2	18.1
West Virginia	22,163	1.1	1.1	3.4	1.1	1.1
Wisconsin	72,002	.1	.2	.1	17/ .4	.4
Wyoming	6,901	1.1	1.2	1.2	1.4	1.3
Puerto Rico	66,558	1.1	1.4	.1	2.2	1.8
Virgin Islands	2,276	34.8	31.4	8.0	38.3	36.5
Guam	3,535	3.3	21.1	1.2	1.5	1.4

1/ Excludes data for Puerto Rico, Virgin Islands, and Guam.
2/ California, Louisiana, Nebraska, Oklahoma, and Puerto Rico report date last normal menses began but do not report clinical estimate of gestation.
3/ Educational attainment is reported by New York City only.
4/ Revised certificate with this item not implemented until March 1, 1989.
5/ Revised certificate with this item not implemented until April 1, 1989.
6/ Illinois does not report ultrasound.
7/ Kansas does not report Rh sensitization.
8/ Massachusetts does not report birth injury.
9/ Nevada does not report meconium and fetal distress.
10/ New York City (but not New York State) reports these factors: genital herpes, hydramnios/oligohydramnios, hemoglobinopathy, incompetent cervix, previous infant 4000+ grams, and previous preterm or small-for-gestational-age infant.
11/ Cephalopelvic disproportion is reported by New York City only.
12/ New York State and New York City do not report assisted ventilation less than 30 minutes and assisted ventilation of 30 minutes or more. New York City (but not New York State) reports fetal alcohol syndrome and meconium aspiration syndrome.

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13/ North Carolina does not report cord prolapse.
14/ Texas does not report genital herpes and uterine bleeding.
15/ Texas does not report cephalopelvic disproportion, anesthetic complications, and fetal distress.
16/ Texas does not report birth injury.
17/ Wisconsin does not report fetal alcohol syndrome.

unknown. When marital status is not stated on the birth certificate of a reporting area, the mother is considered married.

When births to unmarried women are reported as second- or higher-order births, it is not known whether the mother was married or unmarried when the previous deliveries occurred, because her marital status at the time of these earlier births is not available from the birth record.

Rates for 1940 and 1950 are based on decennial census counts. In this volume, rates for 1955-89 are based on a smoothed series of population estimates (9). Because of sampling error, the original U.S. Bureau of the Census population estimates by marital status fluctuate erratically from year to year; therefore, they have been smoothed so that the rates do not show similar variations. The rates shown in this volume differ from those published in volumes of Vital Statistics of the United States before 1969, which were based on the original estimates provided annually by the U.S. Bureau of the Census. Birth rates by marital status for 1971-79 have been revised and differ from rates published before 1980 in volumes of Vital Statistics of the United States (see "Computation of rates and other measures").

Place of delivery and attendant at birth

The 1989 revision of the U.S. Standard Certificate of Live Birth includes separate categories for freestanding birthing centers, the mother's residence, and clinic or doctor's office as the place of birth. In previous years place of birth was classified simply as either "In hospital" or "Not in hospital." Births occurring in hospitals, institutions, clinics, centers, or homes were included in the category "In hospital." In this context the word "homes" does not refer to the mother's residence but to an institution, such as a home for unmarried women. Birthing centers were included in either category, depending on each State's assessment of the facility. Beginning in 1989 births occurring in clinics and in birthing centers not attached to a hospital are classified as "Not in hospital." This change in classification may account in part for the lower proportion of "In hospital" births compared with previous years. (The change in classification of clinics should have minor impact because comparatively few births occur in these facilities, but the effect of any change in classification of freestanding birthing centers is unknown.)

Beginning in 1975 the attendant at birth and place of delivery items were coded independently, primarily to permit the identification of the person in attendance at hospital deliveries. This information for 1975-91 is presented in more detail in tables 1-87 and 1-88. The 1989 certificate includes separate classifications for "M.D." (Doctor of Medicine), "D.O." (Doctor of Osteopathy), "C.N.M." (certified nurse midwife), "Other midwife," and "Other" attendants. In earlier certificates births attended by certified nurse midwives were grouped with those attended by lay midwives. The new certificate also facilitates the identification of home births,

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[redacted]hs in freestanding birthing centers, and births in clinics or physician [redacted]ices.

Data shown in this volume for the "In hospital" category for 1975-88 include all births in clinics or maternity centers, regardless of the attendant. Data for 1975-77 published before 1980 included clinic and center births in the category "In hospital" only when the attendant was a physician. Data shown for 1975-77 in tables 1-87 and 1-88, therefore, differ from data published before 1980. As a result of this change, for 1975 an additional 12,352 births are now classified as occurring in hospitals, raising the percent of births occurring in hospitals from 98.7 to 99.1. Similarly, for 1976 the number of births occurring in hospitals increased by 14,133 and the percent in hospitals raised from 98.6 to 99.1; for 1977 the increase is 15,937 and the percent in hospitals raised from 98.5 to 99.0. For 1974 and earlier the "In hospital" category includes all births in hospitals or institutions and births in clinics, centers, or maternity homes only when attended by physicians.

The "Not in hospital" category includes births for which no information is reported on place of birth. Before 1975 births for which the stated place of birth was a "doctor's office" and delivery was by a physician were included in the category "In hospital." Beginning in 1975 these births were tabulated as "Not in hospital" and included with births delivered by physicians in this category. Although the actual number of such births is unknown, the effect of the change is minimal. In 1974, 0.3 percent of all births were delivered by physicians outside of hospitals; in 1975 this proportion was 0.4 percent.

Babies born on the way to or on arrival at the hospital are classified [redacted]aving been born in the hospital. This may account for some of the hospital births not delivered by physicians or midwives.

The percent distributions by attendant at birth for 1975-81 shown in table 1-88 have been revised to exclude births for which the attendant was unspecified. In recent years, the number of births with unspecified attendant has fluctuated substantially. Excluding these births from the percent distributions allows for a more meaningful year-to-year comparison in the proportion of births for each specified attendant.

Birthweight

Birthweight is reported in some areas in pounds and ounces rather than in grams. However, the metric system has been used in tabulating and presenting the statistics to facilitate comparison with data published by other groups.

The categories for birthweight were changed in 1979 to be consistent with the recommendations in the Ninth Revision of the International Classification of Diseases (ICD-9). The revised categories in gram intervals and their equivalents in pounds and ounces are as follows:

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Less than 500 grams = 1 lb 1 oz or less
500-999 grams = 1 lb 2 oz-2 lb 3 oz
1,000-1,499 grams = 2 lb 4 oz-3 lb 4 oz
1,500-1,999 grams = 3 lb 5 oz-4 lb 6 oz
2,000-2,499 grams = 4 lb 7 oz-5 lb 8 oz
2,500-2,999 grams = 5 lb 9 oz-6 lb 9 oz
3,000-3,499 grams = 6 lb 10 oz-7 lb 11 oz
3,500-3,999 grams = 7 lb 12 oz-8 lb 13 oz
4,000-4,499 grams = 8 lb 14 oz-9 lb 11 oz
4,500-4,999 grams = 9 lb 15 oz-11 lb 0 oz
5,000 grams or more = 11 lb 1 oz or more

The ICD-9 defines low birthweight as less than 2,500 grams. This is a shift of 1 gram from the previous criterion of 2,500 grams or less, which was recommended by the American Academy of Pediatrics in 1935 and adopted in 1948 by the World Health Organization in the Sixth Revision of the International Lists of Diseases and Causes of Death.

After data classified by pounds and ounces are converted to grams, median weights are computed and rounded before publication. To establish the continuity of class intervals needed to convert pounds and ounces to grams, the end points of these intervals are assumed to be half an ounce less at the lower end and half an ounce more at the upper end. For example, 2 lb 4 oz-3 lb 4 oz is interpreted as 2 lb 3 1/2 oz-3 lb 4 1/2 oz.

Births for which birthweight is not reported are excluded from the computation of percents and medians.

Period of gestation

The period of gestation is defined as beginning with the first day of the last normal menstrual period (LMP) and ending with the day of the birth. The LMP is used as the initial date because it can be more accurately determined than the date of conception, which usually occurs 2 weeks after the LMP.

Births occurring before 37 completed weeks of gestation are considered to be "preterm" or "premature" for purposes of classification. At 37-41 weeks gestation, births are considered to be "term," and at 42 completed weeks and over, "postterm." These distinctions are according to the ICD-9 definitions.

The 1989 revision of the U.S. Standard Certificate of Live Birth includes a new item, "clinical estimate of gestation," that is being compared with length of gestation computed from the LMP date when the latter appears to be inconsistent with birthweight. This is done for normal weight births of apparently short gestations and very low-birthweight births reported to be full term. The clinical estimate also was used if the date of the LMP was not reported. The period of gestation for 3.7 percent of the births in 1989 was based on the clinical estimate of gestation. For all but 0.2 percent of these records, the clinical estimate was used because the LMP date was not reported. For the remaining 0.2 percent the clinical estimate was used because it was compatible with the reported birthweight, whereas the LMP-computed gestation was not. In cases where the reported birthweight was inconsistent with both the LMP-computed gestation and the clinical estimate of gestation, the LMP-computed gestation was used and birthweight was reclassified as "not stated." These changes result in only a very small

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discontinuity in the data. For further information on the clinical estimate of gestation see "Computer Edits for Natality Data, Effective 1989," NCHS Instruction Manual, Part 12, pages 34-36.

Before 1981 the period of gestation was computed only when there was a valid month, day, and year of LMP. However, length of gestation could not be determined from a substantial number of live birth certificates each year because the day of LMP was missing. Beginning in 1981 weeks of gestation have been imputed for records with missing day of LMP when there is a valid month and year. Each such record is assigned the gestational period in weeks of the preceding record that has a complete LMP date with the same computed months of gestation and the same 500-gram birthweight interval. The effect of the imputation procedure is to increase slightly the proportion of preterm births and to lower the proportion of births at 39, 40, 41, and 42 weeks of gestation. A more complete discussion of this procedure and its implications is presented in a previous report (10).

Because of postconception bleeding or menstrual irregularities, the presumed date of LMP may be in error. In these instances the computed gestational period may be longer or shorter than the true gestational period, but the extent of such errors is unknown.

Month of pregnancy prenatal care began

For those records in which the name of the month is entered for this item, instead of first, second, third, and so forth, the month of pregnancy in which prenatal care began is determined from the month named and the month last normal menses began. For these births, if the item "Date last normal menses began" is not stated, the month of pregnancy in which prenatal care began is tabulated as not stated.

Number of prenatal visits

Tabulations of the number of prenatal visits were presented for the first time in 1972. In 1989 these data were collected from the birth certificates of all States. Percent distributions and the median number of prenatal visits exclude births to mothers who had no prenatal care.

Apgar score

One- and 5-minute Apgar scores were added to the U.S. Standard Certificate of Live Birth in 1978 to evaluate the condition of the newborn infant at 1 and 5 minutes after birth. The Apgar score is a useful measure of the need for resuscitation and a predictor of the infant's chances of surviving the first year of life. It is a summary measure of the infant's condition based on heart rate, respiratory effort, muscle tone, reflex irritability, and color. Each of these factors is given a score of 0, 1, or 2; the sum of these 5 values is the Apgar score, which ranges from 0 to 10. A score of 10 is optimum, and a low score raises some doubts about the survival and subsequent health of the infant. In 1989 the 1- and 5-minute Apgar scores were included on the birth certificates of 47 States and the District of Columbia.

Tobacco and alcohol use during pregnancy

The checkbox format allows for classification of a mother as a smoker

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or drinker during pregnancy and for reporting the aver[illegible]
garettes smoked per day or drinks consumed per week. When smoking and/or drinking status is not reported or is inconsistent with the quantity of cigarettes or drinks reported, the status is changed to be consistent with the amount reported. For example, if the drinking status is reported as "no" but one or more average drinks a week are reported, the mother is classified as a drinker. If the number of cigarettes smoked per day is reported as one or more, the mother is considered a smoker. When one (or a fraction of one) drink a week is recorded, the mother is classified as a drinker. For records on which the number of drinks or number of cigarettes is reported as a span, for example, 10-15, the lower number is used. The number of drinkers and number of drinks reported on birth certificates are believed to underestimate actual alcohol use.

Data on tobacco use were collected by 43 States and the District of Columbia in 1989. Information on alcohol use was included on the certificates of 44 States and the District of Columbia. See table A for a listing of reporting areas.

Weight gained during pregnancy

Weight gain is reported in pounds. A loss of weight is reported as zero gain. Computations of median weight gain were based on ungrouped data. This item was included on the certificates of 46 States and the District of Columbia. See table A for a listing of reporting areas.

Medical risk factors for this pregnancy

This item, which includes 16 specific medical risk factors, was included on the birth certificates of 47 States and the District of Columbia. Three States, however, did not include all factors on their birth certificates. See table A for more detailed information.

The format allows for the designation of more than one risk factor and includes a choice of "None." Accordingly, if the item is not completed, it is classified as "not stated."

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (11).

Definitions of medical terms

Anemia--Hemoglobin level of less than 10.0 g/dl during pregnancy or a hematocrit of less than 30 percent during pregnancy.

Cardiac disease--Disease of the heart.

Acute or chronic lung disease--Disease of the lungs during pregnancy.

Diabetes--Metabolic disorder characterized by excessive discharge of urine and persistent thirst; includes juvenile onset, adult onset, and gestational diabetes during pregnancy.

Genital herpes--Infection of the skin of the genital area by herpes simplex virus.

Hydramnios/Oligohydramnios--Any noticeable excess (hydramnios) or lack (oligohydramnios) of amniotic fluid.

Hemoglobinopathy--A blood disorder caused by alteration in the genetically determined molecular structure of hemoglobin (for example,

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sickle cell anemia).

Hypertension, chronic--Blood pressure persistently greater than 140/90, diagnosed prior to onset of pregnancy or before the 20th week of gestation.

Hypertension, pregnancy-associated--An increase in blood pressure of at least 30 mm Hg systolic or 15 mm Hg diastolic on two measurements taken 6 hours apart after the 20th week of gestation.

Eclampsia--The occurrence of convulsions and/or coma unrelated to other cerebral conditions in women with signs and symptoms of pre-eclampsia.

Incompetent cervix--Characterized by painless dilation of the cervix in the second trimester or early in the third trimester of pregnancy, with prolapse of membranes through the cervix and ballooning of the membranes into the vagina, followed by rupture of membranes and subsequent expulsion of the fetus.

Previous infant 4,000+ grams--The birthweight of a previous live-born child was over 4,000 grams (8 lbs 13 oz).

Previous preterm or small-for-gestational-age infant--Previous birth of an infant prior to term (before 37 completed weeks of gestation) or of an infant weighing less than the 10th percentile for gestational age using a standard weight-for-age chart.

Renal disease--Kidney disease.

Rh sensitization--the process or state of becoming sensitized to the Rh factor as when an Rh-negative woman is pregnant with an Rh-positive fetus.

Uterine bleeding--Any clinically significant bleeding during the pregnancy, taking into consideration the stage of pregnancy; any second or third trimester bleeding of the uterus prior to the onset of labor.

Obstetric procedures

This item includes six specific obstetric procedures. Birth records with "Obstetric procedures" left blank are considered "not stated." Data on obstetric procedures were reported by all States and the District of Columbia. Illinois did not report ultrasound.

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (11).

Definitions of medical terms

Amniocentesis--Surgical transabdominal perforation of the uterus to obtain amniotic fluid to be used in the detection of genetic disorders, fetal abnormalities, and fetal lung maturity.

Electronic fetal monitoring--Monitoring with external devices applied to the maternal abdomen or with internal devices with an electrode attached to the fetal scalp and a catheter through the cervix into the uterus, to detect and record fetal heart tones and uterine contractions.

Induction of labor--The initiation of uterine contractions before the spontaneous onset of labor by medical and/or surgical means for the purpose of delivery.

Stimulation of labor--Augmentation of previously established labor by use of oxytocin.

Tocolysis--Use of medications to inhibit preterm uterine contractions to extend the length of pregnancy and therefore avoid a preterm birth.

Ultrasound--Visualization of the fetus and placenta by means of sound

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Complications of labor and/or delivery

The checkbox format allows for the selection of 15 specific complications and for the designation of more than 1 complication where appropriate. A choice of "None" is also included. Accordingly, if the item is not completed, it is classified as "not stated."

Forty-nine States and the District of Columbia included this item on their birth certificates. However, not all of the complications were reported by all reporting States (see table A).

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (11).

Definitions of medical terms

Febrile--A fever greater than 100 degrees F. or 38 C. occurring during labor and/or delivery.

Meconium, moderate/heavy--Meconium consists of undigested debris from swallowed amniotic fluid, various products of secretion, excretion and shedding by the gastrointestinal tract; moderate to heavy amounts of meconium in the amniotic fluid noted during labor and/or delivery.

Premature rupture of membranes (more than 12 hours)--Rupture of the membranes at any time during pregnancy and more than 12 hours before the onset of labor.

Abruptio placenta--Premature separation of a normally implanted placenta from the uterus.

Placenta previa--Implantation of the placenta over or near the internal opening of the cervix.

Other excessive bleeding--The loss of a significant amount of blood from conditions other than abruptio placenta or placenta previa.

Seizures during labor--Maternal seizures occurring during labor from any cause.

Precipitous labor (less than 3 hours)--Extremely rapid labor and delivery lasting less than 3 hours.

Prolonged labor (more than 20 hours)--Abnormally slow progress of labor lasting more than 20 hours.

Dysfunctional labor--Failure to progress in a normal pattern of labor.

Breech/Malpresentation--At birth, the presentation of the fetal buttocks rather than the head, or other malpresentation.

Cephalopelvic disproportion--The relationship of the size, presentation and position of the fetal head to the maternal pelvis prevents dilation of the cervix and/or descent of the fetal head.

Cord prolapse--Premature expulsion of the umbilical cord in labor before the fetus is delivered.

Anesthetic complications--Any complication during labor and/or delivery brought on by an anesthetic agent or agents.

Fetal distress--Signs indicating fetal hypoxia (deficiency in amount of oxygen reaching fetal tissues).

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Abnormal conditions of the newborn

This item provides information on eight specific abnormal conditions. More than one abnormal condition may be reported for a given birth or "None" may be selected. If the item is not completed it is tabulated as "not stated." This item was included on the birth certificates of 47 States and the District of Columbia in 1989. However, several States did not include all conditions (see table A).

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (11).

Definitions of medical terms

Anemia--Hemoglobin level of less than 13.0 g/dL or a hematocrit of less than 39 percent.

Birth injury--Impairment of the infant's body function or structure due to adverse influences that occurred at birth.

Fetal alcohol syndrome--A syndrome of altered prenatal growth and development occurring in infants born of women who consumed excessive amounts of alcohol during pregnancy.

Hyaline membrane disease/RDS--A disorder primarily of prematurity, manifested clinically by respiratory distress and pathologically by pulmonary hyaline membranes and incomplete expansion of the lungs at birth.

Meconium aspiration syndrome--Aspiration of meconium by the fetus or newborn, affecting the lower respiratory system.

Assisted ventilation (less than 30 minutes)--A mechanical method of assisting respiration for newborns with respiratory failure.

Assisted ventilation (30 minutes or more)--Newborn placed on assisted ventilation for 30 minutes or longer.

Seizures--A seizure of any etiology.

Congenital anomalies of child

The data provided in this item relate to 21 specific anomalies or anomaly groups. It is well documented that congenital anomalies, except for the most visible and most severe, are incompletely reported on birth certificates. The completeness of reporting specific anomalies depends on how easily they are recognized in the short time between birth and birth registration.

Forty-five States and the District of Columbia included this item on their birth certificates (see table A). The format allows for the identification of more than one anomaly including a choice of "None" should no anomalies be evident. The category "not stated" includes birth records for which the item is not completed.

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics(11).

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Anencephalus--Absence of the cerebral hemispheres.

Spina Bifida/meningocele--Developmental anomaly characterized by defective closure of the bony encasement of the spinal cord, through which the cord and meninges may or may not protrude.

Hydrocephalus--Excessive accumulation of cerebrospinal fluid within the ventricles of the brain with consequent enlargement of the cranium.

Microcephalus--A significantly small head.

Other central nervous system anomalies--Other specified anomalies of the brain, spinal cord, and nervous system.

Heart malformations--Congenital anomalies of the heart.

Other circulatory/respiratory anomalies--Other specified anomalies of the circulatory and respiratory systems.

Rectal atresia/stenosis--Congenital absence, closure, or narrowing of the rectum.

Tracheo-esophageal fistula/Esophageal atresia--An abnormal passage between the trachea and the esophagus; esophageal atresia is the congenital absence or closure of the esophagus.

Omphalocele/gastroschisis--An omphalocele is a protrusion of variable amounts of abdominal viscera from a midline defect at the base of the umbilicus. In gastroschisis, the abdominal viscera protrude through an abdominal wall defect, usually on the right side of the umbilical cord insertion.

Other gastrointestinal anomalies--Other specified congenital anomalies of the gastrointestinal system.

Malformed genitalia--Congenital anomalies of the reproductive organs.

Renal agenesis--One or both kidneys are completely absent.

Other urogenital anomalies--Other specified congenital anomalies of the organs concerned in the production and excretion of urine, together with organs of reproduction.

Cleft lip/palate--Cleft lip is a fissure of elongated opening of the lip; cleft palate is a fissure in the roof of the mouth. These are failures of embryonic development.

Polydactyly/syndactyly/adactyly--Polydactyly is the presence of more than five digits on either hands and/or feet; syndactyly is having fused or webbed fingers and/or toes; adactyly is the absence of fingers and/or toes.

Club foot--Deformities of the foot, which is twisted out of shape or position.

Diaphragmatic hernia--Herniation of the abdominal contents through the diaphragm into the thoracic cavity usually resulting in respiratory distress.

Other musculoskeletal/integumental anomalies--Other specified congenital anomalies of the muscles, skeleton, or skin.

Down's syndrome--The most common chromosomal defect with most cases resulting from an extra chromosome (trisomy 21).

Other chromosomal anomalies--All other chromosomal aberrations.

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Method of delivery

The new birth certificate contains a checkbox item on method of delivery. The choices include vaginal delivery, with the additional options of forceps, vacuum, and vaginal birth after previous cesarean section (VBAC), as well as a choice of primary or repeat cesarean. When only forceps, vacuum, or VBAC is checked, a vaginal birth is assumed. In 1989 this information was collected from the birth certificates of 45 and the District of Columbia. See table A for a listing of reporting areas.

Several rates are computed for method of delivery. The overall cesarean section rate or total cesarean rate is computed as the proportion of all births that were delivered by cesarean section. The primary cesarean rate is a measure that relates the number of women having a primary cesarean delivery to all women giving birth who have never had a cesarean delivery. The denominator for this rate includes all births, less those with method of delivery classified as repeat cesareans and vaginal birth after previous cesarean. The repeat cesarean rate is the proportion of all cesarean deliveries that were to women having their second (or subsequent) cesarean delivery. The rate for vaginal birth after previous cesarean (VBAC) delivery is computed by relating all VBAC deliveries to the sum of VBAC and repeat cesarean deliveries, that is, to women with a previous cesarean section. Repeat cesarean and VBAC rates for first births exist because the rates are computed on the basis of previous pregnancies, not just live births.

Hispanic parentage

The 1989 revision of the U.S. Standard Certificate of Live Birth includes items to identify the Hispanic origin of the parents. Concurrent with the 1978 revision of the U.S. Certificate of Live Birth, NCHS recommended that items to identify the Hispanic or ethnic origin of the newborn's parents be included on birth certificates and has tabulated and evaluated these data from the reporting States. Forty-seven States and the District of Columbia reported Hispanic origin of the parents for 1989. Based on data published by the U.S. Bureau of the Census (12) and related unpublished tabulations, it is estimated that 99 percent of the Hispanic population resides in the 1989 reporting area.

In computing birth and fertility rates for the Hispanic population, births in New Hampshire and births with origin of mother not stated are included with non-Hispanic births rather than being distributed. Thus, rates for the Hispanic population are underestimates of the true rates to the extent that the births in the reporting area with origin mother not stated (0.9 percent) were actually to Hispanic mothers. To compute rates for the Hispanic population for the United States as a whole, estimates by Hispanic origin and age of mother were made by inflating the figure for the reporting areas by the proportion of the U.S. Hispanic population in the nonreporting State of New Hampshire. This procedure was performed separately for each Hispanic origin subgroup. The resulting rates are, therefore, estimated for the United States.

The population with origin not stated was imputed. The effect on the rates is believed to be small

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eath and fetal death statistics

Mortality statistics for 1989 are, as for all previous years except 1972, based on information from records of all deaths occurring in the United States. Fetal-death statistics for every year are based on all reports of fetal death received by the National Center for Health Statistics (NCHS).

The death-registration system and the fetal-death reporting system of the United States encompass the 50 States, the District of Columbia, New York City (which is independent of New York State for the purpose of death registration), Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianas. In the statistical tabulations of this publication, United States refers only to the aggregate of the 50 States (including New York City) and the District of Columbia. Tabulations for Guam, Puerto Rico, and the Virgin Islands are shown separately in this volume. No data have ever been included for American Samoa or the Trust Territory of the Pacific Islands.

The Virgin Islands was admitted to the registration area for deaths in 1924; Puerto Rico, in 1932; and Guam, in 1970. Tabulations of death statistics for Puerto Rico and the Virgin Islands were shown regularly in the annual volumes of Vital Statistics of the United States from the year of their admission through 1971 except for the years 1967-69, and tabulations for Guam were included for 1970 and 1971. Death statistics for Puerto Rico, the Virgin Islands, and Guam were not included in the 1972 volume but have been included in section 8 of the volumes for each of the years 1973-78 and in section 9 beginning with 1979. Information for 1972 for these three areas was published in the respective annual vital statistics reports of the Department of Health of the Commonwealth of Puerto Rico, the Department of Health of the Virgin Islands, and the Department of Public Health and Social Services of the Government of Guam.

Procedures used by NCHS to collect death statistics have changed over the years. Before 1971, tabulations of deaths and fetal deaths were based solely on information obtained by NCHS from copies of the original certificates. The information from these copies was edited, coded, and tabulated. For 1960-70, all mortality information taken from these records was transferred by NCHS to magnetic tape for computer processing.

Beginning with 1971, an increasing number of States provided NCHS, via the Vital Statistics Cooperative Program (VSCP), computer tapes of data coded according to NCHS specifications. The year State-coded demographic data were first transmitted on computer tape to NCHS is shown below for each of the States, New York City, Puerto Rico, and the District of Columbia, all of which now furnish demographic or nonmedical data on tape.

1971	1977
Florida	Alaska
	Idaho
	Massachusetts
	New York City

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Ohio
Puerto Rico

1972
- Maine
- Missouri
- New Hampshire
- Rhode Island
- Vermont

1973
- Colorado
- Michigan
- New York (except) New York City)

1974
- Illinois
- Iowa
- Kansas
- Montana
- Nebraska
- Oregon
- South Carolina

1975
- Louisiana
- Maryland
- North Carolina
- Oklahoma
- Tennessee
- Virginia
- Wisconsin

1976
- Alabama
- Kentucky
- Minnesota
- Nevada
- Texas
- West Virginia

1978
- Indiana
- Utah
- Washington

1979
- Connecticut
- Hawaii
- Mississippi
- New Jersey
- Pennsylvania
- Wyoming

1980
- Arkansas
- New Mexico
- South Dakota

1982
- North Dakota

1985
- Arizona
- California
- Delaware
- Georgia
- District of Columbia

For the Virgin Islands and Guam, mortality statistics for 1989 are based on information obtained directly by NCHS from copies of the original certificates received from the registration offices.

In 1974 States began coding medical (cause-of-death) data on computer tapes according to NCHS specifications. The year State-coded medical data were first transmitted to NCHS is shown below for the 30 States now furnishing such data. NCHS contracted with Colorado, Kansas, and Mississippi to precode medical data for all deaths on computer tape for the five States added in 1988. Vermont subcontracted with Pennsylvania to code its medical data.

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1974
Iowa
Michigan

1975
Louisiana
Nebraska
North Carolina
Virginia
Wisconsin

1980
Colorado
Kansas
Massachusetts
Mississippi
New Hampshire
Pennsylvania
South Carolina

1981
Maine

1983
Minnesota

1984
Maryland
New York State (except New York City)
Vermont

1986
California
Florida
Texas

1988
Alaska
Delaware
Idaho
North Dakota
Wyoming

1989
Georgia
Indiana
Washington

For 1989 and previous years except 1972, NCHS coded the medical information from copies of the original certificates received from the registration offices for all deaths occurring in those States that were not furnishing NCHS with medical data coded according to NCHS specifications. For 1981 and 1982, these procedures were modified because of a coding and processing backlog resulting from personnel and budgetary restrictions. To produce the mortality files on a timely basis with reduced resources, NCHS used State-coded underlying cause-of-death information supplied by 19 States for 50 percent of the records; for the other 50 percent of the records for these States as well as for 100 percent of the records for the remaining 21 registration areas, NCHS coded the medical information. Mortality statistics for 1972 were based on information obtained from a 50-percent sample of death records instead of from all records as in other years. The sampling resulted from personnel and budgetary restrictions. Sampling variation associated with the 50-percent sample is described in "Estimates of errors arising from 50-percent sample for 1972."

Fetal death data are obtained directly from copies of original reports of fetal deaths received by NCHS, except New York State (excluding New York City), which submitted State-coded data in 1989. Fetal-death data are not published by NCHS for the Virgin Islands and Guam.

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Standard certificates and reports

For many years, the U.S. Standard Certificate of Death and the U.S. Standard Report of Fetal Death, issued by the Public Health Service, have been used as the principle means to attain uniformity in the contents of documents used to collect information on these events. They have been modified in each State to the extent required by the particular needs of the State or by special provisions of the State vital statistics law. However, the certificates or reports of most States conform closely in content and arrangement to the standards.

The first issue of the U.S. Standard Certificate of Death appeared in 1900. Since then, it has been revised periodically by the national vital statistics agency through consultation with State health officers and registrars; Federal agencies concerned with vital statistics; national, State, and county medical societies; and others working in such fields as public health, social welfare, demography, and insurance. This revision procedure has ensured careful evaluation of each item in terms of its current and future usefulness for legal, medical and health, demographic, and research purposes. New items have been added when necessary, and old items have been modified to ensure better reporting; or in some cases, items have been dropped when their usefulness appeared to be limited.

New revisions of the U.S. Standard Certificate of Death and the U.S. Standard Report of Fetal Death were recommended for State use beginning January 1, 1989. The U.S. Standard Certificate of Death and the U.S. Standard Report of Fetal Death are shown in figures 7-A and 7-B(1).

Among the major changes made were the addition of a new item on educational attainment and changes to improve the medical certification of cause of death. Additional lines to report causes of death were added as well as more complete instructions with examples for properly completing the cause of death. Also, for the first time, the U.S. Standard Certificate of Death includes a question on the Hispanic origin of the decedent. A number of States had included an Hispanic-origin identifier on their certificates, resulting in data shown in this volume for years before 1989. To obtain information on type of place of death, the format of the item was changed from an open-ended question to a checkbox.

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Chapter 8
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mpleteness of registration

All States have adopted laws that require the registration of births and deaths and the reporting of fetal deaths. It is believed that more than 99 percent of the births and deaths occurring in this country are registered. Reporting requirements for fetal deaths vary somewhat from State to State (see "Comparability and completeness of data"). Overall reporting is not as complete for fetal deaths as for births and deaths, but it is believed to be relatively complete for fetal deaths at a gestation of 28 weeks or more. National statistical data on fetal deaths include only fetal deaths occurring at a stated or presumed gestation of 20 weeks or more.

Massachusetts data

The 1964 statistics for deaths exclude approximately 6,000 events registered in Massachusetts, primarily to residents of that State. Microfilm copies of these records were not received by NCHS. Figures for the United States and the New England Division are affected also.

Alabama data

The 1988 statistics for deaths show no deaths assigned to the City of Prattville in Autauga County. The death records that should have been assigned to this area were instead assigned to the Balance of County due to a processing error.

ality control procedures

Demographic items on the death certificate--As previously indicated, for 1989 the mortality data for these items were obtained from two sources--photocopies of the original certificates furnished by the Virgin Islands and Guam and records on data tape furnished by the 50 States, the District of Columbia, New York City, and Puerto Rico. For the Virgin Islands and Guam, which sent only copies of the original certificates, the demographic items were coded for 100 percent of the death certificates. The demographic coding for 100 percent of the certificates was independently verified.

As part of the quality control procedures for mortality data, each registration area goes through a calibration period, during which it must achieve the specified error tolerance level of 2 percent per item for 3 consecutive months, based on independent verification by NCHS of a 50-percent sample of that area's records. When the area has achieved the required error tolerance level, a sample of 70-80 records per month is used to monitor quality of coding. All areas providing data on computer tapes prior to 1989 have achieved the specified error tolerance; accordingly, the demographic items on about 70-80 records per area per month were independently verified by NCHS. The estimated average error rate for all demographic items in 1989 was 0.25 percent.

These verification procedures involve controlling for two types of

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error (coding and entering into the data record tape) at the same [illegible] the error rates are a combined measure of both types. It may be assumed that the entering errors are randomly distributed across all items on the record, but this assumption cannot be made as readily for coding errors. Although systematic errors in coding infrequent events may escape detection during sample verification, it is probable that some of these errors were detected during the initial period when 50 percent of the file was being verified, thus providing an opportunity to retrain the coders.

Medical items on the death certificate--As is true for demographic data, mortality medical data are also subject to quality control procedures to control for errors of both coding and data entry. Each of the 30 registration areas that furnished NCHS with coded medical information in 1989 according to NCHS specifications had to qualify for sample verification first. During an initial calibration period, the area had to demonstrate that its staff could achieve a specified error tolerance level of less than 5 percent for coding all medical items. After the area had achieved the required error tolerance level, a sample of 70-80 records per month was used to monitor quality of medical coding. For the 30 reporting States, the average coding error rate in 1989 was estimated at just over 4 percent.

Table E. Source for resident population and population including Armed Forces abroad: Birth- and death-registration States, 1900-1932, and United States, 1900-1989

Year	Source
1989.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1057, 1990.
1988.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1045, 1990.
1986-87.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1022, Mar. 1988.
1985.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1000, Feb. 1987.
1984.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 985, Apr. 1986.
1983.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No.965, Mar. 1985.
1982.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 949, May. 1984.
1981.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 929, May. 1983.
1980.....	U.S. Bureau of the Census, U.S. Census of Population:1980, Number of Inhabitants,PC80-1A1, United States Summary, 1983.
1971-79.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 917, July 1982.
1970.....	U.S. Bureau of Census, U.S. Census of Population: 1970, Number of Inhabitants, Final Report PC [illegible] United States Summary, 1971.
1961-69.....	U.S. Bureau of the Census, Current Population Reports,

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	Series P-25, No. 519, April 1974.
1960.....	U.S. Bureau of the Census, U.S. Census of Population: [illegible], Number of Inhabitants, PC (1)-A1, United States Summary, 1964.
1951-59.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No.310, June 30, 1965.
1940-50.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 499, May 1973.
1930-39.....	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 499, May 1973, and National Office of Vital Statistics, Vital Statistics Rates in the United States, 1900-1940, 1947.
1920-29.....	National Office of Vital Statistics, Vital Statistics Rates in the United States,1900-1940, 1947.
1917-19.....	Same as for 1930-39
1900-1916...	Same as for 1920-29

For the remaining 20 States, the District of Columbia, New York City, Puerto Rico, the Virgin Islands, and Guam, NCHS coded the medical items for 100 percent of the death records. A 1-percent sample of the records was coded independently for quality control purposes. The estimated average error rate for these areas was about 3 percent.

The ACME system for selecting the underlying cause of death through computer application contributes to the quality control of medical items on the death certificate. (See "Automated selection of underlying cause of death.")

Demographic items on the report of fetal death--For 1989, all data on fetal deaths, except for New York State (excluding New York City), were coded under contract by the U.S. Bureau of the Census. Coding and entering of information on data tapes were verified on a 100-percent basis because of the relatively small number of records involved.

Other control procedures--After coding and entering on data tape are completed, record counts are balanced against control totals for each shipment of records from a registration area. Editing procedures ensure that records with inconsistent or impossible codes are modified. Inconsistent codes are those, for example, indicating a contradiction between cause of death and age or sex of the decedent. Records so identified during the computer editing process are either corrected by reference to the source record or adjusted by arbitrary code assignment (37). Further, conditions specified on a list of infrequent or rare causes of death are confirmed by the certifier or a State Health Officer. All subsequent operations in tabulating and in preparing tables are verified during the computer processing or by statistical clerks.

Estimates of errors arising from 50-percent sample for 1972

Death statistics for 1972 in this report (excluding fetal-death statistics) are based on a 50-percent sample of all deaths occurring in the 50 States and the District of Columbia. A description of the sample design and a table of the percent errors of the estimated numbers of deaths by size of estimate and total deaths in the area are shown in the Technical Appendix from Vital Statistics of the United States, 1972.

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Chapter 8
HISTORY

The first death statistics published by the Federal Government concerned events in 1850 and were based on statistics collected during the decennial census of that year. In 1880 a national "registration area" was created for deaths. Originally consisting of two States--Massachusetts and New Jersey--the District of Columbia, and several large cities having efficient systems for death registrations, the death-registration area continued to expand until 1933, when it included the entire United States for the first time. Tables showing data for death-registration States include the District of Columbia for all years; registration cities in nonregistration States are not included. For more details on the history of the death-registration area, see the Vital Statistics of the United States, 1979, Volume II, Mortality, Part A, section 7, pages 3 and 4 and Vital Statistics of the United States, 1950, Volume I, chapter 1, pages 2-19. Statistics on fetal deaths were first published for the birth-registration area in 1918 and then every year beginning with 1922.

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Chapter 8
COMPUTATION OF RATES AND OTHER MEASURES

Population bases

The population bases from which death rates shown in this report are computed are prepared by the U.S. Bureau of the Census. Rates for 1940, 1950, 1960, 1970, and 1980 are based on the population enumerated as of April 1 in the censuses for those years. Rates for all other years use the estimated midyear (July 1) population. Death rates for the United States, individual States, and Metropolitan areas are based on the total resident populations of the respective areas. Except as noted, these populations exclude the Armed Forces abroad but include the Armed Forces stationed in each area.

The resident populations of the birth- and death-registration States for 1900-32, and of the United States for 1900-90, and revised populations for 1981-89 are shown in table 7-1. In addition, the population including Armed Forces abroad is shown for the United States. Table E lists the sources for these populations.

Population estimates for 1989--The population of the United States estimated by age, race, and sex for 1989 is shown in table 7-2, and the population for each State by broad age groups follows in table 7-3. Population estimates for the 1984-89 incorporate new estimation procedures for net migration and net undocumented immigration. The 1989 estimates are comparable with those for 1984-88 but are not strictly comparable with the postcensal estimates for 1981-83 shown in tables 7-2 and 7-3 of Vital Statistics of the United States, Volume II, for those years. Although the death rates and estimates of life expectancy for 1984-89 are not strictly comparable with those for previous years, the trends for the total population and most age-race-sex groups are not substantially affected. For additional details, see the Technical Appendix From Vital Statistics of the United States, 1984, Volume II, and the report of the U.S. Bureau of the Census(31). Population data by race are consistent with the modified (see below) 1980 population by race.

Population for 1980--the population of the United States by age, race, and sex; and the population for each State by age are shown in tables 7-2 and 7-3, respectively, of Vital Statistics of the United States, 1980, Volume II. The figures by race have been modified as described below.

Changes in reporting practices affected the racial counts of the 1980 census, particularly those of the Hispanic population. Changes in coding and classifying practices also impacted the racial counts in the 1980 census. One particular change created a major inconsistency between the 1980 census data and historical data series, including censuses and vital statistics. About 40 percent of the Hispanic population counted in 1980, more than 5.8 million persons, did not mark one of the specified races listed on the census questionnaire but instead marked the "Other" category.

In the 1980 census, coding procedures were modified for persons who marked "Other" race and wrote in a national origin destination of a Latin American country or a specific Hispanic-origin group in response to the racial question. These persons remained in the "Other" racial category in 1980 census data; in previous censuses and in vital statistics, such responses had almost always been coded into the "White" category.

To maintain comparability, the "Other" racial category in the 1980 census was reallocated to be consistent with previous procedures. Persons

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who marked the "Other" racial category and reported any Spanish origin in the Spanish origin question (5,840,648 persons) were distributed to white and black races in proportion to the distribution of persons of Hispanic origin who actually reported their race as "White" or "Black." This was done for each age-sex group.

As a result of this procedure, 5,705,155 persons (98 percent) were added to the white population and 135,493 persons (2 percent) to the black population. Persons who marked the "Other" racial category and reported that they were not of Spanish origin (916,338 persons) were distributed as follows: 20 percent in each age-sex group were added to the "Asian and Pacific Islander" category (183,268 persons), and 80 percent were added to the "White" category (733,070 persons). The count of American Indians, Eskimos, and Aleuts was not affected by these procedures. Unpublished tabulations of these modified census counts were obtained from the U.S. Bureau of the Census and used to compute the rates for this volume.

Population estimates for 1971-79--Death rates in this volume for 1971-79 used revised population estimates that are consistent with the 1980 census levels. The 1980 census enumerated approximately 5.5 million more persons than had been estimated for April 1, 1980 (32). These revised estimates for the United States by age, race, and sex are published by the U.S. Bureau of the Census in Current Population Reports, Series P-25, Number 917. Unpublished revised estimates for States were obtained from the U.S. Bureau of the Census. For Puerto Rico, the Virgin Islands, and Guam, revised estimates are published in Current Population Reports, Series P-25, Number 919.

Population estimates for 1961-69--Death rates in this volume for 1961-69 are based on revised estimates of the population and thus may differ slightly from rates published before 1976. The rates shown in tables 1-1 and 1-2, the life table values in table 6-5, and the population estimates in table 7-1 for each year during 1961-69 have been revised to reflect modified population bases as published in the U.S. Bureau of the Census, Current Population Reports, Series P-25, Number 519. The data shown in table 1-10 for 1961-69 have not been revised.

Rates and ratios based on live births--Infant and maternal mortality rates and fetal death and perinatal mortality ratios are computed on the basis of the number of live births. Fetal death and perinatal mortality rates are computed on the basis of the number of live births and fetal deaths. Counts of live births are published annually in Vital Statistics of the United States, Volume I, Natality.

New Jersey--As previously indicated, data by race are not available for New Jersey for 1962 and 1963. Therefore, for 1962 and 1963 NCHS estimated a population by age, race, and sex that excluded New Jersey for rates shown by race. The methodology used to estimate the revised population excluding New Jersey is discussed in the technical appendixes of the 1962 and 1963 volumes.

Net census undercount

Just as the underenumeration of deaths and the misreporting of of demographic characteristics on the death certificate can introduce error into the annual rates, so can enumeration errors in the latest decennial census. This is because annual population estimates for the postcensal interval, which are used in the denominator for calculating death rates,

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are computed using the decennial census count as a base (33). Net census undercount is the result of miscounting and misreporting of demographic characteristics such as age. Age-specific death rates are affected by both the net census undercount and the misreporting of age on the death certificate (34). To the extent that the net undercount is substantial and that it varies among subgroups and geographic areas, it may have important consequences for vital statistics measures.

Although death rates based on a population adjusted for net census undercount may be more accurate than rates based on an unadjusted population, rates in this volume are not adjusted; rather, they are computed using population estimates that preserve the age pattern of the net census undercount across the postcensal interval. Thus, it is important to consider the possible impact of net census undercount on death rates.

The U.S. Bureau of the Census has conducted extensive research on the completeness of coverage of the U.S. population (including underenumeration and misstatement of age, race, and sex) in the last four decennial censuses--1950,1960,1970, and 1980. From this work have come estimates of the national population that was not counted by age, race and sex (35,36). The reports for 1980 include estimates of net census undercount using alternative methodological assumptions for age, race, and sex subgroups of the national population modified for race consistency with previous population counts as described in the section "Population Bases." These studies indicate that, although coverage was improved over previous censuses, there was differential coverage among the population subgroups; that is, some age, race, and sex groups were more completely counted than others.

Net census undercounts can affect levels of the observed vital rates, differences among groups, and levels and group differences shown by summary measures such as age-adjusted death rates and life expectancy.

Levels and differentials--If adjustments were made for net census undercount, the size of denominators of the death rates generally would increase and the rates, therefore, would decrease. The adjusted rates for 1980 can be computed by multiplying the reported rates by ratios of the census-level resident population to the resident population adjusted for the estimated net census undercount (table 7-4). A ratio of less than 1.0 indicates a net census undercount and, when applied, results in a corresponding decrease in the death rate. A ratio greater than 1.0--indicating a net census overcount--multiplied by the reported rate results in an increase in the death rate.

Coverage ratios for all ages show that, in general, females were more completely enumerated than males and the white population more completely enumerated than the population of all other races in the 1980 Census of Population. The black population was undercounted relative to the total population of all other races.

For the total population, underenumeration varied by age group, with the greatest differences found for persons aged 80-84 and 85 years and over. All other age groups were overcounted or undercounted by less than 3 percent.

Among the age-sex-race groups, coverage was lowest for black males aged 40-44 and 45-49 years. Underenumeration for these groups was 19 percent. In contrast, white females in these age groups were essentially completely enumerated. For black females and white males in these same age groups, the undercount ranged from 3 to 6 percent. For the under-1-year

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age group, the white population was overenumerated by [redacted] percent, whereas infants of other races were underenumerated by 9 percent.

If vital statistics measures were calculated with adjustments for net census undercounts for each population subgroup, the resulting rates would be differentially reduced from their original levels; that is, rates for those groups with the greatest estimated undercounts would show the greatest relative reductions due to these adjustments. Similar effects would be evident in the opposite direction for groups with overcounts. As a consequence, the ratio of mortality between the rates for the white population and the population of other races, or the black population, usually would be reduced.

Similarly, the differences between the death rates among subgroups of the population by cause of death would be affected by adjustments for net census undercounts. For example, for the age group 35-39 years in 1980, the ratio of the death rate for Homicide and legal intervention for black males to that for white males is 7.3, whereas the ratio of the death rates adjusted for net census undercount is 6.2. For Ischemic heart disease for males aged 40-44 years, the ratio of the death rate for the population of all other races to that for the white population is 1.2 using the unadjusted rates, but it is 1.1 when adjusted for estimated underenumeration.

Summary measures--The effect of net census undercount on age-adjusted death rates depends on the underenumeration of each age group and on the distribution of deaths by age. Thus, the age-adjusted death rate in 1980 for All causes would decrease from 585.8 to 579.3 per 100,000 population if the age-specific death rates were corrected for net census undercount.

For Diseases of the heart, the age-adjusted death rate for white males would decrease from 277.5 to 273.0 per 100,000 population, a decline of 1.3 percent. For black males the change, from an unadjusted rate of 327.3 to an adjusted rate of 308.3, would amount to 5.8 percent.

If death rates by age were adjusted, then the corresponding life expectancy at birth computed from these rates would change. The importance of adjustments varies by age; that is, when calculating life expectancy, the impact of an undercount or overcount is greatest at the younger ages. In general, the effect of correcting the death rates is to increase the estimate of life expectancy at birth. Differential underenumeration among race-sex groups would lead to greater changes in life expectancy for some groups than for others. For white females who were completely enumerated in 1980, revised estimates of life expectancy would remain roughly constant; those for black males wold show the greatest increase.

Age-adjusted death rates

Age-adjusted death rates shown in this volume are computed using the distribution in 10-year age intervals of the enumerated population of the United States in 1940 as the standard population. Each figure represents the rate that would have existed had the age-specific rates of the particular year prevailed in a population whose age distribution was the same as that of the United States in 1940. The rates for the total population and for each race-sex group were adjusted using the same standard population. It is important not to compare age-adjusted death rates with crude rates. The standard 1940 population, on the basis of one million total population, is

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as follows:

Age	Number
All ages	1,000,000
Under 1 year	15,343
1-4 years	64,718
5-14 years	170,355
15-24 years	181,677
25-34 years	162,066
35-44 years	139,237
45-54 years	117,811
55-64 years	80,294
65-74 years	48,426
75-84 years	17,303
85 years and over	2,770

Life Tables

U.S. abridged life tables are constructed by reference to a standard table (38). Life tables for the decennial period 1979-81 are used as the standard life tables in constructing the 1980-89 abridged life tables. With the availability of the 1979-81 standard life tables, revised life table values were computed for 1980-82; these appeared for the first time in Vital Statistics of the United States, 1983.

Life tables for the decennial period 1969-71 are used as the standard life tables in constructing the 1970-79 abridged life tables. Life table values for 1970-73 were first revised in Vital Statistics of the United States, 1977; before 1977, life table values for 1970-73 were constructed using the 1959-61 decennial life tables. In addition, life table values for 1951-59, 1961-69, and 1971-79 appearing in this volume are based on revised intercensal estimates of the populations for those years. As such, these life table values may differ from life table values for those years published in previous volumes.

There has been an increasing interest in data on the average length of life for single calendar years before the initiation of the annual abridged life table series for selected race-sex groups in 1945. The figures in table 6-5 for the race and sex groups for the following years were estimated to meet these needs (39).

Years	Race and sex groups
1900-45	Total
1900-47	Male
1900-47	Female
1900-50	White
1900-44	White, male
1900-44	White, female
1900-50	All other
1900-44	All other, male
1900-44	All other, female

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The geographic areas covered in life [illegible] limited to the death-registration areas. Life tables for 1900-1902 and 1909-11 were constructed using mortality data from the 1900 death-registration States--10 States and the District of Columbia--and for 1919-21 from the 1920 death-registration States--34 States and the District of Columbia. The tables for 1929-31 through 1958 cover the conterminous United States. Decennial life table values for the 3-year period 1959-61 were derived from data that include Alaska and Hawaii for each year (table 6-4). Data for each year shown in table 6-5 include Alaska beginning in 1959 and Hawaii beginning in 1960. It is believed that the inclusion of these two States does not materially affect life table values.

Random variation in numbers of deaths, death rates, and mortality rates and ratios

Deaths and population-based rates--Except for those reported in 1972, the numbers of deaths reported for a community represent complete counts of such events. As such, they are not subject to sampling error, although they are subject to errors in the registration process. However, when the figures are used for analytical purposes, such as the comparison of rates over a period or for different areas, the number of events that actually occurred may be considered as one of a large series of possible results that could have arisen under the same circumstances (40). The probable range of values may be estimated from the actual figures according to certain statistical assumptions.

In general, distributions of vital events may be assumed to follow the binomial distribution. Estimates of standard error and tests of significance under this assumption are described in most standard statistics texts. When the number of events is large, the standard error, expressed as a percent of the number or rate, is usually small.

When the number of events is small (perhaps less than 100) and the probability of such an event is small, considerable caution must be observed in interpreting the conditions described by the figures. This is particularly true for infant mortality rates, cause-specific death rates, and death rates for counties. Events of a rare nature may be assumed to follow a Poisson probability distribution. For this distribution, a simple approximation may be used to estimate a confidence interval, as follows.

If N is the number of registered deaths in the population and R is the corresponding rate, the chance is 19 in 20 that

1. $N - 2\hat{u}N$ and $N + 2\hat{u}N$
   covers the "true" number of events.

2. $R - 2(R/\hat{u}N)$ and $R + 2(R/\hat{u}N)$
   covers the "true" rate.

If the rate R1 corresponding to N1 events is compared with the rate R2 corresponding to N2 events, the difference between the two rates may be regarded as statistically significant at the 0.05 level if it exceeds

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2 x [û of (R1 squared/N1 + R2 squared/N2)]

For example, if the observed death rate for a community were 10.0 per 1,000 population and if this rate were based on 20 recorded deaths, the chance is 19 in 20 that the "true" death rate for that community lies between 5.5 and 14.5 per 1,000 population. If the death rate for this community of 10.0 per 1,000 population were being compared with a rate of 15.0 per 1,000 population for a second community, which is based on 25 recorded deaths, then the difference between the rates for the two communities is 5.0. This difference is less than twice the standard error of the difference

2 x [û of (10.0 squared/20 + 15.0 squared/25)]

of the two rates that is computed to be 7.5. From this, it is concluded that the difference between the rates for the two communities is not statistically significant at the 0.05 level of significance.

Rates, proportions, and ratios--Beginning in 1989, an asterisk is shown in place of a rate based on fewer than 20 deaths. These rates have a relative standard error of 23 percent or more and therefore are considered highly variable. For age-adjusted death rates, this criterion is applied to the sum of the age-specific deaths.

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Chapter 8
CLASSIFICATION OF DATA

The principal value of vital statistics data is realized through the presentation of rates, which are computed by relating the vital events of a class to the population of a similarly defined class. Vital statistics and population statistics must therefore be classified according to similarly defined systems and tabulated in comparable groups. Even when the variables common to both, such as geographic area, age, sex, and race, have been similarly classified and tabulated, differences between the enumeration method of obtaining population data and the registration method of obtaining vital statistics data may result in significant discrepancies.

The general rules used in the classification of geographic and personal items for deaths and fetal deaths for 1989 are set forth in two NCHS instruction manuals (2,3). A discussion of the classification of certain important items is presented below.

Classification by occurrence and residence

Tabulations for the United States and specified geographic areas in this volume are classified by place of residence unless stated as by place of occurrence. Before 1970, resident mortality statistics for the United States included all deaths occurring in the United States with deaths of "nonresidents of the United States" assigned to place of death. "Deaths of nonresidents of the United States" refers to deaths that occur in the United States of nonresident aliens; nationals residing abroad; and residents of Puerto Rico, the Virgin Islands, Guam, and other territories of the United States. Beginning with 1970, deaths of nonresidents of the United States are not included in tables by place of residence.

Tables by place of occurrence, on the other hand, include deaths of both residents and nonresidents of the United States. Consequently, for each year beginning with 1970, the total number of deaths in the United States by place of occurrence was somewhat greater than the total by place of residence. For 1989 this difference amounted to 3,393 deaths. Mortality statistics by place of occurrence are shown in tables 1-11, 1-19, 1-20, 1-30, 1-31, 1-32, 3-1, 3-6, 8-1, and 8-7.

Before 1970, except in 1964 and 1965, deaths of nonresidents of the United States occurring in the United States were treated as deaths of residents of the exact places of occurrence, which in most instances were urban areas. In 1964 and 1965 deaths of nonresidents of the United States occurring in the United States were allocated as deaths of residents of the balance of the county in which they occurred.

Residence error--Results of a 1960 study showed the classification of residence information on the death certificates corresponded closely to the residence classification of the census records for the decedents whose records were matched (4).

A comparison of the results of this study of deaths with those for a previous matched record study of births (5) showed the quality of residence data had improved considerably between 1950 and 1960. Both studies found that events in urban areas were overstated by the NCHS classification in comparison with the U.S. Bureau of the Census

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classification. The magnitude of the difference was substantially greater for deaths in 1960 than it was for births in 1950.

The improvement is attributed to an item added in 1956 to the U.S. Standard Certificates of Birth and of Death, asking whether residence was inside or outside city limits. This new item aided in properly allocating the residence of persons living near cities but outside the corporate limits.

Geographic classification

The rules followed in the classification of geographic areas for deaths and fetal deaths are contained in the two instruction manuals referred to previously (2,3). The geographic codes assigned by the NCHS during data reduction of source information on birth, death, and fetal-death records are given in another instruction manual (6). Beginning with 1982 data, the geographic codes were modified to reflect results of the 1980 census. For 1970-81, codes are based on results of the 1970 census.

Standard metropolitan statistical areas--The standard metropolitan statistical areas (SMSA's) used in this volume are those established by the U.S. Office of Management and Budget from final 1980 census population counts and used by the U.S. Bureau of the Census, except in the New England States.

An SMSA is a county or a group of contiguous counties containing a city of 50,000 inhabitants or more or an urbanized area of 50,000 with a total metropolitan population of at least 100,000, except in the New England States. In addition to the county or counties containing such a city or urbanized area, contiguous counties are included in an SMSA if, according to specified criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city or urbanized area (8).

In the New England States, the U.S. Office of Management and Budget uses towns and cities rather than counties as geographic components of SMSA's. However, NCHS cannot use the SMSA classification for these States because its data are not coded to identify all towns. Instead, NCHS uses New England County Metropolitan Areas (NECMA's). Made up of county units, these areas are established by the U.S. Office of Management and Budget (8,9).

Metropolitan and nonmetropolitan counties--Independent cities and counties included in MSA's and PMSA's or in NECMA's are included in data for metropolitan counties; all other counties are classified as nonmetropolitan.

Population-size groups--In 1989, vital statistics data for cities and certain other urban places were classified according to the population enumerated in the 1980 Census of Population. Data are available for individual cities and other urban places of 10,000 or more population. Data for the remaining areas not separately identified are shown in the tables under the heading "balance of area" or "balance of county." For the years 1970-81, classification of areas was determined by the population enumerated in the 1970 Census of Population. Beginning with 1982 data, some urban places identified in previous reports were deleted and others were added because of changes occurring in the enumerated population between 1970 and 1980.

Urban places other than incorporated cities for which vital

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statistics data are shown in this volume include the following:

- Each town in the New England States, New York, and Wisconsin and each township in Michigan, New Jersey, and Pennsylvania that had no incorporated municipality as a subdivision and had either 25,000 inhabitants or more, or a population of 10,000 to 25,000 and a density of 1,000 persons or more per square mile.
- Each county in States other than those indicated above that had no incorporated municipality within its boundary and had a density of 1,000 persons or more per square mile. (Arlington County, Virginia, is the only county classified as urban under this rule.)
- Each place in Hawaii with a population of 10,000 or more. (There are no incorporated cities in the State.)

Before 1964, places were classified as "urban" or "rural." The technical appendixes for earlier years discuss the previous classification system.

State or country of birth

Mortality statistics by State or country of birth (table 1-36) became available beginning with 1979. State or country of birth of a decedent is assigned to 1 of the 50 States, the District of Columbia; or to Puerto Rico, the Virgin Islands, or Guam--if specified on the death certificate. The place of birth is also tabulated for Canada, Cuba, Mexico, and for the Remainder of the World. Deaths for which information on State or country of birth was unknown, not stated, or not classifiable accounted for a small proportion of all deaths in 1989, about 1.2 percent.

Early mortality reports published by the U.S. Bureau of the Census contained tables showing nativity of parents as well as nativity of decedent. Publication of these tables was discontinued in 1933. Mortality data showing nativity of decedent were again published in annual reports for 1939-41 and for 1950.

Age

The age recorded on the death record is the age at last birthday. With respect to the computation of death rates, the age classification used by the U.S. Bureau of the Census is based also on the age of the person in completed years. For computation of age-specific and age-adjusted death rates, deaths with age not stated are excluded. For life table computation, deaths with age not stated are distributed proportionately.

Race

For vital statistics in the United States for 1989, deaths are classified by race--white, black, American Indian, Chinese, Hawaiian, Japanese, Filipino, Other Asian and Pacific Islanders, and Other. Mortality data for Filipino and Other Asian or Pacific Islander were shown for the first time in 1979.

The white category includes, in addition to persons reported as

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white, those reported as Mexican, Puerto Rican, Cuban, and [redacted] Caucasians. The American Indian category includes American, Alaskan, Canadian, Eskimo, and Aleut. If the racial entry on the death certificate indicates a mixture of Hawaiian and any other race, the entry is coded to Hawaiian. If the race is given as a mixture of white and any other race, the entry is coded to the appropriate nonwhite race. If a mixture of races other than white is given (except Hawaiian), the entry is coded to the first race listed. This procedure for coding the first race listed has been used since 1969. Before 1969, if the entry for race was a mixture of black and any other race except Hawaiian, the entry was coded to black.

Most of the tables in this volume, however, do not show data for this detailed classification by race. In all the tables, the divisions are white, all other (including black), and black separately.

Race not stated--For 1989, the number of death records for which race was unknown, not stated, or not classifiable was 4,499, or 0.2 percent of the total deaths. Death records with race entry not stated are assigned to a racial designation as follows: If the preceding record is coded white, the code assignment is made to white; if the code is other than white, the assignment is made to black. Before 1964, all records with race not stated were assigned to white except records of residents of New Jersey for 1962-64.

New Jersey, 1962-64--New Jersey omitted the race item from its certificates of live birth, death, and fetal death used in the beginning of 1962. The item was restored during the latter part of 1962. However, the certificate revision without the race item was used for most of 1962 as well as 1963. Therefore, figures by race for 1962 and 1963 exclude New Jersey. For 1964, 6.8 percent of the death records used for residents of New Jersey did not contain the race item.

Adjustments made in vital statistics to account for the omission of the race item in New Jersey for part of the certificates filed during 1962-64 are described in the technical appendixes of the Vital Statistics of the United States for each of those data years.

Hispanic origin

Mortality statistics for the Hispanic-origin population are based on information for those States and the District of Columbia that included items on the death certificate to identify Hispanic or ethnic origin of decedents. Data for 1989 were obtained from the District of Columbia and all States except Louisiana, New Hampshire, and Oklahoma. Hispanic mortality data were published for the first time in 1984. Generally, the reporting States used items similar to one of two basic formats recommended by NCHS. The first format is directed specifically toward the Hispanic population and appears on the U.S. Standard Certificate of Death as follows:

Was decedent of Hispanic origin?
(Specify No or Yes-If Yes, specify Cuban, Mexican,
Puerto Rican, etc.) ___ No ___ Yes
Specify:

The second format is a more general ancestry item and appears as follows:

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Ancestry - Mexican, Puerto Rican, Cuban, African, English, Irish, German, Hmong, etc., (specify)

For 1989, mortality data in tables 1-37 and 2-19 are based on deaths to residents of all 47 reporting States and the District of Columbia. In tables 1-38, 1-43, and 1-44, mortality data for the Hispanic-origin population are based on deaths to residents of 44 reporting States and the District of Columbia whose data were at least 90 percent complete on a place-of-occurrence basis and considered to be sufficiently comparable to be used for analysis. The 44 States are Alabama, Alaska, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York (including New York City), North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, West Virginia, Wisconsin, and Wyoming. Data for three States--Connecticut, Maryland, and Virginia--are excluded from tables 1-38, 1-43, and 1-44 because of the large proportion of deaths (in excess of 10 percent) occurring in these States for which Hispanic origin was not stated or was unknown.

In tables 2-20, 2-21, 2-22, and 2-23, the reporting areas are based on deaths to residents of 43 reporting States and the District of Columbia whose mortality data for all ages and whose live birth data were at least 90 percent complete on a place-of-occurrence basis and considered to be sufficiently comparable to be used for analysis. The 43 States are Alabama, Alaska, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York (including New York City), North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming. Data for Connecticut, Maryland, and Virginia were excluded for the reasons stated above. Rhode Island also was excluded because of the large proportion of unknown.

The 44 and 43 reporting States and the District of Columbia for which general mortality data are shown in this report accounted for about 97 percent of the Hispanic population in the United States in 1980. This included about 99 percent of the Mexican population, 94 percent of the Puerto Rican population, 97 percent of the Cuban population, and 94 percent of the "Other Hispanic" population (10). Accordingly, some caution should be exercised in generalizing mortality patterns from the reporting area to the Hispanic-origin population (especially Puerto Ricans) of the entire United States. For qualifications regarding infant mortality of the Hispanic-origin population, see "Infant deaths."

Marital status

Mortality statistics by marital status (tables 1-34 and 1-35) were published in 1979 for the first time since 1961. (They were previously published in the annual volumes for 1949-51 and 1959-61.) Several reports analyzing mortality by marital status have been published, including the special study based on 1959-61 data (11). Reference to earlier reports is given in the appendix of part B of the 1959-61 special study.

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Mortality statistics by marital status are tabulated separately for never married, married, widowed, and divorced. Certificates on which the marriage is specified as being annulled are classified as never married. Where marital status is specified as separated or common-law marriage, it is classified as married. Of the 2,094,043 resident deaths 15 years of age and over in 1989, 20,709 certificates (1.0 percent) had marital status not stated.

Educational attainment

Beginning with the 1989 data year, mortality data on educational attainment are being tabulated from information reported on the death certificate. As a result of the revisions of the U.S. Standard Certificate of Death (1), this item was added to the certificates of a large number of States:

- Decedent's Education (specify only highest grade completed)
- Elementary/Secondary (0-12) College (1-4 or 5+)

Mortality data on educational attainment for 1989 (table 1-45) are based on deaths to residents of 21 reporting States whose data were at least 90 percent complete on a place-of-occurrence basis. The 21 States are Arizona, California, Colorado, Delaware, Florida, Hawaii, Idaho, Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, New Hampshire, Oregon, South Carolina, Utah, Vermont, Wisconsin, and Wyoming.

Place of death and status of decedent

Mortality statistics by place of death were published in 1979 for the first time since 1958 (tables 1-30--1-32). In addition, mortality data also were available for the first time in 1979 for the status of decedent when death occurred in a hospital or medical center. The 1989 data were obtained from the following two items appearing on the revised U.S. Standard Certificate of Death: (1)

- Item 9a. Place of Death (check only one)
  Hospital: Inpatient, ER/Outpatient, DOA
  Other: Nursing Home, Residence, Other(specify)

- Item 9b. Facility Name (If not institution, give street and number)

Before the 1989 revision of the Standard Certificate of Death, information on place of death and status of decedent could be determined if the hospital or institution indicated Inpatient, Outpatient, ER, and DOA, and if the name of the hospital or institution, which was used to determine the kind of facility, appeared on the certificate. The change to a checkbox format in many States for this item may affect the comparability of data between 1989 and previous years.

Except for Oklahoma, all of the States (including New York City) and the District of Columbia have item 9 (or its equivalent) on their certificates. Louisiana's certificate was revised in 1989, but the computer system was not changed. Therefore, the same detail categories

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used in 1988 were used in 1989. As a result, not all categories were available. For all reporting States and the District of Columbia in the Vital Statistics Cooperative Program, NCHS accepts the state definition, classification, or code for hospitals, medical centers, nursing homes, or other institutions.

Effective with data year 1980, the coding for place of death and status of decedent was modified. A new coding category was added: "Death on arrival--hospital, clinic, medical center name not given." Deaths coded to this category are tabulated in tables 1-30--1-32. Had the 1979 coding categories been used, these deaths would have been tabulated as "Place unknown."

California--For the first five months of data year 1989, California coded "residence" to "other" for "Place of Death."

Mortality by month and date of death

Deaths by month have been tabulated regularly and published in the annual volume for each year beginning with data year 1900. For 1989 deaths by month are shown in tables 1-20, 1-21, 1-24, 1-33, 2-12, 2-13, 2-14 and 3-7.

Date of death was published for the first time for data year 1972. In addition, unpublished data for selected causes by date of death for 1962 are available from NCHS.

Numbers of deaths by date of death in this volume are shown in table 1-33 for the total number of deaths and for the numbers of deaths for the following three causes, for which the greatest interest in date of occurrence of death has been expressed: Motor vehicle accidents, Suicide, and Homicide and legal intervention.

These data show the frequency distribution of deaths for the selected causes by day of the week. They also make it possible to identify holidays with peak numbers of deaths from specified causes.

Report of autopsy

Before 1972, the last year for which autopsy data were tabulated was 1958. Beginning in 1972, all registration areas requested information on the death certificates as to whether an autopsy were performed. For 1989, autopsies were reported on 247,251 death certificates, 11.5 percent of the total (table 1-29).

Information indicating whether autopsy findings were used in determining the cause of death was tabulated for 1972-73 for all but nine registration areas and for 1974-77 for all but eight registration areas. The item "autopsy findings used" was deleted from the 1978 U.S. Standard Certificate of Death.

For eight of the cause-of-death categories shown in table 1-29, autopsies were reported as performed for 50 percent or more of all deaths (Meningococcal infection; Pregnancy with abortive outcome; other complications of pregnancy, childbirth, and the puerperium; Symptoms, signs, and ill-defined conditions; Motor vehicle accidents; Suicide; Homicide and legal intervention; and All other external causes). There was one other category for which 40 percent or more of the death certificates reported autopsies. Autopsies were reported for only 7.3 percent of the Major cardiovascular diseases.

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Cause of death

Cause-of-death classification--Since 1949, cause-of-death statistics have been based on the underlying cause of death, which is defined as "(a) the disease or injury which initiated the train of events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury" (12).

For each death, the underlying cause is selected from an array of conditions reported in the medical certification section on the death certificate. This section provides a format for entering the cause of death sequentially. The conditions are translated into medical codes through use of the classification structure and the selection and modification rules contained in the applicable revision of the International Classification of Diseases (ICD), published by the World Health Organization (WHO). Selection rules provide guidance for systematically identifying the underlying cause of death. Modification rules are intended to improve the usefulness of mortality statistics by giving preference to certain classification categories over others and/or to consolidate two or more conditions on the certificate into one classification category.

As a statistical datum, underlying cause of death is a simple, one-dimensional statistic; it is conceptually easy to understand and a well-accepted measure of mortality. It identifies the initiating cause of death and is therefore most useful to public health officials in developing measures to prevent the onset of the chain of events leading to death. The rules for selecting the underlying cause of death are included in ICD as a means of standardizing classification, which contributes toward comparability and uniformity in mortality medical statistics among countries.

Tabulation lists--Beginning with data year 1979, the cause-of-death statistics published by NCHS have been classified according to the Ninth Revision of the International Classification of Diseases (12). In addition to specifying that ICD-9 be used, WHO also recommends how the data should be tabulated to promote international comparability. The recommended system for tabulating data in ICD-9 allows countries to construct their mortality and morbidity tabulation lists from the rubrics of the WHO Basic Tabulation List (BTL) if the rubrics from the WHO mortality and morbidity lists, respectively, are included. This tabulation system for the Ninth Revision is more flexible than that for the Eighth Revision, in which specific lists were recommended for tabulating mortality and morbidity data.

The BTL recommended under the Ninth Revision consists of 57 two-digit rubrics that when added equal the "all causes" total. Identified within each two-digit rubric are up to nine three-digit rubrics that are numbered from zero to eight and whose total does not equal the two-digit rubric. The two-digit BTL rubrics 01 through 46 are used for the tabulation of nonviolent deaths according to ICD categories 001-799. Rubrics relating to chapter 17 (nature-of-injury causes 47 through 56) are not used by NCHS for selecting underlying causes of death; rather, preference is given to rubrics E47 through E56. The 57th two-digit rubric V0 is the Supplementary Classification of Factors Influencing Health Status and Contact with Health Services and is not

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appropriate for the tabulation of mortality data. The WHO [redacted] List, a subset of the titles contained in the BTL, consists of 50 rubrics that are the minimum necessary for the national display of mortality data.

Five lists of causes have been developed for tabulation and publication of mortality data in this volume--the Each-Cause List, List of 282 Selected Causes of Death, List of 72 Selected Causes of Death, List of 61 Selected Causes of Infant Death, and List of 34 Selected Causes of Death. These lists were designed to be as comparable as possible with the NCHS lists more recently used under the Eighth Revision. However, complete comparability could not always be achieved.

The Each-Cause List is made up of each three-digit category of the WHO Detailed List to which deaths may be validly assigned and most four-digit subcategories. The list is used for tabulation for the entire United States. The published Each-Cause table does not show the four-digit subcategories provided for Motor vehicle accidents (E810-E825); however, these subcategories that identify persons injured are shown in the accident tables of this report (section 5). Special fifth-digit subcategories also are used in the accident tables to identify place of accident when deaths from nontransport accidents are shown. These are not shown in the Each-Cause table.

The List of 282 Selected Causes of Death is constructed from BTL rubrics 01-46 and E47-E56. Each of the 56 BTL two-digit titles can be obtained either directly or by combining titles in the List. The three-digit level of the BTL is modified more extensively. Where more detail was desired, categories not shown in the three-digit rubrics were added to the List of 282 Selected Causes of Death. Where less detail was needed, the three-digit rubrics were combined. Moreover, each of the 50 rubrics of the WHO Mortality List can be obtained from the List of 282 Selected Causes of Death.

The List of 72 Selected Causes of Death was constructed by combining titles in the List of 282 Selected Causes of Death. It is used in tables published for the United States, for each State, and for Standard metropolitan statistical areas.

The List of 61 Selected Causes of Infant Death shows more detailed titles for Congenital anomalies and Certain conditions originating in the perinatal period than any other list except the Each-Cause List.

The List of 34 Selected Causes of Death was created by combining titles in the List of 72 Selected Causes. A table using this list is published for detailed geographic areas.

Beginning with data for 1987, changes were made in these lists to accommodate the introduction in the United States of new category numbers *042-*044 for Human immunodeficiency virus infection. The changes are described in the Technical Appendix from Vital Statistics for the United States, 1987.

Effect of list revisions--The International Lists or adaptations of them, used in the United States since 1900, have been revised approximately every 10 years so the disease classifications may be consistent with advances in medical science and with changes in diagnostic practice. Each revision of the International Lists has produced some break in comparability of cause-of-death statistics. Cause-of-death statistics beginning with 1979 are classified by NCHS according to the ICD-9 (12). For a discussion of each of the

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classifications used with death statistics since 1900, see Vital Statistics of the United States, 1979, Volume II, Mortality, Part A, section 7, pages 9-14.

A dual coding study was undertaken in which the Ninth and the Eighth Revisions were compared to measure the extent of discontinuity in cause-of-death statistics resulting from introducing the new Revision. A study for the List of 72 Selected Causes of Death and the List of 10 Selected Causes of Infant Death has been published (13). The List of 10 Selected Causes of Infant Death is a basic NCHS tabulation list not used in this volume but used for provisional data in the Monthly Vital Statistics Report, another NCHS publication. Comparability studies were also undertaken between the Eighth and Seventh, Seventh and Sixth, and Sixth and Fifth Revisions. For additional information about these studies, see the 1979 Technical Appendix previously mentioned.

Significant coding changes under the Ninth Revision--Since the implementation of ICD-9 in the United States, effective with mortality data for 1979, several coding changes have been introduced. The more important changes are discussed as follows. In early 1983, a change that affected data from 1981 to 1986 was made in the coding of acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) infection, which affected data from 1981 to 1986. Also effective with data year 1981 was a coding change for poliomyelitis. For data year 1982, the definition of child was changed (which affects the classification of deaths to a number of categories, including Child battering and other maltreatment), and guidelines for coding deaths to the category Child battering and other maltreatment (ICD No. E967) were changed also. During the calendar year 1985, detailed instructions for coding motor vehicle accidents involving all-terrain vehicles (ATV's) were implemented to ensure consistency in coding these accidents. Effective with data year 1986, "primary" and "invasive" tumors, unspecified were classified as "malignant;" these neoplasms had been classified to Neoplasms of unspecified nature (ICD-9 No. 239).

Beginning with data for 1987, NCHS introduced new category numbers *042-*044 for classifying and coding HIV infection, formerly referred to as human T-cell lymphotropic virus-III/lymphadenopathy associated virus (HTLV-III/LAV) infection. The asterisk appearing before the category numbers indicates these codes are not part of ICD-9. Also changed effective with data year 1987 were coding rules for the conditions "dehydration" and "disseminated intravascular coagulopathy." Effective with data year 1988, minor content changes were made to the classification for HIV infection. Detailed discussion of these changes may be found in the technical appendix for previous volumes.

Coding in 1989--The rules and instructions used in coding the 1989 mortality medical data remained essentially the same as those used for the 1988 data.

Medical certification--The use of a standard classification list, although essential for State, regional, and international comparison, does not ensure strict comparability of the tabulated figures. A high degree of comparability among areas could be attained only if all records of cause of death were reported with equal accuracy and completeness. The medical certification of cause of death can be made only by a qualified person, usually a physician, a medical examiner, or a coroner. Therefore, the reliability and accuracy of cause-of-death

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statistics are, to a large extent, governed by the ability of the certifier to make the proper diagnosis and by the care with which he or she records this information on the death certificate.

A number of studies have been undertaken on the quality of medical certification on the death certificate. In general, these have been for relatively small samples and for limited geographic areas. A bibliography prepared by NCHS (14), covering 128 references over 23 years, indicates no definitive conclusions have been reached about the quality of medical certification on the death certificate. No country has a well-defined program for systematically assessing the quality of medical certifications reported on death certificates or for measuring the error effects on the levels and trends of cause-of-death statistics.

One index of the quality of reporting causes of death is the proportion of death certificates coded to the Ninth Revision Chapter XVI, Symptoms, signs, and ill-defined conditions (ICD-9 Nos. 780-799). Although deaths occur for which it is impossible to determine the underlying cause, this proportion indicates the care and consideration given to the certification by the medical certifier. This proportion also may be used as a rough measure of the specificity of the medical diagnoses made by the certifier in various areas. In 1989 a record low of 1.3 percent of all reported deaths in the United States was assigned to this category compared with 1.4 for 1988. However, trends in the percent of deaths assigned to this category vary by age. Although the percent of deaths in this category for all ages combined has generally remained stable between 1980 and 1988, a slight increase in the percent occurred for the age group 5-14 years and a decrease occurred for all the age groups 55 years and over. However, between 1988 and 1989, the percent decreased for almost all age groups.

Automated selection of underlying cause of death--Beginning with data year 1968, NCHS began using a computer system for assigning the underlying cause of death. It has been used every year since. The system is called "Automated Classification of Medical Entities" (ACME).

The ACME system applies the same rules for selecting the underlying cause as would be applied manually by a nosologist; however, under this system, the computer consistently applies the same criteria, thus eliminating intercoder variation in this step of the process.

The ACME computer program requires the coding of all conditions shown on the medical certification. These codes are matched automatically against decision tables that consistently select the underlying cause of death for each record according to the international rules. The decision tables provide the comprehensive relationships among the conditions classified by ICD when applying the rules of selection and modification.

The decision tables were developed by NCHS staff on the basis of their experience in coding underlying causes of death under the earlier manual coding system and as a result of periodic independent validations. These tables periodically are updated to reflect additional new information on the relationship among medical conditions. For data year 1988, these tables were amended to incorporate minor changes to the previously mentioned classification for HIV infection (*042-*044) that originally had been implemented with data year 1987. Coding procedures for selecting the underlying cause of death by using the ACME computer

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program, as well as by using the ACME decision tables, are documented in NCHS instruction manuals (15-17).

Cause-of-death ranking--Cause-of-death ranking (except for infants) is based on numbers of deaths assigned to categories in the List of 72 Selected Causes of Death and the category Human immunodeficiency virus infection (*042-*044); cause-of-death ranking for infants is based on the List of 61 Selected Causes of Infant Death and HIV infection. HIV infection was added to the list of rankable causes effective with data year 1987.

The group titles Major cardiovascular diseases and Symptoms, signs, and ill-defined conditions from the List of 72 Selected Causes of Death are not ranked; Certain conditions originating in the perinatal period and Symptoms, signs, and ill-defined conditions from the List of 61 Selected Causes of Infant Death are not ranked. In addition, category titles beginning with the words "Other" or "All other" are not ranked to determine the leading causes of death. When one of the titles representing a subtotal is ranked (such as Tuberculosis), its component parts (in this case, Tuberculosis of respiratory system and Other tuberculosis) are not ranked.

Maternal deaths

Maternal deaths are those for which the certifying physician has designated a maternal condition as the underlying cause of death. Maternal conditions are those assigned to Complications of pregnancy, childbirth, and the puerperium (ICD-9 Nos. 630-676). In the Ninth Revision, WHO for the first time defined a maternal death as follows:

> A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Under the Eighth Revision, maternal deaths were assigned to the category "Complications of pregnancy, childbirth, and the puerperium" (ICDA-8 Nos. 630-678). Although WHO did not define maternal mortality, an NCHS classification rule that limited the definition of a maternal death to a death that occurred within a year after termination of pregnancy from any "maternal cause," that is, any cause within the range of ICDA-8 Nos. 630-678. This rule applied only if a duration was given for the condition. If no duration was specified and the underlying cause of death was a maternal condition, the duration was assumed to be within a year and the death was coded by NCHS as a maternal death. The change from an under-1-year limitation for duration used in the Eighth Revision to an under-42-days limitation used in the Ninth Revision did not have much effect on the comparability of maternal mortality statistics. However, comparability was affected by the following classification change. Under the Ninth Revision, maternal causes of death have been expanded to include indirect obstetric causes (ICD-9 [illegible]). These causes include infective and parasitic conditions as well as other conditions present in the mother classifiable elsewhere but that complicate pregnancy, childbirth, and the puerperium, such as

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Syphilis, Tuberculosis, Diabetes mellitus, Drug dependence, and Congenital cardiovascular disorders.

Maternal mortality rates are computed on the basis of the number of live births. The maternal mortality rate indicates the likelihood of a pregnant woman dying of maternal causes. The number of live births used in the denominator is an approximation of the population of pregnant women who are at risk of a maternal death.

Race--Beginning with the 1989 data year, NCHS changed the method of tabulating live birth and fetal death data by race from race of child to race of mother. This resulted in a discontinuity in maternal mortality rates by race between 1989 and previous years; see section on "Change in tabulation of race data for live births and fetal deaths" under "Infant deaths".

Infant deaths

Age--Infant death is defined as a death under 1 year of age. The term excludes fetal deaths. Infant deaths are usually divided into two categories according to age, neonatal and postneonatal. Neonatal deaths are those that occur during the first 27 days of life; postneonatal deaths are those that occur between 28 days and 1 year of age. Generally, it has been believed that different factors influencing the child's survival predominate in these two periods: Factors associated with prenatal development, heredity, and the birth process were considered dominant in the neonatal period; environmental factors, such as nutrition, hygiene, and accidents, were considered more important in the postneonatal period. Recently, however, the distinction between these two periods has blurred due in part to advances in neonatology, which have enabled more very small premature infants to survive the neonatal period.

Rates--Infant mortality rates shown in sections 2 and 3 are the most commonly used indices for measuring the risk of dying during the first year of life; they are calculated by dividing the number of infant deaths in a calendar year by the number of live births registered for the same period and are presented as rates per 1,000 or per 100,000 live births. Infant mortality rates use the number of live births in the denominator to approximate the population at risk of dying before the first birthday. This measure is an approximation because some live births will not have been exposed to a full year's risk of dying and some of the infants who die during a year will have been born in the previous year. The error introduced in the infant mortality rate by this inexactness is usually small, especially when the birth rate is relatively constant from year to year (18,19). Other sources of error in the infant mortality rate have been attributed to differences in applying the definitions for infant death and fetal death when registering the event (20,21).

In contrast to infant mortality rates based on live births, infant death rates shown in Section 1 are based on the estimated population under 1 year of age. Infant death rates, which appear in tabulations of age-specific death rates, are calculated by dividing the number of infant deaths in a calendar year by the estimated midyear population of persons under 1 year of age and are presented as rates per 100,000 population in this age group. Patterns and trends in the infant

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death rate may differ somewhat from those of the more commonly used "infant mortality rate," mainly because of differences in the nature of the denominator and in the time reference. Whereas the population denominator for the infant death rate is estimated using data on births, infant deaths, and migration for the 12-month period of July-June, the denominator for the infant mortality rate is a count of births occurring during the 12 months of January-December. The difference in the time reference can result in different trends between the two indices during periods when birth rates are moving up or down markedly.

The infant death rate also is subject to greater imprecision than is the infant mortality rate because of problems of enumerating and estimating the population under 1 year of age (21).

Race--Beginning with the 1989 data year, NCHS changed the method of tabulating live birth and fetal-death data by race from race of child to race of mother. This results in infant, fetal, perinatal, and maternal mortality rates for 1989 that are not comparable with those published for previous years, because live births comprise the denominator of these rates. To facilitate continuity and ease of interpretation, key published tables for 1989 and 1990, including all trend tables, will show data computed on the basis of live births and fetal deaths tabulated by both race of mother and race of child. This will make it possible to distinguish the effects of this change from real changes in the data.

As in previous years, race for infant and maternal deaths (the numerator of the rate) is tabulated by the race of the decedent. For fetal and perinatal mortality rates, both the numerator and denominator of the rates are affected, since the change to race of mother affects both fetal deaths and live births.

As noted in detail in the Technical Appendix to Vital Statistics of the United States, 1989, Vol. I, Natality, data on live births and fetal deaths are being tabulated by race of the mother. When the race of the mother is unknown, the race of the mother is assigned to the father's race; when information for both parents is missing, the race of the mother is assigned to the specific race of the mother of the preceding record with known race. In previous years, birth and fetal death tabulations were by race of child, as reported for the mother and father. Briefly, in cases of mixed parentage where only one parent was white, the child was assigned to the other parent's race. When neither parent was white, the child was assigned the race of the father, except if either parent was Hawaiian, the child was assigned to Hawaiian. If race was not reported for one parent, the child was assigned the race of the parent for whom race was given.

The change in the tabulation of live births and fetal deaths by race reflects three factors over the past two decades: the topical content of the birth certificate has been expanded to include considerable health and demographic information related to the mother, the increasing incidence of interracial parentage, and the growing proportion of births for which the race of the father is not reported.

Quantitatively, the change in the basis for tabulating live births and fetal deaths by race results in more white births and fetal deaths and fewer to the black population and to other races. As a consequence, infant, fetal, perinatal, and maternal mortality rates under the new classification tend to be lower for white infants and higher for infants of other races (Table A). In general, discontinuities are larger for infant and maternal mortality rates, where only the denominator of the rate is affected by the

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change than for fetal and perinatal mortality rates where both the numerator and the denominator are affected. For some minority race groups, the effect of the change is quite large.

Table A. Ratio of infant, neonatal, postneonatal, maternal, and perinatal rates, with race for live births tabulated according to race of mother to those with race for live births tabulated according to race of child: United States, 1989

Race	Infant deaths	Neonatal deaths	Postneonatal deaths	Maternal deaths	Fetal deaths
All races	1.00	1.00	1.00	1.00	1.00
White	0.98	0.98	0.98	0.98	1.00
Black	1.05	1.05	1.05	1.05	1.02
American Indian	1.25	1.25	1.25	*	1.07
Chinese	1.07	1.07	1.07	*	0.99
Japanese	1.22	1.22	*	*	0.94
Hawaiian	1.45	1.45	1.45	*	1.15
Filipino	1.06	1.06	1.06	*	1.03
Other Asian	1.09	1.09	1.09	*	1.01
Other races	*	*	*	*	1.03

Race	Perinatal definition		
	I	II	III
All races	1.00	1.00	1.00
White	0.99	0.99	0.99
Black	1.04	1.04	1.04
American Indian	1.17	1.14	1.13
Chinese	1.03	1.03	1.02
Japanese	1.06	1.05	1.05
Hawaiian	1.31	1.28	1.26
Filipino	1.04	1.04	1.04
Other Asian	1.04	1.04	1.04
Other races	1.21	1.21	1.21

The change in the race classification of live births and fetal deaths presents challenges to those analyzing infant, fetal, perinatal, and maternal mortality data, particularly trend data. To facilitate analysis of infant mortality by race, reports will be prepared showing historic data tabulated by race of mother.

Comparison of race data from birth and death certificates--Regardless of whether vital events are tabulated by race of mother or by race of child, inconsistencies exist in reporting race for the same infant between birth and death certificates, based on results of studies in which race on the birth and death certificates for the same infant were compared (22).

These reporting inconsistencies can result in systematic biases in infant mortality rates by specified race, in particular, underestimates for specified races other than white or black. In the computation of race-specific infant mortality rates published in Vital Statistics of the United States, the race item for the numerator comes from the death

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certificate, and for the denominator, from the birth certificate. Biases in the rates may arise because of possible inconsistencies in reporting race on these two vital records. Race of the mother and father is reported on the birth certificate by the mother at the time of delivery; whereas race of the deceased infant is reported on the death certificate by the funeral director based on observation or on information supplied by an informant, such as a parent. Previous studies have noted that the race of an infant who died and was of a smaller minority race group is sometimes reported as white on the death certificate, but is reported as the minority race group on the birth certificate, resulting, in the aggregate, in understatement of infant mortality for smaller race groups (22).

Estimates can be made of the degree of bias in race-specific infant mortality rates by comparing rates for birth cohorts based on the newly available linked birth and infant death data set (23,24) with period rates based on mortality data published in Vital Statistics of the United States for the same year(s). In this comparison, cohort rates are based entirely on the linked data set while period rates are constructed using a numerator (infant deaths) based on mortality data published in VSUS and a denominator (live births) based on the linked data set.

The comparison of cohort and period rates is somewhat affected by small differences in the events included in the numerators of the two rates. The numerator of the cohort rate is comprised of infant deaths to the cohort of infants born in a calendar year whereas the numerator of the period rate is comprised of infant deaths that occur in the calendar year.

Based on data comparing infant mortality rates from the linked data set for the birth cohorts of 1984-85 with period rates constructed for 1984-85, bias in the rates for the two major race groups--white and black--is small (Table B). However, cohort rates for the smaller race groups are estimated to be higher than period rates by 9 to 41 percent. Cohort rates have not been adjusted to reflect the approximately 2 percent of infant death records that were not linked to their corresponding birth records. Because of systematic understatement of infant mortality rates based on period data, data from the national linked files should be used to measure infant mortality for races other than black and white. For the major race groups, period data are a close approximation of the rates based on linked files.

Hispanic origin--Infant mortality rates for the Hispanic-origin population are based on numbers of resident infant deaths reported to be of Hispanic origin and numbers of resident live births by Hispanic origin of mother for the 43 reporting States and the District of Columbia. In computing infant mortality rates, deaths and live births of unknown origin are not distributed among the specified Hispanic and non-Hispanic groups. Because the percent of infant deaths of unknown origin for 1989 was 2.6 percent and the percent of live births of unknown origin was 1.1 percent, infant mortality rates by specified Hispanic origin and race for non-Hispanic origin are slightly underestimated. In addition, as discussed above for specified races, period infant mortality rates for specific Hispanic-origin groups tend to be underestimated when compared with rates based on the national linked birth and infant death data set as shown in Table C. Comparisons also are affected

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Table B. Infant mortality rates by race of mother for the period 1984-85 and for birth cohorts, 1984-85; and ratio of birth cohort to period rates: United States

[Rates per 1,000 live births in specified groups]

Race	Period rate 1985-87	Birth cohort rate 1985-87	Ratio cohort/ period rates
All races	10.7	10.4	0.97
White	9.3	8.9	0.96
Black	19.1	18.4	0.96
American Indian	11.7	13.2	1.13
Chinese	5.9	6.5	1.10
Japanese	5.3	6.2	1.17
Filipino	5.4	8.1	1.50
Other Asian	7.8	9.1	1.17
Other races	7.7	9.8	1.27

NOTE: Births for race not stated are not distributed.

by the approximate 2 percent of infant death records that are not linked to the corresponding birth records.

Caution should be exercised when generalizing from the ratios of cohort-to-period rates for 1986 with data for 1989, because the area for Hispanic data has expanded from 18 reporting States and the District of Columbia in 1986 to 43 reporting States and the District of Columbia in 1989. The Hispanic reporting area for 1986 included Arizona, Arkansas, California, Colorado, District of Columbia, Georgia, Hawaii, Illinois, Indiana, Kansas, Mississippi, Nebraska, New Jersey, New York, North Dakota, Ohio, Texas, Utah, and Wyoming.

Small numbers of infant deaths for specific Hispanic-origin groups can result in infant mortality rates subject to relatively large random variation (see "Random variation in numbers of deaths, death rates, and mortality rates and ratios").

Tabulation list--Causes of death for infants are tabulated according to a list of causes that is different from the list of causes for the population of all ages, except for the Each Cause List. (See "Cause-of-death classification" under "Cause of death.")

California--From 1985 to 1988, data on age at death for California, were biased in the categories 1-23 hours and 1 day because of processing errors that affected selected infants who died within 24 hours after birth. Specifically, some infants who died within 1-23 hours of birth were erroneously coded as dying at 1 day after birth.

Beginning with 1985 data, California provided NCHS with computer tapes of precoded mortality data through the Vital Statistics Cooperative Program (VSCP); whereas prior to 1985, data from the State of California were based on information coded by NCHS from copies of original death certificates. The effect of these errors on national data, for the years 1985-88 shown in table 2-3 is negligible. The problem has been identified and corrected for 1989 and subsequent years.

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Table C. Infant mortality rates by specified Hispanic origin of mother for the period 1986 and birth cohort of 1986; and ratio of birth cohort to period rates: Total of 18 reporting States and the District of Columbia

[Rates per 1,000 live births in specified group. Figures for origin not stated included in "All origins" but not distributed among origin groups]

Origin	Period rate 1986	Birth cohort rate 1986	Ratio cohort/ period rates
All origins	10.2	9.9	0.97
Hispanic total	8.0	8.4	1.05
Mexican	7.7	7.9	1.03
Puerto Rican	8.6	11.8	1.37
Cuban	*	8.2	*
Other Hispanic1	9.1	8.4	0.90
Non-Hispanic total2	10.0	10.1	1.01
Non-Hispanic White	8.6	8.3	0.97
Non-Hispanic Black	16.9	17.8	1.05

1Includes Central and South American, and other and unknown Hispanic.
2Includes races other than white and black.

Fetal deaths

In May 1950, WHO recommended the following definition of fetal death be adopted for international use:

> Death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles (25).

The term "fetal death" was defined on an all-inclusive basis to end confusion arising from the use of such terms as stillbirth, spontaneous abortion, and miscarriage.

Shortly thereafter, this definition was adopted by NCHS as the nationally recommended standard. All registration areas except Puerto Rico have definitions similar to the standard definition (26). Puerto Rico has no formal definition.

As another step toward increasing the comparability of data on fetal deaths for different countries, WHO recommended that for statistical purposes fetal deaths be classified as early, intermediate, and late. These groups are defined as follows:

Less than 20 completed weeks of gestation (early fetal deaths)..... Group I

20 completed weeks of gestation but less than 28 (intermediate fetal deaths)..... Group II

28 completed weeks of gestation and over

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(late fetal deaths).....Group III
Gestation period not classifiable in groups I, II, and III.....Group IV

As shown in table 3-11, Group IV consists of fetal deaths with gestation not stated but presumed to be 20 weeks or more.

Until 1939, the nationally recommended procedure for registration of a fetal death required the filing of a live-birth certificate and a death certificate. In 1939, a separate Standard Certificate of Stillbirth (fetal death) was created to replace the former procedure. This was revised in 1949, 1956, 1968, 1978, and 1989. The 1989 U.S. Standard Report of Fetal Death is shown in figure 7-B.

The 1977 revision of the Model State Vital Statistics Act and Model State Vital Statistics Regulations (27) recommended spontaneous fetal deaths at a gestation of 20 weeks or more or a weight of 350 grams or more and all induced terminations of pregnancy regardless of gestational age be reported and further be reported on separate forms. These forms should be considered legally required statistical reports rather than legal documents.

Beginning with fetal deaths reported in 1970, procedures were implemented that attempted to separate reports of spontaneous fetal deaths from those of induced terminations of pregnancy. These procedures were implemented because the health implications of spontaneous fetal deaths are different from those of induced terminations of pregnancy. These procedures are still used.

Comparability and completeness of data--Registration area requirements for reporting fetal deaths vary. Most of the areas require reporting of fetal death at gestations of 20 weeks or more. Table D shows the minimum period of gestation required by each State to report fetal death in 1989. Substantial evidence exists that indicates some fetal deaths for which reporting is required are not reported (28).

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Table D. Period of gestation at which fetal-death reporting is required: Each reporting area, 1989

Area	All periods of gestation	16 wks	20 wks	20 wks or 350 grams	20 wks. or 400 grams	20 wks. or 500 grams	5 mos.	350 grams	500 grams
Alabama				X					
Alaska			X						
Arizona			1X						
Arkansas	2X								
California			X						
Colorado	2X								
Connecticut			X						
Delaware			X						
District of Columbia						X			
Florida			X						
Georgia	X								
Hawaii	X								
Idaho				X					
Illinois			X						
Indiana			X						
Iowa			X						
Kansas								X	
Kentucky				X					
Louisiana				X					
Maine	2X								
Maryland			3X						
Massachusetts				X					
Michigan					X				
Minnesota			X						
Mississippi				X					
Missouri				X					
Montana			X						
Nebraska			X						
Nevada			X						
New Hampshire				X					
New Jersey			X						
New Mexico									X
New York									
New York excluding New York City	X								
New York City	X								
North Carolina			X						
North Dakota			X						
Ohio			X						
Oklahoma			X						
Oregon			4X						
Pennsylvania		X							
Rhode Island	X								
South Carolina				X					

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South Dakota						X
Tennessee						5X
Texas		X				
Utah		X				
Vermont		6X				
Virginia	X					
Washington		X				
West Virginia		X				
Wisconsin			X			
Wyoming		X				
Puerto Rico					X	
Virgin Islands	X					
Guam		X				

1. If gestational age is unknown, weight of 350 grams or more.
2. Although State law requires the reporting of fetal deaths of all periods of gestation, only data for fetal deaths of 20 weeks or more of gestation are provided to NCHS.
3. If gestational age is unknown, weight of 500 grams or more.
4. If gestational age is unknown, weight of 400 grams or more, or crown-heel length of 28 centimeters or more.
5. If weight is unknown, 22 completed weeks of gestation or more.
6. If gestational age is unknown, weight of 400 or more grams, 15 or more ounces.

Underreporting of fetal deaths is most likely to occur in the earlier part of the required reporting period for each State. Thus for States requiring reporting of all periods of gestation, fetal deaths occurring under 20 weeks of gestation are less completely reported; for States requiring reporting of fetal deaths of 20 weeks of gestation or more, fetal deaths occurring at 20-23 weeks of gestation are less completely reported. Thus, reporting of fetal deaths at 20-23 weeks of gestation may be more complete for those States that report fetal deaths at all periods of gestation than for others.

To maximize the comparability of data by year and by State, most of the tables in section 3 are based on fetal deaths occurring at gestations of 20 weeks or more. These tables also include fetal deaths for which gestation is not stated for those States requiring reporting at 20 weeks or more gestation only. Beginning with 1969, fetal deaths of not stated gestation were excluded for States requiring reporting of all products of conception except for those with a stated birthweight of 500 grams or more. In 1989, this rule was applied to the following States: Georgia, Hawaii, New York (including New York City), Rhode Island, and Virginia. Each year, there are exceptions to this procedure.

Arkansas--Since 1971, Arkansas has been using two reporting forms for fetal deaths: A confidential Spontaneous Abortion form that is not sent to NCHS and a Fetal Death Certificate that is. During the period 1971-80, it is believed that most spontaneous fetal deaths of less than 20 weeks' gestation were reported on the confidential form and, therefore, were not reported to NCHS. During the period 1981-83, Arkansas specified that fetal deaths of less than 28 weeks' gestation or weighing less than 1,000 grams could be reported on the confidential form; beginning with 1984 data, the State specified that fetal deaths of 20 weeks' gestation or weighing 500 grams be

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reported on the Fetal Death Certificate. Because of these changes, the comparability of counts of early fetal deaths may be affected. In particular, counts of fetal deaths at 20 to 27 weeks for 1981-83 were not comparable between Arkansas and other reporting areas or with Arkansas data for 1984-89. It is believed that reporting has improved but it is still not comparable with data for 1980 and earlier years.

Colorado--Although Colorado State law requires reporting fetal deaths of all periods of gestation, beginning in 1989 the State provides to NCHS only data for fetal deaths of 20 weeks gestation or more.

Maine--Maine uses two reporting forms for fetal deaths: A Report of Abortion (Spontaneous and Induced) and a Report of Fetal Death. Most spontaneous fetal deaths at less than 20 weeks' gestation are reported on the Report of Abortion, and, therefore, are excluded from fetal death counts in this volume.

Maryland--From the counts of frequencies by month, it appears that not all fetal deaths occurring in the first quarter of 1989 were reported. This may account in part for the decrease in the reported number of fetal deaths and in fetal mortality rates for Maryland between 1988 and 1989.

Wisconsin--Beginning in 1986, Wisconsin changed its reporting requirements for spontaneous fetal deaths from "20 weeks" to "20 weeks or 350 grams."

Revised Report of Fetal Death for 1989--Beginning with data for 1989, new items were added to the U.S. Standard Report of Fetal Death, including Hispanic origin of the mother and father, medical and other risk factors of pregnancy, obstetric procedures, and method of delivery. In addition, questions on complications of labor and/or delivery and congenital anomalies of fetus were changed from an open-ended question to a checkbox format to ensure more complete reporting of information. However, because of differences in implementation dates of the new fetal death report between States, and because of inexperience in reporting and processing the new items, reporting of the new items in individual States may not be complete for 1989. The data quality and completeness of many of these items are being evaluated.

Period of gestation--The period of gestation is the number of completed weeks elapsed between the first day of the last normal menstrual period (LMP) and the date of delivery. The first day of the LMP is used as the initial date because it can be more accurately determined than the date of conception, which usually occurs 2 weeks after LMP. Data on period of gestation are computed from information on "date of delivery" and "date last normal menses began." If "date last normal menses began" is not on the record or if the calculated gestation falls beyond a duration considered biologically plausible, the "Physician's estimate of gestation" is used.

To improve data quality, beginning with data for 1989, NCHS instituted a new computer edit to check for consistency between gestation and birthweight (29). Briefly, if LMP gestation is inconsistent with birthweight, and the physician's estimate is consistent, the physician's estimate is used; if both are inconsistent, LMP gestation is used, and birthweight is assigned to unknown. When the period of gestation is reported in months on the report, it is allocated

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to gestational intervals in weeks as follows:

1 - 3 months to under 16 weeks
4 months to 16 - 19 weeks
5 months to 20 - 23 weeks
6 months to 24 - 27 weeks
7 months to 28 - 31 weeks
8 months to 32 - 35 weeks
9 months to 40 weeks
10 months and over to 43 weeks and over

All areas reported LMP in 1989, except Puerto Rico, and all areas except California, the District of Columbia, Louisiana, Maryland, and Oklahoma reported physician's estimate of gestation.

Birthweight--Most of the 55 registration areas do not specify how weight should be given, that is, in pounds and ounces or in grams. In the tabulation and presentation of birthweight data, the metric system (grams) has been used to facilitate comparison with other data published in the United States and internationally. Birthweight specified in pounds and ounces is assigned the equivalent of the gram intervals, as follows:

Less than 500 grams	=	0 lb 1 oz or less
500 - 999 grams	=	1 lb 2 oz - 2 lb 3 oz
1,000 - 1,499 grams	=	2 lb 4 oz - 3 lb 4 oz
1,500 - 1,999 grams	=	3 lb 5 oz - 4 lb 6 oz
2,000 - 2,499 grams	=	4 lb 7 oz - 5 lb 8 oz
2,500 - 2,999 grams	=	5 lb 9 oz - 6 lb 9 oz
3,000 - 3,499 grams	=	6 lb 10 oz - 7 lb 11 oz
3,500 - 3,999 grams	=	7 lb 12 oz - 8 lb 13 oz
4,000 - 4,499 grams	=	8 lb 14 oz - 9 lb 14 oz
4,500 - 4,999 grams	=	9 lb 15 oz - 11 lb 0 oz
5,000 grams or more	=	11 lb 1 oz or more

With the introduction of ICD-9, the birthweight classification intervals for perinatal mortality statistics were shifted downward by 1 gram as shown above. Previously, the intervals were, for example, 1,001-1,500, 1,501-2,000, and so forth. Beginning in 1989, NCHS instituted a consistency check between birthweight and gestation; see previous section on gestation.

Race--Beginning with data for 1989, NCHS changed the method of tabulating fetal death, perinatal, and live birth data by race from race of child to race of mother. This has resulted in a discontinuity in fetal mortality rates by race between 1989 and previous years; see section on "Change in tabulation of race data for live births and fetal deaths," under Infant deaths.

Hispanic origin of mother--Fetal mortality data for the Hispanic-origin population are based on fetal deaths to mothers of Hispanic origin who were residents of those States and the District of Columbia that included items on the report of fetal death to identify Hispanic or ethnic origin of mother. Data for 1989 were obtained from 44 States; areas not supplying data were the District of Columbia, Louisiana, Maryland, Massachusetts, New Hampshire, Oklahoma, and Rhode Island.

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For 1989, fetal and perinatal mortality data in table [redacted] for a reporting area of 44 States and tables 3-20, 4-6 and 4-7 are for a reporting area of 31 states that had an item on Hispanic or ethnic origin on the death certificate, birth certificate, and report of fetal death and whose data for all three files were at least 90 percent complete on a place-of-occurrence basis and considered to be sufficiently comparable to be used for analysis. The States included are Alabama, Arizona, Arkansas, California, Colorado, Florida, Georgia, Hawaii, Idaho, Illinois, Iowa, Kansas, Kentucky, Minnesota, Mississippi, Missouri, Nebraska, Nevada, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, West Virginia, Wisconsin, and Wyoming.

The 31 reporting States for which fetal and perinatal data by Hispanic origin are shown accounted for about 75 percent of the Hispanic population in 1980, including 92 percent of the Mexican population, 27 percent of the Puerto Rican population, 75 percent of the Cuban population, and 57 percent of the "Other Hispanic" population (10). Accordingly, caution should be exercised in generalizing mortality patterns from the reporting area to the Hispanic-origin population (especially Puerto Ricans) of the entire United States. (See also "Hispanic origin" under "Classification of data").

Total-birth order--Total-birth order refers to the sum of live births and other terminations (including spontaneous fetal deaths and induced terminations of pregnancy) a woman has had, including the fetal death being recorded. For example, if a woman has given birth to two live babies and to one born dead, the next fetal death to occur is counted as number four in total-birth order.

Beginning with implementation of the 1989 revision of the U. S. Standard Report of Fetal Death, total-birth order is calculated from three items on pregnancy history: number of previous live births now living; number of previous live births now dead; and number of other terminations (spontaneous and induced at any time after conception). For prior years, total-birth order was calculated from four items, see the Technical Appendix from Vital Statistics of the United States, Volume II, Mortality, Part A.

Although all registration areas use the two standard items pertaining to number of previous live births, registration areas phrase the item pertaining to other terminations of pregnancy differently. Total-birth order for all areas is calculated from the sum of available information. Thus, information on total-birth order may not be completely comparable among the registration areas. In addition, there may be substantial underreporting of other terminations of pregnancy on the fetal death report.

Marital status--Table 3-3 shows fetal deaths and fetal-death rates by mother's marital status. The following states were excluded from this table because their reports of fetal death did not include an item on marital status: California, Connecticut, Maryland, Michigan, Nevada, New York (including New York City), Ohio, and Texas. Because live births comprise the denominator of the rate, marital status must be reported for mothers of live births. Marital status of the mother of the live birth is inferred for States that did not report it on the birth certificate.

Beginning with data for 1989, fetal deaths with marital

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status not stated are shown as not stated in frequencies, but are proportionally distributed for rate computations into either the married or unmarried categories according to the percent of fetal death reports with stated marital status that fall into each category for the reporting States. Before 1989, fetal deaths with not-stated marital status were assigned to the married category. Because of this change, fetal death frequencies and rates by marital status for 1989 are not strictly comparable with those for previous years.

No quantitative data exist on the characteristics of unmarried women who do not report, misreport their marital status, or fail to register fetal deaths. Underreporting may be greater for the unmarried group than for the married group.

Age of mother--Beginning with data for 1989, the U.S. Standard Report of Fetal Death asks for the mother's date of birth. Age of mother is computed from the mother's date of birth and the date of the termination of the pregnancy. For those States whose certificates do not contain an item for the mother's date of birth, reported age of the mother (in years) is used. The age of the mother is edited by NCHS for upper and lower limits. When mothers are reported to be under 10 years of age or 50 years of age and over, the age of the mother is considered not stated and is assigned as follows: Age on all fetal-death records with age of mother not stated is assigned according to the age appearing on the record previously processed for a mother of identical race and having the same total-birth order (total of live births and other terminations).

Sex of fetus--Beginning with data for 1989, for all fetal deaths of 20 or more weeks gestation, not-stated sex of fetus is assigned the sex of the fetus from the previous record. Before 1989, no such assignment is made.

Plurality--All registration areas except Louisiana report the plurality of the fetus. Although Louisiana has not reported this item for many years, prior to 1989, data for Louisiana was erroneously converted to a plurality of 1 (single birth) and included in United States totals. Beginning with 1989 data, Louisiana is excluded from tables reporting plurality of the fetus. For reporting areas, not-stated plurality of the fetus is assigned to single births.

Perinatal mortality

Perinatal definitions--Beginning with data year 1979, perinatal mortality data for the United States and each State have been published in section 4. WHO recommends in ICD-9 "national perinatal statistics should include all fetuses and infants delivered weighing at least 500 grams (or when birthweight is unavailable, the corresponding gestational age (22 weeks) or body length (25 cm crown-heel)), whether alive or dead...." It further recommends, "countries should present, solely for international comparisons, 'standard perinatal statistics' in which both the numerator and denominator of all rates are restricted to fetuses and infants weighing 1,000 grams or more (or, where birthweight is unavailable, the corresponding gestational age (28 weeks) or body length (35 cm crown-heel))." Because birthweight and gestational age are not reported on the death certificate in the United States, NCHS was unable to adopt these definitions. Three definitions of perinatal mortality

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are used by NCHS: Perinatal Definition I, generally used for international comparisons, which includes fetal deaths of 28 weeks' gestation or more and infant deaths of less than 7 days; Perinatal Definition II, which includes fetal deaths of 20 weeks' gestation or more and infant deaths of less than 28 days; and Perinatal Definition III, which includes fetal deaths of 20 weeks' gestation or more and infant deaths of less than 7 days.

Variations in fetal death reporting requirements and practices have implications for comparing perinatal rates among States. Because reporting is generally sporadic near the lower limit of the reporting requirement, States that require reporting of all products of pregnancy, regardless of gestation, are likely to have more complete reporting of fetal deaths at 20 weeks or more than those States that do not. The larger number of fetal deaths reported for these "all periods" States may result in higher perinatal mortality rates than those rates reported for States whose reporting is less complete. Accordingly, reporting completeness may account, in part, for differences among the State perinatal rates, particularly differences for Definitions II and III, which use data for fetal deaths at 20-27 weeks.

Not stated--Fetal deaths with gestational age not stated are presumed to be of 20 weeks' gestation or more if the State requires reporting of all fetal deaths at a gestational age of 20 weeks or more or the fetus weighed 500 grams or more in those States requiring reporting of all fetal deaths, regardless of gestational age. For Definition I, fetal deaths at a gestation not stated but presumed to have been of 20 weeks or more are allocated to the category 28 weeks or more, according to the proportion of fetal deaths with stated gestational age that falls into that category. For Definitions II and III, fetal deaths at a presumed gestation of 20 weeks or more are included with those at a stated gestation of 20 weeks or more

The allocation of not-stated gestational age for fetal deaths is made individually for each State, for metropolitan and nonmetropolitan areas, and separately for the entire United States. Accordingly, the sum of perinatal deaths for the areas according to Definition I may not equal the total number of perinatal deaths for the United States.

Race--Beginning with the 1989 data year, NCHS has changed the method of tabulating fetal death and live birth data by race from race of child to race of mother. This has resulted in a discontinuity in perinatal mortality rates by race between 1989 and previous years; see "Change in race classification for live births and fetal deaths" under "Infant deaths."

Hispanic origin--See "Hispanic origin of mother" under "Fetal deaths."

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Chapter 9

1990 ADDENDUM TO "TECHNICAL APPENDIX" OF VITAL STATISTICS OF THE UNITED STATES, 1989, VOLUME II, MORTALITY, PART A

To assist the users of the mortality public-use data tapes, attached is a copy of the "Technical Appendix" of the Vital Statistics of the United States, 1989, Volume II, Mortality, Part A. This technical appendix provides certain qualifications that are essential to using, analyzing, and interpreting the data on those tapes. Certain modifications to the attached technical appendix are essential to make it applicable to the mortality file for the 1990 data year. Those modifications, which will appear in the printed version of the 1990 technical appendix, include the following:

I. Source of data

State-coded medical data:

For 1990, of the States in the VSCP, 25 submitted precoded medical data for all death certificates on computer tape: California, Colorado, Florida, Georgia, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Nebraska, New Hampshire, New York State(excluding New York City), North Carolina, Pennsylvania, South Carolina, Texas, Vermont, Virginia, Washington, and Wisconsin. NCHS also contracted with Colorado and Kansas to precode medical data for all deaths on computer tape for Alaska, Delaware, Idaho, North Dakota, and Wyoming. Vermont subcontracted with Pennsylvania to code its medical data.

The remaining 20 VSCP States, New York City, and the District of Columbia submitted copies of the original certificates from which NCHS coded the medical data.

All States submitted precoded demographic data for all death certificates on computer tape in 1990.

Data for Puerto Rico, the Virgin Islands, and Guam are not available on the mortality public-use data tapes.

II. Classification of data

A. Medical Indexing, Classification, and Retrieval (MICAR).

Prior to data for 1968, mortality medical data were based on manual coding of an underlying cause of death for each certificate in accordance with WHO rules. Effective with data year 1968, NCHS converted to computerized coding of the underlying cause and manual coding of all causes (multiple causes) on the death certificate. In this system,called "Automated Classification of Medical Entities" (ACME), the multiple cause codes serve as inputs to the computer software that employs WHO rules to select the underlying cause. Since 1968, many States also have implemented ACME and provide multiple cause and underlying cause data to NCHS in electronic form.

Beginning with data year 1990, another computer system is being implemented. This system, called "Mortality Medical Indexing, Classification,

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and Retrieval (MICAR) automates the coding of the multiple causes of death. In addition, MICAR ultimately can provide more detailed information on the conditions reported on the death certificates than is available through the International Classification of Diseases (ICD) code structure. In the first year of implementation, only about 5 percent (94,372) of the nation's death records were coded using MICAR with subsequent processing through ACME. The remainder of the national file was processed by either NCHS or States using only the ACME system. This includes a portion of the records for Alabama, Kentucky, Oregon, Rhode Island, and West Virginia. The remainder of the national file was processed by either NCHS or State using only the ACME system.

B. Metropolitan Areas

Metropolitan areas are as defined March 30,1990, and reflects population counts from the 1990 Census. A new listing of 320 Metropolitan Statistical Areas (MSAs), Primary Metropolitan Statistical Areas (PMSAs), and New England County Metropolitan Areas (NECMAs) is included in this documentation. There are also 20 consolidated Metropolitan Statistical AREAS (CMSAs), which are made up of PSMAs. Other geographic changes based in the 1990 Census will be implemented late.

B. Hispanic origin.

Data for 1990 were obtained from the District of Columbia and all States except the following three States: Louisiana, New Hampshire, and Oklahoma.

For 1990, mortality data published in Vital Statistics of the United States (VSUS) tables 1-37 and 2-19 are based on deaths to residents of all 7 States and the District of Columbia. Tables 1-38, 1-43, and 1-44 are based on deaths to residents of 45 States, New York State (excluding New York City), and the District of Columbia whose data were at least 90 percent complete on a place-of-occurrence basis and considered to be sufficiently comparable to be used for analysis. The 45 States are Alabama, Alaska, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming. Data for Connecticut were excluded from tables 1-38, 1-43, and 1-44 because of the large proportion of deaths (in excess of 10 percent) occurring in the State for which Hispanic Origin was not stated or was unknown.

In tables 2-20, 2-21, 2-22, and 2-23 the data are based on deaths to residents of 45 States, New York State (excluding New York City), and the District of Columbia whose mortality data for all ages and whose live birth data were at least 90 percent complete on a place-of-occurrence basis and considered to be sufficiently comparable to be used for analysis. The 45 States are the same as listed above. Data for Connecticut were excluded for the reason stated above.

The 45 States, New York State (excluding New York City), and the District of Columbia for which general mortality data are shown in this report accounted for about 89 percent of the Hispanic population in the United States,

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including about 99 percent of the Mexican population, 58 [illegible] Puerto Rican population, 92 percent of the Cuban population, and 61 percent of the "other Hispanic" population (1).

Infant mortality - In computing infant mortality rates, deaths and live births of unknown origin are not distributed among the specified Hispanic and non-Hispanic groups. Because for 1990 the percent of infant deaths of unknown origin was 1.6 and the percent of live births of unknown origin was 1.0, infant mortality rates by specified Hispanic origin and race for non-Hispanic origin may be somewhat underestimated.

C. Educational attainment.

Mortality data on educational attainment for 1990 are based on deaths to residents of 28 States and the District of Columbia whose data were at least 90 percent complete on a place-of-occurrence basis. These 28 States are Alabama, Arizona, California, Colorado, Delaware, Florida, Hawaii, Idaho, Illinois, Iowa, Kansas, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Wisconsin, and Wyoming.

IV. Population bases for computing rates:

The population used for computing death rates and life tabls shown in VSUS, 1990 (frunished by the U.S. Bureau of the Census) represents the population residing in the specified area. The populations for 1990 are based on the April 1, 1990 census enumeration. The 1990 census counts by age and race were modified to be consistent with Office of Management and Budget categories and historical categories for death data. Death rates and life tables for 1981-89 have been recomputed, based on revised populations that are consistent with the 1990 census levels(2,3). They are, therefore, not comparable with death rates and life tables values values published in Advance Reports of Final Mortality Statistics, in Vital Statistics of the United States, Volume II, Mortality, and in other NCHS putlications for those yers.alues published in other NCHS publications for those years.

References

1. U.S. Bureau of the Census: Unpublished data from the 1990 census for person of Spanish origin by State.

2. U.S Bureau of the Census: Unpublished data from the 1990 census, by age, sex, race, and sex.

3. U.S. Bureau of the Census: Unpublished data from the 1990, by State.

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Chapter 1
Introduction

This CD-ROM documentation was prepared in the Division of Vital Statistics. Manju Sharma of the Systems and Programming Branch was responsible for developing the natality documentation and for providing all of the computer programming services necessary to keep it up-to-date. T.J. Mathews of the Natality, Marriage, and Divorce Statistics Branch prepared the Technical Appendix. The Registration Methods Branch and the Technical Services Branch provided consultation to State Vital Statistics offices regarding collection of birth certificate data.

Questions on the documentation or general questions concerning the natality file should be directed to the Systems and Programming Branch, Division of vital Statistics, NCHS, 6525 Belcrest Road, Room 840, Hyattsville, Md. 20782 (301-436-8900).

Quesions concerning the Technical Appendix or substantive questions concerning the natality data should be directed to the Natality, Marriage, and Divorce Statistics Branch, Division of Vital Statistics, NCHS, 6525 Belcrest Road, Room 840, Hyattsville, Md. 20782 (301-436-8954).

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Reynolds
Exhibit No. 5
9.19.97
D'Andra Fisher

CHAPTER 23

LIST OF DATA ELEMENTS AND LOCATIONS

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Chapter 3
1993 Detail Natality Record

Item Location	Field Name	Item and Code Outline
1-2	[DATAYEAR]	YEAR OF BIRTH OF CHILD (Data Year)
		92 ... 92
3	[RESTATUS]	RESIDENT STATUS
		1 ... RESIDENT: State and county of occurrence and residence are the same.
		2 ... INTRASTATE NONRESIDENT: State of occurrence and residence are the same, but county is different.
		3 ... INTERSTATE NONRESIDENT: State of occurrence and residence are different, but both are in the U.S.
		4 ... FOREIGN RESIDENT: State of occurrence is one of the 50 States or the District of Columbia, but the residence of the mother is outside of the U.S.
4	[PLDEL]	PLACE OR FACILITY OF BIRTH
		1 ... Hospital
		2 ... Freestanding Birthing Center
		3 ... Clinic or Doctor's Office
		4 ... A Residence
		5 ... Other
		9 ... Unknown or Not Stated
5	[BIRATTND]	ATTENDANT AT BIRTH
		1 ... Doctor of Medicine (M.D.)
		2 ... Doctor of Osteopathy (D.O.)
		3 ... Certified Nurse Midwife (C.N.M.)
		4 ... Other Midwife
		5 ... Other
		9 ... Unknown or Not Stated
6	[DIVOCC]	DIVISION OF OCCURRENCE
		1 ... New England
		2 ... Middle Atlantic

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Item Location	Field Name	Item and Code Outline
		3 ... East North Central
		4 ... West North Central
		5 ... South Atlantic
		6 ... East South Central
		7 ... West South Central
		8 ... Mountain
		9 ... Pacific
7-8	[STNATEXP]	EXPANDED STATE OF OCCURRENCE
		This item is designed to separately identify New York city records from other New York State records.
		01 ... Alabama
		02 ... Alaska
		03 ... Arizona
		04 ... Arkansas
		05 ... California
		06 ... Colorado
		07 ... Connecticut
		08 ... Delaware
		09 ... District of Columbia
		10 ... Florida
		11 ... Georgia
		12 ... Hawaii
		13 ... Idaho
		14 ... Illinois
		15 ... Indiana
		16 ... Iowa
		17 ... Kansas
		18 ... Kentucky
		19 ... Louisiana
		20 ... Maine
		21 ... Maryland
		22 ... Massachusetts
		23 ... Michigan
		24 ... Minnesota
		25 ... Mississippi
		26 ... Missouri
		27 ... Montana
		28 ... Nebraska
		29 ... Nevada
		30 ... New Hampshire
		31 ... New Jersey
		32 ... New Mexico
		33 ... New York
		34 ... New York city

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Item Location	Field Name	Item and Code Outline
		35 ... North Carolina
		36 ... North Dakota
		37 ... Ohio
		38 ... Oklahoma
		39 ... Oregon
		40 ... Pennsylvania
		41 ... Rhode Island
		42 ... South Carolina
		43 ... South Dakota
		44 ... Tennessee
		45 ... Texas
		46 ... Utah
		47 ... Vermont
		48 ... Virginia
		49 ... Washington
		50 ... West Virginia
		51 ... Wisconsin
		52 ... Wyoming
9-10	[STATENAT]	STATE OF OCCURRENCE
		01 ... Alabama
		02 ... Alaska
		03 ... Arizona
		04 ... Arkansas
		05 ... California
		06 ... Colorado
		07 ... Connecticut
		08 ... Delaware
		09 ... District of Columbia
		10 ... Florida
		11 ... Georgia
		12 ... Hawaii
		13 ... Idaho
		14 ... Illinois
		15 ... Indiana
		16 ... Iowa
		17 ... Kansas
		18 ... Kentucky
		19 ... Louisiana
		20 ... Maine
		21 ... Maryland
		22 ... Massachusetts
		23 ... Michigan
		24 ... Minnesota
		25 ... Mississippi
		26 ... Missouri
		27 ... Montana

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Item Location	Field Name	Item and Code Outline
		28 ... Nebraska
		29 ... Nevada
		30 ... New Hampshire
		31 ... New Jersey
		32 ... New Mexico
		33 ... New York
		34 ... North Carolina
		35 ... North Dakota
		36 ... Ohio
		37 ... Oklahoma
		38 ... Oregon
		39 ... Pennsylvania
		40 ... Rhode Island
		41 ... South Carolina
		42 ... South Dakota
		43 ... Tennessee
		44 ... Texas
		45 ... Utah
		46 ... Vermont
		47 ... Virginia
		48 ... Washington
		49 ... West Virginia
		50 ... Wisconsin
		51 ... Wyoming
9-13	[CNTYNAT]	COUNTY OF OCCURRENCE
		001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. (Note: To uniquely identify a county, both the State and county codes must be used.) A complete list of counties is shown in the Geographic Code Outline further back in this document.
		999 ... County of less than 100,000 population

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Item Location	Field Name	Item and Code Outline
14-15	[STOCCFIP]	STATE OF OCCURRENCE (FIPS)
		01 ... Alabama
		02 ... Alaska
		04 ... Arizona
		05 ... Arkansas
		06 ... California
		08 ... Colorado
		09 ... Connecticut
		10 ... Delaware
		11 ... District of Columbia
		12 ... Florida
		13 ... Georgia
		15 ... Hawaii
		16 ... Idaho
		17 ... Illinois
		18 ... Indiana
		19 ... Iowa
		20 ... Kansas
		21 ... Kentucky
		22 ... Louisiana
		23 ... Maine
		24 ... Maryland
		25 ... Massachusetts
		26 ... Michigan
		27 ... Minnesota
		28 ... Mississippi
		29 ... Missouri
		30 ... Montana
		31 ... Nebraska
		32 ... Nevada
		33 ... New Hampshire
		34 ... New Jersey
		35 ... New Mexico
		36 ... New York
		37 ... North Carolina
		38 ... North Dakota
		39 ... Ohio
		40 ... Oklahoma
		41 ... Oregon
		42 ... Pennsylvania
		44 ... Rhode Island
		45 ... South Carolina
		46 ... South Dakota
		47 ... Tennessee
		48 ... Texas
		49 ... Utah

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Item Location	Field Name	Item and Code Outline
		50 ... Vermont
		51 ... Virginia
		53 ... Washington
		54 ... West Virginia
		55 ... Wisconsin
		56 ... Wyoming
14-18	[CNTOCFIP]	COUNTY OF OCCURRENCE (FIPS)
		001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. (Note: To uniquely identify a county, both the State and county codes must be used.) A complete list of counties is shown in the Geographic Code Outline further back in this document.
		999 ... County of less than 100,000 population
19	[CNTOCPOP]	POPULATION SIZE OF COUNTY OF OCCURRENCE
		Based on the results of the 1980 Census
		0 ... County of 1,000,000 or more
		1 ... County of 500,000 to 1,000,000
		2 ... County of 250,000 to 500,000
		3 ... County of 100,000 to 250,000
		9 ... County of less than 100,000
20	[REGNRES]	REGION OF RESIDENCE
21	[DIVRES]	DIVISION OF RESIDENCE
		00 ... Foreign Residents
		1 ... NORTHEAST
		1 ... New England
		2 ... Middle Atlantic
		2 ... MIDWEST
		3 ... East North Central
		4 ... West North Central
		3 ... SOUTH
		5 ... South Atlantic
		6 ... East South Central
		7 ... West South Central

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Item Location	Field Name	Item and Code Outline
		4 ... WEST
		8 ... Mountain
		9 ... Pacific
22-23	[STATERES]	STATE OF RESIDENCE
		01 ... Alabama
		02 ... Alaska
		03 ... Arizona
		04 ... Arkansas
		05 ... California
		06 ... Colorado
		07 ... Connecticut
		08 ... Delaware
		09 ... District of Columbia
		10 ... Florida
		11 ... Georgia
		12 ... Hawaii
		13 ... Idaho
		14 ... Illinois
		15 ... Indiana
		16 ... Iowa
		17 ... Kansas
		18 ... Kentucky
		19 ... Louisiana
		20 ... Maine
		21 ... Maryland
		22 ... Massachusetts
		23 ... Michigan
		24 ... Minnesota
		25 ... Mississippi
		26 ... Missouri
		27 ... Montana
		28 ... Nebraska
		29 ... Nevada
		30 ... New Hampshire
		31 ... New Jersey
		32 ... New Mexico
		33 ... New York
		34 ... North Carolina
		35 ... North Dakota
		36 ... Ohio
		37 ... Oklahoma
		38 ... Oregon
		39 ... Pennsylvania
		40 ... Rhode Island
		41 ... South Carolina
		42 ... South Dakota

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Item Location	Field Name	Item and Code Outline
		43 ... Tennessee
		44 ... Texas
		45 ... Utah
		46 ... Vermont
		47 ... Virginia
		48 ... Washington
		49 ... West Virginia
		50 ... Wisconsin
		51 ... Wyoming
		52-57,59 ... Foreign Residents
		52 ... Puerto Rico
		53 ... Virgin Islands
		54 ... Guam
		55 ... Canada
		56 ... Cuba
		57 ... Mexico
		59 ... Remainder of the World
22-26	[CNTYRES]	COUNTY OF RESIDENCE
		A complete list of counties is shown in the Geographic Code Outline further back in this document.
		001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. (Note: To uniquely identify a county, both the State and county codes must be used.)
		999 ... County of less than 100,000 population
		ZZZ ... Foreign residents
27-28	[STATERES]	STATE OF RESIDENCE
		01 ... Alabama
		02 ... Alaska
		03 ... Arizona
		04 ... Arkansas
		05 ... California
		06 ... Colorado
		07 ... Connecticut
		08 ... Delaware
		09 ... District of Columbia
		10 ... Florida
		11 ... Georgia
		12 ... Hawaii

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Item Location	Field Name	Item and Code Outline
		13 ... Idaho
		14 ... Illinois
		15 ... Indiana
		16 ... Iowa
		17 ... Kansas
		18 ... Kentucky
		19 ... Louisiana
		20 ... Maine
		21 ... Maryland
		22 ... Massachusetts
		23 ... Michigan
		24 ... Minnesota
		25 ... Mississippi
		26 ... Missouri
		27 ... Montana
		28 ... Nebraska
		29 ... Nevada
		30 ... New Hampshire
		31 ... New Jersey
		32 ... New Mexico
		33 ... New York
		34 ... North Carolina
		35 ... North Dakota
		36 ... Ohio
		37 ... Oklahoma
		38 ... Oregon
		39 ... Pennsylvania
		40 ... Rhode Island
		41 ... South Carolina
		42 ... South Dakota
		43 ... Tennessee
		44 ... Texas
		45 ... Utah
		46 ... Vermont
		47 ... Virginia
		48 ... Washington
		49 ... West Virginia
		50 ... Wisconsin
		51 ... Wyoming
		52-57,59 ... Foreign Residents
		52 ... Puerto Rico
		53 ... Virgin Islands
		54 ... Guam
		55 ... Canada
		56 ... Cuba
		57 ... Mexico
		59 ... Remainder of the World

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Item Location	Field Name	Item and Code Outline
27-31	[CITYRES]	CITY OF RESIDENCE
		A complete list of cities is shown in the Geographic Code Outline further back in this document.
		001-nnn ... Cities are numbered alphabetically within each State and identify each city with a population of 100,000 or more in 1980. (Note: To uniquely identify a city, both State and city codes must be used. State, county and city codes may also be used.)
		999 ... Balance of county
		ZZZ ... Foreign residents
32	[CITRSPOP]	POPULATION SIZE OF CITY OF RESIDENCE
		Based on the results of the 1980 census
		0 ... Place of 1,000,000 or more
		1 ... Place of 500,000 to 1,000,000
		2 ... Place of 250,000 to 500,000
		3 ... Place of 100,000 to 250,000
		9 ... Place of less than 100,000
		Z ... Foreign residents
33	[METRORES]	METROPOLITAN - NONMETROPOLITAN COUNTY OF RESIDENCE
		1 ... Metropolitan county
		2 ... Nonmetropolitan county
		Z ... Foreign residents
34-35	[STRESFIP]	STATE OF RESIDENCE (FIPS)
		00 ... Foreign residents
		01 ... Alabama
		02 ... Alaska
		04 ... Arizona
		05 ... Arkansas
		06 ... California
		08 ... Colorado
		09 ... Connecticut
		10 ... Delaware
		11 ... District of Columbia
		12 ... Florida
		13 ... Georgia
		15 ... Hawaii
		16 ... Idaho

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Item Location	Field Name	Item and Code Outline
		17 ... Illinois
		18 ... Indiana
		19 ... Iowa
		20 ... Kansas
		21 ... Kentucky
		22 ... Louisiana
		23 ... Maine
		24 ... Maryland
		25 ... Massachusetts
		26 ... Michigan
		27 ... Minnesota
		28 ... Mississippi
		29 ... Missouri
		30 ... Montana
		31 ... Nebraska
		32 ... Nevada
		33 ... New Hampshire
		34 ... New Jersey
		35 ... New Mexico
		36 ... New York
		37 ... North Carolina
		38 ... North Dakota
		39 ... Ohio
		40 ... Oklahoma
		41 ... Oregon
		42 ... Pennsylvania
		44 ... Rhode Island
		45 ... South Carolina
		46 ... South Dakota
		47 ... Tennessee
		48 ... Texas
		49 ... Utah
		50 ... Vermont
		51 ... Virginia
		53 ... Washington
		54 ... West Virginia
		55 ... Wisconsin
		56 ... Wyoming
34-38	[CNTYRFIP]	COUNTY OF RESIDENCE (FIPS)
		001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. (Note: To uniquely identify a county, both the State and county codes must be used.)
		999 ... County of less than 100,000 population
		000 ... Foreign residents

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Item Location	Field Name	Item and Code Outline
39-40	[CMSA]	CMSA OF RESIDENCE (FIPS)

Consolidated Metropolitan Statistical Areas are groupings of certain Primary Metropolitan Statistical Areas and are defined by the U.S. Office of Management and Budget (OMB) as of June 30, 1990.

00 ... Not a CMSA
07 ... Boston - Lawrence-Salem, MA-NH
10 ... Buffalo - Niagara Falls, NY
14 ... Chicago - Gary-Lake County, IL-IN-WI
21 ... Cincinnati - Hamilton, OH-KY-IN
28 ... Cleveland - Akron-Lorain, OH
31 ... Dallas - Fort Worth, TX
34 ... Denver - Boulder, CO
35 ... Detroit - Ann Arbor, MI
41 ... Hartford - New Britain-Middletown, CT
42 ... Houston - Galveston-Brazoria, TX
49 ... Los Angeles -Anaheim-Riverside, CA
56 ... Miami - Fort Lauderdale, FL
63 ... Milwaukee - Racine, WI
70 ... New York -Northern New Jersey- Long Island, NY-NJ-CT
77 ... Philadelphia - Wilmington-Trenton, PA-NJ-DE-MD
78 ... Pittsburgh - Beaver Valley, PA
79 ... Portland - Vancouver, OR-WA
80 ... Providence - Pawtucket-Fall River, RI-MA
84 ... San Francisco -Oakland-San Jose, CA
91 ... Seattle - Tacoma, WA

41-44 [SMSARFIP] PMSA/MSA OF RESIDENCE (FIPS)

Primary Metropolitan Statistical Areas and Metropolitan Statistical Areas are those defined by the U.S. Office of Management and Budget as of June 30, 1990. For New England, the New England County Metropolitan Areas (NECMA's) are used.

Further back in this document is a list of PMSA's, MSA's, NECMA's, and their component counties.

0000 ... Nonmetropolitan counties or foreign residents
0040-9360 ... Code range
9999 ... Area of less than 100,000 population

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Item Location	Field Name	Item and Code Outline
45	[CNTRSPOP]	POPULATION SIZE OF COUNTY OF RESIDENCE

Based on the results of the 1980 Census.

0	... County of 1,000,000 or more
1	... County of 500,000 to 1,000,000
2	... County of 250,000 to 500,000
3	... County of 100,000 to 250,000
9	... County of less than 100,000
Z	... Foreign resident

46 [MAGERFLG] REPORTED AGE OF MOTHER USED FLAG

This position is flagged whenever the mother's reported age in years is used. The reported age is used, if valid, when age derived from date of birth is not available or when it is outside the 10-49 code range.

Blank	... Reported age is not used
1	... Reported age is used

47 [MAGEIMP] AGE OF MOTHER IMPUTATION FLAG

Blank	... Age is not imputed
1	... Age is imputed

48-49 [DMAGE] AGE OF MOTHER

This item is: a) computed using dates of birth of mother and of child when available and if valid; b) reported and valid; or c) imputed. This is the age item used in NCHS publications.

10-49	... Age in single years

50-51 [MAGE12] AGE OF MOTHER RECODE 12

01	... Under 15 years
03	... 15 years
04	... 16 years
05	... 17 years
06	... 18 years
07	... 19 years
08	... 20 - 24 years
09	... 25 - 29 years
10	... 30 - 34 years
11	... 35 - 39 years

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Item Location	Field Name	Item and Code Outline
		12 ... 40 - 44 years
		13 ... 45 - 49 years
52	[MAGE8]	AGE OF MOTHER RECODE 8
		1 ... Under 15 years
		2 ... 15 - 19 years
		3 ... 20 - 24 years
		4 ... 25 - 29 years
		5 ... 30 - 34 years
		6 ... 35 - 39 years
		7 ... 40 - 44 years
		8 ... 45 - 49 years
53	[ORMOTH]	HISPANIC ORIGIN OF MOTHER Origin is not reported by all areas. See reporting flags.
		0 ... Non - Hispanic
		1 ... Mexican
		2 ... Puerto Rican
		3 ... Cuban
		4 ... Central or South American
		5 ... Other and unknown Hispanic
		9 ... Origin unknown or not stated
54	[ORRACEM]	HISPANIC ORIGIN AND RACE OF MOTHER RECODE Origin is not reported by all areas. See reporting flags.
		1 ... Mexican
		2 ... Puerto Rican
		3 ... Cuban
		4 ... Central or South American
		5 ... Other and unknown Hispanic
		6 ... Non - Hispanic White
		7 ... Non - Hispanic Black
		8 ... Non - Hispanic other races
		9 ... Origin unknown or not stated
55	[HISPR2]	HISPANIC ORIGIN OF MOTHER RECODE2 This variable is computed from ORMOTH. Non-stated is added to non-hispanic for the purpose of computing rates.
		1 ... Non - Hispanic
		2 ... Hispanic

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Item Location	Field Name	Item and Code Outline
56	[MRACEIMP]	RACE OF MOTHER IMPUTATION FLAG
		Blank ... Race is not imputed 1 ... Unknown race is imputed 2 ... All other races, formerly code 09, is imputed
57-58	[MRACE]	RACE OF MOTHER
		Beginning with 1993 data, some areas started reporting additional Asian or Pacific Islander codes for race. See reporting flags. Codes 18-68 replace old code 08 for these areas. Code 78 replaces old code 08 for all other areas. For consistency with Census races, code 09 (all other races) has been imputed. 01 ... White 02 ... Black 03 ... American Indian (includes Aleuts and Eskimos) 04 ... Chinese 05 ... Japanese 06 ... Hawaiian (includes part-Hawaiian) 07 ... Filipino 18 ... Asian Indian 28 ... Korean 38 ... Samoan 48 ... Vietnamese 58 ... Guamanian 68 ... Other Asian or Pacific Islander in areas reporting codes 18-58 78 ... Combined other Asian or Pacific Islander, includes codes 18-68 for areas that do not report them separately
59	[MRACE4]	RACE OF MOTHER RECODE
		1 ... White 2 ... Black 3 ... American Indian 4 ... Asian/Pacific Islander
60-61	[DMEDUC]	EDUCATION OF MOTHER DETAIL
		Effective with 1993 data, all areas report education. 00 ... No formal education

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Item Location	Field Name	Item and Code Outline
		01-08 ... Years of elementary school
		09 ... 1 year of high school
		10 ... 2 years of high school
		11 ... 3 years of high school
		12 ... 4 years of high school
		13 ... 1 year of college
		14 ... 2 years of college
		15 ... 3 years of college
		16 ... 4 years of college
		17 ... 5 or more years of college
		99 ... Not stated
62	[MEDUC6]	EDUCATION OF MOTHER RECODE
		1 ... 0 - 8 years
		2 ... 9 - 11 years
		3 ... 12 years
		4 ... 13 - 15 years
		5 ... 16 years and over
		6 ... Not stated
63	[DMARIMP]	MARITAL STATUS OF MOTHER IMPUTATION FLAG
		Blank ... Marital Status is not imputed
		1 ... Marital Status is imputed
64	[DMAR]	MARITAL STATUS OF MOTHER
		1 ... Married
		2 ... Unmarried
65-66	[MPLBIR]	PLACE OF BIRTH OF MOTHER
		01 ... Alabama
		02 ... Alaska
		03 ... Arizona
		04 ... Arkansas
		05 ... California
		06 ... Colorado
		07 ... Connecticut
		08 ... Delaware
		09 ... District of Columbia
		10 ... Florida
		11 ... Georgia
		12 ... Hawaii
		13 ... Idaho
		14 ... Illinois
		15 ... Indiana

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Item Location	Field Name	Item and Code Outline
		16 ... Iowa
		17 ... Kansas
		18 ... Kentucky
		19 ... Louisiana
		20 ... Maine
		21 ... Maryland
		22 ... Massachusetts
		23 ... Michigan
		24 ... Minnesota
		25 ... Mississippi
		26 ... Missouri
		27 ... Montana
		28 ... Nebraska
		29 ... Nevada
		30 ... New Hampshire
		31 ... New Jersey
		32 ... New Mexico
		33 ... New York
		34 ... North Carolina
		35 ... North Dakota
		36 ... Ohio
		37 ... Oklahoma
		38 ... Oregon
		39 ... Pennsylvania
		40 ... Rhode Island
		41 ... South Carolina
		42 ... South Dakota
		43 ... Tennessee
		44 ... Texas
		45 ... Utah
		46 ... Vermont
		47 ... Virginia
		48 ... Washington
		49 ... West Virginia
		50 ... Wisconsin
		51 ... Wyoming
		52 ... Puerto Rico
		53 ... Virgin Islands
		54 ... Guam
		55 ... Canada
		56 ... Cuba
		57 ... Mexico
		59 ... Remainder of the World
		99 ... Not classifiable
67	[MPLBIRR]	PLACE OF BIRTH OF MOTHER RECODE
		1 ... Native born

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Item Location	Field Name	Item and Code Outline
		2 ... Foreign born 3 ... Unknown or not stated
68-69	[DMAGERPT]	REPORTED AGE OF MOTHER 10-49 ... Age in single years 99 ... Unknown or not stated
70	[ADEQUACY]	ADEQUACY OF CARE RECODE (KESSNER INDEX) This recode is based on a modified Kessner criterion. Month Prenatal Care Began, Number of Prenatal Visits, and Gestation are the items used to generate this recode. 1 ... Adequate 2 ... Intermediate 3 ... Inadequate 4 ... Unknown
71-72	[NLBNL]	NUMBER OF LIVE BIRTHS, NOW LIVING Does not include this birth or adoptions. 00-30 ... Stated number of births 99 ... Unknown or not stated
73-74	[NLBND]	NUMBER OF LIVE BIRTHS, NOW DEAD Does not include this birth or adoptions. 00-30 ... Stated number of births 99 ... Unknown or not stated
75-76	[NOTERM]	NUMBER OF OTHER TERMINATIONS Includes spontaneous and induced at any time after conception. 00-30 ... Stated number of other terminations 99 ... Unknown or not stated
77	[LIVORD9]	LIVE BIRTH ORDER RECODE 1 ... First Child 2 ... Second Child 3 ... Third Child 4 ... Fourth Child

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Item Location	Field Name	Item and Code Outline
		5 ... Fifth Child
		6 ... Sixth Child
		7 ... Seventh Child
		8 ... Eighth Child and over
		9 ... Unknown or not stated
78	[TOTORD9]	TOTAL BIRTH ORDER RECODE
		1 ... First Child
		2 ... Second Child
		3 ... Third Child
		4 ... Fourth Child
		5 ... Fifth Child
		6 ... Sixth Child
		7 ... Seventh Child
		8 ... Eighth Child and over
		9 ... Unknown or not stated
79-80	[MONPRE]	DETAIL MONTH OF PREGNANCY PRENATAL CARE BEGAN
		00 ... No prenatal care
		01 ... 1st month
		02 ... 2nd month
		03 ... 3rd month
		04 ... 4th month
		05 ... 5th month
		06 ... 6th month
		07 ... 7th month
		08 ... 8th month
		09 ... 9th month
		99 ... Unknown or not stated
81	[MPRE6]	MONTH PRENATAL CARE BEGAN RECODE 6
		1 ... 1st - 2nd month
		2 ... 3rd month
		3 ... 4th - 6th month
		4 ... 7th - 9th month
		5 ... No prenatal care
		6 ... Unknown or not stated
82	[MPRE5]	MONTH PRENATAL CARE BEGAN RECODE 5
		1 ... 1st Trimester (1st-3rd month)
		2 ... 2nd Trimester (4th-6th month)
		3 ... 3rd Trimester (7th-9th month)
		4 ... No Prenatal Care
		5 ... Unknown or not stated

51710 6682

Item Location	Field Name	Item and Code Outline
83-84	[NPREVIST]	TOTAL NUMBER OF PRENATAL VISITS
		00 ... No prenatal visits
		01-48 ... Stated number of visits
		49 ... 49 or more visits
		99 ... Unknown or not stated
85-86	[NPREV12]	NUMBER OF PRENATAL VISITS RECODE
		01 ... No visits
		02 ... 1 - 2 visits
		03 ... 3 - 4 visits
		04 ... 5 - 6 visits
		05 ... 7 - 8 visits
		06 ... 9 - 10 visits
		07 ... 11 - 12 visits
		08 ... 13 - 14 visits
		09 ... 15 - 16 visits
		10 ... 17 - 18 visits
		11 ... 19 visits or more
		12 ... Unknown or not stated number of visits
87-92	[LMPDATE]	DATE LAST NORMAL MENSES BEGAN
87-88	[LMPMON]	MONTH LAST NORMAL MENSES BEGAN
		01 ... January
		02 ... February
		03 ... March
		04 ... April
		05 ... May
		06 ... June
		07 ... July
		08 ... August
		09 ... September
		10 ... October
		11 ... November
		12 ... December
		99 ... Unknown or not stated month of LMP
89-90	[LMPDAY]	DAY LAST NORMAL MENSES BEGAN
		01-31 ... As applicable to month of LMP
		99 ... Unknown or not stated day of LMP

51710 6683

Item Location	Field Name	Item and Code Outline
91-92	[LMPYR]	YEAR LAST NORMAL MENSES BEGAN
		91 ... 1991
		92 ... 1993
		99 ... Unknown or not stated year of LMP
93-94	[ISLLB10]	INTERVAL SINCE LAST LIVE BIRTH RECODE
		00 ... Not applicable (no previous live birth)
		01 ... Zero months (plural birth)
		02 ... 1 - 11 months
		03 ... 12 - 17 months
		04 ... 18 - 23 months
		05 ... 24 - 35 months
		06 ... 36 - 47 months
		07 ... 48 - 59 months
		08 ... 60 - 71 months
		09 ... 72 months and over
		10 ... Unknown
95	[FAGERFLG]	REPORTED AGE OF FATHER USED FLAG
		This position is flagged whenever the father's reported age in years is used. The reported age is used, if valid, when age derived from date of birth is not available or when it is less than 10.
96-97	[DFAGE]	AGE OF FATHER
		This item is either computed from date of birth of father and of child or is the reported age. This is the age item used in NCHS publications.
		10-98 ... Age in single years
		99 ... Unknown or not stated
98-99	[FAGE11]	AGE OF FATHER RECODE
		01 ... Under 15 years
		02 ... 15 - 19 years
		03 ... 20 - 24 years
		04 ... 25 - 29 years
		05 ... 30 - 34 years
		06 ... 35 - 39 years
		07 ... 40 - 44 years
		08 ... 45 - 49 years
		09 ... 50 - 54 years

51710 6684

Item Location	Field Name	Item and Code Outline
		10 ... 55 - 98 years
		11 ... Not stated
100	[ORRACEF]	HISPANIC ORIGIN AND RACE OF FATHER RECODE
		Origin of father is not reported by all areas. See reporting flags.
		1 ... Mexican
		2 ... Puerto Rican
		3 ... Cuban
		4 ... Central or South American
		5 ... Other and unknown Hispanic
		6 ... Non - Hispanic White
		7 ... Non - Hispanic Black
		8 ... Non - Hispanic other or unknown race
		9 ... Origin unknown or not stated
101-102	[FRACE]	RACE OF FATHER
		Beginning with 1993 data, some areas started reporting additional Asian or Pacific Islander codes for race. See reporting flags. Codes 18 - 68 replace old code 08 for these areas. Code 78 replaces old code 08 for all other areas. Code 09 (all other races) has been changed to 99.
		01 ... White
		02 ... Black
		03 ... American Indian (includes Aleuts and Eskimos)
		04 ... Chinese
		05 ... Japanese
		06 ... Hawaiian (includes part-Hawaiian)
		07 ... Filipino
		18 ... Asian Indian
		28 ... Korean
		38 ... Samoan
		48 ... Vietnamese
		58 ... Guamanian
		68 ... Other Asian or Pacific Islander in areas reporting codes 18-58
		78 ... Combined other Asian or Pacific Islander, includes codes 18-68 for areas that do not report them separately
		99 ... Unknown or not stated

51710 6685

Item Location	Field Name	Item and Code Outline
103	[FEDUC6]	EDUCATION OF FATHER RECODE
		1 ... 0 - 8 years
		2 ... 9 - 11 years
		3 ... 12 years
		4 ... 13 - 15 years
		5 ... 16 years and over
		6 ... Not stated
104-105	[DFAGERPT]	REPORTED AGE OF FATHER
		10-98 ... Age in single years
		99 ... Unknown or not stated
106	[FRACEIMP]	RACE OF FATHER IMPUTATION FLAG
		(Unknown race of father is not imputed. However, the all other races code is changed to unknown.)
		Blank ... Race is not changed
		3 ... All other races, formerly code 09, is changed to code 99
107	[CDOBMIMP]	MONTH OF BIRTH OF CHILD IMPUTATION FLAG
		Blank ... Month is not imputed
		1 ... Month is imputed
108-109	[BIRMON]	MONTH OF BIRTH
		01 ... January
		02 ... February
		03 ... March
		04 ... April
		05 ... May
		06 ... June
		07 ... July
		08 ... August
		09 ... September
		10 ... October
		11 ... November
		12 ... December
110-113	[BIRYR]	YEAR OF BIRTH
		1993 ... 1993

51710 6686

Item Location	Field Name	Item and Code Outline
114	[WEEKDAY]	DAY OF WEEK CHILD BORN
		1 ... Sunday 2 ... Monday 3 ... Tuesday 4 ... Wednesday 5 ... Thursday 6 ... Friday 7 ... Saturday
115	[GESTESTM]	CLINICAL ESTIMATE OF GESTATION USED FLAG
		This position is flagged whenever the clinical estimate of gestation is used. It is used when gestation could not be computed or when the computed gestation is outside the 17-47 code range. Blank ... Clinical Estimate is not used 1 ... Clinical Estimate is used
116	[GESTIMP]	GESTATION IMPUTATION FLAG
		Blank ... Gestation is not imputed 1 ... Gestation is imputed
117-118	[GESTAT]	GESTATION - DETAIL IN WEEKS
		This item is: a) computed using dates of birth of child and last normal menses; b) imputed from LMP date; c) the clinical estimate; or d) unknown when there is insufficient data to impute or no valid clinical estimate. This is the gestation item used in NCHS publications. 17-47 ... 17th through 47th week of gestation 99 ... Unknown
119	[GESTAT10]	GESTATION RECODE 10
		01 ... Under 20 weeks 02 ... 20 - 27 weeks 03 ... 28 - 31 weeks 04 ... 32 - 35 weeks 05 ... 36 weeks 06 ... 37 - 39 weeks 07 ... 40 weeks 08 ... 41 weeks 09 ... 42 weeks and over 10 ... Not stated

51710 6687

Item Location	Field Name	Item and Code Outline
120	[GESTAT3]	GESTATION RECODE 3
		1 ... Under 37 weeks
		2 ... 37 weeks and over
		3 ... Not stated
121	[CSEXIMP]	SEX IMPUTATION FLAG
		Blank ... Sex is not imputed
		1 ... Sex is imputed
122	[CSEX]	SEX
		1 ... Male
		2 ... Female
123-126	[DBIRWT]	BIRTH WEIGHT - DETAIL IN GRAMS
		0227-8165 ... Number of grams
		9999 ... Not stated birth weight
127-128	[BIRWT12]	BIRTH WEIGHT RECODE 12
		01 ... 499 grams or less
		02 ... 500 - 999 grams
		03 ... 1000 - 1499 grams
		04 ... 1500 - 1999 grams
		05 ... 2000 - 2499 grams
		06 ... 2500 - 2999 grams
		07 ... 3000 - 3499 grams
		08 ... 3500 - 3999 grams
		09 ... 4000 - 4499 grams
		10 ... 4500 - 4999 grams
		11 ... 5000 - 8165 grams
		12 ... Not stated
129	[BIRWT4]	BIRTH WEIGHT RECODE 4
		1 ... 1499 grams or less
		2 ... 1500 - 2499 grams
		3 ... 2500 - grams or more
		4 ... Unknown or not stated
130	[PLURIMP]	PLURALITY IMPUTATION FLAG
		Blank ... Plurality is not imputed
		1 ... Plurality is imputed

51710 6688

Item Location	Field Name	Item and Code Outline
131	[DPLURAL]	PLURALITY
		1 ... Single 2 ... Twin 3 ... Triplet 4 ... Quadruplet 5 ... Quintuplet or higher
132-133	[CLINGEST]	CLINICAL ESTIMATE OF GESTATION
		Clinical estimate is not reported by all areas. See reporting flags. 17-47 ... Estimated gestation in weeks 99 ... Unknown or not stated
134-139	[DELMETH]	METHOD OF DELIVERY
		Each method is assigned a separate position, and the code structure for each method (position) is: 1 ... The method was used 2 ... The method was not used 8 ... Method not on certificate 9 ... Method unknown or not stated
134	[VAGINAL]	VAGINAL
135	[VBAC]	VAGINAL BIRTH AFTER PREVIOUS C-SECTION
136	[PRIMAC]	PRIMARY C -SECTION
137	[REPEAC]	REPEAT C -SECTION
138	[FORCEP]	FORCEPS
139	[VACUUM]	VACUUM
140	[DELMETH5]	METHOD OF DELIVERY RECODE
		1 ... Vaginal (excludes vaginal after previous C-section) 2 ... Vaginal birth after previous C-section 3 ... Primary C -section 4 ... Repeat C -section 5 ... Not stated

51710 6689

Item Location	Field Name	Item and Code Outline
142-158	[MEDRISK]	MEDICAL RISK FACTORS Each risk factor is assigned a separate position, and the code structure for each risk factor (position) is: 1 ... Factor reported 2 ... Factor not reported 8 ... Factor not on certificate 9 ... Factor not classifiable
142	[ANEMIA]	ANEMIA (HCT.<30/HGB.<10)
143	[CARDIAC]	CARDIAC DISEASE
144	[LUNG]	ACUTE OR CHRONIC LUNG DISEASE
145	[DIABETES]	DIABETES
146	[HERPES]	GENITAL HERPES
147	[HYDRA]	HYDRAMNIOS/OLIGOHYDRAMNIOS
148	[HEMO]	HEMOGLOBINOPATHY
149	[CHYPER]	HYPERTENSION, CHRONIC
150	[PHYPER]	HYPERTENSION, PREGNANCY-ASSOCIATED
151	[ECLAMP]	ECLAMPSIA
152	[INCERVIX]	INCOMPETENT CERVIX
153	[PRE4000]	PREVIOUS INFANT 4000+ GRAMS
154	[PRETERM]	PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT
155	[RENAL]	RENAL DISEASE
156	[RH]	RH SENSITIZATION
157	[UTERINE]	UTERINE BLEEDING
158	[OTHERMR]	OTHER MEDICAL RISK FACTORS
159-162	[TOBACRSK]	TOBACCO RISKS

51710 6690

Item Location	Field Name	Item and Code Outline
159	[TOBACCO]	**TOBACCO USE DURING PREGNANCY**
		1 ... Yes
		2 ... No
		9 ... Unknown or not stated
160-161	[CIGAR]	AVERAGE NUMBER OF CIGARETTES PER DAY
		00-97 ... As stated
		98 ... 98 or more cigarettes per day
		99 ... Unknown or not stated
162	[CIGAR6]	**AVERAGE NUMBER OF CIGARETTES PER DAY RECODE**
		0 ... Nonsmoker
		1 ... 1 - 5 cigarettes per day
		2 ... 6 - 10 cigarettes per day
		3 ... 11 - 20 cigarettes per day
		4 ... 21 - 40 cigarettes per day
		5 ... 41 or more cigarettes per day
		6 ... Unknown or not stated
163-164	[ALCOHRSK]	ALCOHOL
163	[ALCOHOL]	ALCOHOL USE DURING PREGNANCY
		1 ... Yes
		2 ... No
		9 ... Unknown or not stated
164	[DRINK5]	AVERAGE NUMBER OF DRINKS PER WEEK RECODE
		0 ... Non drinker
		1 ... 1 drink per week
		2 ... 2 drinks per week
		3 ... 3 - 4 drinks per week
		4 ... 5 or more drinks per week
		5 ... Unknown or not stated
165-167	[WTGANRSK]	WEIGHT GAIN DURING PREGNANCY
165-166	[WTGAIN]	WEIGHT GAIN
		00-97 ... Stated number of pounds
		98 ... 98 pounds or more
		99 ... Unknown or not stated

51710 6691

Item Location	Field Name	Item and Code Outline
167	[WTGAIN9]	WEIGHT GAIN RECODE

1 ... Less than 16 pounds
2 ... 16 - 20 pounds
3 ... 21 - 25 pounds
4 ... 26 - 30 pounds
5 ... 31 - 35 pounds
6 ... 36 - 40 pounds
7 ... 41 - 45 pounds
8 ... 46 or more pounds
9 ... Unknown or not stated

168-174 [OBSTETRC] OBSTETRIC PROCEDURES

Each procedure is assigned a separate position, and the code structure for each procedure (position) is:

1 ... Procedure reported
2 ... Procedure not reported
8 ... Procedure not on certificate
9 ... Procedure not classifiable

168 [AMNIO] AMNIOCENTESIS

169 [MONITOR] ELECTRONIC FETAL MONITORING

170 [INDUCT] INDUCTION OF LABOR

171 [STIMULA] STIMULATION OF LABOR

172 [TOCOL] TOCOLYSIS

173 [ULTRAS] ULTRASOUND

174 [OTHEROB] OTHER OBSTETRIC PROCEDURES

175-190 [LABOR] COMPLICATIONS OF LABOR AND/OR DELIVERY

Each complication is assigned a separate position, and the code structure for each complication (position) is:

1 ... Complication reported
2 ... Complication not reported
8 ... Complication not on certificate
9 ... Complication not classifiable

51710 6692

Item Location	Field Name	Item and Code Outline
175	[FEBRILE]	FEBRILE (>100 DEGREES F. OR 38 DEGREES C.)
176	[MECONIUM]	MECONIUM, MODERATE/HEAVY
177	[RUPTURE]	PREMATURE RUPTURE OF MEMBRANE (>12 HOURS)
178	[ABRUPTIO]	ABRUPTIO PLACENTA
179	[PREPLACE]	PLACENTA PREVIA
180	[EXCEBLD]	OTHER EXCESSIVE BLEEDING
181	[SEIZURE]	SEIZURES DURING LABOR
182	[PRECIP]	PRECIPITOUS LABOR (<3 HOURS)
183	[PROLONG]	PROLONGED LABOR (>20 HOURS)
184	[DYSFUNC]	DYSFUNCTIONAL LABOR
185	[BREECH]	BREECH/MALPRESENTATION
186	[CEPHALO]	CEPHALOPELVIC DISPROPORTION
187	[CORD]	CORD PROLAPSE
188	[ANESTHE]	ANESTHETIC COMPLICATIONS
189	[DISTRESS]	FETAL DISTRESS
190	[OTHERLB]	OTHER COMPLICATION OF LABOR AND/OR DELIVERY
191-199	[NEWBORN]	ABNORMAL CONDITIONS OF THE NEWBORN Each condition is assigned a separate position, and the code structure for each condition (position) is: 1 ... Condition reported 2 ... Condition not reported 8 ... Condition not on certificate 9 ... Condition not classifiable
191	[NANEMIA]	ANEMIA (HCT.<39/HGB.<13)
192	[INJURY]	BIRTH INJURY
193	[ALCOSYN]	FETAL ALCOHOL SYNDROME
194	[HYALINE]	HYALINE MEMBRANE DISEASE

51710 6693

Item Location	Field Name	Item and Code Outline
195	[MECONSYN]	MECONIUM ASPIRATION SYNDROME
196	[VENL30]	ASSISTED VENTILATION, LESS THAN 30 MINUTES
197	[VEN30M]	ASSISTED VENTILATION, 30 MINUTES OR MORE
198	[NSEIZ]	SEIZURES
199	[OTHERAB]	OTHER ABNORMAL CONDITIONS OF THE NEWBORN
200-218	[FLRES]	REPORTING FLAGS FOR PLACE OF RESIDENCE

These positions contain flags to indicate whether or not the specified item is included on the birth certificate of the State of residence or of the MSA of residence. The code structure for each flag (position) is:

0 ... The item is not reported
1 ... The item is reported or partially reported.

200	[FLGORIGM]	ORIGIN OF MOTHER
201	[FLGORIGF]	ORIGIN OF FATHER
202	[FLGMEDUC]	EDUCATION OF MOTHER
203	[FLGFEDUC]	EDUCATION OF FATHER
204	[FLGGESTE]	CLINICAL ESTIMATE OF GESTATION
205	[FLGOMAPS]	1 - MINUTE APGAR SCORE
206	[FLGFMAPS]	5 - MINUTE APGAR SCORE
207	[FLGDELMT]	METHOD OF DELIVERY
208	[FLGMEDRS]	MEDICAL RISK FACTORS
209	[FLGTOBAC]	TOBACCO USE
210	[FLGALCOH]	ALCOHOL USE
211	[FLGWTGN]	WEIGHT GAIN
212	[FLGOBSTR]	OBSTETRIC PROCEDURES

51710 6694

Item Location	Field Name	Item and Code Outline
213	[FLGLABOR]	COMPLICATIONS OF LABOR AND/OR DELIVERY
214	[FLGNEWBR]	ABNORMAL CONDITIONS OF NEWBORN
215	[FLGCONG]	CONGENITAL ANOMALIES
216	[EDUCSMSA]	EDUCATION OF MOTHER (BASED ON MSA)
217	[APIFLAG]	RACE CODES 18-68 REPORTED (BEGINNING WITH 1993 DATA)
218-220	[SMSARES]	PSMA/MSA OF RESIDENCE (NCHS)

Primary Metropolitan Statistical Areas and Metropolitan Statistical Areas are those defined by the U.S. Office of Management and Budget (OMB) as of June 30, 1990. For New England, the New England County Metropolitan Areas (NECMA's) are used.

Further back in this document is a list of PMSA's, MSA's, NECMA's, and their component counties.

000 ... Nonmetropolitan counties
001-320 ... Code range
999 ... Area of less than 100,000 population
ZZZ ... Foreign residents

221 [POPSMAS] PMSA/MSA POPULATION SIZE

Based on 1990 Census county population counts

1 ... Area of 250,000 or more
2 ... Area of 100,000 to 250,000
9 ... Area of less than 100,000 or non-metropolitan area
Z ... Foreign resident

51710 6695

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
01						Alabama	01
	001	196	1			Autauga	001 5240
				030	6	Prattville, part	
				999	9	Balance of county	
	002	192	1	999	9	Baldwin	003 5160
	003	000	2			Barbour	005 0000
				013	6	Eufaula	
				999	9	Balance of county	
	004	000	2	999	9	Bibb	007 0000
	005	037	1	999	9	Blount	009 1000
	006	000	2	999	9	Bullock	011 0000
	007	000	2	999	9	Butler	013 0000
	008	015	1			Calhoun	015 0450
				004	5	Anniston	
				999	9	Balance of county	
	009	000	2	999	9	Chambers	017 0000
	010	000	2	999	9	Cherokee	019 0000
	011	000	2	999	9	Chilton	021 0000
	012	000	2	999	9	Choctaw	023 0000
	013	000	2	999	9	Clarke	025 0000
	014	000	2	999	9	Clay	027 0000
	015	000	2	999	9	Cleburne	029 0000
	016	000	2			Coffee	031 0000
				012	6	Enterprise, part	
				999	9	Balance of county	
	017	100	1			Colbert	033 2650
				034	6	Sheffield	
				999	9	Balance of county	
	018	000	2	999	9	Conecuh	035 0000
	019	000	2	999	9	Coosa	037 0000
	020	000	2			Covington	039 0000
				003	6	Andalusia	
				999	9	Balance of county	
	021	000	2	999	9	Crenshaw	041 0000
	022	000	2			Cullman	043 0000
				009	6	Cullman	
				999	9	Balance of county	
	023	085	1			Dale	045 2180
				011	5	Dothan, part	
				012	6	Enterprise, part	
				028	6	Ozark	
				999	9	Balance of county	
	024	000	2			Dallas	047 0000
				033	5	Selma	
				999	9	Balance of county	
	025	000	2			De Kalb	049 0000
				016	6	Fort Payne	

51710 6696

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
01						Alabama	01
				999	9	Balance of county	
	026	196	1			Elmore	051 5240
				030	6	Prattville, part	
				999	9	Balance of county	
	027	000	2	999	9	Escambia	053 0000
	028	111	1			Etowah	055 2880
				017	5	Gadsden	
				999	9	Balance of county	
	029	000	2	999	9	Fayette	057 0000
	030	000	2	999	9	Franklin	059 0000
	031	000	2	999	9	Geneva	061 0000
	032	000	2	999	9	Greene	063 0000
	033	000	2	999	9	Hale	065 0000
	034	000	2	999	9	Henry	067 0000
	035	085	1			Houston	069 2180
				011	5	Dothan, part	
				999	9	Balance of county	
	036	000	2			Jackson	071 0000
				032	6	Scottsboro	
				999	9	Balance of county	
	037	037	1			Jefferson	073 1000
				007	5	Bessemer	
				008	2	Birmingham	
				014	6	Fairfield	
				018	6	Homewood	
				019	6	Hoover, part	
				020	6	Hueytown	
				025	6	Mountain Brook	
				040	6	Vestavia Hills	
				999	9	Balance of county	
	038	000	2	999	9	Lamar	075 0000
	039	100	1			Lauderdale	077 2650
				015	5	Florence	
				999	9	Balance of county	
	040	080	1	999	9	Lawrence	079 2030
	041	000	2			Lee	081 0000
				006	5	Auburn	
				027	6	Opelika	
				029	5	Phenix City, part	
				999	9	Balance of county	
	042	000	2			Limestone	083 0000
				005	6	Athens	
				999	9	Balance of county	
	043	000	2	999	9	Lowndes	085 0000
	044	000	2			Macon	087 0000
	039	6		Tuskegee			

51710 6697

MSA Codes Effective with 1990 Data. All Other Codes Effective with [illegible]

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
01						Alabama	01
				999	9	Balance of county	
	045	132	1			Madison	089 3440
				021	3	Huntsville	
				999	9	Balance of county	
	046	000	2	999	9	Marengo	091 0000
	047	000	2	999	9	Marion	093 0000
	048	000	2			Marshall	095 0000
				001	6	Albertville	
				999	9	Balance of county	
	049	192	1			Mobile	097 5160
				023	3	Mobile	
				031	5	Prichard	
				999	9	Balance of county	
	050	000	2	999	9	Monroe	099 0000
	051	196	1			Montgomery	101 5240
				024	3	Montgomery	
				999	9	Balance of county	
	052	080	1			Morgan	103 2030
				010	5	Decatur	
				999	9	Balance of county	
	053	000	2	999	9	Perry	105 0000
	054	000	2	999	9	Pickens	107 0000
	055	000	2			Pike	109 0000
				037	6	Troy	
				999	9	Balance of county	
	056	000	2	999	9	Randolph	111 0000
	057	071	1			Russell	113 1800
				029	5	Phenix City, part	
				999	9	Balance of county	
	058	037	1	999	9	St. Clair	115 1000
	059	037	1			Shelby	117 1000
				019	6	Hoover, part	
				999	9	Balance of county	
	060	000	2	999	9	Sumter	119 0000
	061	000	2			Talladega	121 0000
				035	6	Sylacauga	
				036	6	Talladega	
				999	9	Balance of county	
	062	000	2			Tallapoosa	123 0000
				002	6	Alexander City	
				999	9	Balance of county	
	063	296	1			Tuscaloosa	125 8600
				026	6	Northport	
				038	4	Tuscaloosa	
				999	9	Balance of county	
	064	037	1			Walker	127 1000
				022	6	Jasper	

51710 6698

Vital Statistics Geographic Code Outline

MSA Codes Effective With 1990 Data. All Other Codes Effective With [illegible]

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
01						Alabama	01
	999	9		Balance of county			
	065	000	2	999	9	Washington	129 0000
	066	000	2	999	9	Wilcox	131 0000
	067	000	2	999	9	Winston	133 0000

51710 6699

Vital Statistics Geographic Code Outline

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
02						Alaska	02
	001	000	2	999	9	Aleutian Islands	010 0000
	002	011	1	001	3	Anchorage, coext. with Anchorage city	020 0380
	003	000	2	999	9	Bethel	050 0000
	004	000	2	999	9	Bristol Bay borough	060 0000
	005	000	2	999	9	Dillingham	070 0000
	006	000	2			Fairbanks North Star borough	090 0000
				002	6	Fairbanks	
				999	9	Balance of area	
	007	000	2	999	9	Haines borough	100 0000
	008	000	2	003	6	Juneau, coext. with Juneau city	110 0000
	009	000	2	999	9	Kenai Peninsula borough	122 0000
	010	000	2	999	9	Ketchikan Gateway borough	130 0000
	011	000	2	999	9	Kobuk	140 0000
	012	000	2	999	9	Kodiak Island borough	150 0000
	013	000	2	999	9	Matanuska-Susitna borough	170 0000
	014	000	2	999	9	Nome	180 0000
	015	000	2	999	9	North Slope borough	185 0000
	016	000	2	999	9	Prince of Wales-Outer Ketchikan	201 0000
	017	000	2	999	9	Sitka borough	220 0000
	018	000	2	999	9	Skagway-Yakutat-Angoon	231 0000
	019	000	2	999	9	Southeast Fairbanks	240 0000
	020	000	2	999	9	Valdez-Cordova	261 0000
	021	000	2	999	9	Wade Hampton	270 0000
	022	000	2	999	9	Wrangell-Petersburg	280 0000
	023	000	2	999	9	Yukon-Koyukuk	290 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
03						Arizona	04
	001	000	2	999	9	Apache	001 0000
	002	000	2			Cochise	003 0000
				003	6	Douglas	
				014	5	Sierra Vista	
				999	9	Balance of county	
	003	000	2			Coconino	005 0000
				004	5	Flagstaff	
				999	9	Balance of county	
	004	000	2	999	9	Gila	007 0000
	005	000	2	999	9	Graham	009 0000
	006	000	2	999	9	Greenlee	011 0000
	007	226	1			Maricopa	013 6200
				002	5	Chandler	
				005	4	Glendale	
				007	3	Mesa	
				009	6	Paradise Valley	
				010	6	Peoria	
				011	1	Phoenix	
				013	4	Scottsdale	
				015	3	Tempe	
				999	9	Balance of county	
	008	000	2			Mohave	015 0000
				006	6	Lake Havasu City	
				999	9	Balance of county	
	009	000	2	999	9	Navajo	017 0000
	010	294	1			Pima	019 8520
				016	2	Tucson	
				999	9	Balance of county	
	011	000	2			Pinal	021 0000
				001	6	Casa Grande	
				999	9	Balance of county	
	012	000	2			Santa Cruz	023 0000
				008	6	Nogales	
				999	9	Balance of county	
	013	000	2			Yavapai	025 0000
				012	6	Prescott	
				999	9	Balance of county	
	014	320	1			Yuma	027 9360
				017	5	Yuma	
				999	9	Balance of county	

51710 6701

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
04						Arkansas	05
	001	000	2			Arkansas	001 0000
				025	6	Stuttgart	
				999	9	Balance of county	
	002	000	2	999	9	Ashley	003 0000
	003	000	2	999	9	Baxter	005 0000
	004	000	2			Benton	007 0000
				020	6	Rogers	
				024	6	Springdale, part	
				999	9	Balance of county	
	005	000	2	999	9	Boone	009 0000
	006	000	2	999	9	Bradley	011 0000
	007	000	2	999	9	Calhoun	013 0000
	008	000	2	999	9	Carroll	015 0000
	009	000	2	999	9	Chicot	017 0000
	010	000	2			Clark	019 0000
				001	6	Arkadelphia	
				999	9	Balance of county	
	011	000	2	999	9	Clay	021 0000
	012	000	2	999	9	Cleburne	023 0000
	013	000	2	999	9	Cleveland	025 0000
	014	000	2			Columbia	027 0000
				015	6	Magnolia	
				999	9	Balance of county	
	015	000	2	999	9	Conway	029 0000
	016	000	2			Craighead	031 0000
				013	5	Jonesboro	
				999	9	Balance of county	
	017	106	1			Crawford	033 2720
				027	6	Van Buren	
				999	9	Balance of county	
	018	185	1			Crittenden	035 4920
				029	5	West Memphis	
				999	9	Balance of county	
	019	000	2	999	9	Cross	037 0000
	020	000	2	999	9	Dallas	039 0000
	021	000	2	999	9	Desha	041 0000
	022	000	2	999	9	Drew	043 0000
	023	171	1			Faulkner	045 4400
				005	6	Conway	
				999	9	Balance of county	
	024	000	2	999	9	Franklin	047 0000
	025	000	2	999	9	Fulton	049 0000
	026	000	2			Garland	051 0000
				011	5	Hot Springs	
				999	9	Balance of county	
	027	000	2	999	9	Grant	053 0000

51710 6702

MSA Codes Effective With 1990 Census, All Other Codes

Vital Statistics Codes						PIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
04						Arkansas	05		
	028	000	2			Greene	055	0000	
				018	6	Paragould			
				999	9	Balance of county			
	029	000	2			Hempstead	057	0000	
				010	6	Hope			
				999	9	Balance of county			
	030	000	2			Hot Spring	059	0000	
				016	6	Malvern			
				999	9	Balance of county			
	031	000	2	999	9	Howard	061	0000	
	032	000	2	999	9	Independence	063	0000	
	033	000	2	999	9	Izard	065	0000	
	034	000	2	999	9	Jackson	067	0000	
	035	227	1			Jefferson	069	6240	
				019	4	Pine Bluff			
				999	9	Balance of county			
	036	000	2	999	9	Johnson	071	0000	
	037	000	2	999	9	Lafayette	073	0000	
	038	000	2	999	9	Lawrence	075	0000	
	039	000	2	999	9	Lee	077	0000	
	040	000	2	999	9	Lincoln	079	0000	
	041	000	2	999	9	Little River	081	0000	
	042	000	2	999	9	Logan	083	0000	
	043	171	1	999	9	Lonoke	085	4400	
	044	000	2	999	9	Madison	087	0000	
	045	000	2	999	9	Marion	089	0000	
	046	290	1			Miller	091	8360	
				026	6	Texarkana			
				999	9	Balance of county			
	047	000	2			Mississippi	093	0000	
				003	6	Blytheville			
				999	9	Balance of county			
	048	000	2	999	9	Monroe	095	0000	
	049	000	2	999	9	Montgomery	097	0000	
	050	000	2	999	9	Nevada	099	0000	
	051	000	2	999	9	Newton	101	0000	
	052	000	2			Ouachita	103	0000	
				004	6	Camden			
				999	9	Balance of county			
	053	000	2	999	9	Perry	105	0000	
	054	000	2			Phillips	107	0000	
				028	6	West Helena			
				999	9	Balance of county			
	055	000	2	999	9	Pike	109	0000	
	056	000	2	999	9	Poinsett	111	0000	
	057	000	2	999	9	Polk	113	0000	

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Vital Statistics Geographic Code Outline

MSA Codes Effective With 1990 Data. All Other Codes Effective [illegible] Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
04						Arkansas	05	
	058	000	2			Pope		115 0000
				021	6	Russellville		
				999	9	Balance of county		
	059	000	2	999	9	Prairie		117 0000
	060	171	1			Pulaski		119 4400
				012	5	Jacksonville		
				014	3	Little Rock		
				017	4	North Little Rock		
				023	6	Sherwood		
				999	9	Balance of county		
	061	000	2	999	9	Randolph		121 0000
	062	000	2			St. Francis		123 0000
				008	6	Forrest City		
				999	9	Balance of county		
	063	171	1			Saline		125 4400
				002	6	Benton		
				999	9	Balance of county		
	064	000	2	999	9	Scott		127 0000
	065	000	2	999	9	Searcy		129 0000
	066	106	1			Sebastian		131 2720
				009	4	Fort Smith		
				999	9	Balance of county		
	067	000	2	999	9	Sevier		133 0000
	068	000	2	999	9	Sharp		135 0000
	069	000	2	999	9	Stone		137 0000
	070	000	2			Union		139 0000
				006	5	El Dorado		
				999	9	Balance of county		
	071	000	2	999	9	Van Buren		141 0000
	072	098	1			Washington		143 2580
				007	5	Fayetteville		
				024	6	Springdale, part		
				999	9	Balance of county		
	073	000	2			White		145 0000
				022	6	Searcy		
				999	9	Balance of county		
	074	000	2	999	9	Woodruff		147 0000
	075	000	2	999	9	Yell		149 0000

51710 6704

MSA Codes Effective With 1990 Data. All Other Codes Effective With [illegible]

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
05						California	06	
	001	210	1			Alameda	001	5775
				001	4	Alameda		
				002	6	Albany		
				022	3	Berkeley		
				071	3	Fremont		
				082	4	Hayward		
				107	5	Livermore		
				141	5	Newark		
				146	2	Oakland		
				163	6	Piedmont		
				168	5	Pleasanton		
				202	4	San Leandro		
				241	5	Union City		
				999	9	Balance of county		
	002	000	2	999	9	Alpine	003	0000
	003	000	2	999	9	Amador	005	0000
	004	064	1			Butte	007	1620
				037	5	Chico		
				158	6	Paradise		
				999	9	Balance of county		
	005	000	2	999	9	Calaveras	009	0000
	006	000	2	999	9	Colusa	011	0000
	007	210	1			Contra Costa	013	5775
				005	5	Antioch		
				045	3	Concord		
				061	6	El Cerrito		
				094	6	Lafayette		
				123	6	Martinez		
				136	6	Moraga Town		
				164	6	Pinole		
				165	5	Pittsburg		
				167	5	Pleasant Hill		
				180	4	Richmond		
				207	6	San Pablo		
				248	4	Walnut Creek		
				999	9	Balance of county		
	008	000	2	999	9	Del Norte	015	0000
	009	250	1			El Dorado	017	6920
				226	6	South Lake Tahoe		
				999	9	Balance of county		
	010	110	1			Fresno	019	2840
				041	5	Clovis		
				072	3	Fresno		
				178	6	Reedley		
				199	6	Sanger		
				221	6	Selma		
				999	9	Balance of county		

51710 6705

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
05						California	06	
	011	000	2	999	9	Glenn	021	0000
	012	000	2			Humboldt	023	0000
				007	6	Arcata		
				065	6	Eureka		
				999	9	Balance of county		
	013	000	2			Imperial	025	0000
				024	6	Brawley		
				029	6	Calexico		
				060	6	El Centro		
				999	9	Balance of county		
	014	000	2	999	9	Inyo	027	0000
	015	024	1			Kern	029	0680
				013	3	Bakersfield		
				056	6	Delano		
				181	6	Ridgecrest		
				999	9	Balance of county		
	016	000	2			Kings	031	0000
				079	6	Hanford		
				999	9	Balance of county		
	017	000	2	999	9	Lake	033	0000
	018	000	2	999	9	Lassen	035	0000
	019	174	1			Los Angeles	037	4480
				003	4	Alhambra		
				006	5	Arcadia		
				009	6	Artesia		
				012	5	Azusa		
				014	4	Baldwin Park		
				017	5	Bell		
				018	4	Bellflower		
				019	5	Bell Gardens		
				023	5	Beverly Hills		
				027	4	Burbank		
				034	4	Carson		
				036	4	Cerritos		
				040	5	Claremont		
				043	6	Commerce		
				044	4	Compton		
				049	5	Covina		
				050	6	Cudahy		
				051	5	Culver City		
				057	4	Downey		
				058	6	Duarte		
				062	4	El Monte		
				063	6	El Segundo		
				074	5	Gardena		
				077	3	Glendale		
				078	5	Glendora		

51710 6706

MSA Codes Effective With 1990 Data. All Other Codes [illegible]

Vital Statistics Codes St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	FIPS Codes St	Cnty	MSA
05						California	06		
				080	6	Hawaiian Gardens			
				081	4	Hawthorne			
				084	6	Hermosa Beach			
				088	5	Huntington Park			
				091	4	Inglewood			
				093	6	La Canada Flintridge			
				097	4	Lakewood			
				099	5	La Mirada			
				100	5	Lancaster			
				102	5	La Puente			
				104	6	La Verne			
				105	6	Lawndale			
				110	6	Lomita			
				112	2	Long Beach			
				115	0	Los Angeles			
				118	5	Lynwood			
				120	5	Manhattan Beach			
				124	6	Maywood			
				131	5	Monrovia			
				133	4	Montebello			
				135	4	Monterey Park			
				144	4	Norwalk			
				153	6	Palmdale			
				157	6	Palos Verdes Estates			
				159	5	Paramount			
				160	3	Pasadena			
				162	4	Pico Rivera			
				169	4	Pomona			
				173	5	Rancho Palos Verdes			
				176	4	Redondo Beach			
				184	5	Rosemead			
				195	6	San Dimas			
				196	6	San Fernando			
				198	5	San Gabriel			
				205	6	San Marino			
				213	6	Santa Fe Springs			
				215	4	Santa Monica			
				222	6	Sierra Madre			
				224	6	South El Monte			
				225	4	South Gate			
				227	6	South Pasadena			
				233	5	Temple City			
				235	3	Torrance			
				250	4	West Covina			
				252	4	Whittier			
				999	9	Balance of county			

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
05						California	06
	020	000	2			Madera	039 0000
				119	6	Madera	
				999	9	Balance of county	
	021	261	1			Marin	041 7360
				103	6	Larkspur	
				128	6	Mill Valley	
				145	5	Novato	
				188	6	San Anselmo	
				208	5	San Rafael	
				999	9	Balance of county	
	022	000	2	999	9	Mariposa	043 0000
	023	000	2			Mendocino	045 0000
				240	6	Ukiah	
				999	9	Balance of county	
	024	186	1			Merced	047 4940
				011	6	Atwater	
				116	6	Los Banos	
				126	5	Merced	
				999	9	Balance of county	
	025	000	2	999	9	Modoc	049 0000
	026	000	2	999	9	Mono	051 0000
	027	256	1			Monterey	053 7120
				122	6	Marina	
				134	5	Monterey	
				152	6	Pacific Grove	
				187	4	Salinas	
				220	5	Seaside	
				999	9	Balance of county	
	028	299	1			Napa	055 8720
				139	4	Napa	
				999	9	Balance of county	
	029	000	2	999	9	Nevada	057 0000
	030	010	1			Orange	059 0360
				004	3	Anaheim	
				025	5	Brea	
				026	4	Buena Park	
				048	4	Costa Mesa	
				053	5	Cypress	
				070	4	Fountain Valley	
				073	3	Fullerton	
				075	3	Garden Grove	
				087	3	Huntington Beach	
				092	4	Irvine	
				095	6	Laguna Beach	
				096	5	La Habra	
				101	6	La Palma	

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
05						California	06	
				113	6	Los Alamitos		
				142	4	Newport Beach		
				149	4	Orange		
				166	5	Placentia		
				193	5	San Clemente		
				201	6	San Juan Capistrano		
				209	3	Santa Ana		
				219	5	Seal Beach		
				229	6	Stanton		
				239	5	Tustin		
				251	4	Westminster		
				254	5	Yorba Linda		
				999	9	Balance of county		
	031	250	1			Placer	061	6920
				185	6	Roseville		
				999	9	Balance of county		
	032	000	2	999	9	Plumas	063	0000
	033	245	1			Riverside	065	6780
				015	6	Banning		
				046	5	Corona		
				083	6	Hemet		
				090	6	Indio		
				143	6	Norco		
				154	6	Palm Desert		
				155	5	Palm Springs		
				182	3	Riverside		
				999	9	Balance of county		
	034	250	1			Sacramento	067	6920
				067	6	Folsom		
				186	2	Sacramento		
				999	9	Balance of county		
	035	000	2			San Benito	069	0000
				086	6	Hollister		
				999	9	Balance of county		
	036	245	1			San Bernardino	071	6780
				016	6	Barstow		
				038	5	Chino		
				042	5	Colton		
				068	5	Fontana		
				109	6	Loma Linda		
				132	6	Montclair		
				148	4	Ontario		
				172	4	Rancho Cucamonga		
				175	5	Redlands		
				179	5	Rialto		
				189	3	San Bernardino		
				242	5	Upland		

51710 6709

Vital Statistics Codes St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	FIPS Codes St	Cnty	MSA
05						California	06		
				245	6	Victorville			
				999	9	Balance of county			
	037	260	1			San Diego		073	7320
				032	5	Carlsbad			
				039	4	Chula Vista			
				047	6	Coronado			
				059	4	El Cajon			
				064	4	Escondido			
				089	6	Imperial Beach			
				098	4	La Mesa			
				106	6	Lemon Grove			
				140	5	National City			
				147	4	Oceanside			
				194	1	San Diego			
				204	6	San Marcos			
				247	5	Vista			
				999	9	Balance of county			
	038	261	1	197	1	San Francisco, coext. with San Francisco city		075	7360
	039	284	1			San Joaquin		077	8120
				108	5	Lodi			
				121	6	Manteca			
				230	3	Stockton			
				236	6	Tracy			
				999	9	Balance of county			
	040	000	2			San Luis Obispo		079	0000
				008	6	Arroyo Grande			
				010	6	Atascadero			
				203	5	San Luis Obispo			
				999	9	Balance of county			
	041	261	1			San Mateo		081	7360
				020	6	Belmont			
				028	5	Burlingame			
				054	4	Daly City			
				069	6	Foster City			
				085	6	Hillsborough			
				125	5	Menlo Park			
				127	6	Millbrae			
				151	5	Pacifica			
				177	4	Redwood City			
				190	5	San Bruno			
				192	6	San Carlos			
				206	4	San Mateo			
				228	5	South San Francisco			
				999	9	Balance of county			
	042	263	1			Santa Barbara		083	7480
				033	6	Carpinteria			

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Vital Statistics Geographic Code Outline
MSA Codes Effective With 1990 Data. All Other Codes Effective With 1983 Data.

Vital Statistics Codes St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	FIPS Codes St	Cnty	MSA
05						California	06		
				111	5	Lompoc			
				210	4	Santa Barbara			
				214	5	Santa Maria			
				999	9	Balance of county			
	043	262	1			Santa Clara		085	7400
				031	5	Campbell			
				052	5	Cupertino			
				076	6	Gilroy			
				114	5	Los Altos			
				117	5	Los Gatos			
				129	5	Milpitas			
				137	6	Morgan Hill			
				138	4	Mountain View			
				156	4	Palo Alto			
				200	1	San Jose			
				211	4	Santa Clara			
				218	5	Saratoga			
				232	3	Sunnyvale			
				999	9	Balance of county			
	044	264	1			Santa Cruz		087	7485
				212	5	Santa Cruz			
				249	6	Watsonville			
				999	9	Balance of county			
	045	241	1			Shasta		089	6690
				174	5	Redding			
				999	9	Balance of county			
	046	000	2	999	9	Sierra		091	0000
	047	000	2	999	9	Siskiyou		093	0000
	048	299	1			Solano		095	8720
				021	6	Benicia			
				066	4	Fairfield			
				231	6	Suisun City			
				243	5	Vacaville			
				244	4	Vallejo			
				999	9	Balance of county			
	049	266	1			Sonoma		097	7500
				161	5	Petaluma			
				183	6	Rohnert Park			
				217	4	Santa Rosa			
				999	9	Balance of county			
	050	193	1			Stanislaus		099	5170
				035	6	Ceres			
				130	3	Modesto			
				238	5	Turlock			
				999	9	Balance of county			
	051	319	1			Sutter		101	9340
				255	6	Yuba City			

51710 6711

Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
05						California	06		
				999	9	Balance of county			
	052	000	2	999	9	Tehama		103	0000
	053	000	2	999	9	Trinity		105	0000
	054	303	1			Tulare		107	8780
				170	6	Porterville			
				237	6	Tulare			
				246	5	Visalia			
				999	9	Balance of county			
	055	000	2	999	9	Tuolumne		109	0000
	056	219	1			Ventura		111	6000
				030	5	Camarillo			
				150	3	Oxnard			
				171	6	Port Hueneme			
				191	4	San Buenaventura (Ventura)			
				216	6	Santa Paula			
				223	4	Simi Valley			
				234	4	Thousand Oaks			
				999	9	Balance of county			
	057	250	1			Yolo		113	6920
				055	5	Davis			
				253	5	Woodland			
				999	9	Balance of county			
	058	319	1	999	9	Yuba		115	9340

51710 6712

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
06						Colorado	08
	001	082	1			**Adams**	001 2080
				001	4	Arvada, part	
				002	3	Aurora, part	
				004	6	Brighton, part	
				005	6	Broomfield, part	
				008	6	Commerce City	
				020	5	Northglenn	
				023	5	Thornton	
				024	4	Westminster, part	
				999	9	Balance of county	
	002	000	2	999	9	Alamosa	003 0000
	003	082	1			Arapahoe	005 2080
				002	3	Aurora, part	
				011	5	Englewood	
				017	5	Littleton, part	
				999	9	Balance of county	
	004	000	2	999	9	Archuleta	007 0000
	005	000	2	999	9	Baca	009 0000
	006	000	2	999	9	Bent	011 0000
	007	043	1			Boulder	013 1125
				003	4	Boulder	
				005	6	Broomfield, part	
				018	5	Longmont	
				999	9	Balance of county	
	008	000	2	999	9	Chaffee	015 0000
	009	000	2	999	9	Cheyenne	017 0000
	010	000	2	999	9	Clear Creek	019 0000
	011	000	2	999	9	Conejos	021 0000
	012	000	2	999	9	Costilla	023 0000
	013	000	2	999	9	Crowley	025 0000
	014	000	2	999	9	Custer	027 0000
	015	000	2	999	9	Delta	029 0000
	016	082	1	009	2	Denver, coext. with Denver city	031 2080
	017	000	2	999	9	Dolores	033 0000
	018	082	1			Douglas	035 2080
				017	5	Littleton, part	
				999	9	Balance of county	
	019	000	2	999	9	Eagle	037 0000
	020	000	2	999	9	Elbert	039 0000
	021	068	1			El Paso	041 1720
				007	3	Colorado Springs	
				999	9	Balance of county	
	022	000	2			Fremont	043 0000
				006	6	Canon City	
				999	9	Balance of county	
	023	000	2	999	9	Garfield	045 0000

51710 6713

SA Codes Effective With 1990 Data. All Other Codes [illegible] Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
06						Colorado	0
8							
	024	000	2	999	9	Gilpin	047 0000
	025	000	2	999	9	Grand	049 0000
	026	000	2	999	9	Gunnison	051 0000
	027	000	2	999	9	Hinsdale	053 0000
	028	000	2	999	9	Huerfano	055 0000
	029	000	2	999	9	Jackson	057 0000
	030	082	1			Jefferson	059 2080
				001	4	Arvada, part	
				005	6	Broomfield, part	
				013	6	Golden	
				016	3	Lakewood	
				024	4	Westminster, part	
				025	5	Wheat Ridge	
				999	9	Balance of county	
	031	000	2	999	9	Kiowa	061 0000
	032	000	2	999	9	Kit Carson	063 0000
	033	000	2	999	9	Lake	065 0000
	034	000	2			La Plata	067 0000
				010	6	Durango	
				999	9	Balance of county	
	035	102	1			Larimer	069 2670
				012	4	Fort Collins	
				019	5	Loveland	
				999	9	Balance of county	
	036	000	2	999	9	Las Animas	071 0000
	037	000	2	999	9	Lincoln	073 0000
	038	000	2			Logan	075 0000
				022	6	Sterling	
				999	9	Balance of county	
	039	000	2			Mesa	077 0000
				014	5	Grand Junction	
				999	9	Balance of county	
	040	000	2	999	9	Mineral	079 0000
	041	000	2	999	9	Moffat	081 0000
	042	000	2	999	9	Montezuma	083 0000
	043	000	2	999	9	Montrose	085 0000
	044	000	2	999	9	Morgan	087 0000
	045	000	2	999	9	Otero	089 0000
	046	000	2	999	9	Ouray	091 0000
	047	000	2	999	9	Park	093 0000
	048	000	2	999	9	Phillips	095 0000
	049	000	2	999	9	Pitkin	097 0000
	050	000	2	999	9	Prowers	099 0000
	051	236	1			Pueblo	101 6560
				021	3	Pueblo	
				999	9	Balance of county	
	052	000	2	999	9	Rio Blanco	103 0000

51710 6714

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
06						Colorado	08	
	053	000	2	999	9	Rio Grande		105 0000
	054	000	2	999	9	Routt		107 0000
	055	000	2	999	9	Saguache		109 0000
	056	000	2	999	9	San Juan		111 0000
	057	000	2	999	9	San Miguel		113 0000
	058	000	2	999	9	Sedgwick		115 0000
	059	000	2	999	9	Summit		117 0000
	060	000	2	999	9	Teller		119 0000
	061	000	2	999	9	Washington		121 0000
	062	119	1			Weld		123 3060
				004	6	Brighton, part		
				015	4	Greeley		
				999	9	Balance of county		
	063	000	2	999	9	Yuma		125 0000

51710 6715

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1981 Data.

Vital Statistics Codes							FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
07						Connecticut	09		
	001	047	1			Fairfield		001	1163
				003	3	Bridgeport			
				005	4	Danbury			
				006	6	Darien town			
				011	4	Fairfield town			
				012	4	Greenwich town			
				026	4	Norwalk			
				031	5	Shelton			
				033	3	Stamford			
				034	4	Stratford town			
				036	5	Trumbull town			
				042	5	Westport town			
				999	9	Balance of county			
	002	126	1			Hartford		003	3283
				004	4	Bristol			
				008	4	East Hartford town			
				010	5	Enfield town			
				015	3	Hartford			
				016	5	Manchester town			
				021	4	New Britain			
				023	5	Newington town			
				029	6	Plainville town			
				030	6	Rocky Hill town			
				032	5	Southington town			
				040	4	West Hartford town			
				043	5	Wethersfield town			
				045	5	Windsor town			
				046	6	Windsor Locks town			
				999	9	Balance of county			
	003	000	2			Litchfield		005	0000
				035	5	Torrington			
				999	9	Balance of county			
	004	126	1			Middlesex		007	3283
				018	5	Middletown			
				999	9	Balance of county			
	005	203	1			New Haven		009	5483
				001	6	Ansonia			
				002	6	Branford town			
				007	6	Derby			
				009	5	East Haven town			
				014	4	Hamden town			
				017	4	Meriden			
				019	5	Milford			
				020	5	Naugatuck			
				022	3	New Haven			
				025	6	North Haven town			
				028	6	Orange town			

51710 6716

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
07						Connecticut	09		
				038	5	Wallingford town			
				039	3	Waterbury			
				041	4	West Haven			
				999	9	Balance of county			
	006	204	1			New London		011	5523
				013	6	Groton			
				024	5	New London			
				027	5	Norwich			
				999	9	Balance of county			
	007	126	1			Tolland		013	3283
				037	5	Vernon town			
				999	9	Balance of county			
	008	000	2			Windham		015	0000
				044	6	Willimantic			
				999	9	Balance of county			

51710 6717

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
08						Delaware	10		
	001	000	2			Kent		001	0000
				001	6	Dover			
				999	9	Balance of county			
	002	313	1			New Castle		003	9160
				002	5	Newark			
				003	4	Wilmington			
				999	9	Balance of county			
	003	000	2	999	9	Sussex		005	0000

51710 6718

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
10						Florida	12	
	001	112	1			Alachua	001	2900
				026	4	Gainesville		
				999	9	Balance of county		
	002	000	2	999	9	Baker	003	0000
	003	220	1			Bay	005	6015
				066	5	Panama City		
				999	9	Balance of county		
	004	112	1	999	9	Bradford	007	2900
	005	184	1			Brevard	009	4900
				010	6	Cocoa		
				011	6	Cocoa Beach		
				046	5	Melbourne		
				064	6	Palm Bay		
				076	6	Rockledge		
				089	5	Titusville		
				999	9	Balance of county		
	006	103	1			Broward	011	2680
				012	6	Cooper City		
				014	5	Coral Springs		
				015	6	Dania		
				016	6	Davie		
				018	5	Deerfield Beach		
				022	3	Fort Lauderdale		
				029	5	Hallandale, part		
				031	3	Hollywood		
				040	5	Lauderdale Lakes		
				041	5	Lauderhill		
				043	6	Lighthouse Point		
				045	5	Margate		
				050	5	Miramar		
				054	6	North Lauderdale		
				058	6	Oakland Park		
				067	5	Pembroke Pines		
				070	5	Plantation		
				072	4	Pompano Beach		
				083	5	Sunrise		
				085	5	Tamarac		
				093	6	Wilton Manors		
				999	9	Balance of county		
	007	000	2	999	9	Calhoun	013	0000
	008	000	2	999	9	Charlotte	015	0000
	009	000	2	999	9	Citrus	017	0000
	010	138	1	999	9	Clay	019	3600
	011	199	1			Collier	021	5345
				051	6	Naples		
				999	9	Balance of county		
	012	000	2	999	9	Columbia	023	0000

51710 6719

SA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
10						Florida	12
	013	187	1			Dade	025 5000
				013	5	Coral Gables	
				029	5	Hallandale, part	
				030	3	Hialeah	
				032	6	Homestead	
				047	2	Miami	
				048	4	Miami Beach	
				049	6	Miami Springs	
				055	5	North Miami	
				056	5	North Miami Beach	
				060	6	Opa-locka	
				082	6	South Miami	
				999	9	Balance of county	
	014	000	2	999	9	De Soto	027 0000
	015	000	2	999	9	Dixie	029 0000
	016	138	1			Duval	031 3600
				033	1	Jacksonville	
				034	6	Jacksonville Beach	
				999	9	Balance of county	
	017	223	1			Escambia	033 6080
				068	4	Pensacola	
				999	9	Balance of county	
	018	000	2	999	9	Flagler	035 0000
	019	000	2	999	9	Franklin	037 0000
	020	287	1	999	9	Gadsden	039 8240
	021	000	2	999	9	Gilchrist	041 0000
	022	000	2	999	9	Glades	043 0000
	023	000	2	999	9	Gulf	045 0000
	024	000	2	999	9	Hamilton	047 0000
	025	000	2	999	9	Hardee	049 0000
	026	000	2	999	9	Hendry	051 0000
	027	288	1	999	9	Hernando	053 8280
	028	000	2	999	9	Highlands	055 0000
	029	288	1			Hillsborough	057 8280
				071	6	Plant City	
				086	2	Tampa	
				088	6	Temple Terrace	
				999	9	Balance of county	
	030	000	2	999	9	Holmes	059 0000
	031	000	2			Indian River	061 0000
				091	6	Vero Beach	
				999	9	Balance of county	
	032	000	2	999	9	Jackson	063 0000
	033	000	2	999	9	Jefferson	065 0000
	034	000	2	999	9	Lafayette	067 0000

51710 6720

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
10						Florida	12		
	035	000	2			Lake		069	0000
				042	6	Leesburg			
				999	9	Balance of county			
	036	104	1			Lee		071	2700
				007	5	Cape Coral			
				023	5	Fort Myers			
				999	9	Balance of county			
	037	287	1			Leon		073	8240
				084	4	Tallahassee			
				999	9	Balance of county			
	038	000	2	999	9	Levy		075	0000
	039	000	2	999	9	Liberty		077	0000
	040	000	2	999	9	Madison		079	0000
	041	044	1			Manatee		081	1140
				006	5	Bradenton			
				999	9	Balance of county			
	042	211	1			Marion		083	5790
				059	5	Ocala			
				999	9	Balance of county			
	043	105	1	999	9	Martin		085	2710
	044	000	2			Monroe		087	0000
				035	6	Key West			
				999	9	Balance of county			
	045	138	1	999	9	Nassau		089	3600
	046	107	1			Okaloosa		091	2750
				025	6	Fort Walton Beach			
				999	9	Balance of county			
	047	000	2	999	9	Okeechobee		093	0000
	048	217	1			Orange		095	5960
				061	3	Orlando			
				095	6	Winter Park			
				999	9	Balance of county			
	049	217	1			Osceola		097	5960
				036	6	Kissimmee			
				999	9	Balance of county			
	050	308	1			Palm Beach		099	8960
				003	6	Belle Glade			
				004	5	Boca Raton			
				005	5	Boynton Beach			
				020	5	Delray Beach			
				038	5	Lake Worth			
				057	6	North Palm Beach			
				065	6	Palm Beach Gardens			
				075	5	Riviera Beach			
				092	4	West Palm Beach			
				999	9	Balance of county			

51710 6721

Vital Statistics Codes						State, County, City, or Country Name	FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S		St	Cnty	MSA
10						Florida	12		
	051	288	1			Pasco		101	8280
				052	6	New Port Richey			
				999	9	Balance of county			
	052	288	1			Pinellas		103	8280
				009	4	Clearwater			
				021	5	Dunedin			
				027	6	Gulfport			
				039	4	Largo			
				069	5	Pinellas Park			
				078	3	St. Petersburg			
				087	6	Tarpon Springs			
				999	9	Balance of county			
	053	159	1			Polk		105	3980
				002	6	Bartow			
				028	6	Haines City			
				037	5	Lakeland			
				094	6	Winter Haven			
				999	9	Balance of county			
	054	000	2			Putnam		107	0000
				063	6	Palatka			
				999	9	Balance of county			
	055	138	1			St. Johns		109	3600
				077	6	St. Augustine			
				999	9	Balance of county			
	056	105	1			St. Lucie		111	2710
				024	5	Fort Pierce			
				074	6	Port St. Lucie			
				999	9	Balance of county			
	057	223	1	999	9	Santa Rosa		113	6080
	058	267	1			Sarasota		115	7510
				080	5	Sarasota			
				090	6	Venice			
				999	9	Balance of county			
	059	217	1			Seminole		117	5960
				001	6	Altamonte Springs			
				008	6	Casselberry			
				044	6	Longwood			
				079	6	Sanford			
				096	6	Winter Springs			
				999	9	Balance of county			
	060	000	2	999	9	Sumter		119	0000
	061	000	2	999	9	Suwannee		121	0000
	062	000	2	999	9	Taylor		123	0000
	063	000	2	999	9	Union		125	0000
	064	079	1			Volusia		127	2020
				017	4	Daytona Beach			
				019	6	De Land			

51710 6722

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
10						Florida	12	
				053	6	New Smyrna Beach		
				062	6	Ormond Beach		
				073	6	Port Orange		
				081	6	South Daytona		
				999	9	Balance of county		
	065	000	2	999	9	Wakulla	129	0000
	066	000	2	999	9	Walton	131	0000
	067	000	2	999	9	Washington	133	0000

51710 6723

Vital Statistics Geographic Code Outline

A Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
11						Georgia	13	
			2	999	9	Appling		001 0000
	002	000	2	999	9	Atkinson		003 0000
	003	000	2	999	9	Bacon		005 0000
	004	000	2	999	9	Baker		007 0000
	005	000	2			Baldwin		009 0000
				026	6	Milledgeville		
				999	9	Balance of county		
	006	000	2	999	9	Banks		011 0000
	007	019	1	999	9	Barrow		013 0520
	008	000	2	999	9	Bartow		015 0000
	009	000	2			Ben Hill		017 0000
				018	6	Fitzgerald, part		
				999	9	Balance of county		
	010	000	2	999	9	Berrien		019 0000
	011	178	1			Bibb		021 4680
				024	3	Macon, part		
				999	9	Balance of county		
	012	000	2	999	9	Bleckley		023 0000
	013	000	2	999	9	Brantley		025 0000
	014	000	2	999	9	Brooks		027 0000
	015	000	2	999	9	Bryan		029 0000
	016	000	2			Bulloch		031 0000
				033	6	Statesboro		
				999	9	Balance of county		
	017	000	2	999	9	Burke		033 0000
	018	019	1	999	9	Butts		035 0520
	019	000	2	999	9	Calhoun		037 0000
	020	000	2	999	9	Camden		039 0000
	021	000	2	999	9	Candler		043 0000
	022	000	2			Carroll		045 0000
				008	6	Carrollton		
				999	9	Balance of county		
	023	061	1	999	9	Catoosa		047 1560
	024	000	2	999	9	Charlton		049 0000
	025	268	1			Chatham		051 7520
				031	3	Savannah		
				999	9	Balance of county		
	026	071	1	999	9	Chattahoochee		053 1800
	027	000	2	999	9	Chattooga		055 0000
	028	019	1	999	9	Cherokee		057 0520
	029	018	1			Clarke		059 0500
				003	5	Athens		
				999	9	Balance of county		
	030	000	2	999	9	Clay		061 0000
	031	019	1			Clayton		063 0520
				009	6	College Park, part		

51710 6724

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
11						Georgia	13	
				019	6	Forest Park		
				999	9	Balance of county		
	032	000	2	999	9	Clinch		065 0000
	033	019	1			Cobb		067 0520
				025	5	Marietta		
				032	6	Smyrna		
				999	9	Balance of county		
	034	000	2			Coffee		069 0000
				015	6	Douglas		
				999	9	Balance of county		
	035	000	2			Colquitt		071 0000
				027	6	Moultrie		
				999	9	Balance of county		
	036	021	1	999	9	Columbia		073 0600
	037	000	2	999	9	Cook		075 0000
	038	019	1			Coweta		077 0520
				028	6	Newnan		
				999	9	Balance of county		
	039	000	2	999	9	Crawford		079 0000
	040	000	2			Crisp		081 0000
				011	6	Cordele		
				999	9	Balance of county		
	041	061	1	999	9	Dade		083 1560
	042	000	2	999	9	Dawson		085 0000
	043	000	2			Decatur		087 0000
				006	6	Bainbridge		
				999	9	Balance of county		
	044	019	1			De Kalb		089 0520
				004	2	Atlanta, part		
				014	6	Decatur		
				999	9	Balance of county		
	045	000	2	999	9	Dodge		091 0000
	046	000	2	999	9	Dooly		093 0000
	047	003	1			Dougherty		095 0120
				001	4	Albany		
				999	9	Balance of county		
	048	019	1	999	9	Douglas		097 0520
	049	000	2	999	9	Early		099 0000
	050	000	2	999	9	Echols		101 0000
	051	268	1	999	9	Effingham		103 7520
	052	000	2	999	9	Elbert		105 0000
	053	000	2	999	9	Emanuel		107 0000
	054	000	2	999	9	Evans		109 0000
	055	000	2	999	9	Fannin		111 0000
	056	019	1	999	9	Fayette		113 0520
	057	000	2			Floyd		115 0000
				029	5	Rome		

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Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
11						Georgia	13		
				999	9	Balance of county			
	058	019	1	999	9	Forsyth		117	0520
	059	000	2	999	9	Franklin		119	0000
	060	019	1			Fulton		121	0520
				004	2	Atlanta, part			
				009	6	College Park, part			
				017	5	East Point			
				030	6	Roswell			
				999	9	Balance of county			
	061	000	2	999	9	Gilmer		123	0000
	062	000	2	999	9	Glascock		125	0000
	063	000	2			Glynn		127	0000
				007	6	Brunswick			
				999	9	Balance of county			
	064	000	2	999	9	Gordon		129	0000
	065	000	2	999	9	Grady		131	0000
	066	000	2	999	9	Greene		133	0000
	067	019	1	999	9	Gwinnett		135	0520
	068	000	2	999	9	Habersham		137	0000
	069	000	2			Hall		139	0000
				020	6	Gainesville			
				999	9	Balance of county			
	070	000	2	999	9	Hancock		141	0000
	071	000	2	999	9	Haralson		143	0000
	072	000	2	999	9	Harris		145	0000
	073	000	2	999	9	Hart		147	0000
	074	000	2	999	9	Heard		149	0000
	075	019	1	999	9	Henry		151	0520
	076	178	1			Houston		153	4680
				038	5	Warner Robins			
				999	9	Balance of county			
	077	000	2			Irwin		155	0000
				018	6	Fitzgerald, part			
				999	9	Balance of county			
	078	018	1	999	9	Jackson		157	0500
	079	000	2	999	9	Jasper		159	0000
	080	000	2	999	9	Jeff Davis		161	0000
	081	000	2	999	9	Jefferson		163	0000
	082	000	2	999	9	Jenkins		165	0000
	083	000	2	999	9	Johnson		167	0000
	084	178	1			Jones		169	4680
				024	3	Macon, part			
				999	9	Balance of county			
	085	000	2	999	9	Lamar		171	0000
	086	000	2	999	9	Lanier		173	0000
	087	000	2			Laurens		175	0000
				016	6	Dublin			

51710 6726

Vital Statistics Geographic Code Outline

MSA Codes Effective With 1990 Data. All Other Codes Effect

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
11						Georgia	13
				999	9	Balance of county	
	088	003	1	999	9	Lee	177 0120
	089	000	2			Liberty	179 0000
				022	6	Hinesville	
				999	9	Balance of county	
	090	000	2	999	9	Lincoln	181 0000
	091	000	2	999	9	Long	183 0000
	092	000	2			Lowndes	185 0000
				036	5	Valdosta	
				999	9	Balance of county	
	093	000	2	999	9	Lumpkin	187 0000
	094	021	1	999	9	McDuffie	189 0600
	095	000	2	999	9	McIntosh	191 0000
	096	000	2	999	9	Macon	193 0000
	097	018	1	999	9	Madison	195 0500
	098	000	2	999	9	Marion	197 0000
	099	000	2	999	9	Meriwether	199 0000
	100	000	2	999	9	Miller	201 0000
	101	000	2	999	9	Mitchell	205 0000
	102	000	2	999	9	Monroe	207 0000
	103	000	2			Montgomery	209 0000
				037	6	Vidalia, part	
				999	9	Balance of county	
	104	000	2	999	9	Morgan	211 0000
	105	000	2	999	9	Murray	213 0000
	106	071	1			Muscogee	215 1800
				010	3	Columbus	
				999	9	Balance of county	
	107	019	1			Newton	217 0520
				012	6	Covington	
				999	9	Balance of county	
	108	018	1	999	9	Oconee	219 0500
	109	000	2	999	9	Oglethorpe	221 0000
	110	019	1	999	9	Paulding	223 0520
	111	178	1	999	9	Peach	225 4680
	112	000	2	999	9	Pickens	227 0000
	113	000	2	999	9	Pierce	229 0000
	114	000	2	999	9	Pike	231 0000
	115	000	2	999	9	Polk	233 0000
	116	000	2	999	9	Pulaski	235 0000
	117	000	2	999	9	Putnam	237 0000
	118	000	2	999	9	Quitman	239 0000
	119	000	2	999	9	Rabun	241 0000
	120	000	2	999	9	Randolph	243 0000
	121	021	1			Richmond	245 0600
				005	5	Augusta	
				999	9	Balance of county	

51710 6727

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
11						Georgia	13		
	122	019	1	999	9	Rockdale		247	0520
	123	000	2	999	9	Schley		249	0000
	124	000	2	999	9	Screven		251	0000
	125	000	2	999	9	Seminole		253	0000
	126	019	1			Spalding		255	0520
				021	6	Griffin			
				999	9	Balance of county			
	127	000	2	999	9	Stephens		257	0000
	128	000	2	999	9	Stewart		259	0000
	129	000	2			Sumter		261	0000
				002	6	Americus			
				999	9	Balance of county			
	130	000	2	999	9	Talbot		263	0000
	131	000	2	999	9	Taliaferro		265	0000
	132	000	2	999	9	Tattnall		267	0000
	133	000	2	999	9	Taylor		269	0000
	134	000	2	999	9	Telfair		271	0000
	135	000	2	999	9	Terrell		273	0000
	136	000	2			Thomas		275	0000
				034	6	Thomasville			
				999	9	Balance of county			
	137	000	2			Tift		277	0000
				035	6	Tifton			
				999	9	Balance of county			
	138	000	2			Toombs		279	0000
				037	6	Vidalia, part			
				999	9	Balance of county			
	139	000	2	999	9	Towns		281	0000
	140	000	2	999	9	Treutlen		283	0000
	141	000	2			Troup		285	0000
				023	6	La Grange			
				999	9	Balance of county			
	142	000	2	999	9	Turner		287	0000
	143	000	2	999	9	Twiggs		289	0000
	144	000	2	999	9	Union		291	0000
	145	000	2	999	9	Upson		293	0000
	146	061	1	999	9	Walker		295	1560
	147	019	1	999	9	Walton		297	0520
	148	000	2			Ware		299	0000
				039	6	Waycross			
				999	9	Balance of county			
	149	000	2	999	9	Warren		301	0000
	150	000	2	999	9	Washington		303	0000
	151	000	2	999	9	Wayne		305	0000
	152	000	2	999	9	Webster		307	0000
	153	000	2	999	9	Wheeler		309	0000
	154	000	2	999	9	White		311	0000

51710 6728

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
11						Georgia	13		
	155	000	2			Whitfield		313	0000
				013	6	Dalton			
				999	9	Balance of county			
	156	000	2	999	9	Wilcox		315	0000
	157	000	2	999	9	Wilkes		317	0000
	158	000	2	999	9	Wilkinson		319	0000
	159	000	2	999	9	Worth		321	0000

51710 6729

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
12						Hawaii	15		
	001	000	2			Hawaii		001	0000
				003	5	Hilo			
				999	9	Balance of county			
	002	128	1			Honolulu		003	3320
				001	5	Aiea			
				002	6	Ewa Beach			
				004	2	Honolulu			
				006	5	Kailua			
				007	5	Kaneohe			
				008	6	Mililani Town			
				009	6	Mokapu			
				010	5	Pearl City			
				011	6	Schofield Barracks			
				012	6	Wahiawa			
				014	5	Waipahu			
				999	9	Balance of county			
	003	000	2	999	9	Kalawao		005	0000
	004	000	2	999	9	Kauai		007	0000
	005	000	2			Maui		009	0000
				005	6	Kahului			
				013	6	Wailuku			
				999	9	Balance of county			

51710 6730

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
13						Idaho	16
	001	041	1			Ada	001 1080
				002	3	Boise City	
				999	9	Balance of county	
	002	000	2	999	9	Adams	003 0000
	003	000	2			Bannock	005 0000
				009	5	Pocatello	
				999	9	Balance of county	
	004	000	2	999	9	Bear Lake	007 0000
	005	000	2	999	9	Benewah	009 0000
	006	000	2			Bingham	011 0000
				001	6	Blackfoot	
				999	9	Balance of county	
	007	000	2	999	9	Blaine	013 0000
	008	000	2	999	9	Boise	015 0000
	009	000	2	999	9	Bonner	017 0000
	010	000	2			Bonneville	019 0000
				005	5	Idaho Falls	
				999	9	Balance of county	
	011	000	2	999	9	Boundary	021 0000
	012	000	2	999	9	Butte	023 0000
	013	000	2	999	9	Camas	025 0000
	014	000	2			Canyon	027 0000
				003	6	Caldwell	
				008	5	Nampa	
				999	9	Balance of county	
	015	000	2	999	9	Caribou	029 0000
	016	000	2	999	9	Cassia	031 0000
	017	000	2	999	9	Clark	033 0000
	018	000	2	999	9	Clearwater	035 0000
	019	000	2	999	9	Custer	037 0000
	020	000	2	999	9	Elmore	039 0000
	021	000	2	999	9	Franklin	041 0000
	022	000	2	999	9	Fremont	043 0000
	023	000	2	999	9	Gem	045 0000
	024	000	2	999	9	Gooding	047 0000
	025	000	2	999	9	Idaho	049 0000
	026	000	2	999	9	Jefferson	051 0000
	027	000	2	999	9	Jerome	053 0000
	028	000	2			Kootenai	055 0000
				004	6	Coeur d'Alene	
				999	9	Balance of county	
	029	000	2			Latah	057 0000
				007	6	Moscow	
				999	9	Balance of county	
	030	000	2	999	9	Lemhi	059 0000
	031	000	2	999	9	Lewis	061 0000
	032	000	2	999	9	Lincoln	063 0000

51710 6731

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
13						Idaho	16	
	033	000	2			Madison		065 0000
				010	6	Rexburg		
				999	9	Balance of county		
	034	000	2	999	9	Minidoka		067 0000
	035	000	2			Nez Perce		069 0000
				006	5	Lewiston		
				999	9	Balance of county		
	036	000	2	999	9	Oneida		071 0000
	037	000	2	999	9	Owyhee		073 0000
	038	000	2	999	9	Payette		075 0000
	039	000	2	999	9	Power		077 0000
	040	000	2	999	9	Shoshone		079 0000
	041	000	2	999	9	Teton		081 0000
	042	000	2			Twin Falls		083 0000
				011	5	Twin Falls		
				999	9	Balance of county		
	043	000	2	999	9	Valley		085 0000
	044	000	2	999	9	Washington		087 0000

51710 6732

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
14						Illinois	17	
	001	000	2			Adams		001 0000
				135	5	Quincy		
				999	9	Balance of county		
	002	000	2	999	9	Alexander		003 0000
	003	000	2	999	9	Bond		005 0000
	004	249	1			Boone		007 6880
				010	6	Belvidere		
				999	9	Balance of county		
	005	000	2	999	9	Brown		009 0000
	006	000	2	999	9	Bureau		011 0000
	007	000	2	999	9	Calhoun		013 0000
	008	000	2	999	9	Carroll		015 0000
	009	000	2	999	9	Cass		017 0000
	010	056	1			Champaign		019 1400
				030	4	Champaign		
				136	6	Rantoul		
				160	5	Urbana		
				999	9	Balance of county		
	011	000	2			Christian		021 0000
				158	6	Taylorville		
				999	9	Balance of county		
	012	000	2	999	9	Clark		023 0000
	013	000	2	999	9	Clay		025 0000
	014	254	1			Clinton		027 7040
				029	6	Centralia, part		
				999	9	Balance of county		
	015	000	2			Coles		029 0000
				031	6	Charleston		
				101	6	Mattoon		
				999	9	Balance of county		
	016	063	1			Cook		031 1600
				002	6	Alsip		
				004	4	Arlington Heights, part		
				006	6	Bartlett, part		
				009	6	Bellwood		
				011	6	Bensenville, part		
				012	5	Berwyn		
				015	6	Blue Island		
				019	6	Bridgeview		
				020	6	Brookfield		
				021	6	Buffalo Grove, part		
				022	5	Burbank		
				024	5	Calumet City		
				032	0	Chicago, part		
				033	5	Chicago Heights		
				034	6	Chicago Ridge		
				035	4	Cicero		

51710 6733

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes					State, County, City, or Country Name	FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S		St	Cnty	MSA
14						Illinois	17		
	037		6			Country Club Hills			
				038	6	Crestwood			
				043	6	Deerfield, part			
				045	4	Des Plaines			
				047	6	Dolton			
				054	4	Elgin, part			
				055	5	Elk Grove Village, part			
				057	6	Elmwood Park			
				058	4	Evanston			
				059	6	Evergreen Park			
				061	6	Forest Park			
				062	6	Franklin Park			
				067	5	Glenview			
				068	6	Glenwood			
				070	5	Hanover Park, part			
				072	5	Harvey			
				073	6	Hazel Crest			
				075	6	Hickory Hills			
				077	6	Hinsdale, part			
				078	5	Hoffman Estates			
				079	6	Homewood			
				082	6	Justice			
				085	6	La Grange			
				086	6	La Grange Park			
				088	5	Lansing			
				092	6	Lincolnwood			
				099	6	Markham			
				100	6	Matteson			
				102	5	Maywood			
				103	6	Melrose Park			
				104	6	Midlothian			
				108	6	Morton Grove			
				109	4	Mount Prospect			
				113	5	Niles			
				115	6	Norridge			
				116	5	Northbrook			
				118	6	Northlake			
				119	5	Oak Forest			
				120	4	Oak Lawn			
				121	4	Oak Park			
				123	6	Orland Park			
				125	5	Palatine			
				126	6	Palos Heights			
				127	6	Palos Hills			
				128	5	Park Forest, part			
				129	5	Park Ridge			
				134	6	Prospect Heights			

51710 6734

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
14						Illinois	17	
				137	6	Riverdale		
				138	6	River Forest		
				139	6	River Grove		
				143	6	Rolling Meadows		
				145	6	Roselle, part		
				148	6	Sauk Village		
				149	4	Schaumburg, part		
				150	6	Schiller Park		
				151	4	Skokie		
				152	6	South Holland		
				155	6	Streamwood		
				157	6	Summit		
				159	5	Tinley Park, part		
				164	6	Westchester		
				166	6	Western Springs		
				169	6	Wheeling, part		
				170	5	Wilmette		
				171	6	Winnetka		
				176	6	Worth		
				999	9	Balance of county		
	017	000	2	999	9	Crawford	033	0000
	018	000	2	999	9	Cumberland	035	0000
	019	000	2			De Kalb	037	0000
				044	5	De Kalb		
				999	9	Balance of county		
	020	000	2	999	9	De Witt	039	0000
	021	000	2	999	9	Douglas	041	0000
	022	063	1			Du Page	043	1600
				001	5	Addison		
				005	4	Aurora, part		
				006	6	Bartlett, part		
				007	6	Batavia, part		
				011	6	Bensenville, part		
				013	6	Bloomingdale		
				016	5	Bolingbrook, part		
				027	6	Carol Stream		
				032	0	Chicago, part		
				041	6	Darien		
				048	5	Downers Grove		
				055	5	Elk Grove Village, part		
				056	5	Elmhurst		
				065	6	Glendale Heights		
				066	6	Glen Ellyn		
				070	5	Hanover Park, part		
				077	6	Hinsdale, part		
				093	6	Lisle		
				094	5	Lombard		

51710 6735

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
14						Illinois	17
				112	5	Naperville, part	
				145	6	Roselle, part	
				147	6	St. Charles, part	
				149	4	Schaumburg, part	
				161	6	Villa Park	
				165	6	West Chicago	
				167	6	Westmont	
				168	5	Wheaton	
				172	6	Wood Dale	
				173	6	Woodridge	
				999	9	Balance of county	
	023	000	2	999	9	Edgar	045 0000
	024	000	2	999	9	Edwards	047 0000
	025	000	2			Effingham	049 0000
				053	6	Effingham	
				999	9	Balance of county	
	026	000	2	999	9	Fayette	051 0000
	027	000	2	999	9	Ford	053 0000
	028	000	2	999	9	Franklin	055 0000
	029	000	2			Fulton	057 0000
				025	6	Canton	
				999	9	Balance of county	
	030	000	2	999	9	Gallatin	059 0000
	031	000	2	999	9	Greene	061 0000
	032	145	1	999	9	Grundy	063 3690
	033	000	2	999	9	Hamilton	065 0000
	034	000	2	999	9	Hancock	067 0000
	035	000	2	999	9	Hardin	069 0000
	036	000	2	999	9	Henderson	071 0000
	037	077	1			Henry	073 1960
				084	6	Kewanee	
				999	9	Balance of county	
	038	000	2	999	9	Iroquois	075 0000
	039	000	2			Jackson	077 0000
				026	5	Carbondale	
				999	9	Balance of county	
	040	000	2	999	9	Jasper	079 0000
	041	000	2			Jefferson	081 0000
				110	6	Mount Vernon	
				999	9	Balance of county	
	042	254	1	999	9	Jersey	083 7040
	043	000	2	999	9	Jo Daviess	085 0000
	044	000	2	999	9	Johnson	087 0000
	045	022	1			Kane	089 0620
				005	4	Aurora, part	
				007	6	Batavia, part	
				028	6	Carpentersville	

51710 6736

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
14						Illinois	17	
				054	4	Elgin, part		
				147	6	St. Charles, part		
				999	9	Balance of county		
	046	148	1			Kankakee	091	3740
				017	6	Bourbonnais		
				018	6	Bradley		
				083	5	Kankakee		
				999	9	Balance of county		
	047	022	1	999	9	Kendall	093	0620
	048	000	2			Knox	095	0000
				064	5	Galesburg		
				999	9	Balance of county		
	049	158	1			Lake	097	3965
				004	4	Arlington Heights, part		
				021	6	Buffalo Grove, part		
				043	6	Deerfield, part		
				076	5	Highland Park		
				087	6	Lake Forest		
				090	6	Libertyville		
				111	6	Mundelein		
				117	5	North Chicago		
				146	6	Round Lake Beach		
				163	4	Waukegan		
				169	6	Wheeling, part		
				177	6	Zion		
				999	9	Balance of county		
	050	000	2			La Salle	099	0000
				089	6	La Salle		
				124	6	Ottawa		
				132	6	Peru		
				156	6	Streator, part		
				999	9	Balance of county		
	051	000	2	999	9	Lawrence	101	0000
	052	000	2			Lee	103	0000
				046	6	Dixon		
				999	9	Balance of county		
	053	000	2			Livingston	105	0000
				133	6	Pontiac		
				156	6	Streator, part		
				999	9	Balance of county		
	054	000	2			Logan	107	0000
				091	6	Lincoln		
				999	9	Balance of county		
	055	000	2			McDonough	109	0000
				097	6	Macomb		
				999	9	Balance of county		
	056	063	1			McHenry	111	1600

51710 6737

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
14						Illinois	17	
				039	6	Crystal Lake		
				096	6	McHenry		
				175	6	Woodstock		
				999	9	Balance of county		
	057	040	1			McLean	113	1040
				014	5	Bloomington		
				114	5	Normal		
				999	9	Balance of county		
	058	081	1			Macon	115	2040
				042	4	Decatur		
				999	9	Balance of county		
	059	000	2	999	9	Macoupin	117	0000
	060	254	1			Madison	119	7040
				003	5	Alton		
				036	6	Collinsville, part		
				052	6	Edwardsville		
				069	5	Granite City		
				174	6	Wood River		
				999	9	Balance of county		
	061	000	2			Marion	121	0000
				029	6	Centralia, part		
				999	9	Balance of county		
	062	000	2	999	9	Marshall	123	0000
	063	000	2	999	9	Mason	125	0000
	064	000	2	999	9	Massac	127	0000
	065	279	1	999	9	Menard	129	7880
	066	000	2	999	9	Mercer	131	0000
	067	254	1	999	9	Monroe	133	7040
	068	000	2	999	9	Montgomery	135	0000
	069	000	2			Morgan	137	0000
				080	6	Jacksonville		
				999	9	Balance of county		
	070	000	2	999	9	Moultrie	139	0000
	071	000	2	999	9	Ogle	141	0000
	072	224	1			Peoria	143	6120
				130	5	Pekin, part		
				131	3	Peoria		
				999	9	Balance of county		
	073	000	2	999	9	Perry	145	0000
	074	000	2	999	9	Piatt	147	0000
	075	000	2	999	9	Pike	149	0000
	076	000	2	999	9	Pope	151	0000
	077	000	2	999	9	Pulaski	153	0000
	078	000	2	999	9	Putnam	155	0000
	079	000	2	999	9	Randolph	157	0000
	080	000	2	999	9	Richland	159	0000
	081	077	1			Rock Island	161	1960

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
14						Illinois	17
				049	6	East Moline	
				105	5	Moline	
				142	5	Rock Island	
				999	9	Balance of county	
	082	254	1			St. Clair	163 7040
				008	5	Belleville	
				023	6	Cahokia	
				036	6	Collinsville, part	
				051	4	East St. Louis	
				060	6	Fairview Heights	
				122	6	O'Fallon	
				999	9	Balance of county	
	083	000	2			Saline	165 0000
				071	6	Harrisburg	
				999	9	Balance of county	
	084	279	1			Sangamon	167 7880
				153	3	Springfield	
				999	9	Balance of county	
	085	000	2	999	9	Schuyler	169 0000
	086	000	2	999	9	Scott	171 0000
	087	000	2	999	9	Shelby	173 0000
	088	000	2	999	9	Stark	175 0000
	089	000	2			Stephenson	177 0000
				063	5	Freeport	
				999	9	Balance of county	
	090	224	1			Tazewell	179 6120
				050	6	East Peoria	
				107	6	Morton	
				130	5	Pekin, part	
				162	6	Washington	
				999	9	Balance of county	
	091	000	2	999	9	Union	181 0000
	092	000	2			Vermilion	183 0000
				040	5	Danville	
				999	9	Balance of county	
	093	000	2	999	9	Wabash	185 0000
	094	000	2			Warren	187 0000
				106	6	Monmouth	
				999	9	Balance of county	
	095	000	2	999	9	Washington	189 0000
	096	000	2	999	9	Wayne	191 0000
	097	000	2	999	9	White	193 0000
	098	000	2			Whiteside	195 0000
				140	6	Rock Falls	
				154	6	Sterling	
				999	9	Balance of county	
	099	145	1			Will	197 3690

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Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
14						Illinois	17		
				016	5	Bolingbrook, part			
				081	4	Joliet			
				112	5	Naperville, part			
				128	5	Park Forest, part			
				144	6	Romeoville			
				159	5	Tinley Park, part			
				999	9	Balance of county			
	100	000	2			Williamson	199	0000	
				074	6	Herrin			
				098	6	Marion			
				999	9	Balance of county			
	101	249	1			Winnebago	201	6880	
				095	6	Loves Park			
				141	3	Rockford			
				999	9	Balance of county			
	102	224	1	999	9	Woodford	203	6120	

51710 6740

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
015						Indiana	18	
	001	000	2	999	9	Adams	001	0000
	002	108	1			Allen	003	2760
				015	3	Fort Wayne		
				999	9	Balance of county		
	003	000	2			Bartholomew	005	0000
				007	5	Columbus		
				999	9	Balance of county		
	004	000	2	999	9	Benton	007	0000
	005	000	2	999	9	Blackford	009	0000
	006	133	1			Boone	011	3480
				034	6	Lebanon		
				999	9	Balance of county		
	007	000	2	999	9	Brown	013	0000
	008	000	2	999	9	Carroll	015	0000
	009	000	2			Cass	017	0000
				035	6	Logansport		
				999	9	Balance of county		
	010	175	1			Clark	019	4520
				006	6	Clarksville		
				028	6	Jeffersonville		
				999	9	Balance of county		
	011	289	1	999	9	Clay	021	8320
	012	000	2			Clinton	023	0000
				016	6	Frankfort		
				999	9	Balance of county		
	013	000	2	999	9	Crawford	025	0000
	014	000	2			Daviess	027	0000
				060	6	Washington		
				999	9	Balance of county		
	015	065	1	999	9	Dearborn	029	1640
	016	000	2	999	9	Decatur	031	0000
	017	108	1	999	9	De Kalb	033	2760
	018	197	1			Delaware	035	5280
				042	4	Muncie		
				999	9	Balance of county		
	019	000	2	999	9	Dubois	037	0000
	020	090	1			Elkhart	039	2330
				012	5	Elkhart		
				019	6	Goshen		
				999	9	Balance of county		
	021	000	2			Fayette	041	0000
				008	6	Connersville		
				999	9	Balance of county		
	022	175	1			Floyd	043	4520
				044	5	New Albany		
				999	9	Balance of county		
	023	000	2	999	9	Fountain	045	0000

51710 6741

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
15						Indiana	18	
	024	000	2	999	9	Franklin	047	0000
	025	000	2	999	9	Fulton	049	0000
	026	000	2	999	9	Gibson	051	0000
	027	000	2			Grant	053	0000
				037	5	Marion		
				999	9	Balance of county		
	028	000	2	999	9	Greene	055	0000
	029	133	1			Hamilton	057	3480
				005	6	Carmel		
				046	6	Noblesville		
				999	9	Balance of county		
	030	133	1			Hancock	059	3480
				020	6	Greenfield		
				999	9	Balance of county		
	031	175	1	999	9	Harrison	061	4520
	032	133	1	999	9	Hendricks	063	3480
	033	000	2			Henry	065	0000
				045	6	New Castle		
				999	9	Balance of county		
	034	153	1			Howard	067	3850
				029	5	Kokomo		
				999	9	Balance of county		
	035	000	2			Huntington	069	0000
				026	6	Huntington		
				999	9	Balance of county		
	036	000	2			Jackson	071	0000
				051	6	Seymour		
				999	9	Balance of county		
	037	000	2	999	9	Jasper	073	0000
	038	000	2	999	9	Jay	075	0000
	039	000	2			Jefferson	077	0000
				036	6	Madison		
				999	9	Balance of county		
	040	000	2	999	9	Jennings	079	0000
	041	133	1			Johnson	081	3480
				017	6	Franklin		
				021	6	Greenwood		
				999	9	Balance of county		
	042	000	2			Knox	083	0000
				057	6	Vincennes		
				999	9	Balance of county		
	043	000	2			Kosciusko	085	0000
				059	6	Warsaw		
				999	9	Balance of county		
	044	000	2	999	9	Lagrange	087	0000
	045	114	1			Lake	089	2960
				010	6	Crown Point		

51710 6742

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
15						Indiana	18
				011	5	East Chicago	
				018	3	Gary	
				022	6	Griffith	
				023	4	Hammond	
				024	5	Highland	
				025	6	Hobart	
				031	6	Lake Station	
				039	5	Merrillville	
				043	6	Munster	
				050	6	Schererville	
				999	9	Balance of county	
	046	000	2			La Porte	091 0000
				032	6	La Porte	
				040	5	Michigan City	
				999	9	Balance of county	
	047	000	2			Lawrence	093 0000
				002	6	Bedford	
				999	9	Balance of county	
	048	012	1			Madison	095 0400
				001	4	Anderson	
				013	6	Elwood, part	
				999	9	Balance of county	
	049	133	1			Marion	097 3480
				003	6	Beech Grove	
				027	1	Indianapolis	
				033	5	Lawrence	
				054	6	Speedway	
				999	9	Balance of county	
	050	000	2	999	9	Marshall	099 0000
	051	000	2	999	9	Martin	101 0000
	052	000	2			Miami	103 0000
				047	6	Peru	
				999	9	Balance of county	
	053	039	1			Monroe	105 1020
				004	4	Bloomington	
				999	9	Balance of county	
	054	000	2			Montgomery	107 0000
				009	6	Crawfordsville	
				999	9	Balance of county	
	055	133	1			Morgan	109 3480
				038	6	Martinsville	
				999	9	Balance of county	
	056	000	2	999	9	Newton	111 0000
	057	000	2	999	9	Noble	113 0000
	058	000	2	999	9	Ohio	115 0000
	059	000	2	999	9	Orange	117 0000
	060	000	2	999	9	Owen	119 0000

51710 6743

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
15						Indiana	18
	061	000	2	999	9	Parke	121 0000
	062	000	2	999	9	Perry	123 0000
	063	000	2	999	9	Pike	125 0000
	064	114	1			Porter	127 2960
				048	5	Portage	
				056	6	Valparaiso	
				999	9	Balance of county	
	065	095	1	999	9	Posey	129 2440
	066	000	2	999	9	Pulaski	131 0000
	067	000	2	999	9	Putnam	133 0000
	068	000	2	999	9	Randolph	135 0000
	069	000	2	999	9	Ripley	137 0000
	070	000	2	999	9	Rush	139 0000
	071	277	1			St. Joseph	141 7800
				041	5	Mishawaka	
				053	3	South Bend	
				999	9	Balance of county	
	072	000	2	999	9	Scott	143 0000
	073	133	1			Shelby	145 3480
				052	6	Shelbyville	
				999	9	Balance of county	
	074	000	2	999	9	Spencer	147 0000
	075	000	2	999	9	Starke	149 0000
	076	000	2	999	9	Steuben	151 0000
	077	000	2	999	9	Sullivan	153 0000
	078	000	2	999	9	Switzerland	155 0000
	079	156	1			Tippecanoe	157 3920
				030	5	Lafayette	
				061	6	West Lafayette	
				999	9	Balance of county	
	080	153	1			Tipton	159 3850
				013	6	Elwood, part	
				999	9	Balance of county	
	081	000	2	999	9	Union	161 0000
	082	095	1			Vanderburgh	163 2440
				014	3	Evansville	
				999	9	Balance of county	
	083	000	2	999	9	Vermillion	165 0000
	084	289	1			Vigo	167 8320
				055	4	Terre Haute	
				999	9	Balance of county	
	085	000	2			Wabash	169 0000
				058	6	Wabash	
				999	9	Balance of county	
	086	000	2	999	9	Warren	171 0000
	087	095	1	999	9	Warrick	173 2440
	088	000	2	999	9	Washington	175 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
15						Indiana	18		
	089	000	2			Wayne		177	0000
				049	5	Richmond			
				999	9	Balance of county			
	090	000	2	999	9	Wells		179	0000
	091	000	2	999	9	White		181	0000
	092	108	1	999	9	Whitley		183	2760

51710 6745

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
16						Iowa	19	
	001	000	2	999	9	Adair	001	0000
	002	000	2	999	9	Adams	003	0000
	003	000	2	999	9	Allamakee	005	0000
	004	000	2	999	9	Appanoose	007	0000
	005	000	2	999	9	Audubon	009	0000
	006	000	2	999	9	Benton	011	0000
	007	306	1			Black Hawk	013	8920
				006	5	Cedar Falls		
				028	4	Waterloo		
				999	9	Balance of county		
	008	000	2			Boone	015	0000
				004	6	Boone		
				999	9	Balance of county		
	009	306	1	999	9	Bremer	017	8920
	010	000	2	999	9	Buchanan	019	0000
	011	000	2	999	9	Buena Vista	021	0000
	012	000	2	999	9	Butler	023	0000
	013	000	2	999	9	Calhoun	025	0000
	014	000	2	999	9	Carroll	027	0000
	015	000	2	999	9	Cass	029	0000
	016	000	2	999	9	Cedar	031	0000
	017	000	2			Cerro Gordo	033	0000
				020	5	Mason City		
				999	9	Balance of county		
	018	000	2	999	9	Cherokee	035	0000
	019	000	2	999	9	Chickasaw	037	0000
	020	000	2	999	9	Clarke	039	0000
	021	000	2			Clay	041	0000
				026	6	Spencer		
				999	9	Balance of county		
	022	000	2	999	9	Clayton	043	0000
	023	000	2			Clinton	045	0000
				008	5	Clinton		
				999	9	Balance of county		
	024	000	2	999	9	Crawford	047	0000
	025	083	1	999	9	Dallas	049	2120
	026	000	2	999	9	Davis	051	0000
	027	000	2	999	9	Decatur	053	0000
	028	000	2	999	9	Delaware	055	0000
	029	000	2			Des Moines	057	0000
				005	5	Burlington		
				999	9	Balance of county		
	030	000	2	999	9	Dickinson	059	0000
	031	086	1			Dubuque	061	2200
				012	4	Dubuque		
				999	9	Balance of county		
	032	000	2	999	9	Emmet	063	0000

51710 6746

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
16						Iowa	19
	033	000	2	999	9	Fayette	065 0000
	034	000	2	999	9	Floyd	067 0000
	035	000	2	999	9	Franklin	069 0000
	036	000	2	999	9	Fremont	071 0000
	037	000	2	999	9	Greene	073 0000
	038	000	2	999	9	Grundy	075 0000
	039	000	2	999	9	Guthrie	077 0000
	040	000	2	999	9	Hamilton	079 0000
	041	000	2	999	9	Hancock	081 0000
	042	000	2	999	9	Hardin	083 0000
	043	000	2	999	9	Harrison	085 0000
	044	000	2	999	9	Henry	087 0000
	045	000	2	999	9	Howard	089 0000
	046	000	2	999	9	Humboldt	091 0000
	047	000	2	999	9	Ida	093 0000
	048	000	2	999	9	Iowa	095 0000
	049	000	2	999	9	Jackson	097 0000
	050	000	2			Jasper	099 0000
				022	6	Newton	
				999	9	Balance of county	
	051	000	2	999	9	Jefferson	101 0000
	052	134	1			Johnson	103 3500
				016	4	Iowa City	
				999	9	Balance of county	
	053	000	2	999	9	Jones	105 0000
	054	000	2	999	9	Keokuk	107 0000
	055	000	2	999	9	Kossuth	109 0000
	056	000	2			Lee	111 0000
				014	6	Fort Madison	
				017	6	Keokuk	
				999	9	Balance of county	
	057	055	1			Linn	113 1360
				007	3	Cedar Rapids	
				018	6	Marion	
				999	9	Balance of county	
	058	000	2	999	9	Louisa	115 0000
	059	000	2	999	9	Lucas	117 0000
	060	000	2	999	9	Lyon	119 0000
	061	000	2	999	9	Madison	121 0000
	062	000	2			Mahaska	123 0000
				023	6	Oskaloosa	
				999	9	Balance of county	
	063	000	2	999	9	Marion	125 0000
	064	000	2			Marshall	127 0000
				019	6	Marshalltown	
				999	9	Balance of county	
	065	000	2	999	9	Mills	129 0000

51710 6747

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
16						Iowa	19	
	066	000	2	999	9	Mitchell		131 0000
	067	000	2	999	9	Monona		133 0000
	068	000	2	999	9	Monroe		135 0000
	069	000	2	999	9	Montgomery		137 0000
	070	000	2			Muscatine		139 0000
				021	6	Muscatine		
				999	9	Balance of county		
	071	000	2	999	9	O'Brien		141 0000
	072	000	2	999	9	Osceola		143 0000
	073	000	2	999	9	Page		145 0000
	074	000	2	999	9	Palo Alto		147 0000
	075	000	2	999	9	Plymouth		149 0000
	076	000	2	999	9	Pocahontas		151 0000
	077	083	1			Polk		153 2120
				002	6	Ankeny		
				011	3	Des Moines		
				027	6	Urbandale		
				029	6	West Des Moines		
				999	9	Balance of county		
	078	215	1			Pottawattamie		155 5920
				009	4	Council Bluffs		
				999	9	Balance of county		
	079	000	2	999	9	Poweshiek		157 0000
	080	000	2	999	9	Ringgold		159 0000
	081	000	2	999	9	Sac		161 0000
	082	077	1			Scott		163 1960
				003	5	Bettendorf		
				010	3	Davenport		
				999	9	Balance of county		
	083	000	2	999	9	Shelby		165 0000
	084	000	2	999	9	Sioux		167 0000
	085	000	2			Story		169 0000
				001	5	Ames		
				999	9	Balance of county		
	086	000	2	999	9	Tama		171 0000
	087	000	2	999	9	Taylor		173 0000
	088	000	2	999	9	Union		175 0000
	089	000	2	999	9	Van Buren		177 0000
	090	000	2			Wapello		179 0000
				024	5	Ottumwa		
				999	9	Balance of county		
	091	083	1			Warren		181 2120
				015	6	Indianola		
				999	9	Balance of county		
	092	000	2	999	9	Washington		183 0000
	093	000	2	999	9	Wayne		185 0000
	094	000	2			Webster		187 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
16						Iowa	19		
				013	5	Fort Dodge			
				999	9	Balance of county			
	095	000	2	999	9	Winnebago		189	0000
	096	000	2	999	9	Winneshiek		191	0000
	097	275	1			Woodbury		193	7720
				025	4	Sioux City			
				999	9	Balance of county			
	098	000	2	999	9	Worth		195	0000
	099	000	2	999	9	Wright		197	0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
17						Kansas	20
	001	000	2	999	9	Allen	001 0000
	002	000	2	999	9	Anderson	003 0000
	003	000	2			Atchison	005 0000
				002	6	Atchison	
				999	9	Balance of county	
	004	000	2	999	9	Barber	007 0000
	005	000	2			Barton	009 0000
				009	6	Great Bend	
				999	9	Balance of county	
	006	000	2	999	9	Bourbon	011 0000
	007	000	2	999	9	Brown	013 0000
	008	310	1			Butler	015 9040
				006	6	El Dorado	
				999	9	Balance of county	
	009	000	2	999	9	Chase	017 0000
	010	000	2	999	9	Chautauqua	019 0000
	011	000	2	999	9	Cherokee	021 0000
	012	000	2	999	9	Cheyenne	023 0000
	013	000	2	999	9	Clark	025 0000
	014	000	2	999	9	Clay	027 0000
	015	000	2	999	9	Cloud	029 0000
	016	000	2	999	9	Coffey	031 0000
	017	000	2	999	9	Comanche	033 0000
	018	000	2			Cowley	035 0000
				001	6	Arkansas City	
				034	6	Winfield	
				999	9	Balance of county	
	019	000	2			Crawford	037 0000
				028	6	Pittsburg	
				999	9	Balance of county	
	020	000	2	999	9	Decatur	039 0000
	021	000	2	999	9	Dickinson	041 0000
	022	000	2	999	9	Doniphan	043 0000
	023	165	1			Douglas	045 4150
				015	4	Lawrence	
				999	9	Balance of county	
	024	000	2	999	9	Edwards	047 0000
	025	000	2	999	9	Elk	049 0000
	026	000	2			Ellis	051 0000
				010	6	Hays	
				999	9	Balance of county	
	027	000	2	999	9	Ellsworth	053 0000
	028	000	2			Finney	055 0000
				008	6	Garden City	
				999	9	Balance of county	
	029	000	2			Ford	057 0000
				005	6	Dodge City	

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Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
17						Kansas	20
				999	9	Balance of county	
	030	000	2			Franklin	059 0000
				025	6	Ottawa	
				999	9	Balance of county	
	031	000	2			Geary	061 0000
				013	6	Junction City	
				999	9	Balance of county	
	032	000	2	999	9	Gove	063 0000
	033	000	2	999	9	Graham	065 0000
	034	000	2	999	9	Grant	067 0000
	035	000	2	999	9	Gray	069 0000
	036	000	2	999	9	Greeley	071 0000
	037	000	2	999	9	Greenwood	073 0000
	038	000	2	999	9	Hamilton	075 0000
	039	000	2	999	9	Harper	077 0000
	040	310	1			Harvey	079 9040
				023	6	Newton	
				999	9	Balance of county	
	041	000	2	999	9	Haskell	081 0000
	042	000	2	999	9	Hodgeman	083 0000
	043	000	2	999	9	Jackson	085 0000
	044	000	2	999	9	Jefferson	087 0000
	045	000	2	999	9	Jewell	089 0000
	046	149	1			Johnson	091 3760
				017	6	Leawood	
				018	6	Lenexa	
				022	6	Merriam	
				024	5	Olathe	
				026	4	Overland Park	
				029	6	Prairie Village	
				031	5	Shawnee	
				999	9	Balance of county	
	047	000	2	999	9	Kearny	093 0000
	048	000	2	999	9	Kingman	095 0000
	049	000	2	999	9	Kiowa	097 0000
	050	000	2			Labette	099 0000
				027	6	Parsons	
				999	9	Balance of county	
	051	000	2	999	9	Lane	101 0000
	052	149	1			Leavenworth	103 3760
				016	5	Leavenworth	
				999	9	Balance of county	
	053	000	2	999	9	Lincoln	105 0000
	054	000	2	999	9	Linn	107 0000
	055	000	2	999	9	Logan	109 0000
	056	000	2			Lyon	111 0000
				007	5	Emporia	

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
17						Kansas	20	
				999	9	Balance of county		
	057	000	2			McPherson		113 0000
				020	6	McPherson		
				999	9	Balance of county		
	058	000	2	999	9	Marion		115 0000
	059	000	2	999	9	Marshall		117 0000
	060	000	2	999	9	Meade		119 0000
	061	149	1	999	9	Miami		121 3760
	062	000	2	999	9	Mitchell		123 0000
	063	000	2			Montgomery		125 0000
				004	6	Coffeyville		
				012	6	Independence		
				999	9	Balance of county		
	064	000	2	999	9	Morris		127 0000
	065	000	2	999	9	Morton		129 0000
	066	000	2	999	9	Nemaha		131 0000
	067	000	2			Neosho		133 0000
				003	6	Chanute		
				999	9	Balance of county		
	068	000	2	999	9	Ness		135 0000
	069	000	2	999	9	Norton		137 0000
	070	000	2	999	9	Osage		139 0000
	071	000	2	999	9	Osborne		141 0000
	072	000	2	999	9	Ottawa		143 0000
	073	000	2	999	9	Pawnee		145 0000
	074	000	2	999	9	Phillips		147 0000
	075	000	2			Pottawatomie		149 0000
				021	5	Manhattan, part		
				999	9	Balance of county		
	076	000	2	999	9	Pratt		151 0000
	077	000	2	999	9	Rawlins		153 0000
	078	000	2			Reno		155 0000
				011	5	Hutchinson		
				999	9	Balance of county		
	079	000	2	999	9	Republic		157 0000
	080	000	2	999	9	Rice		159 0000
	081	000	2			Riley		161 0000
				021	5	Manhattan, part		
				999	9	Balance of county		
	082	000	2	999	9	Rooks		163 0000
	083	000	2	999	9	Rush		165 0000
	084	000	2	999	9	Russell		167 0000
	085	000	2			Saline		169 0000
				030	5	Salina		
				999	9	Balance of county		
	086	000	2	999	9	Scott		171 0000
	087	310	1			Sedgwick		173 9040

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
17						Kansas	20		
				033	2	Wichita			
				999	9	Balance of county			
	088	000	2			Seward		175	0000
				019	6	Liberal			
				999	9	Balance of county			
	089	292	1			Shawnee		177	8440
				032	3	Topeka			
				999	9	Balance of county			
	090	000	2	999	9	Sheridan		179	0000
	091	000	2	999	9	Sherman		181	0000
	092	000	2	999	9	Smith		183	0000
	093	000	2	999	9	Stafford		185	0000
	094	000	2	999	9	Stanton		187	0000
	095	000	2	999	9	Stevens		189	0000
	096	000	2	999	9	Sumner		191	0000
	097	000	2	999	9	Thomas		193	0000
	098	000	2	999	9	Trego		195	0000
	099	000	2	999	9	Wabaunsee		197	0000
	100	000	2	999	9	Wallace		199	0000
	101	000	2	999	9	Washington		201	0000
	102	000	2	999	9	Wichita		203	0000
	103	000	2	999	9	Wilson		205	0000
	104	000	2	999	9	Woodson		207	0000
	105	149	1			Wyandotte		209	3760
				014	3	Kansas City			
				999	9	Balance of county			

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Vital Statistics Geographic Code Outline

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
18						Kentucky	21
	001	000	2	999	9	Adair	001 0000
	002	000	2	999	9	Allen	003 0000
	003	000	2	999	9	Anderson	005 0000
	004	000	2	999	9	Ballard	007 0000
	005	000	2			Barren	009 0000
				011	6	Glasgow	
				999	9	Balance of county	
	006	000	2	999	9	Bath	011 0000
	007	000	2			Bell	013 0000
				019	6	Middlesborough	
				999	9	Balance of county	
	008	065	1			Boone	015 1640
				007	6	Florence	
				999	9	Balance of county	
	009	168	1	999	9	Bourbon	017 4280
	010	131	1			Boyd	019 3400
				001	5	Ashland	
				999	9	Balance of county	
	011	000	2			Boyle	021 0000
				004	6	Danville	
				999	9	Balance of county	
	012	000	2	999	9	Bracken	023 0000
	013	000	2	999	9	Breathitt	025 0000
	014	000	2	999	9	Breckinridge	027 0000
	015	175	1	999	9	Bullitt	029 4520
	016	000	2	999	9	Butler	031 0000
	017	000	2	999	9	Caldwell	033 0000
	018	000	2			Calloway	035 0000
				020	6	Murray	
				999	9	Balance of county	
	019	065	1			Campbell	037 1640
				078	6	Fort Thomas	
				021	6	Newport	
				999	9	Balance of county	
	020	000	2	999	9	Carlisle	039 0000
	021	000	2	999	9	Carroll	041 0000
	022	131	1	999	9	Carter	043 3400
	023	000	2	999	9	Casey	045 0000
	024	066	1			Christian	047 1660
				013	5	Hopkinsville	
				999	9	Balance of county	
	025	168	1			Clark	049 4280
				13	6	Winchester	
				999	9	Balance of county	
	026	000	2	999	9	Clay	051 0000
	027	00		999	9	Clinton	053 0000
	028	000	2	999	9	Crittenden	055 0000

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Vital Statistics Geographic Code Outline

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
18						Kentucky	21	
	029	000	2	999	9	Cumberland	057	0000
	030	218	1			Daviess	059	5990
				023	4	Owensboro		
				999	9	Balance of county		
	031	000	2	999	9	Edmonson	061	0000
	032	000	2	999	9	Elliott	063	0000
	033	000	2	999	9	Estill	065	0000
	034	168	1	015	3	Fayette, coext. with Lexington-Fayette	067	4280
	035	000	2	999	9	Fleming	069	0000
	036	000	2	999	9	Floyd	071	0000
	037	000	2			Franklin	073	0000
				009	5	Frankfort		
				999	9	Balance of county		
	038	000	2	999	9	Fulton	075	0000
	039	000	2	999	9	Gallatin	077	0000
	040	000	2	999	9	Garrard	079	0000
	041	000	2	999	9	Grant	081	0000
	042	000	2			Graves	083	0000
				018	6	Mayfield		
				999	9	Balance of county		
	043	000	2	999	9	Grayson	085	0000
	044	000	2	999	9	Green	087	0000
	045	131	1	999	9	Greenup	089	3400
	046	000	2	999	9	Hancock	091	0000
	047	000	2			Hardin	093	0000
				005	6	Elizabethtown		
				025	6	Radcliff		
				999	9	Balance of county		
	048	000	2	999	9	Harlan	095	0000
	049	000	2	999	9	Harrison	097	0000
	050	000	2	999	9	Hart	099	0000
	051	095	1			Henderson	101	2440
				012	6	Henderson		
				999	9	Balance of county		
	052	000	2	999	9	Henry	103	0000
	053	000	2	999	9	Hickman	105	0000
	054	000	2			Hopkins	107	0000
				017	6	Madisonville		
				999	9	Balance of county		
	055	000	2	999	9	Jackson	109	0000
	056	175	1			Jefferson	111	4520
				014	6	Jeffersontown		
				016	2	Louisville		
				027	6	St. Matthews		
				028	6	Shively		
				999	9	Balance of county		

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Vital Statistics Geographic Code Outline
MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
18						Kentucky	21
	057	168	1			Jessamine	113 4280
				022	6	Nicholasville	
				999	9	Balance of county	
	058	000	2	999	9	Johnson	115 0000
	059	065	1			Kenton	117 1640
				003	5	Covington	
				006	6	Erlanger	
				999	9	Balance of county	
	060	000	2	999	9	Knott	119 0000
	061	000	2	999	9	Knox	121 0000
	062	000	2	999	9	Larue	123 0000
	063	000	2	999	9	Laurel	125 0000
	064	000	2	999	9	Lawrence	127 0000
	065	000	2	999	9	Lee	129 0000
	066	000	2	999	9	Leslie	131 0000
	067	000	2	999	9	Letcher	133 0000
	068	000	2	999	9	Lewis	135 0000
	069	000	2	999	9	Lincoln	137 0000
	070	000	2	999	9	Livingston	139 0000
	071	000	2	999	9	Logan	141 0000
	072	000	2	999	9	Lyon	143 0000
	073	000	2			McCracken	145 0000
				024	5	Paducah	
				999	9	Balance of county	
	074	000	2	999	9	McCreary	147 0000
	075	000	2	999	9	McLean	149 0000
	076	000	2			Madison	151 0000
				026	6	Richmond	
				999	9	Balance of county	
	077	000	2	999	9	Magoffin	153 0000
	078	000	2	999	9	Marion	155 0000
	079	000	2	999	9	Marshall	157 0000
	080	000	2	999	9	Martin	159 0000
	081	000	2	999	9	Mason	161 0000
	082	000	2	999	9	Meade	163 0000
	083	000	2	999	9	Menifee	165 0000
	084	000	2	999	9	Mercer	167 0000
	085	000	2	999	9	Metcalfe	169 0000
	086	000	2	999	9	Monroe	171 0000
	087	000	2	999	9	Montgomery	173 0000
	088	000	2	999	9	Morgan	175 0000
	089	000	2	999	9	Muhlenberg	177 0000
	090	000	2	999	9	Nelson	179 0000
	091	000	2	999	9	Nicholas	181 0000
	092	000	2	999	9	Ohio	183 0000
	093	175	1	999	9	Oldham	185 4520
	094	000	2	999	9	Owen	187 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
18						Kentucky	21
	095	000	2	999	9	Owsley	189 0000
	096	000	2	999	9	Pendleton	191 0000
	097	000	2	999	9	Perry	193 0000
	098	000	2	999	9	Pike	195 0000
	099	000	2	999	9	Powell	197 0000
	100	000	2			Pulaski	199 0000
				029	6	Somerset	
				999	9	Balance of county	
	101	000	2	999	9	Robertson	201 0000
	102	000	2	999	9	Rockcastle	203 0000
	103	000	2	999	9	Rowan	205 0000
	104	000	2	999	9	Russell	207 0000
	105	168	1			Scott	209 4280
				010	6	Georgetown	
				999	9	Balance of county	
	106	175	1	999	9	Shelby	211 4520
	107	000	2	999	9	Simpson	213 0000
	108	000	2	999	9	Spencer	215 0000
	109	000	2	999	9	Taylor	217 0000
	110	000	2	999	9	Todd	219 0000
	111	000	2	999	9	Trigg	221 0000
	112	000	2	999	9	Trimble	223 0000
	113	000	2	999	9	Union	225 0000
	114	000	2			Warren	227 0000
				002	5	Bowling Green	
				999	9	Balance of county	
	115	000	2	999	9	Washington	229 0000
	116	000	2	999	9	Wayne	231 0000
	117	000	2	999	9	Webster	233 0000
	118	000	2	999	9	Whitley	235 0000
	119	000	2	999	9	Wolfe	237 0000
	120	168	1	999	9	Woodford	239 4280

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
19						Louisiana	22	
	001	000	2			Acadia		001 0000
				008	6	Crowley		
				010	6	Eunice, part		
				999	9	Balance of parish		
	002	000	2	999	9	Allen		003 0000
	003	027	1	999	9	Ascension		005 0760
	004	000	2	999	9	Assumption		007 0000
	005	000	2	999	9	Avoyelles		009 0000
	006	000	2			Beauregard		011 0000
				009	6	De Ridder, part		
				999	9	Balance of parish		
	007	000	2	999	9	Bienville		013 0000
	008	274	1			Bossier		015 7680
				007	5	Bossier City		
				028	3	Shreveport, part		
				999	9	Balance of parish		
	009	274	1			Caddo		017 7680
				028	3	Shreveport, part		
				999	9	Balance of parish		
	010	157	1			Calcasieu		019 3960
				018	4	Lake Charles		
				030	6	Sulphur		
				999	9	Balance of parish		
	011	000	2	999	9	Caldwell		021 0000
	012	000	2	999	9	Cameron		023 0000
	013	000	2	999	9	Catahoula		025 0000
	014	000	2	999	9	Claiborne		027 0000
	015	000	2	999	9	Concordia		029 0000
	016	000	2	999	9	De Soto		031 0000
	017	027	1			East Baton Rouge		033 0760
				003	6	Baker		
				005	3	Baton Rouge		
				999	9	Balance of parish		
	018	000	2	999	9	East Carroll		035 0000
	019	000	2	999	9	East Feliciana		037 0000
	020	000	2	999	9	Evangeline		039 0000
	021	000	2	999	9	Franklin		041 0000
	022	000	2	999	9	Grant		043 0000
	023	000	2			Iberia		045 0000
				023	5	New Iberia		
				999	9	Balance of parish		
	024	000	2	999	9	Iberville		047 0000
	025	000	2	999	9	Jackson		049 0000
	026	205	1			Jefferson		051 5560
				011	6	Gretna		
				013	6	Harahan		
				016	4	Kenner		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
19						Louisiana	22
				034	6	Westwego	
				999	9	Balance of parish	
	027	000	2			Jefferson Davis	053 0000
				015	6	Jennings	
				999	9	Balance of parish	
	028	155	1			Lafayette	055 3380
				017	4	Lafayette	
				999	9	Balance of parish	
	029	129	1			Lafourche	057 3350
				032	6	Thibodaux	
				999	9	Balance of parish	
	030	000	2	999	9	La Salle	059 0000
	031	000	2			Lincoln	061 0000
				027	6	Ruston	
				999	9	Balance of parish	
	032	027	1	999	9	Livingston	063 0760
	033	000	2			Madison	065 0000
				031	6	Tallulah	
				999	9	Balance of parish	
	034	000	2			Morehouse	067 0000
				004	6	Bastrop	
				999	9	Balance of parish	
	035	000	2			Natchitoches	069 0000
				022	6	Natchitoches	
				999	9	Balance of parish	
	036	205	1	024	1	Orleans, coext. with	071 5560
	037	195				New Orleans city	
						Ouachita	073 3200
				020	4	Monroe	
				033	6	West Monroe	
				999	9	Balance of parish	
	038	000	2	999	9	Plaquemines	075 0000
	039	000	2	999	9	Pointe Coupee	077 0000
	040	006	1			Rapides	079 0220
				002	4	Alexandria	
				026	6	Pineville	
				999	9	Balance of parish	
	041	000	2	999	9	Red River	081 0000
	042	000	2	999	9	Richland	083 0000
	043	000	2	999	9	Sabine	085 0000
	044	205	1	999	9	St. Bernard	087 5560
	045	205	1	999	9	St. Charles	089 5560
	046	000	2	999	9	St. Helena	091 0000
	047	000	2	999	9	St. James	093 0000
	048	205	1	999	9	St. John the Baptist	095 5560
	049	000	2			St. Landry	097 0000
				010	6	Eunice, part	

51710 6759

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
19						Louisiana	22	
				025	6	Opelousas		
				999	9	Balance of parish		
	050	155	1	999	9	St. Martin		099 3880
	051	000	2			St. Mary		101 0000
				021	6	Morgan City		
				999	9	Balance of parish		
	052	205	1			St. Tammany		103 5560
				029	5	Slidell		
				999	9	Balance of parish		
	053	000	2			Tangipahoa		105 0000
				012	6	Hammond		
				999	9	Balance of parish		
	054	000	2	999	9	Tensas		107 0000
	055	129	1			Terrebonne		109 3350
				014	5	Houma		
				999	9	Balance of parish		
	056	000	2	999	9	Union		111 0000
	057	000	2			Vermilion		113 0000
				001	6	Abbeville		
				999	9	Balance of parish		
	058	000	2			Vernon		115 0000
				009	6	De Ridder, part		
				999	9	Balance of parish		
	059	000	2			Washington		117 0000
				006	6	Bogalusa		
				999	9	Balance of parish		
	060	000	2			Webster		119 0000
				019	6	Minden		
				999	9	Balance of parish		
	061	027	1	999	9	West Baton Rouge		121 0760
	062	000	2	999	9	West Carroll		123 0000
	063	000	2	999	9	West Feliciana		125 0000
	064	000	2	999	9	Winn		127 0000

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Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
20						Maine	23	
	001	167	1			Androscoggin		001 4243
				001	6	Auburn		
				006	5	Lewiston		
				999	9	Balance of county		
	002	000	2			Aroostook		003 0000
				008	6	Presque Isle		
				999	9	Balance of county		
	003	230	1			Cumberland		005 6403
				007	4	Portland		
				010	6	South Portland		
				012	6	Westbrook		
				999	9	Balance of county		
	004	000	2	999	9	Franklin		007 0000
	005	000	2	999	9	Hancock		009 0000
	006	000	2			Kennebec		011 0000
				002	6	Augusta		
				011	6	Waterville		
				999	9	Balance of county		
	007	000	2	999	9	Knox		013 0000
	008	000	2	999	9	Lincoln		015 0000
	009	000	2	999	9	Oxford		017 0000
	010	026	1			Penobscot		019 0733
				003	5	Bangor		
				999	9	Balance of county		
	011	000	2	999	9	Piscataquis		021 0000
	012	000	2			Sagadahoc		023 0000
				004	6	Bath		
				999	9	Balance of county		
	013	000	2	999	9	Somerset		025 0000
	014	000	2	999	9	Waldo		027 0000
	015	000	2	999	9	Washington		029 0000
	016	000	2			York		031 0000
				005	6	Biddeford		
				009	6	Saco		
				999	9	Balance of county		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
21						Maryland	24	
	001	074	1			Allegany	001	1900
				007	5	Cumberland		
				999	9	Balance of county		
	002	025	1			Anne Arundel	003	0720
				002	5	Annapolis		
				999	9	Balance of county		
	003	025	1	999	9	Baltimore	005	0720
	004	025	1	003	1	Baltimore city	510	0720
	005	305	1	999	9	Calvert	009	8840
	006	000	2	999	9	Caroline	011	0000
	007	025	1	999	9	Carroll	013	0720
	008	313	1	999	9	Cecil	015	9160
	009	305	1	999	9	Charles	017	8840
	010	000	2			Dorchester	019	0000
				005	6	Cambridge		
				999	9	Balance of county		
	011	305	1			Frederick	021	8840
				008	5	Frederick		
				999	9	Balance of county		
	012	000	2	999	9	Garrett	023	0000
	013	025	1			Harford	025	0720
				001	6	Aberdeen		
				999	9	Balance of county		
	014	025	1	999	9	Howard	027	0720
	015	000	2	999	9	Kent	029	0000
	016	305	1			Montgomery	031	8840
				009	5	Gaithersburg		
				015	5	Rockville		
				017	6	Takoma Park, part		
				999	9	Balance of county		
	017	305	1			Prince George's	033	8840
				004	5	Bowie		
				006	6	College Park		
				010	6	Greenbelt		
				012	6	Hyattsville		
				013	6	Laurel		
				014	6	New Carrollton		
				017	6	Takoma Park, part		
				999	9	Balance of county		
	018	025	1	999	9	Queen Anne's	035	0720
	019	000	2	999	9	St. Mary's	037	0000
	020	000	2	999	9	Somerset	039	0000
	021	000	2	999	9	Talbot	041	0000
	022	123	1			Washington	043	3180
				011	5	Hagerstown		
				999	9	Balance of county		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
21						Maryland	24		
	023	000	2			Wicomico		045	0000
				016	6	Salisbury			
				999	9	Balance of county			
	024	000	2	999	9	Worcester		047	0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
22						Massachusetts	25
	001	000	2			Barnstable	001 0000
				008	5	Barnstable town	
				999	9	Balance of county	
	002	229	1			Berkshire	003 6323
				057	6	North Adams	
				062	4	Pittsfield	
				999	9	Balance of county	
	003	202	1			Bristol	005 5403
				007	5	Attleboro	
				027	6	Fairhaven town	
				028	4	Fall River	
				054	4	New Bedford	
				059	6	North Attleborough town	
				073	6	Somerset town	
				079	5	Taunton	
				999	9	Balance of county	
	004	000	2	999	9	Dukes	007 0000
	005	042	1			Essex	009 1123
				003	6	Amesbury town	
				005	6	Andover town	
				010	5	Beverly	
				022	6	Danvers town	
				032	5	Gloucester	
				033	5	Haverhill	
				037	4	Lawrence	
				042	4	Lynn	
				043	6	Lynnfield town	
				045	6	Marblehead town	
				049	5	Methuen town	
				055	6	Newburyport	
				061	5	Peabody	
				069	5	Salem	
				070	6	Saugus town	
				078	6	Swampscott town	
				999	9	Balance of county	
	006	000	2	999	9	Franklin	011 0000
	007	281	1			Hampden	013 8003
				002	5	Agawam town	
				020	4	Chicopee	
				035	5	Holyoke	
				040	6	Longmeadow town	
				075	3	Springfield	
				086	5	Westfield	
				087	5	West Springfield town	
				999	9	Balance of county	
	008	281	1			Hampshire	015 8003
				004	5	Amherst town	

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Vital Statistics Codes					State, County, City, or Country Name	FIPS Codes	
St	Cnty	MSA	M/NM	City P/S		St Cnty	MSA
22					Massachusetts	25	
				025 6	Easthampton town		
				058 5	Northampton		
				999 9	Balance of county		
	009	042	1		Middlesex	017	1123
				006 5	Arlington town		
				009 5	Belmont town		
				011 5	Billerica town		
				016 6	Burlington town		
				017 4	Cambridge		
				018 5	Chelmsford town		
				024 6	Dracut town		
				026 5	Everett		
				030 4	Framingham town		
				036 6	Hudson town		
				039 5	Lexington town		
				041 4	Lowell		
				044 4	Malden		
				046 5	Marlborough		
				047 4	Medford		
				048 5	Melrose		
				052 5	Natick town		
				056 4	Newton		
				066 6	Reading town		
				074 4	Somerville		
				076 6	Stoneham town		
				080 6	Tewksbury town		
				081 6	Wakefield town		
				082 4	Waltham		
				083 5	Watertown town		
				091 6	Wilmington town		
				092 6	Winchester town		
				094 5	Woburn		
				999 9	Balance of county		
	010	000	2	999 9	Nantucket	019	0000
	011	042	1		Norfolk	021	1123
				013 5	Braintree town		
				015 4	Brookline town		
				023 5	Dedham town		
				034 6	Holbrook town		
				051 5	Milton town		
				053 5	Needham town		
				060 5	Norwood town		
				064 4	Quincy		
				065 5	Randolph town		
				077 5	Stoughton town		
				085 5	Wellesley town		
				088 6	Westwood town		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
22						Massachusetts	25	
				089	4	Weymouth town		
				999	9	Balance of county		
	012	042	1			Plymouth	023	1123
				001	6	Abington town		
				014	4	Brockton		
				063	5	Plymouth town		
				068	6	Rockland town		
				071	6	Scituate town		
				090	6	Whitman town		
				999	9	Balance of county		
	013	042	1			Suffolk	025	1123
				012	1	Boston		
				019	5	Chelsea		
				067	5	Revere		
				093	6	Winthrop town		
	014	315	1			Worcester	027	9243
				021	6	Clinton town		
				029	5	Fitchburg		
				031	6	Gardner		
				038	5	Leominster		
				050	6	Milford town		
				072	6	Shrewsbury town		
				084	6	Webster town		
				095	3	Worcester		
				999	9	Balance of county		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
23						Michigan	26	
	001	000	2	999	9	Alcona		001 0000
	002	000	2	999	9	Alger		003 0000
	003	000	2			Allegan		005 0000
				049	5	Holland, part		
				999	9	Balance of county		
	004	000	2			Alpena		007 0000
				004	6	Alpena		
				999	9	Balance of county		
	005	000	2	999	9	Antrim		009 0000
	006	000	2	999	9	Arenac		011 0000
	007	000	2	999	9	Baraga		013 0000
	008	000	2	999	9	Barry		015 0000
	009	251	1			Bay		017 6960
				007	6	Bangor township		
				009	5	Bay City		
				063	5	Midland, part		
				999	9	Balance of county		
	010	000	2	999	9	Benzie		019 0000
	011	032	1			Berrien		021 0870
				010	6	Benton Harbor		
				070	6	Niles		
				999	9	Balance of county		
	012	000	2	999	9	Branch		023 0000
	013	028	1			Calhoun		025 0780
				002	6	Albion		
				008	5	Battle Creek		
				999	9	Balance of county		
	014	000	2	999	9	Cass		027 0000
	015	000	2	999	9	Charlevoix		029 0000
	016	000	2	999	9	Cheboygan		031 0000
	017	000	2			Chippewa		033 0000
				088	6	Sault Ste. Marie		
				999	9	Balance of county		
	018	000	2	999	9	Clare		035 0000
	019	161	1			Clinton		037 4040
				055	3	Lansing, part		
				999	9	Balance of county		
	020	000	2	999	9	Crawford		039 0000
	021	000	2			Delta		041 0000
				028	6	Escanaba		
				999	9	Balance of county		
	022	000	2	999	9	Dickinson		043 0000
	023	161	1			Eaton		045 4040
				055	3	Lansing, part		
				999	9	Balance of county		
	024	000	2	999	9	Emmet		047 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
23						Michigan	26	
	025	099	1			Genesee		049 2640
				016	5	Burton		
				032	3	Flint		
				033	5	Flint township		
				036	5	Genesee township		
				066	5	Mount Morris township		
				999	9	Balance of county		
	026	000	2	999	9	Gladwin		051 0000
	027	000	2	999	9	Gogebic		053 0000
	028	000	2			Grand Traverse		055 0000
				094	6	Traverse City		
				999	9	Balance of county		
	029	000	2	999	9	Gratiot		057 0000
	030	000	2	999	9	Hillsdale		059 0000
	031	000	2	999	9	Houghton		061 0000
	032	000	2	999	9	Huron		063 0000
	033	161	1			Ingham		065 4040
				026	5	East Lansing		
				055	3	Lansing, part		
				062	5	Meridian township		
				999	9	Balance of county		
	034	000	2	999	9	Ionia		067 0000
	035	000	2	999	9	Iosco		069 0000
	036	000	2	999	9	Iron		071 0000
	037	000	2			Isabella		073 0000
				067	6	Mount Pleasant		
				999	9	Balance of county		
	038	135	1			Jackson		075 3520
				051	5	Jackson		
				999	9	Balance of county		
	039	147	1			Kalamazoo		077 3720
				052	4	Kalamazoo		
				053	6	Kalamazoo township		
				077	5	Portage		
				999	9	Balance of county		
	040	000	2	999	9	Kalkaska		079 0000
	041	117	1			Kent		081 3000
				025	6	East Grand Rapids		
				039	3	Grand Rapids		
				040	6	Grandville		
				054	5	Kentwood		
				097	6	Walker		
				104	4	Wyoming		
				999	9	Balance of county		
	042	000	2	999	9	Keweenaw		083 0000
	043	000	2	999	9	Lake		085 0000
	044	084	1	999	9	Lapeer		087 2160

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
23						Michigan	26	
	045	000	2	999	9	Leelanau		089 0000
	046	000	2			Lenawee		091 0000
				001	6	Adrian		
				999	9	Balance of county		
	047	084	1	999	9	Livingston		093 2160
	048	000	2	999	9	Luce		095 0000
	049	000	2	999	9	Mackinac		097 0000
	050	084	1			Macomb		099 2160
				020	4	Clinton township		
				024	5	East Detroit		
				034	6	Fraser		
				046	6	Harrison township		
				065	6	Mount Clemens		
				083	4	Roseville		
				087	4	St. Clair Shores		
				089	5	Shelby township		
				092	3	Sterling Heights		
				098	3	Warren		
				999	9	Balance of county		
	051	000	2	999	9	Manistee		101 0000
	052	000	2			Marquette		103 0000
				059	6	Marquette		
				999	9	Balance of county		
	053	000	2	999	9	Mason		105 0000
	054	000	2			Mecosta		107 0000
				013	6	Big Rapids		
				999	9	Balance of county		
	055	000	2			Menominee		109 0000
				061	6	Menominee		
				999	9	Balance of county		
	056	251	1			Midland		111 6960
				063	5	Midland, part		
				999	9	Balance of county		
	057	000	2	999	9	Missaukee		113 0000
	058	084	1			Monroe		115 2160
				064	6	Monroe		
				999	9	Balance of county		
	059	000	2	999	9	Montcalm		117 0000
	060	000	2	999	9	Montmorency		119 0000
	061	198	1			Muskegon		121 5320
				068	5	Muskegon		
				069	6	Muskegon Heights		
				071	6	Norton Shores		
				999	9	Balance of county		
	062	000	2	999	9	Newaygo		123 0000
	063	084	1			Oakland		125 2160
				006	5	Avon township		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
23						Michigan	26	
				011	6	Berkley		
				012	6	Beverly Hills		
				014	6	Birmingham		
				015	5	Bloomfield township		
				019	6	Clawson		
				029	6	Farmington		
				030	4	Farmington Hills		
				031	5	Ferndale		
				047	6	Hazel Park		
				058	5	Madison Heights		
				072	6	Novi		
				073	5	Oak Park		
				076	4	Pontiac		
				084	4	Royal Oak		
				090	4	Southfield		
				096	4	Troy		
				100	5	West Bloomfield township		
				999	9	Balance of county		
	064	000	2	999	9	Oceana	127	0000
	065	000	2	999	9	Ogemaw	129	0000
	066	000	2	999	9	Ontonagon	131	0000
	067	000	2	999	9	Osceola	133	0000
	068	000	2	999	9	Oscoda	135	0000
	069	000	2	999	9	Otsego	137	0000
	070	117	1			Ottawa	139	3000
				037	5	Georgetown township		
				038	6	Grand Haven		
				049	5	Holland, part		
				999	9	Balance of county		
	071	000	2	999	9	Presque Isle	141	0000
	072	000	2	999	9	Roscommon	143	0000
	073	251	1			Saginaw	145	6960
				085	4	Saginaw		
				086	5	Saginaw township		
				999	9	Balance of county		
	074	084	1			St. Clair	147	2160
				078	5	Port Huron		
				999	9	Balance of county		
	075	000	2	999	9	St. Joseph	149	0000
	076	000	2	999	9	Sanilac	151	0000
	077	000	2	999	9	Schoolcraft	153	0000
	078	000	2			Shiawassee	155	0000
				074	6	Owosso		
				999	9	Balance of county		
	079	000	2	999	9	Tuscola	157	0000
	080	000	2	999	9	Van Buren	159	0000
	081	014	1			Washtenaw	161	0440

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
23						Michigan	26		
				005	3	Ann Arbor			
				105	6	Ypsilanti			
				106	5	Ypsilanti township			
				999	9	Balance of county			
	082	084	1			Wayne		163	2160
				003	5	Allen Park			
				018	5	Canton township			
				021	4	Dearborn			
				022	4	Dearborn Heights			
				023	0	Detroit			
				027	6	Ecorse			
				035	5	Garden City			
				041	6	Grosse Pointe Farms			
				042	6	Grosse Pointe Park			
				043	6	Grosse Pointe Woods			
				044	6	Hamtramck			
				045	6	Harper Woods			
				048	5	Highland Park			
				050	5	Inkster			
				056	5	Lincoln Park			
				057	3	Livonia			
				060	6	Melvindale			
				075	6	Plymouth township			
				079	4	Redford township			
				080	6	River Rouge			
				081	6	Riverview			
				082	6	Romulus			
				091	5	Southgate			
				093	4	Taylor			
				095	6	Trenton			
				099	6	Wayne			
				101	4	Westland			
				102	6	Woodhaven			
				103	5	Wyandotte			
				999	9	Balance of county			
	083	000	2			Wexford		165	0000
				017	6	Cadillac			
				999	9	Balance of county			

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Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
24						Minnesota	27
	001	000	2	999	9	Aitkin	001 0000
	002	191	1			Anoka	003 5120
				002	6	Anoka	
				006	5	Blaine, part	
				013	6	Columbia Heights	
				014	5	Coon Rapids	
				024	5	Fridley	
				047	6	Ramsey	
				999	9	Balance of county	
	003	000	2	999	9	Becker	005 0000
	004	000	2			Beltrami	007 0000
				005	6	Bemidji	
				999	9	Balance of county	
	005	252	1			Benton	009 6980
				053	5	St. Cloud, part	
				999	9	Balance of county	
	006	000	2	999	9	Big Stone	011 0000
	007	000	2			Blue Earth	013 0000
				031	5	Mankato, part	
				999	9	Balance of county	
	008	000	2			Brown	015 0000
				041	6	New Ulm	
				999	9	Balance of county	
	009	000	2			Carlton	017 0000
				012	6	Cloquet	
				999	9	Balance of county	
	010	191	1	999	9	Carver	019 5120
	011	000	2	999	9	Cass	021 0000
	012	000	2	999	9	Chippewa	023 0000
	013	191	1	999	9	Chisago	025 5120
	014	096	1			Clay	027 2520
				037	5	Moorhead	
				999	9	Balance of county	
	015	000	2	999	9	Clearwater	029 0000
	016	000	2	999	9	Cook	031 0000
	017	000	2	999	9	Cottonwood	033 0000
	018	000	2			Crow Wing	035 0000
				008	6	Brainerd	
				999	9	Balance of county	
	019	191	1			Dakota	037 5120
				003	6	Apple Valley	
				011	5	Burnsville	
				018	6	Eagan	
				026	6	Hastings, part	
				029	6	Inver Grove Heights	
				030	6	Lakeville	

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
24						Minnesota	27
				042	6	Northfield, part	
				057	6	South St. Paul	
				060	6	West St. Paul	
				999	9	Balance of county	
	020	000	2	999	9	Dodge	039 0000
	021	000	2	999	9	Douglas	041 0000
	022	000	2	999	9	Faribault	043 0000
	023	000	2	999	9	Fillmore	045 0000
	024	000	2			Freeborn	047 0000
				001	6	Albert Lea	
				999	9	Balance of county	
	025	000	2			Goodhue	049 0000
				048	6	Red Wing	
				999	9	Balance of county	
	026	000	2	999	9	Grant	051 0000
	027	191	1			Hennepin	053 5120
				007	4	Bloomington	
				009	5	Brooklyn Center	
				010	5	Brooklyn Park	
				016	5	Crystal	
				019	6	Eden Prairie	
				020	5	Edina	
				025	6	Golden Valley	
				028	6	Hopkins	
				032	6	Maple Grove	
				035	2	Minneapolis	
				036	5	Minnetonka	
				040	6	New Hope	
				046	5	Plymouth	
				049	5	Richfield	
				050	6	Robbinsdale	
				054	5	St. Louis Park	
				999	9	Balance of county	
	028	000	2	999	9	Houston	055 0000
	029	000	2	999	9	Hubbard	057 0000
	030	191	1	999	9	Isanti	059 5120
	031	000	2	999	9	Itasca	061 0000
	032	000	2	999	9	Jackson	063 0000
	033	000	2	999	9	Kanabec	065 0000
	034	000	2			Kandiyohi	067 0000
				062	6	Willmar	
				999	9	Balance of county	
	035	000	2	999	9	Kittson	069 0000
	036	000	2	999	9	Koochiching	071 0000
	037	000	2	999	9	Lac qui Parle	073 0000
	038	000	2	999	9	Lake	075 0000
	039	000	2	999	9	Lake of the Woods	077 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
24						Minnesota	27	
	040	000	2	999	9	Le Sueur		079 0000
	041	000	2	999	9	Lincoln		081 0000
	042	000	2			Lyon		083 0000
				034	6	Marshall		
				999	9	Balance of county		
	043	000	2	999	9	McLeod		085 0000
	044	000	2	999	9	Mahnomen		087 0000
	045	000	2	999	9	Marshall		089 0000
	046	000	2			Martin		091 0000
				021	6	Fairmont		
				999	9	Balance of county		
	047	000	2	999	9	Meeker		093 0000
	048	000	2	999	9	Mille Lacs		095 0000
	049	000	2	999	9	Morrison		097 0000
	050	000	2			Mower		099 0000
				004	6	Austin		
				999	9	Balance of county		
	051	000	2	999	9	Murray		101 0000
	052	000	2			Nicollet		103 0000
				031	5	Mankato, part		
				999	9	Balance of county		
	053	000	2			Nobles		105 0000
				065	6	Worthington		
				999	9	Balance of county		
	054	000	2	999	9	Norman		107 0000
	055	247	1			Olmsted		109 6820
				051	4	Rochester		
				999	9	Balance of county		
	056	000	2			Otter Tail		111 0000
				023	6	Fergus Falls		
				999	9	Balance of county		
	057	000	2	999	9	Pennington		113 0000
	058	000	2	999	9	Pine		115 0000
	059	000	2	999	9	Pipestone		117 0000
	060	000	2	999	9	Polk		119 0000
	061	000	2	999	9	Pope		121 0000
	062	191	1			Ramsey		123 5120
				006	5	Blaine, part		
				033	5	Maplewood		
				038	6	Mounds View		
				039	6	New Brighton		
				043	6	North St. Paul		
				052	5	Roseville		
				055	2	St. Paul		
				056	6	Shoreview		
				061	6	White Bear Lake, part		
				999	9	Balance of county		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
24						Minnesota	27	
	063	000	2	999	9	Red Lake	125	0000
	064	000	2	999	9	Redwood	127	0000
	065	000	2	999	9	Renville	129	0000
	066	000	2			Rice	131	0000
				022	6	Faribault		
				042	6	Northfield, part		
				999	9	Balance of county		
	067	000	2	999	9	Rock	133	0000
	068	000	2	999	9	Roseau	135	0000
	069	087	1			St. Louis	137	2240
				017	4	Duluth		
				027	6	Hibbing		
				059	6	Virginia		
				999	9	Balance of county		
	070	191	1	999	9	Scott	139	5120
	071	252	1			Sherburne	141	6980
				053	5	St. Cloud, part		
				999	9	Balance of county		
	072	000	2	999	9	Sibley	143	0000
	073	252	1			Stearns	145	6980
				053	5	St. Cloud, part		
				999	9	Balance of county		
	074	000	2			Steele	147	0000
				045	6	Owatonna		
				999	9	Balance of county		
	075	000	2	999	9	Stevens	149	0000
	076	000	2	999	9	Swift	151	0000
	077	000	2	999	9	Todd	153	0000
	078	000	2	999	9	Traverse	155	0000
	079	000	2	999	9	Wabasha	157	0000
	080	000	2	999	9	Wadena	159	0000
	081	000	2	999	9	Waseca	161	0000
	082	191	1			Washington	163	5120
				015	6	Cottage Grove		
				026	6	Hastings, part		
				044	6	Oakdale		
				058	6	Stillwater		
				061	6	White Bear Lake, part		
				064	6	Woodbury		
				999	9	Balance of county		
	083	000	2	999	9	Watonwan	165	0000
	084	000	2	999	9	Wilkin	167	0000
	085	000	2			Winona	169	0000
				063	5	Winona		
				999	9	Balance of county		
	086	191	1	999	9	Wright	171	5120
	087	000	2	999	9	Yellow Medicine	173	0000

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Vital Statistics Geographic Code Outline
MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
25						Mississippi	28
	001	000	2			Adams	001 0000
				019	6	Natchez	
				999	9	Balance of county	
	002	000	2			Alcorn	003 0000
				008	6	Corinth	
				999	9	Balance of county	
	003	000	2	999	9	Amite	005 0000
	004	000	2	999	9	Attala	007 0000
	005	000	2	999	9	Benton	009 0000
	006	000	2			Bolivar	011 0000
				005	6	Cleveland	
				999	9	Balance of county	
	007	000	2	999	9	Calhoun	013 0000
	008	000	2	999	9	Carroll	015 0000
	009	000	2	999	9	Chickasaw	017 0000
	010	000	2	999	9	Choctaw	019 0000
	011	000	2	999	9	Claiborne	021 0000
	012	000	2	999	9	Clarke	023 0000
	013	000	2	999	9	Clay	025 0000
	014	000	2			Coahoma	027 0000
				004	6	Clarksdale	
				999	9	Balance of county	
	015	000	2	999	9	Copiah	029 0000
	016	000	2	999	9	Covington	031 0000
	017	185	1	999	9	De Soto	033 4920
	018	000	2			Forrest	035 0000
				013	5	Hattiesburg, part	
				999	9	Balance of county	
	019	000	2	999	9	Franklin	037 0000
	020	000	2	999	9	George	039 0000
	021	000	2	999	9	Greene	041 0000
	022	000	2			Grenada	043 0000
				011	6	Grenada	
				999	9	Balance of county	
	023	035	1	999	9	Hancock	045 0920
	024	035	1			Harrison	047 0920
				001	5	Biloxi	
				012	5	Gulfport	
				999	9	Balance of county	
	025	136	1			Hinds	049 3560
				006	6	Clinton	
				014	5	Jackson, part	
				999	9	Balance of county	
	026	000	2	999	9	Holmes	051 0000
	027	000	2	999	9	Humphreys	053 0000
	028	000	2	999	9	Issaquena	055 0000
	029	000	2	999	9	Itawamba	057 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
25						Mississippi	28		
	030	222	1			Jackson		059	6025
				018	6	Moss Point			
				020	6	Ocean Springs			
				021	5	Pascagoula			
				999	9	Balance of county			
	031	000	2	999	9	Jasper		061	0000
	032	000	2	999	9	Jefferson		063	0000
	033	000	2	999	9	Jefferson Davis		065	0000
	034	000	2			Jones		067	0000
				015	6	Laurel			
				999	9	Balance of county			
	035	000	2	999	9	Kemper		069	0000
	036	000	2	999	9	Lafayette		071	0000
	037	000	2			Lamar		073	0000
				013	5	Hattiesburg, part			
				999	9	Balance of county			
	038	000	2			Lauderdale		075	0000
				017	5	Meridian			
				999	9	Balance of county			
	039	000	2	999	9	Lawrence		077	0000
	040	000	2	999	9	Leake		079	0000
	041	000	2			Lee		081	0000
				025	6	Tupelo			
				999	9	Balance of county			
	042	000	2			Leflore		083	0000
				010	6	Greenwood			
				999	9	Balance of county			
	043	000	2			Lincoln		085	0000
				002	6	Brookhaven			
				999	9	Balance of county			
	044	000	2			Lowndes		087	0000
				007	5	Columbus			
				999	9	Balance of county			
	045	136	1			Madison		089	3560
				003	6	Canton			
				999	9	Balance of county			
	046	000	2	999	9	Marion		091	0000
	047	000	2	999	9	Marshall		093	0000
	048	000	2	999	9	Monroe		095	0000
	049	000	2	999	9	Montgomery		097	0000
	050	000	2	999	9	Neshoba		099	0000
	051	000	2	999	9	Newton		101	0000
	052	000	2	999	9	Noxubee		103	0000
	053	000	2			Oktibbeha		105	0000
				024	6	Starkville			
				999	9	Balance of county			
	054	000	2	999	9	Panola		107	0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
25						Mississippi	28
	055	000	2			Pearl River	109 0000
				023	6	Picayune	
				999	9	Balance of county	
	056	000	2	999	9	Perry	111 0000
	057	000	2			Pike	113 0000
				016	6	McComb	
				999	9	Balance of county	
	058	000	2	999	9	Pontotoc	115 0000
	059	000	2	999	9	Prentiss	117 0000
	060	000	2	999	9	Quitman	119 0000
	061	136	1			Rankin	121 3560
				014	3	Jackson, part	
				022	6	Pearl	
				999	9	Balance of county	
	062	000	2	999	9	Scott	123 0000
	063	000	2	999	9	Sharkey	125 0000
	064	000	2	999	9	Simpson	127 0000
	065	000	2	999	9	Smith	129 0000
	066	000	2	999	9	Stone	131 0000
	067	000	2	999	9	Sunflower	133 0000
	068	000	2	999	9	Tallahatchie	135 0000
	069	000	2	999	9	Tate	137 0000
	070	000	2	999	9	Tippah	139 0000
	071	000	2	999	9	Tishomingo	141 0000
	072	000	2	999	9	Tunica	143 0000
	073	000	2	999	9	Union	145 0000
	074	000	2	999	9	Walthall	147 0000
	075	000	2			Warren	149 0000
				026	5	Vicksburg	
				999	9	Balance of county	
	076	000	2			Washington	151 0000
				009	5	Greenville	
				999	9	Balance of county	
	077	000	2	999	9	Wayne	153 0000
	078	000	2	999	9	Webster	155 0000
	079	000	2	999	9	Wilkinson	157 0000
	080	000	2	999	9	Winston	159 0000
	081	000	2	999	9	Yalobusha	161 0000
	082	000	2			Yazoo	163 0000
				027	6	Yazoo City	
				999	9	Balance of county	

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Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
26						Missouri	29	
	001	000	2			Adair	001	0000
				028	6	Kirksville		
				999	9	Balance of county		
	002	000	2	999	9	Andrew	003	0000
	003	000	2	999	9	Atchison	005	0000
	004	000	2			Audrain	007	0000
				034	6	Mexico		
				999	9	Balance of county		
	005	000	2	999	9	Barry	009	0000
	006	000	2	999	9	Barton	011	0000
	007	000	2	999	9	Bates	013	0000
	008	000	2	999	9	Benton	015	0000
	009	000	2	999	9	Bollinger	017	0000
	010	069	1			Boone	019	1740
				011	4	Columbia		
				999	9	Balance of county		
	011	253	1			Buchanan	021	7000
				043	4	St. Joseph		
				999	9	Balance of county		
	012	000	2			Butler	023	0000
				037	6	Poplar Bluff		
				999	9	Balance of county		
	013	000	2	999	9	Caldwell	025	0000
	014	000	2			Callaway	027	0000
				017	6	Fulton		
				023	5	Jefferson City, part		
				999	9	Balance of county		
	015	000	2	999	9	Camden	029	0000
	016	000	2			Cape Girardeau	031	0000
				008	5	Cape Girardeau		
				999	9	Balance of county		
	017	000	2	999	9	Carroll	033	0000
	018	000	2	999	9	Carter	035	0000
	019	149	1			Cass	037	3760
				004	6	Belton		
				030	5	Lee's Summit, part		
				999	9	Balance of county		
	020	000	2	999	9	Cedar	039	0000
	021	000	2	999	9	Chariton	041	0000
	022	280	1	999	9	Christian	043	7920
	023	000	2	999	9	Clark	045	0000
	024	149	1			Clay	047	3760
				014	6	Excelsior Springs, part		
				016	6	Gladstone		
				022	3	Independence, part		
				026	1	Kansas City, part		
				031	6	Liberty		
				999	9	Balance of county		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
26						Missouri	29	
	025	000	2	999	9	Clinton		049 0000
	026	000	2			Cole		051 0000
				023	5	Jefferson City, part		
				999	9	Balance of county		
	027	000	2	999	9	Cooper		053 0000
	028	000	2	999	9	Crawford		055 0000
	029	000	2	999	9	Dade		057 0000
	030	000	2	999	9	Dallas		059 0000
	031	000	2	999	9	Daviess		061 0000
	032	000	2	999	9	De Kalb		063 0000
	033	000	2	999	9	Dent		065 0000
	034	000	2	999	9	Douglas		067 0000
	035	000	2			Dunklin		069 0000
				027	6	Kennett		
				999	9	Balance of county		
	036	254	1	999	9	Franklin		071 7040
	037	000	2	999	9	Gasconade		073 0000
	038	000	2	999	9	Gentry		075 0000
	039	280	1			Greene		077 7920
				048	3	Springfield		
				999	9	Balance of county		
	040	000	2	999	9	Grundy		079 0000
	041	000	2	999	9	Harrison		081 0000
	042	000	2	999	9	Henry		083 0000
	043	000	2	999	9	Hickory		085 0000
	044	000	2	999	9	Holt		087 0000
	045	000	2	999	9	Howard		089 0000
	046	000	2	999	9	Howell		091 0000
	047	000	2	999	9	Iron		093 0000
	048	149	1			Jackson		095 3760
				006	5	Blue Springs		
				019	6	Grandview		
				022	3	Independence, part		
				026	2	Kansas City, part		
				030	5	Lee's Summit, part		
				038	5	Raytown		
				999	9	Balance of county		
	049	146	1			Jasper		097 3710
				009	6	Carthage		
				025	5	Joplin, part		
				999	9	Balance of county		
	050	254	1			Jefferson		099 7040
				001	6	Arnold		
				999	9	Balance of county		
	051	000	2			Johnson		101 0000
				050	5	Warrensburg		
				999	9	Balance of county		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
26						Missouri	29	
	052	000	2	999	9	Knox		103 0000
	053	000	2	999	9	Laclede		105 0000
	054	149	1	999	9	Lafayette		107 3760
	055	000	2	999	9	Lawrence		109 0000
	056	000	2	999	9	Lewis		111 0000
	057	000	2	999	9	Lincoln		113 0000
	058	000	2	999	9	Linn		115 0000
	059	000	2	999	9	Livingston		117 0000
	060	000	2	999	9	McDonald		119 0000
	061	000	2	999	9	Macon		121 0000
	062	000	2	999	9	Madison		123 0000
	063	000	2	999	9	Maries		125 0000
	064	000	2			Marion		127 0000
				020	6	Hannibal, part		
				999	9	Balance of county		
	065	000	2	999	9	Mercer		129 0000
	066	000	2	999	9	Miller		131 0000
	067	000	2	999	9	Mississippi		133 0000
	068	000	2	999	9	Moniteau		135 0000
	069	000	2	999	9	Monroe		137 0000
	070	000	2	999	9	Montgomery		139 0000
	071	000	2	999	9	Morgan		141 0000
	072	000	2			New Madrid		143 0000
				047	6	Sikeston, part		
				999	9	Balance of county		
	073	146	1			Newton		145 3710
				025	5	Joplin, part		
				999	9	Balance of county		
	074	000	2	999	9	Nodaway		147 0000
	075	000	2	999	9	Oregon		149 0000
	076	000	2	999	9	Osage		151 0000
	077	000	2	999	9	Ozark		153 0000
	078	000	2	999	9	Pemiscot		155 0000
	079	000	2	999	9	Perry		157 0000
	080	000	2			Pettis		159 0000
				046	6	Sedalia		
				999	9	Balance of county		
	081	000	2			Phelps		161 0000
				040	6	Rolla		
				999	9	Balance of county		
	082	000	1	999	9	Pike		163 0000
	083	149	1			Platte		165 3760
				026	2	Kansas City, part		
				999	9	Balance of county		
	084	000	1	999	9	Polk		167 0000
	085	000	1	999	9	Pulaski		169 0000
	086	000	1	999	9	Putnam		171 0000

51710 6781

SA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
26						Missouri	29
	087	000	2			Ralls	173 0000
				020	6	Hannibal, part	
				999	9	Balance of county	
	088	000	2			Randolph	175 0000
				035	6	Moberly	
				999	9	Balance of county	
	089	149	1			Ray	177 3760
				014	6	Excelsior Springs, part	
				999	9	Balance of county	
	090	000	2	999	9	Reynolds	179 0000
	091	000	2	999	9	Ripley	181 0000
	092	254	1			St. Charles	183 7040
				042	5	St. Charles	
				045	6	St. Peters	
				999	9	Balance of county	
	093	000	2	999	9	St. Clair	185 0000
	094	000	2	999	9	Ste. Genevieve	186 0000
	095	000	2	999	9	St. Francois	187 0000
	096	254	1			St. Louis	189 7040
				002	6	Ballwin	
				003	6	Bellefontaine Neighbors	
				005	6	Berkeley	
				007	6	Bridgeton	
				010	6	Clayton	
				012	6	Crestwood	
				013	6	Creve Coeur	
				015	6	Ferguson	
				016	4	Florissant	
				021	6	Hazelwood	
				024	6	Jennings	
				029	5	Kirkwood	
				032	6	Maplewood	
				036	6	Overland	
				039	6	Richmond Heights	
				041	6	St. Ann	
				049	5	University City	
				051	6	Webster Groves	
				999	9	Balance of county	
	097	254	1	044	2	St. Louis city	510 7040
	098	000	2			Saline	195 0000
				033	6	Marshall	
				999	9	Balance of county	
	099	000	2	999	9	Schuyler	197 0000
	100	000	2	999	9	Scotland	199 0000
	101	000	2			Scott	201 0000
				047	6	Sikeston, part	
				999	9	Balance of county	

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
26						Missouri	29
	102	000	2	999	9	Shannon	203 0000
	103	000	2	999	9	Shelby	205 0000
	104	000	2	999	9	Stoddard	207 0000
	105	000	2	999	9	Stone	209 0000
	106	000	2	999	9	Sullivan	211 0000
	107	000	2	999	9	Taney	213 0000
	108	000	2	999	9	Texas	215 0000
	109	000	2	999	9	Vernon	217 0000
	110	000	2	999	9	Warren	219 0000
	111	000	2	999	9	Washington	221 0000
	112	000	2	999	9	Wayne	223 0000
	113	000	2	999	9	Webster	225 0000
	114	000	2	999	9	Worth	227 0000
	115	000	2	999	9	Wright	229 0000

51710 6783

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
27						Montana	30
	001	000	2	999	9	Beaverhead	001 0000
	002	000	2	999	9	Big Horn	003 0000
	003	000	2	999	9	Blaine	005 0000
	004	000	2	999	9	Broadwater	007 0000
	005	000	2	999	9	Carbon	009 0000
	006	000	2	999	9	Carter	011 0000
	007	118	1			Cascade	013 3040
				005	4	Great Falls	
				999	9	Balance of county	
	008	000	2	999	9	Chouteau	015 0000
	009	000	2	999	9	Custer	017 0000
	010	000	2	999	9	Daniels	019 0000
	011	000	2	999	9	Dawson	021 0000
	012	000	2	001	6	Deer Lodge, coext. with Anaconda -Deer Lodge	023 0000
	013	000	2	999	9	Fallon	025 0000
	014	000	2	999	9	Fergus	027 0000
	015	000	2			Flathead	029 0000
				008	6	Kalispell	
				999	9	Balance of county	
	016	000	2			Gallatin	031 0000
				003	6	Bozeman	
				999	9	Balance of county	
	017	000	2	999	9	Garfield	033 0000
	018	000	2	999	9	Glacier	035 0000
	019	000	2	999	9	Golden Valley	037 0000
	020	000	2	999	9	Granite	039 0000
	021	000	2			Hill	041 0000
				006	6	Havre	
				999	9	Balance of county	
	022	000	2	999	9	Jefferson	043 0000
	023	000	2	999	9	Judith Basin	045 0000
	024	000	2	999	9	Lake	047 0000
	025	000	2			Lewis and Clark	049 0000
				007	6	Helena	
				999	9	Balance of county	
	026	000	2	999	9	Liberty	051 0000
	027	000	2	999	9	Lincoln	053 0000
	028	000	2	999	9	McCone	055 0000
	029	000	2	999	9	Madison	057 0000
	030	000	2	999	9	Meagher	059 0000
	031	000	2	999	9	Mineral	061 0000
	032	000	2			Missoula	063 0000
				009	5	Missoula	
				999	9	Balance of county	
	033	000	2	999	9	Musselshell	065 0000
	034	000	2	999	9	Park	067 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
27						Montana	30
	035	000	2	999	9	Petroleum	069 0000
	036	000	2	999	9	Phillips	071 0000
	037	000	2	999	9	Pondera	073 0000
	038	000	2	999	9	Powder River	075 0000
	039	000	2	999	9	Powell	077 0000
	040	000	2	999	9	Prairie	079 0000
	041	000	2	999	9	Ravalli	081 0000
	042	000	2	999	9	Richland	083 0000
	043	000	2	999	9	Roosevelt	085 0000
	044	000	2	999	9	Rosebud	087 0000
	045	000	2	999	9	Sanders	089 0000
	046	000	2	999	9	Sheridan	091 0000
	047	000	2			Silver Bow	093 0000
				004	5	Butte-Silver Bow	
				999	9	Balance of county	
	048	000	2	999	9	Stillwater	095 0000
	049	000	2	999	9	Sweet Grass	097 0000
	050	000	2	999	9	Teton	099 0000
	051	000	2	999	9	Toole	101 0000
	052	000	2	999	9	Treasure	103 0000
	053	000	2	999	9	Valley	105 0000
	054	000	2	999	9	Wheatland	107 0000
	055	000	2	999	9	Wibaux	109 0000
	056	034	1			Yellowstone	111 0880
				002	4	Billings	
				999	9	Balance of county	
	057	000	2	999	9	Yellowstone National Park	113 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
28						Nebraska	31
	001	000	2			Adams	001 0000
				006	6	Hastings	
				999	9	Balance of county	
	002	000	2	999	9	Antelope	003 0000
	003	000	2	999	9	Arthur	005 0000
	004	000	2	999	9	Banner	007 0000
	005	000	2	999	9	Blaine	009 0000
	006	000	2	999	9	Boone	011 0000
	007	000	2	999	9	Box Butte	013 0000
	008	000	2	999	9	Boyd	015 0000
	009	000	2	999	9	Brown	017 0000
	010	000	2			Buffalo	019 0000
				007	6	Kearney	
				999	9	Balance of county	
	011	000	2	999	9	Burt	021 0000
	012	000	2	999	9	Butler	023 0000
	013	000	2	999	9	Cass	025 0000
	014	000	2	999	9	Cedar	027 0000
	015	000	2	999	9	Chase	029 0000
	016	000	2	999	9	Cherry	031 0000
	017	000	2	999	9	Cheyenne	033 0000
	018	000	2	999	9	Clay	035 0000
	019	000	2	999	9	Colfax	037 0000
	020	000	2	999	9	Cuming	039 0000
	021	000	2	999	9	Custer	041 0000
	022	275	1	999	9	Dakota	043 7720
	023	000	2	999	9	Dawes	045 0000
	024	000	2	999	9	Dawson	047 0000
	025	000	2	999	9	Deuel	049 0000
	026	000	2	999	9	Dixon	051 0000
	027	000	2			Dodge	053 0000
				004	6	Fremont	
				999	9	Balance of county	
	028	215	1			Douglas	055 5920
				011	2	Omaha	
				999	9	Balance of county	
	029	000	2	999	9	Dundy	057 0000
	030	000	2	999	9	Fillmore	059 0000
	031	000	2	999	9	Franklin	061 0000
	032	000	2	999	9	Frontier	063 0000
	033	000	2	999	9	Furnas	065 0000
	034	000	2			Gage	067 0000
				001	6	Beatrice	
				999	9	Balance of county	
	035	000	2	999	9	Garden	069 0000
	036	000	2	999	9	Garfield	071 0000
	037	000	2	999	9	Gosper	073 0000

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Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
28						Nebraska	31
	038	000	2	999	9	Grant	075 0000
	039	000	2	999	9	Greeley	077 0000
	040	000	2			Hall	079 0000
				005	5	Grand Island	
				999	9	Balance of county	
	041	000	2	999	9	Hamilton	081 0000
	042	000	2	999	9	Harlan	083 0000
	043	000	2	999	9	Hayes	085 0000
	044	000	2	999	9	Hitchcock	087 0000
	045	000	2	999	9	Holt	089 0000
	046	000	2	999	9	Hooker	091 0000
	047	000	2	999	9	Howard	093 0000
	048	000	2	999	9	Jefferson	095 0000
	049	000	2	999	9	Johnson	097 0000
	050	000	2	999	9	Kearney	099 0000
	051	000	2	999	9	Keith	101 0000
	052	000	2	999	9	Keya Paha	103 0000
	053	000	2	999	9	Kimball	105 0000
	054	000	2	999	9	Knox	107 0000
	055	170	1			Lancaster	109 4360
				008	3	Lincoln	
				999	9	Balance of county	
	056	000	2			Lincoln	111 0000
				010	6	North Platte	
				999	9	Balance of county	
	057	000	2	999	9	Logan	113 0000
	058	000	2	999	9	Loup	115 0000
	059	000	2	999	9	McPherson	117 0000
	060	000	2			Madison	119 0000
				009	6	Norfolk	
				999	9	Balance of county	
	061	000	2	999	9	Merrick	121 0000
	062	000	2	999	9	Morrill	123 0000
	063	000	2	999	9	Nance	125 0000
	064	000	2	999	9	Nemaha	127 0000
	065	000	2	999	9	Nuckolls	129 0000
	066	000	2	999	9	Otoe	131 0000
	067	000	2	999	9	Pawnee	133 0000
	068	000	2	999	9	Perkins	135 0000
	069	000	2	999	9	Phelps	137 0000
	070	000	2	999	9	Pierce	139 0000
	071	000	2			Platte	141 0000
				003	6	Columbus	
				999	9	Balance of county	
	072	000	2	999	9	Polk	143 0000
	073	000	2	999	9	Red Willow	145 0000
	074	000	2	999	9	Richardson	147 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
28						Nebraska	31		
	075	000	2	999	9	Rock		149	0000
	076	000	2	999	9	Saline		151	0000
	077	215	1			Sarpy		153	5920
				002	6	Bellevue			
				999	9	Balance of county			
	078	000	2	999	9	Saunders		155	0000
	079	000	2			Scotts Bluff		157	0000
				012	6	Scottsbluff			
				999	9	Balance of county			
	080	000	2	999	9	Seward		159	0000
	081	000	2	999	9	Sheridan		161	0000
	082	000	2	999	9	Sherman		163	0000
	083	000	2	999	9	Sioux		165	0000
	084	000	2	999	9	Stanton		167	0000
	085	000	2	999	9	Thayer		169	0000
	086	000	2	999	9	Thomas		171	0000
	087	000	2	999	9	Thurston		173	0000
	088	000	2	999	9	Valley		175	0000
	089	215	1	999	9	Washington		177	5920
	090	000	2	999	9	Wayne		179	0000
	091	000	2	999	9	Webster		181	0000
	092	000	2	999	9	Wheeler		183	0000
	093	000	2	999	9	York		185	0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
29						Nevada	32	
	001	000	2	001	5	Carson City city		510 0000
	002	000	2	999	9	Churchill		001 0000
	003	164	1			Clark		003 4120
				002	6	Henderson		
				003	3	Las Vegas		
				004	5	North Las Vegas		
				999	9	Balance of county		
	004	000	2	999	9	Douglas		005 0000
	005	000	2	999	9	Elko		007 0000
	006	000	2	999	9	Esmeralda		009 0000
	007	000	2	999	9	Eureka		011 0000
	008	000	2	999	9	Humboldt		013 0000
	009	000	2	999	9	Lander		015 0000
	010	000	2	999	9	Lincoln		017 0000
	011	000	2	999	9	Lyon		019 0000
	012	000	2	999	9	Mineral		021 0000
	013	000	2	999	9	Nye		023 0000
	014	000	2	999	9	Pershing		027 0000
	015	000	2	999	9	Storey		029 0000
	016	242	1			Washoe		031 6720
				005	3	Reno		
				006	5	Sparks		
				999	9	Balance of county		
	017	000	2	999	9	White Pine		033 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						State, County, City, or Country Name	FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S		St	Cnty MSA
30						New Hampshire	33	
	001	000	2			Belknap		001 0000
				006	6	Laconia		
				999	9	Balance of county		
	002	000	2	999	9	Carroll		003 0000
	003	000	2			Cheshire		005 0000
				005	6	Keene		
				999	9	Balance of county		
	004	000	2			Coos		007 0000
				001	6	Berlin		
				999	9	Balance of county		
	005	000	2			Grafton		009 0000
				007	6	Lebanon		
				999	9	Balance of county		
	006	180	1			Hillsborough		011 4763
				008	4	Manchester		
				009	4	Nashua		
				999	9	Balance of county		
	007	000	2			Merrimack		013 0000
				003	5	Concord		
				999	9	Balance of county		
	008	232	1			Rockingham		015 6453
				010	5	Portsmouth		
				999	9	Balance of county		
	009	232	1			Strafford		017 6453
				004	6	Dover		
				011	6	Rochester		
				012	6	Somersworth		
				999	9	Balance of county		
	010	000	2			Sullivan		019 0000
				002	6	Claremont		
				999	9	Balance of county		

51710 6790

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
31						New Jersey	34	
	001	020	1			Atlantic	001	0560
				003	5	Atlantic City		
				053	6	Hammonton		
				120	6	Pleasantville		
				139	6	Somers Point		
				152	6	Ventnor City		
				999	9	Balance of county		
	002	033	1			Bergen	003	0875
				007	5	Bergenfield		
				020	6	Cliffside Park		
				029	6	Dumont		
				036	6	Elmwood Park		
				037	6	Englewood		
				039	5	Fair Lawn		
				040	6	Fairview		
				041	5	Fort Lee		
				044	5	Garfield		
				046	6	Glen Rock		
				049	5	Hackensack		
				056	6	Hasbrouck Heights		
				060	6	Hillsdale		
				075	6	Lodi		
				077	6	Lyndhurst township		
				096	6	New Milford		
				098	6	North Arlington		
				103	6	Oakland		
				108	6	Palisades Park		
				109	5	Paramus		
				125	6	Ramsey		
				127	6	Ridgefield		
				128	6	Ridgefield Park		
				129	5	Ridgewood		
				131	6	River Edge		
				134	6	Rutherford		
				135	6	Saddle Brook township		
				146	5	Teaneck township		
				147	6	Tenafly		
				156	6	Waldwick		
				157	6	Wallington		
				168	6	Westwood		
				172	6	Wyckoff township		
				999	9	Balance of county		
	003	225	1			Burlington	005	6160
				013	6	Burlington		
				016	6	Cinnaminson township		
				024	6	Delran township		
				081	6	Maple Shade township		

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Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
31						New Jersey	34
				089	6	Moorestown township	
				092	6	Mount Holly township	
				113	5	Pemberton township	
				169	5	Willingboro township	
				999	9	Balance of county	
	004	225	1			Camden	007 6160
				006	6	Bellmawr	
				014	4	Camden	
				017	4	Cherry Hill township	
				022	6	Collingswood	
				047	5	Gloucester township	
				048	6	Gloucester City	
				050	6	Haddon township	
				051	6	Haddonfield	
				072	6	Lindenwold	
				114	5	Pennsauken township	
				155	6	Voorhees township	
				999	9	Balance of county	
	005	020	1			Cape May	009 0560
				105	6	Ocean City	
				999	9	Balance of county	
	006	302	1			Cumberland	011 8760
				011	6	Bridgeton	
				087	6	Millville	
				154	4	Vineland	
				999	9	Balance of county	
	007	207	1			Essex	013 5640
				005	5	Belleville	
				009	5	Bloomfield	
				016	6	Cedar Grove township	
				031	4	East Orange	
				065	4	Irvington	
				074	5	Livingston township	
				082	6	Maplewood township	
				086	6	Millburn township	
				088	5	Montclair	
				094	2	Newark	
				102	5	Nutley	
				107	5	Orange	
				141	6	South Orange Village township	
				153	6	Verona	
				162	6	West Caldwell	
				166	5	West Orange	
				999	9	Balance of county	
	009	225	1			Gloucester	015 6160
				026	6	Deptford township	
				045	6	Glassboro	

51710 6792

SA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes					State, County, City, or Country Name	FIPS Codes	
St	Cnty	MSA	M/NM	City P/S		St Cnty	MSA
31					New Jersey	34	
				159 5	Washington township		
				163 6	West Deptford township		
				171 5	Woodbury		
				999 9	Balance of county		
	009	142	1		Hudson	017	3640
				004 4	Bayonne		
				055 6	Harrison		
				062 5	Hoboken		
				067 3	Jersey City		
				069 5	Kearny		
				099 5	North Bergen township		
				138 6	Secaucus		
				150 4	Union City		
				161 6	Weehawken township		
				165 5	West New York		
				999 9	Balance of county		
	010	188	1	999 9	Hunterdon	019	5015
	011	293	1		Mercer	021	8480
				032 6	East Windsor township		
				038 5	Ewing township		
				052 4	Hamilton township		
				123 6	Princeton		
				149 4	Trenton		
				999 9	Balance of county		
	012	188	1		Middlesex	023	5015
				015 6	Carteret		
				030 5	East Brunswick township		
				034 4	Edison township		
				059 6	Highland Park		
				083 6	Metuchen		
				084 6	Middlesex		
				095 5	New Brunswick		
				100 6	North Brunswick township		
				106 4	Old Bridge township		
				116 5	Perth Amboy		
				118 5	Piscataway township		
				136 5	Sayreville		
				142 6	South Plainfield		
				143 6	South River		
				170 4	Woodbridge township		
				999 9	Balance of county		
	013	194	1		Monmouth	025	5190
				001 6	Aberdeen township		
				002 6	Asbury Park		
				033 6	Eatontown		
				043 6	Freehold		

51710 6793

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
31						New Jersey	34
				058	6	Hazlet township	
				064	5	Howell township	
				068	6	Keansburg	
				076	5	Long Branch	
				085	4	Middletown township	
				093	5	Neptune township	
				104	6	Ocean township	
				126	6	Red Bank	
				999	9	Balance of county	
	014	207	1			Morris	027 5640
				025	6	Denville township	
				027	6	Dover	
				054	6	Hanover township	
				078	6	Madison	
				090	6	Morris township	
				091	6	Morristown	
				110	5	Parsippany-Troy Hills township	
				115	6	Pequannock township	
				999	9	Balance of county	
	015	194	1			Ocean	029 5190
				010	4	Brick township	
				028	4	Dover township	
				066	5	Jackson township	
				070	5	Lakewood township	
				079	5	Manchester township	
				121	6	Point Pleasant	
				999	9	Balance of county	
	016	033	1			Passaic	031 0875
				021	4	Clifton	
				057	6	Hawthorne	
				073	6	Little Falls township	
				111	4	Passaic	
				112	3	Paterson	
				122	6	Pompton Lakes	
				130	6	Ringwood	
				148	6	Totowa	
				158	6	Wanaque	
				160	5	Wayne township	
				167	6	West Paterson	
				999	9	Balance of county	
	017	313	1	999	9	Salem	033 9160
	018	188	1			Somerset	035 5015
				012	5	Bridgewater township	
				042	5	Franklin township	
				080	6	Manville	
				101	6	North Plainfield	
				140	6	Somerville	

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
31						New Jersey	34		
				999	9	Balance of county			
	019	207	1			Sussex		037	5640
				063	6	Hopatcong			
				999	9	Balance of county			
	020	207	1			Union		039	5640
				008	6	Berkeley Heights township			
				019	6	Clark township			
				023	6	Cranford township			
				035	3	Elizabeth			
				061	6	Hillside township			
				071	5	Linden			
				097	6	New Providence			
				119	5	Plainfield			
				124	5	Rahway			
				132	6	Roselle			
				133	6	Roselle Park			
				137	6	Scotch Plains township			
				144	6	Springfield township			
				145	6	Summit			
				151	4	Union township			
				164	5	Westfield			
				999	9	Balance of county			
	021	007	1			Warren		041	0240
				117	6	Phillipsburg			
				999	9	Balance of county			

51710 6795

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						State, County, City, or Country Name	FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S		St Cnty	MSA
32						New Mexico	35	
	001	005	1			Bernalillo	001	0200
				002	2	Albuquerque		
				999	9	Balance of county		
	002	000	2	999	9	Catron	003	0000
	003	000	2			Chaves	005	0000
				011	5	Roswell		
				999	9	Balance of county		
	004	000	2	999	9	Cibola	006	0000
	005	000	2	999	9	Colfax	007	0000
	006	000	2			Curry	009	0000
				005	5	Clovis		
				999	9	Balance of county		
	007	000	2	999	9	De Baca	011	0000
	008	163	1			Dona Ana	013	4100
				009	5	Las Cruces		
				999	9	Balance of county		
	009	000	2			Eddy	015	0000
				003	6	Artesia		
				004	5	Carlsbad		
				999	9	Balance of county		
	010	000	2	999	9	Grant	017	0000
	011	000	2	999	9	Guadalupe	019	0000
	012	000	2	999	9	Harding	021	0000
	013	000	2	999	9	Hidalgo	023	0000
	014	000	2			Lea	025	0000
				008	5	Hobbs		
				999	9	Balance of county		
	015	000	2	999	9	Lincoln	027	0000
	016	265	1	999	9	Los Alamos	028	7490
	017	000	2	999	9	Luna	029	0000
	018	000	2			McKinley	031	0000
				007	6	Gallup		
				999	9	Balance of county		
	019	000	2	999	9	Mora	033	0000
	020	000	2			Otero	035	0000
				001	6	Alamogordo		
				999	9	Balance of county		
	021	000	2	999	9	Quay	037	0000
	022	000	2	999	9	Rio Arriba	039	0000
	023	000	2	999	9	Roosevelt	041	0000
	024	000	2	999	9	Sandoval	043	0000
	025	000	2			San Juan	045	0000
				006	5	Farmington		
				999	9	Balance of county		
	026	000	2			San Miguel	047	0000
				010	6	Las Vegas		
				999	9	Balance of county		

51710 6796

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
32						New Mexico	35
	027	265	1			Santa Fe	049 7490
				012	5	Santa Fe	
				999	9	Balance of county	
	028	000	2	999	9	Sierra	051 0000
	029	000	2	999	9	Socorro	053 0000
	030	000	2	999	9	Taos	055 0000
	031	000	2	999	9	Torrance	057 0000
	032	000	2	999	9	Union	059 0000
	033	000	2	999	9	Valencia	061 0000

51710 6797

Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
33						New York	36
	001	004	1			Albany	001 0160
				001	3	Albany	
				013	6	Cohoes	
				097	6	Watervliet	
				999	9	Balance of county	
	002	000	2	999	9	Allegany	003 0000
	003	036	1			Broome	007 0960
				007	4	Binghamton	
				021	6	Endicott	
				041	6	Johnson City	
				095	5	Vestal town	
				999	9	Balance of county	
	004	000	2			Cattaraugus	009 0000
				065	6	Olean	
				999	9	Balance of county	
	005	000	2			Cayuga	011 0000
				003	5	Auburn	
				999	9	Balance of county	
	006	140	1			Chautauqua	013 3610
				018	6	Dunkirk	
				023	6	Fredonia	
				040	5	Jamestown	
				999	9	Balance of county	
	007	091	1			Chemung	015 2335
				020	5	Elmira	
				999	9	Balance of county	
	008	000	2	999	9	Chenango	017 0000
	009	000	2			Clinton	019 0000
				073	6	Plattsburgh	
				999	9	Balance of county	
	010	000	2	999	9	Columbia	021 0000
	011	000	2			Cortland	023 0000
				015	6	Cortland	
				999	9	Balance of county	
	012	000	2	999	9	Delaware	025 0000
	013	233	1			Dutchess	027 6460
				006	6	Beacon	
				076	5	Poughkeepsie	
				999	9	Balance of county	
	014	050	1			Erie	029 1280
				010	2	Buffalo	
				016	6	Depew	
				033	6	Hamburg	
				042	6	Kenmore	
				045	6	Lackawanna	
				048	6	Lancaster	

51710 6798

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
33						New York	36
				091	6	Tonawanda	
				099	4	West Seneca town	
				999	9	Balance of county	
	015	000	2	999	9	Essex	031 0000
	016	000	2	999	9	Franklin	033 0000
	017	000	2			Fulton	035 0000
				031	6	Gloversville	
				999	9	Balance of county	
	018	000	2			Genesee	037 0000
				005	6	Batavia	
				999	9	Balance of county	
	019	004	1	999	9	Greene	039 0160
	020	000	2	999	9	Hamilton	041 0000
	021	298	1	999	9	Herkimer	043 8680
	022	000	2			Jefferson	045 0000
				096	5	Watertown	
				999	9	Balance of county	
	023	000	2	999	9	Lewis	049 0000
	024	248	1	999	9	Livingston	051 6840
	025	285	1			Madison	053 8160
				066	6	Oneida	
				999	9	Balance of county	
	026	248	1			Monroe	055 6840
				008	5	Brighton town	
				027	5	Gates town	
				032	4	Greece town	
				036	5	Henrietta town	
				038	4	Irondequoit town	
				072	5	Penfield town	
				079	3	Rochester	
				999	9	Balance of county	
	027	004	1			Montgomery	057 0160
				002	6	Amsterdam	
				999	9	Balance of county	
	028	201	1			Nassau	059 5380
				019	6	East Rockaway	
				022	6	Floral Park	
				024	5	Freeport	
				026	6	Garden City	
				029	6	Glen Cove	
				035	5	Hempstead	
				049	5	Long Beach	
				050	6	Lynbrook	
				052	6	Massapequa Park	
				055	6	Mineola	
				081	6	Rockville Centre	

51710 6799

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
33						New York	36
				094	5	Valley Stream	
				098	6	Westbury	
				999	9	Balance of county	
	029	206	1			New York city	5600
				009	0	Bronx borough, Bronx county	005
				043	0	Brooklyn borough, Kings county	047
				060	0	Manhattan borough, New York county	061
				077	0	Queens borough, Queens county	081
				078	0	Staten Island borough, Richmond county	085
	030	208	1			Niagara	063 5700
				048	6	Lockport	
				061	4	Niagara Falls	
				063	5	North Tonawanda	
				999	9	Balance of county	
	031	298	1			Oneida	065 8680
				081	5	Rome	
				093	4	Utica	
				999	9	Balance of county	
	032	285	1			Onondaga	067 8160
				089	3	Syracuse	
				999	9	Balance of county	
	033	248	1			Ontario	069 6840
				011	6	Canandaigua	
				028	6	Geneva, part	
				999	9	Balance of county	
	034	216	1			Orange	071 5950
				054	6	Middletown	
				058	6	Newburgh	
				999	9	Balance of county	
	035	248	1	999	9	Orleans	073 6840
	036	285	1			Oswego	075 8160
				025	6	Fulton	
				069	6	Oswego	
				999	9	Balance of county	
	037	000	2			Otsego	077 0000
				067	6	Oneonta	
				999	9	Balance of county	
	038	206	1			Putnam	079 5600
				012	5	Carmel town	
				999	9	Balance of county	
	039	004	1			Rensselaer	083 0160
				092	4	Troy	
				999	9	Balance of county	
	040	206	1			Rockland	087 5600

51710 6800

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
33						New York	36
				087	6	Spring Valley	
				088	6	Suffern	
				999	9	Balance of county	
	041	000	2			St. Lawrence	089 0000
				053	6	Massena	
				064	6	Ogdensburg	
				075	6	Potsdam	
				999	9	Balance of county	
	042	004	1			Saratoga	091 0160
				084	6	Saratoga Springs	
				999	9	Balance of county	
	043	004	1			Schenectady	093 0160
				062	6	Niskayuna town	
				082	5	Rotterdam town	
				086	4	Schenectady	
				999	9	Balance of county	
	044	000	2	999	9	Schoharie	095 0000
	045	000	2	999	9	Schuyler	097 0000
	046	000	2			Seneca	099 0000
				028	6	Geneva, part	
				999	9	Balance of county	
	047	000	2			Steuben	101 0000
				014	6	Corning	
				037	6	Hornell	
				999	9	Balance of county	
	048	201	1			Suffolk	103 5380
				004	6	Babylon	
				047	5	Lindenhurst	
				070	6	Patchogue	
				999	9	Balance of county	
	049	000	2	999	9	Sullivan	105 0000
	050	036	1	999	9	Tioga	107 0960
	051	000	2			Tompkins	109 0000
				039	5	Ithaca	
				999	9	Balance of county	
	052	000	2			Ulster	111 0000
				044	6	Kingston	
				999	9	Balance of county	
	053	115	1			Warren	113 2975
				030	6	Glens Falls	
				999	9	Balance of county	
	054	115	1	999	9	Washington	115 2975
	055	248	1			Wayne	117 6840
				057	6	Newark	
				999	9	Balance of county	

51710 6801

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
33						New York	36
	056	206	1			Westchester	119 5600
				017	6	Dobbs Ferry	
				034	6	Harrison	
				051	6	Mamaroneck	
				056	4	Mount Vernon	
				059	4	New Rochelle	
				068	6	Ossining	
				071	6	Peekskill	
				074	6	Port Chester	
				083	6	Rye	
				085	6	Scarsdale	
				090	6	Tarrytown	
				100	5	White Plains	
				101	3	Yonkers	
				102	5	Yorktown town	
				999	9	Balance of county	
	057	000	2	999	9	Wyoming	121 0000
	058	000	2	999	9	Yates	123 0000

51710 6802

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
34						North Carolina	37	
	001	051	1			Alamance		001 1300
				005	5	Burlington		
				999	9	Balance of county		
	002	127	1	999	9	Alexander		003 3290
	003	000	2	999	9	Alleghany		005 0000
	004	000	2	999	9	Anson		007 0000
	005	000	2	999	9	Ashe		009 0000
	006	000	2	999	9	Avery		011 0000
	007	000	2	999	9	Beaufort		013 0000
	008	000	2	999	9	Bertie		015 0000
	009	000	2	999	9	Bladen		017 0000
	010	000	2	999	9	Brunswick		019 0000
	011	017	1			Buncombe		021 0480
				003	4	Asheville		
				999	9	Balance of county		
	012	127	1			Burke		023 3290
				021	6	Hickory, part		
				030	6	Morganton		
				999	9	Balance of county		
	013	059	1			Cabarrus		025 1520
				009	6	Concord		
				999	9	Balance of county		
	014	000	2			Caldwell		027 0000
				026	6	Lenoir		
				999	9	Balance of county		
	015	000	2			Camden		029 0000
				012	6	Elizabeth City, part		
				999	9	Balance of county		
	016	000	2	999	9	Carteret		031 0000
	017	000	2	999	9	Caswell		033 0000
	018	127	1			Catawba		035 3290
				021	6	Hickory, part		
				999	9	Balance of county		
	019	000	2	999	9	Chatham		037 0000
	020	000	2	999	9	Cherokee		039 0000
	021	000	2	999	9	Chowan		041 0000
	022	000	2	999	9	Clay		043 0000
	023	000	2			Cleveland		045 0000
				038	6	Shelby		
				999	9	Balance of county		
	024	000	2	999	9	Columbus		047 0000
	025	000	2			Craven		049 0000
				019	6	Havelock		
				031	6	New Bern		
				999	9	Balance of county		

51710 6803

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
34						North Carolina	37
	026	097	1			Cumberland	051 2560
				013	4	Fayetteville	
				999	9	Balance of county	
	027	000	2	999	9	Currituck	053 0000
	028	000	2	999	9	Dare	055 0000
	029	121	1			Davidson	057 3120
				022	4	High Point, part	
				027	6	Lexington	
				040	6	Thomasville	
				999	9	Balance of county	
	030	121	1	999	9	Davie	059 3120
	031	000	2	999	9	Duplin	061 0000
	032	238	1			Durham	063 6640
				007	5	Chapel Hill, part	
				010	3	Durham	
				999	9	Balance of county	
	033	000	2			Edgecombe	065 0000
				035	5	Rocky Mount, part	
				999	9	Balance of county	
	034	121	1			Forsyth	067 3120
				043	3	Winston-Salem	
				999	9	Balance of county	
	035	238	1	999	9	Franklin	069 6640
	036	059	1			Gaston	071 1520
				015	5	Gastonia	
				999	9	Balance of county	
	037	000	2	999	9	Gates	073 0000
	038	000	2	999	9	Graham	075 0000
	039	000	2	999	9	Granville	077 0000
	040	000	2	999	9	Greene	079 0000
	041	121	1			Guilford	081 3120
				017	3	Greensboro	
				022	4	High Point, part	
				999	9	Balance of county	
	042	000	2			Halifax	083 0000
				034	6	Roanoke Rapids	
				999	9	Balance of county	
	043	000	2	999	9	Harnett	085 0000
	044	000	2	999	9	Haywood	087 0000
	045	000	2	999	9	Henderson	089 0000
	046	000	2	999	9	Hertford	091 0000
	047	000	2	999	9	Hoke	093 0000
	048	000	2	999	9	Hyde	095 0000
	049	000	2			Iredell	097 0000
				039	6	Statesville	
				999	9	Balance of county	

51710 6804

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
34						North Carolina	37
	050	000	2	999	9	Jackson	099 0000
	051	000	2	999	9	Johnston	101 0000
	052	000	2	999	9	Jones	103 0000
	053	000	2			Lee	105 0000
				037	6	Sanford	
				999	9	Balance of county	
	054	000	2			Lenoir	107 0000
				024	5	Kinston	
				999	9	Balance of county	
	055	059	1	999	9	Lincoln	109 1520
	056	000	2	999	9	McDowell	111 0000
	057	000	2	999	9	Macon	113 0000
	058	000	2	999	9	Madison	115 0000
	059	000	2	999	9	Martin	117 0000
	060	059	1			Mecklenburg	119 1520
				008	2	Charlotte	
				999	9	Balance of county	
	061	000	2	999	9	Mitchell	121 0000
	062	000	2	999	9	Montgomery	123 0000
	063	000	2	999	9	Moore	125 0000
	064	000	2			Nash	127 0000
				035	5	Rocky Mount, part	
				999	9	Balance of county	
	065	314	1			New Hanover	129 9200
				041	5	Wilmington	
				999	9	Balance of county	
	066	000	2	999	9	Northampton	131 0000
	067	139	1			Onslow	133 3605
				023	6	Jacksonville	
				999	9	Balance of county	
	068	238	1			Orange	135 6640
				007	5	Chapel Hill, part	
				999	9	Balance of county	
	069	000	2	999	9	Pamlico	137 0000
	070	000	2			Pasquotank	139 0000
				012	6	Elizabeth City, part	
				999	9	Balance of county	
	071	000	2	999	9	Pender	141 0000
	072	000	2	999	9	Perquimans	143 0000
	073	000	2	999	9	Person	145 0000
	074	000	2			Pitt	147 0000
				018	5	Greenville	
				999	9	Balance of county	
	075	000	2	999	9	Polk	149 0000
	076	121	1			Randolph	151 3120
				002	6	Asheboro	
				022	4	High Point, part	

51710 6805

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
34						North Carolina	37	
				999	9	Balance of county		
	077	000	2	999	9	Richmond	153 0000	
	078	000	2			Robeson	155 0000	
				028	6	Lumberton		
				999	9	Balance of county		
	079	000	2			Rockingham	157 0000	
				011	6	Eden		
				033	6	Reidsville		
				999	9	Balance of county		
	080	059	1			Rowan	159 1520	
				036	6	Salisbury		
				999	9	Balance of county		
	081	000	2	999	9	Rutherford	161 0000	
	082	000	2	999	9	Sampson	163 0000	
	083	000	2			Scotland	165 0000	
				025	6	Laurinburg		
				999	9	Balance of county		
	084	000	2			Stanly	167 0000	
				001	6	Albemarle		
				999	9	Balance of county		
	085	121	1	999	9	Stokes	169 3120	
	086	000	2	999	9	Surry	171 0000	
	087	000	2	999	9	Swain	173 0000	
	088	000	2	999	9	Transylvania	175 0000	
	089	000	2	999	9	Tyrrell	177 0000	
	090	059	1			Union	179 1520	
				029	6	Monroe		
				999	9	Balance of county		
	091	000	2			Vance	181 0000	
				020	6	Henderson		
				999	9	Balance of county		
	092	238	1			Wake	183 6640	
				006	6	Cary		
				014	6	Garner		
				032	3	Raleigh		
				999	9	Balance of county		
	093	000	2	999	9	Warren	185 0000	
	094	000	2	999	9	Washington	187 0000	
	095	000	2			Watauga	189 0000	
				004	6	Boone		
				999	9	Balance of county		
	096	000	2			Wayne	191 0000	
				016	6	Goldsboro		
				999	9	Balance of county		
	097	000	2	999	9	Wilkes	193 0000	
	098	000	2			Wilson	195 0000	
				042	6	Wilson		

51710 6806

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
34						North Carolina	37		
				999	9	Balance of county			
	099	121	1	999	9	Yadkin		197	3120
	100	000	2	999	9	Yancey		199	0000

51710 6807

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
35						North Dakota	38
	001	000	2	999	9	Adams	001 0000
	002	000	2	999	9	Barnes	003 0000
	003	000	2	999	9	Benson	005 0000
	004	000	2	999	9	Billings	007 0000
	005	000	2	999	9	Bottineau	009 0000
	006	000	2	999	9	Bowman	011 0000
	007	000	2	999	9	Burke	013 0000
	008	038	1			Burleigh	015 1010
				001	5	Bismarck	
				999	9	Balance of county	
	009	096	1			Cass	017 2520
				003	4	Fargo	
				008	6	West Fargo	
				999	9	Balance of county	
	010	000	2	999	9	Cavalier	019 0000
	011	000	2	999	9	Dickey	021 0000
	012	000	2	999	9	Divide	023 0000
	013	000	2	999	9	Dunn	025 0000
	014	000	2	999	9	Eddy	027 0000
	015	000	2	999	9	Emmons	029 0000
	016	000	2	999	9	Foster	031 0000
	017	000	2	999	9	Golden Valley	033 0000
	018	116	1			Grand Forks	035 2985
				004	5	Grand Forks	
				999	9	Balance of county	
	019	000	2	999	9	Grant	037 0000
	020	000	2	999	9	Griggs	039 0000
	021	000	2	999	9	Hettinger	041 0000
	022	000	2	999	9	Kidder	043 0000
	023	000	2	999	9	La Moure	045 0000
	024	000	2	999	9	Logan	047 0000
	025	000	2	999	9	McHenry	049 0000
	026	000	2	999	9	McIntosh	051 0000
	027	000	2	999	9	McKenzie	053 0000
	028	000	2	999	9	McLean	055 0000
	029	000	2	999	9	Mercer	057 0000
	030	038	1			Morton	059 1010
				006	6	Mandan	
				999	9	Balance of county	
	031	000	2	999	9	Mountrail	061 0000
	032	000	2	999	9	Nelson	063 0000
	033	000	2	999	9	Oliver	065 0000
	034	000	2	999	9	Pembina	067 0000
	035	000	2	999	9	Pierce	069 0000
	036	000	2	999	9	Ramsey	071 0000
	037	000	2	999	9	Ransom	073 0000
	038	000	2	999	9	Renville	075 0000

51710 6808

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
35						North Dakota	38
	039	000	2	999	9	Richland	077 0000
	040	000	2	999	9	Rolette	079 0000
	041	000	2	999	9	Sargent	081 0000
	042	000	2	999	9	Sheridan	083 0000
	043	000	2	999	9	Sioux	085 0000
	044	000	2	999	9	Slope	087 0000
	045	000	2			Stark	089 0000
				002	6	Dickinson	
				999	9	Balance of county	
	046	000	2	999	9	Steele	091 0000
	047	000	2			Stutsman	093 0000
				005	6	Jamestown	
				999	9	Balance of county	
	048	000	2	999	9	Towner	095 0000
	049	000	2	999	9	Traill	097 0000
	050	000	2	999	9	Walsh	099 0000
	051	000	2			Ward	101 0000
				007	5	Minot	
				999	9	Balance of county	
	052	000	2	999	9	Wells	103 0000
	053	000	2			Williams	105 0000
				009	6	Williston	
				999	9	Balance of county	

51710 6809

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
36						Ohio	39
	001	000	2	999	9	Adams	001 0000
	002	169	1			Allen	003 4320
				067	5	Lima	
				999	9	Balance of county	
	003	000	2			Ashland	005 0000
				004	6	Ashland	
				999	9	Balance of county	
	004	000	2			Ashtabula	007 0000
				005	6	Ashtabula	
				033	6	Conneaut	
				999	9	Balance of county	
	005	000	2			Athens	009 0000
				006	6	Athens	
				999	9	Balance of county	
	006	169	1	999	9	Auglaize	011 4320
	007	309	1	999	9	Belmont	013 9000
	008	000	2	999	9	Brown	015 0000
	009	124	1			Butler	017 3200
				047	5	Fairfield	
				060	4	Hamilton	
				081	5	Middletown	
				096	6	Oxford	
				999	9	Balance of county	
	010	053	1	999	9	Carroll	019 1320
	011	000	2			Champaign	021 0000
				130	6	Urbana	
				999	9	Balance of county	
	012	078	1			Clark	023 2000
				118	4	Springfield	
				999	9	Balance of county	
	013	065	1	999	9	Clermont	025 1640
	014	000	2			Clinton	027 0000
				145	6	Wilmington	
				999	9	Balance of county	
	015	000	2			Columbiana	029 0000
				042	6	East Liverpool	
				108	6	Salem	
				999	9	Balance of county	
	016	000	2			Coshocton	031 0000
				034	6	Coshocton	
				999	9	Balance of county	
	017	000	2			Crawford	033 0000
				022	6	Bucyrus	
				055	6	Galion	
				999	9	Balance of county	

51710 6810

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
36						Ohio	39	
	018	067	1			Cuyahoga	035	1680
				009	6	Bay Village		
				011	6	Bedford		
				012	6	Bedford Heights		
				014	6	Berea		
				017	6	Brecksville		
				018	6	Broadview Heights		
				019	6	Brooklyn		
				020	5	Brook Park		
				030	1	Cleveland		
				031	4	Cleveland Heights		
				040	5	East Cleveland		
				045	4	Euclid		
				048	6	Fairview Park		
				056	5	Garfield Heights		
				065	4	Lakewood		
				069	6	Lyndhurst		
				071	5	Maple Heights		
				076	6	Mayfield Heights		
				080	6	Middleburg Heights		
				089	5	North Olmsted		
				091	6	North Royalton		
				098	4	Parma		
				099	6	Parma Heights		
				106	6	Richmond Heights		
				107	6	Rocky River		
				110	6	Seven Hills		
				111	5	Shaker Heights		
				115	6	Solon		
				116	5	South Euclid		
				121	5	Strongsville		
				128	6	University Heights		
				136	6	Warrensville Heights		
				140	6	Westlake		
				999	9	Balance of county		
	019	000	2			Darke	037	0000
				058	6	Greenville		
				999	9	Balance of county		
	020	000	2			Defiance	039	0000
				037	6	Defiance		
				999	9	Balance of county		
	021	072	1			Delaware	041	1840
				038	6	Delaware		
				139	6	Westerville, part		
				999	9	Balance of county		

51710 6811

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
36						Ohio	39
	022	000	2			Erie	043 0000
				109	5	Sandusky	
				133	6	Vermilion, part	
				999	9	Balance of county	
	023	072	1			Fairfield	045 1840
				032	1	Columbus, part	
				066	5	Lancaster	
				105	6	Reynoldsburg, part	
				999	9	Balance of county	
	024	000	2			Fayette	047 0000
				137	6	Washington	
				999	9	Balance of county	
	025	072	1			Franklin	049 1840
				015	6	Bexley	
				032	1	Columbus, part	
				054	6	Gahanna	
				059	6	Grove City	
				105	6	Reynoldsburg, part	
				129	5	Upper Arlington	
				139	6	Westerville, part	
				141	6	Whitehall	
				147	6	Worthington	
				999	9	Balance of county	
	026	291	1	999	9	Fulton	051 8400
	027	000	2	999	9	Gallia	053 0000
	028	067	1	999	9	Geauga	055 1680
	029	078	1			Greene	057 2000
				010	5	Beavercreek	
				036	3	Dayton, part	
				046	5	Fairborn	
				148	6	Xenia	
				999	9	Balance of county	
	030	000	2			Guernsey	059 0000
				023	6	Cambridge	
				999	9	Balance of county	
	031	065	1			Hamilton	061 1640
				028	2	Cincinnati	
				050	6	Forest Park	
				082	6	Montgomery	
				088	6	North College Hill	
				094	5	Norwood	
				104	6	Reading	
				112	6	Sharonville	
				117	6	Springdale	
				999	9	Balance of county	

51710 6812

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
36						Ohio	39	
	032	000	2			Hancock	063	0000
				049	5	Findlay		
				051	6	Fostoria, part		
				999	9	Balance of county		
	033	000	2	999	9	Hardin	065	0000
	034	000	2	999	9	Harrison	067	0000
	035	000	2	999	9	Henry	069	0000
	036	000	2	999	9	Highland	071	0000
	037	000	2	999	9	Hocking	073	0000
	038	000	2	999	9	Holmes	075	0000
	039	000	2			Huron	077	0000
				093	6	Norwalk		
				999	9	Balance of county		
	040	000	2	999	9	Jackson	079	0000
	041	283	1			Jefferson	081	8080
				119	5	Steubenville		
				999	9	Balance of county		
	042	000	2			Knox	083	0000
				083	6	Mount Vernon		
				999	9	Balance of county		
	043	067	1			Lake	085	1680
				041	6	Eastlake		
				078	5	Mentor		
				097	6	Painesville		
				142	6	Wickliffe		
				143	6	Willoughby		
				144	6	Willowick		
				999	9	Balance of county		
	044	131	1			Lawrence	087	3400
				062	6	Ironton		
				999	9	Balance of county		
	045	072	1			Licking	089	1840
				084	5	Newark		
				105	6	Reynoldsburg, part		
				999	9	Balance of county		
	046	000	2			Logan	091	0000
				013	6	Bellefontaine		
				999	9	Balance of county		
	047	173	1			Lorain	093	4440
				003	6	Amherst		
				007	6	Avon Lake		
				042	4	Elyria		
				068	4	Lorain		
				090	6	North Ridgeville		
				113	6	Sheffield Lake		
				133	6	Vermilion, part		
				999	9	Balance of county		

51710 6813

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
36						Ohio	39
	048	291	1			Lucas	095 8400
				075	6	Maumee	
				095	6	Oregon	
				123	6	Sylvania	
				126	2	Toledo	
				999	9	Balance of county	
	049	072	1	999	9	Madison	097 1840
	050	318	1			Mahoning	099 9320
				002	6	Alliance, part	
				024	6	Campbell	
				122	6	Struthers	
				149	3	Youngstown, part	
				999	9	Balance of county	
	051	000	2			Marion	101 0000
				073	5	Marion	
				999	9	Balance of county	
	052	067	1			Medina	103 1680
				021	5	Brunswick	
				077	6	Medina	
				134	6	Wadsworth	
				999	9	Balance of county	
	053	000	2	999	9	Meigs	105 0000
	054	000	2	999	9	Mercer	107 0000
	055	078	1			Miami	109 2000
				101	6	Piqua	
				127	6	Troy	
				999	9	Balance of county	
	056	000	2	999	9	Monroe	111 0000
	057	078	1			Montgomery	113 2000
				026	6	Centerville	
				036	3	Dayton, part	
				044	6	Englewood	
				061	5	Huber Heights	
				064	4	Kettering	
				079	6	Miamisburg	
				131	6	Vandalia	
				138	6	West Carrollton	
				999	9	Balance of county	
	058	000	2	999	9	Morgan	115 0000
	059	000	2	999	9	Morrow	117 0000
	060	000	2			Muskingum	119 0000
				150	5	Zanesville	
				999	9	Balance of county	
	061	000	2	999	9	Noble	121 0000
	062	000	2	999	9	Ottawa	123 0000
	063	000	2	999	9	Paulding	125 0000
	064	000	2	999	9	Perry	127 0000

51710 6814

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
36						Ohio	39		
	065	072	1			Pickaway		129	1840
				029	6	Circleville			
				999	9	Balance of county			
	066	000	2	999	9	Pike		131	0000
	067	002	1			Portage		133	0080
				063	5	Kent			
				103	6	Ravenna			
				999	9	Balance of county			
	068	000	2	999	9	Preble		135	0000
	069	000	2	999	9	Putnam		137	0000
	070	181	1			Richland		139	4800
				070	4	Mansfield			
				999	9	Balance of county			
	071	000	2			Ross		141	0000
				027	6	Chillicothe			
				999	9	Balance of county			
	072	000	2			Sandusky		143	0000
				053	6	Fremont			
				999	9	Balance of county			
	073	000	2			Scioto		145	0000
				102	5	Portsmouth			
				999	9	Balance of county			
	074	000	2			Seneca		147	0000
				051	6	Fostoria, part			
				125	6	Tiffin			
				999	9	Balance of county			
	075	000	2			Shelby		149	0000
				114	6	Sidney			
				999	9	Balance of county			
	076	053	1			Stark		151	1320
				002	6	Alliance, part			
				025	4	Canton			
				074	5	Massillon			
				087	6	North Canton			
				999	9	Balance of county			
	077	002	1			Summit		153	0080
				001	3	Akron			
				008	5	Barberton			
				035	5	Cuyahoga Falls			
				092	6	Norton			
				120	5	Stow			
				124	6	Tallmadge			
				999	9	Balance of county			
	078	318	1			Trumbull		155	9320
				067	6	Girard			
				086	6	Niles			

51710 6815

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
36						Ohio	39		
				135	4	Warren			
				149	3	Youngstown, part			
				999	9	Balance of county			
	079	000	2			Tuscarawas		157	0000
				039	6	Dover			
				085	6	New Philadelphia			
				999	9	Balance of county			
	080	072	1	999	9	Union		159	1840
	081	000	2			Van Wert		161	0000
				132	6	Van Wert			
				999	9	Balance of county			
	082	000	2	999	9	Vinton		163	0000
	083	065	1			Warren		165	1640
				052	6	Franklin			
				999	9	Balance of county			
	084	221	1			Washington		167	6020
				072	6	Marietta			
				999	9	Balance of county			
	085	000	2			Wayne		169	0000
				146	6	Wooster			
				999	9	Balance of county			
	086	000	2	999	9	Williams		171	0000
	087	291	1			Wood		173	8400
				016	6	Bowling Green			
				051	6	Fostoria, part			
				100	6	Perrysburg			
				999	9	Balance of county			
	088	000	2	999	9	Wyandot		175	0000

51710 6816

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
37						Oklahoma	40	
	001	000	2	999	9	Adair	001	0000
	002	000	2	999	9	Alfalfa	003	0000
	003	000	2	999	9	Atoka	005	0000
	004	000	2	999	9	Beaver	007	0000
	005	000	2	999	9	Beckham	009	0000
	006	000	2	999	9	Blaine	011	0000
	007	000	2			Bryan	013	0000
				011	6	Durant		
				999	9	Balance of county		
	008	000	2	999	9	Caddo	015	0000
	009	213	1			Canadian	017	5880
				013	6	El Reno		
				023	2	Oklahoma City, part		
				033	6	Yukon		
				999	9	Balance of county		
	010	000	2			Carter	019	0000
				003	6	Ardmore		
				999	9	Balance of county		
	011	000	2	999	9	Cherokee	021	0000
	012	000	2	999	9	Choctaw	023	0000
	013	000	2	999	9	Cimarron	025	0000
	014	213	1			Cleveland	027	5880
				020	5	Moore		
				022	4	Norman		
				023	2	Oklahoma City, part		
				999	9	Balance of county		
	015	000	2	999	9	Coal	029	0000
	016	166	1			Comanche	031	4200
				016	4	Lawton		
				999	9	Balance of county		
	017	000	2	999	9	Cotton	033	0000
	018	000	2	999	9	Craig	035	0000
	019	295	1			Creek	037	8560
				027	6	Sapulpa		
				999	9	Balance of county		
	020	000	2	999	9	Custer	039	0000
	021	000	2	999	9	Delaware	041	0000
	022	000	2	999	9	Dewey	043	0000
	023	000	2	999	9	Ellis	045	0000
	024	092	1			Garfield	047	2340
				014	4	Enid		
				999	9	Balance of county		
	025	000	2	999	9	Garvin	049	0000
	026	000	2			Grady	051	0000
				007	6	Chickasha		
				999	9	Balance of county		
	027	000	2	999	9	Grant	053	0000

51710 6817

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
37						Oklahoma	40
	028	000	2	999	9	Greer	055 0000
	029	000	2	999	9	Harmon	057 0000
	030	000	2	999	9	Harper	059 0000
	031	000	2	999	9	Haskell	061 0000
	032	000	2	999	9	Hughes	063 0000
	033	000	2			Jackson	065 0000
				002	6	Altus	
				999	9	Balance of county	
	034	000	2	999	9	Jefferson	067 0000
	035	000	2	999	9	Johnston	069 0000
	036	000	2			Kay	071 0000
				025	5	Ponca City	
				999	9	Balance of county	
	037	000	2	999	9	Kingfisher	073 0000
	038	000	2	999	9	Kiowa	075 0000
	039	000	2	999	9	Latimer	077 0000
	040	000	2	999	9	Le Flore	079 0000
	041	000	2	999	9	Lincoln	081 0000
	042	213	1			Logan	083 5880
				015	6	Guthrie	
				999	9	Balance of county	
	043	000	2	999	9	Love	085 0000
	044	213	1			McClain	087 5880
				023	2	Oklahoma City, part	
				999	9	Balance of county	
	045	000	2	999	9	McCurtain	089 0000
	046	000	2	999	9	McIntosh	091 0000
	047	000	2	999	9	Major	093 0000
	048	000	2	999	9	Marshall	095 0000
	049	000	2	999	9	Mayes	097 0000
	050	000	2	999	9	Murray	099 0000
	051	000	2			Muskogee	101 0000
				021	5	Muskogee	
				999	9	Balance of county	
	052	000	2	999	9	Noble	103 0000
	053	000	2	999	9	Nowata	105 0000
	054	000	2	999	9	Okfuskee	107 0000
	055	213	1			Oklahoma	109 5880
				005	6	Bethany	
				009	5	Del City	
				012	5	Edmond	
				019	5	Midwest City	
				023	2	Oklahoma City, part	
				030	6	The Village	
				999	9	Balance of county	
	056	000	2			Okmulgee	111 0000
				024	6	Okmulgee	

51710 6818

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
37						Oklahoma	40	
				999	9	Balance of county		
	057	295	1			Osage		113 8560
				004	5	Bartlesville, part		
				026	6	Sand Springs, part		
				031	2	Tulsa, part		
				999	9	Balance of county		
	058	000	2			Ottawa		115 0000
				018	6	Miami		
				999	9	Balance of county		
	059	000	2	999	9	Pawnee		117 0000
	060	000	2			Payne		119 0000
				029	5	Stillwater		
				999	9	Balance of county		
	061	000	2			Pittsburg		121 0000
				017	6	McAlester		
				999	9	Balance of county		
	062	000	2			Pontotoc		123 0000
				001	6	Ada		
				999	9	Balance of county		
	063	213	1			Pottawatomie		125 5880
				023	2	Oklahoma City, part		
				028	5	Shawnee		
				999	9	Balance of county		
	064	000	2	999	9	Pushmataha		127 0000
	065	000	2	999	9	Roger Mills		129 0000
	066	295	1			Rogers		131 8560
				008	6	Claremore		
				999	9	Balance of county		
	067	000	2	999	9	Seminole		133 0000
	068	106	1	999	9	Sequoyah		135 2720
	069	000	2			Stephens		137 0000
				010	6	Duncan		
				999	9	Balance of county		
	070	000	2	999	9	Texas		139 0000
	071	000	2	999	9	Tillman		141 0000
	072	295	1			Tulsa		143 8560
				006	5	Broken Arrow, part		
				026	6	Sand Springs, part		
				031	2	Tulsa, part		
				999	9	Balance of county		
	073	295	1			Wagoner		145 8560
				006	5	Broken Arrow, part		
				999	9	Balance of county		
	074	000	2			Washington		147 0000
				004	5	Bartlesville, part		
				999	9	Balance of county		
	075	000	2	999	9	Washita		149 0000

51710 6819

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
37						Oklahoma	40		
	076	000	2	999	9	Woods		151	0000
	077	000	2			Woodward		153	0000
				032	6	Woodward			
				999	9	Balance of county			

51710 6820

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
38						Oregon	41
	001	000	2	999	9	Baker	001 0000
	002	000	2			Benton	003 0000
				001	5	Albany, part	
				007	5	Corvallis	
				999	9	Balance of county	
	003	231	1			Clackamas	005 6440
				015	6	Lake Oswego, part	
				019	6	Milwaukie, part	
				021	6	Oregon City	
				023	2	Portland, part	
				028	6	West Linn	
				999	9	Balance of county	
	004	000	2	999	9	Clatsop	007 0000
	005	000	2	999	9	Columbia	009 0000
	006	000	2			Coos	011 0000
				006	6	Coos Bay	
				999	9	Balance of county	
	007	000	2	999	9	Crook	013 0000
	008	000	2	999	9	Curry	015 0000
	009	000	2			Deschutes	017 0000
				004	6	Bend	
				999	9	Balance of county	
	010	000	2			Douglas	019 0000
				024	6	Roseburg	
				999	9	Balance of county	
	011	000	2	999	9	Gilliam	021 0000
	012	000	2	999	9	Grant	023 0000
	013	000	2	999	9	Harney	025 0000
	014	000	2	999	9	Hood River	027 0000
	015	183	1			Jackson	029 4890
				002	6	Ashland	
				018	5	Medford	
				999	9	Balance of county	
	016	000	2	999	9	Jefferson	031 0000
	017	000	2			Josephine	033 0000
				010	6	Grants Pass	
				999	9	Balance of county	
	018	000	2			Klamath	035 0000
				013	6	Klamath Falls	
				999	9	Balance of county	
	019	000	2	999	9	Lake	037 0000
	020	094	1			Lane	039 2400
				008	3	Eugene	
				026	5	Springfield	
				999	9	Balance of county	
	021	000	2	999	9	Lincoln	041 0000

51710 6821

A Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
38						Oregon	41	
	022	000	2			Linn	043	0000
				001	5	Albany, part		
				016	6	Lebanon		
				999	9	Balance of county		
	023	000	2	999	9	Malheur	045	0000
	024	255	1			Marion	047	7080
				025	4	Salem, part		
				029	6	Woodburn		
				999	9	Balance of county		
	025	000	2	999	9	Morrow	049	0000
	026	231	1			Multnomah	051	6440
				011	5	Gresham		
				015	6	Lake Oswego, part		
				019	6	Milwaukie, part		
				023	2	Portland, part		
				999	9	Balance of county		
	027	255	1			Polk	053	7080
				025	4	Salem, part		
				999	9	Balance of county		
	028	000	2	999	9	Sherman	055	0000
	029	000	2	999	9	Tillamook	057	0000
	030	000	2			Umatilla	059	0000
				022	6	Pendleton		
				999	9	Balance of county		
	031	000	2			Union	061	0000
				014	6	La Grande		
				999	9	Balance of county		
	032	000	2	999	9	Wallowa	063	0000
	033	000	2			Wasco	065	0000
				005	6	City of the Dalles		
				999	9	Balance of county		
	034	231	1			Washington	067	6440
				003	5	Beaverton		
				009	6	Forest Grove		
				012	5	Hillsboro		
				015	6	Lake Oswego, part		
				023	2	Portland, part		
				027	6	Tigard		
				999	9	Balance of county		
	035	000	2	999	9	Wheeler	069	0000
	036	231	1			Yamhill	071	6440
				017	6	McMinnville		
				020	6	Newberg		
				999	9	Balance of county		

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Vital Statistics Geographic Code Outline
MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
39						Pennsylvania	42
	001	317	1	999	9	Adams	001 9280
	002	228	1			Allegheny	003 6280
				006	6	Baldwin	
				008	6	Bellevue	
				011	5	Bethel Park	
				015	6	Brentwood	
				022	6	Carnegie	
				023	6	Castle Shannon	
				027	6	Clairton	
				033	6	Dormont	
				035	6	Duquesne	
				039	6	Elizabeth township	
				047	6	Harrison township	
				069	5	McCandless township	
				070	5	McKeesport	
				079	5	Monroeville	
				080	5	Mount Lebanon township	
				082	6	Munhall	
				092	6	North Versailles township	
				095	4	Penn Hills township	
				098	2	Pittsburgh	
				099	5	Plum	
				106	5	Ross township	
				108	6	Scott township	
				110	5	Shaler township	
				113	6	South Park township	
				122	6	Swissvale	
				131	6	Upper St. Clair township	
				138	5	West Mifflin	
				140	6	Whitehall	
				144	6	Wilkinsburg	
				999	9	Balance of county	
	003	000	2	999	9	Armstrong	005 0000
	004	030	1			Beaver	007 0845
				002	6	Aliquippa	
				007	6	Beaver Falls	
				999	9	Balance of county	
	005	000	2	999	9	Bedford	009 0000
	006	240	1			Berks	011 6680
				081	6	Muhlenberg township	
				104	4	Reading	
				999	9	Balance of county	
	007	000	1			Blair	013 0880
				004	4	Altoona	
				999	9	Balance of county	
	008	000	2	999	9	Bradford	015 0000

51710 6823

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
39						Pennsylvania	42	
	009	225	1			Bucks	017	6160
				009	4	Bensalem township		
				016	6	Bristol		
				017	4	Bristol township		
				043	5	Falls township		
				068	6	Lower Southampton township		
				075	5	Middletown township		
				090	5	Northampton township		
				132	6	Upper Southampton township		
				133	5	Warminster township		
				999	9	Balance of county		
	010	000	2			Butler	019	0000
				018	6	Butler		
				999	9	Balance of county		
	011	144	1			Cambria	021	3680
				054	5	Johnstown		
				999	9	Balance of county		
	012	000	2	999	9	Cameron	023	0000
	013	007	1	999	9	Carbon	025	0240
	014	282	1			Centre	027	8050
				118	5	State College		
				999	9	Balance of county		
	015	225	1			Chester	029	6160
				028	6	Coatesville		
				097	6	Phoenixville		
				124	6	Tredyffrin township		
				136	6	West Chester		
				137	6	West Goshen township		
				999	9	Balance of county		
	016	000	2	999	9	Clarion	031	0000
	017	000	2	999	9	Clearfield	033	0000
	018	000	2	999	9	Clinton	035	0000
	019	269	1			Columbia	037	7560
				010	6	Berwick		
				013	6	Bloomsburg		
				999	9	Balance of county		
	020	000	2			Crawford	039	0000
				073	6	Meadville		
				999	9	Balance of county		
	021	125	1			Cumberland	041	3240
				021	6	Carlisle		
				038	6	East Pennsboro township		
				062	6	Lower Allen township		
				999	9	Balance of county		
	022	125	1			Dauphin	043	3240
				046	4	Harrisburg		
				066	5	Lower Paxton township		

51710 6824

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
39						Pennsylvania	42		
				074	6	Middletown			
				120	6	Susquehanna township			
				121	6	Swatara township			
				999	9	Balance of county			
	023	225	1			Delaware		045	6160
				005	6	Aston township			
				026	5	Chester			
				031	6	Darby			
				032	6	Darby township			
				049	4	Haverford township			
				059	6	Lansdowne			
				072	6	Marple township			
				076	6	Middletown township			
				085	6	Nether Providence township			
				088	6	Newtown township			
				103	5	Radnor township			
				105	5	Ridley township			
				115	5	Springfield township			
				126	6	Upper Chichester township			
				127	4	Upper Darby township			
				146	6	Yeadon			
				999	9	Balance of county			
	024	000	2	999	9	Elk		047	0000
	025	093	1			Erie		049	2360
				042	3	Erie			
				077	5	Millcreek township			
				999	9	Balance of county			
	026	228	1			Fayette		051	6280
				030	6	Connellsville			
				125	6	Uniontown			
				999	9	Balance of county			
	027	000	2	999	9	Forest		053	0000
	028	000	2			Franklin		055	0000
				024	6	Chambersburg			
				999	9	Balance of county			
	029	000	2	999	9	Fulton		057	0000
	030	000	2	999	9	Greene		059	0000
	031	000	2	999	9	Huntingdon		061	0000
	032	000	2			Indiana		063	0000
				052	6	Indiana			
				999	9	Balance of county			
	033	000	2	999	9	Jefferson		065	0000
	034	000	2	999	9	Juniata		067	0000
	035	269	1			Lackawanna		069	7560
				020	6	Carbondale			
				084	6	Dunmore			
				109	4	Scranton			

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Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
39						Pennsylvania	42	
				999	9	Balance of county		
	036	160	1			Lancaster		071 4000
				029	6	Columbia		
				041	6	Ephrata		
				056	4	Lancaster		
				057	6	Lancaster township		
				071	5	Manheim township		
				999	9	Balance of county		
	037	000	2			Lawrence		073 0000
				086	5	New Castle		
				999	9	Balance of county		
	038	125	1			Lebanon		075 3240
				061	5	Lebanon		
				999	9	Balance of county		
	039	007	1			Lehigh		077 0240
				003	3	Allentown		
				012	4	Bethlehem, part		
				040	6	Emmaus		
				107	6	Salisbury township		
				141	6	Whitehall township		
				999	9	Balance of county		
	040	269	1			Luzerne		079 7560
				050	5	Hazleton		
				055	6	Kingston		
				084	6	Nanticoke		
				143	4	Wilkes-Barre		
				999	9	Balance of county		
	041	312	1			Lycoming		081 9140
				145	5	Williamsport		
				999	9	Balance of county		
	042	000	2			McKean		083 0000
				014	6	Bradford		
				999	9	Balance of county		
	043	271	1			Mercer		085 7610
				112	6	Sharon		
				999	9	Balance of county		
	044	000	2	999	9	Mifflin		087 0000
	045	269	1	999	9	Monroe		089 7560
	046	225	1			Montgomery		091 6160
				001	4	Abington township		
				025	5	Cheltenham township		
				036	6	East Norriton township		
				048	6	Hatfield township		
				058	6	Lansdale		
				064	4	Lower Merion township		
				065	6	Lower Moreland township		
				067	6	Lower Providence township		

51710 6826

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
39						Pennsylvania	42
				089	5	Norristown	
				100	6	Plymouth township	
				101	6	Pottstown	
				116	5	Springfield township	
				123	6	Towamencin township	
				128	6	Upper Dublin township	
				129	5	Upper Merion township	
				130	5	Upper Moreland township	
				139	6	West Norriton township	
				142	6	Whitemarsh township	
				999	9	Balance of county	
	047	000	2	999	9	Montour	093 0000
	048	007	1			Northampton	095 0240
				012	4	Bethlehem, part	
				037	5	Easton	
				094	6	Palmer township	
				999	9	Balance of county	
	049	000	2			Northumberland	097 0000
				111	6	Shamokin	
				119	6	Sunbury	
				999	9	Balance of county	
	050	125	1	999	9	Perry	099 3240
	051	225	1	096	0	Philadelphia, coext. with Philadelphia city	101 6160
	052	000	2	999	9	Pike	103 0000
	053	000	2	999	9	Potter	105 0000
	054	000	2			Schuylkill	107 0000
				102	6	Pottsville	
				999	9	Balance of county	
	055	000	2	999	9	Snyder	109 0000
	056	144	1	999	9	Somerset	111 3630
	057	000	2	999	9	Sullivan	113 0000
	058	000	2	999	9	Susquehanna	115 0000
	059	000	2	999	9	Tioga	117 0000
	060	000	2	999	9	Union	119 0000
	061	000	2			Venango	121 0000
				093	6	Oil City	
				999	9	Balance of county	
	062	000	2			Warren	123 0000
				134	6	Warren	
				999	9	Balance of county	
	063	228	1			Washington	125 6280
				019	6	Canonsburg	
				135	6	Washington	
				999	9	Balance of county	
	064	000	2	999	9	Wayne	127 0000
	065	228	1			Westmoreland	129 6280

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Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
39						Pennsylvania	42	
				044	6	Greensburg		
				051	5	Hempfield township		
				053	6	Jeannette		
				060	6	Latrobe		
				063	6	Lower Burrell		
				078	6	Monessen		
				083	6	Municipality of Murrysville		
				087	6	New Kensington		
				091	5	North Huntingdon township		
				999	9	Balance of county		
	066	269	1	999	9	Wyoming		131 7560
	067	317	1			York		133 9280
				045	6	Hanover		
				114	6	Springettsbury township		
				117	6	Spring Garden township		
				147	5	York		
				999	9	Balance of county		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
40						Rhode Island	44		
	001	234	1			Bristol		001	6483
				001	6	Barrington town			
				002	6	Bristol town			
				014	6	Warren town			
				999	9	Balance of county			
	002	234	1			Kent		003	6483
				004	5	Coventry town			
				015	4	Warwick			
				016	5	West Warwick town			
				999	9	Balance of county			
	003	000	2			Newport		005	0000
				009	6	Middletown town			
				010	5	Newport			
				999	9	Balance of county			
	004	234	1			Providence		007	6483
				003	6	Central Falls			
				005	4	Cranston			
				006	5	Cumberland town			
				007	4	East Providence			
				008	6	Johnston town			
				011	5	North Providence town			
				012	4	Pawtucket			
				013	3	Providence			
				017	5	Woonsocket			
				999	9	Balance of county			
	005	234	1	999	9	Washington		009	6483

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
41						South Carolina	45	
	001	000	2	999	9	Abbeville		001 0000
	002	021	1			Aiken		003 0600
				001	6	Aiken		
				019	6	North Augusta		
				999	9	Balance of county		
	003	000	2	999	9	Allendale		005 0000
	004	013	1			Anderson		007 0405
				002	5	Anderson		
				999	9	Balance of county		
	005	000	2	999	9	Bamberg		009 0000
	006	000	2	999	9	Barnwell		011 0000
	007	000	2	999	9	Beaufort		013 0000
	008	057	1			Berkeley		015 1440
				011	6	Goose Creek		
				015	6	Hanahan		
				999	9	Balance of county		
	009	000	2	999	9	Calhoun		017 0000
	010	057	1			Charleston		019 1440
				004	4	Charleston		
				017	6	Mount Pleasant		
				020	4	North Charleston		
				999	9	Balance of county		
	011	000	2			Cherokee		021 0000
				009	6	Gaffney		
				999	9	Balance of county		
	012	000	2	999	9	Chester		023 0000
	013	000	2	999	9	Chesterfield		025 0000
	014	000	2	999	9	Clarendon		027 0000
	015	000	2	999	9	Colleton		029 0000
	016	000	2	999	9	Darlington		031 0000
	017	000	2	999	9	Dillon		033 0000
	018	057	1	999	9	Dorchester		035 1440
	019	000	2	999	9	Edgefield		037 0000
	020	000	2	999	9	Fairfield		039 0000
	021	101	1			Florence		041 2655
				008	5	Florence		
				999	9	Balance of county		
	022	000	2			Georgetown		043 0000
				010	6	Georgetown		
				999	9	Balance of county		
	023	122	1			Greenville		045 3160
				012	4	Greenville		
				014	6	Greer, part		
				999	9	Balance of county		
	024	000	2			Greenwood		047 0000
				010	6	Greenwood		
				999	9	Balance of county		

51710 6830

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
41						South Carolina	45
	025	000	2	999	9	Hampton	049 0000
	026	000	2			Horry	051 0000
				006	6	Conway	
				018	6	Myrtle Beach	
				999	9	Balance of county	
	027	000	2	999	9	Jasper	053 0000
	028	000	2	999	9	Kershaw	055 0000
	029	000	2	999	9	Lancaster	057 0000
	030	000	2			Laurens	059 0000
				016	6	Laurens	
				999	9	Balance of county	
	031	000	2	999	9	Lee	061 0000
	032	070	1			Lexington	063 1760
				003	6	Cayce	
				026	6	West Columbia	
				999	9	Balance of county	
	033	000	2	999	9	McCormick	065 0000
	034	000	2	999	9	Marion	067 0000
	035	000	2	999	9	Marlboro	069 0000
	036	000	2	999	9	Newberry	071 0000
	037	000	2	999	9	Oconee	073 0000
	038	000	2			Orangeburg	075 0000
				021	6	Orangeburg	
				999	9	Balance of county	
	039	122	1			Pickens	077 3160
				007	6	Easley	
				999	9	Balance of county	
	040	070	1			Richland	079 1760
				005	3	Columbia	
				999	9	Balance of county	
	041	000	2	999	9	Saluda	081 0000
	042	122	1			Spartanburg	083 3160
				014	6	Greer, part	
				023	5	Spartanburg	
				999	9	Balance of county	
	043	000	2			Sumter	085 0000
				024	6	Sumter	
				999	9	Balance of county	
	044	000	2			Union	087 0000
				025	6	Union	
				999	9	Balance of county	
	045	000	2	999	9	Williamsburg	089 0000
	046	059	1			York	091 1520
				022	6	Rock Hill	
				999	9	Balance of county	

51710 6831

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
42						South Dakota	46
	001	000	2	999	9	Aurora	003 0000
	002	000	2			Beadle	005 0000
				003	6	Huron	
				999	9	Balance of county	
	003	000	2	999	9	Bennett	007 0000
	004	000	2	999	9	Bon Homme	009 0000
	005	000	2			Brookings	011 0000
				002	6	Brookings	
				999	9	Balance of county	
	006	000	2			Brown	013 0000
				001	5	Aberdeen	
				999	9	Balance of county	
	007	000	2	999	9	Brule	015 0000
	008	000	2	999	9	Buffalo	017 0000
	009	000	2	999	9	Butte	019 0000
	010	000	2	999	9	Campbell	021 0000
	011	000	2	999	9	Charles Mix	023 0000
	012	000	2	999	9	Clark	025 0000
	013	000	2			Clay	027 0000
				008	6	Vermillion	
				999	9	Balance of county	
	014	000	2			Codington	029 0000
				009	6	Watertown	
				999	9	Balance of county	
	015	000	2	999	9	Corson	031 0000
	016	000	2	999	9	Custer	033 0000
	017	000	2			Davison	035 0000
				004	6	Mitchell	
				999	9	Balance of county	
	018	000	2	999	9	Day	037 0000
	019	000	2	999	9	Deuel	039 0000
	020	000	2	999	9	Dewey	041 0000
	021	000	2	999	9	Douglas	043 0000
	022	000	2	999	9	Edmunds	045 0000
	023	000	2	999	9	Fall River	047 0000
	024	000	2	999	9	Faulk	049 0000
	025	000	2	999	9	Grant	051 0000
	026	000	2	999	9	Gregory	053 0000
	027	000	2	999	9	Haakon	055 0000
	028	000	2	999	9	Hamlin	057 0000
	029	000	2	999	9	Hand	059 0000
	030	000	2	999	9	Hanson	061 0000
	031	000	2	999	9	Harding	063 0000
	032	000	2			Hughes	065 0000
				005	6	Pierre	
				999	9	Balance of county	

51710 6832

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
42						South Dakota	46
	033	000	2	999	9	Hutchinson	067 0000
	034	000	2	999	9	Hyde	069 0000
	035	000	2	999	9	Jackson	071 0000
	036	000	2	999	9	Jerauld	073 0000
	037	000	2	999	9	Jones	075 0000
	038	000	2	999	9	Kingsbury	077 0000
	039	000	2	999	9	Lake	079 0000
	040	000	2	999	9	Lawrence	081 0000
	041	000	2			Lincoln	083 0000
				007	4	Sioux Falls, part	
				999	9	Balance of county	
	042	000	2	999	9	Lyman	085 0000
	043	000	2	999	9	McCook	087 0000
	044	000	2	999	9	McPherson	089 0000
	045	000	2	999	9	Marshall	091 0000
	046	000	2	999	9	Meade	093 0000
	047	000	2	999	9	Mellette	095 0000
	048	000	2	999	9	Miner	097 0000
	049	276	1			Minnehaha	099 7760
				007	4	Sioux Falls, part	
				999	9	Balance of county	
	050	000	2	999	9	Moody	101 0000
	051	239	1			Pennington	103 6660
				006	5	Rapid City	
				999	9	Balance of county	
	052	000	2	999	9	Perkins	105 0000
	053	000	2	999	9	Potter	107 0000
	054	000	2	999	9	Roberts	109 0000
	055	000	2	999	9	Sanborn	111 0000
	056	000	2	999	9	Shannon	113 0000
	057	000	2	999	9	Spink	115 0000
	058	000	2	999	9	Stanley	117 0000
	059	000	2	999	9	Sully	119 0000
	060	000	2	999	9	Todd	121 0000
	061	000	2	999	9	Tripp	123 0000
	062	000	2	999	9	Turner	125 0000
	063	000	2	999	9	Union	127 0000
	064	000	2	999	9	Walworth	129 0000
	065	000	2			Yankton	135 0000
				010	6	Yankton	
				999	9	Balance of county	
	066	000	2	999	9	Ziebach	137 0000

51710 6833

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
43						Tennessee	47
	001	152	1			Anderson	001 3840
				031	5	Oak Ridge, part	
				999	9	Balance of county	
	002	000	2			Bedford	003 0000
				034	6	Shelbyville	
				999	9	Balance of county	
	003	000	2	999	9	Benton	005 0000
	004	000	2	999	9	Bledsoe	007 0000
	005	152	1			Blount	009 3840
				025	6	Maryville	
				999	9	Balance of county	
	006	000	2			Bradley	011 0000
				006	5	Cleveland	
				999	9	Balance of county	
	007	000	2	999	9	Campbell	013 0000
	008	000	2	999	9	Cannon	015 0000
	009	000	2	999	9	Carroll	017 0000
	010	143	1			Carter	019 3660
				011	6	Elizabethton	
				019	5	Johnson City, part	
				999	9	Balance of county	
	011	200	1	999	9	Cheatham	021 5360
	012	000	2	999	9	Chester	023 0000
	013	000	2	999	9	Claiborne	025 0000
	014	000	2	999	9	Clay	027 0000
	015	000	2	999	9	Cocke	029 0000
	016	000	2			Coffee	031 0000
				036	6	Tullahoma, part	
				999	9	Balance of county	
	017	000	2	999	9	Crockett	033 0000
	018	000	2	999	9	Cumberland	035 0000
	019	200	1			Davidson	037 5360
				030	2	Nashville-Davidson	
				999	9	Balance of county	
	020	000	2	999	9	Decatur	039 0000
	021	000	2	999	9	De Kalb	041 0000
	022	200	1	999	9	Dickson	043 5360
	023	000	2			Dyer	045 0000
				009	6	Dyersburg	
				999	9	Balance of county	
	024	000	2	999	9	Fayette	047 0000
	025	000	2	999	9	Fentress	049 0000
	026	000	2			Franklin	051 0000
				036	6	Tullahoma, part	
				999	9	Balance of county	
	027	000	2			Gibson	053 0000
				017	6	Humboldt	

51710 6834

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
43						Tennessee	47	
				999	9	Balance of county		
	028	000	2	999	9	Giles		055 0000
	029	152	1	999	9	Grainger		057 3840
	030	000	2			Greene		059 0000
				015	6	Greeneville		
				999	9	Balance of county		
	031	000	2	999	9	Grundy		061 0000
	032	000	2			Hamblen		063 0000
				028	6	Morristown		
				999	9	Balance of county		
	033	061	1			Hamilton		065 1560
				004	3	Chattanooga		
				010	6	East Ridge		
				033	6	Red Bank		
				999	9	Balance of county		
	034	000	2	999	9	Hancock		067 0000
	035	000	2	999	9	Hardeman		069 0000
	036	000	2	999	9	Hardin		071 0000
	037	143	1			Hawkins		073 3660
				020	5	Kingsport, part		
				999	9	Balance of county		
	038	000	2	999	9	Haywood		075 0000
	039	000	2	999	9	Henderson		077 0000
	040	000	2			Henry		079 0000
				032	6	Paris		
				999	9	Balance of county		
	041	000	2	999	9	Hickman		081 0000
	042	000	2	999	9	Houston		083 0000
	043	000	2	999	9	Humphreys		085 0000
	044	000	2	999	9	Jackson		087 0000
	045	152	1	999	9	Jefferson		089 3840
	046	000	2	999	9	Johnson		091 0000
	047	152	1			Knox		093 3840
				021	3	Knoxville		
				999	9	Balance of county		
	048	000	2	999	9	Lake		095 0000
	049	000	2	999	9	Lauderdale		097 0000
	050	000	2			Lawrence		099 0000
				022	6	Lawrenceburg		
				999	9	Balance of county		
	051	000	2	999	9	Lewis		101 0000
	052	000	2	999	9	Lincoln		103 0000
	053	000	2	999	9	Loudon		105 0000
	054	000	2			McMinn		107 0000
				001	6	Athens		
				999	9	Balance of county		
	055	000	2	999	9	McNairy		109 0000

51710 6835

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
43						Tennessee	47		
	056	000	2	999	9	Macon		111	0000
	057	137	1			Madison		113	3580
				018	5	Jackson			
				999	9	Balance of county			
	058	061	1	999	9	Marion		115	1560
	059	000	2	999	9	Marshall		117	0000
	060	000	2			Maury		119	0000
				007	5	Columbia			
				999	9	Balance of county			
	061	000	2	999	9	Meigs		121	0000
	062	000	2	999	9	Monroe		123	0000
	063	066	1			Montgomery		125	1660
				005	4	Clarksville			
				999	9	Balance of county			
	064	000	2	999	9	Moore		127	0000
	065	000	2	999	9	Morgan		129	0000
	066	000	2			Obion		131	0000
				037	6	Union City			
				999	9	Balance of county			
	067	000	2	999	9	Overton		133	0000
	068	000	2	999	9	Perry		135	0000
	069	000	2	999	9	Pickett		137	0000
	070	000	2	999	9	Polk		139	0000
	071	000	2			Putnam		141	0000
				008	6	Cookeville			
				999	9	Balance of county			
	072	000	2	999	9	Rhea		143	0000
	073	000	2			Roane		145	0000
				031	5	Oak Ridge, part			
				999	9	Balance of county			
	074	200	1			Robertson		147	5360
				035	6	Springfield			
				999	9	Balance of county			
	075	200	1			Rutherford		149	5360
				029	5	Murfreesboro			
				999	9	Balance of county			
	076	000	2	999	9	Scott		151	0000
	077	061	1	999	9	Sequatchie		153	1560
	078	152	1	999	9	Sevier		155	3840
	079	185	1			Shelby		157	4920
				002	6	Bartlett			
				014	6	Germantown			
				026	1	Memphis			
				027	6	Millington			
				999	9	Balance of county			
	080	000	2	999	9	Smith		159	0000
	081	000	2	999	9	Stewart		161	0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
43						Tennessee	47		
	082	143	1			Sullivan		163	3660
				003	6	Bristol			
				020	5	Kingsport, part			
				999	9	Balance of county			
	083	200	1			Sumner		165	5360
				013	6	Gallatin			
				016	5	Hendersonville			
				999	9	Balance of county			
	084	185	1	999	9	Tipton		167	4920
	085	000	2	999	9	Trousdale		169	0000
	086	143	1	999	9	Unicoi		171	3660
	087	152	1	999	9	Union		173	3840
	088	000	2	999	9	Van Buren		175	0000
	089	000	2			Warren		177	0000
				024	6	McMinnville			
				999	9	Balance of county			
	090	143	1			Washington		179	3660
				019	5	Johnson City, part			
				999	9	Balance of county			
	091	000	2	999	9	Wayne		181	0000
	092	000	2	999	9	Weakley		183	0000
	093	000	2	999	9	White		185	0000
	094	200	1			Williamson		187	5360
				012	6	Franklin			
				999	9	Balance of county			
	095	200	1			Wilson		189	5360
				023	6	Lebanon			
				999	9	Balance of county			

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
44						Texas	48	
	001	000	2			Anderson	001	0000
				103	6	Palestine		
				999	9	Balance of county		
	002	000	2			Andrews	003	0000
				005	6	Andrews		
				999	9	Balance of county		
	003	000	2			Angelina	005	0000
				086	5	Lufkin		
				999	9	Balance of county		
	004	000	2	999	9	Aransas	007	0000
	005	000	2			Archer	009	0000
				151	4	Wichita Falls, part		
				999	9	Balance of county		
	006	000	2	999	9	Armstrong	011	0000
	007	000	2	999	9	Atascosa	013	0000
	008	000	2	999	9	Austin	015	0000
	009	000	2	999	9	Bailey	017	0000
	010	000	2	999	9	Bandera	019	0000
	011	000	2	999	9	Bastrop	021	0000
	012	000	2	999	9	Baylor	023	0000
	013	000	2			Bee	025	0000
				015	6	Beeville		
				999	9	Balance of county		
	014	151	1			Bell	027	3810
				017	6	Belton		
				073	5	Killeen		
				132	5	Temple		
				999	9	Balance of county		
	015	259	1			Bexar	029	7240
				121	1	San Antonio		
				138	6	Universal City		
				999	9	Balance of county		
	016	000	2	999	9	Blanco	031	0000
	017	000	2	999	9	Borden	033	0000
	018	000	2	999	9	Bosque	035	0000
	019	290	1			Bowie	037	8360
				134	5	Texarkana		
				999	9	Balance of county		
	020	045	1			Brazoria	039	1145
				003	6	Alvin		
				006	6	Angleton		
				053	6	Freeport		
				075	6	Lake Jackson		
				107	6	Pearland, part		
				999	9	Balance of county		
	021	349	1			Brazos	041	1360
				025	5	Bryan		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
44						Texas	48
				031	5	College Station	
				999	9	Balance of county	
	022	000	2	999	9	Brewster	043 0000
	023	000	2	999	9	Briscoe	045 0000
	024	000	2	999	9	Brooks	047 0000
	025	000	2			Brown	049 0000
				024	6	Brownwood	
				999	9	Balance of county	
	026	000	2	999	9	Burleson	051 0000
	027	000	2	999	9	Burnet	053 0000
	028	000	2	999	9	Caldwell	055 0000
	029	000	2			Calhoun	057 0000
				114	6	Port Lavaca	
				999	9	Balance of county	
	030	000	2	999	9	Callahan	059 0000
	031	048	1			Cameron	061 1240
				023	4	Brownsville	
				063	5	Harlingen	
				122	6	San Benito	
				999	9	Balance of county	
	032	000	2	999	9	Camp	063 0000
	033	000	2	999	9	Carson	065 0000
	034	000	2	999	9	Cass	067 0000
	035	000	2	999	9	Castro	069 0000
	036	000	2			Chambers	071 0000
				012	4	Baytown, part	
				999	9	Balance of county	
	037	000	2			Cherokee	073 0000
				070	6	Jacksonville	
				999	9	Balance of county	
	038	000	2	999	9	Childress	075 0000
	039	000	2	999	9	Clay	077 0000
	040	000	2	999	9	Cochran	079 0000
	041	000	2	999	9	Coke	081 0000
	042	000	2	999	9	Coleman	083 0000
	043	075	1			Collin	085 1920
				029	5	Carrollton, part	
				036	1	Dallas, part	
				057	3	Garland, part	
				088	6	McKinney	
				111	4	Plano, part	
				116	4	Richardson, part	
				999	9	Balance of county	
	044	000	2	999	9	Collingsworth	087 0000
	045	000	2	999	9	Colorado	089 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
44						Texas	48	
	046	259	1			Comal		091 7240
				099	6	New Braunfels, part		
				999	9	Balance of county		
	047	000	2	999	9	Comanche		093 0000
	048	000	2	999	9	Concho		095 0000
	049	000	2			Cooke		097 0000
				055	6	Gainesville		
				999	9	Balance of county		
	050	151	1			Coryell		099 3810
				033	6	Copperas Cove		
				999	9	Balance of county		
	051	000	2	999	9	Cottle		101 0000
	052	000	2	999	9	Crane		103 0000
	053	000	2	999	9	Crockett		105 0000
	054	000	2	999	9	Crosby		107 0000
	055	000	2	999	9	Culberson		109 0000
	056	000	2	999	9	Dallam		111 0000
	057	075	1			Dallas		113 1920
				010	6	Balch Springs		
				029	5	Carrollton, part		
				036	1	Dallas, part		
				041	6	De Soto		
				043	5	Duncanville		
				050	6	Farmers Branch		
				057	3	Garland, part		
				058	4	Grand Prairie, part		
				059	6	Grapevine, part		
				069	3	Irving		
				078	6	Lancaster		
				091	4	Mesquite		
				116	4	Richardson, part		
				139	6	University Park		
				999	9	Balance of county		
	058	000	2			Dawson		115 0000
				077	6	Lamesa		
				999	9	Balance of county		
	059	000	2			Deaf Smith		117 0000
				065	6	Hereford		
				999	9	Balance of county		
	060	000	2	999	9	Delta		119 0000
	061	075	1			Denton		121 1920
				029	5	Carrollton, part		
				036	1	Dallas, part		
				040	5	Denton		
				083	6	Lewisville		
				111	4	Plano, part		
				136	6	The Colony		

51710 6840

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
44						Texas	48
				999	9	Balance of county	
	062	000	2	999	9	De Witt	123 0000
	063	000	2	999	9	Dickens	125 0000
	064	000	2	999	9	Dimmit	127 0000
	065	000	2	999	9	Donley	129 0000
	066	000	2	999	9	Duval	131 0000
	067	000	2	999	9	Eastland	133 0000
	068	212	1			Ector	135 5800
				101	4	Odessa	
				999	9	Balance of county	
	069	000	2	999	9	Edwards	137 0000
	070	075	1			Ellis	139 1920
				048	6	Ennis	
				058	4	Grand Prairie, part	
				146	6	Waxahachie	
				999	9	Balance of county	
	071	089	1			El Paso	141 2320
				047	2	El Paso	
				999	9	Balance of county	
	072	000	2			Erath	143 0000
				128	6	Stephenville	
				999	9	Balance of county	
	073	000	2	999	9	Falls	145 0000
	074	000	2	999	9	Fannin	147 0000
	075	000	2	999	9	Fayette	149 0000
	076	000	2	999	9	Fisher	151 0000
	077	000	2	999	9	Floyd	153 0000
	078	000	2	999	9	Foard	155 0000
	079	130	1			Fort Bend	157 3360
				066	0	Houston, part	
				095	6	Missouri City, part	
				118	6	Rosenberg	
				999	9	Balance of county	
	080	000	2	999	9	Franklin	159 0000
	081	000	2	999	9	Freestone	161 0000
	082	000	2	999	9	Frio	163 0000
	083	000	2	999	9	Gaines	165 0000
	084	113	1			Galveston	167 2920
				054	6	Friendswood, part	
				056	4	Galveston	
				076	6	La Marque	
				081	6	League City	
				135	5	Texas City	
				999	9	Balance of county	
	085	000	2	999	9	Garza	169 0000
	086	000	2	999	9	Gillespie	171 0000
	087	000	2	999	9	Glasscock	173 0000

51710 6841

Vital Statistics Codes							FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
44						Texas	48		
	088	000	2	999	9	Goliad		175	0000
	089	000	2	999	9	Gonzales		177	0000
	090	000	2			Gray		179	0000
				104	6	Pampa			
				999	9	Balance of county			
	091	273	1			Grayson		181	7640
				039	6	Denison			
				125	5	Sherman			
				999	9	Balance of county			
	092	172	1			Gregg		183	4420
				072	6	Kilgore, part			
				084	4	Longview, part			
				999	9	Balance of county			
	093	000	2	999	9	Grimes		185	0000
	094	259	1			Guadalupe		187	7240
				099	6	New Braunfels, part			
				124	6	Seguin			
				999	9	Balance of county			
	095	000	2			Hale		189	0000
				110	6	Plainview			
				999	9	Balance of county			
	096	000	2	999	9	Hall		191	0000
	097	000	2	999	9	Hamilton		193	0000
	098	000	2	999	9	Hansford		195	0000
	099	000	2	999	9	Hardeman		197	0000
	100	029	1	999	9	Hardin		199	0840
	101	130	1			Harris		201	3360
				012	4	Baytown, part			
				016	6	Bellaire			
				037	6	Deer Park			
				054	6	Friendswood, part			
				066	0	Houston, part			
				079	6	La Porte			
				095	6	Missouri City, part			
				106	3	Pasadena			
				107	6	Pearland, part			
				127	6	South Houston			
				149	6	West University Place			
				999	9	Balance of county			
	102	172	1			Harrison		203	4420
				084	4	Longview, part			
				089	6	Marshall			
				999	9	Balance of county			
	103	000	2	999	9	Hartley		205	0000
	104	000	2	999	9	Haskell		207	0000
	105	123	1			Hays		209	0840
				123	6	San Marcos			

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
44						Texas	48	
				999	9	Balance of county		
	106	000	2	999	9	Hemphill		211 0000
	107	000	2			Henderson		213 0000
				008	6	Athens		
				999	9	Balance of county		
	108	182	1			Hidalgo		215 4880
				045	6	Edinburg		
				087	4	McAllen		
				090	6	Mercedes		
				094	6	Mission		
				109	6	Pharr		
				148	6	Weslaco		
				999	9	Balance of county		
	109	000	2	999	9	Hill		217 0000
	110	000	2			Hockley		219 0000
				082	6	Levelland		
				999	9	Balance of county		
	111	000	2	999	9	Hood		221 0000
	112	000	2			Hopkins		223 0000
				129	6	Sulphur Springs		
				999	9	Balance of county		
	113	000	2	999	9	Houston		225 0000
	114	000	2			Howard		227 0000
				019	6	Big Spring		
				999	9	Balance of county		
	115	000	2	999	9	Hudspeth		229 0000
	116	000	2			Hunt		231 0000
				060	6	Greenville		
				999	9	Balance of county		
	117	000	2			Hutchinson		233 0000
				020	6	Borger		
				999	9	Balance of county		
	118	000	2	999	9	Irion		235 0000
	119	000	2	999	9	Jack		237 0000
	120	000	2	999	9	Jackson		239 0000
	121	000	2	999	9	Jasper		241 0000
	122	000	2	999	9	Jeff Davis		243 0000
	123	029	1			Jefferson		245 0840
				013	3	Beaumont		
				061	6	Groves		
				096	6	Nederland		
				112	4	Port Arthur		
				116	6	Port Neches		
				999	9	Balance of county		
	124	000	2	999	9	Jim Hogg		247 0000
	125	000	1			Jim Wells		249 0000
				002	6	Alice		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
44						Texas	48
				999	9	Balance of county	
	126	109	1			Johnson	251 2800
				027	6	Burleson, part	
				030	6	Cleburne	
				999	9	Balance of county	
	127	000	2			Jones	253 0000
				001	4	Abilene, part	
				999	9	Balance of county	
	128	000	2	999	9	Karnes	255 0000
	129	075	1			Kaufman	257 1920
				036	1	Dallas, part	
				133	6	Terrell	
				999	9	Balance of county	
	130	000	2	999	9	Kendall	259 0000
	131	000	2	999	9	Kenedy	261 0000
	132	000	2	999	9	Kent	263 0000
	133	000	2			Kerr	265 0000
				071	6	Kerrville	
				999	9	Balance of county	
	134	000	2	999	9	Kimble	267 0000
	135	000	2	999	9	King	269 0000
	136	000	2	999	9	Kinney	271 0000
	137	000	2			Kleberg	273 0000
				034	3	Corpus Christi, part	
				074	5	Kingsville	
				999	9	Balance of county	
	138	000	2	999	9	Knox	275 0000
	139	000	2			Lamar	277 0000
				105	5	Paris	
				999	9	Balance of county	
	140	000	2	999	9	Lamb	279 0000
	141	000	2	999	9	Lampasas	281 0000
	142	000	2	999	9	La Salle	283 0000
	143	000	2	999	9	Lavaca	285 0000
	144	000	2	999	9	Lee	287 0000
	145	000	2	999	9	Leon	289 0000
	146	130	1	999	9	Liberty	291 3360
	147	000	2	999	9	Limestone	293 0000
	148	000	2	999	9	Lipscomb	295 0000
	149	000	2	999	9	Live Oak	297 0000
	150	000	2	999	9	Llano	299 0000
	151	000	2	999	9	Loving	301 0000
	152	176	1			Lubbock	303 4600
				085	3	Lubbock	
				999	9	Balance of county	
	153	000	2	999	9	Lynn	305 0000
	154	000	2	999	9	McCulloch	307 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
44						Texas	48
	155	304	1			McLennan	309 8800
				144	3	Waco	
				999	9	Balance of county	
	156	000	2	999	9	McMullen	311 0000
	157	000	2	999	9	Madison	313 0000
	158	000	2	999	9	Marion	315 0000
	159	000	2	999	9	Martin	317 0000
	160	000	2	999	9	Mason	319 0000
	161	000	2			Matagorda	321 0000
				011	6	Bay City	
				999	9	Balance of county	
	162	000	2			Maverick	323 0000
				044	6	Eagle Pass	
				999	9	Balance of county	
	163	000	2	999	9	Medina	325 0000
	164	000	2	999	9	Menard	327 0000
	165	189	1			Midland	329 5040
				092	4	Midland	
				999	9	Balance of county	
	166	000	2	999	9	Milam	331 0000
	167	000	2	999	9	Mills	333 0000
	168	000	2	999	9	Mitchell	335 0000
	169	000	2	999	9	Montague	337 0000
	170	130	1			Montgomery	339 3360
				032	6	Conroe	
				066	0	Houston, part	
				999	9	Balance of county	
	171	000	2			Moore	341 0000
				042	6	Dumas	
				999	9	Balance of county	
	172	000	2	999	9	Morris	343 0000
	173	000	2	999	9	Motley	345 0000
	174	000	2			Nacogdoches	347 0000
				097	5	Nacogdoches	
				999	9	Balance of county	
	175	000	2			Navarro	349 0000
				035	6	Corsicana	
				999	9	Balance of county	
	176	000	2	999	9	Newton	351 0000
	177	000	2			Nolan	353 0000
				130	6	Sweetwater	
				999	9	Balance of county	
	178	373	1			Nueces	355 1880
				034	3	Corpus Christi, part	
				113	6	Portland, part	
				117	4	Robstown	
				999	9	Balance of county	

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
44						Texas	48		
	179	000	2	999	9	Ochiltree		357	0000
	180	000	2	999	9	Oldham		359	0000
	181	029	1			Orange		361	0840
				102	6	Orange			
				143	6	Vidor			
				999	9	Balance of county			
	182	000	2			Palo Pinto		363	0000
				093	6	Mineral Wells, part			
				999	9	Balance of county			
	183	000	2	999	9	Panola		365	0000
	184	109	1			Parker		367	2800
				093	6	Mineral Wells, part			
				147	6	Weatherford			
				999	9	Balance of county			
	185	000	2	999	9	Parmer		369	0000
	186	000	2	999	9	Pecos		371	0000
	187	000	2	999	9	Polk		373	0000
	188	009	1			Potter		375	0320
				004	3	Amarillo, part			
				999	9	Balance of county			
	189	000	2	999	9	Presidio		377	0000
	190	000	2	999	9	Rains		379	0000
	191	009	1			Randall		381	0320
				004	3	Amarillo, part			
				028	6	Canyon			
				999	9	Balance of county			
	192	000	2	999	9	Reagan		383	0000
	193	000	2	999	9	Real		385	0000
	194	000	2	999	9	Red River		387	0000
	195	000	2			Reeves		389	0000
				108	6	Pecos			
				999	9	Balance of county			
	196	000	2	999	9	Refugio		391	0000
	197	000	2	999	9	Roberts		393	0000
	198	000	2	999	9	Robertson		395	0000
	199	075	1			Rockwall		397	1920
				036	1	Dallas, part			
				057	3	Garland, part			
				999	9	Balance of county			
	200	000	2	999	9	Runnels		399	0000
	201	000	2			Rusk		401	0000
				064	6	Henderson			
				072	6	Kilgore, part			
				999	9	Balance of county			
	202	000	2	999	9	Sabine		403	0000
	203	000	2	999	9	San Augustine		405	0000
	204	000	2	999	9	San Jacinto		407	0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
44						Texas	48
	205	073	1			San Patricio	409 1880
				034	3	Corpus Christi, part	
				113	6	Portland, part	
				999	9	Balance of county	
	206	000	2	999	9	San Saba	411 0000
	207	000	2	999	9	Schleicher	413 0000
	208	000	2			Scurry	415 0000
				126	6	Snyder	
				999	9	Balance of county	
	209	000	2	999	9	Shackelford	417 0000
	210	000	2	999	9	Shelby	419 0000
	211	000	2	999	9	Sherman	421 0000
	212	297	1			Smith	423 8640
				137	4	Tyler	
				999	9	Balance of county	
	213	000	2	999	9	Somervell	425 0000
	214	000	2	999	9	Starr	427 0000
	215	000	2	999	9	Stephens	429 0000
	216	000	2	999	9	Sterling	431 0000
	217	000	2	999	9	Stonewall	433 0000
	218	000	2	999	9	Sutton	435 0000
	219	000	2	999	9	Swisher	437 0000
	220	109	1			Tarrant	439 2800
				007	3	Arlington	
				014	6	Bedford	
				018	6	Benbrook	
				027	6	Burleson, part	
				049	6	Euless	
				051	6	Forest Hill	
				052	2	Fort Worth	
				058	4	Grand Prairie, part	
				059	6	Grapevine, part	
				062	5	Haltom City	
				068	5	Hurst	
				100	5	North Richland Hills	
				145	6	Watauga	
				150	6	White Settlement	
				999	9	Balance of county	
	221	001	1			Taylor	441 0040
				001	4	Abilene, part	
				999	9	Balance of county	
	222	000	2	999	9	Terrell	443 0000
	223	000	2			Terry	445 0000
				022	6	Brownfield	
				999	9	Balance of county	
	224	000	2	999	9	Throckmorton	447 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
44						Texas	48	
	225	000	2			Titus		449 0000
				096	6	Mount Pleasant		
				999	9	Balance of county		
	226	258	1			Tom Green		451 7200
				120	4	San Angelo		
				999	9	Balance of county		
	227	023	1			Travis		453 0640
				009	2	Austin, part		
				119	6	Round Rock, part		
				999	9	Balance of county		
	228	000	2	999	9	Trinity		455 0000
	229	000	2	999	9	Tyler		457 0000
	230	000	2	999	9	Upshur		459 0000
	231	000	2	999	9	Upton		461 0000
	232	000	2			Uvalde		463 0000
				140	6	Uvalde		
				999	9	Balance of county		
	233	000	2			Val Verde		465 0000
				038	5	Del Rio		
				999	9	Balance of county		
	234	000	2	999	9	Van Zandt		467 0000
	235	301	1			Victoria		469 8750
				142	4	Victoria		
				999	9	Balance of county		
	236	000	2			Walker		471 0000
				067	6	Huntsville		
				999	9	Balance of county		
	237	130	1	999	9	Waller		473 3360
	238	000	2	999	9	Ward		475 0000
	239	000	2			Washington		477 0000
				021	6	Brenham		
				999	9	Balance of county		
	240	162	1			Webb		479 4080
				080	4	Laredo		
				999	9	Balance of county		
	241	000	2			Wharton		481 0000
				046	6	El Campo		
				999	9	Balance of county		
	242	000	2	999	9	Wheeler		483 0000
	243	311	1			Wichita		485 9080
				026	6	Burkburnett		
				151	4	Wichita Falls, part		
				999	9	Balance of county		
	244	000	2			Wilbarger		487 0000
				141	6	Vernon		
				999	9	Balance of county		
	245	000	2	999	9	Willacy		489 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
44						Texas	48		
	246	023	1			Williamson		491	0640
				009	2	Austin, part			
				119	6	Round Rock, part			
				131	6	Taylor			
				999	9	Balance of county			
	247	000	2	999	9	Wilson		493	0000
	248	000	2	999	9	Winkler		495	0000
	249	000	2	999	9	Wise		497	0000
	250	000	2	999	9	Wood		499	0000
	251	000	2	999	9	Yoakum		501	0000
	252	000	2	999	9	Young		503	0000
	253	000	2	999	9	Zapata		505	0000
	254	000	2	999	9	Zavala		507	0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
45						Utah	49
	001	000	2	999	9	Beaver	001 0000
	002	000	2			Box Elder	003 0000
				003	6	Brigham City	
				999	9	Balance of county	
	003	000	2			Cache	005 0000
				007	5	Logan	
				999	9	Balance of county	
	004	000	2	999	9	Carbon	007 0000
	005	000	2	999	9	Daggett	009 0000
	006	257	1			Davis	011 7160
				002	5	Bountiful	
				005	6	Clearfield	
				006	6	Layton	
				999	9	Balance of county	
	007	000	2	999	9	Duchesne	013 0000
	008	000	2	999	9	Emery	015 0000
	009	000	2	999	9	Garfield	017 0000
	010	000	2	999	9	Grand	019 0000
	011	000	2			Iron	021 0000
				004	6	Cedar City	
				999	9	Balance of county	
	012	000	2	999	9	Juab	023 0000
	013	000	2	999	9	Kane	025 0000
	014	000	2	999	9	Millard	027 0000
	015	000	2	999	9	Morgan	029 0000
	016	000	2	999	9	Piute	031 0000
	017	000	2	999	9	Rich	033 0000
	018	257	1			Salt Lake	035 7160
				008	6	Midvale	
				009	5	Murray	
				016	3	Salt Lake City	
				017	4	Sandy City	
				019	6	South Salt Lake	
				022	5	West Jordan	
				999	9	Balance of county	
	019	000	2	999	9	San Juan	037 0000
	020	000	2	999	9	Sanpete	039 0000
	021	000	2	999	9	Sevier	041 0000
	022	000	2	999	9	Summit	043 0000
	023	000	2			Tooele	045 0000
				021	6	Tooele	
				999	9	Balance of county	
	024	000	2	999	9	Uintah	047 0000
	025	235	1			Utah	049 6520
				001	6	American Fork	
				011	4	Orem	
				012	6	Pleasant Grove	

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
45						Utah	49		
				013	4	Provo			
				020	6	Springville			
				999	9	Balance of county			
	026	000	2	999	9	Wasatch		051	0000
	027	000	2			Washington		053	0000
				015	6	St. George			
				999	9	Balance of county			
	028	000	2	999	9	Wayne		055	0000
	029	257	1			Weber		057	7160
				010	4	Ogden			
				014	6	Roy			
				018	6	South Ogden			
				999	9	Balance of county			

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
46						Vermont	50
	001	000	2	999	9	Addison	001 0000
	002	000	2	999	9	Bennington	003 0000
	003	000	2	999	9	Caledonia	005 0000
	004	052	1			Chittenden	007 1303
				001	5	Burlington	
				003	6	South Burlington	
				999	9	Balance of county	
	005	000	2	999	9	Essex	009 0000
	006	000	2	999	9	Franklin	011 0000
	007	052	1	999	9	Grand Isle	013 1303
	008	000	2	999	9	Lamoille	015 0000
	009	000	2	999	9	Orange	017 0000
	010	000	2	999	9	Orleans	019 0000
	011	000	2			Rutland	021 0000
				002	6	Rutland	
				999	9	Balance of county	
	012	000	2	999	9	Washington	023 0000
	013	000	2	999	9	Windham	025 0000
	014	000	2	999	9	Windsor	027 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
47						Virginia	51
	001	000	2	999	9	Accomack	001 0000
	002	060	1	999	9	Albemarle	003 1540
	003	305	1	001	3	Alexandria city	510 8840
	004	000	2	999	9	Alleghany	005 0000
	005	000	2	999	9	Amelia	007 0000
	006	177	1	999	9	Amherst	009 4640
	007	000	2	999	9	Appomattox	011 0000
	008	305	1			Arlington	013 8840
				002	3	Arlington	
	009	000	2	999	9	Augusta	015 0000
	010	000	2	999	9	Bath	017 0000
	011	000	2	999	9	Bedford	019 0000
	012	000	2	999	9	Bedford city	515 0000
	013	000	2	999	9	Bland	021 0000
	014	246	1	999	9	Botetourt	023 6800
	015	143	1	004	6	Bristol city	520 3660
	016	000	2	999	9	Brunswick	025 0000
	017	000	2	999	9	Buchanan	027 0000
	018	000	2	999	9	Buckingham	029 0000
	019	000	2	999	9	Buena Vista city	530 0000
	020	177	1	999	9	Campbell	031 4640
	021	000	2	999	9	Caroline	033 0000
	022	000	2	999	9	Carroll	035 0000
	023	244	1	999	9	Charles City	036 6760
	024	000	2	999	9	Charlotte	037 0000
	025	060	1	005	5	Charlottesville city	540 1540
	026	209	1	006	3	Chesapeake city	550 5720
	027	244	1	999	9	Chesterfield	041 6760
	028	000	2	999	9	Clarke	043 0000
	029	000	2	999	9	Clifton Forge city	560 0000
	030	244	1	008	6	Colonial Heights city	570 6760
	031	000	2	999	9	Covington city	580 0000
	032	000	2	999	9	Craig	045 0000
	033	000	2	999	9	Culpeper	047 0000
	034	000	2	999	9	Cumberland	049 0000
	035	076	1	009	5	Danville city	590 1950
	036	000	2	999	9	Dickenson	051 0000
	037	244	1	999	9	Dinwiddie	053 6760
	038	000	2	999	9	Emporia city	595 0000
	039	000	2	999	9	Essex	057 0000
	040	305	1			Fairfax	059 8840
				015	6	Herndon	
				031	6	Vienna	
				999	9	Balance of county	
	041	305	1	010	6	Fairfax city	600 8840
	042	305	1	999	9	Falls Church city	610 8840
	043	000	2	999	9	Fauquier	061 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
47						Virginia	51	
	044	000	2	999	9	Floyd		063 0000
	045	060	1	999	9	Fluvanna		065 1540
	046	000	2	999	9	Franklin		067 0000
	047	000	2	999	9	Franklin city		620 0000
	048	000	2	999	9	Frederick		069 0000
	049	000	2	011	6	Fredericksburg city		630 0000
	050	000	2	999	9	Galax city		640 0000
	051	000	2	999	9	Giles		071 0000
	052	209	1	999	9	Gloucester		073 5720
	053	244	1	999	9	Goochland		075 6760
	054	000	2	999	9	Grayson		077 0000
	055	060	1	999	9	Greene		079 1540
	056	000	2	999	9	Greensville		081 0000
	057	000	2	999	9	Halifax		083 0000
	058	209	1	013	3	Hampton city		650 5720
	059	244	1	999	9	Hanover		085 6760
	060	000	2	014	6	Harrisonburg city		660 0000
	061	244	1	999	9	Henrico		087 6760
	062	000	2	999	9	Henry		089 0000
	063	000	2	999	9	Highland		091 0000
	064	244	1	016	6	Hopewell city		670 6760
	065	000	2	999	9	Isle of Wight		093 0000
	066	209	1	999	9	James City		095 5720
	067	000	2	999	9	King and Queen		097 0000
	068	000	2	999	9	King George		099 0000
	069	000	2	999	9	King William		101 0000
	070	000	2	999	9	Lancaster		103 0000
	071	000	2	999	9	Lee		105 0000
	072	000	2	999	9	Lexington city		678 0000
	073	305	1	999	9	Loudoun		107 8840
	074	000	2	999	9	Louisa		109 0000
	075	000	2	999	9	Lunenburg		111 0000
	076	177	1	017	4	Lynchburg city		680 4640
	077	000	2	999	9	Madison		113 0000
	078	305	1	018	6	Manassas city		683 8840
	079	305	1	999	9	Manassas Park city		685 8840
	080	000	2	019	6	Martinsville city		690 0000
	081	000	2	999	9	Mathews		115 0000
	082	000	2	999	9	Mecklenburg		117 0000
	083	000	2	999	9	Middlesex		119 0000
	084	000	2			Montgomery		121 0000
				003	6	Blacksburg		
				007	6	Christiansburg		
				999	9	Balance of county		
	085	000	2	999	9	Nelson		125 0000
	086	244	1	999	9	New Kent		127 6760
	087	209	1	020	3	Newport News city		700 5720

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
47						Virginia	51
	088	209	1	021	2	Norfolk city	710 5720
	089	000	2	999	9	Northampton	131 0000
	090	000	2	999	9	Northumberland	133 0000
	091	000	2	999	9	Norton city	720 0000
	092	000	2	999	9	Nottoway	135 0000
	093	000	2	999	9	Orange	137 0000
	094	000	2	999	9	Page	139 0000
	095	000	2	999	9	Patrick	141 0000
	096	244	1	022	5	Petersburg city	730 6760
	097	076	1	999	9	Pittsylvania	143 1950
	098	209	1	999	9	Poquoson city	735 5720
	099	209	1	023	3	Portsmouth city	740 5720
	100	244	1	999	9	Powhatan	145 6760
	101	000	2	999	9	Prince Edward	147 0000
	102	244	1	999	9	Prince George	149 6760
	103	305	1	999	9	Prince William	153 8840
	104	000	2			Pulaski	155 0000
				024	6	Pulaski	
				999	9	Balance of county	
	105	000	2	025	6	Radford city	750 0000
	106	000	2	999	9	Rappahannock	157 0000
	107	000	2	999	9	Richmond	159 0000
	108	244	1	026	3	Richmond city	760 6760
	109	246	1	999	9	Roanoke	161 6800
	110	246	1	027	3	Roanoke city	770 6800
	111	000	2	999	9	Rockbridge	163 0000
	112	000	2	999	9	Rockingham	165 0000
	113	000	2	999	9	Russell	167 0000
	114	246	1	028	6	Salem city	775 6800
	115	143	1	999	9	Scott	169 3660
	116	000	2	999	9	Shenandoah	171 0000
	117	000	2	999	9	Smyth	173 0000
	118	000	2	999	9	Southampton	175 0000
	119	000	2	999	9	South Boston city	780 0000
	120	000	2	999	9	Spotsylvania	177 0000
	121	305	1	999	9	Stafford	179 8840
	122	000	2	029	6	Staunton city	790 0000
	123	209	1	030	5	Suffolk city	800 5720
	124	000	2	999	9	Surry	181 0000
	125	000	2	999	9	Sussex	183 0000
	126	000	2	999	9	Tazewell	185 0000
	127	209	1	032	2	Virginia Beach city	810 5720
	128	000	2			Warren	187 0000
				012	6	Front Royal	
				999	9	Balance of county	
	129	143	1	999	9	Washington	191 3660
	130	000	2	033	6	Waynesboro city	820 0000

51710 6855

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
47						Virginia	51		
	131	000	2	999	9	Westmoreland		193	0000
	132	209	1	999	9	Williamsburg city		830	5720
	133	000	2	034	6	Winchester city		840	0000
	134	000	2	999	9	Wise		195	0000
	135	000	2	999	9	Wythe		197	0000
	136	209	1	999	9	York		199	5720

51710 6856

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
48						Washington	53	
	001	000	2	999	9	Adams		001 0000
	002	000	2	999	9	Asotin		003 0000
	003	243	1			Benton		005 6740
				011	5	Kennewick		
				029	5	Richland		
				999	9	Balance of county		
	004	000	2			Chelan		007 0000
				035	6	Wenatchee		
				999	9	Balance of county		
	005	000	2			Clallam		009 0000
				024	6	Port Angeles		
				999	9	Balance of county		
	006	300	1			Clark		011 8725
				033	5	Vancouver		
				999	9	Balance of county		
	007	000	2	999	9	Columbia		013 0000
	008	000	2			Cowlitz		015 0000
				010	6	Kelso		
				015	5	Longview		
				999	9	Balance of county		
	009	000	2	999	9	Douglas		017 0000
	010	000	2	999	9	Ferry		019 0000
	011	243	1			Franklin		021 6740
				023	6	Pasco		
				999	9	Balance of county		
	012	000	2	999	9	Garfield		023 0000
	013	000	2			Grant		025 0000
				018	6	Moses Lake		
				999	9	Balance of county		
	014	000	2			Grays Harbor		027 0000
				001	6	Aberdeen		
				999	9	Balance of county		
	015	000	2			Island		029 0000
				021	6	Oak Harbor		
				999	9	Balance of county		
	016	000	2	999	9	Jefferson		031 0000
	017	270	1			King		033 7600
				002	5	Auburn		
				003	4	Bellevue		
				012	6	Kent		
				013	6	Kirkland		
				017	6	Mercer Island		
				027	6	Redmond		
				028	5	Renton		
				030	2	Seattle		
				999	9	Balance of county		

51710 6857

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
48						Washington	53	
	018	046	1			Kitsap		035 1150
				005	5	Bremerton		
				999	9	Balance of county		
	019	000	2			Kittitas		037 0000
				008	6	Ellensburg		
				999	9	Balance of county		
	020	000	2	999	9	Klickitat		039 0000
	021	000	2			Lewis		041 0000
				006	6	Centralia		
				999	9	Balance of county		
	022	000	2	999	9	Lincoln		043 0000
	023	000	2	999	9	Mason		045 0000
	024	000	2	999	9	Okanogan		047 0000
	025	000	2	999	9	Pacific		049 0000
	026	000	2	999	9	Pend Oreille		051 0000
	027	286	1			Pierce		053 8200
				026	6	Puyallup		
				032	3	Tacoma		
				999	9	Balance of county		
	028	000	2	999	9	San Juan		055 0000
	029	000	2			Skagit		057 0000
				020	6	Mount Vernon		
				999	9	Balance of county		
	030	000	2	999	9	Skamania		059 0000
	031	270	1			Snohomish		061 7600
				007	5	Edmonds		
				009	4	Everett		
				016	6	Lynnwood		
				019	6	Mountlake Terrace		
				999	9	Balance of county		
	032	278	1			Spokane		063 7840
				031	3	Spokane		
				999	9	Balance of county		
	033	000	2	999	9	Stevens		065 0000
	034	214	1			Thurston		067 5910
				014	6	Lacey		
				022	5	Olympia		
				999	9	Balance of county		
	035	000	2	999	9	Wahkiakum		069 0000
	036	000	2			Walla Walla		071 0000
				034	5	Walla Walla		
				999	9	Balance of county		
	037	031	1			Whatcom		073 0860
				004	5	Bellingham		
				999	9	Balance of county		
	038	000	2			Whitman		075 0000
				025	6	Pullman		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						State, County, City, or Country Name	FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S		St	Cnty	MSA
48						Washington	53		
				999	9	Balance of county			
	039	316	1			Yakima		077	9260
				036	5	Yakima			
				999	9	Balance of county			

51710 6859

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty	MSA
49						West Virginia	54	
	001	000	2	999	9	Barbour	001	0000
	002	000	2			Berkeley	003	0000
				007	6	Martinsburg		
				999	9	Balance of county		
	003	000	2	999	9	Boone	005	0000
	004	000	2	999	9	Braxton	007	0000
	005	283	1			Brooke	009	8080
				014	6	Weirton, part		
				999	9	Balance of county		
	006	131	1			Cabell	011	3400
				006	4	Huntington, part		
				999	9	Balance of county		
	007	000	2	999	9	Calhoun	013	0000
	008	000	2	999	9	Clay	015	0000
	009	000	2	999	9	Doddridge	017	0000
	010	000	2	999	9	Fayette	019	0000
	011	000	2	999	9	Gilmer	021	0000
	012	000	2	999	9	Grant	023	0000
	013	000	2	999	9	Greenbrier	025	0000
	014	000	2	999	9	Hampshire	027	0000
	015	283	1			Hancock	029	8080
				014	6	Weirton, part		
				999	9	Balance of county		
	016	000	2	999	9	Hardy	031	0000
	017	000	2			Harrison	033	0000
				004	6	Clarksburg		
				999	9	Balance of county		
	018	000	2	999	9	Jackson	035	0000
	019	000	2	999	9	Jefferson	037	0000
	020	058	1			Kanawha	039	1480
				003	4	Charleston		
				011	6	St. Albans		
				012	6	South Charleston		
				999	9	Balance of county		
	021	000	2	999	9	Lewis	041	0000
	022	000	2	999	9	Lincoln	043	0000
	023	000	2	999	9	Logan	045	0000
	024	000	2	999	9	McDowell	047	0000
	025	000	2			Marion	049	0000
				005	6	Fairmont		
				999	9	Balance of county		
	026	309	1			Marshall	051	9100
				009	6	Moundsville		
				015	6	Wheeling, part		
				999	9	Balance of county		
	028	000	2			Mercer	055	0000
	027	000	2	999	9	Mason	053	0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
49						West Virginia	54	
				002	6	Bluefield		
				999	9	Balance of county		
	029	074	1	999	9	Mineral		057 1900
	030	000	2	999	9	Mingo		059 0000
	031	000	2			Monongalia		061 0000
				008	5	Morgantown		
				999	9	Balance of county		
	032	000	2	999	9	Monroe		063 0000
	033	000	2	999	9	Morgan		065 0000
	034	000	2	999	9	Nicholas		067 0000
	035	309	1			Ohio		069 9000
				015	5	Wheeling, part		
				999	9	Balance of county		
	036	000	2	999	9	Pendleton		071 0000
	037	000	2	999	9	Pleasants		073 0000
	038	000	2	999	9	Pocahontas		075 0000
	039	000	2	999	9	Preston		077 0000
	040	058	1	999	9	Putnam		079 1480
	041	000	2			Raleigh		081 0000
				001	6	Beckley		
				999	9	Balance of county		
	042	000	2	999	9	Randolph		083 0000
	043	000	2	999	9	Ritchie		085 0000
	044	000	2	999	9	Roane		087 0000
	045	000	2	999	9	Summers		089 0000
	046	000	2	999	9	Taylor		091 0000
	047	000	2	999	9	Tucker		093 0000
	048	000	2	999	9	Tyler		095 0000
	049	000	2	999	9	Upshur		097 0000
	050	131	1			Wayne		099 3400
				006	4	Huntington, part		
				999	9	Balance of county		
	051	000	2	999	9	Webster		101 0000
	052	000	2	999	9	Wetzel		103 0000
	053	000	2	999	9	Wirt		105 0000
	054	221	1			Wood		107 6020
				010	5	Parkersburg		
				013	6	Vienna		
				999	9	Balance of county		
	055	000	2	999	9	Wyoming		109 0000

51710 6861

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	FIPS Codes St	Cnty	MSA
50						Wisconsin	55		
	001	000	2	999	9	Adams		001	0000
	002	000	2	999	9	Ashland		003	0000
	003	000	2	999	9	Barron		005	0000
	004	000	2	999	9	Bayfield		007	0000
	005	120	1			Brown		009	3080
				001	6	Allouez town			
				003	6	Ashwaubenon			
				010	6	De Pere			
				016	4	Green Bay			
				999	9	Balance of county			
	006	000	2	999	9	Buffalo		011	0000
	007	000	2	999	9	Burnett		013	0000
	008	016	1			Calumet		015	0460
				002	4	Appleton, part			
				999	9	Balance of county			
	009	088	1			Chippewa		017	2290
				008	6	Chippewa Falls			
				011	4	Eau Claire, part			
				999	9	Balance of county			
	010	000	2	999	9	Clark		019	0000
	011	000	2	999	9	Columbia		021	0000
	012	000	2	999	9	Crawford		023	0000
	013	179	1			Dane		025	4720
				023	3	Madison			
				031	6	Middleton			
				045	6	Sun Prairie			
				999	9	Balance of county			
	014	000	2			Dodge		027	0000
				004	6	Beaver Dam			
				048	6	Watertown, part			
				999	9	Balance of county			
	015	000	2	999	9	Door		029	0000
	016	087	1			Douglas		031	2240
				046	5	Superior			
				999	9	Balance of county			
	017	000	2			Dunn		033	0000
				029	6	Menomonie			
				999	9	Balance of county			
	018	088	1			Eau Claire		035	2290
				011	4	Eau Claire, part			
				999	9	Balance of county			
	019	000	2	999	9	Florence		037	0000
	020	000	2			Fond du Lac		039	0000
				012	5	Fond du Lac			
				999	9	Balance of county			
	021	000	2	999	9	Forest		041	0000
	022	000	2	999	9	Grant		043	0000

51710 6862

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty MSA
50						Wisconsin	55	
	023	000	2			Green		045 0000
				033	6	Monroe		
				999	9	Balance of county		
	024	000	2	999	9	Green Lake		047 0000
	025	000	2	999	9	Iowa		049 0000
	026	000	2	999	9	Iron		051 0000
	027	000	2	999	9	Jackson		053 0000
	028	000	2			Jefferson		055 0000
				048	6	Watertown, part		
				055	6	Whitewater, part		
				999	9	Balance of county		
	029	000	2	999	9	Juneau		057 0000
	030	150	1			Kenosha		059 3800
				021	4	Kenosha		
				999	9	Balance of county		
	031	000	2	999	9	Kewaunee		061 0000
	032	154	1			La Crosse		063 3870
				022	5	La Crosse		
				999	9	Balance of county		
	033	000	2	999	9	Lafayette		065 0000
	034	000	2	999	9	Langlade		067 0000
	035	000	2	999	9	Lincoln		069 0000
	036	000	2			Manitowoc		071 0000
				024	5	Manitowoc		
				047	6	Two Rivers		
				999	9	Balance of county		
	037	307	1			Marathon		073 8940
				026	6	Marshfield, part		
				050	5	Wausau		
				999	9	Balance of county		
	038	000	2			Marinette		075 0000
				025	6	Marinette		
				999	9	Balance of county		
	039	000	2	999	9	Marquette		077 0000
	040	000	2	999	9	Menominee		078 0000
	041	190	1			Milwaukee		079 5080
				007	6	Brown Deer		
				009	6	Cudahy		
				013	6	Franklin		
				015	6	Glendale		
				017	6	Greendale		
				018	6	Greenfield		
				032	1	Milwaukee, part		
				037	6	Oak Creek		
				040	6	St. Francis		
				042	6	Shorewood		

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
50						Wisconsin	55
				043	6	South Milwaukee	
				051	4	Wauwatosa	
				052	4	West Allis	
				054	6	Whitefish Bay	
				999	9	Balance of county	
	042	000	2	999	9	Monroe	081 0000
	043	000	2	999	9	Oconto	083 0000
	044	000	2	999	9	Oneida	085 0000
	045	016	1			Outagamie	087 0460
				002	4	Appleton, part	
				020	6	Kaukauna	
				999	9	Balance of county	
	046	190	1			Ozaukee	089 5080
				030	6	Mequon	
				999	9	Balance of county	
	047	000	2	999	9	Pepin	091 0000
	048	000	2	999	9	Pierce	093 0000
	049	000	2	999	9	Polk	095 0000
	050	000	2			Portage	097 0000
				044	6	Stevens Point	
				999	9	Balance of county	
	051	000	2	999	9	Price	099 0000
	052	237	1			Racine	101 6600
				039	4	Racine	
				999	9	Balance of county	
	053	000	2	999	9	Richland	103 0000
	054	141	1			Rock	105 3620
				005	5	Beloit	
				019	4	Janesville	
				999	9	Balance of county	
	055	000	2	999	9	Rusk	107 0000
	056	191	1	999	9	St. Croix	109 5120
	057	000	2	999	9	Sauk	111 0000
	058	000	2	999	9	Sawyer	113 0000
	059	000	2	999	9	Shawano	115 0000
	060	272	1			Sheboygan	117 7620
				041	5	Sheboygan	
				999	9	Balance of county	
	061	000	2	999	9	Taylor	119 0000
	062	000	2	999	9	Trempealeau	121 0000
	063	000	2	999	9	Vernon	123 0000
	064	000	2	999	9	Vilas	125 0000
	065	000	2			Walworth	127 0000
				055	6	Whitewater, part	
				999	9	Balance of county	
	066	000	2	999	9	Washburn	129 0000

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MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
50						Wisconsin	55
	067	190	1			Washington	131 5080
				014	6	Germantown	
				032	1	Milwaukee, part	
				053	6	West Bend	
				999	9	Balance of county	
	068	190	1			Waukesha	133 5080
				006	5	Brookfield	
				028	5	Menomonee Falls	
				034	6	Muskego	
				036	5	New Berlin	
				049	4	Waukesha	
				999	9	Balance of county	
	069	000	2	999	9	Waupaca	135 0000
	070	000	2	999	9	Waushara	137 0000
	071	016	1			Winnebago	139 0460
				002	4	Appleton, part	
				027	6	Menasha	
				035	6	Neenah	
				038	5	Oshkosh	
				999	9	Balance of county	
	072	000	2			Wood	141 0000
				026	6	Marshfield, part	
				056	6	Wisconsin Rapids	
				999	9	Balance of county	

51710 6865

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes						FIPS Codes	
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St Cnty MSA
51						Wyoming	56
	001	000	2			Albany	001 0000
				005	6	Laramie	
				999	9	Balance of county	
	002	000	2	999	9	Big Horn	003 0000
	003	000	2			Campbell	005 0000
				003	6	Gillette	
				999	9	Balance of county	
	004	000	2			Carbon	007 0000
				006	6	Rawlins	
				999	9	Balance of county	
	005	000	2	999	9	Converse	009 0000
	006	000	2	999	9	Crook	011 0000
	007	000	2	999	9	Fremont	013 0000
	008	000	2	999	9	Goshen	015 0000
	009	000	2	999	9	Hot Springs	017 0000
	010	000	2	999	9	Johnson	019 0000
	011	062	1			Laramie	021 1580
				002	5	Cheyenne	
				999	9	Balance of county	
	012	000	2	999	9	Lincoln	023 0000
	013	054	1			Natrona	025 1350
				001	4	Casper	
				999	9	Balance of county	
	014	000	2	999	9	Niobrara	027 0000
	015	000	2	999	9	Park	029 0000
	016	000	2	999	9	Platte	031 0000
	017	000	2			Sheridan	033 0000
				008	6	Sheridan	
				999	9	Balance of county	
	018	000	2	999	9	Sublette	035 0000
	019	000	2			Sweetwater	037 0000
				004	6	Green River	
				007	6	Rock Springs	
				999	9	Balance of county	
	020	000	2	999	9	Teton	039 0000
	021	000	2	999	9	Uinta	041 0000
	022	000	2	999	9	Washakie	043 0000
	023	000	2	999	9	Weston	045 0000

51710 6866

MSA Codes Effective With 1990 Data. All Other Codes Effective With 1982 Data.

Vital Statistics Codes							FIPS Codes		
St	Cnty	MSA	M/NM	City	P/S	State, County, City, or Country Name	St	Cnty	MSA
52	ZZZ	ZZZ	Z	ZZZ	Z	Puerto Rico	00	000	0000
53	ZZZ	ZZZ	Z	ZZZ	Z	Virgin Islands	00	000	0000
54	ZZZ	ZZZ	Z	ZZZ	Z	Guam	00	000	0000
55	ZZZ	ZZZ	Z	ZZZ	Z	Canada	00	000	0000
56	ZZZ	ZZZ	Z	ZZZ	Z	Cuba	00	000	0000
57	ZZZ	ZZZ	Z	ZZZ	Z	Mexico	00	000	0000
59	ZZZ	ZZZ	Z	ZZZ	Z	Remainder of World	00	000	0000

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CHAPTER 4

LIST OF METROPOLITAN STATISTICAL AREAS AND THEIR COMPONENT COUNTIES

Metropolitan Statistical Areas Established in 1990 Page 1
and Adapted for Use by DVS

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
001			Abilene, TX MSA	0040		
	44		Texas		48	
		221	Taylor			441
002			Akron, OH PMSA	0080		
	36		Ohio		39	
		067	Portage			133
		077	Summit			153
003			Albany, GA MSA	0120		
	11		Georgia		13	
		047	Dougherty			095
		088	Lee			177
004			Albany-Schenectady-Troy, NY MSA	0160		
	33		New York		36	
		001	Albany			001
		019	Greene			039
		027	Montgomery			057
		039	Rensselaer			083
		042	Saratoga			091
		043	Schenectady			093
005			Albuquerque, NM MSA	0200		
	32		New Mexico		35	
		001	Bernalillo			001
006			Alexandria, LA MSA	0220		
	19		Louisiana		22	
		040	Rapides			079
007			Allentown-Bethlehem-Easton, PA-NJ MSA	0240		
	31		New Jersey		34	
		021	Warren			041
	39		Pennsylvania		42	
		013	Carbon			025
		039	Lehigh			077
		048	Northampton			095
008			Altoona, PA MSA	0280		
	39		Pennsylvania		42	
		007	Blair			013
009			Amarillo, TX MSA	0320		
	44		Texas		48	
		188	Potter			375
		191	Randall			381
010			Anaheim-Santa Ana, CA PMSA	0360		
	05		California		06	
		030	Orange			059
011			Anchorage, AK MSA	0380		
	02		Alaska		02	
		020	Anchorage, boext. with Anchorage city			020

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
012			Anderson, IN MSA	0400		
	15		Indiana		18	
		048	Madison			095
013			Anderson, SC MSA	0405		
	41		South Carolina		45	
		004	Anderson			007
014			Ann Arbor, MI PMSA	0440		
	23		Michigan		26	
		081	Washtenaw			161
015			Anniston, AL MSA	0450		
	01		Alabama		01	
		008	Calhoun			015
016			Appleton-Oshkosh-Neenah, WI MSA	0460		
	50		Wisconsin		55	
		008	Calumet			015
		045	Outagamie			087
		071	Winnebago			139
017			Asheville, NC MSA	0480		
	34		North Carolina		37	
		011	Buncombe			021
018			Athens, GA MSA	0500		
	11		Georgia		13	
		029	Clarke			059
		078	Jackson			157
		097	Madison			195
		108	Oconee			219
019			Atlanta, GA MSA	0520		
	11		Georgia		13	
		007	Barrow			013
		013	Butts			035
		028	Cherokee			057
		031	Clayton			063
		033	Cobb			067
		038	Coweta			077
		044	De Kalb			089
		048	Douglas			097
		056	Fayette			113
		058	Forsyth			117
		060	Fulton			121
		067	Gwinnett			135
		075	Henry			151
		107	Newton			217
		110	Paulding			223
		132	Rockdale			247
		136	Spalding			255
		147	Walton			297
020			Atlantic City, NJ MSA	0640		
	31		New Jersey		34	

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		001	Atlantic			001
		005	Cape May			009
021			Augusta, GA-SC MSA	0600		
	11		Georgia		13	
		036	Columbia			073
		094	McDuffie			189
		121	Richmond			245
	41		South Carolina		45	
		002	Aiken			003
022			Aurora-Elgin, IL PMSA	0620		
	14		Illinois		17	
		045	Kane			089
		047	Kendall			093
023			Austin, TX MSA	0640		
	44		Texas		48	
		105	Hays			209
		227	Travis			453
		246	Williamson			491
024			Bakersfield, CA MSA	0680		
	05		California		06	
		015	Kern			029
025			Baltimore, MD MSA	0720		
	21		Maryland		24	
		002	Anne Arundel			003
		003	Baltimore			005
		004	Baltimore city			510
		007	Carroll			013
		013	Harford			025
		014	Howard			027
		018	Queen Anne's			035
026			Bangor, ME NECMA	0733		
	20		Maine		23	
		010	Penobscot			019
027			Baton Rouge, LA MSA	0760		
	19		Louisiana		22	
		003	Ascension			005
		017	East Baton Rouge			033
		032	Livingston			063
		061	West Baton Rouge			121
028			Battle Creek, MI MSA	0780		
	23		Michigan		26	
		013	Calhoun			025
029			Beaumont-Port Arthur, TX MSA	0840		
	44		Texas		48	
		100	Hardin			199
		123	Jefferson			245
		181	Orange			361
030			Beaver County, PA PMSA	0845		

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
	39		Pennsylvania		42	
		004	Beaver			007
031			Bellingham, WA MSA	0860		
	48		Washington		53	
		037	Whatcom			073
032			Benton Harbor, MI MSA	0870		
	23		Michigan		26	
		011	Berrien			021
033			Bergen-Passaic, NJ PMSA	0875		
	31		New Jersey		34	
		002	Bergen			003
		016	Passaic			031
034			Billings, MT MSA	0880		
	27		Montana		30	
		056	Yellowstone			111
035			Biloxi-Gulfport, MS MSA	0920		
	25		Mississippi		28	
		023	Hancock			045
		024	Harrison			047
036			Binghamton, NY MSA	0960		
	33		New York		36	
		003	Broome			007
		050	Tioga			107
037			Birmingham, AL MSA	1000		
	01		Alabama		01	
		005	Blount			009
		037	Jefferson			073
		058	St. Clair			115
		059	Shelby			117
		064	Walker			127
038			Bismarck, ND MSA	1010		
	35		North Dakota		38	
		008	Burleigh			015
		030	Morton			059
039			Bloomington, IN MSA	1020		
	15		Indiana		18	
		053	Monroe			105
040			Bloomington-Normal, IL MSA	1040		
	14		Illinois		17	
		057	McLean			113
041			Boise City, ID MSA	1080		
	13		Idaho		16	
		001	Ada			001
042			Boston-Lawrence-Salem -Lowell-Brockton, MA NECMA	1123		
	22		Massachusetts		25	
		009	Essex			009
		009	Middlesex			017

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		011	Norfolk			021
		012	Plymouth			023
		013	Suffolk			025
043			Boulder-Longmont, CO PMSA	1125		
	06		Colorado		08	
		007	Boulder			013
044			Bradenton, FL MSA	1140		
	10		Florida		12	
		041	Manatee			081
045			Brazoria, TX PMSA	1145		
	44		Texas		48	
		020	Brazoria			039
046			Bremerton, WA MSA	1150		
	48		Washington		53	
		018	Kitsap			035
047			Bridgeport-Stamford -Norwalk-Danbury, CT NECMA	1163		
	07		Connecticut		09	
		001	Fairfield			001
048			Brownsville-Harlingen, TX MSA	1240		
	44		Texas		48	
		031	Cameron			061
049			Bryan-College Station, TX MSA	1260		
	44		Texas		48	
		021	Brazos			041
050			Buffalo, NY PMSA	1280		
	33		New York		36	
		014	Erie			029
051			Burlington, NC MSA	1300		
	34		North Carolina		37	
		001	Alamance			001
052			Burlington, VT NECMA	1303		
	46		Vermont		50	
		004	Chittenden			007
		007	Grand Isle			013
053			Canton, OH MSA	1320		
	36		Ohio		39	
		010	Carroll			019
		076	Stark			151
054			Casper, WY MSA	1350		
	51		Wyoming		56	
		013	Natrona			025
055			Cedar Rapids, IA MSA	1360		
	16		Iowa		19	
		057	Linn			113
056			Champaign-Urbana-Rantoul, IL MSA	1400		
	14		Illinois		17	
		019	Champaign			019

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
057			Charleston, SC MSA	1440		
	41		South Carolina		45	
		008	Berkeley			015
		010	Charleston			019
		018	Dorchester			035
058			Charleston, WV MSA	1480		
	49		West Virginia		54	
		020	Kanawha			039
		040	Putnam			079
059			Charlotte-Gastonia -Rock Hil, NC-SC MSA	1520		
	34		North Carolina		37	
		013	Cabarrus			025
		036	Gaston			071
		055	Lincoln			109
		060	Mecklenburg			119
		080	Rowan			159
		090	Union			179
	41		South Carolina		45	
		046	York			091
060			Charlottesville, VA MSA	1540		
	47		Virginia		51	
		002	Albemarle			003
		025	Charlottesville city			540
		045	Fluvanna			065
		055	Greene			079
061			Chattanooga, TN-GA MSA	1560		
	11		Georgia		13	
		023	Catoosa			047
		041	Dade			083
		146	Walker			295
	43		Tennessee		47	
		033	Hamilton			065
		058	Marion			115
		077	Sequatchie			153
062			Cheyenne, WY MSA	1580		
	51		Wyoming		56	
		011	Laramie			021
063			Chicago, IL PMSA	1600		
	14		Illinois		17	
		016	Cook			031
		022	Du Page			043
		056	McHenry			111
064			Chico, CA MSA	1620		
	05		California		06	
		004	Butte			007
065			Cincinnati, OH-KY-IN PMSA	1640		
	15		Indiana		18	

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Metropolitan Statistical Areas Established in 1990 and Adapted for Use by DVS

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		015	Dearborn			029
	18		Kentucky		21	
		008	Boone			015
		019	Campbell			037
		059	Kenton			117
	36		Ohio		39	
		013	Clermont			025
		031	Hamilton			061
		083	Warren			165
066			Clarksville-Hopkinsville, TN-KY MSA	1660		
	18		Kentucky		21	
		024	Christian			047
	43		Tennessee		47	
		063	Montgomery			125
067			Cleveland, OH PMSA	1680		
	36		Ohio		39	
		018	Cuyahoga			035
		028	Geauga			055
		043	Lake			085
		052	Medina			103
068			Colorado Springs, CO MSA	1720		
	06		Colorado		08	
		021	El Paso			041
069			Columbia, MO MSA	1740		
	26		Missouri		29	
		010	Boone			019
070			Columbia, SC MSA	1760		
	41		South Carolina		45	
		032	Lexington			063
		040	Richland			079
071			Columbus, GA-AL MSA	1800		
	01		Alabama		01	
		057	Russell			113
	11		Georgia		13	
		026	Chattahoochee			053
		106	Muscogee			215
072			Columbus, OH MSA	1840		
	36		Ohio		39	
		021	Delaware			041
		023	Fairfield			045
		025	Franklin			049
		045	Licking			089
		049	Madison			097
		065	Pickaway			129
		080	Union			159
073			Corpus Christi, TX MSA	1880		
	44		Texas		48	
		178	Nueces			355

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		205	San Patricio			409
074			Cumberland, MD-WV MSA	1900		
	21		Maryland		24	
		001	Allegany			001
	49		West Virginia		54	
		029	Mineral			057
075			Dallas, TX PMSA	1920		
	44		Texas		48	
		043	Collin			085
		057	Dallas			113
		061	Denton			121
		070	Ellis			139
		129	Kaufman			257
		199	Rockwall			397
076			Danville, VA MSA	1950		
	47		Virginia		51	
		035	Danville city			590
		097	Pittsylvania			143
077			Davenport-Rock Island -Moline, IA-IL MSA	1960		
	14		Illinois		17	
		037	Henry			073
		081	Rock Island			161
	16		Iowa		19	
		082	Scott			163
078			Dayton-Springfield, OH MSA	2000		
	36		Ohio		39	
		012	Clark			023
		029	Greene			057
		055	Miami			109
		057	Montgomery			113
079			Daytona Beach, FL MSA	2020		
	10		Florida		12	
		064	Volusia			127
080			Decatur, AL MSA	2030		
	01		Alabama		01	
		040	Lawrence			079
		052	Morgan			103
081			Decatur, IL MSA	2040		
	14		Illinois		17	
		058	Macon			115
082			Denver, CO PMSA	2080		
	06		Colorado		08	
		001	Adams			001
		003	Arapahoe			005
		016	Denver, coext. with Denver city			031
		035	Douglas			035
		039	Jefferson			059

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
083			Des Moines, IA MSA	2120		
	16		Iowa		19	
		025	Dallas			049
		077	Polk			153
		091	Warren			181
084			Detroit, MI PMSA	2160		
	23		Michigan		26	
		044	Lapeer			087
		047	Livingston			093
		050	Macomb			099
		058	Monroe			115
		063	Oakland			125
		074	St. Clair			147
		082	Wayne			163
085			Dothan, AL MSA	2180		
	01		Alabama		01	
		023	Dale			045
		035	Houston			069
086			Dubuque, IA MSA	2200		
	16		Iowa		19	
		031	Dubuque			061
087			Duluth, MN-WI MSA	2240		
	24		Minnesota		27	
		069	St. Louis			137
	50		Wisconsin		55	
		016	Douglas			031
088			Eau Claire, WI MSA	2290		
	50		Wisconsin		55	
		009	Chippewa			017
		018	Eau Claire			035
089			El Paso, TX MSA	2320		
	44		Texas		48	
		071	El Paso			141
090			Elkhart-Goshen, IN MSA	2330		
	15		Indiana		18	
		020	Elkhart			039
091			Elmira, NY MSA	2335		
	33		New York		36	
		007	Chemung			015
092			Enid, OK MSA	2340		
	37		Oklahoma		40	
		024	Garfield			047
093			Erie, PA MSA	2360		
	39		Pennsylvania		42	
		025	Erie			049
094			Eugene-Springfield, OR MSA	2400		
	38		Oregon		41	
		039	Lane			039

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
095			Evansville, IN-KY MSA	2440		
	15		Indiana		18	
		065	Posey			129
		082	Vanderburgh			163
		087	Warrick			173
	18		Kentucky		21	
		051	Henderson			101
096			Fargo-Moorhead, ND-MN MSA	2520		
	24		Minnesota		27	
		014	Clay			027
	35		North Dakota		38	
		009	Cass			017
097			Fayetteville, NC MSA	2560		
	34		North Carolina		37	
		026	Cumberland			051
098			Fayetteville-Springdale, AR MSA	2580		
	04		Arkansas		05	
		072	Washington			143
099			Flint, MI MSA	2640		
	23		Michigan		26	
		025	Genesee			049
100			Florence, AL MSA	2650		
	01		Alabama		01	
		017	Colbert			033
		039	Lauderdale			077
101			Florence, SC MSA	2655		
	41		South Carolina		45	
		021	Florence			041
102			Fort Collins-Loveland, CO MSA	2670		
	06		Colorado		08	
		035	Larimer			069
103			Fort Lauderdale-Hollywood -Pompano Beach, FL PSMA	2680		
	10		Florida		12	
		006	Broward			011
104			Fort Myers-Cape Coral, FL MSA	2700		
	10		Florida		12	
		036	Lee			071
105			Fort Pierce, FL MSA	2710		
	10		Florida		12	
		043	Martin			085
		056	St. Lucie			111
106			Fort Smith, AR-OK MSA	2720		
	04		Arkansas		05	
		017	Crawford			033
		066	Sebastian			131
	37		Oklahoma		40	
		069	Sequoyah			135

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
107			Fort Walton Beach, FL MSA	2750		
	10		Florida		12	
		046	Okaloosa			091
108			Fort Wayne, IN MSA	2760		
	15		Indiana		18	
		002	Allen			003
		017	De Kalb			033
		092	Whitley			183
109			Fort Worth-Arlington, TX PMSA	2800		
	44		Texas		48	
		126	Johnson			251
		184	Parker			367
		220	Tarrant			439
110			Fresno, CA MSA	2840		
	05		California		06	
		010	Fresno			019
111			Gadsden, AL MSA	2880		
	01		Alabama		01	
		028	Etowah			055
112			Gainesville, FL MSA	2900		
	10		Florida		12	
		001	Alachua			001
		004	Bradford			007
113			Galveston-Texas City, TX PMSA	2920		
	44		Texas		48	
		084	Galveston			167
114			Gary-Hammond, IN PMSA	2960		
	15		Indiana		18	
		048	Lake			089
		064	Porter			127
115			Glens Falls, NY MSA	2975		
	33		New York		36	
		068	Warren			113
		084	Washington			115
116			Grand Forks, ND MSA	2985		
	35		North Dakota		38	
		018	Grand Forks			035
117			Grand Rapids, MI MSA	3000		
	23		Michigan		26	
		041	Kent			081
		070	Ottawa			139
118			Great Falls, MT MSA	3040		
	27		Montana		30	
		007	Cascade			013
119			Greeley, CO MSA	3060		
	06		Colorado		08	
		123	Weld			123
120			Green Bay, WI MSA	3080		

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
	50		Wisconsin		55	
		005	Brown			009
121			Greensboro--Winston-Salem -High Point, NC MSA	3120		
	34		North Carolina		37	
		029	Davidson			057
		030	Davie			059
		034	Forsyth			067
		041	Guilford			081
		076	Randolph			151
		085	Stokes			169
		099	Yadkin			197
122			Greenville-Spartanburg, SC MSA	3160		
	41		South Carolina		45	
		023	Greenville			045
		039	Pickens			077
		042	Spartanburg			083
123			Hagerstown, MD MSA	3180		
	21		Maryland		24	
		022	Washington			043
124			Hamilton-Middletown, OH PMSA	3200		
	36		Ohio		39	
		009	Butler			017
125			Harrisburg-Lebanon-Carlisle, PA MSA	3240		
	39		Pennsylvania		42	
		021	Cumberland			041
		022	Dauphin			043
		038	Lebanon			075
		050	Perry			099
126			Hartford-New Britain -Middletown, CT NECMA	3283		
	07		Connecticut		09	
		002	Hartford			003
		004	Middlesex			007
		007	Tolland			013
127			Hickory-Morganton, NC MSA	3290		
	34		North Carolina		37	
		002	Alexander			003
		012	Burke			023
		018	Catawba			035
128			Honolulu, HI MSA	3320		
	12		Hawaii		15	
		002	Honolulu			003
129			Houma-Thibodaux, LA MSA	3350		
	19		Louisiana		22	
		023	Lafourche			057
		085	Terrebonne			111
130			Houston, TX PMSA	3360		

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
	44		Texas		48	
		079	Fort Bend			157
		101	Harris			201
		146	Liberty			291
		170	Montgomery			339
		237	Waller			473
131			Huntington-Ashland, WV-KY-OH MSA	3400		
	18		Kentucky		21	
		010	Boyd			019
		022	Carter			043
		045	Greenup			089
	36		Ohio		39	
		044	Lawrence			087
	49		West Virginia		54	
		006	Cabell			011
		050	Wayne			099
132			Huntsville, AL MSA	3440		
	01		Alabama		01	
		045	Madison			089
133			Indianapolis, IN MSA	3480		
	15		Indiana		18	
		006	Boone			011
		029	Hamilton			057
		030	Hancock			059
		032	Hendricks			063
		041	Johnson			081
		049	Marion			097
		055	Morgan			109
		073	Shelby			145
134			Iowa City, IA MSA	3500		
	16		Iowa		19	
		052	Johnson			103
135			Jackson, MI MSA	3520		
	23		Michigan		26	
		038	Jackson			075
136			Jackson, MS MSA	3560		
	25		Mississippi		28	
		025	Hinds			049
		045	Madison			089
		061	Rankin			121
137			Jackson, TN MSA	3580		
	43		Tennessee		47	
		057	Madison			113
138			Jacksonville, FL MSA	3600		
	10		Florida		12	
		019	Clay			019
		031	Duval			031
		045	Nassau			089

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Metropolitan Statistical Areas Established in 1990 and Adapted for Use by DVS

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		055	St. Johns			109
139			Jacksonville, NC MSA	3605		
	34		North Carolina		37	
		067	Onslow			133
140			Jamestown-Dunkirk, NY MSA	3610		
	33		New York		36	
		006	Chautauqua			013
141			Janesville-Beloit, WI MSA	3620		
	50		Wisconsin		55	
		054	Rock			105
142			Jersey City, NJ PMSA	3640		
	31		New Jersey		34	
		009	Hudson			017
143			Johnson City-Kingsport -Bristol, TN-VA MSA	3660		
	43		Tennessee		47	
		010	Carter			019
		037	Hawkins			073
		082	Sullivan			163
		086	Unicoi			171
		090	Washington			179
	47		Virginia		51	
		015	Bristol city			520
		115	Scott			169
		129	Washington			191
144			Johnstown, PA MSA	3680		
	39		Pennsylvania		42	
		011	Cambria			021
		056	Somerset			111
145			Joliet, IL PMSA	3690		
	14		Illinois		17	
		032	Grundy			063
		099	Will			197
146			Joplin, MO MSA	3710		
	26		Missouri		29	
		049	Jasper			097
		073	Newton			145
147			Kalamazoo, MI MSA	3720		
	23		Michigan		26	
		039	Kalamazoo			077
148			Kankakee, IL MSA	3740		
	14		Illinois		17	
		046	Kankakee			091
149			Kansas City, MO-KS MSA	3760		
	17		Kansas		20	
		046	Johnson			091
		052	Leavenworth			103
		061	Miami			121

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		105	Wyandotte			209
	26		Missouri		29	
		019	Cass			037
		024	Clay			047
		048	Jackson			095
		054	Lafayette			107
		083	Platte			165
		089	Ray			177
150			Kenosha, WI PMSA	3800		
	50		Wisconsin		55	
		030	Kenosha			059
151			Killeen-Temple, TX MSA	3810		
	44		Texas		48	
		014	Bell			027
		050	Coryell			099
152			Knoxville, TN MSA	3840		
	43		Tennessee		47	
		001	Anderson			001
		005	Blount			009
		029	Grainger			057
		045	Jefferson			089
		047	Knox			093
		078	Sevier			155
		087	Union			173
153			Kokomo, IN MSA	3850		
	15		Indiana		18	
		034	Howard			067
		080	Tipton			159
154			La Crosse, WI MSA	3870		
	50		Wisconsin		55	
		032	La Crosse			063
155			Lafayette, LA MSA	3880		
	19		Louisiana		22	
		028	Lafayette			055
		050	St. Martin			099
156			Lafayette-West Lafayette, IN MSA	3920		
	15		Indiana		18	
		079	Tippecanoe			157
157			Lake Charles, LA MSA	3960		
	19		Louisiana		22	
		010	Calcasieu			019
158			Lake County, IL PMSA	3965		
	14		Illinois		17	
		049	Lake			097
159			Lakeland-Winter Haven, FL MSA	3980		
	10		Florida		12	
		053	Polk			105
160			Lancaster, PA MSA	4000		

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Vital Statistics Codes Area	State	County	Area Name and County Components	FIPS Codes Area	State	Cnty
	39		Pennsylvania		42	
		036	Lancaster			071
161			Lansing-East Lansing, MI MSA	4040		
	23		Michigan		26	
		019	Clinton			037
		023	Eaton			045
		033	Ingham			065
162			Laredo, TX MSA	4080		
	44		Texas		48	
		240	Webb			479
163			Las Cruces, NM MSA	4100		
	32		New Mexico		35	
		008	Dona Ana			013
164			Las Vegas, NV MSA	4120		
	29		Nevada		32	
		003	Clark			003
165			Lawrence, KS MSA	4150		
	17		Kansas		20	
		023	Douglas			045
166			Lawton, OK MSA	4200		
	37		Oklahoma		40	
		016	Comanche			031
167			Lewiston-Auburn, ME NECMA	4243		
	20		Maine		23	
		001	Androscoggin			001
168			Lexington-Fayette, KY MSA	4280		
	18		Kentucky		21	
		009	Bourbon			017
		025	Clark			049
		034	Fayette, coext. with Lexington-Fayette			067
		057	Jessamine			113
		105	Scott			209
		120	Woodford			239
169			Lima, OH MSA	4320		
	36		Ohio		39	
		002	Allen			003
		006	Auglaize			011
170			Lincoln, NE MSA	4360		
	28		Nebraska		31	
		055	Lancaster			109
171			Little Rock-North Little Rock, AR MSA	4400		
	04		Arkansas		05	
		023	Faulkner			045
		043	Lonoke			085
		060	Pulaski			119
		063	Saline			125

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
172			Longview-Marshall, TX MSA	4420		
	44		Texas		48	
		092	Gregg			183
		102	Harrison			203
173			Lorain-Elyria, OH PMSA	4440		
	36		Ohio		39	
		047	Lorain			093
174			Los Angeles-Long Beach, CA PMSA	4480		
	05		California		06	
		019	Los Angeles			037
175			Louisville, KY-IN MSA	4520		
	15		Indiana		18	
		010	Clark			019
		022	Floyd			043
		031	Harrison			061
	18		Kentucky		21	
		015	Bullitt			029
		056	Jefferson			111
		093	Oldham			185
		106	Shelby			211
176			Lubbock, TX MSA	4600		
	44		Texas		48	
		152	Lubbock			303
177			Lynchburg, VA MSA	4640		
	47		Virginia		51	
		006	Amherst			009
		020	Campbell			031
		076	Lynchburg city			680
178			Macon-Warner Robins, GA MSA	4680		
	11		Georgia		13	
		011	Bibb			021
		076	Houston			153
		084	Jones			169
		111	Peach			225
179			Madison, WI MSA	4720		
	50		Wisconsin		55	
		013	Dane			025
180			Manchester-Nashua, NH NECMA	4763		
	30		New Hampshire		33	
		006	Hillsborough			011
181			Mansfield, OH MSA	4800		
	36		Ohio		39	
		139	Richland			139
182			McAllen-Edinburg-Mission, TX MSA	4880		
	44		Texas		48	
		108	Hidalgo			215
183			Medford, OR MSA	4890		
	38		Oregon		41	

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Metropolitan Statistical Areas Established in 1990 and Adapted for Use by DVS

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		015	Jackson			029
184			Melbourne-Titusville -Palm Bay, FL MSA	4900		
	10		Florida		12	
		005	Brevard			009
185			Memphis, TN-AR-MS MSA	4920		
	04		Arkansas		05	
		018	Crittenden			035
	25		Mississippi		28	
		017	De Soto			033
	43		Tennessee		47	
		079	Shelby			157
		084	Tipton			167
186			Merced, CA MSA	4940		
	05		California		06	
		024	Merced			047
187			Miami-Hialeah, FL PMSA	5000		
	10		Florida		12	
		013	Dade			025
188			Middlesex-Somerset -Hunterdon, NJ PSMA	5015		
	31		New Jersey		34	
		010	Hunterdon			019
		012	Middlesex			023
		018	Somerset			035
189			Midland, TX MSA	5040		
	44		Texas		48	
		165	Midland			329
190			Milwaukee, WI PMSA	5080		
	50		Wisconsin		55	
		041	Milwaukee			079
		046	Ozaukee			089
		067	Washington			131
		068	Waukesha			133
191			Minneapolis-St. Paul, MN-WI MSA	5120		
	24		Minnesota		27	
		002	Anoka			003
		010	Carver			019
		013	Chisago			025
		019	Dakota			037
		027	Hennepin			053
		030	Isanti			059
		062	Ramsey			123
		070	Scott			139
		082	Washington			163
		086	Wright			171
	55		Wisconsin		55	
		056	St. Croix			109

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
192			Mobile, AL MSA	5160		
	01		Alabama		01	
		002	Baldwin			003
		049	Mobile			097
193			Modesto, CA MSA	5170		
	05		California		06	
		050	Stanislaus			099
194			Monmouth-Ocean, NJ PMSA	5190		
	31		New Jersey		34	
		013	Monmouth			025
		015	Ocean			029
195			Monroe, LA MSA	5200		
	19		Louisiana		22	
		037	Ouachita			073
196			Montgomery, AL MSA	5240		
	01		Alabama		01	
		001	Autauga			001
		026	Elmore			051
		051	Montgomery			101
197			Muncie, IN MSA	5280		
	15		Indiana		18	
		018	Delaware			035
198			Muskegon, MI MSA	5320		
	23		Michigan		26	
		061	Muskegon			121
199			Naples, FL MSA	5345		
	10		Florida		12	
		011	Collier			021
200			Nashville, TN MSA	5360		
	43		Tennessee		47	
		011	Cheatham			021
		019	Davidson			037
		022	Dickson			043
		074	Robertson			147
		075	Rutherford			149
		083	Sumner			165
		094	Williamson			187
		095	Wilson			189
201			Nassau-Suffolk, NY PMSA	5380		
	33		New York		36	
		028	Nassau			059
		048	Suffolk			103
202			New Bedford-Fall River -Attleboro, MA NECMA	5403		
	22		Massachusetts		25	
		003	Bristol			005
203			New Haven-Waterbury -Meriden, CT NECMA	5483		

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
	07		Connecticut		09	
		005	New Haven			009
204			New London-Norwich, CT NECMA	5523		
	07		Connecticut		09	
		006	New London			011
205			New Orleans, LA MSA	5560		
	19		Louisiana		22	
		026	Jefferson			051
		036	Orleans, coext. with New Orleans city			071
		044	St. Bernard			087
		045	St. Charles			089
		048	St. John the Baptist			095
		052	St. Tammany			103
206			New York, NY PMSA	5600		
	33		New York		36	
		029	New York city			005
		038	Putnam			079
		040	Rockland			087
		056	Westchester			119
207			Newark, NJ PMSA	5640		
	31		New Jersey		34	
		007	Essex			013
		014	Morris			027
		019	Sussex			037
		020	Union			039
208			Niagara Falls, NY PMSA	5700		
	33		New York		36	
		030	Niagara			063
209			Norfolk-Virginia Beach -Newport News, VA MSA	5720		
	47		Virginia		51	
		026	Chesapeake city			550
		052	Gloucester			073
		058	Hampton city			650
		066	James City			095
		087	Newport News city			700
		088	Norfolk city			710
		098	Poquoson city			735
		099	Portsmouth city			740
		123	Suffolk city			800
		127	Virginia Beach city			810
		132	Williamsburg city			830
		136	York			199
210			Oakland, CA PMSA	5775		
	05		California		06	
		001	Alameda			001
		007	Contra Costa			013

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
211			Ocala, FL MSA	5790		
	10		Florida		12	
		042	Marion			083
212			Odessa, TX MSA	5800		
	44		Texas		48	
		068	Ector			135
213			Oklahoma City, OK MSA	5880		
	37		Oklahoma		40	
		009	Canadian			017
		014	Cleveland			027
		042	Logan			083
		044	McClain			087
		055	Oklahoma			109
		063	Pottawatomie			125
214			Olympia, WA MSA	5910		
	48		Washington		53	
		034	Thurston			067
215			Omaha, NE-IA MSA	5920		
	16		Iowa		19	
		078	Pottawattamie			155
	28		Nebraska		31	
		028	Douglas			055
		077	Sarpy			153
		089	Washington			177
216			Orange County, NY PMSA	5950		
	33		New York		36	
		034	Orange			071
217			Orlando, FL MSA	5960		
	10		Florida		12	
		048	Orange			095
		049	Osceola			097
		059	Seminole			117
218			Owensboro, KY MSA	5990		
	18		Kentucky		21	
		030	Daviess			059
219			Oxnard-Ventura, CA PMSA	6000		
	05		California		06	
		056	Ventura			111
220			Panama City, FL MSA	6015		
	10		Florida		12	
		003	Bay			005
221			Parkersburg-Marietta, WV-OH MSA	6030		
	36		Ohio		39	
		084	Washington			167
	49		West Virginia		54	
		054	Wood			107
222			Pascagoula, MS MSA	6035		
	25		Mississippi		28	

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		030	Jackson			059
223			Pensacola, FL MSA	6080		
	10		Florida		12	
		017	Escambia			033
		057	Santa Rosa			113
224			Peoria, IL MSA	6120		
	14		Illinois		17	
		072	Peoria			143
		090	Tazewell			179
		102	Woodford			203
225			Philadelphia, PA-NJ PMSA	6160		
	31		New Jersey		34	
		003	Burlington			005
		004	Camden			007
		008	Gloucester			015
	39		Pennsylvania		42	
		009	Bucks			017
		015	Chester			029
		023	Delaware			045
		046	Montgomery			091
		051	Philadelphia, coext. with Philadelphia city			101
226			Phoenix, AZ MSA	6200		
	03		Arizona		04	
		007	Maricopa			013
227			Pine Bluff, AR MSA	6240		
	04		Arkansas		05	
		035	Jefferson			069
228			Pittsburgh, PA PMSA	6280		
	39		Pennsylvania		42	
		002	Allegheny			003
		026	Fayette			051
		063	Washington			125
		065	Westmoreland			129
229			Pittsfield, MA NECMA	6323		
	22		Massachusetts		25	
		002	Berkshire			003
230			Portland, ME NECMA	6403		
	20		Maine		23	
		003	Cumberland			005
231			Portland, OR PMSA	6440		
	38		Oregon		41	
		003	Clackamas			005
		026	Multnomah			051
		034	Washington			067
		036	Yamhill			071
232			Portsmouth-Dover-Rochester NH NECMA	6450		

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Metropolitan Statistical Areas Established in 1990 and Adapted for Use by DVS

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
	30		New Hampshire		33	
		008	Rockingham			015
		009	Strafford			017
233			Poughkeepsie, NY MSA	6460		
	33		New York		36	
		013	Dutchess			027
234			Providence-Pawtucket -Woonsocket, RI NECMA	6483		
	40		Rhode Island		44	
		001	Bristol			001
		002	Kent			003
		004	Providence			007
		005	Washington			009
235			Provo-Orem, UT MSA	6520		
	45		Utah		49	
		025	Utah			049
236			Pueblo, CO MSA	6560		
	06		Colorado		08	
		051	Pueblo			101
237			Racine, WI PMSA	6600		
	50		Wisconsin		55	
		052	Racine			101
238			Raleigh-Durham, NC MSA	6640		
	34		North Carolina		37	
		032	Durham			063
		035	Franklin			069
		068	Orange			135
		092	Wake			183
239			Rapid City, SD MSA	6660		
	42		South Dakota		46	
		051	Pennington			103
240			Reading, PA MSA	6680		
	39		Pennsylvania		42	
		006	Berks			011
241			Redding, CA MSA	6690		
	05		California		06	
		045	Shasta			089
242			Reno, NV MSA	6720		
	29		Nevada		32	
		016	Washoe			031
243			Richland-Kennewick-Pasco, WA MSA	6740		
	48		Washington		53	
		003	Benton			005
		011	Franklin			021
244			Richmond-Petersburg, VA MSA	6760		
	47		Virginia		51	
		033	Charles City			036
		027	Chesterfield			041

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		030	Colonial Heights city			570
		037	Dinwiddie			053
		053	Goochland			075
		059	Hanover			085
		061	Henrico			087
		064	Hopewell city			670
		086	New Kent			127
		096	Petersburg city			730
		100	Powhatan			145
		102	Prince George			149
		108	Richmond city			760
245			Riverside-San Bernardino, CA PMSA	6780		
	05		California		06	
		033	Riverside			065
		036	San Bernardino			071
246			Roanoke, VA MSA	6800		
	47		Virginia		51	
		014	Botetourt			023
		109	Roanoke			161
		110	Roanoke city			770
		114	Salem city			775
247			Rochester, MN MSA	6820		
	24		Minnesota		27	
		055	Olmsted			109
248			Rochester, NY MSA	6840		
	33		New York		36	
		051	Livingston			051
		055	Monroe			055
		069	Ontario			069
		073	Orleans			073
		117	Wayne			117
249			Rockford, IL MSA	6880		
	14		Illinois		17	
		007	Boone			007
		201	Winnebago			201
250			Sacramento, CA MSA	6920		
	05		California		06	
		017	El Dorado			017
		061	Placer			061
		067	Sacramento			067
		113	Yolo			113
251			Saginaw-Bay City-Midland, MI MSA	6960		
	23		Michigan		26	
		017	Bay			017
		111	Midland			111
		145	Saginaw			145
252			St. Cloud, MN MSA	6980		
	24		Minnesota		27	

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Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		005	Benton			009
		071	Sherburne			141
		073	Stearns			145
253			St. Joseph, MO MSA	7000		
	26		Missouri		29	
		011	Buchanan			021
254			St. Louis, MO-IL MSA	7040		
	14		Illinois		17	
		014	Clinton			027
		042	Jersey			083
		060	Madison			119
		067	Monroe			133
		082	St. Clair			163
	26		Missouri		29	
		036	Franklin			071
		050	Jefferson			099
		092	St. Charles			183
		096	St. Louis			189
		097	St. Louis city			510
255			Salem, OR MSA	7080		
	38		Oregon		41	
		024	Marion			047
		027	Polk			053
256			Salinas-Seaside-Monterey, CA MSA	7120		
	05		California		06	
		027	Monterey			053
257			Salt Lake City-Ogden, UT MSA	7160		
	45		Utah		49	
		006	Davis			011
		018	Salt Lake			035
		029	Weber			057
258			San Angelo, TX MSA	7200		
	44		Texas		48	
		226	Tom Green			451
259			San Antonio, TX MSA	7240		
	44		Texas		48	
		015	Bexar			029
		046	Comal			091
		094	Guadalupe			187
260			San Diego, CA MSA	7320		
	05		California		06	
		037	San Diego			073
261			San Francisco, CA PMSA	7360		
	05		California		06	
		021	Marin			041
		038	San Francisco, coext. with San Francisco city			075
		041	San Mateo			081

51710 6892

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
262			San Jose, CA PMSA	7400		
	05		California		06	
		043	Santa Clara			085
263			Santa Barbara-Santa Maria-Lompoc, CA MSA	7480		
	05		California		06	
		042	Santa Barbara			083
264			Santa Cruz, CA PMSA	7485		
	05		California		06	
		044	Santa Cruz			087
265			Santa Fe, NM MSA	7490		
	32		New Mexico		35	
		016	Los Alamos			028
		027	Santa Fe			049
266			Santa Rosa-Petaluma, CA PMSA	7500		
	05		California		06	
		049	Sonoma			097
267			Sarasota, FL MSA	7510		
	10		Florida		12	
		058	Sarasota			115
268			Savannah, GA MSA	7520		
	11		Georgia		13	
		025	Chatham			051
		051	Effingham			103
269			Scranton--Wilkes-Barre, PA MSA	7560		
	39		Pennsylvania		42	
		019	Columbia			037
		035	Lackawanna			069
		040	Luzerne			079
		045	Monroe			089
		066	Wyoming			131
270			Seattle, WA PMSA	7600		
	48		Washington		53	
		017	King			033
		031	Snohomish			061
271			Sharon, PA MSA	7610		
	39		Pennsylvania		42	
		043	Mercer			085
272			Sheboygan, WI MSA	7620		
	50		Wisconsin		55	
		060	Sheboygan			117
273			Sherman-Denison, TX MSA	7640		
	44		Texas		48	
		091	Grayson			181
274			Shreveport, LA MSA	7680		
	19		Louisiana		22	
		015	Bossier			015
		017	Caddo			017

51710 6893

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
275			Sioux City, IA-NE MSA	7720		
	16		Iowa		19	
		097	Woodbury			193
	28		Nebraska		31	
		022	Dakota			043
276			Sioux Falls, SD MSA	7760		
	42		South Dakota		46	
		049	Minnehaha			099
277			South Bend-Mishawaka, IN MSA	7800		
	15		Indiana		18	
		071	St. Joseph			141
278			Spokane, WA MSA	7840		
	48		Washington		53	
		032	Spokane			063
279			Springfield, IL MSA	7880		
	14		Illinois		17	
		065	Menard			129
		084	Sangamon			167
280			Springfield, MO MSA	7920		
	26		Missouri		29	
		022	Christian			043
		039	Greene			077
281			Springfield, MA NECMA	8003		
	22		Massachusetts		25	
		007	Hampden			013
		008	Hampshire			015
282			State College, PA MSA	8050		
	39		Pennsylvania		42	
		014	Centre			027
283			Steubenville-Weirton, OH-WV MSA	8080		
	36		Ohio		39	
		041	Jefferson			081
	49		West Virginia		54	
		005	Brooke			009
		015	Hancock			029
284			Stockton, CA MSA	8120		
	05		California		06	
		039	San Joaquin			077
285			Syracuse, NY MSA	8160		
	33		New York		36	
		025	Madison			053
		032	Onondaga			067
		036	Oswego			075
286			Tacoma, WA PMSA	8200		
	48		Washington		53	
		027	Pierce			053
287			Tallahassee, FL MSA	8240		
	10		Florida		12	

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Vital Statistics Codes Area	State	County	Area Name and County Components	FIPS Codes Area	State	Cnty
		020	Gadsden			039
		037	Leon			073
288			Tampa-St. Petersburg -Clearwater, FL MSA	8280		
	10		Florida		12	
		027	Hernando			053
		029	Hillsborough			057
		051	Pasco			101
		052	Pinellas			103
289			Terre Haute, IN MSA	8320		
	15		Indiana		18	
		011	Clay			021
		084	Vigo			167
290			Texarkana, TX-Texarkana, AR MSA	8360		
	04		Arkansas		05	
		046	Miller			091
	44		Texas		48	
		019	Bowie			037
291			Toledo, OH MSA	8400		
	36		Ohio		39	
		026	Fulton			051
		048	Lucas			095
		087	Wood			173
292			Topeka, KS MSA	8440		
	17		Kansas		20	
		089	Shawnee			177
293			Trenton, NJ PMSA	8480		
	31		New Jersey		34	
		011	Mercer			021
294			Tucson, AZ MSA	8520		
	03		Arizona		04	
		010	Pima			019
295			Tulsa, OK MSA	8560		
	37		Oklahoma		40	
		019	Creek			037
		057	Osage			113
		066	Rogers			131
		072	Tulsa			143
		073	Wagoner			145
296			Tuscaloosa, AL MSA	8600		
	01		Alabama		01	
		063	Tuscaloosa			125
297			Tyler, TX MSA	8640		
	44		Texas		48	
		212	Smith			423
298			Utica-Rome, NY MSA	8680		
	33		New York		36	
		021	Herkimer			043

51710 6895

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		031	Oneida			065
299			Vallejo-Fairfield-Napa, CA PMSA	8720		
	05		California		06	
		028	Napa			055
		048	Solano			095
300			Vancouver, WA PMSA	8725		
	48		Washington		53	
		006	Clark			011
301			Victoria, TX MSA	8750		
	44		Texas		48	
		235	Victoria			469
302			Vineland-Millville -Bridgeton, NJ PMSA	8760		
	31		New Jersey		34	
		006	Cumberland			011
303			Visalia-Tulare-Porterville, CA MSA	8780		
	05		California		06	
		054	Tulare			107
304			Waco, TX MSA	8800		
	44		Texas		48	
		155	McLennan			309
305			Washington, DC-MD-VA MSA	8840		
	09		Dist. of Columbia		11	
		001	District of Columbia			001
	21		Maryland		24	
		005	Calvert			009
		009	Charles			017
		011	Frederick			021
		016	Montgomery			031
		017	Prince George's			033
	47		Virginia		51	
		003	Alexandria city			510
		013	Arlington			013
		040	Fairfax			059
		041	Fairfax city			600
		042	Falls Church city			610
		073	Loudoun			107
		078	Manassas city			683
		079	Manassas Park city			685
		103	Prince William			153
		121	Stafford			179
306			Waterloo-Cedar Falls, IA MSA	8900		
	16		Iowa		19	
		007	Black Hawk			013
		009	Bremer			017
307			Wausau, WI MSA	8940		
	50		Wisconsin		55	
		037	Marathon			073

51710 6896

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
308			West Palm Beach-Boca Raton -Delray Beach, FL MSA	8960		
	10		Florida		12	
		050	Palm Beach			099
309			Wheeling, WV-OH MSA	9000		
	36		Ohio		39	
		007	Belmont			013
	49		West Virginia		54	
		026	Marshall			051
		035	Ohio			069
310			Wichita, KS MSA	9040		
	17		Kansas		20	
		008	Butler			015
		040	Harvey			079
		087	Sedgwick			173
311			Wichita Falls, TX MSA	9080		
	44		Texas		48	
		243	Wichita			485
312			Williamsport, PA MSA	9140		
	39		Pennsylvania		42	
		041	Lycoming			081
313			Wilmington, DE-NJ-MD PMSA	9160		
	08		Delaware		10	
		002	New Castle			003
	21		Maryland		24	
		008	Cecil			015
	31		New Jersey		34	
		017	Salem			033
314			Wilmington, NC MSA	9200		
	34		North Carolina		37	
		065	New Hanover			129
315			Worcester-Fitchburg -Leominster, MA NECMA	9240		
	22		Massachusetts		25	
		014	Worcester			027
316			Yakima, WA MSA	9260		
	48		Washington		53	
		039	Yakima			077
317			York, PA MSA	9280		
	39		Pennsylvania		42	
		001	Adams			001
		067	York			133
318			Youngstown-Warren, OH MSA	[illegible]		
	36		Ohio		39	
		050	Mahoning			099
		[illegible]	Trumbull			155
319			[illegible] City, CA MSA			
	05		California		06	

51710 6897

Vital Statistics Codes				FIPS Codes		
Area	State	County	Area Name and County Components	Area	State	Cnty
		051	Sutter			101
		058	Yuba			115
320			Yuma, AZ MSA	9360		
	03		Arizona		04	
		014	Yuma			027

51710 6898

Chapter 6

SYMBOLS USED IN TABLES

Symbol	Explanation
---	Data not available
...	Category not applicable
-	Quantity zero
0.0	Quantity more than 0 but less than 0.05
*	Figure does not meet standards of reliability or precision

51710 6899

NATALITY DOCUMENTATION TABLE 1.
LIVE BIRTHS BY AGE OF MOTHER, LIVE-BIRTH ORDER, AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

LIVE-BIRTH ORDER AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		UNDER 15 YEARS	15-19 YEARS	20-24 YEARS	25-29 YEARS
ALL RACES					
TOTAL.....	4,000,240	12,554	501,093	1,038,127	1,128,862
FIRST CHILD.....	1,619,840	12,100	379,543	486,093	413,142
SECOND CHILD.....	1,289,326	363	96,219	345,612	396,329
THIRD CHILD.....	645,596	24	19,513	140,247	197,099
FOURTH CHILD.....	253,619	5	3,282	44,653	74,268
FIFTH CHILD.....	96,154	-	450	12,924	26,456
SIXTH CHILD.....	40,647	-	58	3,425	10,296
SEVENTH CHILD.....	18,442	-	16	878	3,928
EIGHTH CHILD AND OVER.	13,545	-	7	306	2,238
NOT STATED.....	18,071	62	2,005	3,989	5,106

51710 6900

NATALITY DOCUMENTATION TABLE 1.
LIVE BIRTHS BY AGE OF MOTHER, LIVE-BIRTH ORDER, AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

LIVE-BIRTH ORDER AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		UNDER 15 YEARS	15-19 YEARS	20-24 YEARS	25-29 YEARS
WHITE					
TOTAL	3,149,833	5,755	341,817	790,154	920,772
FIRST CHILD	1,294,431	5,559	270,357	390,926	348,945
SECOND CHILD	1,038,865	144	59,470	267,272	331,277
THIRD CHILD	503,392	14	9,381	96,211	157,256
FOURTH CHILD	186,085	3	1,139	25,421	54,404
FIFTH CHILD	65,184	-	109	5,808	16,842
SIXTH CHILD	25,776	-	27	1,213	5,493
SEVENTH CHILD	11,209	-	7	299	1,787
EIGHTH CHILD AND OVER	11,033	-	4	110	778
NOT STATED	13,858	35	1,323	2,894	3,990

51710 6901

NATALITY DOCUMENTATION TABLE 1.
LIVE BIRTHS BY AGE OF MOTHER, LIVE-BIRTH ORDER, AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

LIVE-BIRTH ORDER AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		UNDER 15 YEARS	15-19 YEARS	20-24 YEARS	25-29 YEARS
ALL OTHER					
TOTAL	850,407	6,799	159,276	247,973	208,090
FIRST CHILD	325,409	6,541	109,186	95,167	64,197
SECOND CHILD	250,461	219	36,749	78,340	65,052
THIRD CHILD	142,204	10	10,132	44,036	39,843
FOURTH CHILD	67,534	2	2,143	19,232	19,864
FIFTH CHILD	30,970	-	341	7,116	9,614
SIXTH CHILD	14,871	-	31	2,212	4,803
SEVENTH CHILD	7,233	-	9	579	2,141
EIGHTH CHILD AND OVER	7,512	-	3	196	1,460
NOT STATED	4,213	27	682	1,095	1,116

51710 6902

NATALITY DOCUMENTATION TABLE 1.

LIVE BIRTHS BY AGE OF MOTHER, LIVE-BIRTH ORDER, AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

LIVE-BIRTH ORDER AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		UNDER 15 YEARS	15-19 YEARS	20-24 YEARS	25-29 YEARS
BLACK					
TOTAL	658,875	6,417	143,153	208,149	151,566
FIRST CHILD	245,658	6,185	97,314	75,454	39,317
SECOND CHILD	190,344	195	33,489	66,628	47,611
THIRD CHILD	115,261	8	9,385	38,895	32,514
FOURTH CHILD	55,998	2	1,991	17,256	16,542
FIFTH CHILD	25,439	-	306	6,346	7,899
SIXTH CHILD	11,930	-	27	1,973	3,936
SEVENTH CHILD	5,612	-	9	495	1,743
EIGHTH CHILD AND OVER	5,315	-	3	165	1,177
NOT STATED	3,318	27	629	937	827

51710 6903

NATALITY DOCUMENTATION TABLE 1.
LIVE BIRTHS BY AGE OF MOTHER, LIVE-BIRTH ORDER, AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

LIVE-BIRTH ORDER AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		30-34 YEARS	35-39 YEARS	40-44 YEARS	45-49 YEARS
ALL RACES					
TOTAL	4,000,240	901,151	357,053	59,071	2,329
FIRST CHILD	1,619,840	240,602	76,129	11,806	425
SECOND CHILD	1,289,326	323,598	111,764	15,065	376
THIRD CHILD	645,596	193,567	82,795	11,939	412
FOURTH CHILD	253,619	81,092	42,431	7,600	288
FIFTH CHILD	96,154	31,913	19,763	4,430	218
SIXTH CHILD	40,647	14,055	9,973	2,697	143
SEVENTH CHILD	18,442	6,443	5,367	1,689	121
EIGHTH CHILD AND OVER	18,545	5,442	6,814	3,410	328
NOT STATED	18,071	4,439	2,017	435	18

51710 6904

NATALITY DOCUMENTATION TABLE 1.

LIVE BIRTHS BY AGE OF MOTHER, LIVE-BIRTH ORDER, AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

LIVE-BIRTH ORDER AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		30-34 YEARS	35-39 YEARS	40-44 YEARS	45-49 YEARS
WHITE					
TOTAL.....	3,149,833	749,446	292,693	47,386	1,810
FIRST CHILD.....	1,294,431	203,746	64,546	10,001	351
SECOND CHILD.....	1,038,865	274,824	93,178	12,376	324
THIRD CHILD.....	503,392	162,362	68,258	9,599	311
FOURTH CHILD.....	186,085	64,872	34,044	5,962	240
FIFTH CHILD.....	65,184	23,614	15,270	3,370	171
SIXTH CHILD.....	25,776	9,539	7,396	2,010	98
SEVENTH CHILD.....	11,209	4,015	3,779	1,238	84
EIGHTH CHILD AND OVER.	11,033	2,880	4,573	2,473	215
NOT STATED.....	13,858	3,594	1,649	357	16

51710 6905

NATALITY DOCUMENTATION TABLE 1.

LIVE BIRTHS BY AGE OF MOTHER, LIVE-BIRTH ORDER, AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

LIVE-BIRTH ORDER AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		30-34 YEARS	35-39 YEARS	40-44 YEARS	45-49 YEARS
ALL OTHER					
TOTAL.....	850,407	151,705	64,360	11,685	519
FIRST CHILD.....	325,409	36,856	11,583	1,805	74
SECOND CHILD.....	250,461	48,774	18,586	2,689	52
THIRD CHILD.....	142,204	31,205	14,537	2,340	101
FOURTH CHILD.....	67,534	16,220	8,387	1,638	48
FIFTH CHILD.....	30,970	8,299	4,493	1,060	47
SIXTH CHILD.....	14,871	4,516	2,577	687	45
SEVENTH CHILD.....	7,233	2,428	1,588	451	38
EIGHTH CHILD AND OVER.	7,512	2,562	2,241	937	113
NOT STATED.....	4,213	845	368	78	2

51710 6906

NATALITY DOCUMENTATION TABLE 1.

LIVE BIRTHS BY AGE OF MOTHER, LIVE-BIRTH ORDER, AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

LIVE-BIRTH ORDER AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		30-34 YEARS	35-39 YEARS	40-44 YEARS	45-49 YEARS
BLACK					
TOTAL	658,875	100,966	41,348	7,029	247
FIRST CHILD	245,658	20,190	6,220	940	38
SECOND CHILD	190,344	30,166	10,768	1,457	30
THIRD CHILD	115,261	23,194	9,756	1,454	55
FOURTH CHILD	55,998	12,850	6,208	1,120	29
FIFTH CHILD	25,439	6,634	3,478	752	24
SIXTH CHILD	11,930	3,557	1,945	472	20
SEVENTH CHILD	5,612	1,874	1,191	285	15
EIGHTH CHILD AND OVER	5,315	1,912	1,527	497	34
NOT STATED	3,318	589	255	52	2

51710 6907

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		WHITE	BLACK	AMERICAN INDIAN 1/	CHINESE
UNITED STATES....	4,000,240	3,149,833	658,875	38,732	25,530
MALE.....	2,048,861	1,616,332	333,984	19,708	13,254
FEMALE.....	1,951,379	1,533,501	324,891	19,024	12,276
ALABAMA.....	61,706	39,990	21,116	107	59
MALE.....	31,630	20,524	10,789	58	35
FEMALE.....	30,076	19,466	10,327	49	24
ALASKA.....	11,073	7,508	585	2,460	18
MALE.....	5,579	3,775	298	1,240	6
FEMALE.....	5,494	3,733	287	1,220	12
ARIZONA.....	69,056	59,701	2,403	5,784	122
MALE.....	35,047	30,349	1,242	2,857	66
FEMALE.....	34,009	29,352	1,161	2,927	56
ARKANSAS.....	34,289	25,986	7,848	197	20
MALE.....	17,584	13,379	3,966	97	11
FEMALE.....	16,705	12,607	3,882	100	9
CALIFORNIA.....	585,324	478,472	44,973	3,336	11,422
MALE.....	299,611	244,921	22,809	1,655	5,927
FEMALE.....	285,713	233,551	22,164	1,681	5,495
COLORADO.....	54,022	49,256	2,939	533	114
MALE.....	27,678	25,321	1,415	286	59
FEMALE.....	26,344	23,944	1,524	247	55
CONNECTICUT.....	46,700	39,539	5,960	106	140
MALE.....	23,748	20,109	3,011	65	72
FEMALE.....	22,952	19,430	2,949	41	68
DELAWARE.....	10,568	7,943	2,411	21	23
MALE.....	5,404	4,070	1,225	8	17
FEMALE.....	5,164	3,873	1,186	13	6
DIST. OF COL.....	10,639	1,595	8,500	10	325
MALE.....	5,312	795	4,343	5	162
FEMALE.....	5,327	800	4,257	5	163

51710 6908

NATALITY DOCUMENTATION TABLE 2.

LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		WHITE	BLACK	AMERICAN INDIAN 1/	CHINESE
FLORIDA	192,537	144,486	44,483	442	259
MALE	99,225	74,740	22,643	247	128
FEMALE	93,312	69,746	21,840	195	131
GEORGIA	110,622	68,759	39,873	111	196
MALE	56,635	35,360	20,207	65	104
FEMALE	53,987	33,399	19,666	46	92
HAWAII	19,593	5,594	624	189	756
MALE	10,024	2,801	308	98	409
FEMALE	9,569	2,793	316	91	347
IDAHO	17,440	16,891	46	286	41
MALE	8,886	8,622	20	142	22
FEMALE	8,554	8,269	26	144	19
ILLINOIS	190,788	142,175	42,900	231	756
MALE	97,589	72,843	21,776	128	405
FEMALE	93,199	69,332	21,124	103	351
INDIANA	83,949	73,713	9,374	90	102
MALE	43,193	37,906	4,836	57	56
FEMALE	40,756	35,807	4,538	33	46
IOWA	37,826	35,972	1,092	175	71
MALE	19,446	18,477	577	94	41
FEMALE	18,380	17,495	515	81	30
KANSAS	37,406	33,035	3,238	353	82
MALE	19,310	17,096	1,638	184	46
FEMALE	18,096	15,939	1,600	169	37
KENTUCKY	53,000	47,674	4,840	55	34
MALE	27,363	24,659	2,449	28	19
FEMALE	25,637	23,015	2,391	27	15
LOUISIANA	69,402	38,528	29,698	257	73
MALE	35,395	19,762	15,017	129	34
FEMALE	34,007	18,766	14,681	128	39

51710 6909

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		WHITE	BLACK	AMERICAN INDIAN 1/	CHINESE
MAINE	15,065	14,779	57	91	22
MALE	7,812	7,668	27	55	12
FEMALE	7,253	7,111	30	36	10
MARYLAND	74,988	46,812	24,658	221	249
MALE	38,251	24,001	12,481	110	129
FEMALE	36,737	22,811	12,177	111	120
MASSACHUSETTS	84,668	72,845	8,356	111	983
MALE	43,568	37,541	4,244	57	506
FEMALE	41,100	35,304	4,112	54	477
MICHIGAN	139,855	109,182	28,312	762	302
MALE	71,584	56,101	14,290	379	161
FEMALE	68,271	53,081	14,022	383	141
MINNESOTA	64,648	58,302	2,828	1,139	139
MALE	33,264	29,996	1,434	575	68
FEMALE	31,384	28,306	1,394	564	71
MISSISSIPPI	42,149	21,258	20,421	183	29
MALE	21,549	11,031	10,267	88	18
FEMALE	20,600	10,227	10,154	95	11
MISSOURI	75,253	61,045	13,007	229	191
MALE	38,584	31,350	6,611	112	107
FEMALE	36,669	29,695	6,396	117	84
MONTANA	11,365	9,986	48	1,246	9
MALE	5,892	5,154	23	663	6
FEMALE	5,473	4,832	25	583	3
NEBRASKA	23,224	21,233	1,260	371	32
MALE	11,768	10,770	622	191	15
FEMALE	11,456	10,463	638	180	17
NEVADA	22,403	19,075	1,997	367	69
MALE	11,544	9,903	974	184	48
FEMALE	10,859	9,172	1,023	183	41

51710 6910

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		WHITE	BLACK	AMERICAN INDIAN 1/	CHINESE
NEW HAMPSHIRE....	15,436	15,149	109	25	40
MALE.....	7,940	7,790	60	15	20
FEMALE.....	7,496	7,359	49	10	20
NEW JERSEY.....	117,686	88,852	23,128	385	1,029
MALE.....	60,023	45,375	11,704	218	545
FEMALE.....	57,663	43,477	11,424	167	484
NEW MEXICO.....	27,852	23,082	561	3,872	40
MALE.....	14,119	11,695	274	1,952	23
FEMALE.....	13,733	11,387	287	1,920	17
NEW YORK.....	282,392	208,093	60,083	939	4,248
MALE.....	144,692	106,921	30,520	450	2,174
FEMALE.....	137,700	101,172	29,563	489	2,074
NORTH CAROLINA...	101,357	68,998	29,487	1,466	76
MALE.....	51,911	35,466	14,979	741	42
FEMALE.....	49,446	33,532	14,508	725	34
NORTH DAKOTA.....	8,690	7,742	89	763	14
MALE.....	4,507	3,997	40	409	8
FEMALE.....	4,183	3,745	49	354	6
OHIO.....	158,793	131,439	25,458	216	378
MALE.....	81,237	67,437	12,846	112	196
FEMALE.....	77,556	64,002	12,612	104	182
OKLAHOMA.....	46,243	36,135	4,944	4,430	37
MALE.....	23,644	18,489	2,501	2,278	18
FEMALE.....	22,599	17,646	2,443	2,152	19
OREGON.....	41,576	38,703	893	574	212
MALE.....	21,374	19,921	442	299	108
FEMALE.....	20,202	18,782	451	275	104
PENNSYLVANIA.....	160,762	133,063	24,411	179	532
MALE.....	82,528	68,322	12,523	83	267
FEMALE.....	78,234	64,741	11,888	96	265

51710 6911

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		WHITE	BLACK	AMERICAN INDIAN 1/	CHINESE
RHODE ISLAND.....	13,976	12,204	1,151	132	5
MALE.....	7,148	6,199	612	73	3
FEMALE.....	6,828	6,005	539	59	2
SOUTH CAROLINA...	53,835	32,690	20,520	105	45
MALE.....	27,550	16,851	10,378	53	24
FEMALE.....	26,285	15,839	10,142	52	21
SOUTH DAKOTA.....	10,719	8,827	77	1,721	8
MALE.....	5,500	4,539	47	865	3
FEMALE.....	5,219	4,288	30	856	5
TENNESSEE.....	73,017	54,609	17,578	126	94
MALE.....	37,548	28,183	8,933	56	48
FEMALE.....	35,469	26,426	8,645	70	46
TEXAS.....	322,071	272,211	41,694	700	1,134
MALE.....	164,430	139,198	21,018	387	558
FEMALE.....	157,641	133,013	20,676	313	576
UTAH.....	37,127	35,198	278	676	124
MALE.....	19,207	18,214	142	345	66
FEMALE.....	17,920	16,984	136	331	58
VERMONT.....	7,457	7,346	29	11	2
MALE.....	3,855	3,800	14	7	2
FEMALE.....	3,602	3,546	15	4	-
VIRGINIA.....	94,944	68,345	23,334	134	318
MALE.....	48,708	35,182	11,812	67	166
FEMALE.....	46,236	33,163	11,522	67	152
WASHINGTON.....	78,645	68,921	3,145	1,697	294
MALE.....	40,194	35,152	1,633	862	160
FEMALE.....	38,451	33,769	1,507	835	134
WEST VIRGINIA....	21,792	20,834	819	15	29
MALE.....	11,166	10,675	414	11	16
FEMALE.....	10,626	10,159	404	4	13

51710 6912

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		WHITE	BLACK	AMERICAN INDIAN 1/	CHINESE
WISCONSIN.....	69,767	59,868	7,180	866	160
MALE.....	35,705	30,692	3,609	456	82
FEMALE.....	34,062	29,176	3,571	410	78
WYOMING.....	6,555	6,190	61	237	9
MALE.....	3,400	3,219	36	110	7
FEMALE.....	3,155	2,971	25	127	2

1/ INCLUDES BIRTHS TO ALEUTS AND ESKIMOS.

51710 6913

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		JAPANESE	HAWAIIAN	FILIPINO	OTHER ASIAN OR PACIFIC ISLANDER
UNITED STATES....	4,000,240	8,699	5,810	29,643	83,118
MALE.....	2,048,861	4,483	2,990	15,261	42,949
FEMALE.....	1,951,379	4,216	2,820	14,382	40,269
ALABAMA.....	61,706	24	5	25	380
MALE.....	31,630	14	3	14	193
FEMALE.....	30,076	10	2	11	187
ALASKA.....	11,073	19	12	244	227
MALE.....	5,579	10	7	125	118
FEMALE.....	5,494	9	5	119	109
ARIZONA.....	69,056	49	15	176	806
MALE.....	35,047	24	8	105	396
FEMALE.....	34,009	25	7	71	410
ARKANSAS.....	34,289	16	2	32	188
MALE.....	17,584	7	-	16	108
FEMALE.....	16,705	9	2	16	80
CALIFORNIA.....	585,324	3,285	517	15,485	27,834
MALE.....	299,611	1,687	251	7,970	14,391
FEMALE.....	285,713	1,598	266	7,515	13,443
COLORADO.....	54,022	77	15	109	979
MALE.....	27,678	32	9	53	512
FEMALE.....	26,344	45	6	56	467
CONNECTICUT.....	46,700	30	1	85	839
MALE.....	23,748	18	-	35	438
FEMALE.....	22,952	12	1	50	401
DELAWARE.....	10,568	11	2	32	125
MALE.....	5,404	6	1	18	64
FEMALE.....	5,164	5	1	14	61
DIST. OF COL...	11,609	16	17	38	118
MALE.....	5,312	11	16	26	54
FEMALE.....	5,317	5	1	12	64

51710 6914

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		JAPANESE	HAWAIIAN	FILIPINO	OTHER ASIAN OR PACIFIC ISLANDER
FLORIDA.....	192,537	63	19	555	2,230
MALE.....	99,225	27	11	293	1,136
FEMALE.....	93,312	36	8	262	1,094
GEORGIA.....	110,622	78	13	132	1,460
MALE.....	56,635	40	6	74	779
FEMALE.....	53,987	38	7	58	681
HAWAII.....	19,593	2,297	4,717	3,712	1,704
MALE.....	10,024	1,207	2,446	1,887	868
FEMALE.....	9,569	1,090	2,271	1,825	836
IDAHO.....	17,440	41	6	32	97
MALE.....	8,886	14	3	13	50
FEMALE.....	8,554	27	3	19	47
ILLINOIS.....	190,788	274	17	1,004	3,431
MALE.....	97,589	141	4	540	1,752
FEMALE.....	93,199	133	13	464	1,679
INDIANA.....	83,949	61	8	86	515
MALE.....	43,193	26	3	41	268
FEMALE.....	40,756	35	5	45	247
IOWA.....	37,826	15	6	37	458
MALE.....	19,446	6	4	18	229
FEMALE.....	18,380	9	2	19	229
KANSAS.....	37,406	16	7	68	607
MALE.....	19,310	10	4	37	296
FEMALE.....	18,380	6	3	31	311
KENTUCKY.....	53,000	41	3	46	302
MALE.....	27,363	19	-	27	162
FEMALE.....	25,637	22	3	19	140
LOUISIANA.....	69,402	33	5	144	636
MALE.....	35,395	22	2	81	329
FEMALE.....	34,007	11	3	63	307

51710 6915

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		JAPANESE	HAWAIIAN	FILIPINO	OTHER ASIAN OR PACIFIC ISLANDER
MAINE	15,065	9	5	28	74
MALE	7,812	4	3	11	32
FEMALE	7,253	5	2	17	42
MARYLAND	74,988	70	26	288	2,664
MALE	38,251	35	10	149	1,336
FEMALE	36,737	35	16	139	1,328
MASSACHUSETTS	84,668	136	9	158	2,070
MALE	43,568	81	3	77	1,059
FEMALE	41,100	55	6	81	1,011
MICHIGAN	139,855	93	12	239	953
MALE	71,584	41	1	125	486
FEMALE	68,271	52	11	114	467
MINNESOTA	64,648	40	10	107	2,083
MALE	33,264	24	5	55	1,107
FEMALE	31,384	16	5	52	976
MISSISSIPPI	42,149	4	-	35	219
MALE	21,549	3	-	15	127
FEMALE	20,600	1	-	20	92
MISSOURI	75,253	30	10	136	605
MALE	38,584	11	5	64	324
FEMALE	36,669	19	5	72	281
MONTANA	11,365	6	3	28	39
MALE	5,892	3	1	17	25
FEMALE	5,473	3	2	11	14
NEBRASKA	23,224	14	4	35	275
MALE	11,768	6	2	20	142
FEMALE	11,456	8	2	15	133
NEVADA	20,413	43	16	331	465
MALE	11,844	19	16	170	230
FEMALE	10,869	24	21	161	235

51710 6916

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		JAPANESE	HAWAIIAN	FILIPINO	OTHER ASIAN OR PACIFIC ISLANDER
NEW HAMPSHIRE....	15,436	18	-	18	77
MALE.....	7,940	10	-	9	36
FEMALE.....	7,496	8	-	9	41
NEW JERSEY.....	117,686	225	10	1,201	2,856
MALE.....	60,023	125	8	600	1,448
FEMALE.....	57,663	100	2	601	1,408
NEW MEXICO.....	27,852	24	4	66	203
MALE.....	14,119	14	3	38	120
FEMALE.....	13,733	10	1	28	83
NEW YORK.....	282,392	490	12	1,431	7,096
MALE.....	144,692	253	7	717	3,650
FEMALE.....	137,700	237	5	714	3,446
NORTH CAROLINA...	101,357	51	15	140	1,124
MALE.....	51,911	26	7	77	573
FEMALE.....	49,446	25	8	63	551
NORTH DAKOTA.....	8,690	4	-	22	56
MALE.....	4,507	2	-	12	39
FEMALE.....	4,183	2	-	10	17
OHIO.....	158,793	117	11	196	978
MALE.....	81,237	59	4	103	480
FEMALE.....	77,556	58	7	93	498
OKLAHOMA.....	46,243	30	4	41	621
MALE.....	23,644	14	1	21	322
FEMALE.....	22,599	16	3	20	311
OREGON.....	41,576	106	33	161	[illegible]
MALE.....	21,374	48	15	82	[illegible]
FEMALE.....	20,202	58	18	79	[illegible]
PENNSYLVANIA.....	160,762	72	8	253	[illegible]
MALE.....	82,528	36	1	133	[illegible]
FEMALE.....	78,234	36	7	117	[illegible]

51710 6917

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		JAPANESE	HAWAIIAN	FILIPINO	OTHER ASIAN OR PACIFIC ISLANDER
RHODE ISLAND.....	13,976	-	1	2	481
MALE.....	7,148	-	1	1	257
FEMALE.....	6,828	-	-	1	224
SOUTH CAROLINA...	53,835	26	5	114	330
MALE.....	27,550	12	2	64	166
FEMALE.....	26,285	14	3	50	164
SOUTH DAKOTA.....	10,719	8	6	25	47
MALE.....	5,500	7	3	12	24
FEMALE.....	5,219	1	3	13	23
TENNESSEE.....	73,017	44	12	68	486
MALE.....	37,548	24	8	39	257
FEMALE.....	35,469	20	4	29	229
TEXAS.....	322,071	187	43	896	5,206
MALE.....	164,430	108	28	473	2,660
FEMALE.....	157,641	79	15	423	2,546
UTAH.....	37,127	84	17	50	700
MALE.....	19,207	44	6	22	368
FEMALE.....	17,920	40	11	28	332
VERMONT.....	7,457	1	1	3	64
MALE.....	3,855	-	1	1	30
FEMALE.....	3,602	1	-	2	34
VIRGINIA.....	94,944	88	22	654	2,049
MALE.....	48,708	47	16	333	1,085
FEMALE.....	46,236	41	6	321	964
WASHINGTON.....	78,645	209	81	771	3,527
MALE.....	40,194	102	49	401	1,830
FEMALE.....	38,451	107	32	370	1,697
WEST VIRGINIA...	21,790	4	-	16	74
MALE.....	11,166	2	-	10	38
FEMALE.....	10,624	2	-	6	36

51710 6918

NATALITY DOCUMENTATION TABLE 2.
LIVE BIRTHS BY SPECIFIED RACE OF MOTHER AND SEX: UNITED STATES AND EACH STATE: 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AREA AND SEX	TOTAL	SPECIFIED RACE OF MOTHER			
		JAPANESE	HAWAIIAN	FILIPINO	OTHER ASIAN OR PACIFIC ISLANDER
WISCONSIN.....	69,767	26	9	81	1,577
MALE.....	35,705	11	4	39	812
FEMALE.....	34,062	15	5	42	765
WYOMING.....	6,555	4	4	8	42
MALE.....	3,400	1	2	3	22
FEMALE.....	3,155	3	2	5	20

51710 6919

NATALITY DOCUMENTATION TABLE 3.
LIVE BIRTHS BY ATTENDANT, PLACE OF DELIVERY AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF UNITED STATES)

PLACE OF DELIVERY AND RACE OF MOTHER	ALL BIRTHS	ATTENDANT		
		PHYSICIAN		
		TOTAL	DOCTOR OF MEDICINE	DOCTOR OF OSTEOPATHY
ALL RACES 1/	4,000,240	3,759,963	3,622,304	137,659
IN HOSPITAL	3,959,266	3,751,258	3,614,936	136,422
NOT IN HOSPITAL	40,030	7,958	6,759	1,199
FREESTANDING BIRTHING CENTER	11,238	2,242	1,621	621
CLINIC / DOCTOR'S OFFICE	977	463	376	87
RESIDENCE	25,084	4,365	3,916	449
OTHER	2,731	888	846	42
NOT STATED	944	647	609	38
WHITE	3,149,833	2,967,570	2,850,882	116,688
IN HOSPITAL	3,115,570	2,961,659	2,846,118	115,541
NOT IN HOSPITAL	33,506	5,382	4,267	1,115
FREESTANDING BIRTHING CENTER	10,520	2,042	1,427	615
CLINIC / DOCTOR'S OFFICE	786	368	287	81
RESIDENCE	20,519	2,538	2,147	391
OTHER	1,681	434	406	28
NOT STATED	757	529	497	32
BLACK	658,875	617,024	600,058	16,966
IN HOSPITAL	653,593	614,697	597,810	16,887
NOT IN HOSPITAL	5,112	2,220	2,147	73
FREESTANDING BIRTHING CENTER	435	97	94	3
CLINIC / DOCTOR'S OFFICE	123	60	58	2
RESIDENCE	3,705	1,669	1,613	56
OTHER	849	394	382	12
NOT STATED	170	107	101	6

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6920

NATALITY DOCUMENTATION TABLE 3.

LIVE BIRTHS BY ATTENDANT, PLACE OF DELIVERY AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF UNITED STATES)

PLACE OF DELIVERY AND RACE OF MOTHER	ATTENDANT				
	MIDWIFE				
	TOTAL	CERTIFIED NURSE MIDWIFE	OTHER MID-WIFE	OTHER	NOT STATED
ALL RACES 1/	210,054	196,228	13,826	27,729	2,494
IN HOSPITAL	189,913	188,370	1,543	16,351	1,644
NOT IN HOSPITAL	20,114	7,833	12,281	11,341	617
FREESTANDING BIRTHING CENTER	8,638	5,016	3,622	327	31
CLINIC / DOCTOR'S OFFICE	322	157	165	166	26
RESIDENCE	10,764	2,539	8,225	9,492	463
OTHER	390	121	269	1,356	97
NOT STATED	27	25	2	37	233
WHITE	159,814	146,630	13,184	20,586	1,963
IN HOSPITAL	140,674	139,426	1,248	11,979	1,258
NOT IN HOSPITAL	19,120	7,185	11,935	8,591	413
FREESTANDING BIRTHING CENTER	8,138	4,616	3,522	311	29
CLINIC / DOCTOR'S OFFICE	302	143	159	96	20
RESIDENCE	10,333	2,342	7,991	7,341	307
OTHER	347	84	263	843	57
NOT STATED	20	19	1	16	192
BLACK	35,694	35,368	326	5,672	466
IN HOSPITAL	35,094	34,917	177	3,489	313
NOT IN HOSPITAL	594	445	149	2,163	135
FREESTANDING BIRTHING CENTER	325	280	45	11	2
CLINIC / DOCTOR'S OFFICE	12	10	2	46	5
RESIDENCE	227	129	98	1,711	96
OTHER	30	26	4	395	32
NOT STATED	6	6	-	20	37

51710 6921

NATALITY DOCUMENTATION TABLE 4.

LIVE BIRTHS BY AGE, MARITAL STATUS AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES

MARITAL STATUS AND RACE OF MOTHER	AGE OF MOTHER				
	ALL AGES	UNDER 15 YEARS	15-19 YEARS	20-24 YEARS	25-29 YEARS
ALL RACES.....	4,000,240	12,554	501,093	1,038,127	1,128,862
MARRIED.....	2,760,068	1,087	143,661	599,589	895,086
UNMARRIED.....	1,240,172	11,467	357,432	438,538	233,776
WHITE.....	3,149,833	5,755	341,817	790,154	920,772
MARRIED.....	2,407,704	887	128,737	526,616	780,867
UNMARRIED.....	742,129	4,868	213,080	263,538	139,905
ALL OTHER.....	850,407	6,799	159,276	247,973	208,090
MARRIED.....	352,364	200	14,924	72,973	114,219
UNMARRIED.....	498,043	6,599	144,352	175,000	93,871
BLACK.....	658,875	6,417	143,153	208,149	151,566
MARRIED.....	206,399	124	10,122	48,551	66,962
UNMARRIED.....	452,476	6,293	133,031	159,598	84,604

51710 6922

NATALITY DOCUMENTATION TABLE 4.

LIVE BIRTHS BY AGE, MARITAL STATUS AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

MARITAL STATUS AND RACE OF MOTHER	AGE OF MOTHER				
	ALL AGES	30-34 YEARS	35-39 YEARS	40-44 YEARS	45-49 YEARS
ALL RACES.....	4,000,240	901,151	357,053	59,071	2,329
MARRIED.....	2,760,068	768,888	301,483	48,402	1,872
UNMARRIED.....	1,240,172	132,263	55,570	10,669	457
WHITE.....	3,149,833	749,446	292,693	47,386	1,810
MARRIED.....	2,407,704	670,310	258,410	40,377	1,500
UNMARRIED.....	742,129	79,136	34,283	7,009	310
ALL OTHER.....	850,407	151,705	64,360	11,685	519
MARRIED.....	352,364	98,578	43,073	8,025	372
UNMARRIED.....	498,043	53,127	21,287	3,660	147
BLACK.....	658,875	100,966	41,348	7,029	247
MARRIED.....	206,399	53,636	22,822	4,040	142
UNMARRIED.....	452,476	47,330	18,526	2,989	105

51710 6923

NATALITY DOCUMENTATION TABLE 4.

LIVE BIRTHS BY AGE, MARITAL STATUS AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

MARITAL STATUS AND RACE OF MOTHER	AGE OF MOTHER				
	ALL AGES	UNDER 15 YEARS	15-19 YEARS	20-24 YEARS	25-29 YEARS
ALL RACES.....	4,000,240	12,554	501,093	1,038,127	1,128,862
MARRIED.....	2,760,068	1,087	143,661	599,589	895,086
UNMARRIED.....	1,240,172	11,467	357,432	438,538	233,776
WHITE.....	3,149,833	5,755	341,817	790,154	920,772
MARRIED.....	2,407,704	887	128,737	526,616	780,867
UNMARRIED.....	742,129	4,868	213,080	263,538	139,905
ALL OTHER.....	850,407	6,799	159,276	247,973	208,090
MARRIED.....	352,364	200	14,924	72,973	114,219
UNMARRIED.....	498,043	6,599	144,352	175,000	93,871
BLACK.....	658,875	6,417	143,153	208,149	151,566
MARRIED.....	206,399	124	10,122	48,551	66,962
UNMARRIED.....	452,476	6,293	133,031	159,598	84,604

51710 6924

NATALITY DOCUMENTATION TABLE 4.

LIVE BIRTHS BY AGE, MARITAL STATUS AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

MARITAL STATUS AND RACE OF MOTHER	AGE OF MOTHER				
	ALL AGES	30-34 YEARS	35-39 YEARS	40-44 YEARS	45-49 YEARS
ALL RACES.....	4,000,240	901,151	357,053	59,071	2,329
MARRIED.....	2,760,068	768,888	301,483	48,402	1,872
UNMARRIED.....	1,240,172	132,263	55,570	10,669	457
WHITE.....	3,149,833	749,446	292,693	47,386	1,810
MARRIED.....	2,407,704	670,310	258,410	40,377	1,500
UNMARRIED.....	742,129	79,136	34,283	7,009	310
ALL OTHER.....	850,407	151,705	64,360	11,685	519
MARRIED.....	352,364	98,578	43,073	8,025	372
UNMARRIED.....	498,043	53,127	21,287	3,660	147
BLACK.....	658,875	100,966	41,348	7,029	247
MARRIED.....	206,399	53,636	22,822	4,040	142
UNMARRIED.....	452,476	47,330	18,526	2,989	105

51710 6925

NATALITY DOCUMENTATION TABLE 5.
LIVE BIRTHS BY EDUCATIONAL ATTAINMENT AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

YEARS OF SCHOOL COMPLETED	ALL RACES	RACE OF MOTHER		
		WHITE	ALL OTHER	
			TOTAL	BLACK
TOTAL	4,000,240	3,149,833	850,407	658,875
0-5 YEARS	62,844	51,124	11,720	3,159
6 YEARS	79,270	75,183	4,087	2,144
7 YEARS	26,680	20,912	5,768	4,260
8 YEARS	82,392	65,586	16,806	13,397
9 YEARS	174,763	138,428	36,335	30,618
10 YEARS	213,439	151,096	62,343	53,357
11 YEARS	277,000	181,856	95,144	85,245
12 YEARS	1,412,346	1,088,229	324,117	266,769
13 YEARS	308,512	245,942	62,570	52,425
14 YEARS	399,959	320,246	79,713	59,947
15 YEARS	133,765	104,548	29,217	21,537
16 YEARS	507,807	439,496	68,311	37,463
17 YEARS OR MORE	360,967	225,618	35,349	15,336
NOT STATED	60,496	41,569	18,927	13,218

51710 6926

NATALITY DOCUMENTATION TABLE 6.
LIVE BIRTHS BY EDUCATIONAL ATTAINMENT AND RACE OF FATHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

YEARS OF SCHOOL COMPLETED	ALL RACES	RACE OF FATHER			
		WHITE	ALL OTHER		NOT STATED
			TOTAL	BLACK	
TOTAL.....	4,000,240	2,799,961	567,579	412,145	632,700
0-5 YEARS.....	66,250	46,911	7,263	2,043	12,076
6 YEARS.....	71,100	68,517	2,245	826	338
7 YEARS.....	16,051	14,197	1,738	814	116
8 YEARS.....	48,364	43,769	4,337	2,528	258
9 YEARS.....	98,084	89,263	8,385	5,914	436
10 YEARS.....	117,609	97,363	19,769	15,073	477
11 YEARS.....	168,091	130,647	36,714	30,980	730
12 YEARS.....	1,249,112	999,998	244,784	200,261	4,430
13 YEARS.....	198,997	163,203	35,227	28,401	567
14 YEARS.....	322,787	267,310	54,543	39,368	934
15 YEARS.....	109,064	87,836	20,848	14,586	380
16 YEARS.....	474,577	416,543	56,624	31,211	1,410
17 YEARS OR MORE.	347,612	301,522	44,660	16,373	1,430
NOT STATED.....	712,542	72,982	30,442	23,767	609,118

51710 6927

NATALITY DOCUMENTATION TABLE 7.
LIVE BIRTHS BY AGE OF FATHER AND AGE AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AGE AND RACE OF MOTHER	ALL AGES	AGE OF FATHER					
		UNDER 15 YEARS	15-19 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS	35-39 YEARS
ALL RACES 1/.....	4,000,240	487	131,445	608,003	923,142	931,586	498,080
UNDER 15 YEARS..	12,554	137	2,658	899	168	35	15
15-19 YEARS.....	501,093	295	101,040	154,225	33,206	7,895	2,058
20-24 YEARS.....	1,038,127	37	25,066	366,621	298,184	85,079	21,574
25-29 YEARS.....	1,128,862	8	2,127	70,537	472,391	346,175	87,191
30-34 YEARS.....	901,151	6	402	12,796	101,136	422,065	221,657
35-39 YEARS.....	357,053	3	122	2,573	16,295	64,801	152,722
40-44 YEARS.....	59,071	1	25	344	1,731	5,406	12,617
45-49 YEARS.....	2,329	-	5	8	31	130	246
WHITE.....	3,149,833	311	99,392	498,085	790,147	801,515	419,164
UNDER 15 YEARS..	9,755	71	1,623	665	140	25	10
15-19 YEARS.....	341,817	198	76,643	124,509	27,219	6,445	1,672
20-24 YEARS.....	790,154	28	19,065	302,483	252,440	70,112	17,181
25-29 YEARS.....	920,772	7	1,605	57,550	409,069	295,666	70,779
30-34 YEARS.....	749,446	4	327	10,418	86,190	369,077	187,990
35-39 YEARS.....	292,693	2	103	2,152	13,609	55,556	130,747
40-44 YEARS.....	47,386	1	24	302	1,453	4,525	10,582
45-49 YEARS.....	1,810	-	2	6	27	109	203
BLACK.....	658,875	156	27,784	90,637	94,706	77,659	45,414
UNDER 15 YEARS..	2,417	59	941	138	15	7	4
15-19 YEARS.....	143,153	85	21,145	25,091	4,625	1,066	233
20-24 YEARS.....	208,149	8	5,159	52,981	34,084	9,710	2,871
25-29 YEARS.....	151,566	1	460	10,283	43,845	30,193	9,758
30-34 YEARS.....	100,966	2	62	1,784	10,172	30,684	19,097
35-39 YEARS.....	41,348	1	14	287	1,784	5,477	12,234
40-44 YEARS.....	7,029	-	-	22	177	511	1,145
45-49 YEARS.....	247	-	3	1	4	11	22

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6928

NATALITY DOCUMENTATION TABLE 7.
LIVE BIRTHS BY AGE OF FATHER AND AGE AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

AGE AND RACE OF MOTHER	ALL AGES	AGE OF FATHER				
		40-44 YEARS	45-49 YEARS	50-54 YEARS	55-99 YEARS	NOT STATED
ALL RACES 1/.....	4,000,240	173,263	51,280	14,725	7,030	661,199
UNDER 15 YEARS..	12,554	3	2	-	1	8,636
15-19 YEARS.....	501,093	583	227	89	65	201,410
20-24 YEARS.....	1,038,127	5,951	1,943	663	419	232,590
25-29 YEARS.....	1,128,862	22,215	6,378	2,119	1,057	118,664
30-34 YEARS.....	901,151	55,203	14,802	4,199	2,016	66,869
35-39 YEARS.....	357,053	67,556	18,325	4,985	2,237	27,434
40-44 YEARS.....	59,071	21,311	8,817	2,375	1,095	5,349
45-49 YEARS.....	2,329	441	786	295	140	247
WHITE.....	3,149,833	142,011	40,883	11,151	4,652	342,522
UNDER 15 YEARS..	5,755	3	2	-	1	3,215
15-19 YEARS.....	341,817	496	183	69	48	104,335
20-24 YEARS.....	790,154	4,667	1,509	505	263	121,901
25-29 YEARS.....	920,772	17,581	4,931	1,534	634	61,416
30-34 YEARS.....	749,446	45,068	11,742	3,188	1,287	34,155
35-39 YEARS.....	292,693	56,038	14,715	3,846	1,552	14,373
40-44 YEARS.....	47,386	17,802	7,143	1,775	782	2,997
45-49 YEARS.....	1,810	356	658	234	85	130
BLACK.....	658,875	18,388	6,415	2,383	1,630	393,703
UNDER 15 YEARS..	6,417	-	-	-	-	5,203
15-19 YEARS.....	143,153	70	37	13	12	30,726
20-24 YEARS.....	208,149	904	290	115	115	101,912
25-29 YEARS.....	151,566	2,999	980	413	309	82,325
30-34 YEARS.....	100,966	6,110	2,000	723	503	29,309
35-39 YEARS.....	41,348	6,401	2,205	783	468	11,694
40-44 YEARS.....	7,029	1,860	854	318	191	1,961
45-49 YEARS.....	247	44	49	18	28	73

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6929

NATALITY DOCUMENTATION TABLE 8.
LIVE BIRTHS BY BIRTH WEIGHT, PERIOD OF GESTATION AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

PERIOD OF GESTATION AND RACE OF MOTHER	TOTAL	BIRTH WEIGHT			
		UNDER 500 GRAMS	500-900 GRAMS	1,000-1,499 GRAMS	1,500-1,999 GRAMS
ALL RACES 1/.....	4,000,240	5,525	20,760	26,753	55,172
UNDER 28 WEEKS...	28,871	5,126	15,210	4,259	1,230
28-31 WEEKS.....	47,827	211	4,185	13,648	11,116
32-35 WEEKS.....	205,883	20	563	6,042	27,337
36 WEEKS.....	153,044	1	39	590	4,589
37-39 WEEKS.....	1,731,546	8	135	1,111	7,668
40 WEEKS.....	897,934	2	63	251	1,095
41 WEEKS.....	522,629	2	26	170	597
42 WEEKS AND OVER	376,660	4	20	262	833
NOT STATED.....	35,846	151	519	420	707
WHITE.....	3,149,833	2,942	12,006	16,870	35,985
UNDER 28 WEEKS...	15,935	2,743	8,589	2,491	582
28-31 WEEKS.....	29,235	109	2,573	8,685	7,181
32-35 WEEKS.....	138,877	12	348	3,941	18,150
36 WEEKS.....	111,220	1	21	372	3,019
37-39 WEEKS.....	1,366,727	2	93	685	5,038
40 WEEKS.....	733,136	1	44	161	715
41 WEEKS.....	435,037	-	18	120	362
42 WEEKS AND OVER	302,579	3	14	159	516
NOT STATED.....	27,087	71	306	256	422
BLACK.....	658,875	2,428	8,117	8,956	17,049
UNDER 28 WEEKS...	12,090	2,238	6,186	1,643	615
28-31 WEEKS.....	16,726	99	1,478	4,611	3,551
32-35 WEEKS.....	57,344	8	188	1,887	8,180
36 WEEKS.....	34,426	-	16	195	1,368
37-39 WEEKS.....	284,538	6	39	372	2,292
40 WEEKS.....	123,499	1	18	78	331
41 WEEKS.....	66,468	2	6	43	202
42 WEEKS AND OVER	57,986	1	5	35	289
NOT STATED.....	5,798	73	191	194	221

1/ INCLUDES RACES OTHER THAN BLACK AND WHITE.

51710 6930

NATALITY DOCUMENTATION TABLE 8.

LIVE BIRTHS BY BIRTH WEIGHT, PERIOD OF GESTATION AND RACE OF MOTHER: UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

PERIOD OF GESTATION AND RACE OF MOTHER	TOTAL	BIRTH WEIGHT			
		2,000-2,499 GRAMS	2,500-2,999 GRAMS	3,000-3,499 GRAMS	3,500-3,999 GRAMS
ALL RACES 1/.....	4,000,240	180,272	653,329	1,473,810	1,161,340
UNDER 28 WEEKS...	28,871	955	1,334	-	-
28-31 WEEKS.....	47,827	4,894	5,186	5,629	2,840
32-35 WEEKS.....	205,883	55,175	53,179	40,123	18,357
36 WEEKS.....	153,044	25,967	55,424	44,921	16,853
37-39 WEEKS.....	1,731,546	67,408	346,679	720,247	456,756
40 WEEKS.....	897,934	11,923	96,755	339,188	324,620
41 WEEKS.....	522,629	5,498	45,826	176,760	200,500
42 WEEKS AND OVER	376,660	6,586	42,995	134,747	132,414
NOT STATED.....	35,846	1,866	5,951	12,195	9,000
WHITE.....	3,149,833	120,446	459,729	1,147,251	981,051
UNDER 28 WEEKS...	15,935	458	652	-	-
28-31 WEEKS.....	29,235	2,655	2,686	3,285	1,984
32-35 WEEKS.....	138,877	37,517	35,746	26,131	13,114
36 WEEKS.....	111,220	17,763	39,974	33,506	12,897
37-39 WEEKS.....	1,356,727	45,090	245,338	561,431	384,301
40 WEEKS.....	733,136	7,837	68,524	268,024	277,040
41 WEEKS.....	435,037	3,630	33,012	141,179	172,845
42 WEEKS AND OVER	302,579	4,271	29,763	104,397	111,454
NOT STATED.....	27,087	1,225	4,044	9,298	7,416
BLACK.....	658,875	51,194	154,825	248,296	132,440
UNDER 28 WEEKS...	12,090	463	634	-	-
28-31 WEEKS.....	16,726	2,047	2,233	2,051	723
32-35 WEEKS.....	57,344	15,372	14,952	11,610	4,204
36 WEEKS.....	34,426	7,018	12,722	9,207	3,138
37-39 WEEKS.....	284,538	18,681	79,314	119,078	52,766
40 WEEKS.....	123,499	3,477	22,297	53,445	34,527
41 WEEKS.....	66,468	1,609	10,399	27,237	20,315
42 WEEKS AND OVER	57,986	2,030	10,971	23,925	15,818
NOT STATED.....	5,798	497	1,303	1,743	949

1 INCLUDES RACES OTHER THAN BLACK AND WHITE.

51710 6931

NATALITY DOCUMENTATION TABLE 8.
LIVE BIRTHS BY BIRTH WEIGHT, PERIOD OF GESTATION AND RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

PERIOD OF GESTATION AND RACE OF MOTHER	TOTAL	BIRTH WEIGHT			
		4,000-4,499 GRAMS	4,500-4,999 GRAMS	5,000- GRAMS OR MORE	NOT STATED
ALL RACES 1/.....	4,000,240	351,928	59,574	6,985	4,792
UNDER 28 WEEKS...	28,871	-	-	-	757
28-31 WEEKS.....	47,827	-	-	-	118
32-35 WEEKS.....	205,883	4,108	660	119	200
36 WEEKS.....	153,044	3,821	639	94	106
37-39 WEEKS.....	1,731,546	111,875	16,602	2,065	992
40 WEEKS.....	897,934	104,469	17,263	1,822	483
41 WEEKS.....	522,629	76,812	14,569	1,584	285
42 WEEKS AND OVER	376,660	48,056	9,310	1,199	234
NOT STATED.....	35,846	2,787	531	102	1,617
WHITE.....	3,149,833	310,826	53,219	6,053	3,455
UNDER 28 WEEKS...	15,935	-	-	-	420
28-31 WEEKS.....	29,235	-	-	-	77
32-35 WEEKS.....	138,877	3,168	523	86	141
36 WEEKS.....	111,220	3,037	490	69	71
37-39 WEEKS.....	1,356,727	97,627	14,622	1,728	782
40 WEEKS.....	733,136	93,234	15,565	1,592	399
41 WEEKS.....	435,037	68,970	13,230	1,423	248
42 WEEKS AND OVER	302,579	42,400	8,322	1,082	198
NOT STATED.....	27,087	2,390	467	73	1,119
BLACK.....	658,875	29,295	4,479	658	1,138
UNDER 28 WEEKS...	12,090	-	-	-	311
28-31 WEEKS.....	16,726	-	-	-	33
32-35 WEEKS.....	57,344	770	102	22	49
36 WEEKS.....	34,426	601	113	20	28
37-39 WEEKS.....	284,538	10,153	1,429	243	165
40 WEEKS.....	123,499	7,918	1,170	169	68
41 WEEKS.....	66,468	5,583	936	104	32
42 WEEKS AND OVER	57,986	4,042	704	78	28
NOT STATED.....	5,798	228	25	22	424

1/ INCLUDES RACES OTHER THAN BLACK AND WHITE.

51710 6932

NATALITY DOCUMENTATION TABLE 9.
LIVE BIRTHS BY MONTH OF PREGNANCY PRENATAL CARE BEGAN BY RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

RACE	TOTAL	MONTH OF PREGNANCY PRENATAL CARE BEGAN				
		1st MONTH	3RD MONTH	4TH MONTH	5TH MONTH	6TH MONTH
RACE OF MOTHER						
ALL RACES.....	4,000,240	2,279,164	806,686	336,160	186,827	113,293
WHITE.....	3,149,833	1,894,676	633,177	240,751	125,684	74,835
ALL OTHER.....	850,407	384,488	173,509	95,409	61,143	38,458
BLACK.....	658,875	285,960	133,667	77,037	50,263	31,583

51710 6933

NATALITY DOCUMENTATION TABLE 9.
LIVE BIRTHS BY MONTH OF PREGNANCY PRENATAL CARE BEGAN BY RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

RACE	TOTAL	MONTH OF PREGNANCY PRENATAL CARE BEGAN				
		7TH MONTH	8TH MONTH	9TH MONTH	NO CARE	NOT STATED
RACE OF MOTHER						
ALL RACES.....	4,000,240	71,389	39,688	15,515	62,487	89,031
WHITE.....	3,149,833	47,658	26,779	10,687	36,234	59,352
ALL OTHER.....	850,407	23,731	12,909	4,828	26,253	29,679
BLACK.....	658,875	19,188	10,256	3,717	23,903	23,301

51710 6934

Table 1 - Estimated Resident Population by Specified Hispanic Origin, Race for Non-Hispanic Origin, 5-year age groups, and Sex: United States, July 1, 1992 to July 1, 1993

Hispanic Origin and Race	Populations by Age of Mother			
	10-14 yrs	15-19 yrs	20-24 yrs	25-29 yrs
Mexican	765,259	435,052	287,867	744,046
Puerto Rican	128,577	75,304	38,911	95,949
Cuban	25,983	13,653	10,307	32,199
Other Hispanic	193,369	95,953	79,405	216,104
Non-Hispanic White	6,166,639	3,438,889	2,304,921	6,406,282
Non-Hispanic Black	1,340,829	756,283	503,586	1,302,303
Non-Hispanic Other	415,877	222,274	147,337	423,429

	30-34 yrs	35-39 yrs	40-44 yrs	45-49 yrs
Mexican	698,507	673,558	571,104	453,466
Puerto Rican	132,671	150,281	115,173	95,744
Cuban	38,579	41,029	33,622	40,243
Other Hispanic	273,664	260,757	232,141	183,099
Non-Hispanic White	6,859,492	8,110,538	8,079,840	7,379,157
Non-Hispanic Black	1,331,029	1,434,101	1,358,395	1,114,809
Non-Hispanic Other	441,536	487,614	464,375	421,266

51710 6935

Table 2

Census Populations by Females Ages 10-14, and 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 10-14			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
UNITED STATES	7,177,059	1,402,267	110,566	346,649
ALABAMA.....				
Hispanic.....	996	143	19	36
Non-Hispanic.....	96,147	49,616	925	1039
ALASKA.....				
Hispanic.....	797	51	86	57
Non-Hispanic.....	16,584	1,120	4,812	927
ARIZONA.....				
Hispanic.....	36,763	800	1,580	444
Non-Hispanic.....	86,103	5,249	11,942	2,372
ARKANSAS.....				
Hispanic.....	1,034	83	31	26
Non-Hispanic.....	66,935	20,113	539	677
CALIFORNIA.....				
Hispanic.....	350,882	9,519	5,670	11,613
Non-Hispanic.....	477,228	86,576	7,839	122,953
COLORADO.....				
Hispanic.....	21,499	604	504	315
Non-Hispanic.....	96,269	6,147	1,075	2,785
CONNECTICUT.....				
Hispanic.....	9,740	1,077	72	139
Non-Hispanic.....	76,688	11,385	205	2,327
DELAWARE.....				
Hispanic.....	705	114	4	19
Non-Hispanic.....	16,517	5,217	76	446
DIST. OF COL.....				
Hispanic.....	736	188	13	25
Non-Hispanic.....	1,721	11,941	26	281

51710 6936

Table 2
Census Populations by Females Ages 10-14, and 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 10-14			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
FLORIDA.....				
Hispanic.....	54,703	3,666	347	607
Non-Hispanic.....	262,492	89,061	1,390	7,309
GEORGIA.....				
Hispanic.....	4,020	585	75	159
Non-Hispanic.....	154,313	86,240	501	3,949
HAWAII.....				
Hispanic.....	1,662	129	78	2,439
Non-Hispanic.....	9,337	979	158	23,851
IDAHO.....				
Hispanic.....	3,161	64	151	64
Non-Hispanic.....	43,842	172	660	481
ILLINOIS.....				
Hispanic.....	43,332	1,704	343	825
Non-Hispanic.....	274,273	76,781	668	12,431
INDIANA.....				
Hispanic.....	4,894	298	82	86
Non-Hispanic.....	175,558	20,360	515	1,528
IOWA.....				
Hispanic.....	1,926	85	58	59
Non-Hispanic.....	98,956	2,557	375	1,410
KANSAS.....				
Hispanic.....	4,842	242	170	98
Non-Hispanic.....	81,323	6,865	940	1,595
KENTUCKY.....				
Hispanic.....	877	98	6	38
Non-Hispanic.....	122,632	11,711	194	803

51710 6937

Table 2
Census Populations for Females Ages 10-14 and Ages 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 10-14			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
LOUISIANA.....				
Hispanic.....	3,193	448	63	134
Non-Hispanic.....	100,794	66,993	979	2,213
MAINE.....				
Hispanic.....	292	12	8	12
Non-Hispanic.....	41,891	210	323	374
MARYLAND.....				
Hispanic.....	4,534	762	76	193
Non-Hispanic.....	100,002	49,774	467	6,202
MASSACHUSETTS....				
Hispanic.....	11,932	2,657	141	290
Non-Hispanic.....	148,323	11,494	449	6,422
MICHIGAN.....				
Hispanic.....	9,883	722	304	189
Non-Hispanic.....	268,343	56,481	2,600	5,301
MINNESOTA.....				
Hispanic.....	3,081	193	164	142
Non-Hispanic.....	155,460	5,641	2,889	5,866
MISSISSIPPI.....				
Hispanic.....	591	168	17	30
Non-Hispanic.....	55,694	49,198	438	635
MISSOURI.....				
Hispanic.....	2,836	192	81	95
Non-Hispanic.....	158,873	25,625	776	1,986
MONTANA.....				
Hispanic.....	657	23	115	10
Non-Hispanic.....	30,013	116	2,811	196
NEBRASKA.....				
Hispanic.....	2,193	88	83	35
Non-Hispanic.....	55,720	2,942	685	670

51710 6938

Table 2
Census Populations for Females Ages 10-14 and Ages 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 10-14			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
NEVADA.....				
Hispanic.....	6,251	249	208	170
Non-Hispanic.....	33,090	3,937	901	1,708
NEW HAMPSHIRE....				
Hispanic.....	484	32	4	8
Non-Hispanic.....	37,911	264	75	455
NEW JERSEY.....				
Hispanic.....	27,693	3,913	214	632
Non-Hispanic.....	160,201	40,792	451	13,263
NEW MEXICO.....				
Hispanic.....	29,522	441	638	209
Non-Hispanic.....	26,838	1,352	7,626	605
NEW YORK.....				
Hispanic.....	71,458	22,006	896	1,768
Non-Hispanic.....	349,781	103,152	2,128	26,605
NORTH CAROLINA...				
Hispanic.....	2,773	477	89	103
Non-Hispanic.....	154,764	64,855	4,018	2,581
NORTH DAKOTA.....				
Hispanic.....	244	14	25	10
Non-Hispanic.....	22,740	166	1591	145
OHIO.....				
Hispanic.....	6,641	563	102	150
Non-Hispanic.....	329,314	52,234	732	4,176
OKLAHOMA.....				
Hispanic.....	4,084	263	691	151
Non-Hispanic.....	90,623	11,747	13,723	1,506
OREGON.....				
Hispanic.....	5,861	133	274	154
Non-Hispanic.....	94,823	2,283	1,814	3,435

51710 6939

Table 2
Census Populations for Females Ages 10-14 and Ages 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 10-14			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
PENNSYLVANIA.....				
Hispanic.....	10,475	1,586	117	335
Non-Hispanic.....	330,257	43,968	527	6,696
RHODE ISLAND.....				
Hispanic.....	1,891	439	40	66
Non-Hispanic.....	26,174	1,701	172	939
SOUTH CAROLINA...				
Hispanic.....	1,132	221	21	84
Non-Hispanic.....	75,874	50,005	342	974
SOUTH DAKOTA.....				
Hispanic.....	241	10	71	6
Non-Hispanic.....	26,068	162	3,403	166
TENNESSEE.....				
Hispanic.....	1,493	186	31	59
Non-Hispanic.....	134,729	36,744	367	1,588
TEXAS.....				
Hispanic.....	229,502	4,591	1,322	1,807
Non-Hispanic.....	353,008	93,772	2,071	15,391
UTAH.....				
Hispanic.....	4,916	106	167	100
Non-Hispanic.....	86,112	490	1,464	1,870
VERMONT.....				
Hispanic.....	139	4	1	1
Non-Hispanic.....	19,701	108	77	179
VIRGINIA.....				
Hispanic.....	5,790	589	88	287
Non-Hispanic.....	146,987	49,596	530	7,140
WASHINGTON.....				
Hispanic.....	11,059	466	631	670
Non-Hispanic.....	154,316	7,353	4,238	10,949

51710 6940

Table 2
Census Populations for Females Ages 10-14 and Ages 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 10-14			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
WEST VIRGINIA....				
Hispanic.....	307	17	4	6
Non-Hispanic.....	59,951	2,274	87	342
WISCONSIN.....				
Hispanic.....	5,265	320	184	125
Non-Hispanic.....	163,274	14,136	2,170	3,632
WYOMING.....				
Hispanic.....	1,434	35	70	20
Non-Hispanic.....	18,087	141	573	115

51710 6941

Table 2

Census Populations by Females Ages 10-14, and 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 45-49			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
UNITED STATES	6,890,644	886,763	59,066	279,131
ALABAMA.....				
Hispanic.....	610	91	10	25
Non-Hispanic.....	103,963	27,273	551	914
ALASKA.....				
Hispanic.....	372	18	28	41
Non-Hispanic.....	14,540	396	1,969	785
ARIZONA.....				
Hispanic.....	16,188	279	435	186
Non-Hispanic.....	89,347	2,538	4,331	2,052
ARKANSAS.....				
Hispanic.....	415	43	13	13
Non-Hispanic.....	65,662	8,779	455	504
CALIFORNIA.....				
Hispanic.....	163,604	3,952	2,295	5,900
Non-Hispanic.....	593,873	60,334	6,832	98,398
COLORADO.....				
Hispanic.....	11,565	219	226	146
Non-Hispanic.....	103,002	3,581	719	2,177
CONNECTICUT.....				
Hispanic.....	5,280	487	26	82
Non-Hispanic.....	95,835	8,068	177	1,837
DELAWARE.....				
Hispanic.....	348	59	3	17
Non-Hispanic.....	17,837	3,531	67	399
DIST. OF COL.....				
Hispanic.....	691	158	5	25
Non-Hispanic.....	5,693	11,602	43	428

51710 6942

Table 2
Census Populations by Females Ages 10-14, and 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 45-49			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
FLORIDA.....				
Hispanic.....	50,913	2,513	177	463
Non-Hispanic.....	304,048	48,221	1,279	7,134
GEORGIA.....				
Hispanic.....	2,172	302	22	96
Non-Hispanic.....	168,289	51,476	472	3,215
HAWAII.....				
Hispanic.....	756	32	36	1,131
Non-Hispanic.....	11,978	251	147	23,036
IDAHO.....				
Hispanic.....	1,010	18	39	14
Non-Hispanic.....	31,145	20	362	327
ILLINOIS.....				
Hispanic.....	19,811	822	143	524
Non-Hispanic.....	231,011	49,835	692	11,615
INDIANA.....				
Hispanic.....	2,271	131	24	39
Non-Hispanic.....	164,084	12,008	430	1,395
IOWA.....				
Hispanic.....	768	24	10	21
Non-Hispanic.....	81,485	1,056	189	693
KANSAS.....				
Hispanic.....	1,873	80	56	48
Non-Hispanic.....	67,868	3,379	556	1,069
KENTUCKY.....				
Hispanic.....	545	48	10	30
Non-Hispanic.....	113,918	6,918	198	778
LOUISIANA.....				
Hispanic.....	2,574	248	35	66
Non-Hispanic.....	89,997	35,864	537	1,399

51710 6943

Table 2
Census Populations for Females Ages 10-14 and Ages 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 45-49			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
MAINE.....				
Hispanic.....	157	3	7	6
Non-Hispanic.....	39,905	65	177	243
MARYLAND.....				
Hispanic.....	3,367	502	33	156
Non-Hispanic.....	118,446	41,221	479	6,035
MASSACHUSETTS....				
Hispanic.....	4,387	345	119	144
Non-Hispanic.....	174,697	8,202	347	3,968
MICHIGAN.....				
Hispanic.....	4,387	345	119	144
Non-Hispanic.....	248,607	39,151	1,580	4,040
MINNESOTA.....				
Hispanic.....	1,055	56	27	67
Non-Hispanic.....	130,256	1,872	1,182	2,007
MISSISSIPPI.....				
Hispanic.....	355	81	11	24
Non-Hispanic.....	54,443	22,053	252	441
MISSOURI.....				
Hispanic.....	1,508	81	20	59
Non-Hispanic.....	142,572	15,602	691	1,707
MONTANA.....				
Hispanic.....	284	6	22	8
Non-Hispanic.....	25,076	22	1,095	139
NEBRASKA.....				
Hispanic.....	777	25	11	13
Non-Hispanic.....	43,988	1,438	295	427
NEVADA.....				
Hispanic.....	3,016	106	85	121
Non-Hispanic.....	38,769	2,284	644	1,988

51710 6944

Table 2
Census Populations for Females Ages 10-14 and Ages 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 45-49			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
NEW HAMPSHIRE....				
Hispanic.....	256	11	3	6
Non-Hispanic.....	35,527	121	82	302
NEW JERSEY.....				
Hispanic.....	20,800	2,322	125	422
Non-Hispanic.....	198,470	31,912	459	11,851
NEW MEXICO.....				
Hispanic.....	15,963	144	197	91
Non-Hispanic.....	28,342	646	3,183	577
NEW YORK.....				
Hispanic.....	53,444	14,967	509	1,293
Non-Hispanic.....	415,638	86,852	1,630	25,405
NORTH CAROLINA...				
Hispanic.....	1,390	206	31	50
Non-Hispanic.....	177,859	41,695	2,452	2,151
NORTH DAKOTA.....				
Hispanic.....	62	0	8	6
Non-Hispanic.....	16,509	18	515	140
OHIO.....				
Hispanic.....	3,336	239	47	101
Non-Hispanic.....	308,977	33,611	715	3,691
OKLAHOMA.....				
Hispanic.....	1,609	69	178	57
Non-Hispanic.....	85,066	5,808	6,845	1,283
OREGON.....				
Hispanic.....	2,329	48	105	75
Non-Hispanic.....	95,996	1,051	1,179	2,381
PENNSYLVANIA.....				
Hispanic.....	5,306	727	50	139
Non-Hispanic.....	339,270	32,135	510	5,248

51710 6945

Table 2
Census Populations for Females Ages 10-14 and Ages 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 45-49			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
RHODE ISLAND.....				
Hispanic.....	993	203	11	18
Non-Hispanic.....	28,245	822	103	466
SOUTH CAROLINA...				
Hispanic.....	664	127	7	41
Non-Hispanic.....	84,801	30,077	252	1,002
SOUTH DAKOTA.....				
Hispanic.....	98	0	20	5
Non-Hispanic.....	17,762	27	1,069	102
TENNESSEE.....				
Hispanic.....	874	96	14	39
Non-Hispanic.....	144,712	21,623	363	1,315
TEXAS.....				
Hispanic.....	111,743	1,674	510	766
Non-Hispanic.....	358,670	55,335	2,069	12,451
UTAH.....				
Hispanic.....	1,923	35	49	34
Non-Hispanic.....	42,873	171	435	924
VERMONT.....				
Hispanic.....	123	1	0	0
Non-Hispanic.....	19,110	28	47	113
VIRGINIA.....				
Hispanic.....	3,877	278	31	213
Non-Hispanic.....	172,652	33,497	548	7,084
WASHINGTON.....				
Hispanic.....	4,310	131	180	319
Non-Hispanic.....	155,089	3,552	2,398	8,178
WEST VIRGINIA...				
Hispanic.....	265	17	3	8
Non-Hispanic.....	57,637	1,348	101	419

51710 6946

Table 2
Census Populations for Females Ages 10-14 and Ages 45-49, 1993

FIPS STATE AND HISPANIC ORIGIN	FEMALES AGES 45-49			
	RACE OF MOTHER			
	WHITE	BLACK	AMERICAN INDIAN	ASIAN/PACIFIC ISLANDER
WISCONSIN.....				
Hispanic.....	1,876	77	38	46
Non-Hispanic.....	141,878	6,135	991	1,395
WYOMING.....				
Hispanic.....	595	9	19	11
Non-Hispanic.....	13,780	38	250	99

51710 6947

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	All Races		
Fips State	Non-Hispanic	Hispanic	Total
U.S. States	232,592,314	25,190,690	257,783,004
Alabama	4,151,801	28,847	4,180,648
Alaska	577,487	20,381	597,868
Arizona	3,157,690	787,249	3,944,939
Arkansas	2,401,163	24,726	2,425,889
California	22,545,683	8,671,262	31,216,945
Colorado	3,088,728	474,829	3,563,557
Connecticut	3,043,678	234,305	3,277,983
Delaware	680,228	18,251	698,479
District of Col	541,747	37,333	579,080
Florida	11,926,431	1,799,316	13,725,747
Georgia	6,770,714	131,644	6,902,358
Hawaii	1,071,332	94,179	1,165,511
Idaho	1,037,981	62,377	1,100,358
Illinois	10,672,952	1,012,892	11,685,844
Indiana	5,594,677	110,863	5,705,540
Iowa	2,780,768	40,526	2,821,294
Kansas	2,430,777	104,320	2,535,097
Kentucky	3,768,796	25,170	3,793,966
Louisiana	4,191,501	98,849	4,290,350
Maine	1,232,829	6,950	1,239,779
Maryland	4,805,273	152,760	4,958,033
Massachusetts	5,690,604	327,194	6,017,798
Michigan	9,238,858	220,809	9,459,667
Minnesota	4,456,426	67,988	4,524,414
Mississippi	2,621,942	17,891	2,639,833
Missouri	5,166,419	68,725	5,235,144
Montana	827,084	13,958	840,942
Nebraska	1,567,457	45,869	1,613,326
Nevada	1,222,444	159,580	1,382,024
New Hampshire	1,111,820	12,409	1,124,229
New Jersey	7,020,106	838,703	7,858,809
New Mexico	986,840	628,773	1,615,613
New York	15,718,908	2,434,175	18,153,083
North Carolina	6,863,673	88,751	6,952,424
North Dakota	631,492	5,233	636,725
Ohio	10,908,203	153,050	11,061,253
Oklahoma	3,135,593	97,266	3,232,859
Oregon	2,900,643	134,118	3,034,761
Pennsylvania	11,769,466	260,567	12,030,079
Rhode Island	945,005	54,557	999,562
South Carolina	3,894,559	35,438	3,929,997
South Dakota	710,065	6,006	716,071

51710 6948

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	All Races		
Fips State	Non-Hispanic	Hispanic	Total
Tennessee	5,054,121	40,091	5,094,212
Texas	13,167,693	4,854,049	18,021,742
Utah	1,761,215	98,570	1,859,785
Vermont	571,744	3,922	575,666
Virginia	6,285,303	187,696	6,472,999
Washington	5,002,701	255,934	5,258,635
West Virginia	1,809,259	9,062	1,818,321
Wisconsin	4,938,030	106,041	5,044,071
Wyoming	442,359	27,336	469,695

51710 6949

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	White		
Fips State	Non-Hispanic	Hispanic	Total
White	191,841,227	22,947,853	214,789,080
Alabama	3,049,383	24,039	3,073,422
Alaska	440,227	16,346	456,573
Arizona	2,773,184	737,460	3,510,644
Arkansas	1,989,435	21,587	2,011,022
California	17,007,539	8,113,713	25,121,252
Colorado	2,856,405	447,129	3,303,534
Connecticut	2,710,360	206,801	2,917,161
Delaware	546,112	15,282	561,394
District of Col	159,269	26,859	186,128
Florida	9,839,841	1,679,378	11,519,219
Georgia	4,767,779	112,775	4,880,554
Hawaii	354,915	38,220	393,135
Idaho	1,011,081	57,902	1,011,081
Illinois	8,603,777	948,461	9,552,238
Indiana	5,090,107	101,588	5,191,695
Iowa	2,693,238	36,897	2,730,135
Kansas	2,228,260	94,670	2,322,930
Kentucky	3,475,661	21,711	3,497,372
Louisiana	2,790,707	84,760	2,875,467
Maine	1,214,607	6,287	1,220,894
Maryland	3,361,263	124,234	3,485,497
Massachusetts	5,222,349	255,918	5,478,267
Michigan	7,734,443	196,032	7,930,475
Minnesota	4,201,778	58,331	4,260,109
Mississippi	1,655,877	13,868	1,669,745
Missouri	4,530,690	61,082	4,591,772
Montana	771,544	11,741	783,285
Nebraska	1,481,719	42,196	1,523,915
Nevada	1,065,481	145,489	1,210,970
New Hampshire	1,093,459	11,267	1,104,726
New Jersey	5,666,758	722,714	6,389,472
New Mexico	807,105	606,576	1,413,681
New York	12,279,450	1,843,523	14,122,973
North Carolina	5,184,861	73,764	5,258,625
North Dakota	597,065	4,458	601,523
Ohio	9,577,523	136,074	9,713,597
Oklahoma	2,602,400	80,110	2,682,510
Oregon	2,732,573	122,123	2,854,696
Pennsylvania	10,485,466	218,424	10,703,890
Rhode Island	888,899	43,084	926,683
South Carolina	2,475,863	28,554	2,504,417
South Dakota	650,693	4,603	655,291

51710 6950

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	White		
Fips State	Non-Hispanic	Hispanic	Total
Tennessee	4,186,970	34,292	4,221,262
Texas	10,645,401	4,707,014	15,352,415
Utah	1,685,630	91,390	1,777,020
Vermont	563,978	3,615	567,593
Virginia	4,845,732	163,180	5,008,912
Washington	4,507,479	223,797	4,731,276
West Virginia	1,741,830	8,160	1,749,990
Wisconsin	4,571,499	94,917	4,666,416
Wyoming	426,872	25,453	452,325

51710 6951

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	Black		
Fips State	Non-Hispanic	Hispanic	Total
Black	30,763,569	1,415,885	32,179,454
Alabama	1,061,253	3,526	1,064,779
Alaska	24,685	1,281	25,966
Arizona	115,417	15,358	130,775
Arkansas	384,681	1,868	386,549
California	2,195,206	213,115	2,408,321
Colorado	141,964	11,854	153,818
Connecticut	269,935	22,921	292,856
Delaware	121,349	2,473	123,822
District of Col	368,433	6,247	374,680
Florida	1,870,404	96,765	1,967,169
Georgia	1,895,184	13,925	1,909,109
Hawaii	25,909	2,662	28,571
Idaho	3,729	1,187	4,916
Illinois	1,738,708	38,974	1,777,682
Indiana	451,015	5,985	457,000
Iowa	51,338	1,604	52,942
Kansas	147,711	4,828	152,539
Kentucky	267,693	2,123	269,816
Louisiana	1,338,751	9,701	1,348,452
Maine	4,925	302	5,227
Maryland	1,271,818	19,503	1,291,321
Massachusetts	293,391	63,175	356,566
Michigan	1,334,580	15,263	1,349,843
Minnesota	111,077	4,179	115,256
Mississippi	943,007	3,226	946,233
Missouri	569,223	4,256	573,479
Montana	2,399	396	2,795
Nebraska	58,947	1,726	60,673
Nevada	90,124	5,750	95,874
New Hampshire	5,951	808	6,759
New Jersey	1,021,871	96,373	1,118,244
New Mexico	30,063	8,132	38,195
New York	2,620,014	531,255	3,151,269
North Carolina	1,532,370	10,268	1,542,628
North Dakota	3,561	208	3,769
Ohio	1,210,122	11,825	1,221,947
Oklahoma	243,335	5,185	248,520
Oregon	49,315	3,596	52,911
Pennsylvania	1,113,280	33,295	1,146,575
Rhode Island	36,935	9,376	46,311
South Carolina	1,086,041	4,950	1,090,991
South Dakota	3,455	198	3,653

51710 6952

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	Black		
Fips State	Non-Hispanic	Hispanic	Total
Tennessee	819,650	3,975	823,625
Texas	2,096,272	88,782	2,185,054
Utah	11,928	2,307	14,235
Vermont	2,305	142	2,447
Virginia	1,239,251	14,960	1,254,211
Washington	162,458	9,105	171,563
West Virginia	56,556	445	57,001
Wisconsin	262,703	6,000	268,703
Wyoming	3,227	577	3,804

51710 6953

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	American Indian		
Fips State	Non-Hispanic	Hispanic	Total
American Indian	1,882,286	294,708	2,176,994
Alabama	16,134	412	16,546
Alaska	90,629	1,388	92,017
Arizona	207,275	25,693	232,968
Arkansas	12,827	639	13,466
California	192,136	106,871	299,007
Colorado	23,656	9,701	33,357
Connecticut	5,969	1,525	7,494
Delaware	2,001	149	2,150
District of Col	1,139	3	1,520
Florida	35,536	7,438	42,974
Georgia	13,554	1,485	15,039
Hawaii	4,376	1,920	6,296
Idaho	12,924	2,453	15,377
Illinois	18,311	6,734	25,045
Indiana	12,077	1,244	13,321
Iowa	6,935	990	7,925
Kansas	19,802	2,928	22,730
Kentucky	5,450	423	5,873
Louisiana	17,244	1,233	44,799
Maine	5,795	134	5,929
Maryland	12,486	1,546	14,032
Massachusetts	10,661	2,772	13,433
Michigan	52,587	5,178	57,765
Minnesota	51,304	2,857	54,161
Mississippi	8,577	243	8,820
Missouri	18,947	1,497	20,444
Montana	48,449	1,509	49,958
Nebraska	12,112	1,128	13,240
Nevada	20,353	3,932	24,285
New Hampshire	2,005	140	2,145
New Jersey	13,411	4,836	18,247
New Mexico	134,672	10,249	144,921
New York	50,802	17,932	68,734
North Carolina	83,977	1,846	85,823
North Dakota	26,637	396	27,033
Ohio	19,210	2,039	21,249
Oklahoma	252,539	9,427	261,966
Oregon	38,176	4,887	43,063
Pennsylvania	13,831	2,349	16,180
Rhode Island	3,547	787	4,334
South Carolina	8,098	435	8,533
South Dakota	52,212	1,034	53,246

51710 6954

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	American Indian		
Fips State	Non-Hispanic	Hispanic	Total
Tennessee	10,196	589	10,785
Texas	55,324	23,820	79,144
Utah	24,861	2,866	27,727
Vermont	1,590	58	1,648
Virginia	14,929	1,917	16,846
Washington	84,797	10,753	95,550
West Virginia	2,401	119	2,520
Wisconsin	40,522	2,867	43,389
Wyoming	9,303	959	10,262

51710 6955

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	Asian/Pacific Islander		
Fips State	Non-Hispanic	Hispanic	Total
Asian/Pacific Islander	8,105,232	532,244	8,637,476
Alabama	25,031	870	25,901
Alaska	21,946	1,366	23,321
Arizona	61,814	8,738	70,552
Arkansas	14,220	632	14,852
California	3,150,802	237,563	3,388,365
Colorado	66,703	6,145	72,848
Connecticut	57,414	3,058	60,472
Delaware	10,766	347	11,113
District of Col	12,906	3,846	16,752
Florida	180,650	15,735	196,385
Georgia	94,197	3,459	97,656
Hawaii	686,132	51,377	737,509
Idaho	10,247	835	11,082
Illinois	312,156	18,723	330,879
Indiana	41,478	2,046	43,524
Iowa	29,257	1,035	30,292
Kansas	35,004	1,894	36,898
Kentucky	19,992	913	20,905
Louisiana	44,799	3,155	47,954
Maine	7,502	227	7,729
Maryland	159,706	7,477	167,183
Massachusetts	164,203	5,329	169,532
Michigan	117,248	4,336	121,584
Minnesota	92,267	2,621	94,888
Mississippi	14,481	554	15,035
Missouri	47,559	1,890	49,449
Montana	4,692	212	4,904
Nebraska	14,679	819	15,498
Nevada	46,486	4,409	50,895
New Hampshire	10,405	194	10,599
New Jersey	318,066	14,780	332,846
New Mexico	15,000	3,816	18,816
New York	768,642	41,465	810,107
North Carolina	62,465	2,873	65,338
North Dakota	4,229	171	4,400
Ohio	101,348	3,112	104,460
Oklahoma	37,319	2,544	39,863
Oregon	80,579	3,596	84,091
Pennsylvania	156,935	6,499	163,434
Rhode Island	19,874	1,360	21,234
South Carolina	24,557	1,499	26,056
South Dakota	3,715	166	3,881

51710 6956

Table 3 - Total U.S. Population by State, Race, and Hispanic Origin, 1993

	Asian/Pacific Islander		
Fips State	Non-Hispanic	Hispanic	Total
Tennessee	37,305	1,235	38,540
Texas	370,696	34,333	405,129
Utah	38,796	2,007	40,803
Vermont	3,871	107	3,978
Virginia	185,391	7,639	193,030
Washington	247,967	12,279	260,246
West Virginia	8,472	338	8,810
Wisconsin	63,306	2,257	65,563
Wyoming	2,957	347	3,304

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Table 4-1. Population of Birth-and Death-Registration States, 1900-1932, and United States, 1900-1993

[Population enumerated as of April 1 for 1940, 1950, 1960, 1970, 1980, and 1990 and estimated as of July 1 for all other years]

Year	United States 1/		Year	United States 1/	
	Population including Armed Forces abroad	Population residing in area		Population including Armed Forces abroad	Population residing in area
1993.....	258,119,768	257,783,004			
1992.....	255,457,501	255,077,536	1952.....	156,954,000	155,687,000
1991.....	252,688,000	252,177,000	1951.....	154,287,000	153,310,000
1990.....	249,225,000	248,709,873	1950.....	151,132,000	150,697,361
1989.....	247,342,000	246,819,000	1949.....	149,188,000	148,665,000
1988.....	245,021,000	244,499,000	1948.....	146,631,000	146,093,000
1987.....	242,804,000	242,289,000	1947.....	144,126,000	143,446,000
1986.....	240,651,000	240,133,000	1946.....	141,389,000	140,054,000
1985.....	238,466,000	237,924,000	1945.....	139,928,000	132,481,000
1984.....	236,348,000	235,825,000	1944.....	138,397,000	132,885,000
1983.....	234,307,000	233,792,000	1943.....	136,739,000	134,245,000
1982.....	232,188,000	231,664,000	1942.....	134,860,000	133,920,000
1981.....	229,966,000	229,466,000	1941.....	133,402,000	133,121,000
1980.....	227,061,000	226,545,805	1940.....	131,820,000	131,669,275
1979.....	225,055,000	224,567,000	1939.....	131,028,000	130,879,718
1978.....	222,585,000	222,095,000	1938.....	129,969,000	129,824,939
1977.....	220,239,000	219,760,000	1937.....	128,961,000	128,824,829
1976.....	218,035,000	217,563,000	1936.....	128,181,000	128,053,180
1975.....	215,973,000	215,465,000	1935.....	127,362,000	127,250,232
1974.....	213,854,000	213,342,000	1934.....	126,485,000	126,373,773
1973.....	211,909,000	211,357,000	1933.....	125,690,000	125,578,763
1972.....	209,896,000	209,284,000	1932.....	124,949,000	124,840,471
1971.....	207,661,000	206,827,000	1931.....	124,149,000	124,039,648
1970.....	204,270,000	203,211,926	1930.....	123,188,000	123,076,741
1969.....	202,677,000	201,385,000	1929.....	- - -	121,769,939
1968.....	200,706,000	199,399,000	1928.....	- - -	120,501,115
1967.....	198,712,000	197,457,000	1927.....	- - -	119,038,062
1966.....	196,560,000	195,576,000	1926.....	- - -	117,399,225
1965.....	194,303,000	193,526,000	1925.....	- - -	115,831,963
1964.....	191,889,000	191,141,000	1924.....	- - -	114,113,463
1963.....	189,242,000	188,483,000	1923.....	- - -	111,949,945
1962.....	186,538,000	185,771,000	1922.....	- - -	110,054,778
1961.....	183,691,000	182,992,000	1921.....	- - -	108,541,489
1960.....	179,933,000	179,323,175	1920.....	- - -	106,466,420
1959.....	177,264,000	176,513,000	1919.....	105,063,000	104,512,110
1958.....	174,141,000	173,320,000	1918.....	104,550,000	103,202,801
1957.....	171,274,000	170,371,000	1917.....	103,414,000	103,265,913
1956.....	168,221,000	167,306,000	1916.....	- - -	101,965,984
1955.....	165,275,000	164,308,000	1915.....	- - -	100,549,013
1954.....	162,391,000	161,164,000	1914.....	- - -	99,117,567
1953.....	159,565,000	158,242,000	1913.....	- - -	97,226,814

51710 6958

Table 4-1. Population of Birth- and Death-Registration States, 1900-1932, and United States, 1900-1993

[Population enumerated as of April 1 for 1940, 1950, 1960, 1970, 1980, and 1990 and estimated as of July 1 for all other years]

Year	United States 1/	
	Population including Armed Forces abroad	Population residing in area
1912.....	- - -	95,331,300
1911.....	- - -	93,867,814
1910.....	- - -	92,406,536
1909.....	- - -	90,491,525
1908.....	- - -	88,708,976
1907.....	- - -	87,000,271
1906.....	- - -	85,436,556
1905.....	- - -	83,819,666
1904.....	- - -	82,164,974
1903.....	- - -	80,632,152
1902.....	- - -	79,160,196
1901.....	- - -	77,585,128
1900.....	- - -	76,094,134

51710 6959

Table 4-1. Population of Birth- and Death-Registration States, 1900-1932, and United States, 1900-1993

[Population enumerated as of April 1 for 1940, 1950, 1960, 1970, 1980, and 1990 and estimated as of July 1 for all other years]

Year	Birth-registration States		Death-registration States	
	Number of States 2/	Population residing in area	Number of States 2/	Population residing in area
1945.....	. . .	. . .	. . .	. . .
1944.....	. . .	. . .	. . .	. . .
1943.....	. . .	. . .	. . .	. . .
1942.....	. . .	. . .	. . .	. . .
1941.....	. . .	. . .	. . .	. . .
1940.....	. . .	. . .	. . .	. . .
1939.....	. . .	. . .	. . .	. . .
1938.....	. . .	. . .	. . .	. . .
1937.....	. . .	. . .	. . .	. . .
1936.....	. . .	. . .	. . .	. . .
1935.....	. . .	. . .	. . .	. . .
1934.....	. . .	. . .	. . .	. . .
1933.....	. . .	. . .	. . .	. . .
1932.....	47	118,903,899	47	118,903,899
1931.....	46	117,455,229	47	118,148,987
1930.....	46	116,544,946	47	117,238,278
1929.....	46	115,317,450	46	115,317,450
1928.....	44	113,636,160	44	113,636,160
1927.....	40	104,320,830	42	107,084,532
1926.....	35	90,400,590	41	103,822,683
1925.....	33	88,294,564	40	102,031,555
1924.....	33	87,000,295	39	99,318,098
1923.....	30	81,072,123	38	96,788,197
1922.....	30	79,560,746	37	92,702,901
1921.....	27	70,807,090	34	87,814,447
1920.....	23	63,597,307	34	86,079,263
1919.....	22	61,212,076	33	83,157,932
1918.....	20	55,153,782	30	79,008,412
1917.....	20	55,197,952	27	70,234,775
1916.....	11	32,944,013	26	66,971,177
1915.....	10	31,096,697	24	61,894,847
1914.....	. . .	. . .	24	60,963,309
1913.....	. . .	. . .	23	58,156,740
1912.....	. . .	. . .	22	54,847,700
1911.....	. . .	. . .	22	53,929,644
1910.....	. . .	. . .	20	47,470,437
1909.....	. . .	. . .	18	44,223,513
1908.....	. . .	. . .	17	38,634,759
1907.....	. . .	. . .	16	34,552,837
1906.....	. . .	. . .	15	33,782,288

51710 6960

Table 4-1. Population of Birth- and Death-Registration States, 1900-1932, and United States, 1900-1993

[Population enumerated as of April 1 for 1940, 1950, 1960, 1970, 1980, and 1990 and estimated as of July 1 for all other years]

Year	Birth-registration States		Death-registration States	
	Number of States 2/	Population residing in area	Number of States 2/	Population residing in area
1905.....	. . .	. . .	10	21,767,980
1904.....	. . .	. . .	10	21,332,076
1903.....	. . .	. . .	10	20,943,222
1902.....	. . .	. . .	10	20,582,907
1901.....	. . .	. . .	10	20,237,453
1900.....	. . .	. . .	10	19,965,446

1/ Alaska included beginning 1959 and Hawaii, 1960.
2/ The District of Columbia is not included in "Number of States," but it is represented in all data shown for each year.

SOURCE: Published and unpublished data from the U.S. Bureau of the Census; see text.

51710 6961

Table 4-2. Estimated Population of the United States, by Age, Race, and Sex: July 1, 1993

[Figures include Armed Forces stationed in the United States but exclude those stationed outside the United States.]

Age	All races		
	Both sexes	Male	Female
All ages.....	257,783,004	125,800,418	131,982,586
Under 1 yr.	3,916,861	2,004,642	1,912,219
1-4 yrs....	15,773,936	8,070,831	7,703,105
5-9 yrs....	18,529,227	9,487,562	9,041,665
10-14 yrs..	18,520,991	9,484,450	9,036,541
15-19 yrs..	17,267,076	8,857,340	8,409,736
20-24 yrs..	18,762,450	9,542,139	9,220,311
25-29 yrs..	19,624,729	9,849,242	9,775,487
30-34 yrs..	22,250,693	11,092,820	11,157,873
35-39 yrs..	21,586,589	10,726,947	10,859,642
40-44 yrs..	19,197,415	9,477,158	9,720,257
45-49 yrs..	15,930,621	7,814,997	8,115,624
50-54 yrs..	12,726,857	6,185,931	6,540,926
55-59 yrs..	10,679,791	5,119,678	5,560,113
60-64 yrs..	10,242,416	4,806,952	5,435,464
65-69 yrs..	10,021,441	4,508,376	5,513,065
70-74 yrs..	8,618,128	3,727,898	4,890,230
75-79 yrs..	6,473,462	2,596,237	3,877,225
80-84 yrs..	4,247,010	1,500,860	2,746,150
85 & over..	3,413,311	946,358	2,466,953

51710 6962

Table 4-2 (cont'd). Estimated Population of the United States, by Age, Race, and Sex: July 1, 1993

[Figures include Armed Forces stationed in the United States but exclude those stationed outside the United States.]

Age	White		
	Both sexes	Male	Female
All ages.....	214,789,069	105,274,304	109,514,765
Under 1 yr.	3,083,092	1,581,065	1,502,027
1-4 yrs..	12,498,602	6,408,518	6,090,084
5-9 yrs....	14,789,533	7,589,474	7,200,059
10-14 yrs..	14,752,551	7,575,490	7,177,061
15-19 yrs..	13,776,342	7,088,522	6,687,820
20-24 yrs..	15,141,024	7,746,473	7,394,551
25-29 yrs..	15,999,417	8,102,934	7,896,483
30-34 yrs..	18,404,593	9,272,238	9,132,355
35-39 yrs..	17,971,747	9,025,183	8,946,564
40-44 yrs..	16,135,532	8,056,765	8,078,767
45-49 yrs..	13,661,740	6,771,072	6,890,668
50-54 yrs..	10,958,235	5,377,172	5,581,063
55-59 yrs..	9,228,381	4,470,093	4,758,288
60-64 yrs..	8,943,003	4,244,037	4,698,966
65-69 yrs..	8,868,503	4,018,577	4,849,926
70-74 yrs..	7,734,347	3,364,290	4,370,057
75-79 yrs..	5,860,849	2,361,592	3,499,257
80-84 yrs..	3,869,899	1,366,049	2,503,850
85 & over	3,111,679	854,760	2,256,919

51710 6963

Table 4-2 (cont'd). Estimated Population of the United States, by Age, Race, and Sex: July 1, 1993

[Figures include Armed Forces stationed in the United States but exclude those stationed outside the United States.]

Age	All Other		
	Total		
	Both sexes	Male	Female
All ages.....	42,993,935	20,526,114	22,467,821
Under 1 yr.	833,769	423,577	410,192
1-4 yrs..	3,275,334	1,662,313	1,613,021
5-9 yrs....	3,739,694	1,898,088	1,841,606
10-14 yrs..	3,768,440	1,908,960	1,859,480
15-19 yrs..	3,490,734	1,768,818	1,721,916
20-24 yrs..	3,621,426	1,795,666	1,825,760
25-29 yrs..	3,625,312	1,746,308	1,879,004
30-34 yrs..	3,846,100	1,820,582	2,025,518
35-39 yrs..	3,614,842	1,701,764	1,913,078
40-44 yrs..	3,061,883	1,420,393	1,641,490
45-49 yrs..	2,268,881	1,043,925	1,224,956
50-54 yrs..	1,768,622	808,759	959,863
55-59 yrs..	1,451,410	649,585	801,825
60-64 yrs..	1,299,413	592,915	736,498
65-69 yrs..	1,152,938	489,799	663,139
70-74 yrs..	883,781	363,608	520,173
75-79 yrs..	612,613	234,654	377,968
80-84 yrs..	377,111	134,811	242,300
85 & over	301,632	91,598	210,034

51710 6964

Table 4-2 (cont'd). Estimated Population of the United States, by Age, Race, and Sex: July 1, 1993

[Figures include Armed Forces stationed in the United States but exclude those stationed outside the United States.]

Age	Black		
	Total		
	Both sexes	Male	Female
All ages.....	32,179,623	15,254,720	16,924,903
Under 1 yr.	627,290	318,444	308,846
1-4 yrs..	2,497,132	1,264,609	1,232,523
5-9 yrs....	2,844,156	1,441,702	1,402,454
10-14 yrs..	2,842,157	1,439,891	1,402,266
15-19 yrs..	2,668,732	1,351,026	1,317,706
20-24 yrs..	2,685,093	1,320,948	1,364,145
25-29 yrs..	2,675,642	1,277,146	1,398,496
30-34 yrs..	2,822,211	1,322,436	1,499,775
35-39 yrs..	2,660,019	1,244,601	1,415,418
40-44 yrs..	2,221,488	1,028,003	1,193,485
45-49 yrs..	1,629,230	742,464	886,766
50-54 yrs..	1,298,691	584,033	714,658
55-59 yrs..	1,081,684	476,258	605,426
60-64 yrs..	985,378	424,490	560,888
65-69 yrs..	891,953	377,895	514,058
70-74 yrs..	689,677	278,007	411,670
75-79 yrs..	493,106	183,355	309,751
80-84 yrs..	309,286	105,021	204,265
85 & over	256,698	74,391	182,307

SOURCE: Published and unpublished data from the U.S. Bureau of the Census; see text.

51710 6965

Table 4-3. Estimated Total Population and Female Population Aged 15-44 Years: United States, Each Division and State, Puerto Rico, Virgin Islands, and Guam: July 1, 1993

[Figures include Armed Forces stationed in each area, and exclude Armed Forces stationed outside the United States.]

Division and State	Total	Female 15-44 Years
United States	257,783,004	59,143,306
Geographic divisions:		
New England	13,235,017	3,083,468
Middle Atlantic	38,041,971	8,639,758
East North Central	42,956,375	9,872,662
West North Central	18,082,071	4,024,313
South Atlantic	45,737,438	10,505,846
East South Central	15,708,659	3,635,033
West South Central	27,970,840	6,472,203
Mountain	14,776,913	3,337,394
Pacific	41,273,720	9,572,629
New England:		
Maine	1,239,779	282,501
New Hampshire	1,124,229	267,777
Vermont	575,666	135,439
Massachusetts	6,017,798	1,423,970
Rhode Island	999,562	229,471
Connecticut	3,277,983	744,310
Middle Atlantic:		
New York	18,153,083	4,199,850
New Jersey	7,858,809	1,787,894
Pennsylvania	12,030,079	2,652,014
East North Central:		
Ohio	11,061,253	2,531,639
Indiana	5,705,540	1,319,736
Illinois	11,685,844	2,684,926
Michigan	9,459,667	2,197,282
Wisconsin	5,044,071	1,139,079
West North Central:		
Minnesota	4,524,414	1,036,121
Iowa	2,821,294	611,708
Missouri	5,235,144	1,170,922
North Dakota	636,725	137,623
South Dakota	716,071	152,258
Nebraska	1,613,326	356,729
Kansas	2,535,097	558,952

51710 6966

Table 4-3 (cont'd). Estimated Total Population and Female Population Aged 15-44 Years: United States, Each Division and State, Puerto Rico, Virgin Islands, and Guam: July 1, 1993

[Figures include Armed Forces stationed in each area, and exclude Armed Forces stationed outside the United States.]

Division and State	Total	Female 15-44 Years
United States	257,783,004	59,143,306
South Atlantic:		
Delaware	698,479	164,984
Maryland	4,958,033	1,194,535
District of Columbia	579,080	150,098
Virginia	6,472,999	1,560,833
West Virginia	1,818,321	403,491
North Carolina	6,952,424	1,618,476
South Carolina	3,629,997	857,128
Georgia	6,902,358	1,682,723
Florida	13,725,747	2,873,578
East South Central:		
Kentucky	3,793,966	879,549
Tennessee	5,094,212	1,180,303
Alabama	4,180,648	965,812
Mississippi	2,639,833	609,369
West South Central:		
Arkansas	2,425,889	530,537
Louisiana	4,290,350	1,004,091
Oklahoma	3,232,859	707,285
Texas	18,021,742	4,230,290
Mountain:		
Montana	840,942	180,123
Idaho	1,100,358	241,990
Wyoming	469,695	104,553
Colorado	3,563,557	842,024
New Mexico	1,615,613	363,742
Arizona	3,944,939	866,213
Utah	1,859,785	432,359
Nevada	1,382,024	306,390
Pacific:		
Washington	5,258,635	1,217,535
Oregon	3,034,761	675,990
California	31,216,945	7,275,019
Alaska	597,868	142,092
Hawaii	1,165,511	261,933
Puerto Rico	- - -	- - -
Virgin Islands	- - -	- - -
Guam	- - -	- - -

51710 6967

NATALITY DOCUMENTATION TABLE 10.
LIVE BIRTHS BY NUMBER OF PRENATAL VISITS BY RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

RACE	TOTAL	NUMBER OF PRENATAL VISITS					
		NO VISITS	1-2 VISITS	3-4 VISITS	5-6 VISITS	7-8 VISITS	9-10 VISITS
RACE OF MOTHER							
ALL RACES.....	4,000,240	62,487	50,789	101,473	210,108	367,341	765,228
WHITE.....	3,149,833	36,234	29,582	62,675	141,253	271,847	595,926
ALL OTHER.....	850,407	26,253	21,207	38,798	68,855	95,494	169,302
BLACK.....	658,875	23,903	18,155	32,384	55,677	74,272	129,609

51710 6968

NATALITY DOCUMENTATION TABLE 10.
LIVE BIRTHS BY NUMBER OF PRENATAL VISITS BY RACE OF MOTHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

RACE	TOTAL	NUMBER OF PRENATAL VISITS					
		11-12 VISITS	13-14 VISITS	15-16 VISITS	17-18 VISITS	19 + VISITS	NOT STATED
RACE OF MOTHER							
ALL RACES.....	4,000,240	1,030,601	647,818	423,485	95,154	132,572	113,184
WHITE.....	3,149,833	854,208	548,103	347,433	79,009	107,287	76,276
ALL OTHER.....	850,407	176,393	99,715	76,052	16,145	25,285	36,908
BLACK.....	658,875	129,687	73,757	58,710	12,224	20,694	29,803

51710 6969

NATALITY DOCUMENTATION TABLE 11.

LIVE BIRTHS BY 1- and 5- MINUTE APGAR SCORES BY RACE OF MOTHER:
TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

RACE OF MOTHER	TOTAL	APGAR SCORE					
		0	1	2	3	4	5
1-MIN SCORE							
ALL RACES 1/...	3,092,845	2,516	19,234	20,773	26,429	37,019	55,970
WHITE.....	2,399,150	1,424	12,173	14,234	18,740	26,930	41,415
BLACK.....	572,208	996	6,450	5,830	6,806	8,874	12,725
5-MIN SCORE							
ALL RACES 1/...	3,092,845	2,361	6,255	2,704	2,848	4,344	7,791
WHITE.....	2,399,150	1,322	3,481	1,605	1,808	2,814	5,224
BLACK.....	572,208	967	2,582	1,011	959	1,393	2,342

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6970

NATALITY DOCUMENTATION TABLE 11.
LIVE BIRTHS BY 1- and 5- MINUTE APGAR SCORES BY RACE OF MOTHER:
TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

RACE OF MOTHER	TOTAL	APGAR SCORE					
		6	7	8	9	10	NOT STATED
1-MIN SCORE							
ALL RACES 1/...	3,092,845	95,132	255,588	1,229,331	1,303,536	23,398	23,919
WHITE.....	2,399,150	72,486	202,591	978,631	994,284	19,339	16,903
BLACK.....	572,208	19,409	43,911	201,778	256,045	3,363	6,021
5-MIN SCORE							
ALL RACES 1/...	3,092,845	18,029	45,950	214,410	2,385,750	378,784	23,619
WHITE.....	2,399,150	12,327	33,416	165,697	1,845,148	309,466	16,842
BLACK.....	572,208	5,162	11,088	41,067	445,181	54,618	5,838

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6971

NATALITY DOCUMENTATION TABLE 12.
LIVE BIRTHS BY HISPANIC ORIGIN OF MOTHER AND OF FATHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF UNITED STATES)

ORIGIN OF FATHER	ALL ORIGINS	ORIGIN OF MOTHER			
		HISPANIC			
		TOTAL	MEXICAN	PUERTO RICAN	CUBAN
ALL ORIGINS.....	4,000,240	654,418	443,733	58,102	11,916
HISPANIC.....	574,137	490,233	353,772	35,292	7,672
MEXICAN.....	401,794	354,194	339,097	1,853	413
PUERTO RICAN.....	45,722	33,809	1,940	27,810	480
CUBAN.....	12,697	8,962	626	824	5,766
CENTRAL & SOUTH AMERICAN..	77,667	69,084	9,491	4,095	892
OTHER & UNKNOWN HISPANIC..	36,257	24,184	2,618	710	121
NON-HISPANIC.....	2,779,441	78,219	41,248	11,051	3,119
NOT STATED.....	646,662	85,966	48,713	11,759	1,125

51710 6972

NATALITY DOCUMENTATION TABLE 12.
LIVE BIRTHS BY HISPANIC ORIGIN OF MOTHER AND OF FATHER:
UNITED STATES, 1993

(RESIDENT BIRTHS ONLY, EXCLUDES BIRTHS TO NONRESIDENTS OF UNITED STATES)

ORIGIN OF FATHER	ALL ORIGINS	ORIGIN OF MOTHER			
		HISPANIC		NON HISPANIC	NOT STATED
		CENTRAL AND SOUTH AMERICAN	OTHER AND UNKNOWN HISPANIC		
ALL ORIGINS.....	4,000,240	92,371	48,296	3,295,345	50,477
HISPANIC.....	574,137	68,046	25,451	82,713	1,191
MEXICAN.....	401,794	9,171	3,660	47,029	571
PUERTO RICAN.....	45,722	2,807	772	11,688	225
CUBAN.....	12,697	1,569	177	3,705	30
CENTRAL & SOUTH AMERICAN..	77,667	53,895	711	8,376	207
OTHER & UNKNOWN HISPANIC..	36,257	604	20,131	11,915	158
NON-HISPANIC.....	2,779,441	10,380	12,421	2,695,238	5,984
NOT STATED.....	646,662	13,945	10,424	517,394	43,302

51710 6973

NATALITY DOCUMENTATION TABLE 13.
LIVE BIRTHS BY MONTH AND STATE OF OCCURRENCE:
UNITED STATES AND EACH STATE, 1993

(BIRTHS BY STATE OF OCCURRENCE INCLUDE BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

STATE OF OCCURRENCE	TOTAL	MONTH OF BIRTH			
		JAN.	FEB.	MAR.	APR.
UNITED STATES.....	4,004,523	323,420	304,947	342,518	327,372
ALABAMA.....	61,072	5,057	4,704	5,204	4,795
ALASKA.....	10,924	867	801	953	932
ARIZONA.....	68,990	5,580	5,117	5,850	5,536
ARKANSAS.....	33,173	2,710	2,521	2,733	2,562
CALIFORNIA.....	585,564	47,348	43,614	49,780	47,338
COLORADO.....	54,200	4,291	4,117	4,787	4,608
CONNECTICUT.....	46,756	3,690	3,581	4,047	4,040
DELAWARE.....	11,199	941	868	952	978
DIST. OF COL....	19,063	1,585	1,522	1,623	1,577
FLORIDA.....	193,035	15,985	14,850	15,993	14,916
GEORGIA.....	111,318	9,303	8,573	9,517	8,663
HAWAII.....	19,650	1,593	1,500	1,610	1,623
IDAHO.....	17,317	1,354	1,333	1,458	1,459
ILLINOIS.....	187,461	14,860	14,413	16,373	15,574
INDIANA.....	83,622	6,877	6,330	7,195	6,769
IOWA.....	38,113	3,007	2,960	3,341	3,273
KANSAS.....	35,950	2,799	2,793	3,117	3,144
KENTUCKY.....	51,635	4,114	3,844	4,390	4,146
LOUISIANA.....	69,474	5,702	5,328	5,631	5,096
MAINE.....	14,817	1,117	1,151	1,339	1,307
MARYLAND.....	69,494	5,595	5,371	6,068	5,581
MASSACHUSETTS...	85,872	6,837	6,492	7,508	7,267
MICHIGAN.....	138,417	11,221	10,668	12,195	11,846
MINNESOTA.....	64,517	4,866	4,785	5,649	5,561
MISSISSIPPI.....	41,639	3,436	3,208	3,543	3,108
MISSOURI.....	77,986	6,269	5,925	6,693	6,422
MONTANA.....	11,177	843	832	1,000	958
NEBRASKA.....	23,389	1,785	1,840	2,078	1,890
NEVADA.....	22,184	1,675	1,685	1,868	1,713
NEW HAMPSHIRE...	14,883	1,139	1,135	1,330	1,061

51710 6974

NATALITY DOCUMENTATION TABLE 13.
LIVE BIRTHS BY MONTH AND STATE OF OCCURRENCE:
UNITED STATES AND EACH STATE, 1993

(BIRTHS BY STATE OF OCCURRENCE INCLUDE BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

STATE OF OCCURRENCE	TOTAL	MONTH OF BIRTH			
		JAN.	FEB.	MAR.	APR.
NEW JERSEY.....	114,501	9,342	8,735	9,915	9,777
NEW MEXICO.....	27,555	2,280	2,137	2,331	2,288
NEW YORK.....	283,328	23,103	22,001	24,584	23,533
NORTH CAROLINA..	101,663	8,505	7,980	8,472	7,974
NORTH DAKOTA....	9,930	788	764	869	840
OHIO.....	159,757	12,995	12,169	14,053	13,540
OKLAHOMA.....	45,351	3,696	3,509	3,823	3,653
OREGON.....	43,270	3,452	3,290	3,702	3,531
PENNSYLVANIA....	161,493	13,417	12,422	13,981	13,589
RHODE ISLAND....	14,923	1,217	1,124	1,279	1,330
SOUTH CAROLINA..	52,110	4,384	4,043	4,433	4,127
SOUTH DAKOTA....	10,884	832	826	969	885
TENNESSEE.....	77,534	6,063	5,943	6,596	6,161
TEXAS.....	326,267	26,082	24,253	26,551	25,590
UTAH.....	38,014	2,861	2,868	3,274	3,368
VERMONT.....	7,148	520	527	644	680
VIRGINIA.....	92,499	7,576	7,176	7,958	7,512
WASHINGTON.....	77,182	6,102	5,860	6,719	6,600
WEST VIRGINIA...	23,232	1,886	1,789	1,964	1,904
WISCONSIN.....	68,917	5,399	5,220	6,038	5,969
WYOMING.....	6,224	474	450	538	578

51710 6975

NATALITY DOCUMENTATION TABLE 13.
LIVE BIRTHS BY MONTH AND STATE OF OCCURRENCE:
UNITED STATES AND EACH STATE, 1993

(BIRTHS BY STATE OF OCCURRENCE INCLUDE BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

STATE OF OCCURRENCE	TOTAL	MONTH OF BIRTH			
		MAY	JUNE	JULY	AUG.
UNITED STATES.....	4,004,523	336,368	335,703	352,949	351,306
ALABAMA.....	61,072	4,950	4,986	5,428	5,504
ALASKA.....	10,924	907	928	956	928
ARIZONA.....	68,990	5,459	5,677	5,884	6,178
ARKANSAS.....	33,173	2,723	2,755	3,048	2,984
CALIFORNIA.....	585,564	47,991	48,600	50,928	51,794
COLORADO.....	54,200	4,785	4,680	4,857	4,677
CONNECTICUT.....	46,756	4,089	4,011	4,045	3,995
DELAWARE.....	11,199	942	943	1,046	956
DIST. OF COL....	19,063	1,583	1,553	1,657	1,649
FLORIDA.....	193,035	15,637	15,350	16,705	16,724
GEORGIA.....	111,318	9,047	8,981	9,704	9,880
HAWAII.....	19,650	1,649	1,546	1,640	1,747
IDAHO.....	17,317	1,511	1,553	1,499	1,473
ILLINOIS.....	187,461	15,862	16,102	16,452	16,495
INDIANA.....	83,622	7,124	7,049	7,521	7,332
IOWA.....	38,113	3,399	3,132	3,341	3,307
KANSAS.....	35,850	3,001	3,047	3,079	3,111
KENTUCKY.....	51,635	4,309	4,287	4,703	4,536
LOUISIANA.....	69,474	5,530	5,762	6,233	6,194
MAINE.....	14,817	1,323	1,273	1,351	1,312
MARYLAND.....	69,494	5,779	5,736	6,150	6,286
MASSACHUSETTS...	85,872	7,623	7,451	7,545	7,519
MICHIGAN.....	138,417	12,255	12,064	12,134	11,918
MINNESOTA.....	64,517	5,802	5,680	5,739	5,667
MISSISSIPPI.....	41,639	3,207	3,301	3,709	3,802
MISSOURI.....	77,986	6,558	6,626	6,842	6,755
MONTANA.....	11,177	1,005	979	970	1,031
NEBRASKA.....	23,389	2,010	1,986	2,109	2,031
NEVADA.....	22,184	1,815	1,908	1,953	1,917
NEW HAMPSHIRE...	14,803	1,393	1,287	1,316	1,299

51710 6976

NATALITY DOCUMENTATION TABLE 13.
LIVE BIRTHS BY MONTH AND STATE OF OCCURRENCE:
UNITED STATES AND EACH STATE, 1993

(BIRTHS BY STATE OF OCCURRENCE INCLUDE BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

STATE OF OCCURRENCE	TOTAL	MONTH OF BIRTH			
		MAY	JUNE	JULY	AUG.
NEW JERSEY.....	114,501	9,916	9,860	10,355	10,067
NEW MEXICO.....	27,555	2,235	2,325	2,490	2,475
NEW YORK.....	283,328	24,717	23,879	25,235	24,271
NORTH CAROLINA..	101,663	8,182	8,387	9,098	8,765
NORTH DAKOTA....	9,930	825	831	864	942
OHIO.....	159,757	13,802	13,488	14,145	13,856
OKLAHOMA.....	45,351	3,750	3,863	3,903	4,002
OREGON.....	43,270	3,838	3,742	3,701	3,850
PENNSYLVANIA....	161,493	13,928	13,314	14,191	14,083
RHODE ISLAND....	14,923	1,330	1,290	1,326	1,272
SOUTH CAROLINA..	52,110	4,166	4,194	4,677	4,608
SOUTH DAKOTA....	10,884	979	978	937	976
TENNESSEE.....	77,534	6,392	6,556	6,899	6,782
TEXAS.....	326,267	26,246	26,773	28,518	29,214
UTAH.....	38,014	3,299	3,251	3,440	3,194
VERMONT.....	7,148	652	640	641	646
VIRGINIA.....	92,499	7,678	7,916	8,141	8,173
WASHINGTON.....	77,182	6,703	6,795	6,908	6,633
WEST VIRGINIA...	23,232	1,929	1,966	2,039	2,021
WISCONSIN.....	68,917	6,004	5,942	6,226	5,949
WYOMING.....	6,224	539	490	571	527

51710 6977

NATALITY DOCUMENTATION TABLE 13.
LIVE BIRTHS BY MONTH AND STATE OF OCCURRENCE:
UNITED STATES AND EACH STATE, 1993

(BIRTHS BY STATE OF OCCURRENCE INCLUDE BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

STATE OF OCCURRENCE	TOTAL	MONTH OF BIRTH			
		SEPT.	OCT.	NOV.	DEC.
UNITED STATES.....	4,004,523	348,399	333,313	316,751	331,477
ALABAMA.....	61,072	5,432	5,018	4,795	5,199
ALASKA.....	10,924	982	929	830	911
ARIZONA.....	68,990	6,244	5,949	5,645	5,871
ARKANSAS.....	33,173	2,840	2,742	2,634	2,921
CALIFORNIA.....	585,564	52,129	49,980	47,281	48,781
COLORADO.....	54,200	4,538	4,527	4,024	4,309
CONNECTICUT.....	46,756	4,069	3,863	3,628	3,698
DELAWARE.....	11,199	854	945	869	905
DIST. OF COL....	19,063	1,613	1,575	1,508	1,618
FLORIDA.....	193,035	17,390	16,487	16,066	16,942
GEORGIA.....	111,318	9,800	9,200	8,959	9,691
HAWAII.....	19,650	1,647	1,684	1,628	1,783
IDAHO.....	17,317	1,531	1,416	1,378	1,352
ILLINOIS.....	187,461	15,819	15,506	14,819	15,186
INDIANA.....	83,622	7,318	6,829	6,618	6,660
IOWA.....	38,113	3,314	3,042	2,972	3,025
KANSAS.....	35,850	3,119	2,862	2,744	3,034
KENTUCKY.....	51,635	4,503	4,316	4,135	4,352
LOUISIANA.....	69,474	6,066	5,999	5,892	6,041
MAINE.....	14,817	1,228	1,173	1,134	1,109
MARYLAND.....	69,494	6,032	5,908	5,414	5,574
MASSACHUSETTS...	85,872	7,335	7,049	6,527	6,719
MICHIGAN.....	138,417	11,790	11,154	10,461	10,711
MINNESOTA.....	64,517	5,480	5,369	4,871	5,048
MISSISSIPPI.....	41,639	3,728	3,517	3,375	3,705
MISSOURI.....	77,986	6,729	6,452	6,150	6,465
MONTANA.....	11,177	948	875	841	895
NEBRASKA.....	23,389	1,981	1,943	1,879	1,857
NEVADA.....	22,184	2,001	1,886	1,809	1,934
NEW HAMPSHIRE...	14,803	1,248	1,169	1,137	1,165

51710 6978

NATALITY DOCUMENTATION TABLE 13.
LIVE BIRTHS BY MONTH AND STATE OF OCCURRENCE:
UNITED STATES AND EACH STATE, 1993

(BIRTHS BY STATE OF OCCURRENCE INCLUDE BIRTHS TO NONRESIDENTS OF THE UNITED STATES)

STATE OF OCCURRENCE	TOTAL	MONTH OF BIRTH			
		SEPT.	OCT.	NOV.	DEC.
NEW JERSEY.....	114,501	9,818	9,154	8,529	9,033
NEW MEXICO.....	27,555	2,306	2,326	2,172	2,190
NEW YORK.....	283,328	24,033	23,185	21,731	23,056
NORTH CAROLINA..	101,663	8,941	8,588	8,038	8,733
NORTH DAKOTA....	9,930	832	828	718	829
OHIO.....	159,757	13,604	13,047	12,360	12,698
OKLAHOMA.....	45,351	3,891	3,821	3,652	3,788
OREGON.....	43,270	3,649	3,485	3,378	3,652
PENNSYLVANIA....	161,493	13,968	13,308	12,411	12,881
RHODE ISLAND....	14,923	1,261	1,239	1,107	1,148
SOUTH CAROLINA..	52,110	4,539	4,364	4,112	4,463
SOUTH DAKOTA....	10,884	951	892	801	858
TENNESSEE.....	77,534	6,915	6,413	6,174	6,640
TEXAS.....	326,267	29,136	27,720	27,426	28,758
UTAH.....	38,014	3,297	3,086	2,963	3,113
VERMONT.....	7,148	647	540	497	514
VIRGINIA.....	92,499	8,022	7,607	7,228	7,512
WASHINGTON.....	77,182	6,461	6,249	5,878	6,273
WEST VIRGINIA...	23,232	2,028	1,955	1,792	1,959
WISCONSIN.....	68,917	5,874	5,622	5,261	5,413
WYOMING.....	6,224	532	520	500	505

51710 6979

NATALITY DOCUMENTATION TABLE 14.
LIVE BIRTHS FOR SELECTED MEDICAL RISK FACTORS BY AGE AND RACE OF MOTHER
UNITED STATES, 1993

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED RISK FACTORS ON THE BIRTH CERTIFICATE; SEE TECHNICAL APPENDIX, TABLE A)

MEDICAL RISK FACTOR AND RACE OF MOTHER	ALL BIRTHS 1/	MEDICAL RISK FACTOR REPORTED				
		AGE OF MOTHER				
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS
ALL RACES 2/						
ANEMIA	4,000,240	73,424	13,828	22,862	17,979	12,734
CARDIAC DISEASE	4,000,240	16,735	1,301	3,203	4,806	4,856
ACUTE OR CHRONIC LUNG DISEASE	4,000,240	18,750	3,149	5,088	4,688	3,822
DIABETES	4,000,240	102,234	4,310	16,865	28,640	30,772
GENITAL HERPES	3,678,169	30,389	2,640	6,956	8,376	7,933
HYDRAMNIOS/OLIGOHYDRAMNIOS	3,847,418	34,690	4,865	9,112	9,197	7,422
HEMOGLOBINOPATHY	4,000,240	2,521	459	714	663	473
HYPERTENSION, CHRONIC	4,000,240	26,518	1,413	4,279	6,614	7,521
HYPERTENSION, PREGNANCY-ASSOCIATED	4,000,240	116,901	17,256	30,360	31,888	24,100
ECLAMPSIA	4,000,240	13,094	2,579	3,576	3,151	2,393
INCOMPETENT CERVIX	4,000,240	8,935	515	1,584	2,395	2,794
PREVIOUS INFANT 4000+ GRAMS	4,000,240	40,902	809	6,650	12,447	13,386
PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT	4,000,240	45,781	2,830	11,750	13,127	11,617
RENAL DISEASE	4,000,240	8,986	1,401	2,778	2,400	1,639
RH SENSITIZATION	3,962,834	23,906	2,287	5,791	7,059	6,004
UTERINE BLEEDING	3,678,169	28,360	2,663	6,479	8,160	7,293

51710 6980

NATALITY DOCUMENTATION TABLE 14.

LIVE BIRTHS FOR SELECTED MEDICAL RISK FACTORS BY AGE AND RACE OF MOTHER: UNITED STATES, 1993-CON

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED RISK FACTORS ON THE BIRTH CERTIFICATE; SEE TECHNICAL APPENDIX, TABLE A)

MEDICAL RISK FACTOR AND RACE OF MOTHER	ALL BIRTHS 1/	MEDICAL RISK FACTOR REPORTED				
		AGE OF MOTHER				
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS
WHITE						
ANEMIA	3,149,833	47,867	7,703	14,303	12,346	9,236
CARDIAC DISEASE	3,149,833	14,039	850	2,487	4,179	4,295
ACUTE OR CHRONIC LUNG DISEASE	3,149,833	14,138	2,008	3,679	3,750	3,084
DIABETES	3,149,833	80,515	3,179	13,268	23,009	24,372
GENITAL HERPES	2,877,622	24,463	1,441	4,879	6,998	7,085
HYDRAMNIOS/OLIGOHYDRAMNIOS	3,017,108	26,267	3,137	6,718	7,227	5,963
HEMOGLOBINOPATHY	3,149,833	800	67	172	258	197
HYPERTENSION, CHRONIC	3,149,833	18,189	759	2,917	4,804	5,312
HYPERTENSION, PREGNANCY-ASSOCIATED	3,149,833	94,094	11,992	24,275	26,806	20,202
ECLAMPSIA	3,149,833	9,504	1,538	2,536	2,501	1,862
INCOMPETENT CERVIX	3,149,833	6,670	332	1,065	1,751	2,182
PREVIOUS INFANT 4000- GRAMS	3,149,833	36,773	616	5,719	11,264	12,289
PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT	3,149,833	34,289	1,630	8,194	10,097	9,205
RENAL DISEASE	3,149,833	7,282	1,044	2,209	2,023	1,382
RH SENSITIZATION	3,116,798	21,664	1,867	5,116	6,510	5,602
UTERINE BLEEDING	2,877,622	23,113	1,856	5,124	6,812	6,180

51710 6981

NATALITY DOCUMENTATION TABLE 14.
LIVE BIRTHS FOR SELECTED MEDICAL RISK FACTORS BY AGE AND RACE OF MOTHER:
UNITED STATES, 1993-CON

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED RISK FACTORS ON THE BIRTH CERTIFICATE; SEE TECHNICAL APPENDIX, TABLE A)

MEDICAL RISK FACTOR AND RACE OF MOTHER	ALL BIRTHS 1/	MEDICAL RISK FACTOR REPORTED				
		AGE OF MOTHER				
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS
BLACK						
ANEMIA	658,875	21,053	5,395	7,290	4,433	2,665
CARDIAC DISEASE	658,875	2,202	412	614	507	422
ACUTE OR CHRONIC LUNG DISEASE	658,875	3,999	1,069	1,271	779	580
DIABETES	658,875	14,733	966	2,862	3,832	4,059
GENITAL HERPES	617,181	5,142	1,138	1,905	1,154	647
HYDRAMNIOS/OLIGOHYDRAMNIOS	642,358	6,926	1,573	2,059	1,576	1,090
HEMOGLOBINOPATHY	658,875	1,585	387	523	357	239
HYPERTENSION, CHRONIC	658,875	7,405	626	1,266	1,620	1,925
HYPERTENSION, PREGNANCY-ASSOCIATED	658,875	18,995	4,748	5,285	4,112	3,045
ECLAMPSIA	658,875	3,096	940	915	542	436
INCOMPETENT CERVIX	658,875	2,024	173	479	591	539
PREVIOUS INFANT 4000+ GRAMS	658,875	2,657	151	663	759	679
PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT	658,875	9,686	1,110	3,127	2,550	1,948
RENAL DISEASE	658,875	1,385	315	481	285	198
RH SENSITIZATION	655,637	1,893	377	583	461	318
UTERINE BLEEDING	617,181	4,048	725	1,138	1,031	756

1/ TOTAL NUMBER OF BIRTHS TO RESIDENTS OF AREAS REPORTING SPECIFIED MEDICAL RISK FACTOR.
2/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6982

NATALITY DOCUMENTATION TABLE 14.

LIVE BIRTHS FOR SELECTED MEDICAL RISK FACTORS BY AGE AND RACE OF MOTHER: UNITED STATES, 1993-CON

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED RISK FACTORS ON THE BIRTH CERTIFICATE; SEE TECHNICAL APPENDIX, TABLE A)

MEDICAL RISK FACTOR AND RACE OF MOTHER	ALL BIRTHS 1/	MEDICAL RISK FACTOR REPORTED		MEDICAL RISK FACTOR NOT REPORTED	NOT STATED
		AGE OF MOTHER			
		35-39 YEARS	40-49 YEARS		
ALL RACES 2/					
ANEMIA	4,000,240	5,108	913	3,856,408	70,408
CARDIAC DISEASE	4,000,240	2,131	438	3,913,097	70,408
ACUTE OR CHRONIC LUNG DISEASE	4,000,240	1,641	362	3,911,082	70,408
DIABETES	4,000,240	17,455	4,192	3,827,598	70,408
GENITAL HERPES	3,678,169	3,821	663	3,582,562	65,218
HYDRAMNIOS/OLIGOHYDRAMNIOS	3,847,418	3,342	752	3,750,248	62,480
HEMOGLOBINOPATHY	4,000,240	182	30	3,927,311	70,408
HYPERTENSION, CHRONIC	4,000,240	5,139	1,552	3,903,314	70,408
HYPERTENSION, PREGNANCY-ASSOCIATED	4,000,240	11,028	2,269	3,812,931	70,408
ECLAMPSIA	4,000,240	1,115	280	3,916,738	70,408
INCOMPETENT CERVIX	4,000,240	1,387	260	3,920,897	70,408
PREVIOUS INFANT 4000+ GRAMS	4,000,240	6,350	1,260	3,888,930	70,408
PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT	4,000,240	5,499	958	3,884,051	70,408
RENAL DISEASE	4,000,240	652	116	3,920,846	70,408
RH SENSITIZATION	3,962,834	2,367	398	3,867,537	71,391
UTERINE BLEEDING	3,678,169	3,151	614	3,584,591	65,218

51710 6983

NATALITY DOCUMENTATION TABLE 14.
LIVE BIRTHS FOR SELECTED MEDICAL RISK FACTORS BY AGE AND RACE OF MOTHER: UNITED STATES, 1993-CON

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED RISK FACTORS ON THE BIRTH CERTIFICATE; SEE TECHNICAL APPENDIX, TABLE A)

MEDICAL RISK FACTOR AND RACE OF MOTHER	ALL BIRTHS 1/	MEDICAL RISK FACTOR REPORTED		MEDICAL RISK FACTOR NOT REPORTED	NOT STATED
		AGE OF MOTHER			
		35-39 YEARS	40-49 YEARS		
WHITE					
ANEMIA	3,149,833	3,660	619	3,047,322	54,644
CARDIAC DISEASE	3,149,833	1,858	370	3,081,150	54,644
ACUTE OR CHRONIC LUNG DISEASE	3,149,833	1,326	291	3,081,051	54,644
DIABETES	3,149,833	13,536	3,151	3,014,674	54,644
GENITAL HERPES	2,877,622	3,457	603	2,802,958	50,201
HYDRAMNIOS/OLIGOHYDRAMNIOS	3,017,108	2,654	568	2,942,876	47,965
HEMOGLOBINOPATHY	3,149,833	90	16	3,094,389	54,644
HYPERTENSION, CHRONIC	3,149,833	3,408	989	3,077,000	54,644
HYPERTENSION, PREGNANCY-ASSOCIATED	3,149,833	9,022	1,797	3,001,095	54,644
ECLAMPSIA	3,149,833	861	206	3,085,685	54,644
INCOMPETENT CERVIX	3,149,833	1,117	223	3,088,519	54,644
PREVIOUS INFANT 4000- GRAMS	3,149,833	5,752	1,133	3,053,416	54,644
PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT	3,149,833	4,425	738	3,060,900	54,644
RENAL DISEASE	3,149,833	538	86	3,087,907	54,644
RH SENSITIZATION	3,116,798	2,204	365	3,039,594	55,540
UTERINE BLEEDING	2,877,622	2,627	514	2,804,308	50,201

51710 6984

NATALITY DOCUMENTATION TABLE 14.

LIVE BIRTHS FOR SELECTED MEDICAL RISK FACTORS BY AGE AND RACE OF MOTHER: UNITED STATES, 1993-CON

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED RISK FACTORS ON THE BIRTH CERTIFICATE; SEE TECHNICAL APPENDIX, TABLE A)

MEDICAL RISK FACTOR AND RACE OF MOTHER	ALL BIRTHS 1/	MEDICAL RISK FACTOR REPORTED		MEDICAL RISK FACTOR NOT REPORTED	NOT STATED
		AGE OF MOTHER			
		35-39 YEARS	40-49 YEARS		
BLACK					
ANEMIA	658,875	1,065	205	624,756	13,066
CARDIAC DISEASE	658,875	198	49	643,607	13,066
ACUTE OR CHRONIC LUNG DISEASE	658,875	247	53	641,810	13,066
DIABETES	658,875	2,401	613	631,076	13,066
GENITAL HERPES	617,181	264	34	599,643	12,396
HYDRAMNIOS/OLIGOHYDRAMNIOS	642,358	506	122	623,462	11,970
HEMOGLOBINOPATHY	658,875	68	11	644,224	13,066
HYPERTENSION, CHRONIC	658,875	1,510	458	638,404	13,066
HYPERTENSION, PREGNANCY-ASSOCIATED	658,875	1,465	340	626,814	13,066
ECLAMPSIA	658,875	212	51	642,713	13,066
INCOMPETENT CERVIX	658,875	216	26	643,785	13,066
PREVIOUS INFANT 4000- GRAMS	658,875	336	69	643,152	13,066
PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT	658,875	795	156	636,123	13,066
RENAL DISEASE	658,875	88	18	644,424	13,066
RH SENSITIZATION	655,637	128	26	640,601	13,143
UTERINE BLEEDING	617,181	339	59	600,737	12,396

1/ TOTAL NUMBER OF BIRTHS TO RESIDENTS OF AREAS REPORTING SPECIFIED MEDICAL RISK FACTOR.

2/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6985

NATALITY DOCUMENTATION TABLE 15.
LIVE BIRTHS BY SMOKING STATUS OF MOTHER AND AVERAGE NUMBER OF CIGARETTES SMOKED BY MOTHER PER DAY, BY AGE AND RACE OF MOTHER: TOTAL OF 46 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993

SMOKING STATUS, AVERAGE NUMBER OF CIGARETTES PER DAY AND RACE OF MOTHER	ALL	AGE OF MOTHER				
		UNDER 15 YEARS	15-19 YEARS			20-24 YEARS
			TOTAL	15-17 YEARS	18-19 YEARS	
ALL RACES 1/						
TOTAL	3,037,856	10,135	394,036	149,751	244,285	802,304
SMOKER	469,926	698	67,837	21,872	45,965	151,563
1-5 CIGARETTES	100,842	253	18,561	6,712	11,849	32,683
6-10 CIGARETTES	178,879	259	27,638	8,824	18,814	59,992
11-15 CIGARETTES	28,476	23	3,134	897	2,237	8,865
16-20 CIGARETTES	114,759	80	12,899	3,627	9,272	36,146
21-30 CIGARETTES	15,666	7	1,334	333	1,001	4,362
31-40 CIGARETTES	6,427	5	452	129	323	1,661
41 CIGARETTES OR MORE	887	1	92	30	62	223
NOT STATED	23,990	70	3,727	1,320	2,407	7,631
NON-SMOKER	2,513,276	9,272	319,663	125,420	194,243	637,258
NOT STATED	54,654	165	6,536	2,459	4,077	13,483
WHITE						
TOTAL	2,380,728	4,150	258,998	90,790	168,208	599,237
SMOKER	391,772	561	59,567	19,094	40,473	129,374
1-5 CIGARETTES	74,120	178	14,866	5,387	9,479	24,228
6-10 CIGARETTES	148,179	225	24,745	7,936	16,809	51,316
11-15 CIGARETTES	26,043	21	2,942	835	2,107	8,310
16-20 CIGARETTES	102,835	68	12,065	3,362	8,703	33,304
21-30 CIGARETTES	14,597	7	1,264	313	951	4,133
31-40 CIGARETTES	5,684	4	414	113	301	1,500
41 CIGARETTES OR MORE	756	1	83	25	58	192
NOT STATED	19,558	57	3,188	1,123	2,065	8,391
NON-SMOKER	1,945,948	3,516	194,974	70,130	124,844	459,777
NOT STATED	43,008	73	4,457	1,566	2,891	10,086

51710 6986

NATALITY DOCUMENTATION TABLE 15.
LIVE BIRTHS BY SMOKING STATUS OF MOTHER AND AVERAGE NUMBER OF CIGARETTES SMOKED BY MOTHER PER DAY, BY AGE AND RACE OF MOTHER: TOTAL OF 46 REPORTING STATES, AND THE DISTRICT OF COLUMBIA, 1993

SMOKING STATUS, AVERAGE NUMBER OF CIGARETTES PER DAY AND RACE OF MOTHER	ALL	AGE OF MOTHER				
		UNDER 15 YEARS	15-19 YEARS			20-24 YEARS
			TOTAL	15-17 YEARS	18-19 YEARS	
BLACK						
TOTAL	544,368	5,734	123,503	54,626	68,877	176,829
SMOKER	67,923	113	6,365	2,074	4,291	18,937
1-5 CIGARETTES	23,453	59	2,979	1,052	1,927	7,336
6-10 CIGARETTES	26,900	29	2,180	640	1,540	7,480
11-15 CIGARETTES	2,022	2	137	43	94	438
16-20 CIGARETTES	10,280	11	612	181	431	2,361
21-30 CIGARETTES	887	-	46	10	36	178
31-40 CIGARETTES	640	1	28	11	17	125
41 CIGARETTES OR MORE	118	-	7	4	3	27
NOT STATED	3,623	11	376	133	243	992
NON-SMOKER	467,400	5,537	115,340	51,774	63,566	155,126
NOT STATED	9,045	84	1,798	778	1,020	2,766

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6987

NATALITY DOCUMENTATION TABLE 15.
LIVE BIRTHS BY SMOKING STATUS OF MOTHER AND AVERAGE NUMBER OF CIGARETTES SMOKED BY MOTHER PER DAY, BY AGE AND RACE OF MOTHER: TOTAL OF 46 REPORTING STATES, AND THE DISTRICT OF COLUMBIA, 1993

SMOKING STATUS, AVERAGE NUMBER OF CIGARETTES PER DAY AND RACE OF MOTHER	ALL	AGE OF MOTHER			
		25-29 YEARS	30-34 YEARS	35-39 YEARS	40-49 YEARS
ALL RACES 1/					
TOTAL	3,037,856	854,571	675,239	259,327	42,244
SMOKER	469,926	124,065	88,698	32,535	4,530
1-5 CIGARETTES	100,842	24,987	17,422	6,115	821
6-10 CIGARETTES	178,879	46,622	31,839	11,119	1,410
11-15 CIGARETTES	28,476	8,023	6,017	2,117	297
16-20 CIGARETTES	114,759	31,963	23,526	8,859	1,286
21-30 CIGARETTES	15,666	4,391	3,651	1,667	254
31-40 CIGARETTES	6,427	1,760	1,585	817	147
41 CIGARETTES OR MORE	887	256	193	103	19
NOT STATED	23,990	6,063	4,465	1,738	296
NON-SMOKER	2,513,276	715,299	573,636	221,412	36,736
NOT STATED	54,654	15,207	12,905	5,380	978
WHITE					
TOTAL	2,330,729	699,367	568,770	215,887	34,319
SMOKER	391,772	101,880	71,397	25,531	3,462
1-5 CIGARETTES	74,120	17,763	12,396	4,124	565
6-10 CIGARETTES	148,179	37,680	24,810	8,377	1,026
11-15 CIGARETTES	26,043	7,335	5,365	1,817	253
16-20 CIGARETTES	102,835	28,431	20,391	7,546	1,030
21-30 CIGARETTES	14,597	4,083	3,366	1,521	223
31-40 CIGARETTES	5,684	1,536	1,385	717	128
41 CIGARETTES OR MORE	756	221	155	87	17
NOT STATED	19,558	4,831	3,529	1,342	220
NON-SMOKER	1,945,948	585,199	486,585	185,870	30,027
NOT STATED	43,008	12,288	10,788	4,486	830

51710 6988

NATALITY DOCUMENTATION TABLE 15.

LIVE BIRTHS BY SMOKING STATUS OF MOTHER AND AVERAGE NUMBER OF CIGARETTES SMOKED BY MOTHER PER DAY, BY AGE AND RACE OF MOTHER: TOTAL OF 46 REPORTING STATES, AND THE DISTRICT OF COLUMBIA, 1993

SMOKING STATUS, AVERAGE NUMBER OF CIGARETTES PER DAY AND RACE OF MOTHER	ALL	AGE OF MOTHER			
		25-29 YEARS	30-34 YEARS	35-39 YEARS	40-49 YEARS
BLACK					
TOTAL	544,368	122,167	79,053	31,617	5,465
SMOKER	67,923	19,688	15,586	6,309	925
1-5 CIGARETTES	23,453	6,471	4,594	1,788	226
6-10 CIGARETTES	26,900	7,995	6,374	2,503	339
11-15 CIGARETTES	2,022	575	570	262	38
16-20 CIGARETTES	10,280	3,115	2,787	1,178	216
21-30 CIGARETTES	887	266	238	132	27
31-40 CIGARETTES	640	199	181	92	14
41 CIGARETTES OR MORE	118	33	34	15	2
NOT STATED	3,623	1,034	808	339	63
NON-SMOKER	467,400	100,253	61,986	24,709	4,449
NOT STATED	9,045	2,226	1,431	599	91

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6989

NATALITY DOCUMENTATION TABLE 16.

LIVE BIRTHS BY DRINKING STATUS OF MOTHER AND BY MOTHER'S AVERAGE NUMBER OF DRINKS PER WEEK, BY AGE AND RACE OF MOTHER: TOTAL OF 47 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993

DRINKING STATUS, AVERAGE NUMBER OF DRINKS PER WEEK, AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER				
		UNDER 15 YEARS	15 - 19 YEARS			20-24 YEARS
			TOTAL	15-17 YEARS	18-19 YEARS	
ALL RACES TOTAL 1/....	3,121,805	10,323	405,726	153,824	251,902	827,172
DRINKER.....	63,806	79	4,362	1,495	2,867	13,434
1 DRINK OR LESS.....	23,829	22	1,405	473	932	4,547
2 DRINKS.....	7,862	2	455	167	288	1,545
3-4 DRINKS.....	5,270	3	298	91	207	1,028
5 DRINKS OR MORE.....	6,196	8	324	106	218	1,338
NOT STATED.....	20,649	44	1,880	658	1,222	4,976
NON-DRINKER.....	2,999,180	10,060	394,294	149,700	244,594	799,142
NOT STATED.....	58,819	184	7,070	2,629	4,441	14,596
WHITE TOTAL.....	2,454,441	4,256	268,150	93,737	174,413	620,737
DRINKER.....	44,767	49	3,006	989	2,017	8,915
1 DRINK OR LESS.....	19,102	12	992	320	672	3,315
2 DRINKS.....	5,025	1	277	90	187	905
3-4 DRINKS.....	3,026	-	182	57	125	563
5 DRINKS OR MORE.....	3,010	5	204	67	137	714
NOT STATED.....	14,604	31	1,351	455	896	3,418
NON-DRINKER.....	2,363,775	4,121	260,272	91,053	169,219	600,966
NOT STATED.....	45,899	86	4,872	1,695	3,177	10,856
BLACK TOTAL.....	553,742	5,816	126,002	55,739	70,263	180,044
DRINKER.....	16,633	26	1,028	355	673	3,834
1 DRINK OR LESS.....	3,960	8	297	101	196	1,010
2 DRINKS.....	2,627	-	150	59	91	584
3-4 DRINKS.....	2,083	2	103	30	73	404
5 DRINKS OR MORE.....	2,914	3	96	28	68	555
NOT STATED.....	5,049	13	382	137	245	1,281
NON-DRINKER.....	527,261	5,703	123,090	54,575	68,515	173,217
NOT STATED.....	9,848	87	1,884	809	1,075	2,993

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6990

NATALITY DOCUMENTATION TABLE 16.
LIVE BIRTHS BY DRINKING STATUS OF MOTHER AND BY MOTHER'S AVERAGE NUMBER OF DRINKS PER WEEK, BY AGE AND RACE OF MOTHER:
TOTAL OF 47 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993

DRINKING STATUS, AVERAGE NUMBER OF DRINKS PER WEEK, AND RACE OF MOTHER	ALL AGES	AGE OF MOTHER			
		25-29 YEARS	30-34 YEARS	35-39 YEARS	40-49 YEARS
ALL RACES TOTAL 1/....	3,121,805	879,027	691,568	264,863	43,126
DRINKER.....	63,806	17,745	18,496	8,355	1,335
1 DRINK OR LESS.....	23,829	6,550	7,448	3,332	525
2 DRINKS.....	7,862	2,071	2,468	1,153	168
3-4 DRINKS.....	5,270	1,500	1,548	765	128
5 DRINKS OR MORE.....	6,196	1,869	1,685	834	138
NOT STATED.....	20,649	5,755	5,347	2,271	376
NON-DRINKER.....	2,999,180	845,198	659,175	250,607	40,704
NOT STATED.....	58,819	16,084	13,897	5,901	1,087
WHITE TOTAL.....	2,454,441	721,609	583,678	220,903	35,108
DRINKER.....	44,767	11,812	13,593	6,373	1,019
1 DRINK OR LESS.....	19,102	5,126	6,347	2,855	455
2 DRINKS.....	5,025	1,166	1,693	861	122
3-4 DRINKS.....	3,026	778	904	505	94
5 DRINKS OR MORE.....	3,010	810	762	445	70
NOT STATED.....	14,604	3,932	3,887	1,707	278
NON-DRINKER.....	2,363,775	696,999	558,589	209,646	33,182
NOT STATED.....	45,899	12,798	11,496	4,884	907
BLACK TOTAL.....	553,742	124,077	80,220	32,037	5,546
DRINKER.....	16,633	5,275	4,427	1,767	276
1 DRINK OR LESS.....	3,960	1,205	963	419	58
2 DRINKS.....	2,627	840	734	274	45
3-4 DRINKS.....	2,083	679	616	249	30
5 DRINKS OR MORE.....	2,914	976	865	357	62
NOT STATED.....	5,049	1,575	1,249	468	81
NON-DRINKER.....	527,261	116,337	74,135	29,613	5,166
NOT STATED.....	9,848	2,465	1,658	657	104

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6991

NATALITY DOCUMENTATION TABLE 17.

LIVE BIRTHS DEATHS BY WEIGHT GAIN DURING PREGNANCY, BY AGE AND RACE OF MOTHER: TOTAL OF 49 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993

AGE AND RACE OF MOTHER	TOTAL	WEIGHT GAIN DURING PREGNANCY			
		LESS THAN 16 POUNDS	16-20 POUNDS	21-25 POUNDS	26-30 POUNDS
ALL RACES 1/.....	3,414,916	311,804	332,434	450,459	597,919
UNDER 20 YEARS...	443,425	40,897	44,366	53,016	66,600
20-24 YEARS.....	888,831	88,146	88,887	112,767	144,387
25-29 YEARS.....	965,316	84,927	90,530	128,204	175,375
30-34 YEARS.....	769,510	64,159	72,699	107,083	147,053
35-39 YEARS.....	298,452	28,017	30,171	42,350	55,740
40-49 YEARS.....	49,382	5,658	5,781	7,039	8,764
WHITE.....	2,671,361	213,972	244,629	356,095	484,623
UNDER 20 YEARS...	289,462	20,979	25,197	33,290	43,854
20-24 YEARS.....	664,317	57,975	62,076	84,317	110,723
25-29 YEARS.....	786,746	61,948	70,437	106,043	147,666
30-34 YEARS.....	644,364	48,113	58,559	90,979	127,410
35-39 YEARS.....	246,620	20,827	23,845	35,668	47,608
40-49 YEARS.....	39,852	4,130	4,515	5,798	7,362
BLACK.....	613,902	85,391	73,223	76,427	90,721
UNDER 20 YEARS...	141,432	18,689	17,898	18,327	20,922
20-24 YEARS.....	195,396	27,152	23,578	24,739	29,115
25-29 YEARS.....	139,935	19,622	15,882	16,789	20,624
30-34 YEARS.....	92,621	13,106	10,500	11,222	13,570
35-39 YEARS.....	37,819	5,704	4,498	4,543	5,555
40-49 YEARS.....	6,699	1,118	867	807	935

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6992

NATALITY DOCUMENTATION TABLE 17.

LIVE BIRTHS DEATHS BY WEIGHT GAIN DURING PREGNANCY, BY AGE AND RACE OF MOTHER: TOTAL OF 49 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993

AGE AND RACE OF MOTHER	TOTAL	WEIGHT GAIN DURING PREGNANCY				
		31-35 POUNDS	36-40 POUNDS	45-45 POUNDS	46 POUNDS OR MORE	NOT STATED
ALL RACES 1/.....	3,414,916	444,527	385,132	200,125	322,032	370,484
UNDER 20 YEARS...	443,425	50,535	48,481	28,617	57,951	52,962
20-24 YEARS.....	888,831	108,273	98,917	54,809	96,102	96,543
25-29 YEARS.....	965,316	131,685	112,118	57,124	85,029	100,324
30-34 YEARS.....	769,510	108,326	88,222	42,443	58,773	80,752
35-39 YEARS.....	298,452	39,834	32,587	15,026	21,109	33,618
40-49 YEARS.....	49,382	5,874	4,807	2,106	3,068	6,285
WHITE.....	2,671,361	370,742	316,897	165,971	258,014	260,418
UNDER 20 YEARS...	289,462	35,653	34,552	21,264	43,215	31,458
20-24 YEARS.....	664,317	86,378	78,036	44,170	75,733	64,909
25-29 YEARS.....	786,746	113,379	95,148	48,710	69,848	73,567
30-34 YEARS.....	644,364	95,418	76,761	36,997	49,136	60,991
35-39 YEARS.....	246,620	34,849	28,291	13,031	17,553	24,948
40-49 YEARS.....	39,852	5,065	4,109	1,799	2,529	4,545
BLACK.....	613,902	58,304	55,704	28,072	55,469	90,591
UNDER 20 YEARS...	141,432	13,534	12,628	6,543	13,206	19,685
20-24 YEARS.....	195,396	18,615	18,023	9,142	17,844	27,188
25-29 YEARS.....	139,935	13,451	13,047	6,518	12,830	21,172
30-34 YEARS.....	92,621	8,782	8,381	4,109	8,122	14,829
35-39 YEARS.....	37,819	3,366	3,117	1,529	3,019	6,488
40-49 YEARS.....	6,699	556	508	231	448	1,229

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6993

NATALITY DOCUMENTATION TABLE 18.
LIVE BIRTHS WITH SELECTED OBSTETRIC PROCEDURES BY AGE AND RACE OF MOTHER:
UNITED STATES, 1993

OBSTETRIC PROCEDURE AND RACE OF MOTHER	ALL BIRTHS	OBSTETRIC PROCEDURE REPORTED				
		AGE OF MOTHER				
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS
ALL RACES 1/						
AMNIOCENTESIS	4,000,240	124,511	4,878	12,325	17,061	25,479
ELECTRONIC FETAL MONITOR.	4,000,240	3,120,636	404,316	813,316	883,850	700,610
INDUCTION OF LABOR	4,000,240	527,756	58,914	132,354	155,585	123,936
STIMULATION OF LABOR	4,000,240	544,105	71,147	142,933	156,893	120,316
TOCOLYSIS	4,000,240	73,106	10,328	19,925	19,741	15,646
ULTRASOUND	4,000,240	2,375,698	294,973	610,876	675,864	543,697
WHITE						
AMNIOCENTESIS	3,149,833	106,561	3,469	9,715	14,345	22,233
ELECTRONIC FETAL MONITOR.	3,149,833	2,472,079	274,733	622,320	726,579	586,800
INDUCTION OF LABOR	3,149,833	445,892	43,551	109,557	134,957	108,704
STIMULATION OF LABOR	3,149,833	440,431	50,551	112,500	131,140	102,054
TOCOLYSIS	3,149,833	59,597	7,585	15,908	18,569	13,302
ULTRASOUND	3,149,833	1,919,655	206,294	478,373	564,375	461,852
BLACK						
AMNIOCENTESIS	658,875	11,298	1,251	2,196	1,967	1,963
ELECTRONIC FETAL MONITOR.	658,875	510,864	117,638	162,173	116,510	77,398
INDUCTION OF LABOR	658,875	63,583	13,800	19,113	15,097	10,458
STIMULATION OF LABOR	658,875	78,947	18,499	25,390	18,184	11,679
TOCOLYSIS	658,875	10,368	2,383	3,297	2,330	1,614
ULTRASOUND	658,875	353,322	79,896	111,560	81,115	54,547

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NATALITY DOCUMENTATION TABLE 18.
LIVE BIRTHS WITH SELECTED OBSTETRIC PROCEDURES BY AGE AND RACE OF MOTHER:
UNITED STATES, 1993

OBSTETRIC PROCEDURE AND RACE OF MOTHER	ALL BIRTHS	OBSTETRIC PROCEDURE REPORTED		OBSTETRIC PROCEDURE NOT REPORTED	NOT STATED
		AGE OF MOTHER			
		35-39 YEARS	40-49 YEARS		
ALL RACES 1/					
AMNIOCENTESIS	4,000,240	52,932	11,836	3,826,119	49,610
ELECTRONIC FETAL MONITOR.	4,000,240	272,703	45,841	829,994	49,610
INDUCTION OF LABOR	4,000,240	48,243	8,724	3,422,874	49,610
STIMULATION OF LABOR	4,000,240	45,382	7,434	3,406,525	49,610
TOCOLYSIS	4,000,240	6,418	1,048	3,877,524	49,610
ULTRASOUND	4,000,240	214,143	36,145	1,574,932	49,610
WHITE					
AMNIOCENTESIS	3,149,833	46,579	10,220	3,004,676	38,596
ELECTRONIC FETAL MONITOR.	3,149,833	224,781	36,866	639,158	38,596
INDUCTION OF LABOR	3,149,833	41,778	7,345	2,665,345	38,596
STIMULATION OF LABOR	3,149,833	38,036	6,150	2,670,806	38,596
TOCOLYSIS	3,149,833	5,393	840	3,051,640	38,596
ULTRASOUND	3,149,833	179,200	29,561	1,191,582	38,596
BLACK					
AMNIOCENTESIS	658,875	3,129	792	638,727	8,850
ELECTRONIC FETAL MONITOR.	658,875	31,588	5,557	139,161	8,850
INDUCTION OF LABOR	658,875	4,262	853	586,442	8,850
STIMULATION OF LABOR	658,875	4,439	756	571,078	8,850
TOCOLYSIS	658,875	636	108	639,657	8,850
ULTRASOUND	658,875	22,278	3,925	296,703	8,850

1/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6995

NATALITY DOCUMENTATION TABLE 19.

LIVE BIRTHS WITH SELECTED COMPLICATIONS OF LABOR AND/OR DELIVERY BY AGE AND RACE OF MOTHER: UNITED STATES, 1993

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED COMPLICATIONS ON THE BIRTH CERTIFICATE: SEE TECHNICAL APPENDIX A.)

COMPLICATIONS AND RACE OF MOTHER	ALL BIRTHS 1/	COMPLICATION REPORTED				
		AGE OF MOTHER				
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS
ALL RACES 2/						
FEBRILE	4,000,240	58,880	9,395	15,836	16,756	11,840
MECONIUM, MODERATE/HEAVY	4,000,240	227,646	31,621	59,901	62,441	49,408
PREMATURE RUPTURE OF MEMBRANE	4,000,240	122,386	15,484	29,859	34,002	28,387
ABRUPTIO PLACENTA	4,000,240	22,972	2,721	5,633	6,112	5,397
PLACENTA PREVIA	4,000,240	13,646	667	2,170	3,621	4,238
OTHER EXCESSIVE BLEEDING	4,000,240	21,310	2,474	5,108	5,880	5,099
SEIZURES DURING LABOR	4,000,240	1,491	384	419	335	232
PRECIPITOUS LABOR	4,000,240	74,920	7,218	18,486	21,056	18,704
PROLONGED LABOR	4,000,240	36,677	5,169	9,847	10,341	7,557
DYSFUNCTIONAL LABOR	4,000,240	117,931	14,822	30,176	34,478	26,042
BREECH/MALPRESENTATION	4,000,240	148,882	14,820	33,022	42,772	37,972
CEPHALOPELVIC DISPROPORTION	3,678,169	110,076	12,945	27,379	32,860	25,219
CORD PROLAPSE	4,000,240	9,150	947	2,124	2,670	2,163
ANESTHETIC COMPLICATIONS	3,678,169	2,228	156	456	668	618
FETAL DISTRESS	3,678,169	150,821	21,150	39,028	41,021	32,439
WHITE						
FEBRILE	3,149,833	43,706	5,702	11,442	13,164	9,435
MECONIUM, MODERATE/HEAVY	3,149,833	164,229	19,031	41,750	46,735	38,126
PREMATURE RUPTURE OF MEMBRANE	3,149,833	93,310	9,888	21,992	26,897	22,802
ABRUPTIO PLACENTA	3,149,833	17,556	1,793	4,168	4,812	4,345
PLACENTA PREVIA	3,149,833	10,655	444	1,615	2,841	3,437
OTHER EXCESSIVE BLEEDING	3,149,833	17,060	1,782	3,987	4,848	4,235
SEIZURES DURING LABOR	3,149,833	1,042	232	300	253	161
PRECIPITOUS LABOR	3,149,833	56,398	4,387	12,778	16,321	15,255
PROLONGED LABOR	3,149,833	29,825	3,683	7,880	8,664	6,416
DYSFUNCTIONAL LABOR	3,149,833	96,240	10,703	24,263	29,027	21,973
BREECH/MALPRESENTATION	3,149,833	123,738	11,293	26,921	36,283	32,453
CEPHALOPELVIC DISPROPORTION	2,877,622	89,573	8,946	22,077	27,761	21,186
CORD PROLAPSE	3,149,833	7,007	593	1,562	2,146	1,732
ANESTHETIC COMPLICATIONS	2,877,622	1,806	107	386	557	516
FETAL DISTRESS	2,877,622	111,978	13,287	28,381	31,660	25,429

51710 6996

NATALITY DOCUMENTATION TABLE 19

LIVE BIRTHS WITH SELECTED COMPLICATIONS OF LABOR AND/OR DELIVERY BY AGE AND RACE OF MOTHER: UNITED STATES, 1993

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED COMPLICATIONS ON THE BIRTH CERTIFICATE: SEE TECHNICAL APPENDIX A.)

COMPLICATIONS AND RACE OF MOTHER	ALL BIRTHS 1/	COMPLICATION REPORTED				
		AGE OF MOTHER				
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS
BLACK						
FEBRILE	658,875	11,870	3,369	3,698	2,613	1,541
MECONIUM, MODERATE/HEAVY	658,875	52,625	11,616	15,897	12,421	8,539
PREMATURE RUPTURE OF MEMBRANE	658,875	23,429	5,002	6,689	5,510	4,120
ABRUPTIO PLACENTA	658,875	4,527	857	1,291	1,099	810
PLACENTA PREVIA	658,875	2,177	197	479	582	541
OTHER EXCESSIVE BLEEDING	658,875	2,295	440	661	553	398
SEIZURES DURING LABOR	658,875	382	135	109	69	54
PRECIPITOUS LABOR	658,875	13,942	2,431	4,636	3,431	2,352
PROLONGED LABOR	658,875	4,678	1,219	1,449	1,055	634
DYSFUNCTIONAL LABOR	658,875	16,604	3,730	4,947	3,952	2,670
BREECH/MALPRESENTATION	658,875	18,664	3,096	4,968	4,630	3,718
CEPHALOPELVIC DISPROPORTION	617,181	15,002	3,599	4,374	3,534	2,405
CORD PROLAPSE	658,875	1,723	332	493	400	317
ANESTHETIC COMPLICATIONS	617,181	324	44	84	90	68
FETAL DISTRESS	617,181	32,687	7,376	9,468	7,560	5,372

1/ TOTAL NUMBER OF BIRTHS TO RESIDENTS OF AREAS REPORTING SPECIFIED COMPLICATION.

2/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 6997

NATALITY DOCUMENTATION TABLE 19.

LIVE BIRTHS WITH SELECTED COMPLICATIONS OF LABOR AND/OR DELIVERY BY AGE AND RACE OF MOTHER: UNITED STATES, 1993

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED COMPLICATIONS ON THE BIRTH CERTIFICATE: SEE TECHNICAL APPENDIX A.)

COMPLICATIONS AND RACE OF MOTHER	ALL BIRTHS 1/	COMPLICATION REPORTED		COMPLICATION NOT REPORTED	NOT STATED
		AGE OF MOTHER			
		35-39 YEARS	40-49 YEARS		
ALL RACES 2/					
FEBRILE	4,000,240	4,361	692	3,880,656	60,704
MECONIUM, MODERATE/HEAVY	4,000,240	20,447	3,828	3,711,890	60,704
PREMATURE RUPTURE OF MEMBRANE	4,000,240	12,368	2,286	3,817,150	60,704
ABRUPTIO PLACENTA	4,000,240	2,598	511	3,916,564	60,704
PLACENTA PREVIA	4,000,240	2,370	580	3,925,890	60,704
OTHER EXCESSIVE BLEEDING	4,000,240	2,306	443	3,918,226	60,704
SEIZURES DURING LABOR	4,000,240	101	20	3,938,045	60,704
PRECIPITOUS LABOR	4,000,240	8,034	1,422	3,864,616	60,704
PROLONGED LABOR	4,000,240	3,183	580	3,902,859	60,704
DYSFUNCTIONAL LABOR	4,000,240	10,425	1,988	3,821,605	60,704
BREECH/MALPRESENTATION	4,000,240	17,038	3,258	3,790,654	60,704
CEPHALOPELVIC DISPROPORTION	3,678,169	9,928	1,745	3,506,537	61,556
CORD PROLAPSE	4,000,240	1,034	212	3,930,386	60,704
ANESTHETIC COMPLICATIONS	3,678,169	278	52	3,614,385	61,556
FETAL DISTRESS	3,678,169	14,215	2,968	3,465,792	61,556
WHITE					
FEBRILE	3,149,833	3,429	534	3,059,205	46,922
MECONIUM, MODERATE/HEAVY	3,149,833	15,700	2,887	2,938,682	46,922
PREMATURE RUPTURE OF MEMBRANE	3,149,833	9,914	1,817	3,009,601	46,922
ABRUPTIO PLACENTA	3,149,833	2,040	398	3,085,355	46,922
PLACENTA PREVIA	3,149,833	1,852	466	3,092,256	46,922
OTHER EXCESSIVE BLEEDING	3,149,833	1,851	357	3,085,851	46,922
SEIZURES DURING LABOR	3,149,833	80	16	3,101,869	46,922
PRECIPITOUS LABOR	3,149,833	6,552	1,105	3,046,513	46,922
PROLONGED LABOR	3,149,833	2,693	489	3,073,086	46,922
DYSFUNCTIONAL LABOR	3,149,833	8,651	1,623	3,006,671	46,922
BREECH/MALPRESENTATION	3,149,833	14,151	2,637	2,979,173	46,922
CEPHALOPELVIC DISPROPORTION	2,877,622	8,220	1,383	2,740,451	47,598
CORD PROLAPSE	3,149,833	811	163	3,095,904	46,922
ANESTHETIC COMPLICATIONS	2,877,622	227	43	2,828,218	47,599
FETAL DISTRESS	2,877,622	10,978	2,243	2,718,046	47,599

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NATALITY DOCUMENTATION TABLE 19.
LIVE BIRTHS WITH SELECTED COMPLICATIONS OF LABOR AND/OR DELIVERY BY AGE AND RACE OF MOTHER: UNITED STATES, 1993
(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED COMPLICATIONS ON THE BIRTH CERTIFICATE: SEE TECHNICAL APPENDIX A.)

COMPLICATIONS AND RACE OF MOTHER	ALL BIRTHS 1/	COMPLICATION REPORTED		COMPLICATION NOT REPORTED	NOT STATED
		AGE OF MOTHER			
		35-39 YEARS	40-49 YEARS		
BLACK					
FEBRILE	658,875	558	91	635,870	11,135
MECONIUM, MODERATE/HEAVY	658,875	3,518	634	595,115	11,135
PREMATURE RUPTURE OF MEMBRANE	658,875	1,782	326	624,311	11,135
ABRUPTIO PLACENTA	658,875	394	76	643,213	11,135
PLACENTA PREVIA	658,875	320	58	645,563	11,135
OTHER EXCESSIVE BLEEDING	658,875	206	37	645,445	11,135
SEIZURES DURING LABOR	658,875	12	3	647,358	11,135
PRECIPITOUS LABOR	658,875	931	161	633,798	11,135
PROLONGED LABOR	658,875	268	53	643,062	11,135
DYSFUNCTIONAL LABOR	658,875	1,083	222	631,136	11,135
BREECH/MALPRESENTATION	658,875	1,868	384	629,076	11,135
CEPHALOPELVIC DISPROPORTION	617,181	914	176	590,884	11,295
CORD PROLAPSE	658,875	147	34	646,017	11,135
ANESTHETIC COMPLICATIONS	617,181	33	5	605,562	11,295
FETAL DISTRESS	617,181	2,404	507	573,199	11,295

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NATALITY DOCUMENTATION TABLE 20.

LIVE BIRTHS BY METHOD OF DELIVERY BY AGE AND RACE OF MOTHER: UNITED STATES, 1993

AGE AND RACE OF MOTHER	ALL BIRTHS	METHOD OF DELIVERY						
		VAGINAL						
		TOTAL	VAGINAL BIRTH AFTER CESAREAN			OTHER VAGINAL		
			ALL 1/	FOR-CEPS	VACUUM	ALL 1/	FORCEPS	VACUUM
ALL RACES 2/	4,000,240	3,098,796	103,581	6,297	8,424	2,995,215	156,813	199,559
< 15 YEARS	12,554	10,610	11	1	-	10,599	654	763
15-19 YEARS	501,093	420,111	4,007	168	234	416,104	22,713	28,495
15-17 YRS	190,535	161,492	833	41	55	160,659	9,002	11,278
18-19 YRS	310,558	258,619	3,174	127	179	255,445	13,711	17,217
20-24 YEARS	1,038,127	834,239	21,768	1,078	1,493	812,471	41,124	51,377
25-29 YEARS	1,128,862	870,137	32,196	1,960	2,682	837,941	46,139	57,880
30-34 YEARS	901,151	670,0371	31,139	2,189	2,721	638,898	32,747	42,749
35-39 YEARS	357,053	252,498	12,680	800	1,133	239,818	11,594	15,571
40-49 YEARS	61,400	41,164	1,780	101	161	39,384	1,842	2,724
WHITE	3,149,833	2,435,229	82,995	5,450	7,248	2,352,234	131,454	167,688
< 15 YEARS	5,755	4,886	4	-	-	4,882	277	412
15-19 YEARS	341,817	286,839	2,279	103	162	284,560	16,764	21,797
15-17 YRS	121,309	103,047	397	17	32	102,650	6,130	8,089
18-19 YRS	220,508	183,792	1,882	86	130	181,910	10,634	13,708
20-24 YEARS	790,154	634,076	15,711	860	1,207	618,365	34,184	42,850
25-29 YEARS	920,772	709,553	26,237	1,714	2,340	683,316	40,038	50,132
30-34 YEARS	749,446	558,693	26,524	1,968	2,405	532,169	28,566	36,950
35-39 YEARS	292,693	208,004	10,745	718	990	197,259	10,017	13,261
40-49 YEARS	49,196	33,178	1,495	87	144	31,683	1,608	2,286
BLACK	658,875	509,816	16,179	611	766	493,637	18,770	20,659
< 15 YEARS	6,417	5,378	6	1	-	5,372	362	313
15-19 YEARS	143,153	119,112	1,622	62	65	117,490	5,409	5,771
15-17 YRS	63,156	53,061	416	22	21	52,645	2,668	2,797
18-19 YRS	79,997	66,051	1,206	40	44	64,845	2,741	2,974
20-24 YEARS	208,149	166,299	5,356	193	239	160,943	5,702	6,282
25-29 YEARS	151,566	114,474	4,681	173	229	109,793	3,871	4,299
30-34 YEARS	100,966	71,993	3,114	134	162	68,879	2,410	2,745
35-39 YEARS	41,348	27,947	1,224	39	67	26,723	895	1,079
40-49 YEARS	7,276	4,613	176	9	4	4,437	121	170

1/ INCLUDES BIRTHS THAT WERE NOT DELIVERED BY FORCEPS OR VACUUM EXTRACTION.

2/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 7000

NATALITY DOCUMENTATION TABLE 20.
LIVE BIRTHS BY METHOD OF DELIVERY BY AGE AND RACE OF MOTHER:
UNITED STATES, 1993

AGE AND RACE OF MOTHER	ALL BIRTHS	METHOD OF DELIVERY			
		CESAREAN			NOT STATED
		TOTAL	PRIMARY	REPEAT	
ALL RACES 2/	4,000,240	861,987	539,251	322,736	39,457
< 15 YEARS	12,554	1,859	1,841	18	85
15-19 YEARS	501,093	76,917	66,827	10,090	4,065
15-17 YEARS	190,535	27,551	25,623	1,928	1,492
18-19 YEARS	310,558	49,366	41,204	8,162	2,573
20-24 YEARS	1,038,127	194,805	133,024	61,781	9,083
25-29 YEARS	1,128,862	247,323	151,149	96,174	11,402
30-34 YEARS	901,151	221,083	120,530	100,553	10,031
35-39 YEARS	357,053	100,493	54,282	46,211	4,062
40-49 YEARS	61,400	19,507	11,598	7,909	729
WHITE	3,149,833	682,355	423,540	258,815	32,249
< 15 YEARS	5,755	819	811	8	50
15-19 YEARS	341,817	52,072	46,038	6,034	2,906
15-17 YEARS	121,309	17,252	16,267	985	1,010
18-19 YEARS	220,508	34,820	29,771	5,049	1,896
20-24 YEARS	790,154	149,064	103,229	45,835	7,014
25-29 YEARS	920,772	201,688	123,073	78,615	9,531
30-34 YEARS	749,446	182,096	98,075	84,021	8,657
35-39 YEARS	292,693	81,208	43,263	37,945	3,481
40-49 YEARS	49,196	15,408	9,051	6,357	610
BLACK	658,875	143,452	91,677	51,775	5,607
< 15 YEARS	6,417	1,006	996	10	33
15-19 YEARS	143,153	23,030	19,179	3,851	1,011
15-17 YEARS	63,156	9,674	8,767	907	421
18-19 YEARS	79,997	13,356	10,412	2,944	590
20-24 YEARS	208,149	40,158	25,653	14,505	2,690
25-29 YEARS	151,566	35,668	21,015	14,653	1,424
30-34 YEARS	100,966	27,999	15,762	12,237	974
35-39 YEARS	41,348	12,999	7,415	5,584	402
40-49 YEARS	7,076	2,592	1,457	935	71

1/ INCLUDES BIRTHS THAT WERE NOT DELIVERED BY FORCEPS OR VACUUM EXTRACTION.
2/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 7001

NATALITY DOCUMENTATION TABLE 21.

LIVE BIRTHS WITH SELECTED ABNORMALITIES OF THE NEWBORN BY AGE AND RACE OF MOTHER: UNITED STATES, 1993

(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED COMPLICATIONS ON THE BIRTH CERTIFICATE: SEE TECHNICAL APPENDIX, TABLE A.)

ABNORMAL CONDITION AND RACE OF MOTHER	ALL BIRTHS 1/	ABNORMAL CONDITION REPORTED				
		AGE OF MOTHER				
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS
ALL RACES 2/						
ANEMIA	4,000,240	4,355	613	1,185	1,177	889
BIRTH INJURY	3,570,277	8,952	1,196	2,482	2,624	1,866
FETAL ALCOHOL SYNDROME	3,777,651	350	34	61	94	97
HYALINE MEMBRANE DISEASE/RDS	4,000,240	25,808	4,089	6,899	6,740	5,371
MECONIUM ASPIRATION SYNDROME	4,000,240	9,430	1,227	2,445	2,580	2,071
ASSISTED VENTILATION <30 MIN.	3,870,670	68,032	9,097	17,762	19,077	14,960
ASSISTED VENTILATION 30 MIN. OR LONGER	3,870,670	29,802	4,844	7,947	7,630	6,138
SEIZURES	4,000,240	2,770	369	717	747	628
WHITE						
ANEMIA	3,149,833	3,270	402	857	921	706
BIRTH INJURY	2,783,544	7,499	885	2,061	2,279	1,607
FETAL ALCOHOL SYNDROME	2,957,240	201	21	35	57	52
HYALINE MEMBRANE DISEASE/RDS	3,149,833	20,328	2,824	5,277	5,535	4,470
MECONIUM ASPIRATION SYNDROME	3,149,833	7,014	765	1,757	2,008	1,628
ASSISTED VENTILATION <30 MIN.	3,074,465	53,650	5,994	13,404	15,653	12,591
ASSISTED VENTILATION 30 MIN. OR LONGER	3,074,564	22,689	3,189	5,906	6,074	4,938
SEIZURES	3,149,833	2,055	234	508	577	492
BLACK						
ANEMIA	658,875	918	192	292	205	151
BIRTH INJURY	607,565	1,001	251	316	213	155
FETAL ALCOHOL SYNDROME	635,178	110	12	19	26	32
HYALINE MEMBRANE DISEASE/RDS	658,875	4,863	1,183	1,467	1,049	766
MECONIUM ASPIRATION SYNDROME	658,875	2,017	416	597	459	347
ASSISTED VENTILATION <30 MIN.	615,309	11,971	2,785	3,796	2,756	1,814
ASSISTED VENTILATION 30 MIN. OR LONGER	615,309	6,111	1,533	1,795	1,307	971
SEIZURES	658,875	586	122	183	127	99

1 TOTAL NUMBER OF BIRTHS TO RESIDENTS OF AREAS REPORTING SPECIFIED CONDITIONS

2/ INCLUDES RACES OTHER THAN WHITE AND BLACK

51710 7002

NATALITY DOCUMENTATION TABLE 21.
LIVE BIRTHS WITH SELECTED ABNORMALITIES OF THE NEWBORN BY
AGE AND RACE OF MOTHER: UNITED STATES, 1993
(SOME OF THE REPORTING AREAS DO NOT INCLUDE ALL OF THE LISTED
COMPLICATIONS ON THE BIRTH CERTIFICATE: SEE TECHNICAL APPENDIX, TABLE A.)

COMPLICATIONS AND RACE OF MOTHER	ALL BIRTHS 1/	COMPLICATION REPORTED AGE OF MOTHER 35-39 YEARS	COMPLICATION REPORTED AGE OF MOTHER 40-49 YEARS	COMPLICATION NOT REPORTED	NOT STATED
ALL RACES 2/					
ANEMIA........................	4,000,240	422	69	3,919,170	76,715
BIRTH INJURY..................	3,570,277	671	113	3,482,170	79,155
FETAL ALCOHOL SYNDROME........	3,777,651	54	10	3,708,331	68,970
HYALINE MEMBRANE DISEASE/RDS..	4,000,240	2,279	430	3,897,717	76,715
MECONIUM ASPIRATION SYNDROME..	4,000,240	924	183	3,914,095	76,715
ASSISTED VENTILATION <30 MIN..	3,870,670	6,091	1,045	3,728,325	74,313
ASSISTED VENTILATION 30 MIN. OR LONGER...........	3,870,670	2,746	497	3,766,555	74,313
SEIZURES......................	4,000,240	260	49	3,920,755	76,715
WHITE					
ANEMIA........................	3,149,833	333	51	3,086,425	60,138
BIRTH INJURY..................	2,783,544	573	94	2,713,371	62,674
FETAL ALCOHOL SYNDROME........	2,957,240	31	5	2,903,237	53,752
HYALINE MEMBRANE DISEASE/RDS..	3,149,833	1,879	343	3,069,367	60,138
MECONIUM ASPIRATION SYNDROME..	3,149,833	715	141	3,052,661	60,138
ASSISTED VENTILATION <30 MIN..	3,074,465	5,137	871	2,961,308	59,507
ASSISTED VENTILATION 30 MIN. OR LONGER...........	3,074,564	2,193	389	2,992,269	59,507
SEIZURES......................	3,149,833	209	35	3,087,640	60,138
BLACK					
ANEMIA........................	658,875	64	14	644,633	13,324
BIRTH INJURY..................	607,565	55	11	593,387	13,177
FETAL ALCOHOL SYNDROME........	635,178	17	4	622,916	12,152
HYALINE MEMBRANE DISEASE/RDS..	658,875	325	70	640,688	13,324
MECONIUM ASPIRATION SYNDROME..	658,875	164	32	643,534	13,324
ASSISTED VENTILATION <30 MIN..	615,309	[illegible]	114	591,666	11,672
ASSISTED VENTILATION 30 MIN. OR LONGER...........	615,309	[illegible]	85	597,526	11,672
SEIZURES......................	658,875	41	13	644,965	13,324

1/ TOTAL NUMBER OF BIRTHS TO RESIDENTS OF AREAS REPORTING SPECIFIED CONDITIONS
2/ INCLUDES RACES OTHER THAN WHITE AND BLA..

51710 7003

NATALITY DOCUMENTATION TABLE 22.

LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER:
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY REPORTED			
		AGE OF MOTHER			
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS
ALL RACES 2/					
ANENCEPHALUS	3,689,996	501	61	134	133
SPINA BIFIDA/MENINGOCELE	3,689,996	916	122	287	250
HYDROCEPHALUS	3,689,996	943	139	283	257
MICROCEPHALUS	3,689,996	319	50	72	100
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	3,689,996	797	112	211	226
HEART MALFORMATIONS	3,689,996	4,098	463	1,025	1,127
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	3,689,996	4,616	633	1,245	1,184
RECTAL ATRESIA/STENOSIS	3,689,996	325	42	86	94
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	3,689,996	597	74	152	168
OMPHALOCELE/GASTROSCHISIS	3,689,996	920	247	287	195
OTHER GASTROINTESTINAL ANOMALIES	3,689,996	1,124	174	298	293
MALFORMED GENITALIA	3,689,996	2,697	338	711	785
RENAL AGENESIS	3,689,996	430	57	108	120
OTHER UROGENITAL ANOMALIES	3,689,996	4,015	464	1,066	1,109
CLEFT LIP/PALATE	3,689,996	3,080	398	823	907
POLYDACTYLY/SYNDACTYLY/ADACTYLY	3,689,996	2,959	519	869	764
CLUB FOOT	3,689,996	2,080	296	591	554
DIAPHRAGMATIC HERNIA	3,689,996	432	51	106	128
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	3,689,996	6,754	858	1,766	1,835
DOWN'S SYNDROME	3,689,996	1,650	123	244	343
OTHER CHROMOSOMAL ANOMALIES	3,689,996	1,526	174	381	363

51710 7004

NATALITY DOCUMENTATION TABLE 22.
LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER:
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY REPORTED			
		AGE OF MOTHER			
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS
WHITE					
ANENCEPHALUS	2,918,658	402	47	106	106
SPINA BIFIDA/MENINGOCELE	2,918,658	756	94	233	211
HYDROCEPHALUS	2,918,658	746	98	216	208
MICROCEPHALUS	2,918,658	233	26	54	81
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	2,918,658	646	79	168	187
HEART MALFORMATIONS	2,918,658	3,327	317	818	955
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	2,918,658	3,675	443	991	964
RECTAL ATRESIA/STENOSIS	2,918,658	263	35	71	74
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	2,918,658	517	62	124	151
OMPHALOCELE/GASTROSCHISIS	2,918,658	720	187	233	150
OTHER GASTROINTESTINAL ANOMALIES	2,918,658	861	121	222	237
MALFORMED GENITALIA	2,918,658	2,256	239	574	684
RENAL AGENESIS	2,918,658	341	47	88	105
OTHER UROGENITAL ANOMALIES	2,918,658	3,300	374	914	976
CLEFT LIP/PALATE	2,918,658	2,680	332	719	805
POLYDACTYLY/SYNDACTYLY/ADACTYLY	2,918,658	1,655	195	445	480
CLUB FOOT	2,918,658	1,800	242	511	478
DIAPHRAGMATIC HERNIA	2,918,658	356	37	85	106
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	2,918,658	5,381	603	1,343	1,494
DOWN'S SYNDROME	2,918,658	1,431	92	210	295
OTHER CHROMOSOMAL ANOMALIES	2,918,658	1,240	126	309	308

51710 7005

NATALITY DOCUMENTATION TABLE 22.
LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER:
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY REPORTED			
		AGE OF MOTHER			
		ALL AGES	UNDER 20 YEARS	20-24 YEARS	25-29 YEARS
BLACK					
ANENCEPHALUS	598,231	70	12	22	16
SPINA BIFIDA/MENINGOCELE	598,231	128	26	41	33
HYDROCEPHALUS	598,231	177	37	58	45
MICROCEPHALUS	598,231	69	22	13	16
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	598,231	129	30	37	35
HEART MALFORMATIONS	598,231	612	134	176	131
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	598,231	717	168	209	158
RECTAL ATRESIA/STENOSIS	598,231	41	7	11	13
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	598,231	55	9	23	10
OMPHALOCELE/GASTROSCHISIS	598,231	174	55	47	38
OTHER GASTROINTESTINAL ANOMALIES	598,231	226	49	70	45
MALFORMED GENITALIA	598,231	351	88	123	72
RENAL AGENESIS	598,231	48	10	16	10
OTHER UROGENITAL ANOMALIES	598,231	384	76	120	97
CLEFT LIP/PALATE	598,231	254	51	67	65
POLYDACTYLY/SYNDACTYLY/ADACTYLY	598,231	1,234	313	402	270
CLUB FOOT	598,231	223	49	63	62
DIAPHRAGMATIC HERNIA	598,231	58	13	17	14
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	598,231	930	213	318	210
DOWN'S SYNDROME	598,231	151	23	28	33
OTHER CHROMOSOMAL ANOMALIES	598,231	203	38	57	41

1/ TOTAL NUMBER OF BIRTHS TO RESIDENTS OF AREAS REPORTING SPECIFIED CONGENITAL ANOMALY.
2/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 7006

NATALITY DOCUMENTATION TABLE 22.
LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER:
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY REPORTED		
		AGE OF MOTHER		
		30-34 YEARS	35-39 YEARS	40-49 YEARS
ALL RACES 2/				
ANENCEPHALUS	3,689,996	118	45	10
SPINA BIFIDA/MENINGOCELE	3,689,996	174	69	14
HYDROCEPHALUS	3,689,996	172	73	19
MICROCEPHALUS	3,689,996	65	23	9
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	3,689,996	157	75	16
HEART MALFORMATIONS	3,689,996	935	433	115
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	3,689,996	1,024	433	97
RECTAL ATRESIA/STENOSIS	3,689,996	58	37	8
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	3,689,996	135	55	13
OMPHALOCELE/GASTROSCHISIS	3,689,996	109	69	13
OTHER GASTROINTESTINAL ANOMALIES	3,689,996	242	97	20
MALFORMED GENITALIA	3,689,996	553	269	41
RENAL AGENESIS	3,689,996	86	28	1
OTHER UROGENITAL ANOMALIES	3,689,996	963	354	59
CLEFT LIP/PALATE	3,689,996	655	245	52
POLYDACTYLY/SYNDACTYLY/ADACTYLY	3,689,996	567	200	40
CLUB FOOT	3,689,996	412	196	31
DIAPHRAGMATIC HERNIA	3,689,996	107	32	8
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	3,689,996	1,544	617	134
DOWN'S SYNDROME	3,689,996	407	320	213
OTHER CHROMOSOMAL ANOMALIES	3,689,996	325	202	81

51710 7007

NATALITY DOCUMENTATION TABLE 22.
LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER:
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY REPORTED		
		AGE OF MOTHER		
		30-34 YEARS	35-39 YEARS	40-49 YEARS
WHITE				
ANENCEPHALUS	2,918,658	105	33	5
SPINA BIFIDA/MENINGOCELE	2,918,658	151	55	12
HYDROCEPHALUS	2,918,658	144	63	17
MICROCEPHALUS	2,918,658	49	16	7
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	2,918,658	134	65	13
HEART MALFORMATIONS	2,918,658	785	356	96
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	2,918,658	848	347	82
RECTAL ATRESIA/STENOSIS	2,918,658	46	29	8
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	2,918,658	122	48	10
OMPHALOCELE/GASTROSCHISIS	2,918,658	88	52	10
OTHER GASTROINTESTINAL ANOMALIES	2,918,658	191	72	18
MALFORMED GENITALIA	2,918,658	489	235	35
RENAL AGENESIS	2,918,658	77	23	1
OTHER UROGENITAL ANOMALIES	2,918,658	871	315	50
CLEFT LIP/PALATE	2,918,658	576	205	43
POLYDACTYLY/SYNDACTYLY/ADACTYLY	2,918,658	373	132	30
CLUB FOOT	2,918,658	363	177	29
DIAPHRAGMATIC HERNIA	2,918,658	92	28	8
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	2,918,658	1,315	516	110
DOWN'S SYNDROME	2,918,658	373	275	186
OTHER CHROMOSOMAL ANOMALIES	2,918,658	263	167	67

51710 7008

NATALITY DOCUMENTATION TABLE 22.

LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY REPORTED		
		AGE OF MOTHER		
		30-34 YEARS	35-39 YEARS	40-49 YEARS
BLACK				
ANENCEPHALUS	598,231	8	8	4
SPINA BIFIDA/MENINGOCELE	598,231	18	8	2
HYDROCEPHALUS	598,231	27	8	2
MICROCEPHALUS	598,231	11	5	2
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	598,231	17	8	2
HEART MALFORMATIONS	598,231	103	53	15
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	598,231	117	57	8
RECTAL ATRESIA/STENOSIS	598,231	7	3	-
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	598,231	9	3	1
OMPHALOCELE/GASTROSCHISIS	598,231	17	14	3
OTHER GASTROINTESTINAL ANOMALIES	598,231	44	18	-
MALFORMED GENITALIA	598,231	41	23	4
RENAL AGENESIS	598,231	9	3	-
OTHER UROGENITAL ANOMALIES	598,231	60	24	7
CLEFT LIP/PALATE	598,231	44	19	8
POLYDACTYLY/SYNDACTYLY/ADACTYLY	598,231	178	61	10
CLUB FOOT	598,231	33	15	1
DIAPHRAGMATIC HERNIA	598,231	11	3	-
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	598,231	122	57	10
DOWN'S SYNDROME	598,231	23	25	19
OTHER CHROMOSOMAL ANOMALIES	598,231	40	14	13

1/ TOTAL NUMBER OF BIRTHS TO RESIDENTS OF AREAS REPORTING SPECIFIED CONGENITAL ANOMALY.

2/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

51710 7009

NATALITY DOCUMENTATION TABLE 22.

LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER:
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY NOT REPORTED	NOT STATED
ALL RACES 2/			
ANENCEPHALUS	3,689,996	3,623,872	65,623
SPINA BIFIDA/MENINGOCELE	3,689,996	3,623,457	65,623
HYDROCEPHALUS	3,689,996	3,623,430	65,623
MICROCEPHALUS	3,689,996	3,624,054	65,623
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	3,689,996	3,623,576	65,623
HEART MALFORMATIONS	3,689,996	3,620,275	65,623
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	3,689,996	3,619,757	65,623
RECTAL ATRESIA/STENOSIS	3,689,996	3,624,048	65,623
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	3,689,996	3,623,776	65,623
OMPHALOCELE/GASTROSCHISIS	3,689,996	3,623,453	65,623
OTHER GASTROINTESTINAL ANOMALIES	3,689,996	3,623,249	65,623
MALFORMED GENITALIA	3,689,996	3,621,676	65,623
RENAL AGENESIS	3,689,996	3,623,973	65,623
OTHER UROGENITAL ANOMALIES	3,689,996	3,620,358	65,623
CLEFT LIP/PALATE	3,689,996	3,621,293	65,623
POLYDACTYLY/SYNDACTYLY/ADACTYLY	3,689,996	3,621,414	65,623
CLUB FOOT	3,689,996	3,622,293	65,623
DIAPHRAGMATIC HERNIA	3,689,996	3,623,941	65,623
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	3,689,996	3,617,619	65,623
DOWN'S SYNDROME	3,689,996	3,622,723	65,623
OTHER CHROMOSOMAL ANOMALIES	3,689,996	3,622,847	65,623

51710 7010

NATALITY DOCUMENTATION TABLE 22.

LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER:
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY NOT REPORTED	NOT STATED
WHITE			
ANENCEPHALUS	2,918,658	2,866,440	51,816
SPINA BIFIDA/MENINGOCELE	2,918,658	2,866,086	51,816
HYDROCEPHALUS	2,918,658	2,866,096	51,816
MICROCEPHALUS	2,918,658	2,866,609	51,816
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	2,918,658	2,866,196	51,816
HEART MALFORMATIONS	2,918,658	2,863,515	51,816
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	2,918,658	2,863,167	51,816
RECTAL ATRESIA/STENOSIS	2,918,658	2,866,579	51,816
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	2,918,658	2,866,325	51,816
OMPHALOCELE/GASTROSCHISIS	2,918,658	2,866,122	51,816
OTHER GASTROINTESTINAL ANOMALIES	2,918,658	2,865,981	51,816
MALFORMED GENITALIA	2,918,658	2,864,586	51,816
RENAL AGENESIS	2,918,658	2,866,501	51,816
OTHER UROGENITAL ANOMALIES	2,918,658	2,863,342	51,816
CLEFT LIP/PALATE	2,918,658	2,864,162	51,816
POLYDACTYLY/SYNDACTYLY/ADACTYLY	2,918,658	2,866,187	51,816
CLUB FOOT	2,918,658	2,865,042	51,816
DIAPHRAGMATIC HERNIA	2,918,658	2,866,486	51,816
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	2,918,658	2,861,461	51,816
DOWN'S SYNDROME	2,918,658	2,865,411	51,816
OTHER CHROMOSOMAL ANOMALIES	2,918,658	2,865,602	51,816

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NATALITY DOCUMENTATION TABLE 22.

LIVE BIRTHS WITH SELECTED CONGENITAL ANOMALIES BY AGE AND RACE OF MOTHER:
(TOTAL OF 48 REPORTING STATES AND THE DISTRICT OF COLUMBIA, 1993)

CONGENITAL ANOMALY AND RACE OF MOTHER	ALL BIRTHS 1/	CONGENITAL ANOMALY NOT REPORTED	NOT STATED
BLACK			
ANENCEPHALUS	598,231	587,686	10,475
SPINA BIFIDA/MENINGOCELE	598,231	587,628	10,475
HYDROCEPHALUS	598,231	587,579	10,475
MICROCEPHALUS	598,231	587,687	10,475
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	598,231	587,627	10,475
HEART MALFORMATIONS	598,231	587,144	10,475
OTHER CIRCULATORY/RESPIRATORY ANOMALIES	598,231	587,039	10,475
RECTAL ATRESIA/STENOSIS	598,231	587,715	10,475
TRACHEO-ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA	598,231	587,701	10,475
OMPHALOCELE/GASTROSCHISIS	598,231	587,582	10,475
OTHER GASTROINTESTINAL ANOMALIES	598,231	587,530	10,475
MALFORMED GENITALIA	598,231	587,405	10,475
RENAL AGENESIS	598,231	587,708	10,475
OTHER UROGENITAL ANOMALIES	598,231	587,372	10,475
CLEFT LIP/PALATE	598,231	587,502	10,475
POLYDACTYLY/SYNDACTYLY/ADACTYLY	598,231	586,522	10,475
CLUB FOOT	598,231	587,533	10,475
DIAPHRAGMATIC HERNIA	598,231	587,698	10,475
OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	598,231	586,826	10,475
DOWN'S SYNDROME	598,231	587,605	10,475
OTHER CHROMOSOMAL ANOMALIES	598,231	587,553	10,475

1/ TOTAL NUMBER OF BIRTHS TO RESIDENTS OF AREAS REPORTING SPECIFIED CONGENITAL ANOMALY.

2/ INCLUDES RACES OTHER THAN WHITE AND BLACK.

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Chapter 7
SOURCES OF DATA

Natality statistics

Since 1985 natality statistics for all States and the District of Columbia have been based on information from the total file of records. The information is received on computer data tapes coded by the States and provided to NCHS through the Vital Statistics Cooperative Program. NCHS receives these tapes from the registration offices of all States, the District of Columbia, and New York City. Information for Puerto Rico is also received on computer tapes through the Vital Statistics Cooperative Program. Information for the Virgin Islands and Guam is obtained from microfilm copies of original birth certificates and is based on the total file of records for all years.

Birth statistics presented in this report for years prior to 1951 and for 1955 are based on the total file of birth records. Statistics for 1951-54, 1956-66, and 1968-71 are based on 50-percent samples except for data for Guam and the Virgin Islands, which are based on all records filed. During the processing of the 1967 data the sampling rate was reduced from 50 percent to 20 percent. For details of this procedure and its consequences for the 1967 data see pages 3-9 to 3-11 in volume I of Vital Statistics of the United States, 1967. From 1972 to 1984 statistics are based on all records filed in the States submitting computer tapes and on a 50-percent sample of records in all other States.

Information for years prior to 1970 for Puerto Rico, the Virgin Islands, and Guam is published in the annual vital statistics reports of the Department of Health of the Commonwealth of Puerto Rico, the Department of Public Health of the Virgin Islands, the Department of Public Health and Social Services of the Government of Guam, and in selected Vital Statistics of the United States annual reports.

U.S. natality data are limited to births occurring within the United States, including those occurring to U.S. residents and nonresidents. Births to nonresidents of the United States have been excluded from all tabulations by place of residence beginning in 1970 (for further discussion see "Classification by occurrence and residence"). Births occurring to U.S. citizens outside the United States are not included in any tabulations in this report. Similarly the data for Puerto Rico, the Virgin Islands, and Guam are limited to births registered in these areas.

Standard Certificate of Live Birth

The U.S. Standard Certificate of Live Birth, issued by the Public Health Service, has served for many years as the principal means of attaining uniformity in the content of the documents used to collect information on births in the United States. It has been modified in each State to the extent required by the particular State's needs or by special provisions of the State's vital statistics law. However, most State certificates conform closely in content to the standard certificate.

The first standard certificate of birth was developed in 1900. Since then, it has been revised periodically by the national vital statistics agency through consultation with State health officers and registrars; Federal agencies concerned with vital statistics; national, State, and

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county medical societies; and others working in public health, social welfare, demography, and insurance. This procedure has assured careful evaluation of each item for its current and future usefulness for legal, medical, demographic, and research purposes. New items have been added when necessary, and old items have been modified to ensure better reporting or, in some cases, dropped when their usefulness appeared to be limited.

1989 revision--Effective January 1, 1989, a revised U.S. Standard Certificate of Live Birth (figure 4-A) replaced the 1978 revision. This revision provides a wide variety of new information on maternal and infant health characteristics, representing a significant departure from previous versions in both content and format. The most significant format change was the use of checkboxes to obtain detailed medical and health information about the mother and child. It has been demonstrated that this format produces higher quality and more complete information than do open-ended items.

The reformatted items included "Medical Risk Factors for This Pregnancy," which combines the former items "Complications of Pregnancy" and "Concurrent Illnesses or Conditions Affecting the Pregnancy." "Complications of Labor and/or Delivery" and "Congenital Anomalies of Child" also have been revised from the open-ended format. For each of these items at least 15 specific conditions have been identified.

Several new items have been added to the revised certificate. Included are items to obtain information on tobacco and alcohol use during pregnancy, weight gain during pregnancy, obstetric procedures, method of delivery, and abnormal conditions of the newborn. These items can be used to monitor the health practices of the mother that can affect pregnancy and the use of technology in childbirth, and to identify babies with specific abnormal conditions. When combined with other socioeconomic and health data, these new items will provide a wealth of information relevant to the etiology of low birthweight and other adverse pregnancy outcomes.

Another modification was the addition of an Hispanic identifier for the mother and father. Although NCHS had recommended that States add items to identify the Hispanic or ethnic origin of the newborn's parents, concurrent with the 1978 revision of the U.S. Standard Certificate of Live Birth and reported data from the cooperating States since that year, the item was new to the U.S. Standard Certificate for 1989.

The revised certificate also provides more detail than previously requested on the birth attendant and place of birth. This permits a more in-depth analysis of the number and characteristics of births by attendant and type of facility and a comparison of differences in outcome. For further discussion see individual sections for each item.

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Chapter 7
QUALITY OF DATA

Although vital statistics data are useful for a variety of administrative and scientific purposes, they cannot be correctly interpreted unless various qualifying factors and methods of classification are taken into account. The factors to be considered depend on the specific purposes for which the data are to be used. It is not feasible to discuss all the pertinent factors in the use of vital statistics tabulations, but some of the more important ones should be mentioned.

Most of the factors limiting the use of data arise from imperfections in the original records or from the impracticability of tabulating these data in very detailed categories. These limitations should not be ignored, but their existence does not lessen the value of the data for most general purposes.

Completeness of registration

An estimated 99.3 percent of all births occurring in the United States in 1993 were registered; for white births registration was 99.4 percent complete and for all other births, 98.6 percent complete. These estimates are based on the results of the 1964-68 test of birth-registration completeness according to place of delivery (in or out of hospital) and race and on the 1989 proportions of births in these categories. The primary purpose of the test was to obtain current measures of registration completeness for births in and out of hospital by race on a national basis. Data for States were not available as they had been from the previous birth-registration tests in 1940 and 1950. A detailed discussion of the method and results of the 1964-68 birth-registration test is available (14).

The 1964-68 test has provided an opportunity to revise the estimates of birth-registration completeness for the years since the previous test in 1950 to reflect the improvement in registration. This has been done using registration completeness figures from the two tests by place of delivery and race. Estimates of registration completeness for four groups (based on place of delivery and race) for 1951-65 were computed by interpolation between the test results. (It was assumed that the data from the more recent test are for 1966, the midpoint of the test period.) The results of the 1964-68 test are assumed to prevail for 1966 and later years. These estimates were used with the proportions of births registered in these categories to obtain revised numbers of births adjusted for underregistration for each year. The overall percent of birth-registration completeness by race was then computed. The figures for 1951-68 shown in table 1-3 differ slightly from those shown in annual reports for years prior to 1969.

Data adjusted for underregistration for 1951-59 shown in tables 1-1, 1-4, 1-5, 1-9, 1-10, and 1-11 have been revised to be consistent with the 1964-68 test results and differ slightly from data shown in annual reports for years before 1969. For these years the published number of births and birth rates for both racial groups have been revised slightly downward because the 1964-68 test indicated that previous adjustments to registered births were slightly inflated. Because registration completeness figures by age of mother and by live-birth order are not available from the 1964-68

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Reynolds
Exhibit No. 5-A
9.19.97
D'Andra Fisher

test, it must be assumed that the relationships among these variables have not changed since 1950.

Discontinuation of adjustment for underregistration, 1960-- Adjustment for underregistration of births was discontinued in 1960 when birth registration for the United States was estimated to be 99.1 percent complete. This removed a bias introduced into age-specific rates when adjusted births classified by age were used. Age-specific rates are calculated by dividing the number of births to an age group of mothers by the population of women in that age group. Tests have shown that population figures are likely to be understated through census undercounts; these errors compensate for underregistration of births. Adjustment for underregistration of births, therefore, removes the compensating effect of underenumeration, biasing the age-specific rates more than when uncorrected birth and population data are used. (For further details see page 4-11 in the Technical Appendix of volume I, Vital Statistics of the United States, 1963.)

The age-specific rates used in the cohort fertility tables (tables 1-15 through 1-22) are an exception to the above statement. These rates are computed from births corrected for underregistration and population estimates adjusted for underenumeration and misstatement of age. Adjusted birth and population estimates are used for the cohort rates because they are an integral part of a series of rates, estimated with a consistent methodology. It was considered desirable to maintain consistency with respect to the cohort rates, even though it means that they will not be precisely comparable with other rates shown for 5-year age groups.

Completeness of reporting

Interpretation of these data must include evaluation of item completeness. The percent "not stated" is one measure of the quality of the data. Completeness of reporting varies among items and States. See table A for the percent of birth records on which specified items were not stated.

Quality control procedures

States in the Vital Statistics Cooperative Program are required to have an error rate of less than 2.0 percent for each item for 3 consecutive data months during the initial qualifying period. Once a State is qualified, NCHS monitors the quality of data received through independent verification of a sample of records to ensure that the item error rate is not more than approximately 4 percent. In addition, there is verification at the State level before NCHS is sent the data.

After the coding is completed, counts of the taped records are balanced against control totals for each shipment of records from a registration area. Impossible codes are eliminated during the editing processes on the computer and corrected on the basis of reference to the source record or adjusted by arbitrary code assignment. All subsequent operations involved in tabulation and table preparation are verified during computer processing or by statistical clerks.

Small frequencies

The numbers of births reported for an area represent complete counts.

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As such, they are not subject to sampling error, although they are subject to errors in the registration process. However, when the figures are used for analytical purposes, such as the comparison of rates over a period of time or for different areas, the number of events that actually occurred may be considered as one of a large series of possible results that could have arisen under the same circumstances. The probable range of values may be estimated from the actual figures according to certain statistical assumptions.

In general, distributions of vital events may be assumed to follow the binomial distribution. Estimates of standard errors and tests of significance under this assumption are described in most standard statistics texts. When the number of events is large, the relative standard error, expressed as a percent of the number or rate, is usually small.

When the number of events is small (fewer than 100) and the probability of such an event is small, considerable caution must be observed in interpreting the conditions described by the figures. Events of rare nature may be assumed to follow a Poisson probability distribution. For this distribution, a simple approximation may be used to estimate the error as follows:

If N is the number of births and R is the corresponding rate, the chances are 19 in 20 that

1. The "true" number of events lies between

   N - 2√N and N + 2√N

2. The "true" rate lies between

   R - 2(R/√N) and R + 2(R/√N)

If the rate R1 corresponding to N1 events is compared with the rate R2 corresponding to N2 events, the difference between the two rates may be regarded as statistically significant if it exceeds

2 x [√ of (R1 squared/N1 + R2 squared/N2)]

For example, suppose that the observed birth rate for area A was 15.0 per 1,000 population and that this rate was based on 50 recorded births. Given prevailing conditions, the chances are 19 in 20 that the "true" or underlying birth rate for that area lies between 10.8 and 19.2 per 1,000 population. Let it be further supposed that the birth rate for area A of 15.0 per 1,000 population is being compared with a rate of 20.0 per 1,000 population for area B, which is based on 40 recorded births. Although the difference between the rates for the two areas is 5.0, this difference is less than twice the standard error of the difference

2 x [√ of (15.0 squared/50 - 20.0 squared/40)]

of the two rates that is computed to be 7.6. From this, it is concluded that the difference between the rates for the two areas is not statistically significant.

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Chapter 7
HISTORY OF BIRTH-REGISTRATION AREA

The national birth-registration area was proposed in 1850 and established in 1915. By 1933 all 48 States and the District of Columbia were participating in the registration system. The organized territories of Hawaii and Alaska were admitted in 1929 and 1950, respectively; data from these areas were prepared separately until they became States--Alaska in 1959 and Hawaii in 1960. Currently the birth-registration system of the United States covers the 50 States, the District of Columbia, the independent registration area of New York City, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. However, in the statistical tabulations, "United States" refers only to the aggregate of the 50 States (including New York City) and the District of Columbia. Tabulations for Puerto Rico, the Virgin Islands, and Guam are shown separately in section 3 of this volume.

The original birth-registration area of 1915 consisted of 10 States and the District of Columbia. The growth of this area is indicated in table 4-1. This table also presents for each year through 1932 the estimated midyear population of the United States and of those States included in the registration system.

Because of the growth of the area for which data have been collected and tabulated, a national series of geographically comparable data before 1933 can be obtained only by estimation. Annual estimates of births have been prepared by P. K. Whelpton for 1909-34 (4) (table 1-1). These estimates include adjustments for underregistration and for States that were not part of the birth-registration area before 1933.

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Chapter 7
DEFINITION OF LIVE BIRTH

Definition of live birth

Every product of conception that gives a sign of life after birth, regardless of the length of the pregnancy, is considered a live birth. This concept is included in the definition set forth by the World Health Organization (1):

> Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered liveborn.

This definition distinguishes in precise terms a live birth from a fetal death (see the section on fetal deaths in the Technical Appendix of volume II, Vital Statistics of the United States). In the interest of comparable natality statistics, both the Statistical Commission of the United Nations and the National Center for Health Statistics (NCHS) have adopted this definition (2,3).

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Chapter 7
COMPUTATION OF RATES AND OTHER MEASURES

Population bases

The rates shown in this report were computed on the basis of population statistics prepared by the U.S. Bureau of the Census. Rates for 1940, 1950, 1960, 1970, 1980, and 1990 are based on the population enumerated as of April 1 in the censuses of those years. Rates for all other years are based on the estimated midyear (July 1) population for the respective years. Birth rates for the United States, individual States, and metropolitan areas are based on the total resident populations of the respective areas. Except as noted these populations exclude the Armed Forces abroad but include the Armed Forces stationed in each area.

The resident population of the birth- and death-registration States for 1900-32 and for the United States for 1900-93 is shown in table 4-1. In addition, the population including Armed Forces abroad is shown for the United States. Table B shows the sources for these populations.

In both the 1980 and 1990 censuses, a substantial number of persons did not specify a racial group that could be classified as any of the White, Black, American Indian, Eskimo, Aleut, Asian, or Pacific Islander categories on the census form (15). In 1980 the number of persons of "other" race was 6,758,319; in 1990, it was 9,804,847. In both censuses, the large majority of these persons were of Hispanic origin (based on response to a separate question on the form), and many wrote in their Hispanic origin, or Hispanic origin type (for example, Mexican, Puerto Rican) as their race. In both 1980 and 1990, persons of unspecified race were allocated to one of the four tabulated racial groups (white, black, American Indian, Asian or Pacific Islander), based on their response to the Hispanic origin question. These four race categories conform with OMB Directive 15 and are more consistent with the race categories in vital statistics.

In 1980 the allocation of unspecified race was carried out using cross-tabulations of age, sex, race, type of Hispanic origin, and county of residence. Persons of Hispanic origin and unspecified race were allocated to either white or black, based on their Hispanic origin type. Persons of "other" race and Mexican origin were categorically assumed to be white, while persons in other Hispanic categories were distributed to white and black pro rata within the county-age-sex group. For "other-not-specified" persons who were not Hispanic, race was allocated to white, black, or Asian and Pacific Islander, based on proportions gleaned from sample data. The 20-percent sample (respondents who were enumerated on the longer census form) provided a highly detailed coding of race, which allowed identification of otherwise unidentifiable responses with a specified race category. Allocation proportions were thus established at the State level, which were used to distribute the non-Hispanic persons of "other" race in the 100-percent tabulations.

In 1990 the race modification procedure was carried out using individual census records. Persons whose race could not be specified were assigned to a racial category using a pool of "race donors," which was derived from persons of specified race and the identical response to the Hispanic origin question within the auspices of the same Census District Office. As in 1980, the underlying assumption was that the Hispanic origin response was the major criterion for allocating race. Unlike 1980, persons of Hispanic origin, including Mexican, could be assigned to any racial

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Table B. Sources for resident population and population including Armed Forces abroad: Birth- and death-registration States, 1900-1932, and United States, 1900-1993.

Year	Source
1993	U.S. Bureau of the Census, United States population estimates, by age, sex, race, and Hispanic origin: 1993. Census file RESO793. Washington:U.S. Department of Commerce. 1995
1992	U.S. Bureau of the Census. United States population estimates, by age, sex, race, and Hispanic origin: 1992. Census file RESPO792. Washington: U.S. Department of Commerce. 1994
1991	U.S. Bureau of the Census, Unpublished data consistent with Current Population Reports, Series P-25, No.1095, Feb. 1993.
1990	U.S. Bureau of the Census, Unpublished data from the 1990 census. 1990 CPH-L-74 and unpublished data consistent with Current Population Reports, Series P-25, No. 1095, Nov. 1992
1989	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1057, Mar. 1990.
1988	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1045, Jan. 1990.
1986-87	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1022, Mar. 1988.
1985	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1000, Feb. 1987.
1984	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 985, Apr. 1986.
1983	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 965, Mar. 1985.
1982	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 949, May 1984.
1981	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 929, May 1983.
1980	U.S. Bureau of the Census, U.S. Census of Population: 1980, Number of Inhabitants, PC80-1-A1, United States Summary, 1983.
1971-79	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 917, July 1982.
1970	U.S. Bureau of the Census, U.S. Census of Population: 1970, Number of Inhabitants, Final Report PC(1)-A1, United States Summary, 1971.
1961-69	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 519, Apr. 1974.
1960	U.S. Bureau of the Census, U.S. Census of Population: 1960, Number of Inhabitants, PC 1 -A1, United States Summary, 1964.
1951-59	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 310, June 30, 1965.
1940-50	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 499, May 1973

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Table B (cont'd). Sources for resident population and population including Armed Forces abroad: Birth- and death-registration States, 1900-1932, and United States, 1900-1992.

Year	Source
1930-39	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 499, May 1973, and National Office of Vital Statistics, Vital Statistics Rates in the United States, 1900-1940, 1947
1920-29	National Office of Vital Statistics, Vital Statistics Rates in the United States, 1900-1940, 1947
1917-19	Same as for 1930-39.
1900-16	Same as for 1920-29.

group, rather than white or black only, and the non-Hispanic component of "other" race was allocated primarily on the basis of geography (District Office), rather than detailed characteristic.

The means by which respondent's age was determined were fundamentally different in the two censuses; therefore, the problems that necessitated the modification were different. In 1980 respondents reported year of birth and quarter of birth (within year) on the census form. When census results were tabulated, persons born in the first quarter of the year (before April 1) had age equal to 1980 minus year of birth, while persons born in the last three quarters had age equal to 1979 minus year of birth.

In 1990 the quarter year of birth was not reported on the census form, so that direct determination of age from year of birth was impossible. In 1990 census publications age is based on respondents' direct reports of age at last birthday. This definition proved inadequate for postcensal estimates, because it was apparent that many respondents had reported their age at time of either completion of the census form or interview by an enumerator, which could occur several months after the April 1 reference data. As a result, age was biased upward. Modification was based on a respecification of age, for most individual respondents, by year of birth, with allocation to first quarter (persons aged 1990 minus year of birth) and last three quarters (aged 1989 minus year of birth) based on a historical series of registered births by month. This process partially restored the 1980 logic for assignment of age. It was not considered necessary to correct for age overstatement and heaping in 1990, because the availability of age and year of birth on the census form provided elimination of spurious year-of-birth reports in the census data before modification occurred.

Populations for 1993--United States population estimates by age, sex, race, and Hispanic origin: 1993. Census file RESPO793. Washington: U.S. Department of Commerce. 1995.

Populations for 1992--United States population estimates by age, sex, race, and Hispanic origin: 1992. Census file RESO792. Washington: U.S. Department of Commerce. 1994.

Populations for 1991--The population of the United States by age, race, and sex are shown in Current Population Reports, Series P-25, Number 1095. Monthly population figures were published in Current Population Reports, Series P-25, Number 1097.

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Populations for 1990--The population of the United States by age, race, and sex, and the population for each State are shown in Current Population Reports, Series P-25, Number 1095. The figures have been modified as described above. Monthly population figures were published in Current Population Reports, Series P-25, Number 1094.

Population estimates for 1981-89--Birth rates for 1981-89 (except those for cohorts of women in tables 1-15 through 1-22) have been revised, based on revised population estimates that are consistent with the 1990 census levels, and thus may differ from rates published in volumes of Vital Statistics of the United States for these years. The 1990 census counted approximately 1.5 million fewer persons than had earlier been estimated for April 1, 1990. The revised estimates for the United States by age, race, and sex were published by the U.S. Bureau of the Census in Current Population Reports, Series P-25, Number 1095. Population estimates by month are based on data published in Current Population Reports, Series P-25, Number 1094 and unpublished data. Unpublished revised estimates for States were obtained from the U.S. Bureau of the Census.

Populations for 1980--The population of the United States by age, race, and sex, and the population for each State are shown in tables 4-2 and 4-3 of volume I, Vital Statistics of the United States, 1980. The figures by race have been modified as described above. Monthly population figures were published in Current Population Reports, Series P-25, Number 899.

Population estimates for 1971-79--Birth rates for 1971-79 (except those for cohorts of women in tables 1-15 through 1-22) have been revised, based on revised population estimates that are consistent with the 1980 census levels, and thus may differ from rates published in volumes of Vital Statistics of the United States for these years. The 1980 census counted approximately 5.5 million more persons than had earlier been estimated for April 1, 1980 (16). The revised estimates for the United States by age, race, and sex were published by the U.S. Bureau of the Census in Current Population Reports, Series P-25, Number 917. Population estimates by month are based on data published in Current Population Reports, Series P-25, Number 899. Unpublished revised estimates for States were obtained from the U.S. Bureau of the Census.

Population estimates for 1961-69--Birth rates in this volume for 1961-69 (except for those shown in tables 1-5 and 1-6) are based on revised estimates of the population and thus may differ slightly from rates published before 1976. The revised estimates used in computing these rates were published in Current Population Reports, Series P-25, Number 519. The rates shown in tables 1-5 and 1-6 for 1961-64 are based on revised estimates of the population published in Current Population Reports, Series P-25, Numbers 321 and 324 and may differ slightly from rates published in those years.

Population estimates for 1951-59--Final intercensal estimates of the population by age, race, and sex and total population by State for 1951-59 are shown in tables 4-4 and 4-5 of volume I, Vital Statistics of the United States, 1966. Beginning with 1963 these final estimates have been used to compute birth rates for 1951-59 in all issues of Vital Statistics of the United States.

Net census undercounts and overcounts

The U.S. Bureau of the Census has conducted extensive research to evaluate the coverage of the U.S. population including undercount,

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overcount, and misstatement of age, race, and sex) in the last five decennial censuses--1950, 1960, 1970, 1980, and 1990. These studies provide estimates of the national population that was not enumerated or overenumerated in the respective censuses, by age, race, and sex (16-18). The report for 1990 (19) includes estimates of net underenumeration and overenumeration for age, sex, and racial subgroups of the national population, modified for race consistency with previous population counts as described in the section "Population bases."

These studies indicate that there is differential coverage in the censuses among the population subgroups; that is, some age, race, and sex groups are more completely enumerated than others. To the extent that these estimates of overcounts or undercounts are valid, that they are substantial, and that they vary among subgroups and geographic areas, census miscounts can have consequences for vital statistics measures (17). However, the effects of undercounts in the census are reduced to the extent that there is underregistration of births. If these two factors are of equal magnitude, rates based on unadjusted populations are more accurate than those based on adjusted populations because the births have not been adjusted for underregistration.

The impact of net census miscounts on vital statistics measures includes the effects on levels of the rates and effects on differentials among groups.

If adjustments were made for persons who were not counted in the census of population, the size of the denominators would generally increase and the rates would be smaller than without an adjustment. Adjusted rates for 1990

Table C. Ratio of census-level resident population to resident population adjusted for estimated net census undercount by age, sex, and race: United States, April 1, 1990

Age	Total			White		
	Both Sexes	Male	Female	Both Sexes	Male	Female
All ages	0.9815	0.9721	0.9906	0.9802	0.9728	0.9873
10-14 years	0.9882	0.9891	0.9873	0.9830	0.9841	0.9818
15-19 years	1.0166	1.0198	1.0133	1.0094	1.0128	1.0059
20-24 years	1.0002	0.9987	1.0017	0.9975	0.9985	0.9966
25-29 years	0.9591	0.9439	0.9748	0.9558	0.9441	0.9681
30-34 years	0.9687	0.9487	0.9892	0.9669	0.9518	0.9828
35-39 years	0.9790	0.9628	0.9954	0.9764	0.9643	0.9888
40-44 years	0.9901	0.9758	1.0044	0.9875	0.9764	0.9988
45-49 years	0.9775	0.9633	0.9916	0.9762	0.9648	0.9877
50-54 years	...	0.9623	...	...	0.9651	...
55 years and older	...	0.9758	...	...	0.9783	...
15-44 years	...	...	0.9954	...	...	0.9890
15-54 years	...	0.9710	...	...	0.9710	...

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Table C (cont'd). Ratio of census-level resident population to resident population adjusted for estimated net census undercount by age, sex, and race: United States, April 1, 1990

Age	Black		
	Both Sexes	Male	Female
All ages	0.9432	0.9151	0.9699
10-14 years	0.9591	0.9586	0.9595
15-19 years	0.9988	1.0016	0.9959
20-24 years	0.9593	0.9432	0.9753
25-29 years	0.9123	0.8732	0.9510
30-34 years	0.9129	0.8599	0.9651
35-39 years	0.9303	0.8808	0.9778
40-44 years	0.9410	0.8943	0.9850
45-49 years	0.9302	0.8807	0.9762
50-54 years		0.8802	
55 years and older		0.9294	
15-44 years	...		0.9739
15-54 years		0.9046	

can be computed by multiplying the reported rates by ratios of the 1990 census-level population adjusted for the estimated net census miscounts, which are shown in table C. A ratio of less than 1.0 indicates a net census undercount and would result in a corresponding decrease in the rate. A ratio in excess of 1.0 indicates a net census overcount and would result in a corresponding increase in the rate.

Enumeration of white females in the childbearing ages was at least 97 percent complete for all ages. Among black women, the undercount ranged up to 5 percent. Generally, females in the childbearing ages were more completely enumerated than males for similar race-age groups.

If vital statistics measures were calculated with adjustments for net census miscounts for each of these subgroups, the resulting rates would have been differentially changed from their original levels; that is, rates for those groups with the greatest estimated overcounts or undercounts would show the greatest relative changes due to these adjustments. Thus the racial differential in fertility between the white and the "All other" population can be affected by such adjustments.

Cohort fertility tables

The various fertility measures shown for cohorts of women in tables 1-15 through 1-22 are computed from births adjusted for underregistration and population estimates corrected for underenumeration and misstatement of age. The data shown in this volume are not consistent with data published in annual reports before 1974. These data use revised population estimates prepared by the U.S. Bureau of the Census and have been expanded to include data for the two major racial groups. Heuser has prepared a detailed

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description of the methods used in deriving these measures as well as more detailed data for earlier years (20).

Parity distribution--The percent distribution of women by parity (number of children ever born alive to mother) shown in tables 1-17 and 1-21 is derived from cumulative birth rates by order of birth, which are shown in tables 1-16 and 1-20. The percent of zero-parity women is found by subtracting the cumulative first birth rate from 1,000 and dividing by 10. The proportions of women at parities one through six are found from the following formula:

$$\text{Percent at N parity} = \frac{(\text{cum. rate, order N}) - (\text{cum. rate, order N+1})}{10}$$

The percent of women at seventh higher parities is found by dividing the cumulative rate for seventh-order births by 10.

Birth probabilities--Shown in tables 1-18 and 1-22, birth probabilities indicate the likelihood that a woman of a certain parity and age at the beginning of the year will have a child during the year. Birth probabilities differ from central birth rates in that the denominator for birth probabilities is specific for parity as well as for age.

Age-sex-adjusted birth rates

The age-sex-adjusted birth rates shown in table 1-4 are computed by the direct method. The age distribution of women aged 10-49 years as enumerated in 1940 and the total population of the United States for that year are used as the standard populations. The birth rates by age of mother and race that are used to compute these adjusted rates are shown in table 1-9. The age-sex-adjusted birth rates show differences in the level of fertility independent of differences in the age and sex composition of the population. It is important not to confuse these adjusted rates with the crude rates shown in other tables.

Total fertility rate

The total fertility rate is the sum of the birth rates by age of mother (in 5-year age groups) multiplied by 5. It is an age-adjusted rate because it is based on the assumption that there are the same number of women in each age group. In table 1-9 the rate of 2,046 in 1993, for example, means that if a hypothetical group of 1,000 women were to have the same birth rates in each age group that were observed in the actual childbearing population in 1993, they would have a total of 2,046 children by the time they reached the end of the reproductive period (taken here to be age 50 years), assuming that all of the women survived to that age.

Intrinsic vital rates

The intrinsic vital rates shown in table 1-6 are calculated from a stable population. A stable population is that hypothetical population, closed to external migration, that would become fixed in age-sex structure after repeated applications of a constant set of age-sex specific birth and

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death rates. For the mathematical derivation of intrinsic vital rates, see pages 4-13 and 4-14 in the Technical Appendix of volume I, Vital Statistics of the United States, 1962. The technique of calculating intrinsic vital rates is described by Barclay (21).

Seasonal adjustment of rates

The seasonally adjusted birth and fertility rates shown in table 1-8 are computed from the X-11 variant of Census Method II (22). This method of seasonal adjustment used since 1964 differs slightly from the U.S. Bureau of Labor Statistics (BLS) Seasonal Factor Method, which was used for Vital Statistics of the United States, 1964. The fundamental technique is the same in that it is an adaptation of the ratio-to-moving-average method. Before 1964 the method of seasonal adjustment was based on the X-9 variant and other variants of Census Method II. A comparison of the Census Method II with the BLS Seasonal Factor Method shows the differences in the seasonal patterns of births to be negligible.

Computation of percents, medians, and means

Percent distributions, medians, and means are computed using only events for which the characteristic is reported. The "Not stated" category is subtracted from the total before computation of these measures.

The asterisk (*) indicates that the numerator and/or denominator number is less than 20.

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residence is reported with no city or county specified and the State named is different from the State of occurrence, the birth is allocated to the largest city of the State of residence. Before 1973 such births were allocated to the exact place of occurrence.

Geographic classification

The rules followed in the classification of geographic areas for live births are contained in the instruction manual mentioned previously. The geographic code structure for 1993 is given in another manual, "Vital Records Geographic Classification, 1982," NCHS Instruction Manual, Part 8.

United States--In the statistical tabulations, "United States" refers only to the aggregate of the 50 States and the District of Columbia. Alaska has been included in the U.S. tabulations since 1959 and Hawaii since 1960.

Metropolitan statistical areas--The metropolitan statistical areas and primary metropolitan statistical areas (MSA's and PMSA's) used in this report are those established by the U.S. Office of Management and Budget as of April 1, 1990, and used by the U.S. Bureau of the Census (5) except in the New England States.

Except in the New England States, an MSA has either a city with a population of at least 50,000, or a Bureau of the Census urbanized area of at least 50,000 and a total MSA population of at least 100,000. A PMSA consists of a large urbanized county, or cluster of counties, that demonstrates very strong internal economic and social links and has a population over 1 million. When PMSA's are defined, the large area of which they are component parts is designated a Consolidated Metropolitan Statistical Area (CMSA) (6).

In the New England States the U.S. Office of Management and Budget uses towns and cities rather than counties as geographic components of MSA's and PMSA's. NCHS cannot, however, use this classification for these States because its data are not coded to identify all towns. Instead, the New England County Metropolitan Areas (NECMA's) are used. These areas are established by the U.S. Office of Management and Budget (7) and are made up of county units.

Metropolitan and nonmetropolitan counties--Independent cities and counties included in MSA's and PMSA's or NECMA's are included in data for metropolitan counties; all other counties are classified as nonmetropolitan.

Population-size groups--Beginning in 1982 vital statistics data for cities and certain other urban places have been classified according to the population enumerated in the 1980 Census of Population. Data are available for individual cities and other urban places of 10,000 or more population. Data for the remaining areas not separately identified are shown in the tables under the heading "Balance of area" or "Balance of county." Classification of areas for 1970-81 was determined by the population enumerated in the 1970 Census of Population. As a result of changes in the enumerated population between 1970 and 1980, some urban places identified in previous reports are no longer included, and a number of other urban places have been added.

Urban places other than incorporated cities for which vital statistics data are shown in this report include the following:

Each town in New England, New York, and Wisconsin and each township in Michigan, New Jersey, and Pennsylvania that had

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no incorporated municipality as a subdivision and had either 25,000 inhabitants or more, or a population of 10,000 to 25,000 and a density of 1,000 persons or more per square mile.

Each county in States other than those indicated above that had no incorporated municipality within its boundary and had a density of 1,000 persons or more per square mile. (Arlington County, Virginia, is the only county classified as urban under this rule.)

Each place in Hawaii with 10,000 or more population. (There are no incorporated cities in Hawaii.)

Race or national origin

Beginning with the 1989 data year birth data are tabulated primarily by race of mother. In 1988 and prior years the race or national origin shown in tabulations was that of the newborn child. The race of the child was determined for statistical purposes by an algorithm based on the race of the mother and father as reported on the birth certificate. When the parents were of the same race, the race of the child was the same as the race of the parents. When the parents were of different races and one parent was white, the child was assigned to the race of the other parent. When the parents were of different races and neither parent was white, the child was assigned to the race of the father, with one exception--if either parent was Hawaiian, the child was assigned to Hawaiian. If race was missing for one parent, the child was assigned the race of the parent for whom it was reported. When information on race was missing for both parents, the race of the child was considered not stated and the birth was allocated according to rules discussed on page 4 of the Technical Appendix, volume I, Vital Statistics of the United States, 1988. In 1989 the criteria for reporting the race of the parents did not change and continues to reflect the response of the informant (usually the mother).

The most important factor influencing the decision to tabulate births by race of the mother is the decennial revision of the U.S. Standard Certificate of Live Birth in 1989. This revision includes many more health questions that are directly associated with the mother, including alcohol and tobacco use, weight gain during pregnancy, medical risk factors, obstetric procedures, complications of labor and/or delivery, and method of delivery. Additionally, many of the other items that have been on the birth certificate for more than two decades also relate directly to the mother, for example, marital status, education level, and receipt of prenatal care. It is more appropriate to use the race of the mother than the race of the child in tabulating these items.

A second factor has been the increasing incidence of interracial parentage. In 1993, 4.1 percent of births were to parents of different races, compared with just 1.5 percent in 1973. About half of these births were to white mothers and fathers of another race. There have been two major consequences of the increasing interracial parentage. One is the effect on birth rates by race. The number of white births under the former procedures has been arbitrarily limited to infants whose parents were both white or one parent if the race of only one parent was reported. At the

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same time, the number of births of other races has been arbitrarily increased to include all births to white mothers and fathers of other races. Thus, if race of mother had been used, birth rates per 1,000 white women in a given age group would have been higher, while comparable rates for black women and women of other races would have been lower. The other consequence of increasing interracial parentage is the impact on the racial differential in various characteristics of births, particularly in cases where there is generally a large racial disparity, such as the incidence of low birthweight. In this instance, the racial differential is larger when the data are tabulated by race of mother rather than by race of child. The same effect has been noted for characteristics such as nonmarital childbearing, preterm births, late or no prenatal care, and low educational attainment of mother.

The third factor influencing the change is the growing proportion of births with race of father not stated, 16 percent in 1993 compared with 9 percent in 1973. This reflects the increase in the proportion of births to unmarried women; in many cases no information is reported on the father. These births are already assigned the race of the mother on a de facto basis. Tabulating births by race of mother will provide a more uniform approach, rather than a necessarily arbitrary combination of parental races.

The difference in the number of births classified by race of mother rather than by race of child varies among the specific groups, reflecting differences in the extent of mixed parentage. With the new classification by race of mother, the number of births classified as white will go up and the number for all other racial groups will go down. The percent difference in the number of live births by race of mother compared with race of child for 1993 are as follows:

White	2.4
Black	- 6.9
American Indian	-22.0
Chinese	- 5.3
Japanese	-16.5
Hawaiian	-30.8
Filipino	- 4.7
Other Asian or Pacific Islander	- 8.0

This change in the tabulation of births by race presents some problems when analyzing birth data by race, particularly trend data. The problem is likely to be acute for races other than white and black. To facilitate continuity and analysis of the data, key published tables for births in this volume show data for both race of mother and race of child. Most of the trend tables show data by race of mother beginning with 1980 and by race of child for 1980 and previous years. This makes it possible to distinguish the effects of this change from real changes in the data.

The categories for race or national origin are "White," "Black," "American Indian," including Aleuts and Eskimos , "Chinese," "Japanese," "Hawaiian," "Filipino," and "Other Asian or Pacific Islander" (including Asian Indian). Before 1992 there was also an "other" category, which is now combined with the "Not stated" category. Before 1978 the category "Other Asian or Pacific Islander" was not identified separately but included with

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"Other" races. The separation of this category allows identification of the category "Asian or Pacific Islander" by combining the new category "Other Asian or Pacific Islander" with Chinese, Japanese, Hawaiian, and Filipino.

The category "White" comprises births reported as white and births where race is reported as Hispanic. Before 1964 all births for which race or national origin was not stated were classified as white. Beginning in 1964 changes in the procedures for allocating race when race or national origin is not stated have changed the composition of this category. (See discussion on "Race or national origin not stated.")

If the race or national origin of an Asian parent is ill-defined or not clearly identifiable with one of the categories used in the classification (for example, if "Oriental" is entered), an attempt is made to determine the specific race or national origin from the entry for place of birth. If the birthplace is China, Japan, or the Philippines, the race of the parent is assigned to that category. When race cannot be determined from birthplace, it is assigned to the category "Other Asian or Pacific Islander."

Race or national origin not stated--If the race of the mother is not defined or not identifiable with one of the categories used in the classification and the race of the father is known, the race of the father is assigned to the mother. Where information for both parents is missing, the race of the mother is allocated electronically according to the specific race of the mother on the preceding record with a known race of mother. Data for both parents were missing for only 0.4 percent of birth certificates for 1993. Nearly all statistics by race or national origin for the United States as a whole in 1962 and 1963 are affected by a lack of information for New Jersey, which did not report the race of the parents in those years. Birth rates by race for those years are computed on a population base that excluded New Jersey. For the method of estimating the U.S. population by age, sex, and race excluding New Jersey in 1962 and 1963, see page 4-8 in the Technical Appendix of volume I, Vital Statistics of the United States, 1963. Estimates of births to unmarried mothers by race for the United States, which include special estimates for New Jersey for 1962 and 1963, have been prepared and are shown in table 1-76 of this report.

Beginning in 1992, NCHS contracted with seven States with the highest API populations to code births to additional API subgroups. The API subgroups include births to Vietnamese, Asian Indian, Korean, Samoan, Guamanian, and other API women. The seven States included in this reporting area are: California, Hawaii, Illinois, New Jersey, New York, Texas, and Washington. At least two-thirds of the U.S. population of each of these additional API groups lived in the seven-State reporting area (8). Although tables for the expanded API subgroups are not included in this volume, they are available upon request. In addition, the data are available on the detailed natality tapes and CD-ROMs beginning with the 1992 data year. An analytic report based on the 1992 data year is also available upon request [9].

Age of mother

Beginning in 1989 an item on the birth certificate asks for "Date of Birth." In previous years "Age at time of this birth" was requested. Not all States have revised this item for 1989, and therefore the age of

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mother either is derived from the reported month and year of birth or coded as stated on the certificate. The age of mother is edited for upper and lower limits. When the age of mother is computed to be under 10 years or 50 years or over, it is considered not stated and is assigned as described below.

Age-specific birth rates shown in this report are based on populations of women by age, prepared by the U.S. Bureau of the Census. In census years the decennial census counts are used. In intercensal years, estimates of the population of women by age are published by the U.S. Bureau of the Census in Current Population Reports.

The 1990 Census of Population derived age in completed years as of April 1, 1990, from the responses to questions on age at last birthday and month and year of birth, with the latter given preference. In the 1960, 1970, and the 1980 Census of Population, age was also derived from month and year of birth. "Age in completed years" was asked in censuses before 1960. This was nearly the equivalent of the former birth certificate question, which the 1950 test of matched birth and census records confirms by showing a high degree of consistency in reporting age in these two sources (10).

Median age of mother--Median age is the value that divides an age distribution into two equal parts, one-half of the values being less and one-half being greater. Median ages of mothers for 1960 to the present have been computed from birth rates for 5-year age groups rather than from birth frequencies. This method eliminates the effects of changes in the age composition of the childbearing population over time. Changes in the median ages from year to year can thus be attributed solely to changes in the age-specific birth rates.

Not stated date of birth of mother--Beginning in 1964 birth records with date of birth of mother and/or age of mother not stated have had age imputed according to the age of mother from the previous birth record of the same race and total-birth order (total of fetal deaths and live births). (See "Vital Statistics Computer Edits for Natality Data," NCHS Instruction Manual, Part 12, page 9.) In 1963 birth records with age not stated were allocated according to the age appearing on the record previously processed for a mother of identical race and parity (number of live births). For 1960-62 not stated ages were distributed in proportion to the known ages for each racial group. Before 1960 this was done for age-specific birth rates but not for the birth frequency tables, which showed a separate category for age not stated.

Age of father

Age of father is derived from the reported date of birth or coded as stated on the birth certificate. If the age is under 10 years, it is considered not stated and grouped with those cases for which age is not stated on the certificate. Information on age of father is often missing on birth certificates of children born to unmarried mothers, greatly inflating the number of "not stated" in all tabulations by age of father. In computing birth rates by age of father, births tabulated as age of father not stated are distributed in the same proportions as births with known age within each 5-year-age classification of the mother. This procedure is done separately by race. The resulting distributions are summed to form a composite frequency distribution that is the basis for computing birth rates

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by age of father. This procedure avoids the distortion in rates that would result if the relationship between age of mother and age of father were disregarded.

Live-birth order and parity

Live-birth order and parity classifications shown in this volume refer to the total number of live births the mother has had including the 1993 birth. Fetal deaths are excluded.

Live-birth order indicates what number the present birth represents; for example, a baby born to a mother who has had two previous live births (even if one or both are not now living) has a live-birth order of three. Parity indicates how many live births a mother has had. Before delivery a mother having her first baby has a parity of zero and a mother having her third baby has a parity of two. After delivery the mother of a baby who is a first live birth has a parity of one and the mother of a baby who is a third live birth has a parity of three.

Live-birth order and parity are determined from two items on the birth certificate, "Live births now living" and "Live births now dead."

Not stated birth order--Before 1969 if both of these items were blank, the birth was considered a first birth. Beginning in 1969, births for which the pregnancy history items were not completed have been tabulated as live-birth order not stated. As a result of this revised procedure, 22,686 births in 1969 that would have been assigned to the "First birth order" category under the old rules were assigned to the "Not stated" category.

All births tabulated in the "Not stated birth order" category are excluded from the computation of percents. In computing birth rates by live-birth order, births tabulated as birth order not stated are distributed in the same proportion as births of known live-birth order.

Date of last live birth

The date of last live birth was added to the U.S. Standard Certificate of Live Birth in 1968 for the purpose of providing information on child spacing. The interval since the last live birth is the difference between the date of last live birth and the date of present birth. For an interval to be computed, both the month and year of the last live birth must be valid. This interval is computed only for events to mothers who have had at least one previous live birth.

Births for which the interval since last live birth is not stated are excluded from the computation of percents and means.

Zero interval--An interval of zero months since the last live birth indicates the second born of a set of twins, the second or third born of a set of triplets, and so forth. Births with an interval of zero months are excluded from the computation of mean intervals.

Educational attainment

Data on the educational attainment of both parents were collected beginning in 1969 and tabulated for publication in 1969 for the first time.

The educational attainment of either parent is defined as "the number of years of school completed." Only those years completed in "regular"

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schools are counted, that is, a formal educational system of public schools or the equivalent in accredited private or parochial schools. Business or trade schools, such as beauty and barber schools, are not considered "regular" schools for the purposes of this item. No attempt has been made to convert years of school completed in foreign school systems, ungraded school systems, and so forth, to equivalent grades in the American school system. Such entries are included in the category "Not stated."

Persons who have completed only a partial year in high school or college are tabulated as having completed the highest preceding grade. For those certificates on which a specific degree is stated, years of school completed is coded to the level at which the degree is most commonly attained; for example, persons reporting B.A., A.B., or B.S. degrees are considered to have completed 16 years of school.

Education not stated--The category "Not stated" includes all records in reporting areas for which there is no information on years of school completed as well as all records for which the information provided is not compatible with coding specifications.

Births tabulated as education not stated are excluded from the computations of percents.

Marital status

Beginning with 1980 data, national estimates of births to unmarried women are derived from two sources. In 1993 marital status was reported directly on the birth certificates of 44 States and the District of Columbia. In the remaining six States, which lack such an item (California, Connecticut, Michigan, Nevada, New York, and Texas), marital status is inferred from a comparison of the child's and parents' surnames. This procedure represents a substantial departure from the method used before 1980 to prepare national estimates of births to unmarried women, which assumed that the incidence of births to unmarried women in States with no direct question on marital status was the same as the incidence in reporting States in the same geographic division.

The current method uses related information on the birth certificate to improve the quality of national data on this topic, as well as to provide data for the individual nonreporting States. Beginning in 1980 a birth in a nonreporting State is classified as occurring to a married woman if the parents' surnames are the same, or if the child's and father's surnames are the same and the mother's current surname cannot be obtained from the informant item of the birth certificate. A birth is classified as occurring to an unmarried woman if the father's name is missing, if the parents' surnames are different, or if the father's and child's surnames are different and the mother's current surname is missing.

Because of the continued substantial increases in nonmarital childbearing throughout the 1980's, the data have been intensively evaluated in each year, 1985-93. There has been continuing concern that the current method might overstate the number of births to unmarried women because it incorporates data based on a comparison of surnames. This is because births to women who have retained their maiden surname as their legal surname after marriage would be classified as nonmarital births. The evaluation included comparisons of trends in all measures of births to unmarried mothers in States with a marital status item on the birth certificate and those States

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providing inferential data based on the comparison of surnames. Comparisons were made for white and black births separately and by age of mother. The results for years 1985-87 were remarkably similar for both data sets. Nonmarital births increased at virtually the same rate for white and black women and for the various age-of-mother groups. In 1988 and 1989, however, nonmarital births increased at a slightly faster rate in the States with a marital status item on the birth certificate than in the States providing inferential data. This pattern was observed for both white and black births. In 1990 the pattern of change shifted again; births to unmarried women increased at a slightly faster rate in the States providing inferential data than in the States with a marital status item on the birth certificate. This was the case for births to unmarried white women, but births to unmarried black women increased slightly more in the reporting States than in the States providing inferential data. In 1991 the results were similar in the reporting States and in the States providing inferential data for all races and for white births. For black births nonmarital births increased in the reporting States while they declined slightly in States providing inferential data. In 1992-93 the results were again similar for all races, but differed by race. Births to unmarried white women increased more in the States with a marital status item than in the States providing inferential data. Conversely, births to unmarried black women declined more in States providing inferential data than in States with a marital status item on the birth certificate.

Due to a change in the procedures for reporting information on fathers in cases of nonmarital births in Texas, the number of births inferred to be nonmarital was lower in 1990-93 than if there had been no change in the procedures. The measurement of marital status for Texas births is expected to improve beginning with the 1994 data year because a direct question on marital status has been added to the Texas birth certificate.

No adjustments are made during the data processing for errors in the reporting of marital status on the birth records of the 44 reporting States and the District of Columbia because the extent of this reporting problem is unknown. When marital status is not stated on the birth certificate of a reporting area, the mother is considered married.

When births to unmarried women are reported as second-or higher-order births, it is not known whether the mother was married or unmarried when the previous deliveries occurred, because her marital status at the time of these earlier births is not available from the birth record.

Rates for 1940 and 1950 are based on decennial census counts. In this volume, rates for 1955-92 are based on a smoothed series of population estimates (11). Because of sampling error, the original U.S. Bureau of the Census population estimates by marital status fluctuate erratically from year to year; therefore, they have been smoothed so that the rates do not show similar variations. The rates shown in this volume differ from those published in volumes of Vital Statistics of the United States before 1969, which were based on the original estimates provided annually by the U.S. Bureau of the Census. Birth rates by marital status for 1971-79 have been revised and differ from rates published before 1980 in volumes of Vital Statistics of the United States (see "Computation of rates and other measures").

51710 7039

Place of delivery and attendant at birth

The 1989 revision of the U.S. Standard Certificate of Live Birth includes separate categories for freestanding birthing centers, the mother's residence, and clinic or doctor's office as the place of birth. In previous years place of birth was classified simply as either "In hospital" or "Not in hospital." Births occurring in hospitals, institutions, clinics, centers, or homes were included in the category "In hospital." In this context the word "homes" does not refer to the mother's residence but to an institution, such as a home for unmarried women. Birthing centers were included in either category, depending on each State's assessment of the facility. Beginning in 1989 births occurring in clinics and in birthing centers not attached to a hospital are classified as "Not in hospital." This change in classification may account in part for the lower proportion of "In hospital" births compared with previous years. (The change in classification of clinics should have minor impact because comparatively few births occur in these facilities, but the effect of any change in classification of freestanding birthing centers is unknown.)

Beginning in 1975 the attendant at birth and place of delivery items were coded independently, primarily to permit the identification of the person in attendance at hospital deliveries. This information for 1975-93 is presented in more detail in tables 1-87 and 1-88. The 1989 certificate includes separate classifications for "M.D." (Doctor of Medicine), "D.O." (Doctor of Osteopathy), "C.N.M." (certified nurse midwife), "Other midwife," and "Other" attendants. In earlier certificates births attended by certified nurse midwives were grouped with those attended by lay midwives. The new certificate also facilitates the identification of home births, births in freestanding birthing centers, and births in clinics or physician offices.

Data shown in this volume for the "In hospital" category for 1975-88 include all births in clinics or maternity centers, regardless of the attendant. Data for 1975-77 published before 1980 included clinic and center births in the category "In hospital" only when the attendant was a physician. Data shown for 1975-77 in tables 1-87 and 1-88, therefore, differ from data published before 1980. As a result of this change, for 1975 an additional 12,352 births are now classified as occurring in hospitals, raising the percent of births occurring in hospitals from 98.7 to 99.1. Similarly, for 1976 the number of births occurring in hospitals increased by 14,133 and the percent in hospitals raised from 98.6 to 99.1; for 1977 the increase is 15,937 and the percent in hospitals raised from 98.5 to 99.0. For 1974 and earlier the "In hospital" category includes all births in hospitals or institutions and births in clinics, centers, or maternity homes only when attended by physicians.

The "Not in hospital" category includes births for which no information is reported on place of birth. Before 1975 births for which the stated place of birth was a "doctor's office" and delivery was by a physician were included in the category "In hospital." Beginning in 1975 these births were tabulated as "Not in hospital" and included with births delivered by physicians in this category. Although the actual number of such births is unknown, the effect of the change is minimal. In 1974, 0.3 percent of all births were delivered by physicians outside of hospitals; in 1975 this proportion was 0.4 percent.

51710 7040

Babies born on the way to or on arrival at the hospital are classified as having been born in the hospital. This may account for some of the hospital births not delivered by physicians or midwives.

Beginning in 1993, all in-hospital births occurring in Illinois where the attendant was classified as an "other" midwife were changed to certified nurse-midwife. This was necessary because almost all of these births were delivered by midwives certified by the American College of Nurse Midwives, but because Illinois does not certify midwives, many of these births were classified as "other" midwives. This change probably accounts for most of the drop in the total number of in-hospital births delivered by "other" midwives for the U.S. between 1992 and 1993 (from 2,420 to 1,543).

Birthweight

Birthweight is reported in some areas in pounds and ounces rather than in grams. However, the metric system has been used in tabulating and presenting the statistics to facilitate comparison with data published by other groups. The categories for birthweight were changed in 1979 to be consistent with the recommendations in the Ninth Revision of the International Classification of Diseases (ICD-9). The revised categories in gram intervals and their equivalents in pounds and ounces are as follows:

Less than 500 grams = 1 lb 1 oz or less
500-999 grams = 1 lb 2 oz-2 lb 3 oz
1,000-1,499 grams = 2 lb 4 oz-3 lb 4 oz
1,500-1,999 grams = 3 lb 5 oz-4 lb 6 oz
2,000-2,499 grams = 4 lb 7 oz-5 lb 8 oz
2,500-2,999 grams = 5 lb 9 oz-6 lb 9 oz
3,000-3,499 grams = 6 lb 10 oz-7 lb 11 oz
3,500-3,999 grams = 7 lb 12 oz-8 lb 13 oz
4,000-4,499 grams = 8 lb 14 oz-9 lb 14 oz
4,500-4,999 grams = 9 lb 15 oz-11 lb 0 oz
5,000 grams or more = 11 lb 1 oz or more

The ICD-9 defines low birthweight as less than 2,500 grams. This is a shift of 1 gram from the previous criterion of 2,500 grams or less, which was recommended by the American Academy of Pediatrics in 1935 and adopted in 1948 by the World Health Organization in the Sixth Revision of the International Lists of Diseases and Causes of Death.

After data classified by pounds and ounces are converted to grams, median weights are computed and rounded before publication. To establish the continuity of class intervals needed to convert pounds and ounces to grams, the end points of these intervals are assumed to be half an ounce less at the lower end and half an ounce more at the upper end. For example, 2 lb 4 oz-3 lb 4 oz is interpreted as 2 lb 3 1/2 oz-3 lb 4 1/2 oz.

Births for which birthweight is not reported are excluded from the computation of percents and medians.

Period of gestation

The period of gestation is defined as beginning with the first day of the last normal menstrual period (LMP) and ending with the day of the birth.

51710 7041

The LMP is used as the initial date because it can be more accurately determined than the date of conception, which usually occurs 2 weeks after the LMP.

Births occurring before 37 completed weeks of gestation are considered to be "preterm" or "premature" for purposes of classification. At 37-41 weeks gestation, births are considered to be "term," and at 42 completed weeks and over, "postterm." These distinctions are according to the ICD-9 definitions.

The 1989 revision of the U.S. Standard Certificate of Live Birth includes a new item, "clinical estimate of gestation," that is being compared with length of gestation computed from the LMP date when the latter appears to be inconsistent with birthweight. This is done for normal-weight births of apparently short gestations and very low-birthweight births reported to be full term. The clinical estimate also was used if the date of the LMP was not reported. The period of gestation for 4.2 percent of the births in 1993 was based on the clinical estimate of gestation. For 96 percent of these records the clinical estimate was used because the LMP date was not reported. For the remaining 4 percent the clinical estimate was used because it was compatible with the reported birthweight, whereas the LMP-computed gestation was not. In cases where the reported birthweight was inconsistent with both the LMP-computed gestation and the clinical estimate of gestation, the LMP-computed gestation was used and birthweight was reclassified as "not stated." These changes result in only a very small discontinuity in the data. For further information on the use of the clinical estimate of gestation see "Computer Edits for Natality Data, Effective 1989," NCHS Instruction Manual, Part 12, pages 34-36.

Before 1981 the period of gestation was computed only when there was a valid month, day, and year of LMP. However, length of gestation could not be determined from a substantial number of live-birth certificates each year because the day of LMP was missing. Beginning in 1981 weeks of gestation have been imputed for records with missing day of LMP when there is a valid month and year. Each such record is assigned the gestational period in weeks of the preceding record that has a complete LMP date with the same computed months of gestation and the same 500-gram birthweight interval. The effect of the imputation procedure is to increase slightly the proportion of preterm births and to lower the proportion of births at 39, 40, 41, and 42 weeks of gestation. A more complete discussion of this procedure and its implications is presented in a previous report (12).

Because of postconception bleeding or menstrual irregularities, the presumed date of LMP may be in error. In these instances the computed gestational period may be longer or shorter than the true gestational period, but the extent of such errors is unknown.

Month of pregnancy prenatal care began

For those records in which the name of the month is entered for this item, instead of first, second, third, and so forth, the month of pregnancy in which prenatal care began is determined from the month named and the month last normal menses began. For these births, if the item "Date last normal menses began" is not stated the month of pregnancy in which prenatal care began is tabulated as not stated

51710 7042

Number of prenatal visits

Tabulations of the number of prenatal visits were presented for the first time in 1972. Beginning in 1989 these data were collected from the birth certificates of all States. Percent distributions and the median number of prenatal visits exclude births to mothers who had no prenatal care.

Apgar score

One- and 5-minute Apgar scores were added to the U.S. Standard Certificate of Live Birth in 1978 to evaluate the condition of the newborn infant at 1 and 5 minutes after birth. The Apgar score is a useful measure of the need for resuscitation and a predictor of the infant's chances of surviving the first year of life. It is a summary measure of the infant's condition based on heart rate, respiratory effort, muscle tone, reflex irritability, and color. Each of these factors is given a score of 0, 1, or 2; the sum of these 5 values is the Apgar score, which ranges from 0 to 10. A score of 10 is optimum, and a low score raises some doubts about the survival and subsequent health of the infant. In 1993 the reporting area for the 1- and 5-minute Apgar scores was comprised of 48 States and the District of Columbia, accounting for 77 percent of all births in the United States. California and Texas did not have information on Apgar scores on their birth certificate.

Tobacco and alcohol use during pregnancy

The checkbox format allows for classification of a mother as a smoker or drinker during pregnancy and for reporting the average number of cigarettes smoked per day or drinks consumed per week. When smoking and/or drinking status is not reported or is inconsistent with the quantity of cigarettes or drinks reported, the status is changed to be consistent with the amount reported. For example, if the drinking status is reported as "no" but one or more average drinks a week are reported, the mother is classified as a drinker. If the number of cigarettes smoked per day is reported as one or more, the mother is considered a smoker. When one (or a fraction of one) drink a week is recorded, the mother is classified as a drinker. For records on which the number of drinks or number of cigarettes is reported as a span, for example, 10-15, the lower number is used. The number of drinkers and number of drinks reported on birth certificates are believed to underestimate actual alcohol use.

Data on tobacco use were collected by 46 States and the District of Columbia in 1993. This reporting area accounted for 76 percent of all births in the U.S. in 1993. Information on alcohol use was included on the certificates of 47 States and the District of Columbia, accounting for 78 percent of all U.S. births in 1993. . See table A for a listing of reporting areas.

Weight gained during pregnancy

Weight gain is reported in pounds. A loss of weight is reported as zero gain. Computations of median weight gain were based on ungrouped data. This item was included on the certificates of 49 States and the District of Columbia. California did not report this information. This reporting area excluding California accounted for 85 percent of all births in the United States in 1993.

51710 7043

Medical risk factors for this pregnancy

In 1993 this item, which includes 16 specific medical risk factors, was included on the birth certificates of all States and the District of Columbia. Three States, however, did not include all factors on their birth certificates. See table A for more detailed information.

The format allows for the designation of more than one risk factor and includes a choice of "None." Accordingly, if the item is not completed, it is classified as "Not stated."

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (13).

Definitions of medical terms

Anemia--Hemoglobin level of less than 10.0 g/dL during pregnancy or a hematocrit of less than 30 percent during pregnancy.

Cardiac disease--Disease of the heart.

Acute or chronic lung disease--Disease of the lungs during pregnancy.

Diabetes--Metabolic disorder characterized by excessive discharge of urine and persistent thirst; includes juvenile onset, adult onset, and gestational diabetes during pregnancy.

Genital herpes--Infection of the skin of the genital area by herpes simplex virus.

Hydramnios/Oligohydramnios--Any noticeable excess (hydramnios) or lack (oligohydramnios) of amniotic fluid.

Hemoglobinopathy--A blood disorder caused by alteration in the genetically determined molecular structure of hemoglobin (for example, sickle cell anemia).

Hypertension, chronic--Blood pressure persistently greater than 140/90, diagnosed prior to onset of pregnancy or before the 20th week of gestation.

Hypertension, pregnancy-associated--An increase in blood pressure of at least 30 mm Hg systolic or 15 mm Hg diastolic on two measurements taken 6 hours apart after the 20th week of gestation.

Eclampsia--The occurrence of convulsions and/or coma unrelated to other cerebral conditions in women with signs and symptoms of pre-eclampsia.

Incompetent cervix--Characterized by painless dilation of the cervix in the second trimester or early in the third trimester of pregnancy, with prolapse of membranes through the cervix and ballooning of the membranes into the vagina, followed by rupture of membranes and subsequent expulsion of the fetus.

Previous infant 4,000- grams--The birthweight of a previous live-born child was over 4,000 grams (8 lbs 13 oz).

Previous preterm or small-for-gestational-age infant--Previous birth of an infant prior to term (before 37 completed weeks of gestation) or of an infant weighing less than the 10th percentile for gestational age using a standard weight-for-age chart.

Renal disease--Kidney disease.

Rh sensitization--the process or state of becoming sensitized to the Rh factor as when an Rh-negative woman is pregnant with an Rh-positive fetus.

51710 7044

Uterine bleeding--Any clinically significant bleeding during the pregnancy, taking into consideration the stage of pregnancy; any second or third trimester bleeding of the uterus prior to the onset of labor.

Obstetric procedures

This item includes six specific obstetric procedures. Birth records with "Obstetric procedures" left blank are considered "not stated." Data on obstetric procedures were reported by all States and the District of Columbia.

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (13).

Definitions of medical terms

Amniocentesis--Surgical transabdominal perforation of the uterus to obtain amniotic fluid to be used in the detection of genetic disorders, fetal abnormalities, and fetal lung maturity.

Electronic fetal monitoring--Monitoring with external devices applied to the maternal abdomen or with internal devices with an electrode attached to the fetal scalp and a catheter through the cervix into the uterus, to detect and record fetal heart tones and uterine contractions.

Induction of labor--The initiation of uterine contractions before the spontaneous onset of labor by medical and/or surgical means for the purpose of delivery.

Stimulation of labor--Augmentation of previously established labor by use of oxytocin.

Tocolysis--Use of medications to inhibit preterm uterine contractions to extend the length of pregnancy and therefore avoid a preterm birth.

Ultrasound--Visualization of the fetus and placenta by means of sound waves.

Complications of labor and/or delivery

The checkbox format allows for the selection of 15 specific complications and for the designation of more than 1 complication where appropriate. A choice of "None" is also included. Accordingly, if the item is not completed, it is classified as "not stated."

All States and the District of Columbia included this item on their birth certificates. However, not all of the complications were reported by all reporting States (see table A).

51710 7045

Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993
[By place of residence]

Area	Number of births	Place of birth	Attendant at birth	Mother's birth-place	Father's age	Father's race
Total of reporting areas 1/	4,000,240	0.0	0.1	0.2	16.5	15.8
Alabama	61,706	-	0.0	0.1	34.3	34.3
Alaska	11,073	0.0	.1	.1	13.3	12.7
Arizona	69,056	.0	.0	.2	28.4	28.2
Arkansas	34,289	-	.0	.3	18.3	18.3
California	585,324	.0	.1	.0	7.0	3.5
Colorado	54,022	.0	.0	.0	22.1	23.0
Connecticut	46,700	.0	.0	.4	11.3	12.7
Delaware	10,568	.0	.0	.3	33.5	33.7
D.C.	10,629	.0	-	.5	56.3	58.7
Florida	192,537	.0	.0	.1	19.0	19.0
Georgia	110,622	.0	.0	.1	20.3	20.3
Hawaii	19,593	-	.0	.0	10.7	10.7
Idaho	17,440	-	.0	.1	9.2	10.5
Illinois	190,788	.0	.0	.1	17.9	13.3
Indiana	83,949	.0	.1	.2	14.6	14.0
Iowa	37,826	-	.0	.1	16.7	17.0
Kansas	37,406	-	.0	.1	11.9	11.9
Kentucky	53,000	-	.1	.2	22.3	22.4
Louisiana	69,402	.0	.0	.0	30.4	30.5
Maine	15,065	.0	.1	.1	15.9	17.0
Maryland	74,988	.0	.1	.6	5.9	5.3
Massachusetts	84,668	.0	.1	.5	13.2	11.6
Michigan	139,855	.1	.2	.0	25.9	26.0
Minnesota	64,648	.2	.0	.1	10.0	12.4
Mississippi	42,149	-	.0	.1	30.0	29.6
Missouri	75,253	.0	.0	.3	22.3	21.4
Montana	11,365	-	.1	.1	10.5	11.6
Nebraska	23,224	-	-	.0	12.6	12.9
Nevada	22,403	-	.0	.3	25.7	26.8
New Hampshire	15,436	-	.1	.1	9.6	9.9
New Jersey	117,686	.1	.1	.5	10.9	12.1
New Mexico	27,852	-	.0	.6	27.4	28.7
New York	280,392	.1	.3	.8	19.1	19.1
N. Carolina	101,357	.0	.0	.0	19.4	19.2
N. Dakota	8,690	-	-	-	10.8	12.4
Ohio	169,783	-	[illegible]	.4	14.4	14.2
Oklahoma	46,243	.0	.0	.1	19.6	22.4
Oregon	41,576	-	-	.0	15.8	7.6

51710 7046

Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993
[By place of residence]

Area	Number of births	Place of birth	Attendant at birth	Mother's birth-place	Father's age	Father's race
Total of reporting areas 1/	4,000,240	0.0	0.1	0.2	16.5	15.8
Pennsylvania	160,762	.0	.0	.6	7.1	3.1
Rhode Island	13,976	-	.0	.2	16.0	16.2
S. Carolina	53,835	.0	.0	.2	32.1	32.0
S. Dakota	10,719	-	-	.0	13.3	13.4
Tennessee	73,017	-	.0	.1	19.2	19.2
Texas	322,071	.0	.0	.3	17.5	17.0
Utah	37,127	.0	.0	.2	8.5	8.3
Vermont	7,457	.0	.0	.5	4.9	5.3
Virginia	94,944	.0	.0	.1	23.3	23.7
Washington	78,645	-	.2	.6	14.7	13.9
West Virginia	21,792	-	.0	.1	16.1	19.1
Wisconsin	69,767	.0	-	.0	18.6	26.8
Wyoming	6,555	-	-	.1	13.3	13.6
Puerto Rico	65,121	.0	.1	.1	2.5	...
Virgin Islands	2,445	-	.4	-	16.0	16.6
Guam	4,404	.0	.1	.1	23.6	31.4

51710 7047

Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993

[By place of residence]

Area	Number of births	Hispanic Origin		Educational attainment		Live-birth order
		Mother	Father	Mother	Father	
Total of reporting areas 1/	4,000,240	1.3	16.2	1.5	17.8	0.5
Alabama	61,706	0.1	34.3	0.3	34.5	0.0
Alaska	11,073	.1	12.7	1.0	14.9	.1
Arizona	69,056	1.6	29.3	1.9	29.8	.1
Arkansas	34,289	.1	18.3	.5	18.9	.1
California	585,324	1.2	4.2	.9	6.0	.1
Colorado	54,022	.1	21.9	3.4	24.4	.2
Connecticut	46,700	5.1	15.0	9.3	19.3	8.4
Delaware	10,568	.2	33.4	.2	33.7	.1
D.C.	10,629	.1	55.7	5.7	58.7	.5
Florida	192,537	.0	19.8	.4	20.6	.1
Georgia	110,622	.2	20.7	.8	21.8	.2
Hawaii	19,593	.0	10.3	.1	10.8	.0
Idaho	17,440	.1	10.2	1.7	12.5	.2
Illinois	190,788	.1	7.2	.5	17.0	.1
Indiana	83,949	.1	14.0	.7	15.1	.5
Iowa	37,826	.1	22.4	.4	23.5	.1
Kansas	37,406	1.1	12.6	.6	12.7	.0
Kentucky	53,000	.1	26.0	.4	22.8	.3
Louisiana	69,402	.1	30.4	.1	30.5	.0
Maine	15,065	2.3	19.0	.5	17.3	.3
Maryland	74,988	1.1	4.4	3.6	10.4	1.9
Massachusetts	84,668	.5	11.5	.4	11.9	.3
Michigan	139,855	4.2	31.2	.9	28.6	.2
Minnesota	64,648	11.5	21.5	3.1	15.8	.5
Mississippi	42,149	.1	29.9	.2	30.3	.1
Missouri	75,253	.1	23.8	.9	22.1	.2
Montana	11,365	3.6	14.8	.3	11.9	.1
Nebraska	23,224	1.6	14.4	.1	13.1	.0
Nevada	22,403	.1	26.0	.6	28.3	.3
New Hampshire	15,436	...	...	.5	10.7	.1
New Jersey	117,686	.3	10.4	3.0	14.3	.6
New Mexico	27,852	.0	26.7	2.7	30.3	.4
New York	282,392	5.5	22.0	4.3	21.8	1.5
N. Carolina	101,357	.0	19.2	.2	19.5	.1
N. Dakota	8,691	1.1	13.2	.1	12.5	.1
Ohio	168,793	.2	13.0	.4	14.8	.1
Oklahoma	46,243	.2	22.2	.9	23.3	1.3
Oregon	41,576	.1	7.5	.8	11.4	.0

51710 7048

Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993

[By place of residence]

Area	Number of births	Hispanic Origin		Educational attainment		Live birth order
		Mother	Father	Mother	Father	
Total of reporting areas 1/	4,000,240	1.3	16.2	1.5	17.8	0.5
Pennsylvania	160,762	.1	2.4	1.8	7.1	.1
Rhode Island	13,976	9.0	22.5	1.3	17.3	.8
S. Carolina	53,835	.1	31.5	3.1	34.3	.0
S. Dakota	10,719	.1	13.9	.3	14.1	.0
Tennessee	73,017	.1	19.2	.2	19.4	.0
Texas	322,071	.1	16.9	1.2	18.5	.4
Utah	37,127	.1	7.4	1.2	10.2	.2
Vermont	7,457	5.2	9.2	2.0	7.5	3.5
Virginia	94,944	.1	23.4	.6	23.9	.2
Washington	78,645	2.6	14.4	8.5	22.3	1.9
West Virginia	21,792	.0	19.0	.6	19.7	.0
Wisconsin	69,767	.1	22.4	.1	26.9	.0
Wyoming	6,555	.0	13.5	.3	13.9	.2
Puerto Rico	65,121	...	...	.3	3.0	.0
Virgin Islands	2,445	3.5	23.4	4.3	19.5	4.0
Guam	4,404	.1	24.5	.3	24.9	.1

51710 7049

Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993
[By place of residence]

Area	Number of births	Interval since last live birth	Length of Gestation	Month prenatal care began	Number of prenatal visits	Birth weight
Total of reporting areas 1/	4,000,240	3.5	0.9	2.2	2.8	0.1
Alabama	61,706	0.3	0.1	0.5	0.9	0.0
Alaska	11,073	1.4	.2	.9	1.6	.1
Arizona	69,056	1.9	.2	1.4	2.3	.2
Arkansas	34,289	1.6	.3	2.5	3.7	.1
California	585,324	.6	2/ 3.8	.9	2.1	.0
Colorado	54,022	2.3	.1	1.8	3.1	.1
Connecticut	46,700	15.5	4.3	6.9	10.2	.1
Delaware	10,568	2.9	.2	.7	.9	.1
D.C.	10,629	6.0	.4	8.2	8.2	.2
Florida	192,537	1.2	.1	.7	2.0	.0
Georgia	110,622	1.3	.1	1.1	.9	.0
Hawaii	19,593	.5	1.4	9.3	9.0	.1
Idaho	17,440	4.3	1.0	2.3	3.1	.1
Illinois	190,788	.9	.1	1.2	1.7	.0
Indiana	83,949	2.1	.1	.6	1.5	.1
Iowa	37,826	1.0	.1	.7	1.7	.1
Kansas	37,406	.5	.1	.3	.6	.0
Kentucky	53,000	1.2	.2	.8	.9	.1
Louisiana	69,402	.2	.1	.5	.6	.1
Maine	15,065	2.2	.3	.8	.8	.3
Maryland	74,988	6.5	2.1	6.8	9.4	.2
Massachusetts	84,668	1.0	.3	.3	.3	.3
Michigan	139,855	2.6	.1	2.4	4.9	.2
Minnesota	64,648	1.7	1.2	3.8	4.4	.1
Mississippi	42,149	.5	.2	.6	1.5	.1
Missouri	75,253	1.7	.1	1.1	1.7	.0
Montana	11,365	2.7	.1	.6	.7	.0
Nebraska	23,224	.2	.0	.1	.2	.0
Nevada	22,403	2.1	.1	1.0	1.4	.0
New Hampshire	15,436	1.6	.3	1.9	2.3	.3
New Jersey	117,686	12.1	.4	5.1	6.4	.1
New Mexico	27,852	3.6	.1	2.4	2.6	.2
New York	282,392	17.2	.6	8.8	6.1	.4
N. Carolina	101,357	.3	.1	.3	.4	.1
N. Dakota	8,690	.5	.0	.5	.6	.0
Ohio	158,793	2.1	.1	.8	1.3	.1
Oklahoma	46,243	5.2	3.2	6.2	7.6	.6
Oregon	41,576	1.5	.0	.2	.2	.0

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993
[By place of residence]

Area	Number of births	Interval since last live birth	Length of Gestation	Month prenatal care began	Number of pre-natal visits	Birth weight
Total of reporting areas 1/	4,000,240	3.5	0.9	2.2	2.8	0.1
Pennsylvania	160,762	4.7	.1	1.7	1.9	.1
Rhode Island	13,976	2.9	1.1	5.8	6.9	.9
S. Carolina	53,835	1.0	.1	1.0	1.2	.0
S. Dakota	10,719	.2	.1	.3	.3	.0
Tennessee	73,017	.5	.3	1.6	1.3	.1
Texas	322,071	2.4	.4	2.3	3.5	.1
Utah	37,127	6.4	.2	.7	.9	.1
Vermont	7,457	7.1	.2	2.9	1.0	.1
Virginia	94,944	2.8	.2	.9	1.4	.3
Washington	78,645	7.5	1.1	4.7	6.9	.1
West Virginia	21,792	1.2	.2	3.5	3.3	.0
Wisconsin	69,767	.7	.0	.2	.3	.1
Wyoming	6,555	1.2	.1	.5	.7	.0
Puerto Rico	65,121	.4	2/ .0	.3	.1	.0
Virgin Island	2,445	3.5	1.0	-	4.6	.3
Guam	4,404	1.6	.3	.3	.6	.1

51710 7051

Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993

[By place of residence]

Area	Number of births	Apgar score		Medical risk factors	Tobacco use	Alcohol use	Weight gain
		1-minute	5-minute				
Total of reporting areas 1/	4,000,240	0.8	0.8	1.8	1.8	1.9	10.8
Alabama	61,706	0.5	0.5	0.3	0.3	0.4	4.2
Alaska	11,073	.8	.7	.1	.4	.4	2.4
Arizona	69,056	.5	.5	.3	.5	.6	11.1
Arkansas	34,289	3.0	3.0	.1	.3	.4	7.6
California	585,324	...	...	.0	...	...	...
Colorado	54,022	.4	.4	.0	1.2	1.2	7.7
Connecticut	46,700	6.2	6.2	14.4	13.9	13.9	34.5
Delaware	10,568	.5	.5	1.1	.5	.5	1.6
D.C.	10,629	.5	.5	1.2	.9	.9	12.0
Florida	192,537	.3	.3	.0	.1	.1	4.5
Georgia	110,622	.5	.5	.7	1.2	1.3	16.1
Hawaii	19,593	.5	.5	.1	.8	.9	26.0
Idaho	17,440	.6	.6	5.0	.4	.8	13.1
Illinois	190,788	.4	.3	.9	1.2	.5	5.7
Indiana	83,949	.7	.7	.3	...	.6	2.9
Iowa	37,826	.3	.3	.1	.6	.6	4.7
Kansas	37,406	.3	.2	3/ .5	.5	.5	.6
Kentucky	53,000	.4	.4	4.7	3.6	3.4	10.6
Louisiana	69,402	.4	.4	.1	.3	.7	5.6
Maine	15,065	.5	.5	.4	.5	.5	2.5
Maryland	74,988	1.3	1.3	14.4	10.7	11.3	24.8
Massachusetts	84,668	.4	.4	2.3	.2	.2	.4
Michigan	139,855	.6	.6	.7	2.9	2.7	10.8
Minnesota	64,648	.8	.8	5.9	6.2	6.2	22.2
Mississippi	42,149	.6	.6	.1	.3	.3	4.7
Missouri	75,253	.5	.5	.1	.5	.5	2.8
Montana	11,365	.3	.3	.2	.4	.4	1.6
Nebraska	23,224	.3	.2	.0	.9	.9	.7
Nevada	22,403	1.4	1.4	.2	1.2	1.4	6.5
New Hampshire	15,436	.5	.5	.3	.2	.2	4.3
New Jersey	117,686	.7	.7	1.7	4.0	3.7	19.6
New Mexico	27,852	3.2	3.2	.3	.6	.6	6.1
New York	282,392	1.5	1.4	4/ 5.3	...	...	22.5
N. Carolina	101,357	.6	.5	.3	.2	.2	2.3
N. Dakota	8,690	.2	.2	.6	.9	1.1	1.4
Ohio	158,793	.4	.5	.2	.7	.6	4.4
Oklahoma	46,243	4.2	4.2	21.1	16.1	16.6	29.2
Oregon	41,576	.5	.5	.9	.4	.6	2.3

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993

[By place of residence]

Area	Number of births	Apgar Score		Medical risk factors	Tobacco use	Alcohol use	Weight gain
		1-minute	5-minute				
Total of reporting areas 1/	4,000,240	0.8	0.8	1.8	1.8	1.9	10.8
Pennsylvania	160,762	.4	.3	.1	.7	.4	4.4
Rhode Island	13,976	.8	.8	11.1	1.4	1.6	8.1
S. Carolina	53,835	.3	.3	.0	.2	.2	1.7
S. Dakota	10,719	.4	.3	1.7	...	...	2.0
Tennessee	73,017	.4	.4	.3	.3	.3	10.1
Texas	322,071	...	...	5/ 2.4	1.4	1.6	22.4
Utah	37,127	.4	.4	.9	.2	.4	2.0
Vermont	7,457	.4	.4	.2	1.4	1.3	1.0
Virginia	94,944	.4	.4	.3	.4	.4	7.0
Washington	78,645	.3	.3	1.6	1.8	6.8	10.8
West Virginia	21,792	.3	.3	.5	1.0	1.4	16.6
Wisconsin	69,767	.4	.4	.2	.7	.6	1.3
Wyoming	6,555	.2	.2	.1	1.2	1.2	2.4
Puerto Rico	65,121	.2	.2	.1	.0	.0	.2
Virgin Islands	2,445	2.2	2.3	31.0	16.1	18.5	51.9
Guam	4,404	2.2	2.1	1.5	.6	.7	11.1

51710 7053

Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993
[By place of residence]

Area	Number of births	Obstetric procedures	Complications of labor and/or delivery	Method of delivery	Abnormal conditions of newborn	Congenital anomalies
Total of reporting areas 1/	4,000,240	1.2	1.5	1.0	1.9	1.8
Alabama	61,706	0.3	0.4	0.1	0.6	0.1
Alaska	11,073	.0	.0	.5	.1	.1
Arizona	69,056	.0	.3	.3	.5	1.0
Arkansas	34,289	.1	.1	.3	.1	.1
California	585,324	.0	.1	.0	.1	.1
Colorado	54,022	.2	.1	.2	.1	.2
Connecticut	46,700	12.8	14.6	10.1	21.0	23.0
Delaware	10,568	.9	1.2	.5	1.2	1.1
D.C.	10,629	1.0	1.2	.3	1.8	1.8
Florida	192,537	.0	.0	.5	.0	.0
Georgia	110,622	.4	1.2	1.0	.8	.6
Hawaii	19,593	.2	.1	.1	.1	.1
Idaho	17,440	4.9	5.0	.1	6.0	5.9
Illinois	190,788	.9	.9	.4	.2	.3
Indiana	83,949	.1	.2	.2	.2	.2
Iowa	37,826	.1	.1	.3	.1	.1
Kansas	37,406	.3	.4	2.0	.4	.5
Kentucky	53,000	2.8	4.6	3.1	4.5	4.4
Louisiana	69,402	.1	.1	.1	.1	.1
Maine	15,065	.2	.4	.5	.3	.2
Maryland	74,988	11.6	14.5	4.1	17.6	17.8
Massachusetts	84,668	2.3	2.3	2.1	6/ 2.6	2.6
Michigan	139,855	.5	.7	.8	.8	.8
Minnesota	64,648	3.4	5.1	3.3	9.3	8.8
Mississippi	42,149	.1	.1	.1	.0	.1
Missouri	75,253	.0	.0	.5	.0	.0
Montana	11,365	.1	.1	.5	.1	.1
Nebraska	23,224	.0	.0	.1	6/ .0	.0
Nevada	22,403	.2	.1	.5	.3	.2
New Hampshire	15,436	.3	.3	.4	.3	.3
New Jersey	117,686	.9	.6	.4	1.0	3.1
New Mexico	27,852	.1	.0	.3	.0	...
New York	282,392	3.3	4.3	2.3	5.4	...
N. Carolina	101,357	.1	.1	.3	.1	.1
N. Dakota	8,690	.2	.6	.4	.9	.6
Ohio	164,793	.2	.2	.5	.2	.2
Oklahoma	46,243	18.3	20.6	14.6	26.4	27.5
Oregon	41,576	.0	.0	.2	.1	.1

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Table A. Percent of Birth Records on Which Specified Items Were Not Stated: United States and Each State, Puerto Rico, Virgin Islands, and Guam: 1993

[By place of residence]

Area	Number of births	Obstetric procedures	Complications of labor and/or delivery	Method of delivery	Abnormal conditions of newborn	Congenital anomalies
Total of reporting areas 1/	4,000,240	1.2	1.5	1.0	1.9	1.8
Pennsylvania	160,762	.1	.1	.2	.3	.5
Rhode Island	13,976	10.5	10.7	2.4	21.1	22.3
S. Carolina	53,835	.0	.0	.1	.0	.0
S. Dakota	10,719	1.7	1.7	1.7	3.4	3.4
Tennessee	73,017	.2	.4	.5	.2	.2
Texas	322,071	.4	8/ .5	.4	6/ .5	.7
Utah	37,127	.1	.2	.3	2.0	.8
Vermont	7,457	.2	.2	.1	.2	.3
Virginia	94,944	.3	.4	.5	.3	.3
Washington	78,645	1.6	1.7	1.5	1.0	1.0
West Virginia	21,792	.3	.4	.3	.8	.6
Wisconsin	69,767	.1	.1	.1	9/ .4	.4
Wyoming	6,555	.0	.0	.1	.0	.1
Puerto Rico	65,121	.1	.2	.0	.1	.1
Virgin Islands	2,445	27.4	27.5	3.2	34.9	37.3
Guam	4,404	1.5	3.2	.9	1.7	1.6

1/ Excludes data for Puerto Rico, Virgin Islands, and Guam.
2/ California and Puerto Rico report date last normal menses began but do not report clinical estimate of gestation.
3/ Kansas does not report Rh sensitization.
4/ New York City (but not New York State) reports these factors: genital herpes, hydramnios/oligohydramnios, hemoglobinopathy, incompetent cervix, previous infant 4000 + grams, and previous preterm or small-for-gestational-age infant.
5/ Texas does not report genital herpes and uterine bleeding.
6/ Massachusetts, Nebraska, and Texas do not report birth injury.
7/ New York City does not report assisted ventilation less than 30 minutes and assisted ventilation of 30 minutes or more. New York City (but not New York State) reports fetal alcohol syndrome.
8/ Texas does not report cephalopelvic disproportion, anesthetic complications, and fetal distress.
9/ Wisconsin does not report fetal alcohol syndrome.

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The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (13).

Definitions of medical terms

Febrile--A fever greater than 100 degrees F. or 38 C. occurring during labor and/or delivery.

Meconium, moderate/heavy--Meconium consists of undigested debris from swallowed amniotic fluid, various products of secretion, excretion and shedding by the gastrointestinal tract; moderate to heavy amounts of meconium in the amniotic fluid noted during labor and/or delivery.

Premature rupture of membranes (more than 12 hours)--Rupture of the membranes at any time during pregnancy and more than 12 hours before the onset of labor.

Abruptio placenta--Premature separation of a normally implanted placenta from the uterus.

Placenta previa--Implantation of the placenta over or near the internal opening of the cervix.

Other excessive bleeding--The loss of a significant amount of blood from conditions other than abruptio placenta or placenta previa.

Seizures during labor--Maternal seizures occurring during labor from any cause.

Precipitous labor (less than 3 hours)--Extremely rapid labor and delivery lasting less than 3 hours.

Prolonged labor (more than 20 hours)--Abnormally slow progress of labor lasting more than 20 hours.

Dysfunctional labor--Failure to progress in a normal pattern of labor.

Breech/Malpresentation--At birth, the presentation of the fetal buttocks rather than the head, or other malpresentation.

Cephalopelvic disproportion--The relationship of the size, presentation and position of the fetal head to the maternal pelvis prevents dilation of the cervix and/or descent of the fetal head.

Cord prolapse--Premature expulsion of the umbilical cord in labor before the fetus is delivered.

Anesthetic complications--Any complication during labor and/or delivery brought on by an anesthetic agent or agents.

Fetal distress--Signs indicating fetal hypoxia (deficiency in amount of oxygen reaching fetal tissues).

Abnormal conditions of the newborn

This item provides information on eight specific abnormal conditions. More than one abnormal condition may be reported for a given birth or "None" may be selected. If the item is not completed it is tabulated as "not stated." This item was included on the birth certificates of all States and the District of Columbia in 1993. However, several States did not include all conditions (see table A).

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (13).

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Definitions of medical terms

Anemia--Hemoglobin level of less than 13.0 g/dL or a hematocrit of less than 39 percent.

Birth injury--Impairment of the infant's body function or structure due to adverse influences that occurred at birth.

Fetal alcohol syndrome--A syndrome of altered prenatal growth and development occurring in infants born of women who consumed excessive amounts of alcohol during pregnancy.

Hyaline membrane disease/RDS--A disorder primarily of prematurity, manifested clinically by respiratory distress and pathologically by pulmonary hyaline membranes and incomplete expansion of the lungs at birth.

Meconium aspiration syndrome--Aspiration of meconium by the fetus or newborn, affecting the lower respiratory system.

Assisted ventilation (less than 30 minutes)--A mechanical method of assisting respiration for newborns with respiratory failure.

Assisted ventilation (30 minutes or more)--Newborn placed on assisted ventilation for 30 minutes or longer.

Seizures--A seizure of any etiology.

Congenital anomalies of child

The data provided in this item relate to 21 specific anomalies or anomaly groups. It is well documented that congenital anomalies, except for the most visible and most severe, are incompletely reported on birth certificates. The completeness of reporting specific anomalies depends on how easily they are recognized in the short time between birth and birth registration. Forty-eight States and the District of Columbia included this item on their birth certificates (see table A). This reporting area included 92 percent of all births in the United States in 1993. New Mexico and New York did not report this information. The format allows for the identification of more than one anomaly including a choice of "None" should no anomalies be evident. The category "not stated" includes birth records for which the item is not completed.

The following definitions are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (13).

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Definitions of medical terms

Anencephalus--Absence of the cerebral hemispheres.

Spina Bifida/meningocele--Developmental anomaly characterized by defective closure of the bony encasement of the spinal cord, through which the cord and meninges may or may not protrude.

Hydrocephalus--Excessive accumulation of cerebrospinal fluid within the ventricles of the brain with consequent enlargement of the cranium.

Microcephalus--A significantly small head.

Other central nervous system anomalies--Other specified anomalies of the brain, spinal cord, and nervous system.

Heart malformations--Congenital anomalies of the heart.

Other circulatory/respiratory anomalies--Other specified anomalies of the circulatory and respiratory systems.

Rectal atresia/stenosis--Congenital absence, closure, or narrowing of the rectum.

Tracheo-esophageal fistula/Esophageal atresia--An abnormal passage between the trachea and the esophagus; esophageal atresia is the congenital absence or closure of the esophagus.

Omphalocele/gastroschisis--An omphalocele is a protrusion of variable amounts of abdominal viscera from a midline defect at the base of the umbilicus. In gastroschisis, the abdominal viscera protrude through an abdominal wall defect, usually on the right side of the umbilical cord insertion.

Other gastrointestinal anomalies--Other specified congenital anomalies of the gastrointestinal system.

Malformed genitalia--Congenital anomalies of the reproductive organs.

Renal agenesis--One or both kidneys are completely absent.

Other urogenital anomalies--Other specified congenital anomalies of the organs concerned in the production and excretion of urine, together with organs of reproduction.

Cleft lip/palate--Cleft lip is a fissure of elongated opening of the lip; cleft palate is a fissure in the roof of the mouth. These are failures of embryonic development.

Polydactyly/syndactyly/adactyly--Polydactyly is the presence of more than five digits on either hands and/or feet; syndactyly is having fused or webbed fingers and/or toes; adactyly is the absence of fingers and/or toes.

Club foot--Deformities of the foot, which is twisted out of shape or position.

Diaphragmatic hernia--Herniation of the abdominal contents through the diaphragm into the thoracic cavity usually resulting in respiratory distress.

Other musculoskeletal/integumental anomalies--Other specified congenital anomalies of the muscles, skeleton, or skin.

Down's syndrome--The most common chromosomal defect with most cases resulting from an extra chromosome (trisomy 21).

Other chromosomal anomalies--All other chromosomal aberrations.

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Method of delivery

The new birth certificate contains a checkbox item on method of delivery. The choices include vaginal delivery, with the additional options of forceps, vacuum, and vaginal birth after previous cesarean section (VBAC), as well as a choice of primary or repeat cesarean. When only forceps, vacuum, or VBAC is checked, a vaginal birth is assumed. In 1993 this information was collected from the birth certificates of all States and the District of Columbia.

Several rates are computed for method of delivery. The overall cesarean section rate or total cesarean rate is computed as the proportion of all births that were delivered by cesarean section. The primary cesarean rate is a measure that relates the number of women having a primary cesarean delivery to all women giving birth who have never had a cesarean delivery. The denominator for this rate includes all births, less those with method of delivery classified as repeat cesareans and vaginal birth after previous cesarean. The repeat cesarean rate is the proportion of all cesarean deliveries that were to women having their second (or subsequent) cesarean delivery. The rate for vaginal birth after previous cesarean (VBAC) delivery is computed by relating all VBAC deliveries to the sum of VBAC and repeat cesarean deliveries, that is, to women with a previous cesarean section. Repeat cesarean and VBAC rates for first births exist because the rates are computed on the basis of previous pregnancies, not just live births.

Hispanic parentage

The 1989 revision of the U.S. Standard Certificate of Live Births includes items to identify the Hispanic origin of the parents. Concurrent with the 1978 revision of the U.S. Certificate of Live Birth, NCHS recommended that items to identify the Hispanic or ethnic origin of the newborn's parents be included on birth certificates and has tabulated and evaluated these data from the reporting States. All 50 States and the District of Columbia reported Hispanic origin of the parents for 1993.

In computing birth and fertility rates for the Hispanic population, births with origin of mother not stated are included with non-Hispanic births rather than being distributed. Thus, rates for the Hispanic population are underestimates of the true rates to the extent that the births with origin mother not stated (1.3 percent in 1993) were actually to Hispanic mothers. The population with origin not stated was imputed. The effect on the rates is believed to be small.

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ACOG TECHNICAL BULLETIN

SMOKING AND WOMEN'S HEALTH

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6/96

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9.19.97
D'Andra Fisher

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Smoking --1996

Introduction

Over 22 million American women smoke cigarettes despite the overwhelming medical evidence about the harmful effects of smoking. From 1965 to 1990 there was a 40% decline in the overall prevalence of smoking but since 1990 the prevalence has plateaued. Currently 22.5% of American women smoke. (1) Among adolescent high school students the rate of cigarette smoking increased from 27% in 1991 to 35% in 1995. In the 1995 Youth Risk Behavior Survey, 34.3% of high school girls reported that they smoked cigarettes during the past 30 days. (2) Adolescence is the critical period during which most women begin to smoke. 91% of adult smokers had their first cigarette before age 20 and 77% became daily smokers by age 20. Very few women begin smoking after age 20. (3) Physicians, nurses and medical staff can be instrumental in preventing the initiation of smoking among adolescents. Among women of reproductive age 29% smoke. There is a higher prevalence among women living in poverty and those with less than a high school education. (4) Between 19-30% of pregnant women continue to smoke putting themselves and their fetuses at risk for a number of adverse reproductive events. (2, 5) From 1992-1993 restrictive worksite and public smoking policies helped transform a significant number of women from daily smokers into occasional smokers but the overall number of smokers did not change

Most American women who smoke want to quit. In the 1992-93 NHIS survey 72.5% of female smokers reported they wanted to quit, 34% attempt to quit each year but only 2.5% successfully stop each year.(1) OBGyn practitioners can accurately inform

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Smoking --1996

Introduction

Over 22 million American women smoke cigarettes despite the overwhelming medical evidence about the harmful effects of smoking. From 1965 to 1990 there was a 40% decline in the overall prevalence of smoking but since 1990 the prevalence has plateaued. Currently 22.5% of American women smoke. (1) Among adolescent high school students the rate of cigarette smoking increased from 27% in 1991 to 35% in 1995. In the 1995 Youth Risk Behavior Survey, 34.3% of high school girls reported that they smoked cigarettes during the past 30 days. (2) Adolescence is the critical period during which most women begin to smoke. 91% of adult smokers had their first cigarette before age 20 and 77% became daily smokers by age 20. Very few women begin smoking after age 20. (3) Physicians, nurses and medical staff can be instrumental in preventing the initiation of smoking among adolescents. Among women of reproductive age 29% smoke. There is a higher prevalence among women living in poverty and those with less than a high school education. (4) Between 19-30% of pregnant women continue to smoke putting themselves and their fetuses at risk for a number of adverse reproductive events. (2, 5) From 1992-1993 restrictive worksite and public smoking policies helped transform a significant number of women from daily smokers into occasional smokers but the overall number of smokers did not change

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women of the medical consequences of smoking and facilitate successful smoking cessation.

Composition of Tobacco Smoke

There are over 2,500 chemicals identified in tobacco smoke. Many constituents have not been evaluated for their effects on health. Two of the major components that are thought to be responsible for the adverse effects of cigarette smoke are nicotine and carbon monoxide (6). Both active and passive smoking involve the inhalation of smoke, with systemic absorption via the pulmonary vasculature.

EFFECTS OF SMOKING ON WOMEN

General Effects on Women

Cigarette smoking is the largest preventable cause of death and disability among women in the United States.

Cancer

Smoking is responsible of approximately 30% of all cancer. Since 1987 lung cancer has been the leading cause of cancer deaths among women. In 1993 an estimated 56,000 died of lung cancer. Women who smoke are 12 times more likely to die from lung cancer than those who never smoked. By 10 years after smoking cessation the risk of lung cancer returns to that of a nonsmoker. In addition smoking increase the risks of cancer of the oropharynx, esophagus, kidney, bladder, pancreas, and cervix. (7)

Coronary Artery Disease

Smoking is responsible for 55% of the cardiovascular deaths in women less than 65 years old. The Nurses Health Study prospectively followed 117,206 female nurses

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aged 30-55 years. The relative risk (RR) of total coronary heart disease among smokers is four times higher than compared to women who never smoked. The risk of coronary heart disease was highest among those who initiated smoking before 15 years old. (RR =9.25). Women who stopped smoking immediately decreased their relative risk of coronary heart disease to 1.5. Two years after smoking cessation risk of coronary heart disease declined to the level of those who had never smoked. Smoking is also a risk factor for coronary artery disease in women under 30 years old (9).

Women older than 35 years old who use oral contraceptives and smoke have a higher risk of coronary artery disease, cerebrovascular accidents, myocardial infarction and deep venous thrombosis.

Menopause

At least 13 studies indicate that smokers cease menstruating 1-2 years earlier than nonsmokers. This effect is dose dependent, and the difference persists after controlling for subjects' weight (6, 10). Female smokers have significantly reduced bone mineral density of the hip compared to nonsmokers(47). Smokers taking hormone replacement therapy have reduced levels of serum estrogens compared to nonsmokers on the same hormone replacement therapy.

There is an inverse correlation between the number of cigarettes smoked daily and the decreased serum estrogen levels on hormone replacement. This suggests that increased hepatic metabolism of estrogens stimulated by smoking may contribute to the higher rate of osteoporosis among smokers. 19

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Other

Women who smoke cigarettes are 5 times more likely to have bronchitis and emphysema. Chronic sinusitis, peptic ulcer disease, and peripheral vascular disease are also more common in smokers.

Effects on Reproductive Function

Overall, there is evidence that women who smoke have lowered fertility. Tobacco smoking has been implicated in disorders of ovulatory function, tubal function, implantation physiology, oocyte depletion, and early pregnancy loss (5). Smoking also alters the characteristics of sperm.

Fertility

Smoking reduces overall female fertility as measured by fecundity, the probability of conception for a given couple during a given menstrual cycle. A review of published studies reveals a consistently significant increased risk of infertility in smokers compared with nonsmokers (RR or OR, 1.3-1.6) (11).

The prospective Oxford Family Planning Association Study monitored 17,000 women for an average of 11.5 years (12). Fertility rates of women who smoked were approximately 30% lower than those of nonsmokers. The fertility rates of exsmokers were not significantly different from those of women who had never smoked. The difference in pelvic inflammatory disease did not account for the difference in fertility rates in the two groups

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Ovulatory Dysfunction

Animal studies have shown that nicotine can alter gonadotropin release in a dose-dependent fashion, decrease the luteinizing hormone surge and inhibit the release of prolactin. Changes in the midcycle luteinizing hormone surge may explain the effect of smoking on the menstrual cycle (13).

Few well-designed studies have addressed this issue in women. In a classic study of 24,000 women, Hammond found that the frequency of abnormal vaginal bleeding was 67% higher in heavy smokers (those who smoked more than 21 cigarettes per day) than in nonsmokers (14).

Tubal Function

Nicotine alters tubal motility in rhesus monkeys and rabbits (8). In humans, ectopic pregnancy may be a manifestation of altered tubal function. Several case-control studies have shown an approximately doubled risk of ectopic pregnancy when the mother smoked at the time of conception (15). In a multinational study of 1,108 women with confirmed ectopic pregnancies, the frequency of ectopic pregnancy was higher in smokers than in nonsmokers (OR, 2.2-4.0, depending on the subgroup) (16). The analysis was adjusted for pelvic inflammatory disease and intrauterine device use.

Spontaneous Abortion

Large epidemiological studies in developed countries have demonstrated that smokers have 1.2 to 1.8 times as many spontaneous abortions as nonsmokers. Given a background level of clinically apparent spontaneous abortions of approximately 15%, this results in a miscarriage rate of 18-27% for smokers (17).

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A study of in vitro fertilization studies that control for the number of eggs retrieved, fertilization rates, or implantation rates show the incidence of spontaneous abortion was 42.1% in smokers compared with 18.9% in nonsmokers (17).

Kline et al evaluated 979 karyotyped spontaneous abortions (18). Spontaneous abortions of smokers were 39% more likely to be chromosomally normal than those of nonsmokers. This suggests a non-genetic mechanism.

Male Reproductive Function

In a number of studies, a consistent association between smoking and impaired sperm concentration, motility, and morphology has been found (19, 20). Some evidence supports that cessation of smoking may improve sperm density and motility.

Effects on Pregnancy

Various effects of cigarette smoking on pregnancy have been studied. They include placental changes, pregnancy complications, and perinatal loss (Table 1).

Carbon monoxide and nicotine are thought to be the main ingredients in cigarette smoke responsible for adverse fetal effects. These products cause decreased availability of oxygen to maternal tissues and the fetus.

Placental changes found in smokers include hypertrophy, thickening of the trophoblastic basement membrane (21), and calcification (22) changes typically seen in cases of chronic hypoxia and ischemia. The volume density of fetal vessels in terminal villi is decreased, signifying a loss in the exchange area of smokers' placentas (24)

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Pregnancy Complications

In the Collaborative Perinatal Project study, abruptio placentae was 1.5 times more common and was more likely to result in perinatal mortality in smokers than in nonsmokers. When women stopped smoking prior to their first prenatal visit, there were 50% fewer fetal and neonatal deaths due to abruptio placentae (24).

In several recent studies, women who smoked cigarettes during pregnancy had placenta previa twice as often as nonsmokers (25, 26)

Surprisingly, a number of studies suggest that maternal smoking decreases the risk of pregnancy-induced hypertension by 50%, with a dose-dependent relationship (28). The proposed mechanism is nicotine inhibition of thromboxane A_2 production.

Low Birth Weight

There is a consistent association between smoking and lower birth weight in the medical literature supporting a probable causal relationship. This is from a combination of preterm deliveries of appropriate-weight babies and intrauterine growth retardation of term babies.

Recent studies have shown a consistent relationship between preterm PROM and smoking (29, 30). Further studies controlling for differences in maternal sexual activity and in maternal genital tract pathogens are needed to assess the association between smoking and PROM.

In a prospective study of 30,596 pregnant women (31), preterm births (delivered at less than 37 weeks of gestation) were 20% more common in women smoking more than one pack per day while pregnant than in nonsmokers. The analysis controlled for

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maternal age, education, the time of initiation of prenatal care, and alcohol consumption, among other confounding variables. In a recent study attempting to characterize reasons for higher rates of preterm births in black women compared with white women, 10% of the excess risk in black women was attributed to cigarette smoking (32).

Smokers also have a 3.5 - 4.0-fold increase in small-for-gestational-age infants compared with nonsmokers (33). Newborns of smokers are smaller at every gestational age. The women who stop smoking before 16 weeks of gestation have infants with birth weights similar to those of babies of women who never smoked (34).

The mean birth weight of infants of women who smoke during pregnancy is 170-200 g less than that of infants of nonsmokers. This difference persists even after controlling for confounding variables such as maternal age, parity, maternal weight gain and energy intake, social class, level of education, and alcohol consumption. (35)

Perinatal Outcomes

Multiple recent studies have demonstrated a clear association between maternal smoking and perinatal loss. Placenta previa, abruptio placentae, and preterm PROM were responsible for most of the perinatal losses in smokers. These epidemiological studies report an association between smoking and perinatal mortality but do not establish a causal relationship.

Most studies have not found a relationship between smoking in pregnancy and birth defects, childhood cancer, or long-term neurologic sequelae (36). Several studies of sudden infant death syndrome have found maternal smoking in pregnancy to be an important risk factor (37).

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SMOKING CESSATION

Physician Training and Counseling

Physician advice can help women stop smoking but often physicians do not routinely inquire and advise patients about smoking. In the Stanford 5 city project only 50% of smokers reported that their physician had ever advised them to stop smoking. They were less likely to be counseled if they were adolescents or young adults, non oral contraceptive users, or without cigarette related disease. Only 3.6% of exsmokers stated that their physician had helped them quit. (38)

Although there is conflicting data on the magnitude of the effect, physician counseling motivates some patients to quit. The physician's effectiveness in actual cessation rates depends on a systematic approach to identifying smokers and a standardized support for smoking cessation. As a result of 5 randomized controlled trials of brief smoking cessation physician training (3 hours) and intervention protocols cessation rates up to 15% were achieved at 1 year follow up (39)

The major conclusions of the randomized trials regarding physician training are

1. Training physician in the treatment of nicotine dependence will result in more consistent and effective patient care.

2. When trained physicians are routinely prompted to intervene with patients who smoke they can achieve a significant reduction in smoking prevalence

3. Patients of trained physicians who receive routine reminders were up to 6 times more likely to stop smoking than patients of control physicians.

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Intervention Guidelines

General

The National Cancer Institute has published guidelines on smoking cessation that summarize the general consensus in the medical literature on effective applied behavioral management. (40)

The physician and office staff can create a setting that is conducive to smoking cessation. Physicians can insure that all smokers are identified, monitored and appropriately treated at every office visit. The office can identify a smoking cessation coordinator and educator, make the office smoke free, implement a way to identify and monitor smokers, remind the health professionals to intervene and assist in follow-up phone calls and arranging visits.

Guidelines for physicians are summarized in Table II.

Specific Issues

Nicotine Dependence

Physicians can aid in smoking cessation by discussing nicotine addiction and treatment and addressing fears about weight gain, stress management and support systems.

Nicotine medications can double or triple success rates in smoking cessation if prescribed in a setting with ancillary support programs. (41) The short term cessation rates with nicotine medications are between 20-40% compared to 10-20% with placebo, however the long-term efficacy depend on the context of the treatment. (42) Most smokers who quit relapse within a week when the symptoms of nicotine withdrawal are at

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their peak. Nicotine is highly addictive and withdrawal symptoms begin within a few hours, peak in several days and often last up to a month. Typically the symptoms include: dysphoria, insomnia, irritability, anxiety, difficulty concentration, restlessness, decreased heart rate and increase appetite.

Nicotine medications can provide relief of withdrawal symptoms while smokers adapt to life without cigarettes. In cigarette smoke nicotine is rapidly absorbed and with large variability in plasma concentrations. In contrast the medications result in slower, lower and less variable plasma concentrations. The available forms include nicotine gum and the nicotine patch. Nasal sprays and oral inhalers are being investigated. (41)

Nicotine medications should be prescribed for smokers who are likely to be nicotine dependent. (41) Most often those who smoke greater than one pack of cigarettes per day or smoke within 30 minutes of getting up in the morning, or who have experienced nicotine withdrawal symptoms with prior attempts at cessation. Verification of tobacco smoke exposure by measuring salivary plasma or urine continine may be justified in pregnant women or patients with active cardiovascular disease. The only contraindication to nicotine medications is for those patients with hypersensitivity or allergies to nicotine, those with a recent myocardial infraction, worsening angina or life threatening arrhythmia.

Nicotine Gum

Generally, nicotine Polacrilex gum can be prescribed as follows:

- A smoker who smokes less than 25 cigarettes per day can be prescribed one dose of 2 mg for every 2 cigarettes, and

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(b) A woman who smokes greater than 20 cigarettes per day can be prescribed 4 mg. for every 3-4 cigarettes per day up to 30 days maximum. After 1-2 months, weaning can begin with the total daily intake decreased by one unit dose/week. Use for greater than 6 months is not recommended. Side effects of Polacrilex gum include jaw fatigue and GI symptoms.

Transdermal Nicotine

The transdermal nicotine patches come in a variety of doses and can be prescribed as follows:

(a) For women who smoke more than 10 cigarettes a day, the 21 mg. patch should be the initial dose. After 1-2 months wean to successively lower dosages prescribing each for 2-4 weeks.

(b) Patients who smoke 6-10 cigarettes per day should start with the mid-range transdermal doses.

(c) For those who smoke 5 cigarettes or less are likely to have withdrawal symptoms and benefit from transdermal nicotine medication.

Side effects may include skin reaction and sleep disturbance, which can be alleviated by removing the patch at night.

<u>Weight Gain</u>

Many smokers are concerned about weight gain associated with smoking cessation. Not all women who stop smoking will gain weight. In a recent study of smoking cessation and weight gain, women who stopped smoking gained significantly more weight than those who had never smoked or those who continued to

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smoke. Over a 10 year period of time the average amount of weight gain for women associated with smoking cessation was 5.0 kg. However, in the same time period only about 1/6 of the increase in prevalence of overweight in the USA can be attributed to smoking cessation. To equal the health risks of smoking patients would have to gain approximately 100 lbs.

Patients who are worried about weight gain should be counseled to refrain from dieting at the same time they quit smoking. It is unrealistic to tackle both at once. A regular exercise program can help smokers cope with withdrawal symptoms and prevent weight gain. Vegetables (carrot sticks) and fruit are good snacks.

Stress Management

Many smokers are concerned about how to manage stress after stopping smoking. Some of the symptoms of restlessness and inability to concentrate are symptoms of nicotine withdrawal and will become less acuute after 3 days and most disappear within a few weeks. After a few weeks of not smoking, most women actually feel less nervous. By knowing what to expect women can mobilize their personal resources, willpower, family and friends to get through the particularly difficult first few weeks.

Self Help Smoking Cessation Materials

Many women smokers benefit from self-help written materials. The National Cancer Institute has compiled a list of some available materials. (See Table II)

Smoking Cessation in Pregnancy

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Approximately one third of women are smokers at the time they conceive. It has been estimated that if all pregnant women stopped smoking, a 10% reduction of infant and fetal deaths would be seen (42). Approximately 20% of smokers quit by the time of their first prenatal visit (5). Despite regular contact with health care providers who give current antismoking advice, however, only 6% give up smoking later in pregnancy (43).

The most successful efforts in smoking cessation during pregnancy involve interventions that emphasize how to stop smoking and do not just provide antismoking advice. Printed material should be directly targeted to pregnant women and not general smokers (44). A prospective, randomized, controlled clinical trial of an intensive smoking reduction program with substantial patient contact and supervision (initial visit plus telephone contact at least monthly) has been shown to aid in smoking cessation during pregnancy and to increase birth weights (5). Use of a smoking cessation chart may help health care providers to track patient contacts with the goal of achieving initial smoking cessation as well as reinforcing that behavior throughout pregnancy.

A recent metanalysis of 10 randomized controlled trials showed a 50% increase in smoking cessation between the 6th and 9th months with organized prenatal smoking interventions. In the third trimester smoking cessation rates up to 32% were achieved with the prenatal program. Two important points stood out about the successful programs (44):

1) All studies used smoking cessation materials geared toward pregnant women rather than the general population.

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the absence of direct data concerning use of the patch and gum during pregnancy, it is appropriate to inform the patient about the presumed risks and benefits of this approach and to individualize therapeutic decision making.

Conclusions

Smoking tobacco increases cancer, cardiovascular and other health risks for all women. It is also associated with reproductive health problems, increased perinatal mortality, bleeding complications of pregnancy, decreased mean birth weight, and higher incidences of small-for-gestational-age babies, low-birth-weight babies, and preterm deliveries.

The ultimate goal of the provider is to identify all women who smoke and counsel them to stop smoking. The support of providing a concrete smoking cessation plan, with nicotine replacement when indicated and arranging follow-up can help avoid relapse.

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TABLE I
EFFECTS OF SMOKING ON REPRODUCTION AND PREGNANCY

Effect	Relative Risk or Other Result (95% confidence interval)	Reference
Reproductive		
-Increased infertility	1.3 (1.1 - 1.4)	Howe et al, 1985
-Ectopic pregnancy	2.2 (1.3 - 3.6)	Campbell, 1987; Chow 1988
-Spontaneous abortion	1.7 (1.5 - 3.2)	Kline et al, 1977; Anoukure, 1986
Gestational		
-Abruptio placentae	1.5 (1.1 - 1.2)	Naeye, 1980
-Placenta previa	1.9 (1.2 - 3.0)	Williams et al 1991 +
	2.3 (1.5 - 3.5)	Handler, 1994
PROM		
-Term	1.3 (1.1 - 1.9)	Naeye, 1982
-Preterm	2.1 (1.4 - 3.1)	Harger et al 1990
Perinatal mortality	1.25 for smoking < 1 pack/d (1.13 - 1.39) 1.56 for smoking > 1 pack/d (1.37 - 1.77)	Kleinman et al. 1988
Fetal		
-Mean Birth Weight	200 g decrease	Multiple Studies
-SGA infants	3.5 (2.6 - 4.9)	Ounsted at al, 1985
-Prematurity	1.2 (1.1 - 1.4)	Shiono et al, 1986

Abbreviations: NS = not significant, PROM = premature rupture of membranes, SGA = small for gestational age.

+ If the 95% confidence interval includes 1, the relative risk is not statistically significant

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TABLE II
FOR PHYSICIANS

ASK All patients about smoking and document the following in the chart: brand, quantity, age at initiating, prior attempts to quit

ADVISE All smokers to stop - personalize the message to quit

ASSIST Patient in quitting:

1. Establish a quit date within 4 weeks;
2. Consider signing a stop smoking contract with the patient;
3. Provide self-help materials;
4. Consider nicotine replacement for those who smoke more than one pack a day or who smoke their first cigarette within 30 minutes of waking.

ARRANGE Patient follow-up care:

1. Office staff member to call or write patient within 7 days of the initial visit to reinforce the decision.
2. Follow-up visit within 1-2 weeks after the quit date
3. At follow-up visit provide support and help prevent relapse. If relapse happens, encourage patient to try again immediately.
4. Second follow-up visit in 1-2 months For patients who have relapsed, discuss circumstances and special concerns.

National Cancer Institute. How to Help Your Patients Stop Smoking. NIH Publication No. 95-3064 1995

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TABLE III
SELF-HELP SMOKING CESSATION MATERIALS

Organization	Address	Available Materials
American Cancer Society	1599 Clifton Rd, NE Atlanta, GA 30329 404-320-3333	-Danger: Cigarettes -Don't Bite Off More Than You Should Chew -How Can We Reach You? (for women) -How to Stay Quit Over the Holidays -I'm In Charge Now...What's my Secret? (for women) -The Fifty Most Often Asked Questions about Smoking and Health and the Answers -Why Start Life Under a Cloud? (for pregnant women) -Smart Move -Quitter's Guide 7 Day Plan to Help You Stop Smoking Cigarettes
American College of Obstetrics and Gynecology	ACOG Distribution Center Suite 300 East 600 Maryland Avenue SW Washington, DC 20024-2588	-Smoking and Women
American Dental Association	211 East Chicago Avenue Chicago, IL 60611 312-440-2500	-Smokeless Tobacco -38 Million People Have Quit Smoking. You Can Too
American Heart Association	7320 Greenville Avenue Dallas, TX 75231 214-822-9380	-Calling It Quits -Guidelines for a Weight Control Component in a Smoking Cessation Program
American Lung Association	1740 Broadway New York, NY 10019 212-315-8700	-A Healthy Beginning: The Smoke-Free Family Guide for New Parents (kit) -A Lifetime of Freedom from Smoking: A Maintenance Program for Ex-Smokers

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		-Because you Love Your Baby -Freedom from Smoking for You and Your Family -Freedom from Smoking for You and Your Baby (kit) -Freedom from Smoking in 20 Days -In Control: A Home Video Freedom From Smoking Program -Smokeless Tobacco: No Way -Stop Smoking, Stay Trim
Bloomington Heart and Health Program	1900 West Old Shakopoee Rd Bloomington, MN 55431 612-887-9603 612-887-9684 FAX	-Quit and Win
Fox Chase Cancer Center	510 Township Line Road Cheltenham, PA 19012 215-728-2794	-Clear Horizons (for older smokers) -Stop Now for Your Baby -Quitting Times (for women)
Group Health Coop of Puget Sound	521 Wall Street Seattle, WA 98121 800-437-6668	-Free and Clear
Health Promotion Resource Center	Stanford Center for Research in Disease Prevention 1000 Welch Rd Palo Alto, CA 94304-1885 415-723-1000 415-723-0003	-Calling it Quits (videotape) -Cool Turkey Quitting Guide: A Day-by-Day Program to Help You Quit Smoking -Como Dejar de Fumar en Tres Pasos -Quit Smoking Kit
National Cancer Institute	Office of Cancer Communications Building 31, Room 10A24 Bethesda, MD 20892 800-4-CANCER	-Chew or Snuff is Real Bad Stuff -Clearing the Air-How to Quit Smoking and Quit for Keeps -Guia Para Dejar de Fumar Why Do You Smoke?
North Carolina Mutual Life Ins. Co.	411 W. Chapel Hill Street Durham, NC 27701 919-682-9201 Ext. 316	-Quit for life (kit for Black Americans)

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Office on Smoking and Health	Centers for Disease Control 1600 Clifton Rd, NE Mailstop K50 Atlanta, GA 30333 404-488-5705	-Pregnant? That's Two Good Reasons to Quit Smoking -Is Your Baby Smoking?
University of California School of Medicine	Division of General Internal Medicine Room A-405 400 Parnassus Avenue San Francisco, CA 94143-0320	-Quit for Life

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