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Methods and Response Characteristics

1980 National Natality and Fetal Mortality Surveys

This report describes the methods employed in the 1980 National Natality Survey and the 1980 National Fetal Mortality Survey. These surveys are based on information obtained from mothers, hospitals, attendants at delivery, and providers of radiation examinations for a sample of live births and a sample of fetal deaths.

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Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standard of reliability or precision
#	Figure suppressed to comply with confidentiality requirements

Methods and Response Characteristics, 1980 National Natality and Fetal Mortality Surveys

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Introduction

This report describes the methods employed in the 1980 National Natality Survey and the 1980 National Fetal Mortality Survey. This introduction provides a brief overview of the nature and content of these surveys. The next section describes the sampling of vital records, the collection and processing of survey data, the production of national estimates, and the approximation of sampling errors. The third section examines differentials in response rates for mothers, hospitals, and attendants at delivery included in the surveys.

Background

The vital registration system provides annual data on vital events that occur in the United States. Because vital records serve both legal and statistical purposes, they provide limited social, demographic, health, and medical information. The data from vital records can be augmented, however, through periodic mail or telephone "followback" surveys. These surveys are referred to as "followback" because they obtain additional information from sources named on the vital record. A followback survey is a cost-effective means of obtaining supplementary information for a sample of vital events. From the sample it is possible to make estimates of vital events according to characteristics not otherwise available on a national basis. Periodic followback surveys respond to the changing data needs of the public health community without requiring changes in the vital record forms.

Previous National Natality Surveys were conducted by the National Center for Health Statistics (NCHS) based on live births in 1963, 1964–66, 1967–69, and 1972. The focus of the 1963 survey was on the exposure of married mothers to radiation (particularly x rays) during pregnancy. In the 1964–66 and 1967–69 surveys information was sought from married mothers concerning their social and demographic characteristics, and various health and prenatal characteristics. Information collected in the 1972 survey included social, demographic, health, prenatal, labor, and delivery information from married mothers, hospitals, and attendants at delivery. See the references at the end of this report for a list (references 1–22) of reports and papers based on these previous natality surveys.

The 1980 National Natality Survey (NNS)

The 1980 NNS is based on a probability sample of 9,941 live births that occurred in the United States during 1980. The live birth certificate represents the basic source of information. Based on information from the sample birth certificates, questionnaires were mailed to mothers who were married. These mothers were asked to provide information on prenatal health practices, prenatal care, previous pregnancies, and social and demographic characteristics of themselves and their husbands. Each mother was also asked to sign a consent statement authorizing NCHS to obtain supplemental information from her medical records. If the mother did not respond after two questionnaires were sent by mail, a telephone interviewer attempted to complete an abbreviated questionnaire and to obtain a consent statement. To ensure their privacy, unmarried mothers were not contacted.

Regardless of the mother's marital status, questionnaires were mailed to the hospitals and to the attendants at delivery (for example, physicians or nurse-midwives) named on the birth certificates. A questionnaire was sent to the hospital for each sample birth that occurred either in a hospital or en route to a hospital. If the mother signed a consent statement authorizing NCHS to obtain supplemental medical information, a copy was included with the questionnaire. The focus of the hospital questionnaire was on characteristics of labor and delivery, health characteristics of the mother and infant, information on prenatal care visits, and information on radiation examinations and treatments received by the mother during the 12 months before delivery of the sample live birth.

A questionnaire was also mailed to the attendent at delivery

NOTE: Peer review was provided by Kenneth Harris, Office of Research and Methodology.

for each sample birth for which the attendant's address was not the same as the address of the hospital. Again, if the mother signed a consent statement, a copy was included. The questionnaire sent to attendants at delivery also contained questions concerning prenatal care visits and exposure to radiation examinations and treatments before delivery.

If the hospital or attendant at delivery identified on the birth certificate possessed little or no information concerning prenatal care, he or she was asked to provide the names and addresses of other facilities or individuals that could supply this information. Appropriate questionnaires were then sent to those facilities or individuals.

Finally, the mothers, hospitals, and attendants at delivery were asked to provide the names and addresses of other medical sources that provided radiation examinations and treatments to the mother before delivery. A special questionnaire concerning the mother's exposure to radiation was sent to these medical sources.

Though the 1980 NNS incorporates selected aspects of earlier natality followback surveys, it is different in several respects.[23] First, the number of births included in the sample is greater than that in any previous NNS. Second, low-birthweight infants (those less than 2,500 grams) were oversampled to facilitate studies of these births. Third, this is the first followback survey for which extensive medical information was collected for births to unmarried mothers. Although unmarried mothers were not contacted, information was obtained from their hospitals, attendants at delivery, and providers of radiation examinations and treatments. Fourth, this is the first time that data have been collected on maternal alcohol consumption, occupation and industry of both parents, hematocrit and hemoglobin values, blood pressure readings, tests for urine protein, and amniocentesis. This survey is also the first source of national information on the exposure of mothers to ultrasound during pregnancy. Finally, this is the first followback survey in which consent statements were sought from mothers in order to encourage medical sources to provide information.

The 1980 NNS is composed of information from birth certificates and information from questionnaires sent to married mothers, hospitals, attendants at delivery, and providers of radiation examinations and treatments. The survey represents an extensive source of information concerning specific maternal and child health conditions and obstetric practices for live births in the United States.

The 1980 National Fetal Mortality Survey (NFMS)

The 1980 NFMS is based on a probability sample of 6,386 fetal deaths with gestation of 28 weeks or more, or delivery weight of 1,000 grams or more, that occurred in the United States during 1980. The report of fetal death represents the basic source of information in this survey. Married mothers, hospitals, attendants at delivery, and providers of radiation examinations and treatments were surveyed under the same conditions as those described for the 1980 NNS. The same questionnaires were used for both surveys. Although some questions pertained only to live births and others pertained only to fetal deaths, instructions to skip inappropriate questions were included in the questionnaires.

A national followback survey based on fetal death records had not been conducted previously. A pretest conducted prior to the 1980 survey indicated that it was feasible to collect substantially the same information about fetal deaths as about live births.[24] The sampling design for the NFMS was developed so that the NFMS sample would be large enough to permit comparisons between live births in the NNS and fetal deaths in the NFMS.

Conduct of the surveys

The 1980 NNS and NFMS is a major research effort of the National Center for Health Statistics (NCHS) requiring the collaboration and cooperation of many other agencies. The content and methods of these surveys were planned and directed by the Division of Vital Statistics of NCHS. The surveys were approved by health and vital statistics officials in the State and independent registration areas that sampled vital records for inclusion in the surveys. The Division of Data Services of NCHS processed the vital records and collected the data. Seven other Public Health Service agencies participated in planning the surveys and provided funding through NCHS's Reimbursable Work Program:

- The National Center for Devices and Radiological Health, Food and Drug Administration.
- The National Institute for Occupational Safety and Health, Centers for Disease Control.
- The Center for Health Promotion and Education, Centers for Disease Control.
- The National Institute of Child Health and Human Development, National Institutes of Health.
- The National Institute on Drug Abuse; Alcohol, Drug Abuse, and Mental Health Administration.
- The National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration.
- The Bureau of Health Care Delivery and Assistance, Health Resources and Services Administration.

Availability of data and findings

A public-use data tape containing information collected in the 1980 NNS and NFMS may be purchased from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161. Data tapes for the 1964–66, 1967–69, and 1972 National Natality Surveys are also available.[25] Analyses of the 1980 NNS and NFMS data are being published as NCHS reports and as journal articles, and are being presented at meetings of professional organizations.

Survey procedures

Sampling of certificates of live birth

The files of birth certificates in the 50 States, the District of Columbia, and the independent registration area of New York City constituted the sampling frame for the survey. Certificates were registered for an estimated 99.3 percent of all live births that occurred in the United States in 1980.[26]

In each registration area a sequential file number is assigned to each birth certificate received from the beginning to the end of each calendar year. Certificates with file numbers ending with specified combinations of digits were drawn so that 105 of every 10,000 certificates would be selected for the sample. The certificates were drawn as soon as the file of certificates for the most recent month of registration was complete. Copies of the sample certificates were sent monthly to NCHS for further processing. Certificates of live birth received after March 27, 1981 were not selected; there is no reason to believe that any substantial number of birth certificates were received after that date.

Some of the certificates of live birth selected for the sample in the registration areas were not included in the NNS. Births that resulted in adoption and births to nonresidents of the United States were excluded. Births to unmarried mothers in New Jersey and Idaho were excluded at the request of the State registrars of vital statistics in those States.

The next stage of sample selection was designed to produce an oversampling of low-birth-weight infants. Certificates with file numbers ending with a subset of the initially specified digits were selected for the sample. In general, 25 of every 105 certificates were selected in this way. From the remaining certificates (80 of every 105 certificates), only those on which the birth weight of the infant was less than 2,500 grams (5 pounds 8 ounces) were selected for the sample. If the birth weight on a certificate was not stated, it was assumed to be 2,500 grams or more for sampling purposes. The number of low-birth-weight infants in the NNS sample was therefore about 4 times the number that would have been obtained by simple random sampling.

Finally, it was necessary to exclude from the sample some additional certificates for the States of Idaho and Washington. In Idaho permission was requested from married mothers to include the birth certificates of their infants in the NNS. The State of Washington requested permission from unmarried mothers to include the birth certificates of their infants in the NNS. If the mothers refused permission, the certificates were excluded.

The total number of registered live births to residents of the United States during 1980 was 3,612,258 (table A). According to the procedures outlined above, 10,615 certificates of live birth were selected for inclusion in the NNS sample. During the conduct of the survey, however, a shortage of staff dictated a reduction in the number of cases that required special handling. In order to send questionnaires to the attendants at delivery, it was necessary to obtain their names and addresses. In some cases this information was illegible on the vital record, and survey staff had difficulty identifying these individuals through medical and telephone directories. For married mothers, some of the addresses were incomplete or out of date, and questionnaires mailed to these mothers were returned by the Post Office. Survey staff had difficulty obtaining new addresses for these mothers. The decision was made to exclude from the NNS 189 certificates on which the attendant's name and address were illegible, as well as 485 certificates for which the mother's questionnaire was returned by the Post Office. Therefore, 9,941 certificates of live birth form the NNS sample (table A). Hereafter all references to the NNS sample refer to these 9,941 certificates of live birth. This represents approximately 1 in 363 live births to residents of the United States in 1980.

Table A. Total number of live births in the United States in 1980 and number of live births included in the sample for the 1980 National Natality Survey (NNS)

Classification of live births	*Number*
Live births in the United States	3,612,258
Live births selected for the NNS sample	10,615
Live births excluded from the NNS sample	674
Attendant's name or address illegible	189
Mother's questionnaire returned by Post Office	485
Live births included in the NNS sample	9,941

Although the NNS is based on a sample of live births, the terms "women" and "mothers" are frequently used instead of "births" for convenience, particularly when the focus is on mothers.

Sampling of reports of fetal death

The designation for the document filed in the event of a fetal death differs among the registration areas (for example, certificate of fetal death, certificate of stillbirth, report of fetal death). In this report these documents are referred to as "reports of fetal death." Although the requirements

governing the registration of fetal deaths vary among the registration areas, all areas require the registration of fetal deaths of at least 22 weeks gestation or 500 grams.

The extent to which fetal deaths are not registered is unknown.[27] However, underregistration is suspected to be more of a problem near the lower limit for areas with a minimum gestation period requirement. The NFMS was limited to fetal deaths of 28 weeks gestation or more, events that were relatively well registered.

The files of reports of fetal death in 51 of the 52 registration areas constituted the sampling frame for the NFMS. Michigan State law prohibited the use of reports of fetal death in Michigan for purposes of conducting a followback survey.

In each registration area a sequential file number is assigned to each report of fetal death received from the beginning to the end of each calendar year. Reports of fetal death with file numbers ending with specified digits were drawn so that 4 of every 10 reports would be selected for the sample. Copies of the sample reports of fetal death were sent to NCHS on a monthly basis. Reports of fetal death for 1980 received after March 27, 1981 were not selected. No substantial number of reports of fetal death for 1980 were expected after that date.

The sample reports of fetal death were then examined to determine whether they were within the scope of the NFMS; fetal deaths to nonresidents of the United States and induced abortions were excluded. Reports of fetal death to unmarried mothers in New Jersey and Idaho were also excluded at the request of the State registrars of vital statistics in those States.

The NFMS was limited to "late" fetal deaths because they were more likely to have occurred in a hospital, making good medical information available. The following reports of fetal death were selected for the sample: a) Those for which length of pregnancy or physician's estimate of gestation was stated as at least 28 weeks or 7 months; b) those lacking an explicit statement of gestational length for which the delivery weight of the fetus was at least 1,000 grams or 2 pounds, 3 ounces; and c) those lacking an explicit statement of both gestational length and delivery weight for which the length of gestation based on the date of last menstrual period was 196 days (28 weeks) or more. Although not strictly correct given these selection criteria, the fetal deaths included in the NFMS can be referred to as "fetal deaths with gestation of 28 weeks or more, or delivery weight of 1,000 grams or more."

Finally, it was necessary to exclude some reports of fetal death for the States of Idaho and Washington. In Idaho permission was requested from married mothers, and in Washington permission was requested from unmarried mothers to include their reports of fetal death in the NFMS. If the mother refused permission, the report of fetal death was not included.

In accordance with these procedures, 7,391 reports of fetal death were selected for the NFMS sample. It was also necessary to exclude reports of fetal death from the NFMS because of illegible names on vital records, and because some mothers' questionnaires were returned by the Post Office. A total of 1,005 reports of fetal death were excluded from the NFMS for these reasons (table B). Therefore, the 1980 NFMS sample included 6,386 reports of fetal death. Hereafter all references to the NFMS sample refer to these 6,386 reports of fetal death.

Table B. Estimated number of fetal deaths in the United States in 1980 with gestation of 28 weeks or more, or delivery weight of 1,000 grams or more, and number of fetal deaths included in the sample for the 1980 National Fetal Mortality Survey (NFMS)

Classification of fetal deaths	*Number*
Estimated number of fetal deaths in the United States[1]	19,202
Fetal deaths selected for the NFMS sample	7,391
Fetal deaths excluded from the NFMS sample	1,005
Attendant's name or address illegible	512
Mother's questionnaire returned by Post Office	493
Fetal deaths included in the NFMS sample	6,386

[1]See text for derivation of this estimate.

The total number of reports of fetal death eligible for the 1980 NFMS could not be determined from the vital registration system because of the way in which the gestation and birth weight criteria were applied in the selection of the NFMS sample. The total number of eligible reports of fetal death in 1980 was estimated by multiplying the number of reports of fetal death selected (7,391) by the reciprocal of the probability of selection and then adding the number of eligible reports of fetal death in Michigan. This provided an estimate of 19,202 fetal deaths with gestation of 28 weeks or more, or delivery weight of 1,000 grams or more. The survey therefore includes approximately 1 in 3 of the estimated number of late fetal deaths eligible for the NFMS in 1980.

While the NFMS represents a sample of fetal deaths, the terms "women" and "mothers" are used in discussing the data.

Sources of information

Vital records

Although there are some variations in the nature of the information collected on the State live birth certificates, the content of these forms generally corresponds to that of the U.S. Standard Certificate of Live Birth (appendix figure I). Data items for which reporting varies among the registration areas are shown in appendix table I. The birth certificate contains information on the demographic and social characteristics of the parents, the woman's pregnancy history, characteristics of the pregnancy and delivery, and characteristics of the newborn. This information was coded from the birth certificates as part of the data record for each live birth in the 1980 NNS sample. The complications of pregnancy and complications of labor and/or delivery items were coded only in terms of whether or not any complication was noted. Information concerning concurrent illnesses or conditions affecting the pregnancy was not coded. If data items were missing or coded inappropriately, values were imputed according to procedures described elsewhere in this report.

Reports of fetal death also vary among the registration areas, but they generally correspond to the U.S. Standard Report of Fetal Death (appendix figure II). Data items for which reporting varies among the registration areas are shown

in appendix table II. The items on the report of fetal death which deal with the characteristics of the parents, the mother's pregnancy history, and characteristics of the pregnancy and delivery are comparable to those on the live birth certificate. The report of fetal death also contains information on the weight of the fetus, when the fetus died, and whether an autopsy was performed. This information was coded and imputed as described for live births.

Mothers

The mother was a potential source of information about social and demographic characteristics, prenatal care, and health behavior not available from the vital record. In the 1980 NNS and NFMS, questionnaires were sent only to mothers who were married. Consideration for the mother's privacy led to the decision not to contact those who were not married. Although the vital records of most registration areas included an item on the mother's marital status, the vital records of 11 registration areas did not. In addition, marital status was not indicated on a small number of vital records from registration areas that reported marital status.

When marital status was not reported, other information on the vital record was used to infer the mother's marital status. Briefly, a live birth or fetal death was classified as occurring to a married mother if the parents' surnames were the same, or if the child's and father's surnames were the same and the mother's current surname was missing. A live birth or fetal death was classified as occurring to an unmarried mother if the father's name was missing, if the parents' surnames were different, or if the father's and child's surnames were different and the mother's current surname was missing. These rules are listed in the order in which they were applied; the first applicable rule was coded. Beginning in 1980 this procedure was used to infer marital status for all birth certificates in the United States where marital status was not otherwise indicated.[26]

The names and addresses of the married mothers were obtained from the vital records so that questionnaires could be mailed to them. Most vital records provide only the mother's maiden name, so it was necessary to infer the mother's current last name. Generally it was assumed that the name of a married mother consisted of her first name, her maiden last name, and the father's surname.

Hospitals

For those live births and fetal deaths that occurred in a hospital or en route to a hospital, the hospital's patient records represented another source of information about labor and delivery, the health of the mother and infant, and prenatal care. The name and address of the hospital were extracted from the vital record so that a questionnaire could be sent.

Attendants at delivery

The person listed on the vital record as the attendant at delivery was also a potential source of additional information about the mother's prenatal care. Only attendants at delivery who were medical persons (for example, physicians, physicians' assistants, or certified nurse-midwives) were included as sources of prenatal care information. Vital records for which the attendant at delivery could not be identified were eliminated from the samples as described previously. In many cases it was necessary to obtain the attendant's address from medical directories or other sources. If the address for the attendant at delivery was the same as that of the hospital, it was assumed that the person was on the hospital staff and that he or she could not provide information about prenatal care beyond that available from the hospital's patient records. If the address for the attendant at delivery was different from that of the hospital, the name and address of the attendant at delivery were recorded so that a questionnaire could be sent.

Secondary sources of information

Mothers, hospitals, and attendants at delivery were requested to identify other sources of specific medical information. The mothers were asked for the names and addresses of any medical sources that provided them with radiation examinations or treatments during the year preceding their 1980 deliveries. Likewise, the questionnaires sent to the hospitals and attendants at delivery requested the identity of medical sources that could provide additional detail concerning the mother's exposure to radiation. If a questionnaire had not already been sent to these sources, one that dealt exclusively with radiation examinations and treatments was sent. These sources are referred to as "secondary radiation sources." The term "secondary" indicates that the source was identified by one of the other sources in the survey instead of being taken from the vital record.

The questionnaires for hospitals and physicians also requested the identity of other sources that might provide additional information about the mother's prenatal care. If these sources had not already been sent a questionnaire, a copy of the questionnaire intended for attendants at delivery was sent. These sources are referred to as "secondary attendant-at-delivery sources."

Numbers of sources in the NNS and NFMS

The number of sources included in the surveys according to the marital status of the mother are presented in table C. There were 9,941 sample certificates of live birth included in the NNS; 7,825 of the mothers were married and 2,116 were unmarried. Of the 6,386 reports of fetal death included in the NFMS sample, 4,814 of the mothers were married and 1,572 were unmarried.

In addition to the vital records, there were about 45,000 other potential sources of information in the two surveys. Questionnaires were sent to all of the married mothers in both surveys. There were potential hospital sources for about 99 percent of the live births and fetal deaths. There were potential attendant-at-delivery sources for about 80 percent of the live births and 77 percent of the fetal deaths.

There were no secondary radiation or attendant-at-delivery sources for most live births and fetal deaths. Multiple secondary radiation sources were permitted, and there were as many as four for some cases. Only one secondary attendant-at-delivery source was permitted for each case. The vital record was the only source of information in those cases involving unmarried mothers who delivered at home without a medical

Table C. Number of potential sources of information in the 1980 National Natality Survey (NNS) and the 1980 National Fetal Mortality Survey (NFMS) by the type of source and marital status of the mother

Source and marital status of the mother	Number of sources	
	NNS	NFMS
Vital records		
Total	9,941	6,386
Married	7,825	4,814
Unmarried	2,116	1,572
Mothers		
Married	7,825	4,814
Hospitals		
Total	9,855	6,297
Married	7,765	4,762
Unmarried	2,090	1,535
Attendants at delivery		
Total	7,939	4,928
Married	6,580	3,918
Unmarried	1,359	1,010
Secondary radiation sources		
Total	1,443	1,089
Married	1,429	1,071
Unmarried	14	18
Secondary attendant-at-delivery sources		
Total	430	375
Married	315	270
Unmarried	115	105

attendant. There were 9 such cases in the NNS and 20 in the NFMS.

Questionnaires

The same questionnaire forms were used for live births in the NNS and for fetal deaths in the NFMS. The same cover letters were used for medical sources in both surveys, but the cover letter for mothers in the NNS was different from that for mothers in the NFMS. The questionnaires and the cover letters that accompanied the first mailing to each source are shown in appendix figures III through XII.

Mother questionnaire

The questionnaire that was mailed to mothers, the "M–CS" form, includes questions about medical care received before delivery, health-related practices before and during pregnancy, pregnancy history, marital history, wantedness of the pregnancy, expectations for additional children, and methods of feeding the newborn. Instructions to skip inappropriate questions, such as methods of feeding, are provided for women who had a fetal death. The mother questionnaire also contains questions about the socioeconomic characteristics of the mother and father, including education, occupation, income, and national origin or descent. Also included are questions about whether the mother received examinations and treatments involving exposure to radiation during the year preceding her 1980 delivery, and space is provided for the mother to list the names and addresses of the providers of these examinations and treatments.

A pretest of data collection methods for the 1980 NNS and NFMS indicated that medical sources were more likely to supply information when consent statements signed by the patient were provided.[24] Therefore, a consent statement form was included in the questionnaires sent to married mothers. The following consent statement was included at the end of the questionnaire for mothers to read and voluntarily sign:

> I have voluntarily participated in this national health survey and hereby give my consent for the National Center for Health Statistics to obtain supplemental medical information from health records maintained on me by medical sources. I understand that the National Center for Health Statistics will use this information only for statistical purposes in health research, and no information which identifies either me or the medical source will ever be released or published.

Mothers were initially sent an M–CS questionnaire by mail. If they did not respond within 4 weeks, they were sent a second questionnaire. If the mother failed to respond to both questionnaires, an attempt was made to conduct an interview by telephone using an M–CS Abbreviated Telephone Interview. Some questions on the mother's M–CS mail questionnaire were excluded to reduce the time required for the interview.

At the conclusion of these telephone interviews, the consent statement was read to the mother along with this question: "Do you agree with the consent statement which I just read?" The telephone interviewer recorded whether or not the mother agreed. If the mother agreed, the interviewer signed and dated the form certifying that the consent statement had been read to the mother and that she had agreed. The signature of the interviewer represented the mother's consent by proxy; thus the consent statements obtained by telephone are referred to as "proxy consent statements."

Hospital questionnaire

The hospital questionnaire, the "H" form, seeks information about the pregnancy, the labor and delivery episode, and the condition of the infant or fetus at delivery. It includes questions about the induction and duration of labor, use of anesthetics, type of delivery, underlying medical conditions, complications of pregnancy and labor, and postpartum sterilization. Questions about the use of electronic fetal monitoring, Apgar scores, length and weight, and congenital anomalies and other conditions are included for live births and fetal deaths as appropriate. The hospital questionnaire also contains all of the questions from the attendant-at-delivery questionnaire described below.

Attendant-at-delivery questionnaire

The questionnaire that was sent to the attendant at delivery, the "P" form, obtained information on the medical care provided to mothers before delivery. The questionnaire seeks information about the dates of prenatal visits, blood pressure readings, tests for urine protein, hematocrit and hemoglobin

values, amniocentesis, and weight gain. This questionnaire also contains detailed questions about medical x ray, ultrasound, and nuclear medicine procedures, as well as queries regarding short wave and microwave examinations and treatments, during the 12 months preceding delivery. In connection with each of these procedures, the respondent was asked to indicate whether the procedure had been performed at their location or elsewhere. If elsewhere, space was allowed for the name and address of the provider.

Radiation questionnaire

A questionnaire concerning radiation examinations and treatments, the "X" form, was sent to the secondary radiation sources. This questionnaire also contains the questions about medical x ray, ultrasound, nuclear medicine, short wave, and microwave procedures, as well as detailed questions about dental x rays.

Collection of survey data

Contacting mothers

Each married mother was sent a questionnaire (M–CS), an introductory cover letter, and a postage-paid return envelope by first-class mail. These were mailed as soon as possible after the date of delivery to minimize problems of recall. The first mailing to mothers whose deliveries occurred in January 1980 took place in June 1980. Mothers were instructed to complete the questionnaire and to return it in the accompanying postage-paid envelope. If there was no response after 4 weeks, another questionnaire was sent with a followup cover letter and another return envelope.

If there was no response after an additional 4 weeks, an effort was made to contact the mother by telephone. If a telephone number was obtained, as many as seven attempts were made to reach the mother over a 2-week period. About 58 percent of the mothers who had not responded to two mailings were contacted by telephone. If the mother was contacted, an attempt was made to conduct the M–CS Abbreviated Telephone Interview. These interviews were conducted by trained interviewers who were sensitive to the fact that some of the mothers had recently experienced a fetal death. Only the mothers were interviewed; no proxy interviews were accepted. Information was obtained by telephone from 84 percent of the mothers who were contacted. Therefore, a telephone interview was conducted with about half of the mothers who did not respond to the two mailed questionnaires.

If it was not possible to reach the mother by telephone, a questionnaire, cover letter, and return envelope were mailed for the third time. The last of these mailings to mothers was sent in September 1981.

When blank questionnaires were returned by mothers who did not wish to participate, no further attempts were made to contact these mothers. In some cases the questionnaires mailed to mothers were returned by the Post Office as undeliverable. Early in the surveys, an attempt was made to obtain new addresses for these mothers. It became necessary, however, to eliminate this time-consuming process. After February 1981, cases for which the mother's questionnaire was returned by the Post Office were eliminated from the surveys as discussed under "Sampling of certificates of live birth" and "Sampling of reports of fetal death."

When a mail questionnaire or an abbreviated telephone interview containing information was obtained, it was thoroughly edited. The editors identified inappropriate and inconsistent responses and recoded or reformatted certain responses on the precoded forms for keypunching. If certain questions were not answered completely, an attempt was made to recontact the mother by mail or by telephone to obtain the missing information. The editors also examined the consent statement. If the mother gave her consent by signing the statement on the M–CS questionnaire or by agreeing with the statement read to her as part of the M–CS Abbreviated Telephone Interview, copies of the consent statement were made so that they could be included with questionnaires sent to her medical sources.

The distribution of married mothers included in the two surveys by their response status is presented in table D. "Respondents" include only those who provided at least some of the information requested. Among married mothers included in the NNS, 79.5 percent provided information. In the NFMS, 74.5 percent of the married mothers responded. The responses of 36.0 percent of the mothers in the NNS and 37.1 percent of the mothers in the NFMS were attributed to the first mailing of the questionnaire. The responses of an additional 17.1 percent of the mothers in the NNS and 14.9 percent of the mothers in the NFMS were attributed to the second mailing. Substantial proportions of the mothers provided information in a telephone interview (23.2 and 20.1 percent, in the respective surveys). The responses of 3.2 percent of the mothers in the NNS and 2.3 percent of the mothers in the NFMS were attributed to the third mailing. In the NNS, 20.5 percent of the married mothers were nonrespondents, including 3.7

Table D. Number of married mothers included in the 1980 National Natality Survey and National Fetal Mortality Survey and percent distribution by response status

Survey	Number of married mothers in the survey	Response status						
		Total	Respondents					Non-respondents
			All respondents	First mailing	Second mailing	Telephone	Third mailing	
		Percent distribution						
National Natality Survey	7,825	100.0	79.5	36.0	17.1	23.2	3.2	20.5
National Fetal Mortality Survey	4,814	100.0	74.5	37.1	14.9	20.1	2.3	25.5

percent of the mothers who refused or returned blank questionnaires, 2.1 percent for whom there were early Post Office returns or who were deceased, and 14.7 percent for whom there was no response of any kind. In the NFMS, 25.5 percent of the married mothers were nonrespondents, including 6.4 percent of the mothers who refused, 2.7 percent for whom there were early Post Office returns or who were deceased, and 16.5 percent for whom there was no response.

Contacting hospitals and attendants at delivery

Questionnaires were mailed to the hospitals and attendants at delivery for both married and unmarried mothers. The initiation of mailings to these medical sources was determined by the availability of a consent statement from the mother. Because there were no attempts to obtain consent statements from unmarried mothers, mailings to medical sources for these mothers were begun as soon as possible after the deliveries were selected for inclusion in the surveys. These mailings were sent from June 1980 to June 1981.

The initiation of mailings to medical sources for married mothers was determined by the mother's response to the consent statement. If the mother returned a signed consent statement by mail, or if a proxy consent statement was obtained through a telephone interview, mailings to the mother's medical sources were sent with a copy of the consent statement included. If the mother indicated that she did not wish to have one or more of her medical sources contacted, her request was respected. If a consent statement was returned blank, mailings to medical sources were begun without a consent statement. Finally, if there was no response from the mother 3 weeks after the last attempt to contact her, mailings were sent to her medical sources without a consent statement. Mailings to medical sources for married mothers were sent from June 1980 to October 1981.

Medical sources were sent a hospital or attendant-at-delivery questionnaire (as appropriate), an introductory cover letter, a postage-paid return envelope, and a copy of the mother's consent statement, if available, by first-class mail. The recipients were requested to consult their records, to complete the questionnaire, and to return the questionnaire within 1 week. If there was no response after 4 weeks, a second set of questionnaire materials was mailed. If there was no response after 2 additional weeks, an effort was made to contact the hospital or the physician by telephone. The telephone calls encouraged these sources to complete and return the questionnaires that they had already received; there was no attempt to obtain questionnaire information over the phone. If the source requested an additional copy of the questionnaire, a third set of questionnaire materials was sent. The last of these mailings to medical sources was sent in December 1981.

Some questionnaires were returned by the Post Office as undeliverable. In most cases it was possible to obtain a new address and to remail the questionnaire, but in some instances it was learned that the medical facility was closed or that the attendant at delivery had retired or moved. Blank questionnaires were also returned by sources that refused to provide information, by sources that refused to provide information without a consent statement (or without completion of their own form of consent statement), and by sources that indicated that they had no records for the delivery in question.

Hospital and attendant-at-delivery questionnaires containing information were thoroughly edited. As with the mother questionnaires, the editors identified inappropriate and inconsistent responses and recoded or reformatted certain responses on the precoded forms for keypunching. If specific questions were not answered completely, another copy of the questionnaire was mailed to the respondent with the required information noted.

The response rates for the medical sources included in the two surveys according to the mother's marital status are shown in table E. Medical sources that were not contacted

Table E. Number of hospitals and attendants at delivery in the 1980 National Natality and Fetal Mortality Surveys and percent distribution by response status, according to the marital status of the mother

Survey, source, and marital status of the mother	Number of sources in the survey	Response status					
		Total	Respondents				Non-respondents
			All respondents	First mailing	Second mailing	Telephone[1]	
		Percent distribution					
National Natality Survey							
Hospitals	9,855	100.0	76.1	50.7	18.3	7.1	23.9
Married	7,765	100.0	77.6	52.8	18.6	6.2	22.4
Unmarried	2,090	100.0	70.8	43.1	17.1	10.6	29.2
Attendants at delivery	7,939	100.0	61.6	41.1	14.5	6.0	38.4
Married	6,580	100.0	64.3	43.3	15.2	5.8	35.7
Unmarried	1,359	100.0	48.6	30.5	11.3	6.8	51.4
National Fetal Mortality Survey							
Hospitals	6,297	100.0	74.0	49.2	18.2	6.5	26.0
Married	4,762	100.0	76.3	51.5	18.3	6.5	23.7
Unmarried	1,535	100.0	66.7	42.0	18.0	6.7	33.3
Attendants at delivery	4,928	100.0	55.2	35.3	14.6	5.4	44.8
Married	3,918	100.0	57.9	37.7	15.0	5.2	42.1
Unmarried	1,010	100.0	44.6	25.6	13.0	5.9	55.4

[1]Among medical sources, telephone respondents represent those who did not return mail questionnaires until after the telephone reminder.

Table F. Number of secondary radiation sources and secondary attendant-at-delivery sources in the 1980 National Natality and Fetal Mortality Surveys and percent distribution by response status, according to the marital status of the mother

Survey, source, and marital status of the mother	Number of sources in the survey	Response status					
		Total	Respondents				Non-respondents
			All respondents	First mailing	Second mailing	Telephone[1]	
National Natality Survey		Percent distribution					
Secondary radiation sources	1,443	100.0	79.8	50.8	22.9	6.2	20.2
Married	1,429	100.0	79.9	51.0	22.9	6.0	20.1
Unmarried	14	100.0	71.4	28.6	21.4	21.4	28.6
Secondary attendant-at-delivery sources	430	100.0	52.8	25.6	16.0	11.2	47.2
Married	315	100.0	51.7	28.3	14.0	9.5	48.3
Unmarried	115	100.0	55.7	18.3	21.7	15.7	44.3
National Fetal Mortality Survey							
Secondary radiation sources	1,089	100.0	78.2	48.3	23.6	6.3	21.8
Married	1,071	100.0	78.3	48.4	23.7	6.3	21.7
Unmarried	18	100.0	72.2	44.4	16.7	11.1	27.8
Secondary attendant-at-delivery sources	375	100.0	55.7	31.7	16.3	7.7	44.3
Married	270	100.0	57.8	32.2	17.8	7.8	42.2
Unmarried	105	100.0	50.5	30.5	12.4	7.6	49.5

[1]Among medical sources, telephone respondents represent those who did not return mail questionnaires until after the telephone reminder.

at the mother's request are included in table E as nonrespondents. In both surveys, more than 76 percent of the hospitals associated with the deliveries of married mothers returned questionnaires containing information. Among hospitals associated with the deliveries of unmarried mothers, the response rates were 70.8 percent for the NNS and 66.7 percent for the NFMS. The response rates for attendants at delivery who were associated with the deliveries of married mothers were 64.3 percent in the NNS and 57.9 percent in the NFMS. The differences in response rates by the marital status of the mother were greater for attendants at delivery than for hospitals.

The response rates for the attendants at delivery are not an indication of the proportion of respondents to the prenatal care questions, however. For most live births and fetal deaths this information was also sought from hospitals and in some cases from secondary attendant-at-delivery sources.

Contacting secondary medical sources

The medical sources were requested to indicate whether radiation procedures received by the mother had been performed at their own location. If the examination or treatment had been performed elsewhere, the name and address of the provider (hospital, physician, clinic) was requested. If the medical source provided most of the information about the procedure, there was no reason to query the other source named. If the medical source provided only the type of radiation examination or treatment and the date on which it was performed, and the provider named by the medical source was not already a potential source for the mother in question, the provider was added to the survey as a secondary radiation source. If the mother named an additional source that provided radiation examinations or treatments, it was added to the survey as a secondary radiation source. In addition, each hospital and attendant-at-delivery source was requested to provide the name and address of other facilities or individuals that could provide additional information about the mother's prenatal care. The first mailing to these secondary radiation and attendant-at-delivery sources was sent as soon as possible after their names and addresses were obtained. Mailings to these sources consisted of a radiation or attendant-at-delivery questionnaire, an introductory cover letter, a postage-paid return envelope, and a consent statement from the mother if available. The followup and editing procedures for these questionnaires were the same as those described for hospital and attendant-at-delivery questionnaires.

The response rates for the secondary medical sources are shown in table F. Between 71 and 80 percent of the secondary radiation sources provided information. The response rates for these sources are similiar to those for hospitals. The response rates for the secondary attendant-at-delivery sources ranged from 51 to 58 percent.

Data processing and imputation

Individual live births and fetal deaths are the units of observation in the 1980 NNS and NFMS data file. The data for each event include information from a certificate of live birth or a report of fetal death and information from applicable questionnaires. The processing of data from the vital records, including the treatment of missing data, is described first. The sequential process of merging each set of questionnaire data with the vital record data is then described.

Processing of vital records

Information on certificates of live birth was classified and coded according to the rules set forth in "Vital Statistics Classification and Coding Instructions for Live Birth Records, 1980," *NCHS Instruction Manual,* Part 3a. Information on reports of fetal death was classified and coded according to

rules set forth in "Vital Statistics Classification and Coding Instructions for Fetal Death Records, 1980," *NCHS Instruction Manual,* Part 3b. These instruction manuals were modified to provide for the coding of a few additional data items in the NNS and NFMS. The vital record data were keyed to magnetic tape, and the keying was 100 percent verified.

The subsequent processing of the vital record data was done by computer. The data were edited for items with missing or invalid values. Data were missing either because the information was not provided or because the item was not included on the vital record used by the registration area. Values were invalid if they were not within a predetermined range for each data item. Each missing or invalid value is referred to as an "item nonresponse." Most of the variation in the proportion of item nonresponse among the vital records data items was due to differences in the number of areas that reported some items (see appendix tables I and II). There were no vital records for which all values were missing or invalid.

The item nonresponses were replaced by appropriate values through a "hot deck" imputation procedure. This procedure involves the sequential processing of the vital record data file. When an item nonresponse was encountered, it was replaced with a value for that data item from a previous record in the file. In the simplest case, an item nonresponse on the current record was replaced by the value for the same data item from the immediately preceding record in the file. When place of delivery was not reported, for example, the place of delivery code from the previous record was assigned to the current record.

A more complex procedure was used to impute most data items. This procedure involves the identification of one or more data items on the vital record that are associated with the data item to be imputed; these data items are referred to as "predictor items." The previous vital record in the file with similar values for these predictor items was located, and the item nonresponse on the current record was replaced by the value from this previous record. For example, when a nonresponse for the father's age was encountered, the mother's age was used as a predictor item. The previous record in the file with a mother in the same age category was located, and the father's age from this previous record was assigned to the current record.

The records for live births were imputed separately from those for fetal deaths. Because birth certificates for infants who weighed less than 2,500 grams were overrepresented among the live births, birth certificates for infants who weighed less than 2,500 grams were imputed separately from those for infants who weighed 2,500 grams or more.

The vital record data items were imputed before the questionnaires were processed. Information was occasionally supplied by the mother or the hospital for a data item that had been imputed on the vital record. In these instances, the imputed value on the vital record was replaced by the reported value from the mother questionnaire or the hospital questionnaire. However, if information reported on the vital record was inconsistent with information reported by another source, the values were not changed because there was no basis upon which to resolve the inconsistency. An analysis of the comparability of reporting appears elsewhere.[28]

Processing of mother questionnaires

After the mother's M–CS mail questionnaire and M–CS Abbreviated Telephone Interviews were manually edited, the data were keyed to magnetic tape for further processing. These data were edited to detect missing and invalid values which were treated as item nonresponses. For mothers who responded to the M–CS Abbreviated Telephone Interview, responses to the questions that were excluded from the telephone interview were also treated as item nonresponses. Each questionnaire record was also examined to determine whether responses to related questions were internally consistent. For example, a woman's responses about the number of prenatal visits during each month of pregnancy were compared with her response about whether she had any prenatal care. In some cases the inconsistency was resolved by assuming that one set of responses took precedence. In these cases the precedent responses provided a basis for recoding the inconsistent responses. In other cases the inconsistency could not be resolved, and the inconsistent responses were treated as item nonresponses. The questionnaire data for mothers who provided information were matched to and merged with the corresponding vital record data.

In these surveys the vital record was available for each case, but one or more of the potential sources of information (mothers, hospitals, attendants at delivery, secondary radiation sources, and secondary attendant-at-delivery sources) might not have responded. The failure of a potential source to respond is referred to as a "source nonresponse."[29] If there was no mother questionnaire information for a live birth or a fetal death to a married mother, it was designated as a source nonresponse. In the NNS, 20.5 percent of the questionnaires for married mothers were source nonresponses as were 25.5 percent of the questionnaires for married mothers in the NFMS.

The item nonresponses and source nonresponses were then imputed. In this process each source nonresponse was treated as a series of item nonresponses. For some mothers' data items (mother's age, for example), the value assigned was drawn directly from the vital record. Mother questionnaire items for which information was not available from the vital record were imputed using the hot-deck procedures described above with data items from the vital record and from the questionnaire as predictor items. The imputations were carried out separately for fetal deaths, low-weight live births, and other live births. There was no imputation of mother questionnaire data for unmarried mothers.

Processing of hospital and attendant-at-delivery questionnaires

The hospital and attendant-at-delivery questionnaires were keyed to separate magnetic tape files. These data were edited for missing values, invalid values, and internal inconsistencies. Inconsistencies were either resolved or designated as item nonresponses. The subsequent processing of the questions on radiation exposure is described under "Processing of radiation data." The rest of the information on questionnaires

returned by hospitals, attendants at delivery, and secondary attendants at delivery was combined to produce a single data record for each live birth and fetal death for which at least one of these sources responded. There was only one hospital questionnaire for each case, but all of the questions about prenatal care on the hospital questionnaire were also on the attendant-at-delivery questionnaire. Prenatal care information could have been obtained from as many as three sources for some cases (a hospital, an attendant at delivery, and a secondary attendant at delivery). When more than one source provided prenatal care information, the information was combined into a single set of responses.

The combination of responses from two or more questionnaires was accomplished in one of several ways. If any source indicated that hematocrit and hemoglobin values were obtained, that information was retained. If two or more sources provided different values for the highest or lowest hematocrit or hemoglobin values, the higher and lower values, respectively, were retained. If any source indicated that amniocentesis was performed or that specific prenatal advice was given, that information was retained. If two or more sources provided information about the mother's prepregnancy weight or her weight at time of delivery, an order of precedence was assumed: The hospital response was chosen over the response of an attendant at delivery, which was chosen over the response of a secondary attendant at delivery. If two or more sources provided weight at first prenatal visit or weight at last prenatal visit, the lowest and highest values were retained, and it was assumed that they represented the earliest and latest visits, respectively. An indication of which source supplied each prenatal care data item was included in the data record.

The data on prenatal visits from two or more questionnaires were also combined. All visits that were reported on different dates were retained. When more than one visit was reported on the same date, information for only one visit was retained. Although the selection criteria were complex, the effect was generally to retain blood pressure readings reported by attendant-at-delivery sources, and to retain any indication that the result of a urine protein test was positive. Data for a maximum of 30 prenatal care visits were retained for each live birth and fetal death.

The combined hospital and attendant-at-delivery data records were matched to and merged with the corresponding vital record and mother data records. If the information obtained only from hospitals (questions 1–12 and 19–35 on the hospital questionnaire) was missing for a live birth or a fetal death that occurred in a hospital or en route to a hospital, this missing information was designated as a source nonresponse. The percent of source nonresponses for the data obtained only from the hospital corresponds to the percent of nonrespondents for hospitals in table E. If there was no prenatal care information for a live birth or fetal death for which the vital record indicated that the mother had prenatal care, this missing information was designated as a source nonresponse.

Source nonresponses were treated as a series of item nonresponses, which were replaced by values from the vital record whenever possible or were imputed in a manner similar to that described for the mother questionnaires. Data items from the vital record and from the hospital or attendant-at-delivery questionnaires were used as predictor items in the imputation process. These imputations were carried out separately for fetal deaths, low-weight live births, and other live births.

Processing of radiation data

Questions about the mother's exposure to radiation were included on the hospital, attendant-at-delivery, and radiation questionnaires. Once the hospital and attendant-at-delivery questionnaires were edited and checked for consistency, the radiation data were separated for processing with the radiation questionnaire data. The radiation questionnaires were also keyed to magnetic tape, edited, and checked for internal consistency. The radiation information from all of the sources associated with each live birth and fetal death was combined into a single set of responses.

The process of combining responses from two or more sources was designed to retain any indication of exposure to radiation and to retain nonduplicated information about individual radiation procedures. If any of the responding sources reported that the mother had particular radiation procedures (medical x ray, dental x ray, ultrasound, nuclear medicine, short wave, or microwave) during the 12 months preceding delivery, that information was retained. If two or more sources provided duplicated information about a particular x ray, ultrasound, or nuclear medicine procedure, the information was included only once. An indication of which source or sources supplied each radiation data item was included in the data record.

The combined radiation data records were merged with the data records based on vital records, mother, hospital, and attendant-at-delivery questionnaires. Item nonresponses among the radiation data were imputed using the techniques described previously. The hospital, attendant-at-delivery, secondary attendant-at-delivery, and secondary radiation sources that did not respond were identified, and their radiation questions were designated as source nonresponses. These source nonresponses were *not* treated as a series of item nonresponses; the radiation data for each source nonresponse was imputed as a block. The mother's age, race, and her responses to the questions on radiation exposure were utilized as predictor items. A hot-deck procedure was used whereby radiation information from another similar mother with a hospital, attendant-at-delivery, or radiation source was imputed to each source nonresponse as appropriate. For example, if the hospital source for the case currently being processed did not respond, the radiation data from a previous similar mother with a hospital source was assigned to the current case. The same procedure was followed for the attendant-at-delivery and radiation source nonresponses.

Secondary radiation sources were most often added to the surveys based on information supplied by the mother. Consequently, there were very few secondary radiation sources for mothers who did not return questionnaires and for unmarried mothers who were not sent questionnaires. In order to better estimate the extent of radiation exposure for these

mothers, secondary radiation source information was imputed for nonrespondent mothers and for unmarried mothers without secondary radiation sources. In the sequential processing of the data records, nonresponding mothers and unmarried mothers were matched with the previous record for a married mother of similar age, race, and education. If the previous mother had no secondary radiation source, no secondary radiation source data were imputed to the present case. If the previous mother had a secondary radiation source, the data from that source was assigned to the present case.

These imputation procedures were also carried out separately for fetal deaths, low-weight live births, and other live births.

Consistency between responses

One disadvantage of imputing data on an item-by-item basis is that inconsistencies may be introduced. When two or more data items are imputed for a particular source, the data may be drawn from different cases. The predictor items were selected to avoid inconsistencies among directly related questions. In some cases the same predictor items were used, and in other cases the response to one data item was employed as a predictor item in the imputation of a related data item. Some inconsistency among responses that are not directly related are inevitable, as are inconsistencies among responses from different sources.

Estimation

Probability sampling allows the data from the NNS and the NFMS to be weighted to produce national estimates. It also allows approximation of the sampling errors for these estimates.

NNS estimation procedure

NNS sampling weights were prepared by a poststratified ratio estimation procedure. The purpose of a ratio estimation procedure is to use available independent information to reduce the variability of estimates. Independent information about all live births is available from the vital registration system.

This procedure was applied in each of the 50 poststratification cells, or weighting strata, shown in table G. These cells were defined in terms of data items from birth certificates: Mother's marital status and age, and child's race, live-birth order, and birth weight. Combinations of these cells form the major domains of study in the NNS. According to the vital registration system for 1980, certificates for 42,129 of 3,612,258 live births lacked response for one or more of the stratification variables. For the NNS estimation, certificates for these live births were distributed among the poststratification cells.

The sampling weight for each cell, w_i, is the ratio of the number of births to U.S. residents in 1980 to the number of sample births in the NNS:

$$w_i = Y_i/y_i$$

where Y_i = total number of births in the ith poststratification cell based on the vital registration system, and

y_i = total number of sample births in the ith poststratification cell.

These 50 ratios comprise the sampling weights for the NNS.

Thus, the NNS-estimated number of live births for each poststratification cell is consistent with the corresponding number of live births from the vital registration system. Although the estimated total number of births for a poststratification cell is not subject to sampling error, these totals are subject to nonsampling error (for example, undercoverage of the vital registration system and errors in classifying live births whose birth certificate omitted responses for one or more poststratification variables). However, the nonsampling error is considered negligible compared with the sampling error associated with other NNS estimates.

The number of live births with a characteristic of interest, $\hat{x}$, is estimated from the NNS using the formula

$$\hat{x} = \sum_{i=1}^{50} (w_i \cdot x_i)$$

where w_i = sampling weight assigned to sample births in the ith poststratification cell, and

x_i = total number of sample births with the characteristic in the ith poststratification cell.

For publication, NNS estimates of aggregates are rounded to the nearest thousand. Therefore, sums of detailed figures in tables may not always equal the total. Rates and percentages are calculated using the unrounded estimates.

NFMS estimation procedure

NFMS sampling weights are the products of adjustments for the probability of sample selection, for nonresponse, and for the lack of fetal death reports from Michigan. Unlike the NNS estimation procedure, the NFMS estimation procedure does not include a poststratified ratio adjustment. The 22 NFMS weighting strata shown in table H were defined in terms of data items from reports of fetal death: Mother's marital status and age, and fetus's race.

The sampling weight in the ith weighting strata, w_i, is

$$w_i = \frac{1}{p} \cdot \frac{n'_i}{\dot{n}_i} \cdot \frac{\tilde{N}_i + (n'_i/p)}{(n'_i/p)}$$

where p = 2/5, the probability of selection for each sample fetal death,

n'_i = number of sample fetal deaths eligible for the NFMS in the ith weighting stratum,

$\dot{n}_i$ = number of sample fetal deaths in the ith weighting stratum, and

$\tilde{N}_i$ = number of 1980 fetal deaths in the ith weighting stratum eligible for the NFMS in Michigan as estimated from summary data provided by the Michigan Department of Public Health.

Table G. 1980 National Natality Survey (NNS) poststratification cell definitions, number of live births in the NNS, number of live births to residents of the United States in 1980, and sampling weights

Cell number	Cell definitions: Birth weight in grams	Marital status (M or UN)[1]	Race of child	Age of mother in years	Live birth order	Number of births in the NNS[2] (y_i)	Number of births in 1980[3] (Y_i)	Sampling weight (w_i)
Total	...	...	...	...	...	9,941	3,612,258	...
01	<2500	M	White	<20	all	138	18,342	132.91304
02	<2500	M	White	20–24	1	205	22,880	111.60976
03	<2500	M	White	20–24	2+	186	23,362	125.60215
04	<2500	M	White	25–29	1	140	17,271	123.36429
05	<2500	M	White	25–29	2	137	14,042	102.49635
06	<2500	M	White	25–29	3+	102	11,412	111.88235
07	<2500	M	White	30–34	1–2	104	12,667	121.79808
08	<2500	M	White	30–34	3+	97	8,938	92.14433
09	<2500	M	White	35+	all	82	7,372	89.90244
10	<2500	M	Other	<20	all	29	3,279	113.06897
11	<2500	M	Other	20–24	all	87	11,455	131.66667
12	<2500	M	Other	25+	all	182	18,755	103.04945
13	<2500	UN	White	<20	all	108	12,068	111.74074
14	<2500	UN	White	20–24	all	76	9,936	130.73684
15	<2500	UN	White	25+	all	71	7,068	99.54930
16	<2500	UN	Other	<20	all	173	19,808	114.49711
17	<2500	UN	Other	20–24	all	161	17,248	107.13043
18	<2500	UN	Other	25+	all	101	11,219	111.07921
19	≥2500	M	White	<18	all	110	64,899	589.99091
20	≥2500	M	White	18–19	1	296	131,477	444.17905
21	≥2500	M	White	18–19	2+	106	45,881	432.83962
22	≥2500	M	White	20–24	1	909	426,195	468.86139
23	≥2500	M	White	20–24	2	716	292,323	408.27235
24	≥2500	M	White	20–24	3+	237	104,602	441.35865
25	≥2500	M	White	25–29	1	709	295,113	416.23836
26	≥2500	M	White	25–29	2	778	326,167	419.23779
27	≥2500	M	White	25–29	3	358	155,319	433.85196
28	≥2500	M	White	25–29	4+	139	66,857	480.98561
29	≥2500	M	White	30–34	1	226	86,131	381.11062
30	≥2500	M	White	30–34	2	343	145,644	424.61808
31	≥2500	M	White	30–34	3	256	105,241	411.09766
32	≥2500	M	White	30–34	4+	171	79,912	467.32164
33	≥2500	M	White	35+	1–3	136	63,665	468.12500
34	≥2500	M	White	35+	4+	116	51,957	447.90517
35	≥2500	M	Other	<20	all	54	25,799	477.75926
36	≥2500	M	Other	20–24	1	96	41,896	436.41667
37	≥2500	M	Other	20–24	2+	145	65,573	452.22759
38	≥2500	M	Other	25–29	1–2	136	69,296	509.52941
39	≥2500	M	Other	25–29	3+	84	42,676	508.04762
40	≥2500	M	Other	30+	1–2	110	39,400	358.18182
41	≥2500	M	Other	30+	3+	105	48,782	464.59048
42	≥2500	UN	White	<18	all	141	55,385	392.80142
43	≥2500	UN	White	18–19	all	142	64,177	451.95070
44	≥2500	UN	White	20–24	1	148	59,344	400.97297
45	≥2500	UN	White	20–24	2+	113	43,884	388.35398
46	≥2500	UN	White	25+	all	179	69,201	386.59777
47	≥2500	UN	Other	<18	all	128	60,183	470.17969
48	≥2500	UN	Other	18–19	all	155	61,032	393.75484
49	≥2500	UN	Other	20–24	all	271	107,502	396.68635
50	≥2500	UN	Other	25+	all	149	69,623	467.26846

[1]M=married; UN=unmarried.
[2]After the sampling weights were derived, a small number of imputed birth weight values on the birth certificate were replaced by reported values from the hospital (when available). The poststratification cell frequencies changed whenever the birth weight changed from less than 2,500 grams to 2,500 grams or more, and *vice versa*. It was not feasible to recalculate the sampling weights. The frequencies in this column are based on the original birth weight data, including the imputed values that were later replaced.
[3]The national vital registration data included small proportions of cases without information on birth weight (0.3 percent), marital status (0.3 percent), and live birth order (0.9 percent). These cases were reallocated according to the births with information.

The number of fetal deaths with a characteristic of interest, $\hat{x}$, is estimated from the NFMS using the formula

$$\hat{x} = \sum_{i=1}^{22} (w_i \cdot x_i)$$

where w_i = sampling weight in the ith weighting stratum, and

x_i = number of sample fetal deaths in the ith weighting stratum having the characteristic of interest.

NFMS estimates are rounded to the nearest digit. Therefore, sums of detailed figures in the tables may not always equal the total. Rates and percentages are calculated using the unrounded estimates.

Table H. 1980 National Fetal Mortality Survey (NFMS) weighting cell definitions, number of fetal deaths in the NFMS, estimated number of fetal deaths with gestation of 28 weeks or more, or delivery weight of 1,000 grams or more, to residents of the United States in 1980, and sampling weights

Cell number	Cell definitions: Marital status (M or UN)[1]	Cell definitions: Race of fetus	Cell definitions: Age of mother in years	Number of fetal deaths in the NFMS (y_i)	Estimated number of eligible fetal deaths in 1980 (Y_i)[2]	Sampling weight (w_i)
Total	...	...	...	6,386	19,202	...
01	M	White	<18	118	386	3.27119
02	M	White	18–19	267	865	3.23970
03	M	White	20–24	1,227	3,832	3.12306
04	M	White	25–29	1,216	3,709	3.05016
05	M	White	30–34	786	2,311	2.94020
06	M	White	35–39	303	897	2.96040
07	M	White	40+	96	312	3.25000
08	M	Other	<20	57	175	3.07018
09	M	Other	20–24	187	602	3.21925
10	M	Other	25–29	260	818	3.14615
11	M	Other	30–34	161	506	3.14286
12	M	Other	35+	136	380	2.79412
13	UN	White	<18	109	309	2.83486
14	UN	White	18–19	140	381	2.72143
15	UN	White	20–24	258	718	2.78295
16	UN	White	25–29	110	296	2.69091
17	UN	White	30+	107	295	2.75701
18	UN	Other	<18	148	439	2.96622
19	UN	Other	18–19	149	437	2.93289
20	UN	Other	20–24	304	833	2.74013
21	UN	Other	25–29	130	366	2.81538
22	UN	Other	30+	117	335	2.86325

[1]M = married; UN = unmarried.
[2]National data on fetal deaths eligible for inclusion in the 1980 National Fetal Mortality Survey were not available. The number of eligible fetal deaths in 1980 were therefore estimated based on cases in the NFMS sample and information supplied by the Michigan Department of Public Health.

Sampling error

Because NNS and NFMS estimates are based on samples, the estimates may differ from the figures that would have been obtained in a 1980 survey of all live births and a 1980 survey of all fetal deaths using the same data collection instruments and procedures. Probability sampling in the NNS and NFMS allows approximation of the sampling error.

Standard error

The standard error of an estimate is primarily a measure of the variability that occurs by chance (the sampling error) because a sample of the population rather than the total population is surveyed. While the standard errors calculated for the NNS and NFMS estimates reflect some of the random variation inherent in the measurement process, they do not measure any systematic error. The relative standard error of an estimate (RSE) is obtained by dividing the standard error of the estimate by the estimate itself, and is sometimes expressed as a percentage.

In repeated samples using the same questionnaires and procedures, the chances are about 68 in 100 that an estimate from the sample differs by less than one standard error from the corresponding figure that would be obtained through a survey of all live births or fetal deaths. The chances are about 95 in 100 that an estimate from the sample differs by less than two standard errors from the figure that would be obtained through a survey of all live births or fetal deaths.

The standard error of a statistic depends not only on the sampling design but on the statistic itself; the standard error is higher for measurements that are highly variable from one sample unit to another and lower for measurements that are less variable. Because the standard errors for survey statistics are estimated from sample data, they are themselves subject to sampling error, which may be large in some cases.

Estimation of standard error

The standard errors for the NNS and NFMS were estimated by a balanced-repeated-replication procedure using 20 replicate half samples. This procedure estimates the standard errors for survey estimates through the observation of the variability of estimates based on replicate half samples of the total sample. This estimation procedure was developed and described by McCarthy.[30,31]

Standard error approximation

The balanced-repeated-replication procedure can be used to calculate directly the standard error and the relative standard error for all estimates from the NNS and NFMS. However, this procedure is not practical or feasible for all users of these data. The balanced-repeated-replication procedure was therefore used to develop a generalized procedure for approximating the relative standard errors for NNS and NFMS estimates.

Relative standard errors were calculated using the balanced-repeated-replication procedure for several thousand estimates from the analysis plans for the two surveys. Samples of 100 NNS aggregate estimates were selected from domains defined by infant's birth weight and race and the mother's

marital status. Because a minimum of 30 sample births supporting an estimate is needed for the theory for large samples, estimates less than 10,890, the product of 30 and the average NNS sampling weight, were excluded from these samples. A minimum number of sample births was similarly calculated for NNS low-weight estimates (3,400). Each sample was then used to calculate the parameters for the formula

$$\mathrm{RSE}(x) = \sqrt{A + (B/x)}.$$

Three pairs of A and B parameters for this formula were adequate to approximate the relative standard error for aggregate NNS estimates. One pair is for estimates for low-weight births (less than 2,500 grams), one pair for estimates of either unmarried mothers or infants of races other than white, and one pair for all other estimates (all births, births of white infants, and births to married mothers). The standard error of an estimate can be obtained by multiplying the relative standard error of the estimate by the estimate itself.

This procedure underestimates the standard error for certain NNS estimates because data for some sources (source nonrespondents) were imputed in entirety. Therefore, the standard errors for NNS estimates were adjusted based on the response rates for sources included in the survey. Because it is not practical to calculate the response rate corresponding to each estimate, a generalized procedure was adopted whereby a multiplicative adjustment factor based on response rates (k) was incorporated in the formulas for the relative standard errors.

The A and B parameters in table J were rescaled so that they would be appropriate for most NNS estimates based on mother, hospital, attendant-at-delivery, and radiation questionnaires. For these estimates, the adjustment factor, k, is 1. Some questions on the mother's M–CS mail questionnaire (the M–CS form) were excluded from the mother's M–CS Abbreviated Telephone Interview, however. The responses to some of the questions that were excluded from the M–CS Abbreviated Telephone Interview could be inferred; responses to the other questions were imputed. Estimates based on the latter responses are therefore based on a larger proportion of imputed responses than estimates based on other questions on the M–CS form. The adjustment factor for estimates based on the questions on the mother's M–CS form designated in table J ($k = 1.163$) increases the standard error by 16 percent. Because there was no source nonresponse for estimates based solely on data items from the birth certificate, the adjustment factor for these estimates ($k = 0.873$) reduces the standard error by about 13 percent.

The standard errors for NFMS estimates were calculated similarly. Samples of 100 aggregate estimates from the NFMS analysis plan were selected according to the mother's marital status and the fetus's race. Estimates of less than 90 were excluded from this sample, with 90 determined as the product of 30 and the average NFMS sampling weight. The A and B parameters were computed, and one pair of A and B parameters was found adequate to approximate the standard error for aggregate NFMS estimates. The A, B, and k parameters for the NFMS are presented in table K.

Table J. Parameters used to approximate the relative standard errors for estimates based on the 1980 National Natality Survey (NNS) by domain of study and source of information

Domain of study and source of information	*Parameters*	
Domain of study	*A*	*B*
Live births under 2,500 grams regardless of marital status of mother or race of infant	−0.00044585	110.45497
Live births to unmarried mothers and live births of races other than white	−0.00054674	390.07705
Live births in other domains including live births of 2,500 grams or more, live births to married mothers, live births of white infants, and all live births	−0.00010438	377.81921
Source of information	*k*	
All NNS source questionnaires except designated questions from the mother's M–CS mail questionnaire	1.000	
Designated questions from the mother's M–CS mail questionnaire[1]	1.163	
Certificate of live birth only	0.873	

[1]The designated questions on the mother's M–CS mail questionnaire include those for which no information was obtained in the M–CS Abbreviated Telephone Interview: 3, 9, 10, 11a, 11b, 12a, 12b, 13b, 14, 15, 16, 20, 21, 22, 26a(2), 27b, 28b, 32a, 32b, 34a, 34b, 35a, 35b, and 35d.

NOTE: These parameters are not valid for estimates of the number of live births under 2,500 grams smaller than 3,400 or for estimates of the number of live births in all other domains smaller than 10,890.

Table K. Parameters used to approximate the relative standard errors for estimates based on the 1980 National Fetal Mortality Survey (NFMS) by domain of study and source of information

Domain of study and source of information	*Parameters*	
Domain of study	*A*	*B*
All domains	−0.00019317	3.71310
Source of information	*k*	
All NFMS source questionnaires except designated questions from the mother's M–CS mail questionnaire	1.000	
Designated questions from the mother's M–CS mail questionnaire[1]	1.167	
Report of fetal death only	0.860	

[1]The designated questions on the mother's M–CS mail questionnaire include those for which no information was obtained in the M–CS Abbreviated Telephone Interview: 3, 9, 10, 11a, 11b, 12a, 12b, 13b, 14, 15, 16, 20, 21, 22, 26a(2), 27b, 28b, 32a, 32b, 34a, 34b, 35a, 35b, and 35d.

NOTE: These parameters are not valid for estimates of the number of fetal deaths smaller than 90.

Standard error applications

(1) *Standard error for aggregate estimates*—The approximate standard error of an estimated number of live births or fetal deaths with a particular characteristic, x, is calculated by

$$\mathrm{RSE}(x) = k \cdot \sqrt{A + (B/x)}$$

and

$$\mathrm{SE}(x) = x \cdot \mathrm{RSE}(x),$$

where x = estimated number of births,

k = adjustment factor from table J or K,

A, B = parameters from table J or K,

RSE(x) = relative standard error of x, and

SE(x) = standard error of x.

These formulas are not appropriate for estimates of the total number of live births in a poststratification cell or in a combination of such cells because these estimates have negligible error.

Example: Based on the NNS, it is estimated that 134,646 married mothers under 20 years of age smoked cigarettes during the 12 months before their 1980 delivery.

The standard error of this estimate is calculated as follows:

$$\text{RSE}(134{,}646) = 1\sqrt{(-0.00010438)+(377.81921/134{,}646)}$$
$$= 0.052$$

and

$$\text{SE}(134{,}646) = 134{,}646 \cdot 0.052 = 7{,}002.$$

Estimates based on fewer than 30 sample cases are considered unreliable. Based on the average sampling weight, 30 sample cases in the NNS correspond to about 3,400 low-weight births and 10,890 live births in all other domains; 30 sample cases in the NFMS correspond to about 90 fetal deaths. These formulas should not be used to approximate the standard error for smaller estimates in each respective NNS and NFMS domain.

(2) *Standard error for ratios or proportions where the denominator is assumed to have negligible error*—Where the denominator of a ratio is the estimated total number of live births in a poststratification cell or in a combination of such cells, the relative standard error of the ratio is the relative standard error of the numerator. Thus, the approximate standard errors may be calculated using the formulas

$$\text{RSE}(r) = \text{RSE}(x/y) = \text{RSE}(x)$$

and

$$\text{SE}(r) = r \cdot \text{RSE}(x),$$

where

r = ratio or proportion,

x = numerator of the ratio,

y = denominator of the ratio with negligible error,

RSE(r) = relative standard error of r,

SE(r) = standard error of r, and

RSE(x) = relative standard error of x.

Example: An estimated 46.5 percent (134,646) of the married teenage mothers (289,677) smoked cigarettes during the 12 months before delivery. The number of teenage married mothers is a combination of the poststratification cells specified in table G.

Therefore,

$$\text{RSE}(46.5) = \text{RSE}(134{,}646/289{,}677) = \text{RSE}(134{,}646)$$
$$= 0.052 \text{ (from the prior example)}$$

and

$$\text{SE}(46.5) = 46.5 \cdot 0.052 = 2.4.$$

Estimates based on fewer than 30 sample cases are considered unreliable. Based on the average sampling weight, 30 sample cases in the NNS correspond to about 3,400 low-weight births and 10,890 live births in all other domains; 30 sample cases in the NFMS correspond to about 90 fetal deaths. These formulas should not be used to approximate the standard error for smaller estimates in each respective NNS and NFMS domain.

(3) *Standard errors for percentage estimates where both the numerator and the denominator are subject to sampling error*—The formulas used to approximate the standard error for a percentage estimate where both the numerator and the denominator are subject to sampling error are

$$\text{RSE}(p) = \text{RSE}(100\,x/y) = k \cdot \sqrt{(B/p) \cdot (100 - p)/y}$$

and

$$\text{SE}(p) = p \cdot \text{RSE}(p),$$

where

B = parameter from table J or K,

p = $100 \cdot x/y$, the estimated percentage,

x = estimated number of live births or fetal deaths in the numerator of the percentage,

y = estimated number of live births or fetal deaths in the denominator of the percentage,

RSE(p) = relative standard error of p,

SE(p) = standard error of p, and

k = adjustment factor from table J or K.

Example: An estimated 16.8 percent of the 18,939 fetal deaths that occurred in hospitals were delivered by cesarean section. Using the parameters in table K and the formula for the relative standard error of a percentage, the relative standard error is

$$\text{RSE}(16.8) = 1\sqrt{(3.71310/16.8) \cdot (100 - 16.8)/18{,}939}$$
$$= 0.0312$$

and

$$\text{SE}(16.8) = 16.8 \cdot 0.0312 = 0.52.$$

This approximation of the absolute or relative standard error of a percentage is valid if either the relative standard error of the denominator is less than 5 percent,[32] the relative

standard errors of the numerator and the denominator are both less than 10 percent,[33] or both.

(4) *Standard error for ratios ($r = x/y$) where the numerator is not a subclass of the denominator*—The standard error of a ratio may be approximated as

$$RSE(r) = RSE(x/y) = \sqrt{RSE^2(x) + RSE^2(y)}$$

and

$$SE(r) = r \cdot RSE(r)$$

where x = numerator of the ratio,
y = denominator of the ratio,
$RSE(r)$ = relative standard error of the ratio r,
$SE(r)$ = standard error of the ratio r,
$RSE(x)$ = relative standard error of the numerator x, and
$RSE(y)$ = relative standard error of the denominator y.

Example: The standard error of the fetal death ratio for mothers with exactly 12 years of schooling (5.5) may be approximated as

$$RSE\left[\frac{\text{Number of fetal deaths where the mother had 12 years of schooling (NFMS)}}{\text{Number of live births where the mother had 12 years of schooling (NNS)}}\right]$$

$$= RSE\left[\frac{8{,}729}{1{,}591{,}932}\right]$$

$$= \sqrt{(0.0152)^2 + (0.0115)^2} = 0.019$$

and

$$SE(5.5) = 5.5 \cdot 0.019 = 0.10.$$

This approximation of the absolute or relative standard error of a ratio is valid if either the relative standard error of the denominator is less than 5 percent,[32] the relative standard errors of the numerator and the denominator are both less than 10 percent,[33] or both.

Testing differences in the NNS and NFMS

The standard error of a difference between two statistics is approximately the square root of the sum of the squares of the standard errors of the individual statistics. This formulation of the standard error of the difference of two statistics quite accurately approximates the standard error for the difference between uncorrelated statistics; however, it only roughly approximates the standard error in most other cases.

Although the exact number of degrees of freedom in the NNS and NFMS sampling variances is not known, the number of degrees of freedom may be approximated by the number of pseudo strata used in the balanced-repeated-replication procedure (20). Accordingly, hypotheses about differences between estimates are tested using 20 degrees of freedom for the one- or two-tailed t-test as appropriate.

Example: 20.2 percent of the 707,563 live births in hospitals to mothers 30 years of age and over were delivered by cesarean section, compared with 16.3 percent of the 2,873,170 live births in hospitals to women less than 30 years of age.

To test whether this difference is significant at the 0.05 level, compute

$$t = \frac{20.2 - 16.3}{\sqrt{[20.2 \cdot RSE(20.2)]^2 + [16.3 \cdot RSE(16.3)]^2}}$$

$$= \frac{20.2 - 16.3}{\sqrt{[20.2 \cdot 0.0459]^2 + [16.3 \cdot 0.0260]^2}}$$

$$= 3.8.$$

The two-tailed 0.05 critical value for a t-statistic with 20 degrees of freedom is 2.086. Accordingly, the difference is significant at the 0.05 level.

Nonsampling error

Estimates based on the NNS and NFMS are subject to nonsampling as well as sampling error. Sources of nonsampling error include incomplete coverage, ambiguity in the wording of questions, incomplete or inaccurate responses, and errors in data reduction and processing. Although the extent of such nonsampling errors was not measured, the survey procedures in the NNS and NFMS were designed to minimize the introduction of such errors.

The sampling frames for the NNS and NFMS were incomplete, although the gap in their respective coverages was small. As described under "Sampling of Certificates of Live Birth," the NNS sampling frame did not include birth certificates for some adopted infants, birth certificates received by the registration areas after March 27, 1981, and some birth certificates in Idaho and Washington. The NFMS sampling frame did not include the reports of fetal death received by the registration areas after March 27, 1981, reports of fetal death in Michigan, and reports of fetal death to unmarried mothers in New Jersey and Idaho. In addition, some birth certificates and reports of fetal death eligible for the NNS or NFMS were excluded either because the name or the address of the attendant at delivery was illegible or because the mother's questionnaire was returned by the Post Office as undeliverable.

Errors may have been introduced if the respondent was unwilling or unable to respond. To avoid problems such as ambiguous or unclear wording of an instruction, question, or a response category, NCHS staff thoroughly pretested the NNS and NFMS questionnaires.[24] The data from survey questionnaires were keyed with 100 percent independent verification. The machine-readable data were edited by computerized procedures to identify missing, invalid, or inconsistent responses.

Response characteristics

Response rates for mothers

The characteristics of responding mothers can be compared with those of nonresponding mothers by using data from the vital records. These records provide a basic source of information for each live birth and fetal death in the NNS and NFMS. A percent distribution of married mothers in the NNS by respondent status according to characteristics of the mother and infant is shown in table 1. A comparable distribution for married mothers in the NFMS is shown in table 2. These tables are based on all vital records for married mothers, including those for which one or more of the characteristics of the mother or the infant were imputed.

The percent of mothers responding, as shown in these tables, represents the proportion of mothers in the survey that provided at least some information on the mail questionnaire or in the Abbreviated Telephone Interview. These percents are referred to as "response rates." The nonrespondents include mothers who refused, mothers for whom blank questionnaires were returned, and cases where there was no response.

In this section of the report, findings are discussed in terms of observed differences in responses among the sources included in the NNS and NFMS samples. These findings are therefore based on unweighted numbers of sources.

In both surveys response rates differed according to the mother's age, race, number of live births, receipt of prenatal care, educational attainment, and region of residence. Mothers were more likely to respond if they had any of the following characteristics: 20–39 years of age, white, less than four children, more prenatal visits, more years of education, or residence in the Midwest Region. Teenage mothers, mothers of races other than white, and those with four or more children, little prenatal care, or fewer years of education had lower response rates. In the NNS the response rate for mothers whose infants weighed less than 2,500 grams was lower than the response rate for mothers whose infants weighed 2,500 grams or more. The proportion of nonrespondent mothers exceeds 35 percent among black mothers, mothers with less than five prenatal visits, and mothers with less than nine years of education.

If the proportion of mail respondents was relatively small, it generally means that there was a larger proportion of mothers contacted by telephone. Although only 58 percent of the mothers who had not responded to two mailings were reached by telephone, the telephone interviewers obtained an interview from 84 percent of the mothers who were contacted. The percent of telephone respondents therefore tends to be relatively large when the percent of mail respondents is small (tables 1 and 2). The proportion of mail versus telephone respondents also differed according to the characteristics of the mothers. In the NNS, for example, 58.6 percent of white mothers responded by mail and 23.1 percent responded by telephone. Among black mothers, 36.5 percent responded by mail and 27.4 percent responded by telephone. Thus, 28.3 percent of responding white mothers responded by telephone, and 42.9 percent of responding black mothers responded by telephone.

Consent statements from mothers

To encourage the medical sources of the mothers to respond, consent statements authorizing NCHS to obtain supplemental information from medical records were obtained from the mothers. If the characteristics of mothers who provided a consent statement differed from those who did not, the response rates among medical sources could be affected. Differences between respondent and nonrespondent mothers were noted above. In tables 3 and 4, the percent of respondent mothers who provided a consent statement is shown according to characteristics of the mother or the infant. Only 5 mothers in the NNS and 10 mothers in the NFMS provided a consent statement without otherwise responding to the questionnaire. These mothers are not included in tables 3 and 4.

Overall, 96 percent of the respondent mothers in both surveys provided a consent statement. The proportion of mothers who agreed to the proxy consent statement in a telephone interview was slightly lower than the proportion of mothers who signed the consent statement on the mail questionnaire. In the NNS, 96.8 percent of the mothers who responded by mail provided a signed consent statement, and 94.1 percent of those who responded by telephone agreed to the proxy consent statement. In the NFMS, 97.4 percent of the mothers who responded by mail provided a signed consent statement, and 92.0 percent of the telephone respondents agreed to the proxy consent statement.

In the NNS, there was little variation in the overall percent of mothers who provided a consent statement according to characteristics of the mother or the infant. Ninety-three percent or more of the respondent mothers with the characteristics in table 3 provided a consent statement. Among the mail respondents and the telephone respondents, there is somewhat more variation in the percentages by characteristics of the

mother. For most of the characteristics shown, the percent of mail respondents who signed a consent statement was greater than the percent of telephone respondents who agreed to the proxy consent statement. Even among the telephone respondents, at least 90 percent of the mothers in each category agreed to the proxy consent statement.

In the NFMS, the percent of mothers who provided a consent statement tended to decline as the age of the mother increased and as the number of live births increased (table 4). Mothers of races other than white or black were least likely to provide a consent statement (90.2 percent). With a few exceptions, these patterns are evident for both mail and telephone respondents. The percent of mail respondents who signed a consent statement was greater than the percent of telephone respondents who agreed to a proxy consent statement, except for mothers with no prenatal visits.

The difference between the percent of mail respondents who signed a consent statement and the percent of telephone respondents who agreed to the proxy consent statement may be due to differences in procedures (mail versus telephone contact), or it may be due to the reluctance of telephone respondents to cooperate. The fact that telephone respondents had not responded to two mailings is supportive of the latter interpretation.

Response rates for medical sources

If a mother provided a consent statement, a copy was included with the questionnaires sent to her medical sources in an attempt to increase response rates. Response rates for hospitals and for attendants at delivery are presented in table L according to the type of consent statement that was sent. Because this table deals with the effect of consent statements on response rates, hospitals and attendants at delivery that were not contacted at the mother's request are not included. In the NNS, 238 hospital sources and 226 attendant-at-delivery sources were excluded, as were 157 hospital sources and 139 attendant-at-delivery sources in the NFMS. The exclusion of these sources makes the total response rates for the medical sources associated with married mothers in table L slightly higher than the corresponding rates in table E.

In the NNS, 87 percent of hospitals that were sent signed consent statements responded compared with 77 percent for hospitals that were sent proxy consent statements obtained from mothers in telephone interviews. Among married mothers, the response rate for hospitals that were not sent consent statements was 66 percent. Among the attendant-at-delivery sources for married mothers, the differences in response rates by type of consent were similar. In both surveys, the response rates for sources that were sent signed consent statements were at least 8 percentage points higher than the response rates for sources that were sent proxy consent statements. In turn, the response rates for sources that were sent proxy consent statements were between 6 and 11 percentage points higher than the response rates for sources that were not sent consent statements. In both surveys, the response rates for sources associated with unmarried mothers were comparable with those for sources associated with married mothers for whom no consent statement was available.

These findings suggest that the proxy consent statements were less likely to encourage medical sources to respond than the signed consent statements. This is consistent with problems noted during the conduct of the survey. When the proxy consent statements were first sent, replies from some medical sources indicated that they confused the name of the interviewer with the name of the patient, or they believed that the wrong consent statement had been sent. To prevent these misunderstandings, an explanatory note was added to copies of the proxy consent statement; this note emphasized that the statistical interviewer had read the consent statement to the mother named on the questionnaire label and that the interviewer's signature indicated that the mother had agreed. Despite this change in procedures, the proxy consent statements were apparently less effective in eliciting the cooperation of medical sources.

As noted in the discussions of mothers' response rates and consent statements, the proportion of mothers with consent statements differed according to the characteristics of the mother. The relative proportions of signed and proxy consent statements also differed according to the characteristics of the mother. Therefore, the differences in the response rates among medical sources by type of consent statement could

Table L. Response rates for hospitals and attendants at delivery in the 1980 National Natality and Fetal Mortality Surveys by marital status of the mother and type of consent statement

Survey and sources	Married mothers				Unmarried mothers, no consent statement
	Total [1]	Signed consent statement	Proxy consent statement	No consent statement	
			Percent		
National Natality Survey					
Hospitals	80.0	86.6	77.0	66.2	70.8
Attendants at delivery	66.5	72.0	63.9	53.8	48.6
National Fetal Mortality Survey					
Hospitals	78.9	86.5	73.4	67.1	66.7
Attendants at delivery	60.1	66.6	56.6	47.7	44.6

[1]These response rates differ from the percent of respondent sources in table E because medical sources that were not contacted at the mother's request were excluded from the calculation of these rates.

NOTE: Response rates were calculated by dividing the number of sources that supplied at least some information by the total number of sources that were sent questionnaires and then expressing the result as a percent.

be a reflection of differences in the characteristics of the mothers. For example, mothers who were more likely to respond might have delivered in hospitals that were more likely to respond. To examine this possibility, the response rates for the hospitals and for the attendants at delivery were examined according to both type of consent statement and characteristics of the mother from the birth certificate (tables 5 through 8). The response rates for medical sources according to the characteristics of the mothers are also of interest because they are indicative of differences in the proportion of imputed responses. The medical sources that were not contacted at the mother's request are also excluded from these tables. The exclusion of these sources had no substantive effect on inferences about response rates according to type of consent statement or characteristics of mothers.

The pattern of response rates by type of consent statement in table L is repeated for nearly all of the characteristics of mothers for both hospitals and attendants at delivery in both surveys (tables 5 through 8). Generally, the medical sources that were sent signed consent statements had the highest response rate, followed by sources that were sent proxy consent statements, followed by sources that were not sent consent statements. Therefore, the consent statements had an effect on the response rates of medical sources independent of the mother's characteristics.

There was little systematic variation in the response rates of hospitals according to the characteristics of mothers (tables 5 and 6). Among the hospital sources for married mothers in the NNS, response rates were more than 5 percentage points below the overall rate when the mother was black, when the mother had less than five prenatal visits, or when the mother had less than nine years of education. In the NFMS, response rates were also relatively low (more than 5 percentage points) when the mother was black, or when the mother had less than five prenatal visits.

Among the hospital sources for unmarried mothers in the NNS, response rates were relatively low when the mother was 30–34 years of age, had four or more live births, had no prenatal visits, or had 19 or more prenatal visits. Among the hospital sources for unmarried mothers in the NFMS, response rates were relatively low when the mother was over 39 years of age, or when the mother had 19 or more prenatal visits.

Compared with the hospital sources, there was more variation in the response rates of the attendants at delivery according to the characteristics of mothers (tables 7 and 8). In both the NNS and NFMS, response rates for attendants at delivery were more than 5 percentage points below the overall rate when the mother was under 20 years of age or over 39 years of age, was black, had four or more live births, had less than five prenatal visits, or had less than 12 years of education. In the NNS, response rates were also relatively low when the infant weighed less than 2,500 grams or when the mother had five to eight prenatal visits. Among attendant-at-delivery sources for unmarried mothers in the NNS, response rates were relatively low when the mother was over 39 years of age, had three or more live births, had less than five prenatal visits, or had less than 9 years or more than 16 years of education. In the NFMS, response rates were relatively low when the unmarried mothers were 35–39 years of age, were of races other than white or black, had two live births or four or more live births, had no prenatal visits, had 16 years or more of education, or resided in the West.

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List of detailed tables

Table 1. Number of married mothers and percent distribution by response status, according to characteristics of the mother and infant: 1980 National Natality Survey

Characteristic of the mother and infant	Number of mothers	Response status				
		Total	Respondents			Non-respondents
			All respondents	Mail	Telephone	
		Percent distribution				
Total	7,825	100.0	79.5	56.3	23.2	20.5
Age of mother						
Under 20 years	733	100.0	68.9	45.3	23.6	31.1
20–24 years	2,581	100.0	77.5	53.9	23.6	22.5
25–29 years	2,688	100.0	82.1	59.9	22.2	17.9
30–34 years	1,420	100.0	83.8	59.7	24.1	16.2
35–39 years	353	100.0	79.3	57.5	21.8	20.7
40 years and over	50	100.0	80.0	44.0	36.0	20.0
Race of mother						
White	6,875	100.0	81.7	58.6	23.1	18.3
Black	701	100.0	63.9	36.5	27.4	36.1
Other	249	100.0	64.7	48.2	16.5	35.3
Number of live births						
One	3,090	100.0	80.7	58.5	22.2	19.3
Two	2,691	100.0	80.9	58.2	22.7	19.1
Three	1,254	100.0	79.0	53.7	25.4	21.0
Four or more	790	100.0	70.8	45.2	25.6	29.2
Birth weight of infant						
Less than 2500 grams	1,490	100.0	74.1	50.7	23.4	25.9
2500 grams or more	6,335	100.0	80.8	57.6	23.2	19.2
Number of prenatal care visits						
No visits	54	100.0	42.6	25.9	16.7	57.4
1–4 visits	365	100.0	57.5	37.3	20.3	42.5
5–8 visits	1,531	100.0	76.3	53.2	23.1	23.7
9–14 visits	5,045	100.0	82.0	58.6	23.4	18.0
15–18 visits	689	100.0	83.5	59.1	24.4	16.5
19 visits or more	141	100.0	78.7	54.6	24.1	21.3
Education of mother						
0–8 years	308	100.0	61.0	37.7	23.4	39.0
9–11 years	1,104	100.0	67.6	40.2	27.4	32.4
12 years	3,521	100.0	79.2	55.1	24.2	20.8
13–15 years	1,585	100.0	85.3	62.9	22.4	14.7
16 years or more	1,307	100.0	87.8	69.5	18.2	12.2
Region of residence						
Northeast	1,433	100.0	77.9	57.9	20.0	22.1
Midwest[1]	2,189	100.0	85.2	59.6	25.6	14.8
South	2,570	100.0	77.2	52.5	24.7	22.8
West	1,633	100.0	76.9	56.5	20.5	23.1

[1]Formerly the North Central Region.

Table 2. Number of married mothers and percent distribution by response status, according to characteristics of the mother: 1980 National Fetal Mortality Survey

Characteristic of the mother	Number of mothers	Response status				
		Total	Respondents			Non-respondents
			All respondents	Mail	Telephone	
		Percent distribution				
Total	4,814	100.0	74.5	54.3	20.1	25.5
Age of mother						
Under 20 years	442	100.0	66.3	47.3	19.0	33.7
20–24 years	1,414	100.0	74.8	56.2	18.6	25.2
25–29 years	1,476	100.0	78.6	59.0	19.6	21.4
30–34 years	947	100.0	74.9	53.6	21.2	25.1
35–39 years	407	100.0	69.5	43.2	26.3	30.5
40 years and over	128	100.0	64.1	43.8	20.3	35.9
Race of mother						
White	4,051	100.0	76.6	56.9	19.7	23.4
Black	640	100.0	62.2	39.5	22.7	37.8
Other	123	100.0	66.7	45.5	21.1	33.3
Number of live births						
None	2,054	100.0	76.0	58.9	17.1	24.0
One	1,258	100.0	77.5	56.8	20.7	22.5
Two	752	100.0	72.3	50.7	21.7	27.7
Three	358	100.0	71.5	42.5	29.1	28.5
Four or more	392	100.0	63.5	40.3	23.2	36.5
Number of prenatal care visits						
No visits	108	100.0	50.9	37.0	13.9	49.1
1–4 visits	459	100.0	64.9	45.5	19.4	35.1
5–8 visits	1,542	100.0	74.3	52.7	21.5	25.7
9–14 visits	2,284	100.0	76.2	56.4	19.8	23.8
15–18 visits	340	100.0	82.1	63.8	18.2	17.9
19 visits or more	81	100.0	82.7	58.0	24.7	17.3
Education of mother						
0–8 years	283	100.0	61.8	36.4	25.4	38.2
9–11 years	759	100.0	68.0	45.3	22.7	32.0
12 years	2,261	100.0	73.8	52.4	21.4	26.2
13–15 years	802	100.0	78.2	61.1	17.1	21.8
16 years or more	709	100.0	84.5	69.5	15.0	15.5
Region of residence						
Northeast	892	100.0	73.8	53.5	20.3	26.2
Midwest[1]	1,094	100.0	81.0	61.4	19.6	19.0
South	1,835	100.0	73.4	50.8	22.5	26.6
West	993	100.0	70.0	53.7	16.3	30.0

[1]Formerly the North Central Region.

Table 3. Number of respondent married mothers and percent who provided a consent statement (CS) by type of response and characteristics of the mother and infant: 1980 National Natality Survey

Characteristic of the mother and infant	All respondents		Mail repondents		Telephone respondents	
	Number of respondents	Percent who provided a CS	Number of respondents	Percent who provided a CS	Number of respondents	Percent who provided a CS
Total	6,223	96.0	4,405	96.8	1,818	94.1
Age of mother						
Under 20 years	505	98.4	332	97.9	173	99.4
20–24 years	2,001	96.3	1,391	96.5	610	95.6
25–29 years	2,207	95.6	1,609	96.5	598	93.1
30–34 years	1,190	95.2	848	97.1	342	90.6
35–39 years	280	95.0	203	96.6	77	90.9
40 years and over	40	100.0	22	100.0	18	100.0
Race of mother						
White	5,614	96.2	4,029	97.0	1,585	94.2
Black	448	92.6	256	92.6	192	92.7
Other	161	96.9	120	97.5	41	95.1
Number of live births						
One	2,495	95.9	1,808	96.7	687	93.7
Two	2,178	96.2	1,567	96.6	611	95.3
Three	991	96.4	673	97.8	318	93.4
Four or more	559	94.8	357	96.1	202	92.6
Birth weight of infant						
Less than 2500 grams	1,104	96.5	756	97.5	348	94.3
2500 grams or more	5,119	95.9	3,649	96.6	1,470	94.0
Number of prenatal care visits						
No visits	23	95.7	14	92.9	9	100.0
1–4 visits	210	96.7	136	97.8	74	94.6
5–8 visits	1,168	96.3	815	96.7	353	95.5
9–14 visits	4,136	95.9	2,956	96.8	1,180	93.6
15–18 visits	575	95.5	407	96.3	168	93.5
19 visits or more	111	96.4	77	96.1	34	97.1
Education of mother						
0–8 years	188	94.7	116	95.7	72	93.1
9–11 years	746	96.9	444	95.5	302	99.0
12 years	2,790	96.3	1,939	97.1	851	94.4
13–15 years	1,352	95.6	997	96.9	355	91.8
16 years or more	1,147	95.3	909	96.6	238	90.3
Region of residence						
Northeast	1,117	95.1	830	96.5	287	90.9
Midwest[1]	1,865	96.7	1,304	98.2	561	93.4
South	1,985	95.5	1,349	95.5	636	95.4
West	1,256	96.4	922	96.9	334	95.2

[1]Formerly the North Central Region.

Table 4. Number of respondent married mothers and percent who provided a consent statement (CS) by type of response and characteristics of the mother: 1980 National Fetal Mortality Survey

Characteristic of the mother	All respondents		Mail repondents		Telephone respondents	
	Number of respondents	Percent who provided a CS	Number of respondents	Percent who provided a CS	Number of respondents	Percent who provided a CS
Total	3,585	95.9	2,615	97.4	970	92.0
Age of mother						
Under 20 years	293	96.6	209	97.1	84	95.2
20–24 years	1,058	96.8	795	98.0	263	93.2
25–29 years	1,160	96.1	871	97.8	289	91.0
30–34 years	709	95.8	508	96.9	201	93.0
35–39 years	283	92.9	176	96.0	107	87.9
40 years and over	82	91.5	56	92.9	26	88.5
Race of mother						
White	3,105	96.1	2,306	97.6	799	91.7
Black	398	95.7	253	96.0	145	95.2
Other	82	90.2	56	94.6	26	80.8
Number of live births						
None	1,561	96.0	1,209	97.6	352	90.6
One	975	96.7	715	98.0	260	93.1
Two	544	96.0	381	97.1	163	93.3
Three	256	94.9	152	96.1	104	93.3
Four or more	249	93.2	158	94.9	91	90.1
Number of prenatal care visits						
No visits	55	98.2	40	97.5	15	100.0
1–4 visits	298	95.3	209	97.1	89	91.0
5–8 visits	1,145	94.8	813	96.6	332	90.4
9–14 visits	1,741	96.6	1,289	97.7	452	93.6
15–18 visits	279	96.4	217	98.6	62	88.7
19 visits or more	67	97.0	47	100.0	20	90.0
Education of mother						
0–8 years	175	93.7	103	95.1	72	91.7
9–11 years	516	95.5	344	97.1	172	92.4
12 years	1,668	96.1	1,185	97.4	483	93.0
13–15 years	627	96.5	490	97.8	137	92.0
16 years or more	599	95.8	493	97.8	106	86.8
Region of residence						
Northeast	658	96.5	477	98.5	181	91.2
Midwest[1]	886	96.4	672	97.2	214	93.9
South	1,346	95.8	933	97.3	413	92.5
West	695	95.0	533	96.8	162	88.9

[1]Formerly the North Central Region.

Table 5. Response rates for hospitals by marital status of mother, type of consent statement, and characteristics of the mother and infant: 1980 National Natality Survey

Characteristic of the mother and infant	All married mothers[1]	Married mothers				Unmarried mothers, no consent statement
		Type of consent statement			No consent statement	
		Total	Signed	Proxy		
	Percent					
Total	80.0	83.8	86.6	77.0	66.2	70.8
Age of mother						
Under 20 years	79.0	83.0	89.5	70.4	70.4	71.1
20–24 years	80.3	85.1	87.7	78.8	64.9	71.1
25–29 years	79.5	82.8	85.0	76.4	65.6	72.4
30–34 years	80.7	83.6	86.0	77.1	67.1	62.8
35–39 years	80.7	86.0	87.6	81.4	61.6	78.1
40 years and over	87.8	87.2	90.9	82.4	90.0	*71.4
Race of mother						
White	81.1	84.3	87.1	76.9	67.9	73.7
Black	70.3	77.7	77.9	77.5	58.6	67.7
Other	77.7	85.2	87.2	78.9	63.9	78.8
Number of live births						
One	80.3	83.8	86.8	75.7	66.9	71.1
Two	81.3	85.2	87.7	78.8	65.8	72.3
Three	78.5	82.4	84.7	77.2	64.5	71.2
Four or more	77.0	81.3	84.2	75.8	67.3	64.5
Birth weight of infant						
Less than 2500 grams	77.8	82.5	86.0	74.6	65.0	69.0
2500 grams or more	80.6	84.1	86.7	77.6	66.6	71.7
Number of prenatal care visits						
No visits	71.2	90.5	91.7	*88.9	58.1	59.8
1–4 visits	74.1	79.2	82.4	72.7	67.3	72.2
5–8 visits	79.7	83.9	86.8	77.1	66.8	73.1
9–14 visits	81.0	84.4	87.1	77.7	66.5	70.7
15–18 visits	78.1	81.3	84.0	74.5	63.2	66.9
19 visits or more	77.0	80.8	84.9	71.0	64.5	65.6
Education of mother						
0–8 years	71.8	79.8	81.1	77.6	60.2	73.8
9–11 years	78.1	81.8	87.7	73.4	70.7	70.8
12 years	80.6	84.8	87.2	79.0	65.7	69.3
13–15 years	82.3	86.0	87.5	81.7	62.3	73.6
16 years or more	79.3	81.0	84.3	67.8	68.3	74.1
Region of residence						
Northeast	81.4	86.4	89.6	76.4	64.3	72.9
Midwest[2]	83.8	86.9	90.6	78.0	67.2	72.0
South	77.7	81.6	84.1	76.5	65.4	67.5
West	77.5	80.4	81.6	77.0	68.2	74.5

[1]These response rates differ from the percent of respondent sources in table E because medical sources that were not contacted at the mother's request were excluded from the calculation of these rates.
[2]Formerly the North Central Region.

NOTE: Response rates were calculated by dividing the number of sources that supplied at least some information by the total number of sources that were sent questionnaires and then expressing the result as a percent.

*These response rates are based on fewer than 10 sources.

Table 6. Response rates for hospitals by marital status of mother, type of consent statement, and characteristics of the mother: 1980 National Fetal Mortality Survey

Characteristic of the mother	All married mothers[1]	Married mothers				Unmarried mothers, no consent statement
		Type of consent statement			No consent statement	
		Total	Signed	Proxy		
	Percent					
Total	78.9	83.1	86.5	73.4	67.1	66.7
Age of mother						
Under 20 years	75.8	80.6	83.1	74.4	66.4	68.6
20–24 years	81.2	84.5	87.7	74.5	71.4	65.5
25–29 years	78.6	83.4	86.4	73.6	61.6	63.1
30–34 years	79.3	83.2	86.8	73.7	68.2	68.5
35–39 years	74.5	78.3	83.5	68.8	66.1	73.8
40 years and over	80.2	84.0	88.5	73.9	73.2	60.0
Race of mother						
White	80.5	84.2	87.3	74.6	68.4	67.4
Black	69.9	75.2	79.5	67.4	61.4	65.6
Other	75.4	78.4	81.1	71.4	70.5	77.8
Number of live births						
None	79.4	83.5	85.8	75.2	66.7	66.7
One	80.2	84.3	88.1	73.3	66.4	68.4
Two	77.8	81.9	85.8	72.5	67.3	67.1
Three	77.2	80.1	88.3	67.7	70.5	63.8
Four or more	76.2	81.0	84.0	75.6	67.4	62.5
Number of prenatal care visits						
No visits	68.7	73.6	76.3	66.7	63.0	66.7
1–4 visits	72.8	77.9	80.4	71.6	63.7	65.1
5–8 visits	79.0	83.3	86.6	74.5	67.4	70.0
9–14 visits	79.9	83.9	87.6	72.7	67.2	63.5
15–18 visits	83.4	85.4	87.3	78.2	74.1	70.2
19 visits or more	79.7	80.0	83.0	72.2	78.6	58.3
Education of mother						
0–8 years	74.6	78.4	80.2	75.8	68.6	61.7
9–11 years	77.4	81.6	87.0	70.1	68.7	69.3
12 years	79.6	83.5	87.6	72.9	68.6	65.4
13–15 years	79.7	83.7	84.9	78.9	65.7	63.3
16 years or more	79.4	83.9	86.0	72.8	57.4	77.8
Region of residence						
Northeast	80.7	86.0	89.1	77.0	65.9	65.3
Midwest[2]	82.8	86.3	89.6	75.5	68.6	72.1
South	75.3	79.3	83.9	68.4	64.3	64.1
West	79.8	83.5	84.6	79.7	71.6	67.8

[1]These response rates differ from the percent of respondent sources in table E because medical sources that were not contacted at the mother's request were excluded from the calculation of these rates.
[2]Formerly the North Central Region.

NOTE: Response rates were calculated by dividing the number of sources that supplied at least some information by the total number of sources that were sent questionnaires and then expressing the result as a percent.

Table 7. Response rates for attendants at delivery by marital status of mother, type of consent statement, and characteristics of the mother and infant: 1980 National Natality Survey

Characteristic of the mother and infant	All married mothers[1]	Married mothers				Unmarried mothers, no consent statement
		Type of consent statement			No consent statement	
		Total	Signed	Proxy		
	Percent					
Total	66.5	69.6	72.0	63.9	53.8	48.6
Age of mother						
Under 20 years	57.7	62.9	66.2	57.1	44.7	49.1
20–24 years	65.8	69.0	71.0	64.7	53.9	48.5
25–29 years	68.8	72.1	74.4	65.5	54.0	47.9
30–34 years	68.1	69.1	71.7	62.1	62.9	47.4
35–39 years	67.3	70.9	70.0	73.6	51.0	58.8
40 years and over	53.5	57.1	65.0	46.7	*37.5	*25.0
Race of mother						
White	67.6	70.2	72.1	65.4	55.4	51.8
Black	51.1	56.7	65.2	47.3	41.2	44.5
Other	70.8	76.5	79.1	69.0	58.5	53.6
Number of live births						
One	67.8	70.1	72.4	64.0	57.6	52.1
Two	66.9	70.1	71.6	66.1	53.3	48.7
Three	65.9	69.3	73.2	60.8	52.3	43.3
Four or more	61.0	66.4	69.1	60.8	45.9	32.8
Birth weight of infant						
Less than 2500 grams	61.4	65.4	68.3	58.7	48.4	44.3
2500 grams or more	67.7	70.5	72.7	65.0	55.3	50.6
Number of prenatal care visits						
No visits	12.9	15.4	*16.7	*14.3	11.1	9.8
1–4 visits	54.3	63.6	61.7	67.4	40.4	41.9
5–8 visits	61.0	65.1	67.4	59.7	47.7	51.1
9–14 visits	69.2	71.4	74.0	64.8	58.7	53.0
15–18 visits	67.2	69.4	69.6	68.9	56.7	45.7
19 visits or more	62.1	65.4	70.7	52.2	50.0	45.5
Education of mother						
0–8 years	50.2	53.3	56.2	49.0	45.6	41.4
9–11 years	58.8	62.9	65.2	59.8	49.6	49.2
12 years	66.6	69.8	72.1	64.6	53.4	47.1
13–15 years	70.2	72.4	74.0	67.8	57.3	60.0
16 years or more	71.1	72.1	73.9	64.5	63.8	40.5
Region of residence						
Northeast	70.6	73.7	74.8	70.3	58.0	54.3
Midwest[2]	67.5	70.8	73.4	64.5	48.4	46.6
South	63.6	66.2	69.3	59.7	54.4	46.2
West	66.4	69.5	70.9	65.5	55.0	52.4

[1]These response rates differ from the percent of respondent sources in table E because medical sources that were not contacted at the mother's request were excluded from the calculation of these rates.
[2]Formerly the North Central Region.

NOTE: Response rates were calculated by dividing the number of sources that supplied at least some information by the total number of sources that were sent questionnaires and then expressing the result as a percent.

*These response rates are based on fewer than 10 sources.

Table 8. Response rates for attendants at delivery by marital status of mother, type of consent statement, and characteristics of the mother: 1980 National Fetal Mortality Survey

Characteristic of the mother	All married mothers[1]	Married mothers: Type of consent statement: Total	Married mothers: Type of consent statement: Signed	Married mothers: Type of consent statement: Proxy	Married mothers: No consent Statement	Unmarried mothers, no consent statement
	Percent					
Total	60.1	64.0	66.6	56.6	47.7	44.6
Age of mother						
Under 20 years	51.4	52.4	54.8	47.1	49.0	46.5
20–24 years	62.6	66.4	67.3	63.7	49.8	45.6
25–29 years	62.3	66.0	68.6	56.7	48.6	42.2
30–34 years	58.9	63.3	67.8	51.9	46.1	40.5
35–39 years	56.5	61.5	64.2	56.6	45.2	35.0
40 years and over	50.6	56.5	59.5	50.0	37.0	45.0
Race of mother						
White	61.5	65.1	67.3	58.5	48.7	47.8
Black	50.4	54.9	59.4	47.1	42.6	42.1
Other	56.6	59.2	66.7	43.8	52.9	19.0
Number of live births						
None	61.9	64.9	66.5	59.1	52.0	46.0
One	60.6	64.3	68.5	52.5	47.1	49.0
Two	61.3	64.9	68.3	56.3	50.3	39.4
Three	58.1	62.9	62.6	63.3	47.1	44.7
Four or more	46.6	55.6	57.6	52.2	28.3	23.0
Number of prenatal care visits						
No visits	27.5	29.7	32.1	*22.2	25.0	16.1
1–4 visits	50.9	52.2	51.3	54.4	48.1	41.4
5–8 visits	61.3	65.4	68.8	57.1	49.0	48.9
9–14 visits	61.9	65.8	68.8	56.9	48.5	50.4
15–18 visits	62.1	65.1	65.3	64.4	46.8	47.9
19 visits or more	58.0	60.0	64.1	50.0	50.0	*57.1
Education of mother						
0–8 years	50.5	54.7	51.3	59.6	43.6	41.2
9–11 years	54.8	57.1	56.3	59.0	49.1	42.3
12 years	59.0	62.6	66.3	53.1	47.9	47.1
13–15 years	63.9	68.6	70.4	62.0	46.7	47.4
16 years or more	67.8	71.3	73.5	60.3	49.5	37.5
Region of residence						
Northeast	61.9	67.7	70.7	59.2	44.2	42.9
Midwest[2]	61.3	65.1	67.5	57.4	44.4	43.5
South	59.1	61.9	64.2	56.5	50.8	47.6
West	58.7	63.1	66.0	53.0	47.9	39.5

[1]These response rates differ from the percent of respondent sources in table E because medical sources that were not contacted at the mother's request were excluded from the calculation of these rates.
[2]Formerly the North Central Region.

NOTE: Response rates were calculated by dividing the number of sources that supplied at least some information by the total number of sources that were sent questionnaires and then expressing the result as a percent.

*These response rates are based on fewer than 10 sources.

Appendix

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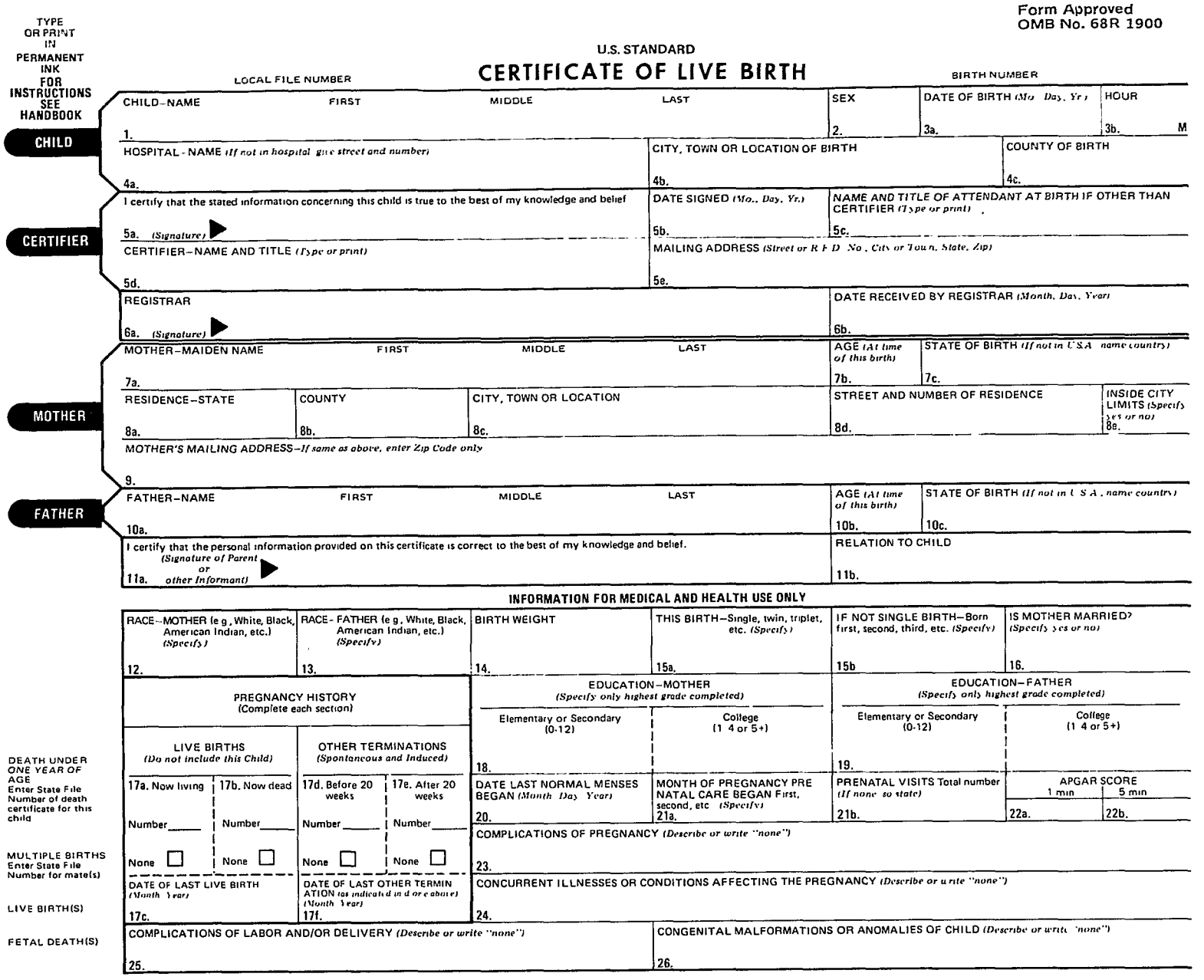
Figure I. U.S. Standard Certificate of Live Birth



Form Approved
OMB No. 68R 1900

TYPE OR PRINT IN PERMANENT INK FOR INSTRUCTIONS SEE HANDBOOK

U.S. STANDARD

CERTIFICATE OF LIVE BIRTH

LOCAL FILE NUMBER

BIRTH NUMBER

CHILD

CHILD–NAME (First, Middle, Last) 1.	SEX 2.	DATE OF BIRTH (Mo., Day, Yr.) 3a.	HOUR 3b.
			M

HOSPITAL–NAME (If not in hospital, give street and number) 4a.	CITY, TOWN OR LOCATION OF BIRTH 4b.	COUNTY OF BIRTH 4c.

CERTIFIER

I certify that the stated information concerning this child is true to the best of my knowledge and belief

5a. (Signature) ▶	DATE SIGNED (Mo., Day, Yr.) 5b.	NAME AND TITLE OF ATTENDANT AT BIRTH IF OTHER THAN CERTIFIER (Type or print) 5c.
CERTIFIER–NAME AND TITLE (Type or print) 5d.	MAILING ADDRESS (Street or R F D No., City or Town, State, Zip) 5e.	

REGISTRAR 6a. (Signature) ▶	DATE RECEIVED BY REGISTRAR (Month, Day, Year) 6b.

MOTHER

MOTHER–MAIDEN NAME (First, Middle, Last) 7a.	AGE (At time of this birth) 7b.	STATE OF BIRTH (If not in U.S.A., name country) 7c.

RESIDENCE–STATE 8a.	COUNTY 8b.	CITY, TOWN OR LOCATION 8c.	STREET AND NUMBER OF RESIDENCE 8d.	INSIDE CITY LIMITS (Specify yes or no) 8e.

MOTHER'S MAILING ADDRESS–*If same as above, enter Zip Code only* 9.

FATHER

FATHER–NAME (First, Middle, Last) 10a.	AGE (At time of this birth) 10b.	STATE OF BIRTH (If not in U.S.A., name country) 10c.

I certify that the personal information provided on this certificate is correct to the best of my knowledge and belief.

(Signature of Parent or other Informant) 11a. ▶	RELATION TO CHILD 11b.

INFORMATION FOR MEDICAL AND HEALTH USE ONLY

RACE–MOTHER (e.g., White, Black, American Indian, etc.) (Specify) 12.	RACE–FATHER (e.g., White, Black, American Indian, etc.) (Specify) 13.	BIRTH WEIGHT 14.	THIS BIRTH–Single, twin, triplet, etc. (Specify) 15a.	IF NOT SINGLE BIRTH–Born first, second, third, etc. (Specify) 15b	IS MOTHER MARRIED? (Specify yes or no) 16.

PREGNANCY HISTORY (Complete each section)

LIVE BIRTHS (Do not include this Child)		OTHER TERMINATIONS (Spontaneous and Induced)	
17a. Now living	17b. Now dead	17d. Before 20 weeks	17e. After 20 weeks
Number____	Number____	Number____	Number____
None ☐	None ☐	None ☐	None ☐
DATE OF LAST LIVE BIRTH (Month, Year) 17c.		DATE OF LAST OTHER TERMINATION (as indicated in d or e above) (Month, Year) 17f.	

EDUCATION–MOTHER (Specify only highest grade completed)		EDUCATION–FATHER (Specify only highest grade completed)	
Elementary or Secondary (0-12)	College (1, 4 or 5+)	Elementary or Secondary (0-12)	College (1, 4 or 5+)
18.		19.	

DATE LAST NORMAL MENSES BEGAN (Month, Day, Year) 20.	MONTH OF PREGNANCY PRENATAL CARE BEGAN First, second, etc. (Specify) 21a.	PRENATAL VISITS Total number (If none, so state) 21b.	APGAR SCORE 1 min 22a.	APGAR SCORE 5 min 22b.

COMPLICATIONS OF PREGNANCY (Describe or write "none") 23.

CONCURRENT ILLNESSES OR CONDITIONS AFFECTING THE PREGNANCY (Describe or write "none") 24.

COMPLICATIONS OF LABOR AND/OR DELIVERY (Describe or write "none") 25.	CONGENITAL MALFORMATIONS OR ANOMALIES OF CHILD (Describe or write "none") 26.

DEATH UNDER ONE YEAR OF AGE
Enter State File Number of death certificate for this child

MULTIPLE BIRTHS
Enter State File Number for mate(s)

LIVE BIRTH(S)

FETAL DEATH(S)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE - PUBLIC HEALTH SERVICE - NATIONAL CENTER FOR HEALTH STATISTICS
1978 REVISION

HRA-161
Rev. 1/78

Table I. Areas reporting selected items on the certificate of live birth: Each State, 1980

Area	Marital status	Educational attainment of parents	Ethnic origin	Hispanic origin	Dates of last live birth and fetal death	"Other" terminations less than 20 weeks and 20 weeks or more	Date last normal menstrual period began (LMP)	Number of prenatal visits	1-minute Apgar score	5-minute Apgar score	Complications of pregnancy	Complications of labor	Congenital anomalies
Alabama	X	X			X	X	X	X	X	X	X	X	X
Alaska	X	X			X	X	X	X	X	X	X	X	X
Arizona	X	X		X	X	X	X	X	X	X	X	X	X
Arkansas	X	X		X	X	X	X	X	X	X	X	X	X
California			X		X	X	X				X	X	X
Colorado	X	X	X		X	[1]X	X	X	X	X	X	X	X
Connecticut		X			X			X	X		X	X	X
Delaware	X	X			X		X	X			X	X	X
District of Columbia	X	X			X		X	X		X	X	X	X
Florida	X	X	X		X	X	X	X	X	X	X	X	X
Georgia	X	X	X		X	X	X	X	X	X	X	X	X
Hawaii	X	X		X	X	X	X	X	X	X	X	X	X
Idaho	X	X			X	X	X	X	X	X	X	X	X
Illinois	X	X	X		X	X	X	X	X	X	X	X	X
Indiana	X	X		X	X	X	X	X	X	X	X	X	
Iowa	X	X			X	X	X	X	X	X	X	X	X
Kansas	X	X	X		X	X	X	X	X	X		X	X
Kentucky	X	X			X	X	X	X	X	X	X	X	X
Louisiana	X	X					X	X					X
Maine	X	X	X		X	X	X	X	X	X	X	X	X
Maryland		X			X	X	X	X	X	X	X	X	X
Massachusetts	X	X			X	X	X	X	X	X	X	X	X
Michigan		X			X	X	X	X	X	X	X	X	X
Minnesota	X	X			X		X	X				X	X
Mississippi	X	X	X		X	X	X	X	X	X	X	X	X
Missouri	X	X			X	X	X	X	X	X	X	X	X
Montana		X			X	X	X	X	X	X	X	X	X
Nebraska	X	X	X		X	X	X	X	X	X	X	X	X
Nevada		X	X		X	X	X	X	X	X	X	X	X
New Hampshire	X	X			X	X	X	X	X	X	X	X	X
New Jersey	X	X	X		X	X	X	X	X	X	X	X	
New Mexico	X	X		X	X	X			X	X	X	X	X
New York		X	[2]X	X	X	[1]X	X	X	X	X	X	X	X
North Carolina	X	X			X		X	X	X	X	X	X	X
North Dakota	X	X	X		X	X	X	X	X	X	X	X	X
Ohio		X	X		X	X	X	X	X	X	X	X	X
Oklahoma	X	X			X		X	X			X	X	X
Oregon	X	X			X	X	X	X	X	X	X	X	X
Pennsylvania	X	X			X	[3]X	X	X	X	X	X	X	X
Rhode Island	X	X			X	X	X	X	X	X	X	X	X
South Carolina	X	X			X	X	X	X	X	X	X	X	X
South Dakota	X	X			X	X	X	X	X	X	X	X	X
Tennessee	X	X			X	X	X	X	X	X	X	X	X
Texas				X			X	X					
Utah	X	X		X	X	X	X	X	X	X	X	X	X
Vermont	X	X			X	X	X	X	X	X	X	X	X
Virginia	X	X			X	X	X	X	X	X	X	X	X
Washington	X				X	X	X	X	X	X	X	X	X
West Virginia	X	X			X	X	X	X	X	X	X	X	X
Wisconsin	X	X			X	X	X	X	X	X		X	X
Wyoming	X	X	X		X	X	X	X	X	X	X	X	X

[1]Colorado and New York State except New York City reported "spontaneous" and "induced" abortions.
[2]New York City reported ethnic origin.
[3]Pennsylvania reports "other" terminations before and after 16 weeks.

Figure II. U.S. Standard Report of Fetal Death

Form Approved
OMB No. 68R 1901

U. S. STANDARD

REPORT OF FETAL DEATH

STATE FILE NUMBER

TYPE OR PRINT IN PERMANENT INK SEE HANDBOOK FOR INSTRUCTIONS

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE NATIONAL CENTER FOR HEALTH STATISTICS 1978 REVISION

MOTHER

1a. HOSPITAL–NAME *(If not in hospital, give street and number)*		1b. CITY, TOWN OR LOCATION OF DELIVERY	1c. COUNTY OF DELIVERY
2a. DATE OF DELIVERY *(Month, Day, Year)*	2b. HOUR OF DELIVERY M	3. SEX OF FETUS	4. WEIGHT OF FETUS
5a. MOTHER–MAIDEN NAME FIRST MIDDLE LAST		5b. AGE *(At time of this delivery)*	6a. RESIDENCE–STATE / 6b. COUNTY
6c. CITY, TOWN OR LOCATION	6d. STREET AND NUMBER	6e. INSIDE CITY LIMITS *(Specify yes or no)*	PREGNANCY HISTORY *(Complete each section)*
7. RACE–(e g , White, Black, American Indian, etc) *(Specify)*	8. EDUCATION *(Specify only highest grade completed)* (Elementary or Secondary (0-12)) / (College (1-4 or 5+))	9. DATE LAST NORMAL MENSES BEGAN *(Month Day, Year)*	10. IS MOTHER MARRIED? *(Specify yes or no)*
12a. MONTH OF PREGNANCY PRENATAL CARE BEGAN First, second, etc *(Specify)*	12b. PRENATAL VISITS Total number *(If none so state)*	13a. THIS BIRTH–Single, twin, triplet, etc *(Specify)*	13b. IF NOT SINGLE BIRTH–Born first, second, third, etc *(Specify)*

PREGNANCY HISTORY *(Complete each section)*

LIVE BIRTHS		OTHER TERMINATIONS *(Spontaneous and Induced)*	
11a. Now living Number ____ None ☐	11b. Now dead Number ____ None ☐	11d. Before 20 weeks Number ____ None ☐	11e. After 20 weeks Number ____ *(Do not include this fetus)* None ☐

11c. DATE OF LAST LIVE BIRTH *(Month, Year)*

11f. DATE OF LAST OTHER TERMINATION *(as indicated in d or e above)* *(Month, Year)*

FATHER

14a. FATHER–NAME FIRST MIDDLE LAST	14b. AGE *(At time of this delivery)*	14c. RACE–(e g., White, Black, American Indian, etc) *(Specify)*	14d. EDUCATION *(Specify only highest grade completed)* (Elementary or Secondary (0-12)) / (College (1-4 or 5+))

CAUSE OF FETAL DEATH

15 PART I — Fetal or maternal condition directly causing fetal death. IMMEDIATE CAUSE *[ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c).]* (a) ____ Specify Fetal or Maternal

Fetal and/or maternal conditions, if any giving rise to the immediate cause (a), stating the underlying cause last

DUE TO, OR AS A CONSEQUENCE OF (b) ____ Specify Fetal or Maternal

DUE TO, OR AS A CONSEQUENCE OF (c) ____ Specify Fetal or Maternal

PART II — OTHER SIGNIFICANT CONDITIONS OF FETUS OR MOTHER Conditions contributing to fetal death but not related to cause given in (a)

	16. FETUS DIED BEFORE LABOR, DURING LABOR OR DELIVERY, UNKNOWN *(Specify)*	17. PHYSICIAN'S ESTIMATE OF GESTATION Weeks / 18. AUTOPSY *(Specify yes or no)*

MULTIPLE BIRTHS Enter State File Number for mate(s)

LIVE BIRTH(S)

19. COMPLICATIONS OF PREGNANCY *(Describe or write 'none')*	20. COMPLICATIONS OF LABOR AND/OR DELIVERY *(Describe or write 'none')*
21. CONCURRENT ILLNESSES OR CONDITIONS AFFECTING THE PREGNANCY *(Describe or write 'none')*	22. CONGENITAL MALFORMATIONS OR ANOMALIES OF FETUS *(Describe or write 'none')*

FETAL DEATH(S)

23. NAME OF PHYSICIAN OR ATTENDANT *(Type or print)*	24. NAME OF PERSON COMPLETING REPORT *(Type or print)* TITLE

HRA-163
Rev. 1/78

Table II. Areas reporting selected items on the report of fetal death: Each State, 1980

Area	Marital status	Education of father	Education of mother	Date last normal menstrual period began (LMP)	Month prenatal care began	Total prenatal visits	"Other" terminations less than 20 weeks and 20 weeks or more	Complications of pregnancy	Complications of labor	Physicians estimate of gestation	Congenital anomalies
Alabama	X	X	X	X	X	X	X	X	X	X	X
Alaska	X	X	X	X				X	X		X
Arizona	X	X	X	X	X	X	X	X	X	X	X
Arkansas										X	
California				X	X		X	X	X		X
Colorado	X	X	X	X	X	X		X	X	X	X
Connecticut		X	X		X	X		X	X	X	X
Delaware	X									X	
District of Columbia	X			X	X	X	[1]X	X	X		
Florida	X	X	X	X	X	X		X	X		X
Georgia	X	X	X	X	X	X	X	X	X	X	X
Hawaii	X	X	X	X	X	X	X	X	X	X	X
Idaho	X	X	X	X	X	X	X	X	X	X	X
Illinois	X	X	X	X	X	X		X	X		X
Indiana	X	X	X	X	X	X	X		X	X	X
Iowa	X	X	X	X	X	X	X	X	X	X	X
Kansas	X	X	X	X	X	X	X				X
Kentucky	X	X	X	X	X	X	X	X	X	X	X
Louisiana	X	X	X	X	X	X					X
Maine	X	X	X	X	X	X	X	X	X	X	X
Maryland		X	X	X	X						X
Massachusetts	X	X	X	X	X	X	X	X	X	X	X
Michigan		X	X	X	X	X	X	X	X	X	X
Minnesota	X	X	X	X	X	X		X	X		X
Mississippi	X	X	X	X	X	X	X	X	X	X	X
Missouri	X	X	X	X	X	X	X	X	X	X	X
Montana		X	X	X	X	X	X	X	X	X	X
Nebraska	X	X	X	X	X	X	X	X	X		X
Nevada	X	X	X	X	X	X	X	X	X	X	X
New Hampshire	X	X	X	X	X	X	X	X	X	X	X
New Jersey	X	X	X	X	X	X		X	X		
New Mexico	X	X	X		X	X	X	X	X	X	X
New York		X	X	X	X	X		X			X
North Carolina	X	X	X	X	X	X				X	
North Dakota	X	X	X	X	X	X	X	X	X	X	X
Ohio		X	X	X	X	X	X	X	X	X	X
Oklahoma	X	X	X	X	X	X		X	X		X
Oregon	X	X	X	X	X	X	X	X	X	X	X
Pennsylvania	X						[2]X			X	
Rhode Island	X	X	X	X	X	X	X	X	X	X	X
South Carolina	X	X	X	X	X	X	X	X	X	X	X
South Dakota	X	X	X		X	X	X	X	X	X	X
Tennessee	X	X	X	X	X	X	X	X	X	X	X
Texas				X	X	X	[1]X			X	X
Utah	X	X	X	X	X	X	X	X	X	X	X
Vermont		X	X	X	X	X		X	X	X	X
Virginia	X		X	X	X	X		X	X	X	X
Washington	X	X	X	X	X	X	X	X	X		X
West Virginia	X	X	X	X	X	X		X	X		X
Wisconsin	X	X	X	X	X	X	X	X	X	X	X
Wyoming	X	X	X	X	X	X	X	X	X	X	X

[1]The District of Columbia and Texas reported "other" terminations after 20 weeks only
[2]Pennsylvania reported "other" terminations after 16 weeks only.

OMB Clearance No.
68-S-78027

M-L

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

Dear Madam:

Your assistance is needed in a national health survey being conducted by the Public Health Service with the approval of your State Health Department. We are trying to learn more about the medical care that women received during the period before and after their 1980 deliveries. The information that women throughout the country give us will greatly aid in providing medical care programs for all American women.

You are part of a small sample of the over three million women who had a live birth in 1980. You, therefore, play an important role in telling us about the medical care you received before and after delivery. Your name and address were obtained from a copy of the Certificate of Live Birth which was provided by your State Registrar of Vital Statistics. The hospital where you delivered and the attendant at your delivery named on the Certificate of Live Birth will also be mailed questionnaires. The medical and dental offices and facilities you identify may also be mailed health care questionnaires. Some of these providers of medical care may request your written permission prior to releasing health information. For this reason we ask that after you complete the enclosed questionnaire, you sign the Consent Statement which is on the last page.

All answers you give us, the information from the hospital where you delivered and from the attendant at birth, as well as that provided by medical personnel and facilities listed by you in the questionnaire will be held strictly confidential. The information will be used only for statistical research purposes.

It is necessary that we obtain as complete and accurate a picture as possible of all the medical care you received before and after your delivery in 1980. If you do not know an exact answer to some of these questions, give your best estimate or write "NA" (not available). Do not leave any questions blank. Please complete the form and return it within the next few days in the enclosed postage-free envelope to the following address:

National Center for Health Statistics/SRCB
Center Building—Prince George Center
3700 East-West Highway
Hyattsville, Maryland 20782

If you should have any questions, please feel free to contact any member of The Followback Survey Staff collect at (301) 436-6117.

Thank you for your cooperation.

Sincerely yours,

Dorothy P. Rice
Director
National Center for Health Statistics

M-L

Figure III. Cover letter for mothers of live births

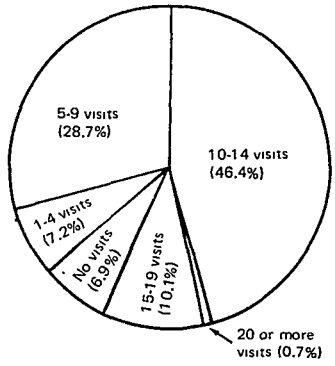
HOW DO I KNOW MY ANSWERS WILL BE KEPT CONFIDENTIAL?

All information collected is confidential and will be used only to prepare statistical summaries and for health care research. No information which will identify an individual or health care provider will be released, as required by Section 308(d) of the Public Health Service Act (42 United States Code, Section 242m), as stated in Public Law 95-623, which authorizes NCHS data collection. All NCHS employees working on this survey are required to observe certain essential rules for protection of confidentiality of records as published in *Staff Manual on Confidentiality: NCHS*, DHEW Publication No. (PHS) 78-1244, U.S. Department of Health, Education, and Welfare, Public Health Service, Hyattsville, Maryland 20782, July 1978. Furthermore, this survey fully conforms to the provisions of the *1974 Federal Privacy Act*.

HOW WILL THE ANSWERS I GIVE BE USED?

The answers you give will be combined with those from thousands of other women, and the results will be reported in percentages and totals in such a way that no one person's answers can be identified.

EXAMPLE: Number of Prenatal Visits Obtained by 2,818,000 Pregnant Women, and Percent



Source: 1972 U.S. National Natality Survey

Note that all personal identifying information such as names, addresses, and local community which might readily identify an individual is removed before data from this survey are made available for bona-fide research purposes.

WHAT IS THE 1980 NATIONAL NATALITY SURVEY?

It is a nationwide survey conducted by the National Center for Health Statistics, a part of the U.S. Public Health Service. Questionnaires are mailed across the nation to a sample of 19,000 women who delivered live births and stillbirths, and these women are scientifically chosen to represent all groups in our population. If you are chosen to participate in this survey, and for some reason do not return this questionnaire, then all the other women you represent will also be missing from the totals, making the results misleading. Therefore, you can see how important your answers are so that you, and women like you, will be represented.

WHO IS SPONSORING THIS SURVEY?

The National Natality Survey is sponsored by the National Center for Health Statistics of The United States Public Health Service, and six other Public Health Service agencies are also participating: the Bureau of Radiological Health (Food and Drug Administration), the National Institute for Occupational Safety and Health (Center for Disease Control), the National Institute of Child Health and Human Development (National Institutes of Health), the National Institute on Drug Abuse (Alcohol, Drug Abuse, and Mental Health Administration), the National Institute on Alcohol Abuse and Alcoholism (Alcohol, Drug Abuse, and Mental Health Administration), and the Bureau of Community Health Services (Health Services Administration).

CAN I GET SURVEY RESULTS?

Yes! However, the results of this study will not be available for some time because the survey is still in progress. You can, however, get free results of many other surveys done by the National Center for Health Statistics now. Simply write your name and address on a separate piece of paper with the words: "FREE NCHS HEALTH REPORTS-M," and enclose it in the envelope with your returned questionnaire.

OMB Clearance No.
68-S-78027

M-S

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

Dear Madam:

Your assistance is needed in a national health survey being conducted by the Public Health Service with the approval of your State Health Department. We are trying to learn more about the medical care that women received during the period before and after their 1980 deliveries. The information that women throughout the country give us will greatly aid in providing medical care programs for all American women.

You are part of a sample of women who experienced a stillbirth and who represent over 33,000 women having such deliveries annually. You, therefore, play an important role in telling us about the medical care you received before and after delivery. We realize that it may be difficult for you to answer some of these questions that we are asking. However, it is our hope that, through the information you provide, we can both help women in the future to avoid losses similar to the one you recently experienced.

Your name and address were obtained from a copy of the Report of Fetal Death which was provided by your State Registrar of Vital Statistics. The hospital where you delivered and the attendant at your delivery named on this vital record will also be mailed questionnaires. The medical and dental offices and facilities you identify may also be mailed health care questionnaires. Some of these providers of medical care may request your written permission prior to releasing health information. For this reason we ask that after you complete the enclosed questionnaire, you sign the Consent Statement which is on the last page.

All answers you give us, the information from the hospital where you delivered and from the attendant at delivery, as well as that provided by medical personnel and facilities listed by you in the questionnaire will be held strictly confidential. The information will be used only for statistical research purposes.

It is necessary that we obtain as complete and accurate a picture as possible of all the medical care you received before and after your delivery in 1980. If you do not know an exact answer to some of these questions, give your best estimate, or write "NA" (not available). Do not leave any questions blank. Please complete the form and return it within the next few days in the enclosed postage-free envelope to the following address:

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Director
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M-S

Figure IV. Cover letter for mothers of fetal deaths

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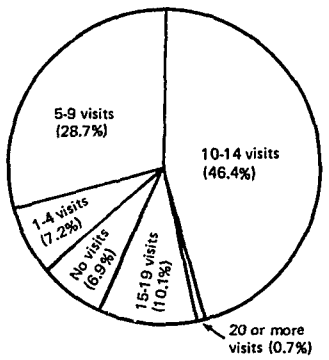

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PHS-T489-4 (4/80)

OMB Clearance No. 68-S-78027

M-CS

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

1980 NATIONAL NATALITY SURVEY

INFORMATION RESTRICTIONS This survey is being conducted under the authority of the Public Health Service Act (42 USC 242K) The information you provide will be used for statistical purposes only Any releases of information or publication by the National Center for Health Statistics will in no way identify any individuals or any medical facilities participating in the survey Your assistance is voluntary and there is no penalty for declining to participate in whole or in part Return of this questionnaire acknowledges your agreement to the uses by NCHS in the manner outlined above

PART I: MEDICAL CARE DURING THE 12 MONTHS BEFORE DELIVERY

1a. Did you make any visits to a doctor or nurse for prenatal care (concerning your pregnancy) before your 1980 delivery?

21 1 ☐ Yes ——▶ *Go to question 1b.*
2 ☐ No ——▶ *Go to question 3.*

b. How many visits for prenatal care did you make during each of the specified months of your pregnancy? If no visits were made during a particular month, enter a zero. *(PLEASE ESTIMATE AS BEST YOU CAN)*

_____ visits during 1st month (CC 22 23)
_____ visits during 2nd month (CC 24 25)
_____ visits during 3rd month (CC 26 27)
_____ visits during 4th month (CC 28 29)
_____ visits during 5th month (CC 30 31)
_____ visits during 6th month (CC 32-33)
_____ visits during 7th month (CC 34 35)
_____ visits during 8th month (CC 36 37)
_____ visits during 9th month and thereafter (prenatal only) (CC 38 39)

2a. Did your doctor suggest that you limit your total weight gain during your recent pregnancy?

40 1 ☐ Yes ——▶ *Go to question 2b.*
2 ☐ No ——▶ *Go to question 3*

b. What limit in total weight gain did the doctor suggest?

_____ lb. gain (CC 41 42)

PART II. CHARACTERISTICS BEFORE AND AFTER DELIVERY

3. During your recent pregnancy, did you do any of the following:

	Yes, based on doctor's or other medical source's suggestion	Yes, based on own decision without consulting doctor or other medical source	NO
a. take a vitamin/mineral supplement? *(Check one box only)* ——▶ 43	1 ☐	2 ☐	3 ☐
b. restrict your calorie intake? *(Check one box only)* ——▶ 44	1 ☐	2 ☐	3 ☐
c. restrict your salt intake? *(Check one box only)* ——▶ 45	1 ☐	2 ☐	3 ☐
d. use diuretics (fluid or water pills) to help eliminate water? *(Check one box only)* ——▶ 46	1 ☐	2 ☐	3 ☐

PLEASE DO NOT WRITE IN THIS AREA FOR OFFICE USE ONLY

M-CS

Figure V. Mother mail questionnaire (M–CS form)

4. How many weeks pregnant were you when you first found out that you were definitely pregnant?

_____ weeks
CC 47 48

5. Did you smoke cigarettes at all during the 12 months before your 1980 delivery?

49 1 ☐ Yes ——→ *Go to question 6a*
2 ☐ No ——→ *Go to question 8a*

6a. On the average, how many cigarettes did you smoke PER DAY before you found out that you were pregnant?

_____ average number of cigarettes per day
CC 50 51

b. What one brand of cigarettes did you smoke most often?

_____ brand
CC 52 54

c. Cigarette type most often smoked? *(Check one box)*
55 1 ☐ Filter Tip or 2 ☐ Non-filter

d. Pack type most often smoked? *(Check one box)*
56 1 ☐ Hard Pack or 2 ☐ Soft Pack

e. Tobacco type most often smoked? *(Check one box)*
57 1 ☐ Menthol or 2 ☐ Regular

f. Cigarette size most often smoked? *(Check one box)*
58 1 ☐ Regular length or 2 ☐ King Size
or
3 ☐ 100 or 120 millimeters

7a. On the average, how many cigarettes did you smoke PER DAY after you found out that you were pregnant? *(Write in a zero if you did not smoke any, and go to question 8a.)*

_____ average number of cigarettes per day
CC 59 60

b. What one brand of cigarettes did you smoke most often?

_____ brand
CC 61 63

c. Cigarette type most often smoked? *(Check one box)*
64 1 ☐ Filter tip or 2 ☐ Non filter

d. Pack type most often smoked? *(Check one box)*
65 1 ☐ Hard Pack or 2 ☐ Soft Pack

e. Tobacco type most often smoked? *(Check one box)*
66 1 ☐ Menthol or 2 ☐ Regular

f. Cigarette size most often smoked? *(Check one box)*
67 1 ☐ Regular length or 2 ☐ King Size
or
3 ☐ 100 or 120 millimeters

8a. Did you drink any alcoholic beverages (beer, wine or liquor) during the 12 months before your 1980 delivery?

68 1 ☐ Yes ——→ *Go to question 8b*
2 ☐ No ——→ *Go to question 9*

8b. How often did you usually drink alcoholic beverages; that is beer, wine, and/or liquor? *(Check one box for before and one box for during pregnancy.)* **Choose the answer that comes closest.**

	(Check one box this column) BEFORE PREGNANCY	*(Check one box this column)* DURING PREGNANCY
69 70 01	☐ Everyday	71 72 01 ☐
02	☐ Nearly everyday	02 ☐
03	☐ 3 or 4 days a week	03 ☐
04	☐ 1 or 2 days a week	04 ☐
05	☐ 3 or 4 days a month	05 ☐
06	☐ About once a month	06 ☐
07	☐ Less than once a month	07 ☐
08	☐ Did not drink at all	08 ☐

c. On the day or days that you drank, how much did you drink on the average per day? *(Check one box for before and one box for during pregnancy.)* **Choose the answer that comes closest.**

	(Check one box this column) BEFORE PREGNANCY	*(Check one box this column)* DURING PREGNANCY
73 74 01	☐ 12 or more drinks	75 76 01 ☐
02	☐ 7 to 11 drinks	02 ☐
03	☐ 6 drinks	03 ☐
04	☐ 5 drinks	04 ☐
05	☐ 4 drinks	05 ☐
06	☐ 3 drinks	06 ☐
07	☐ 2 drinks	07 ☐
08	☐ 1 drink	08 ☐
09	☐ Less than one drink	09 ☐
10	☐ Did not drink at all	10 ☐

d. On a typical day that you drank, what kind(s) of alcoholic beverage did you usually drink? *(Check all that apply.)*

77 1 ☐ beer
78 1 ☐ wine
79 1 ☐ liquor

9. During most of your recent pregnancy, how many cups of coffee or tea with caffeine did you drink per day? *(Please give your best estimate.)*

_____ Number of cups per day of coffee and/or tea
CC101 102

10. During most of your recent pregnancy, how many aspirin tablets did you take per month? *(Include any products containing aspirin, e.g., powders, gums, seltzer tablets, etc.)*

_____ Number of tablets per month
CC 103 105

11a. During the first three months after your recent delivery, did you make any visits to a doctor, clinic, or hospital for postpartum care (concerning this delivery)?

106 1 ☐ Yes ——→ *Go to question 11b*
2 ☐ No ——→ *Go to question 12a*

b. How many visits did you make in all?

_____ visits in 3 months
CC 107

12a. Which one of the following was the first birth control method you used following your 1980 delivery? *(Check one only. If none, check "NO".)*

108 1 ☐ Pill
109 1 ☐ IUD
110 1 ☐ Diaphragm
111 1 ☐ Sterilization of mother
112 1 ☐ Sterilization of father
113 1 ☐ Condom
114 1 ☐ Foam
115 1 ☐ Other Method
116 1 ☐ No → *Go to question 13a*

b. Where did you receive this birth control method? If a doctor prescribed a method, check the box indicating where the doctor was located. *(Check one only.)*

117 1 ☐ Hospital, at time of delivery (before discharge)
118 1 ☐ Hospital, after time of delivery (after discharge)
119 1 ☐ Physician's office
120 1 ☐ Family planning clinic
121 1 ☐ Drugstore, no prescription needed
122 1 ☐ Other Place *(Specify)* 2 _____

Questions 13 and 14 refer to live births only. If your 1980 delivery was a stillbirth, please go on to question 15.

13a. When your baby was first born, did you breast or bottle (formula) feed? *(Check one box only.)*

123 1 ☐ Breast fed only
2 ☐ Bottle fed only
3 ☐ Both breast and bottle fed
4 ☐ Other *(Specify)* 5 _____

b. Which of the following statements influenced your decision to breast feed or bottle feed your baby? *(Check all that apply.)*

124 1 ☐ Better for baby's health
125 1 ☐ More convenient
126 1 ☐ Less interference with daily activities
127 1 ☐ Feel closer to baby
128 1 ☐ This is the same as I did with my previous child
129 1 ☐ Encouragement from my doctor or other medical source
130 1 ☐ Encouragement from my family or friends
131 1 ☐ To help regain my figure
132 1 ☐ It costs less
133 1 ☐ My baby would not breast feed
134 1 ☐ Other *(Specify)* 2 _____

c. *(If you did NOT breast feed, go to question 14.)* **How old was your baby when you stopped breast feeding?**

_____ months
or
_____ weeks
CC 142 143
→ *Go to question 14*

77 ☐ Still breast feeding

14. Thinking back, just before you became pregnant with your new baby, did you want to become pregnant at that time? *(Check one box only.)*

146 1 ☐ I wanted this pregnancy at an earlier time, as well as at that time.
2 ☐ I wanted to become pregnant at that time.
3 ☐ I did not want to become pregnant at the time, but I wanted another child sometime in the future.
4 ☐ I did not want to become pregnant at that time, or at any time in the future.

15. Do you expect to have more children? *(Check one box only.)*

147 1 ☐ Definitely yes
2 ☐ Probably yes
3 ☐ Probably no
4 ☐ Definitely no
→ *Go to question 17*

16. How many more children do you think you will have? *(Please give your best estimate.)*

_____ number
CC 148

17. What is your birth date?

month ____ ____ CC 149 150
day ____ ____ 151 152
year ____ ____ 153 154

18. What is your height?

_____ feet _____ inches
CC 155 CC 156 157

19. What was your weight just before you became pregnant?

_____ lbs.
CC 158 160

b. What was your weight just before you delivered?

_____ lbs.
CC 161 163

20. What is the father's birth date?

month ____ ____ CC 164 165
day ____ ____ 166-167
year ____ ____ 168 169

21. What is the father's height?

_____ feet _____ inches
CC 170 CC 171 172

22. What was the father's weight just before you became pregnant?

_____ lbs.
CC 173 175

PART III. MARITAL AND PREGNANCY HISTORY

We are interested in the outcomes of ALL the pregnancies that you have ever had, whether you were single, married, divorced, separated, or widowed. Please include the 1980 delivery listed on the front of the questionnaire.

IF ANY OF YOUR PREGNANCIES RESULTED IN MULTIPLE DELIVERIES, COUNT EACH INFANT SEPARATELY. Example: A pregnancy of twins born alive would count as two live births.

23a. How many live births have you had? *(Count all deliveries of live born infants, even if the infant died shortly after birth.)*

_____ live births
CC 176 177

b. How many stillbirths have you had? *(Count any infant who was dead upon delivery when the pregnancy had lasted 20 weeks or more.)*

_____ stillbirths
CC 178 179

c. How many miscarriages have you had? *(Count any fetus which was dead upon delivery when the pregnancy lasted less than 20 weeks.)*

_____ miscarraiges
CC 180 181

d. How many abortions have you had? *(Count any induced or intentional terminations of pregnancies.)*

_____ abortions
CC 182 183

24. *PLEASE FILL IN ONE BOX FOR EACH PREGNANCY OUTCOME. FOR EXAMPLE: TWINS WOULD COUNT AS TWO PREGNANCY OUTCOMES. IF YOU HAVE HAD MORE THAN 8 PREGNANCY OUTCOMES, PLEASE LIST THE REQUESTED INFORMATION ON A SEPARATE SHEET OF PAPER. PLEASE BE SURE TO INCLUDE YOUR 1980 DELIVERY.*

PREGNANCY OUTCOME SECTION

Number of Pregnancy Outcome	How Pregnancy Ended	Date Pregnancy Ended	If Live Birth	
			Sex of Child	Other Information
FIRST PREGNANCY OUTCOME	184 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo. (CC 185-186) Day (187-188) Year (189 190)	191 1 ☐ Male 2 ☐ Female	192 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → *(give date of death)* Mo. (CC 193 194) Day (195 196) Year (197 198)
SECOND PREGNANCY OUTCOME	199 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo. (CC 200 201) Day (202-203) Year (204-205)	206 1 ☐ Male 2 ☐ Female	207 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → *(give date of death)* Mo. (CC 208 209) Day (210 211) Year (212 213)
THIRD PREGNANCY OUTCOME	214 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo. (CC 215-216) Day (217 218) Year (219-220)	221 1 ☐ Male 2 ☐ Female	222 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → *(give date of death)* Mo. (CC 223 224) Day (225 226) Year (227 228)
FOURTH PREGNANCY OUTCOME	229 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo. (CC 230-231) Day (232-233) Year (234 235)	236 1 ☐ Male 2 ☐ Female	237 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → *(give date of death)* Mo. (CC 238 239) Day (240-241) Year (242 243)
FIFTH PREGNANCY OUTCOME	244 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo. (CC 245-246) Day (247 248) Year (249 250)	251 1 ☐ Male 2 ☐ Female	252 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → *(give date of death)* Mo. (CC 253-254) Day (255-256) Year (257-258)
SIXTH PREGNANCY OUTCOME	259 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo. (CC 260-261) Day (262-263) Year (264-265)	266 1 ☐ Male 2 ☐ Female	267 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → *(give date of death)* Mo. (CC 268 269) Day (270-271) Year (272 273)
SEVENTH PREGNANCY OUTCOME	274 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo. (CC 275-276) Day (277-278) Year (279 280)	281 1 ☐ Male 2 ☐ Female	282 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → *(give date of death)* Mo. (CC283-284) Day (285-286) Year (287-288)
EIGHTH PREGNANCY OUTCOME	289 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo. (CC 290 291) Day (292-293) Year (294-295)	296 1 ☐ Male 2 ☐ Female	297 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → *(give date of death)* Mo (CC298-299) Day (300-301) Year (302 303)

25. **How many times have you been married?** *(Check one box only.)*

484 1 ☐ Once
2 ☐ Twice
3 ☐ Three times or more
4 ☐ Never married → *Go to question 27a*

26. **Please indicate for each marriage the information requested.** *(If married more than two times, please continue on a separate sheet of paper.)*

a. First marraige

(1) Date marriage began: ____ month (CC 485 486) ____ year (487 488)

(2) Current status: *(Check one box only)*

489 1 ☐ Still together → *Go to question 27a*
2 ☐ Widowed
3 ☐ Divorced
4 ☐ Separated

(3) Date widowed, divorced, or separated:

____ month (CC 490 491) ____ year (492 493)

b. Second marriage

(1) Date marriage began: ____ month (CC 494 495) ____ year (496 497)

(2) Current status: *(Check one box only)*

498 1 ☐ Still together → *Go to question 27a*
2 ☐ Widowed
3 ☐ Divorced
4 ☐ Separated

(3) Date widowed, divorced, or separated:

____ month (CC 499 500) ____ year (501 502)

PART IV. EDUCATION AND OCCUPATION

27a. **What is the highest grade of regular school (elementary school, high school, two or four year college, or university) YOU completed?** *(Do not include business or trade schools or any other specialized training here.)* **Circle the number of the highest grade completed.**

None: 0 (CC 539 540)
Elementary or Secondary School: 1 2 3 4 5 6 7 8 9 10 11 12
University or College: 13 14 15 16
Graduate School: 17 18+

b. **Do you have any vocational or trade school training?**

541 1 ☐ Yes
2 ☐ No

c. **Were you enrolled in school at any time during your 1980 pregnancy?**

542 1 ☐ Yes, full time
2 ☐ Yes, part time
3 ☐ No

28a. **What is the highest grade of regular school (elementary school, high school, two or four year college, or university) THE FATHER completed?** *(Do not include business or trade schools or any other specialized training here.)* **Circle the number of the highest grade completed.**

None: 0 (CC 543 544)
Elementary or Secondary School: 1 2 3 4 5 6 7 8 9 10 11 12
University or College: 13 14 15 16
Graduate School: 17 18+
or 88 ☐ Don't know

b. **Does the father have any vocational or trade school training?**

545 1 ☐ Yes
2 ☐ No

c. **Was he enrolled in school at any time during your 1980 pregnancy?**

546 1 ☐ Yes, full time
2 ☐ Yes, part time
3 ☐ No

29. **Did YOU work at any time during the 12 months before your 1980 delivery?**

547 1 ☐ Yes → *Go to question 31*
2 ☐ No → *Go to question 30*

30. **Did YOU work prior to the 12 months before your 1980 delivery?**

548 1 ☐ Yes → *Go to question 31*
2 ☐ No → *Go to question 32*

31. **YOUR OCCUPATION:** *Please describe clearly your chief job activity or business during the 12 months before your 1980 delivery. If you didn't work during the 12 months before delivery, describe the job you held for the longest period of time before the 1980 delivery. If you had more than one job, describe the one at which you worked the most hours.*

a. **For whom did you work?** *(If you were on active duty in the Armed Forces, specify the branch.)*

Name of company, business, organization or other employer (CC 549)

b. **What kind of business or industry was this? Describe business activity at location where employed.** *(For example, junior-high school, retail supermarket, department store, dairy farm, research, auto assembly, hospital, real estate, etc.)*

Type of industry (CC 550 552)

c. **Is this business mainly manufacturing, wholesale trade, retail trade, or other?** *(Check one box only.)*

553 1 ☐ Manufacturing
2 ☐ Wholesale trade
3 ☐ Retail trade
4 ☐ Other (Agricultural, construction, service, government, etc.)

d. **What kind of work were you doing?** *(For example, real estate agent, instructor, clerk, musician, etc.)*

occupation (CC 554 556)

e. **What were your most important activities or duties?** *(For example, sell houses, teach math, general office work, play guitar in band, etc.)*

duties

f. **Which one of the listed categories best describes your type of employment?** *(Check one box only.)*

557 1 ☐ Employee of private company, business, or individual, for wages, salary or commissions
2 ☐ Federal government employee
3 ☐ State government employee
4 ☐ Local government employee (city, county, etc.)
5 ☐ Self-employed in own business, professional practice or farm — not incorporated
6 ☐ Self-employed in own business, professional practice or farm — incorporated
7 ☐ Working without pay in family business or farm

g. **What were the dates of employment for this job?** *(If you worked at the same job before and after your delivery, please enter the date you stopped work before you gave birth.)*

__ __ month CC 558-559 __ __ year 560 561 to __ __ month CC 562-563 __ __ year 564 565

h. **What was the number of hours you usually worked per week at this job?**

_____ hours per week
CC 566 567

i. **How many days per week did you usually work at this job?**

_____ days per week
CC 568 569

j. **At what time of day did you usually begin and end work?** *(Circle A.M., P.M., noon or midnight next to each time.)*

_____ begin CC 570 573 — A.M. Noon P.M. Midnight CC 574 to _____ end CC 573 578 — A.M. Noon P.M. Midnight CC 579

k. **In your job, did you work with or have exposure to radiation — radioactive isotopes or elements** *(Examples: microwave, x-rays, fluoroscopic equipment, lasers)*?

580 1 ☐ Yes *(Specify)* 2 _____
3 ☐ No
4 ☐ Not sure

32a. During the 12 months preceding your delivery, were you exposed to chemicals used to kill insects, rodents, weeds, or fungi?

581 1 ☐ Yes *(Specify)* 2 _____ → *Go to question 32b*
3 ☐ No → *Go to question 33*
4 ☐ Not sure → *Go to question 33*

b. *(If yes)* **Where did this exposure occur?** *(Check all that apply.)*

582 1 ☐ At home
583 1 ☐ In the area where I lived
584 1 ☐ At my job
585 1 ☐ Other *(Specify)* 2 _____

33. THE FATHER'S OCCUPATION: *Please describe clearly the father's chief job activity or business during the 12 months before your 1980 delivery. If he had more than one job, describe the one at which he worked the most hours. If he did not work during the year before your delivery, give information for his last job or business prior to that. Answer as many parts as you can. If he never worked, check box* ☐ *and go to Question 34.* 615 1

a. **For whom did THE FATHER work?** *(If he was on active duty in the Armed Forces, specify the branch.)*

_____
Name of company, business, organization or other employer
CC 616

b. **What kind of business or industry was this? Describe business activity at location where employed.** *(For example, junior-high school, retail supermarket, department store, dairy farm, research, auto assembly, hospital, real estate, etc.)*

_____
Type of industry
CC 617-619

c. **Is this business mainly manufacturing, wholesale trade, retail trade, or other?** *(Check one box only.)*

620 1 ☐ Manufacturing
2 ☐ Wholesale trade
3 ☐ Retail trade
4 ☐ Other (Agricultural, construction, service, government, etc.)

d. **What kind of work was the father doing?** *(For example, salesman, instructor, surgeon, fireman, musician, etc.)*

_____
occupation
CC 621 623

e. **What were his most important activities or duties?** *(For example, selling cars, teaching math, performing operations, fighting fires, playing piano in a restauraunt, etc.)*

_____
duties

f. **Which one of the listed categories best describes his type of employment?** *(Check one box only.)*

624 1 ☐ Employee of private company, business, or individual, for wages, salary or commissions
2 ☐ Federal government employee
3 ☐ State government employee
4 ☐ Local government employee (city, county, etc.)
5 ☐ Self-employed in own business, professional practice or farm — not incorporated
6 ☐ Self-employed in own business, professional practice or farm — incorporated
7 ☐ Working without pay in family business or farm

g. **What were the dates of employment for this job?**

__ __ month CC 625 626 __ __ year 627 628 to __ __ month CC 629 630 __ __ year 631 632

h. **What was the number of hours he usually worked per week at this job?**

_____ hours per week
CC 633 634

i. **How many days per week did he usually work at this job?**

_____ days per week
CC 635 636

j. **At what time of day did he usually begin and end work?** *(Circle A.M., P.M., noon or midnight next to each time.)*

_____ begin CC 637 640 — A.M. Noon P.M. Midnight CC 641 to _____ end CC 642 645 — A.M. Noon P.M. Midnight CC 646

k. **In the father's job, did he work with or have exposure to radiation — radioactive isotopes or elements** *(Examples: microwave, x-rays, fluoroscopic equipment, lasers)*?

647 1 ☐ Yes *(Specify)* 2 _____
3 ☐ No
4 ☐ Not sure

34a. During the 12 months preceding your delivery, was the father exposed to chemicals used to kill insects, rodents, weeds, or fungi?

648 1 ☐ Yes *(Specify)* 2 _____ → *Go to question 34b*
3 ☐ No → *Go to question 35*
4 ☐ Not sure → *Go to question 35*

b. *(If yes)* **Where did this exposure occur?** *(Check all that apply.)*

649 1 ☐ At home
650 1 ☐ In the area where he lived
651 1 ☐ At his job
652 1 ☐ Other *(Specify)* 2 _____

35. *The following questions refer to your annual income, the father's income, and the total family income from all household members during the 12 months before your 1980 delivery. Include all income from wages, salaries, investments, property, social security, welfare, unemployment compensation, etc. If the exact amount is not known, PLEASE CHECK YOUR BEST ESTIMATE.*

a. What was your annual income before taxes from all sources during the 12 months before your 1980 delivery. *(Check the box that gives the best estimate.)*

653-654 01 ☐ $0 to $2,999
02 ☐ $3,000 to $5,999
03 ☐ $6,000 to $8,999
04 ☐ $9,000 to $11,999
05 ☐ $12,000 to $14,999
06 ☐ $15,000 to $17,999
07 ☐ $18,000 to $20,999
08 ☐ $21,000 to $23,999
09 ☐ $24,000 to $26,999
10 ☐ $27,000 to $29,999
11 ☐ $30,000 or more

b. What was the father's annual income (before taxes) during the 12 months before your 1980 delivery. *(Check the box that gives the best estimate.)*

655-656 01 ☐ $0 to $2,999
02 ☐ $3,000 to $5,999
03 ☐ $6,000 to $8,999
04 ☐ $9,000 to $11,999
05 ☐ $12,000 to $14,999
06 ☐ $15,000 to $17,999
07 ☐ $18,000 to $20,999
08 ☐ $21,000 to $23,999
09 ☐ $24,000 to $26,999
10 ☐ $27,000 to $29,999
11 ☐ $30,000 or more

c. What was the total annual family income before taxes of all the household members (include relatives only) you lived with during the 12 months before your 1980 delivery? Include your own income as well. The household is the one you lived in for most of the 12 months before your delivery. *(Check the box that gives the best estimate.)*

657-658 01 ☐ $0 to $2,999
02 ☐ $3,000 to $5,999
03 ☐ $6,000 to $8,999
04 ☐ $9,000 to $11,999
05 ☐ $12,000 to $14,999
06 ☐ $15,000 to $17,999
07 ☐ $18,000 to $20,999
08 ☐ $21,000 to $23,999
09 ☐ $24,000 to $26,999
10 ☐ $27,000 to $29,999
11 ☐ $30,000 or more

35d. What were the sources of the total family income during the 12 months before your delivery? *(Check all that apply.)*

659 1 ☐ Wage or salary
660 1 ☐ Welfare, aid to families with dependent children
661 1 ☐ Food stamps
662 1 ☐ Other welfare (old age assistance, aid to the blind or the totally disabled or other general assistance)
663 1 ☐ Social security or retirement
664 1 ☐ Unemployment or workmen's compensation
665 1 ☐ Government employee pensions or private pensions
666 1 ☐ Net income from own non-farm business, professional practice or partnership
667 1 ☐ Fee or commission
668 1 ☐ Net income from a farm
669 1 ☐ Veteran's payments
670 1 ☐ Dividends, interest, property rental
671 1 ☐ Alimony or child-support from absent father for any of your children
672 1 ☐ Any other sources of income

36. Which one of these groups best describes your racial background? *(Check one box only.)*

673 1 ☐ American Indian or Alaskan Native
2 ☐ Asian or Pacific Islander
3 ☐ Black or Negro
4 ☐ White
5 ☐ Other *(Specify)* 6 _____

37a. Which of these groups best describes your national origin or descent? *(Check all that apply.)*

674 1 ☐ German
675 1 ☐ Italian
676 1 ☐ Irish
677 1 ☐ French
678 1 ☐ Polish
679 1 ☐ Russian
680 1 ☐ English, Scot, Welsh
681 1 ☐ Puerto Rican
682 1 ☐ Cuban
683 1 ☐ Mexicano, Chicano, Mexican American
684 1 ☐ Other Spanish (Spain/Hispano/Other Latin American)
685 1 ☐ African, Black, Negro
686 1 ☐ American Indian or Alaskan Native
687 1 ☐ Asian or Pacific Islander, such as Chinese, Japanese, Korean, Filipino, or Samoan
688 1 ☐ Other *(Specify)* 2 _____

b. Which one of the above groups do you identify with the most?

_____
(Specify group name)
CC 689-690

38. Which one of these groups best describes the father's racial background? *(Check one box only.)*

692 1 ☐ American Indian or Alaskan Native
2 ☐ Asian or Pacific Islander
3 ☐ Black or Negro
4 ☐ White
5 ☐ Other *(Specify)* 6

39a. Which of these groups best describes the father's national origin or descent? *(Check all that apply.)*

693 1 ☐ German
694 1 ☐ Italian
695 1 ☐ Irish
696 1 ☐ French
697 1 ☐ Polish
698 1 ☐ Russian
699 1 ☐ English, Scot, Welsh
700 1 ☐ Puerto Rican
701 1 ☐ Cuban
702 1 ☐ Mexicano, Chicano, Mexican American
703 1 ☐ Other Spanish (Spain/Hispano/Other Latin American)
704 1 ☐ African, Black, Negro
706 1 ☐ American Indian or Alaskan Native
706 1 ☐ Asian or Pacific Islander, such as Chinese, Japanese, Korean, Filipino, or Samoan
707 1 ☐ Other *(Specify)* 2

b. Which one of the above groups does the father identify with the most?

(Specify group name)
CC 708 709

40a. During the year preceding your 1980 delivery, did you receive any of the listed examinations or treatments? *(Check all that apply.)*

710 1 ☐ Thyroid tests, scans, uptakes (nuclear medicine)
711 1 ☐ Sonogram, scanning (picture of the baby before it was born)
712 1 ☐ Ultrasound (listened to the baby's heart before it was born)
713 1 ☐ X-rays (include all x-rays — head, chest, dental, abdomen, etc.)
714 1 ☐ Deep heat, diathermy, microwave, and shortwave or radio-frequency (include treatment for low back pain, aches, etc.)
715 1 ☐ NO EXAMINATIONS OR TREATMENTS LISTED ABOVE

b. For EACH examination or treatment checked, please list the names and addresses of the providers of these services. If your last name at time of visit was different from that on page one of this questionnaire, please indicate what your name was at that time. *(Continue on a separate sheet of paper if necessary.)*

List names in Question 40b above →

40b.

Name of provider

Address

City State Zip Code

Last name at time of visit

Name of provider

Address

City State Zip Code

Last name at time of visit

41a. Is the name and address printed on the label of this questionnaire correct?

716 1 ☐ Yes → *Go to question 42*
2 ☐ No

b. Please give your correct name and current address.

Name

Address

City State Zip Code

42. May we please have a phone number where we can reach you if we need to clarify some of these questions with you? We will discuss these questions only with you. Please indicate if you prefer that we telephone you during certain hours.

Area Code Phone Number

Hours

PLEASE READ AND SIGN THE CONSENT STATEMENT BELOW.

PHS-T489-4 (4/80)

CONSENT STATEMENT

OMB Clearance No. 68-S-78027

I have voluntarily participated in this national health survey and hereby give my consent for the National Center for Health Statistics to obtain supplemental medical information from health records maintained on me by medical sources. I understand that the National Center for Health Statistics will use this information only for statistical purposes in health research, and no information which identifies either me or the medical source will ever be released or published.

(Today's Date)
CC 717 722

(Your Signature)
CC 723

THANK YOU VERY MUCH FOR YOUR COOPERATION

1. File # _____

2. ID # _____

3. Source Code _____ Livebirth/Stillbirth

4. Name _____

5. Phone # _____

6. Date of Delivery _____

7. First Printout Date _____

INFORMATION RESTRICTIONS: This survey is being conducted under the authority of the Public Health Service Act. Your participation is voluntary, and the information you provide will be used for statistical purposes only. Any releases of information or publication by us, the National Center for Health Statistics, will in no way identify you or any medical facilities participating in the survey.

This is to certify that I have read the Privacy Act Statement to the respondent.

_____
Signature

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

1980 NATIONAL NATALITY SURVEY

M-CS ABBREVIATED TELEPHONE INTERVIEW

PHS-T489-5 (4/80)

OMB Clearance No. 68-S-78027

To be completed by supervisory staff only.

INTERVIEW STATUS

- ☐ **Did not reach respondent**
  - ☐ Out of country
  - ☐ Deceased
  - ☐ Not available
    - ☐ Moved
    - ☐ Exhausted call rule
    - ☐ Other *(Specify)*: _____
  - ☐ Remail to same address
  - ☐ Remail to new address
- ☐ **Reached respondent**
  - ☐ Refused
  - ☐ Breakoff
  - ☐ Interview given
  - ☐ Already sent back questionnaire
  - ☐ Will send back questionnaire
  - ☐ Other *(Specify)*: _____
- ☐ **Fail edit consent statement**

Date completed _____
SSI/LSI _____
initials

151 ☐ 201 ☐

1

Figure VI. M–CS Abbreviated Telephone Interview

1. **Before your 1980 delivery, did you make any visits to a doctor or nurse for prenatal care?**

21 1 ☐ Yes
2 ☐ No *(3)*

2a. Did your doctor suggest that you limit your total weight gain during your recent pregnancy?

40 1 ☐ Yes
2 ☐ No *(3)*

b. What total weight gain limit did your doctor suggest?

_____ lb. gain
cc 41-42

3. **How many weeks pregnant were you when you first found out that you were definitely pregnant?**

_____ weeks
cc 47-48

4. **Did you smoke cigarettes at all during the 12 months before your 1980 delivery?**

49 1 ☐ Yes
2 ☐ No *(6a)*

5a. On the average, how many cigarettes did you smoke PER DAY after you found out that you were pregnant?

_____
average number of cigarettes per day
cc 59-60

☐ None *(6a)*

b. What one brand of cigarettes did you smoke most often?

_____ brand
cc 61-63

What type of cigarettes are the *(Brand Name)* that you smoked?

c. Were they . . .

64 1 ☐ Filter tip or 2 ☐ Non-filter tip

d. Were they . . .

65 1 ☐ Hard pack or 2 ☐ Soft pack

5e. Were they . . .

66 1 ☐ Menthol or 2 ☐ Regular

f. Were they . . .

67 1 ☐ Regular length 2 ☐ King size
or
3 ☐ 100 or 120 millimeters

6a. Did you drink any alcoholic beverages, that is, beer, wine, or liquor, during the 12 months before your 1980 delivery?

68 1 ☐ Yes
2 ☐ No *(7a)*

b. During the time you were pregnant, how often did you drink alcoholic beverages?

(Read List)

71-72 01 ☐ Everyday
02 ☐ Nearly everyday
03 ☐ 3 or 4 days a week
04 ☐ 1 or 2 days a week
05 ☐ 3 or 4 days a month
06 ☐ About once a month
07 ☐ Less than once a month

(Do Not Read)

08 ☐ Did not drink at all *(7)*
88 ☐ Don't know

c. On the days that you drank, how many drinks did you have?

(Do Not Read)

75-76 01 ☐ 12 or more drinks
02 ☐ 7 to 11 drinks
03 ☐ 6 drinks
04 ☐ 5 drinks
05 ☐ 4 drinks
06 ☐ 3 drinks
07 ☐ 2 drinks
08 ☐ 1 drink
09 ☐ Less than one drink
10 ☐ Did not drink at all
88 ☐ Don't know

d. On a typical day that you drank, what kinds of alcoholic beverage did you usually drink? *(Read list and check all that apply.)*

77 1 ☐ Beer
78 1 ☐ Wine
79 1 ☐ Liquor

(Question 7 refers to live births only. If the delivery was a stillbirth, go to question 8.)

7a. When your baby was first born, did you breast feed or bottle, that is, formula feed?
(Do not read list. Check one box only.)

123 1 ☐ Breast fed only
2 ☐ Bottle fed only *(8)*
3 ☐ Both breast and bottle fed
4 ☐ Other *(Specify).* 5 _____

b. How old was your baby when you stopped breast feeding?

_____ months

or

_____ weeks
cc 142 143

77 ☐ Still breast feeding

8. What is your date of birth?

___ ___ month cc 149-150 | ___ ___ day cc 151-152 | ___ ___ year cc 153-154

9. What is your height?

___ feet cc 155 ___ ___ inches cc 156-157

10a. What was your weight just before you became pregnant?

___ . ___ lbs.
cc 158 160

b. What was your weight just before you delivered?

___ ___ lbs.
cc 161 163

PREGNANCY OUTCOME INFORMATION

Be sure to include the 1980 delivery. If space for more than 12 pregnancies is needed continue on a separate sheet of paper and staple to questionnaire.

If the respondent says that she had a miscarriage, ask **"Did the pregnancy last less than 20 weeks?"**

If the respondent says that she had a stillbirth, ask **"Did the pregnancy last 20 weeks or more?"**

11. The next set of questions asks about each of your pregnancies. Let's start with your first pregnancy. *(If 1st pregnancy is the only pregnancy, verify date of baby's birth.)*

Number of Pregnancy Outcome	How Pregnancy Ended	Date Pregnancy Ended
(Read) Was your 1st pregnancy a. . .	184 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 185 186 ___ ___ Day 187 188 ___ ___ Year 189 190
(Read) Was your 2nd pregnancy a. . .	199 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 200-201 ___ ___ Day 202 203 ___ ___ Year 204 205
(Read) Was your 3rd pregnancy a. . .	214 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 215-216 ___ ___ Day 217-218 ___ ___ Year 219 220
(Read) Was your 4th pregnancy a. . .	229 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 230 231 ___ ___ Day 232 233 ___ ___ Year 234 235
(Read) Was your 5th pregnancy a. . .	244 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 245 246 ___ ___ Day 247-248 ___ ___ Year 249-250
(Read) Was your 6th pregnancy a. . .	259 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 260-261 ___ ___ Day 262-263 ___ ___ Year 264-265
(Read) Was your 7th pregnancy a. . .	274-1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 275-276 ___ ___ Day 277 278 ___ ___ Year 279 280
(Read) Was your 8th pregnancy a. . .	289 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 290 291 ___ ___ Day 292 293 ___ ___ Year 294 295
(Read) Was your 9th pregnancy a. . .	304 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 305-306 ___ ___ Day 307 308 ___ ___ Year 309-310
(Read) Was your 10th pregnancy a. . .	319 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 320-321 ___ ___ Day 322-323 ___ ___ Year 324 325
(Read) Was your 11th pregnancy a. . .	334 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 335-336 ___ ___ Day 337 338 ___ ___ Year 339 340
(Read) Was your 12th pregnancy a. . .	349 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	On what date did this event occur? ___ ___ Mo. cc 350 351 ___ ___ Day 352 353 ___ ___ Year 354 355

12a. How many times have you been married? *(Do not read list. Check one box only.)*

484 1 ☐ Once
2 ☐ Twice
3 ☐ Three times or more
4 ☐ Never married *(13a)*

b. What was the date of your first marriage?

Month cc 485 486 — Year 487 488

13a. What was the highest grade or year you completed in school? *(Do not include trade or vocational school.)*

None: 0 (cc 539 540)
Elementary or Secondary School: 1 2 3 4 5 6 7 8 9 10 11 12
University or College: 13 14 15 16
Graduate School: 17 18+

b. Were you enrolled in school at anytime during your 1980 pregnancy?

542 ☐ Yes → 1 ☐ Full-time or 2 ☐ Part-time
3 ☐ No

(If respondent "NEVER MARRIED" terminate interview)

14a. What is the highest grade or year the father completed in school? *(Do not include trade school or vocational school.)*

None: 0 (cc 543 544)
Elementary or Secondary School: 1 2 3 4 5 6 7 8 9 10 11 12
University or College: 13 14 15 16
Graduate School: 17 18+

b. Was he enrolled in school at any time during your 1980 pregnancy?

546 ☐ Yes → 1 ☐ Full-time or 2 ☐ Part-time
3 ☐ No

15. Did YOU work at any time during the 12 months before your 1980 delivery?

547 1 ☐ Yes *("Your Occupation"-A)*
2 ☐ No

16. Did YOU ever work prior to the 12 months before your 1980 delivery?

548 1 ☐ Yes *("Your Occupation"-B)*
2 ☐ No *(18)*

YOUR OCCUPATION—A

(If question 15 is "Yes," read . . .)

The next set of questions pertains to your chief job during the 12 months before your 1980 delivery. *(17a)*

YOUR OCCUPATION—B

(If question 16 is "Yes," read . . .)

The next set of questions pertains to the job you held for the longest period of time before your 1980 delivery. If you had more than one job, these questions refer to the one at which you worked the most hours.

17a. What type of business was the place where you were employed?

Only read as and { For example, junior high school, retail supermarket, dairy farm, research, auto assembly plant, hospital, real estate, etc. . .

Type of industry cc 550 552

b. What kind of work were you doing?

Only read as and { For example, real estate agent, instructor, clerk, musician, etc. . .

occupation cc 554 556

c. What were the dates of employment for this job? If you worked at the same job before and after your delivery, please tell me the date you stopped working before you gave birth.

month cc 558 559 — year 560 561 — to — month 562 563 — year 564 565

d. What was the total number of hours you usually worked per week at this job?

_____ hours per week
cc 566 567

THE FATHER'S OCCUPATION

18a. I am now going to ask you about the type of work the father did in the year before your delivery. If he did not work during that year, then I'd like to know about the job he had prior to that.

615 1 ☐ (Never worked) *(19)*

b. What type of business was the place where the father was employed?

Only read as and { For example, junior high school, retail supermarket, department store, dairy farm, hospital, etc. . .

Type of industry cc 617 619

18c. What kind of work was the father doing?

Only read as and { For example, salesman, instructor, surgeon, fireman, musician, etc...

_____
occupation
cc 621 623

d. What were his dates of employment for this job?

__ __ month cc 625 626 __ __ year 627 628 to __ __ month 629 630 __ __ year 631 632

e. What was the total number of hours he usually worked per week at this job?

_____ hours per week
cc 633 634

19a. What was your family's total combined income, that is before taxes, from all sources during the 12 months before your delivery. Was it...

☐ Less than $15,000 or
☐ More than $15,000?

b. Then, which of the following groups best represents your family's total combined income during that period — Was it...

(If less than $15,000 read...)

657 658 01 ☐ Less than $3,000
02 ☐ More than $3,000 but less than $6,000
03 ☐ More than $6,000 but less than $9,000
04 ☐ More than $9,000 but less than $12,000
05 ☐ More than $12,000 but less than $15,000

(If more than $15,000 read...)

06 ☐ More than $15,000 but less than $18,000
07 ☐ More than $18,000 but less than $21,000
08 ☐ More than $21,000 but less than $24,000
09 ☐ More than $24,000 but less than $27,000
10 ☐ More than $27,000 but less than $30,000
11 ☐ More than $30,000

20a. Please tell me which of the following groups best describes your racial background. Is your racial background *(Read list):*

(After each "NO" mark box and ask: **Besides** *(Racial Group(s))* **is your racial background any other group; such as** *(Read Remainder of list)?*	673 1 ☐ American Indian or Alaskan Native 2 ☐ Asian or Pacific Islander 3 ☐ Black or Negro 4 ☐ White 5 ☐ Or some other group?
(Reask probe until entire list has been read)	6 _____ *Specify*

b. *(If more than one group in 20a, ask:)*

Which of these groups, that is, *(entries in 20a)* **would you say best describes your racial background?**

1 2 3 4 5

_____
Specify

21a. Now, I am going to read you a list of national origins or ancestries. Please tell me which of these groups best describes your national origin or ancestry.

674 1 ☐ German
675 1 ☐ Italian
676 1 ☐ Irish
677 1 ☐ French
678 1 ☐ Polish
679 1 ☐ Russian
680 1 ☐ English, Scot, Welsh
681 1 ☐ Puerto Rican

(Pause)

b. Is your national origin any *(other)* **group, such as:**

682 1 ☐ Cuban
683 1 ☐ Mexicano, Chicano, Mexican American
684 1 ☐ Any other Spanish group (Spain/Hispano/Other Latin American)
685 1 ☐ African, Black, Negro
686 1 ☐ American Indian or Alaskan Native
687 1 ☐ Asian or Pacific Islander (Chinese, Japanese, Korean, Filipino, Samoan)
688 1 ☐ Any other group *(Specify)* 2 _____

22a. Which one of the following groups best describes the father's racial background? Is his racial background:

692 1 ☐ American Indian or Alaskan Native
2 ☐ Asian or Pacific Islander
3 ☐ Black or Negro
4 ☐ White
5 ☐ Other *(Specify)* 6 _____

b. If more than one group in 22a, ask: Which of these groups, that is, *(entries in 22a)* **would you say best describes the father's racial background?**

1 2 3 4 5

_____
Specify

23a. I would also like the same information regarding the father's national origin or ancestry. Which of these groups best describes his national origin or ancestry:

693 1 ☐ German
694 1 ☐ Italian
695 1 ☐ Irish
696 1 ☐ French
697 1 ☐ Polish
698 1 ☐ Russian
699 1 ☐ English, Scot, Welsh
700 1 ☐ Puerto Rican

(Pause)

(Continued)

23b. Is the father's national origin or ancestry any *(other)* group, such as:

701 1 ☐ Cuban
702 1 ☐ Mexicano, Chicano, Mexican American
703 1 ☐ Any other Spanish Group (Spain/ Hispano/Other Latin American)
704 1 ☐ African, Black, Negro
705 1 ☐ American Indian or Alaskan Native
706 1 ☐ Asian or Pacific Islander (Chinese, Japanese, Korean, Filipino, Samoan)
707 1 ☐ Any other group *(Specify)* 2 _____

Name of provider

Address

City State ZIP Code

Last name at time of visit

24a. During the 12 months before your 1980 delivery, did you receive any of the following treatments or examinations:
(Read list. Check all that apply)

710 1 ☐ Thyroid test or scans, that is, nuclear medicine
711 1 ☐ Sonogram or scanning, that is, a picture of the baby before it was born
712 1 ☐ Ultrasound, that is, listening to the baby's heart before it was born
713 1 ☐ X-rays. Please include all x-rays such as head, chest, dental, abdomen, or any other
714 1 ☐ Deep heat, diathermy, microwave, shortwave, or radio frequency. Please include treatment for low back pain, aches, and other treatments of this sort

(Do Not Read)

715 1 ☐ None of the above.

Name of provider

Address

City State ZIP Code

Last name at time of visit

24b. *(REASK name of provider for each treatment or examination checked in 24a.)*

I would now like the name(s) and address(es) of the provider(s) of the treatment(s) or examination(s) just mentioned. Please tell me the name and address of the provider for your *(entries in 24a) (treatment or examination).*

Name of provider

Address

City State ZIP Code

Last name at time of visit

24c. Was your last name different when you received any of these services?

☐ Yes
☐ No

(Enter correct name at time of visit for each provider.)

CONSENT STATEMENT BY PROXY

You might remember that the letter we sent you mentioned that we would be mailing health care questionnaires to the hospital where you delivered, the attendant at your delivery, and medical sources named by you as having provided you with medical care during the 12 months before your delivery. Sometimes these medical sources want us to get your permission for them to release information about the health care they provided to you. We wish to emphasize to you that the information which identifies you or the medical source will never be disclosed to any person or to any agency. Here is the consent statement I am asking you to approve:

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
HYATTSVILLE, MARYLAND 20782

NATIONAL CENTER FOR
HEALTH STATISTICS

This survey has been described to the patient and she has agreed to this consent statement which indicates that you have her permission to provide us with her medical information.

CONSENT STATEMENT

"I have voluntarily participated in this national health survey and hereby give my consent for the National Center for Health Statistics to obtain supplemental medical information from health records maintained on me by medical sources. I understand that the National Center for Health Statistics will use this information only for statistical purposes in health research, and no information which identifies either me or the medical source will ever be released or published.

Do you agree with the Consent Statement which I just read?"

☐ Yes
☐ No

I hereby certify that I have read the above Consent Statement to the respondent and she agreed.

_____ _____
(Signature) (Today's Date)

Statistical Interviewer
National Center for Health Statistics

PHS-T489-5 (4/80)

GPO 870 022

OMB Clearance No.
68-S-78027

H

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

Dear Hospital Administrator:

Your assistance is needed in a national health survey being conducted by the Public Health Service with the approval of your State Health Department.

We are interested in the health care received by women who gave birth to stillborn or liveborn infants during 1980. The information collected will enable us to determine which women are getting various types of medical treatment and what kinds of problems are being encountered during pregnancy and delivery. We are also requesting information concerning how often these women were exposed to ionizing radiation, ultrasound, etc., during the year preceding their 1980 deliveries.

This survey is based on a sample of live births and stillbirths which will represent over three million deliveries occurring in the United States annually. Since the survey is based on only a small sample of deliveries, it is particularly important that we receive as much information as possible concerning all deliveries selected for this study.

You are receiving this questionnaire because your facility was listed as the place of delivery on the Certificate of Live Birth or Report of Fetal Death for the woman specified on page 1 of the questionnaire. In most cases, we have already mailed a different questionnaire to the woman named on page 1 of the questionnaire and informed her that we would be contacting you.

Please be assured that all information which you report about this woman and her delivery will be kept completely confidential. No information which identifies either the patient or your hospital will be disclosed to any person or any other agency. The data we collect will be used in statistical studies and will be published in reports on maternal and infant health.

If certain information is not available, please write "NA" rather than leave the question blank.

Please complete this questionnaire and return it within one week in the enclosed postage-free envelope to the following address:

National Center for Health Statistics/SRCB
Center Building—Prince George Center
3700 East-West Highway
Hyattsville, Maryland 20782

If you should have any questions, please feel free to contact any member of The Followback Survey Staff collect at (301) 436-6117.

Your cooperation in this study is greatly appreciated.

Sincerely yours,

Dorothy P. Rice
Director
National Center for Health Statistics

Figure VII. Cover letter for hospitals

1980 NATIONAL NATALITY SURVEY (NNS)

SPONSORSHIP

The National Natality Survey is a major research effort of the National Center for Health Statistics of The United States Public Health Service. Six other Public Health Service agencies are also participating in and financially supporting these surveys:

- The Bureau of Radiological Health (Food and Drug Administration)
- The National Institute for Occupational Safety and Health (Center for Disease Control)
- The National Institute of Child Health and Human Development (National Institutes of Health)
- The National Institute on Drug Abuse (Alcohol, Drug Abuse, and Mental Health Administration)
- The National Institute on Alcohol Abuse and Alcoholism (Alcohol, Drug Abuse, and Mental Health Administration)
- The Bureau of Community Health Services (Health Services Administration)

Their participation eliminates the need for these agencies to do their own special natality surveys, and consequently reduces respondent burden for surveys of this type.

BACKGROUND AND OBJECTIVES

This survey is necessary to provide current and comprehensive data for the analysis of natality, maternal health, and infant health information. It is based on nationwide samples of live births and fetal deaths of 28 weeks gestation or more as registered through the 52 State and independent registration systems in the U.S. Deliveries from the principal months of January 1980 through December 1980 are being studied. National Natality Surveys have been conducted in 1963, 1964-66, 1967-69, and in 1972. The 1980 National Natality Survey has been specifically designed to study the following major health care areas: x-ray, ultrasound, and nuclear medicine diagnosis and treatment during the year before delivery; occupational and educational characteristics of parents as they affect health; prenatal maternal health behavior and natality; delivery episode information; and postpartum health care.

STUDY DESIGN

The live birth component of the study is a 1-in-425 nationally representative sample of about 11,000 U.S. live births and the mothers, physicians, hospitals, and other medical sources associated with those births. Low-birth-weight infants (under 2500 grams) have been oversampled in order to conduct special studies on high-risk infants. The fetal death component of the study is a 2-in-5 nationwide sample of 8,000 fetal deaths of 28 weeks or more gestation and the mothers, physicians, hospitals, and other medical sources associated with those fetal deaths. Although these are primarily mail surveys, telephone followup will be used in the case of nonresponse.

AUTHORIZING LEGISLATION AND CONFIDENTIALITY

All information collected is confidential and will be used only to prepare statistical summaries and for health care research. No information which will identify an individual or health care provider will be released, as required by Section 308(d) of the Public Health Service Act (42 United States Code, Section 242m), as stated in Public Law 95-623, which authorizes NCHS data collection. All NCHS employees working on these surveys are required to observe certain essential rules for protection of confidentiality of records as published in *Staff Manual on Confidentiality: NCHS,* DHEW Publication No. (PHS) 78-1244, U.S. Department of Health, Education, and Welfare, Public Health Service, Hyattsville, Maryland 20782, July 1978. Furthermore, this survey fully conforms to the provisions of the *1974 Federal Privacy Act.*

In addition to numerous reports that will be published by NCHS after all data are collected, statistical data generated from this survey will be available on public use tapes—after the survey is completed, and without information that identifies study participants—to persons or organizations wishing to use them.

FREE REPORTS

To receive information about your obtaining free reports on a wide variety of health topics, write your name and address on a piece of paper with the words: "FREE NCHS HEALTH REPORTS-H," and enclose it in the envelope with your returned questionnaire.

PHS-T489-1 (4/80)

OMB Clearance No. 68-S-78027

H

Information is requested for the patient named at right concerning the care she received during the specified twelve-month time period. *(Note that her medical file may be listed under her last or middle [maiden] name.)*

The second date shown is the delivery date.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

1980 NATIONAL NATALITY SURVEY

INFORMATION RESTRICTIONS. This survey is being conducted under the authority of the Public Health Service Act (42 USC 242K). The information you provide will be used for statistical purposes only. Any releases of information or publication by the National Center for Health Statistics will in no way identify any individuals or any medical facilities participating in the survey. Your assistance is voluntary and there is no penalty for declining to participate in whole or in part. Return of this questionnaire acknowledges your agreement to the uses by NCHS in the manner outlined above.

Do you have any delivery records for this patient?

☐ **Yes** *(Please continue.)*

☐ **No** *(Go to question 46a and return this form to us.)*

PART I. THE DELIVERY EPISODE

In this part, we are interested in the condition of the woman and the medical care which she received from the time of delivery until the time of discharge.

1a. Date of admission of the woman:

month (CC 15-16) ____ day (17 18) ____ year (19 20) ____

2a. Date of discharge of the woman:

month (CC 21-22) ____ day (23-24) ____ year (25-26) ____

b. Was the woman discharged alive or dead?

27 1 ☐ alive or 2 ☐ dead

3. Date the woman was born:

month (CC 28 29) ____ day (30 31) ____ year (32 33) ____

4a. Was any drug or surgical procedure used to induce or maintain labor?

41 1 ☐ Yes

2 ☐ No → *Go to question 5*

PLEASE DO NOT WRITE IN THIS AREA — FOR OFFICE USE ONLY H

Figure VIII. Hospital questionnaire (H form)

b. What method was used? *(Check all that apply.)*

42 1 ☐ Prostaglandin
43 1 ☐ Rupture of membranes
44 1 ☐ Pitocin drip
45 1 ☐ Saline injection
46 1 ☐ Ergot
47 1 ☐ Other *(Specify)* 2 _____

5. Total duration of labor:
(If precise answer is not known, give your best estimate.)

_____ Hours labor
CC 48-49

88 ☐ Not known

6. Type of anesthetic used for delivery:
(Check all that apply.)

50 1 ☐ Inhalation *(General)*
51 1 ☐ Local *(Pudendal Block)*
52 1 ☐ Spinal
53 1 ☐ Epidural
54 1 ☐ Other *(Specify below)*
2 _____
55 1 ☐ None

7. Type of delivery:
(Check one only)

56-57 01 ☐ Normal spontaneous
02 ☐ Forceps — Low
03 ☐ Forceps — Mid
04 ☐ Forceps — High
05 ☐ Normal, vacuum extractor
06 ☐ Breech
07 ☐ First cesarean section
08 ☐ Repeat cesarean section
09 ☐ Other *(Specify)* 10 _____

8a. Which of the listed complications were noted during this pregnancy? *(Check all that apply.)*

58 1 ☐ Urinary infection
59 1 ☐ Anemia
60 1 ☐ Rubella
61 1 ☐ Obesity
62 1 ☐ Inadequate weight gain
63 1 ☐ Excessive weight gain
64 1 ☐ Abnormal position of placenta (placenta previa)
65 1 ☐ Abnormal position of cord
66 1 ☐ Hypertension
67 1 ☐ Toxemia preeclampsia
68 1 ☐ Eclampsia
69 1 ☐ Embolism
70 1 ☐ Other *(Specify)* 2 _____
71 1 ☐ None

b. Which of the listed complications were noted during this labor? *(Check all that apply.)*

72 1 ☐ Inadequate pelvis
73 1 ☐ Transverse lie
74 1 ☐ Multiple birth
75 1 ☐ Premature rupture of membranes
76 1 ☐ Unusual bleeding or hemorrhage
77 1 ☐ Prolonged labor
78 1 ☐ Anesthesia reaction
79 1 ☐ Abruptio placentae
80 1 ☐ Abnormal position of placenta (placenta previa)
81 1 ☐ Abnormal position of cord
82 1 ☐ Hypertension
83 1 ☐ Toxemia preeclampsia
84 1 ☐ Eclampsia
85 1 ☐ Embolism
86 1 ☐ Other *(Specify)* 2 _____
87 1 ☐ None

9. Which underlying medical conditions existed during this pregnancy? *(Check all that apply.)*

88 1 ☐ Varicosity
89 1 ☐ Congenital heart disease
90 1 ☐ Thyroid condition
91 1 ☐ Obesity
92 1 ☐ Anemia
93 1 ☐ Cardiovascular-renal disease
94 1 ☐ Asthma
95 1 ☐ Other chronic pulmonary
96 1 ☐ Orthopedic condition
97 1 ☐ Rh incompatibility
98 1 ☐ Diabetes, gestational only
99 1 ☐ Diabetes, juvenile
100 1 ☐ Diabetes, adult onset type
101 1 ☐ Sickle cell anemia
102 1 ☐ Alcoholism
103 1 ☐ Other drug abuse *(Specify below)*
2 _____
104 1 ☐ Other *(Specify)* 2 _____
_____
105 1 ☐ None

10. Were any complications to the woman's health noted after delivery?

106 1 ☐ Yes *(Specify)* 2 _____
3 ☐ No

11a. Was any operation performed that will prevent future pregnancies?

107 1 ☐ Yes
2 ☐ No → *Go to question 13a.*

b. What type of operation was it? *(Check one only.)*

108 1 ☐ Removal of ovaries (Ovariectomy, oophorectomy, laparosalpingectomy, etc.)
2 ☐ Removal of uterus (Hysterectomy, etc.)
3 ☐ Removal of both ovaries and uterus
4 ☐ Tubes tied (Tubal ligation, percutaneous tubal interruption, etc.)
5 ☐ Other *(Specify)* 6 _____

12. Why was the operation performed? *(Check one only.)*

109 1 ☐ Medically remedial (to correct a disease condition of the reproductive system)
2 ☐ Contraceptive (performed for the express purpose of rendering the person sterile)
3 ☐ Both remedial and contraceptive

PART II. PRENATAL AND POSTPARTUM VISITS

13a. Was a hematocrit value obtained at any prenatal visit?

110 1 ☐ Yes → *Go to question 13b.*
2 ☐ No → *Go to question 14a.*

b. Please indicate the highest hematocrit value obtained and the date on which it was recorded. *(If only one hematocrit value was obtained, record it and the date on which it was taken, then go to question 14a.)*

_____ % (Highest or only hematocrit)
CC111-114

month CC 115-116 _____ day 117-118 _____ year 119-120

c. If more than one value was obtained, please indicate the lowest hematocrit value and the date it was recorded.

_____ % (Lowest hematocrit)
CC 121-124

month CC 125-126 _____ day 127-128 _____ year 129-130

14a. Was a hemoglobin level obtained at any prenatal visit?

131 1 ☐ Yes ——→ *Go to question 14b*

2 ☐ No ——→ *Go to question 15*

b. Please indicate the highest hemoglobin level obtained and the date on which it was recorded *(If only one hemoglobin level was obtained, record it and the date on which it was taken; then go to question 15.)*

_____ (Highest or only hemoglobin level)
(grams/100cc)
CC 132 135

month	day	year
CC 136 137	138 139	140 141

c. If more than one hemoglobin level was obtained, please indicate the lowest level and the date it was recorded.

_____ (Lowest hemoglobin)
(grams/100cc)
CC 142 145

month	day	year
CC 146 147	148 149	150 151

15. Was amniocentesis performed during this pregnancy?

152 1 ☐ Yes

2 ☐ No

16a. During her recent pregnancy, was the woman advised to: *(Check all that apply.)*

153 1 ☐ Use diuretics

154 1 ☐ Restrict salt intake

155 1 ☐ Use a vitamin-mineral supplement

156 1 ☐ Use a calorically-restricted diet

b. If calorically-restricted diet was advised, how many calories per day? *(If NO diet advised, go to question 17.)*

_____ Calories per day
CC157 160

or

8888 ☐ Diet advised but no number of calories specified

17. In pounds, what was the woman's:

a. Pre-pregnant weight _____ lbs. (CC 161-163)

b. Weight at first prenatal visit _____ lbs. (CC 164 166)

c. Weight at last prenatal visit _____ lbs. (CC 167 169)

d. Weight at time of delivery _____ lbs. (CC 170 172)

Write "NA" if any weight is not known.

18. *Instructions: From your records for this patient, please list the dates of all her prenatal care visits in question 18a and her first postpartum visit in question 18b. For each visit listed, please record 1) the lowest systolic/diastolic blood pressure reading obtained, and 2) the results of the urine protein test conducted at that visit. Please circle "NA" to indicate that a given procedure was not done on a given date. Please list the earliest prenatal visit first.*

If you did not provide this patient with any prenatal care, please check here.

178 1 ☐ **NO PRENATAL CARE PROVIDED** ——→ *Go to question 18b*

18a. All prenatal care visits

Dates of visits	Lowest blood pressure reading on that date (systolic/diastolic)	Results of test for urine protein *(circle one)*
mo. day yr. (CC 179 184)	/ (CC 185 190)	or NA + – NA (CC 191)
mo. day yr (CC 192 197)	/ (CC 198 203)	or NA + – NA (CC 204)
mo day yr. (CC 205 210)	/ (CC 211 216)	or NA + – NA (CC 217)
mo. day yr (CC 218 223)	/ (CC 224 229)	or NA + – NA (CC 230)
mo day yr. (CC 231 236)	/ (CC 237 242)	or NA + – NA (CC 243)
mo. day yr. (CC 244 249)	/ (CC 250 255)	or NA + – NA (CC 256)
mo. day yr. (CC 257 262)	/ (CC 263 268)	or NA + – NA (CC 269)
mo. day yr. (CC 270 275)	/ (CC 276 281)	or NA + – NA (CC 282)
mo. day yr (CC 283 288)	/ (CC 289 294)	or NA + – NA (CC 295)
mo day yr. (CC 296 301)	/ (CC 302 307)	or NA + – NA (CC 308)
mo. day yr. (CC 309 314)	/ (CC 315 320)	or NA + – NA (CC 321)
mo day yr. (CC 322 327)	/ (CC 328 333)	or NA + – NA (CC 334)
mo. day yr. (CC 335 340)	/ (CC 341 346)	or NA + – NA (CC 347)
mo. day yr. (CC 348 353)	/ (CC 354 359)	or NA + – NA (CC 360)
mo. day yr. (CC 361 366)	/ (CC 367 372)	or NA + – NA (CC 373)
mo. day yr. (CC 374 379)	/ (CC 380 385)	or NA + – NA (CC 386)
mo. day yr. (CC 387 392)	/ (CC 393 398)	or NA + – NA (CC 399)
mo. day yr. (CC 400 405)	/ (CC 406-411)	or NA + – NA (CC 412)
mo. day yr. (CC 413 418)	/ (CC 419-424)	or NA + – NA (CC 425)
mo. day yr. (CC 426 431)	/ (CC 432 437)	or NA + – NA (CC 438)

If more space is needed, please continue on a separate sheet of paper.

b. First postpartum visit

mo.	day (CC 439 444)	yr.	/ (CC 445 450)	or NA + – NA (CC 451)

PART III. LIVEBORN AND STILLBORN INFANTS

19a. Please estimate the gestational age of the liveborn or stillborn infant:

_____ weeks or 88 ☐ Not known
CC 464 465

If "Not known" box is checked, go to question 20.

b. Was this estimate based on date of last menstrual period or examination of the infant?

466 1 ☐ Last menstrual period
2 ☐ Examination

20. Were any unusual resuscitative efforts used on the infant excluding routine use of oxygen?

468 1 ☐ Yes
2 ☐ No

21. Please indicate delivery room weight for liveborn and stillborn infants.

_____ . _____ lbs. _____ ounces
CC 469 470 471 473

or _____ grams
CC 469-473

22. What was the length of the infant at delivery?

_____ inches
CC 479 481

or

_____ centimeters
CC 479-481

23. Did the liveborn or stillborn infant have any of the characteristics listed? *(Check all that apply.)*

482 1 ☐ Joint anomalies
483 1 ☐ Abnormal palmar creases
484 1 ☐ Low placental weight
485 1 ☐ Microcephaly
486 1 ☐ Midfacial hypoplasia
487 1 ☐ Epicanthal folds
488 1 ☐ Short palpebral fissures
489 1 ☐ Genital anomalies
490 1 ☐ Elongated philtrum
491 1 ☐ Cardiac murmurs
492 1 ☐ Thin upper lip
493 1 ☐ Microphthalmia
494 1 ☐ Ocular ptosis
495 1 ☐ Anteverted nostrils
496 1 ☐ None of the above

24. Were any other congenital malformations or anomalies noted before discharge?

497 1 ☐ Yes *(Specify)* 2 _____
3 ☐ No

25a. Was electronic fetal monitoring (EFM) used in the management of this pregnancy?

498 1 ☐ Yes
2 ☐ No → *Go to question 26*

25b. Which of the following types of EFM was performed? *(Check all that apply.)*

499 1 ☐ Doppler ultrasound (external)
500 1 ☐ Scalp electrode (internal)
501 1 ☐ Other *(Specify)* 2 _____

26. Was fetal scalp blood sampling performed during this labor or delivery?

502 1 ☐ Yes
2 ☐ No

27a. Was the infant discharged alive?

503 1 ☐ Yes → *Go to question 27b.*
2 ☐ No, infant born alive but died before discharge → *Go to question 27c*
3 ☐ No, infant was stillborn → *Go to question 27d.*

b. What was date of discharge?

__ __ month CC 504 505 | __ __ day 506 507 | __ __ year 508 509

Go to question 28a.

c. What was date of death?

__ __ month CC 510 511 | __ __ day 512 513 | __ __ year 514 515

d. Was a necropsy (autopsy) performed?

516 1 ☐ Yes
2 ☐ No

e. What was the cause of death?

cause _____
CC 517 546

_____

PART IV. LIVEBORN INFANTS

Instructions: Questions 28-35 apply to liveborn infants only. If infant was stillborn, go to PART V.

28a. What was the APGAR score at one minute?

_____ one minute
CC 547 548

or

88 ☐ Not done

b. What was the APGAR score at five minutes?

_____ five minutes
CC 549 550

or

88 ☐ Not done

29. How old was the infant when first examined outside the delivery room?

_____ hours or _____ day
CC 553 554

30. Were any birth injuries noted before discharge?
555 1 ☐ Yes *(Specify)* 2 _____
3 ☐ No

31. Did the infant have respiratory distress syndrome?
556 1 ☐ Yes
2 ☐ No

32. Was the infant jaundiced before discharge?
557 1 ☐ Yes
2 ☐ No

33. Was an exchange transfusion done?
558 1 ☐ Yes
2 ☐ No

34. Was phototherapy for neonatal jaundice used?
559 1 ☐ Yes
2 ☐ No

35. Were any other illnesses noted before discharge?
560 1 ☐ Yes
2 ☐ No

PART V. X-RAY, ULTRASOUND, NUCLEAR MEDICINE, ETC.

SECTION A. Examinations or treatments during the one-year period prior to delivery.

36. Did the woman receive from you or anyone at your facility any x-ray, ultrasound, nuclear medicine, short wave (radio-frequency), or microwave examination or treatment at any time during the one-year period specified on page one including procedures performed at the time of delivery? *(Also include any procedures done elsewhere at your prescription or by another medical or dental facility.)*
561 1 ☐ Yes 2 ☐ No → *Go to question 46a*

37. Please indicate whether the procedures listed were used for examination, treatment, or not used. *(Check all that apply.)*

a. X-ray	562 1 ☐ Exam	563 1 ☐ Treatment	564 1 ☐ Not Used
b. Ultrasound	565 1 ☐ Exam	566 1 ☐ Treatment	567 1 ☐ Not Used
c. Nuclear Medicine	568 1 ☐ Exam	569 1 ☐ Treatment	570 1 ☐ Not Used
d. Short Wave (Radio-frequency)	571 1 ☐ Exam	572 1 ☐ Treatment	573 1 ☐ Not Used
e. Microwave	574 1 ☐ Exam	575 1 ☐ Treatment	576 1 ☐ Not Used

If only short-wave or microwave was checked in question 37, go to SECTION E; otherwise, continue.

Instructions for SECTIONS B, C, and D

- *Complete a separate block for EACH x-ray, ultrasound, or nuclear medicine procedure performed during the ONE YEAR PERIOD specified on page 1.*
- *IF the same type of procedure was performed more than once, please report each separately.*
- *IF more than one procedure was performed on the same date, report each separately.*
- *In reporting NUMBER OF FILMS, include those which may have been technically unsatisfactory.*
- *If additional space is needed, continue on a separate sheet of paper.*

SECTION B. Medical X-Rays ***(on next page)***

Complete a separate block for EACH x-ray examination or treatment performed on this patient during the one-year period preceding her delivery.

If NO x-ray exam or treatment was performed, check box and go to SECTION C.

577 1 ☐ **NO X-RAYS**

38a. Date x-ray procedure was performed: month CC578 579 / day 580 581 / year 582 583

b. Indications for x-ray: *(For example, fetal age or position determination, trauma, etc.)* CC584 585

c. Type of procedure: *(For example, routine chest x-ray, pelvimetry, pyelogram, etc.)* CC586 588

d. Primary area of body examined: *(For example, chest, upper abdomen, shoulder, etc.)* CC 589 590

e. Was this x-ray: *(Check one only.)*
591 1 ☐ Radiographic
2 ☐ Fluoroscopic
3 ☐ Photofluorographic
4 ☐ Therapeutic

f. Number of films: *(Include spot films and those technically unsatisfactory.)* _____ Films CC592 593

g. Place where x-ray was performed:
594 1 ☐ At this location
(or)

Name of physician, hospital or clinic

Address

City State Zip Code

39a. Date x-ray procedure was performed: month CC595 596 / day 597 598 / year 599 600

b. Indications for x-ray: *(For example, fetal age or position determination, trauma, etc.)* CC601 602

c. Type of procedure: *(For example, routine chest x-ray, pelvimetry, pyelogram, etc.)* CC603 605

d. Primary area of body examined: *(For example, chest, upper abdomen, shoulder, etc.)* CC606 607

e. Was this x-ray: *(Check one only.)*
608 1 ☐ Radiographic
2 ☐ Fluoroscopic
3 ☐ Photofluorographic
4 ☐ Therapeutic

f. Number of films: *(Include spot films and those technically unsatisfactory.)* _____ Films CC609 610

g. Place where x-ray was performed:
611 1 ☐ At this location
(or)

Name of physician, hospital or clinic

Address

City State Zip Code

Section C. Ultrasound

Complete a separate block for EACH ultrasound examination or treatment performed on this patient during the one-year period preceding her delivery.

If NO ultrasound exam or treatment, check box and go to SECTION D.

629 1 ☐ **NO ULTRASOUND**

40a. Date ultrasound procedure was performed: month CC630 631 / day 632 633 / year 634 635

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC636 637

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC638 639

d. Ultrasound was used for: 640 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 641 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed:
642 1 ☐ At this location
(or)

Name of physician, hospital or clinic

Address

City State Zip Code

41a. Date ultrasound procedure was performed: month CC643 644 day 645 646 year 647 648

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC649 650

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC651 652

d. Ultrasound was used for: 653 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 654 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 655 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

42a. Date ultrasound procedure was performed: month CC656 657 day 658 659 year 660 661

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC662 663

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC664 665

d. Ultrasound was used for: 666 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 667 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 668 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

43a. Date ultrasound procedure was performed: month CC669 670 day 671 672 year 673 674

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC675 676

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC677 678

d. Ultrasound was used for: 679 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 680 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 681 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

44a. Date ultrasound procedure was performed: month CC682 683 day 684 685 year 686 687

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC688 689

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC690 691

d. Ultrasound was used for: 692 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 693 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 694 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

SECTION D. Nuclear Medicine

Complete a separate block for EACH nuclear medicine examination or treatment performed on this patient during the one-year period preceding her delivery.

If NO nuclear medicine exam or treatment was performed, check box and go to SECTION E.

695 1 ☐ **NO NUCLEAR MEDICINE**

45a. Date procedure was performed: ___ ___ month CC696-697 ___ ___ day 698-699 ___ ___ year 700 701

b. Indications for nuclear medicine: *(For example, tumor localization, determination of renal function, etc.)* _____ CC702 703

c. Type of procedure: *(For example, thyroid uptake, brain scan, placental scan, etc.)* _____ CC704 705

d. Was this nuclear medicine procedure used for: 706 1 ☐ Examination or 2 ☐ Treatment

e. Amount of Radionuclide used: _____ mCi CC707-712

f. Type of Radionuclide used: *(Specify 131_I, $99M_{Tc}$, etc.)* _____ CC713-714

g. Place where nuclear medicine procedure was performed: 715 1 ☐ At this location (or)

_____
Name of physician, hospital or clinic

_____
Address

_____
City State Zip Code

SECTION E. Person Completing This Form.

46a. Name *(Please print)*: _____

b. Address *(If different from address on front of this questionnaire)*:

_____
Street

_____ _____ _____
City State Zip Code

c. Telephone Number: _____
(Area code) Number

47. Date this form completed: ___ ___ month CC716-717 ___ ___ day 718 719 ___ ___ year 720 721

48. If your facility has no delivery records for this patient, can you tell us where she obtained most of her medical care?

_____
Name of physician, hospital or clinic

_____
Address

_____
City State Zip Code

THANK YOU FOR YOUR COOPERATION

OMB Clearance No.
68-S-78027

P

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

Dear Doctor:

Your assistance is needed in a national health survey being conducted by the Public Health Service with the approval of your State Health Department.

We are seeking information on the extent to which medical care is utilized by women during pregnancy and administered to their infants immediately following delivery. This includes questions pertaining to the mother's exposure to ionizing radiation and ultrasound during the year preceding her delivery. The source of information is a sample of women who represent over three million women who deliver stillborn or liveborn infants annually. In most cases, women whose deliveries are included in the survey were sent a questionnaire concerning the prenatal health care they received in connection with their 1980 deliveries.

You are receiving this questionnaire because you were listed as the attendant at delivery on the Certificate of Live Birth or the Report of Fetal Death for the woman listed on page 1 of the questionnaire. Or, that attendant identified you as having the woman's prenatal care records.

Please be assured that all information that you report will be kept completely confidential. No information which identifies either you or the patient will be disclosed to any person or any other agency. The data we collect will be used in statistical studies and will be published in reports on maternal and infant health.

If certain information is not available please write "NA" rather than leave the question blank. Since this survey is based on a small sample of women, it is particularly important that we obtain as much information as possible on all women in the study.

Would you or someone in your office please complete the questionnaire and return it in the postage-free envelope within one week to the following address:

National Center for Health Statistics/SRCB
Center Building—Prince George Center
3700 East-West Highway
Hyattsville, Maryland 20782

If you should have any questions, please feel free to contact any member of The Followback Survey Staff collect at (301) 436-6117.

Your cooperation in the study is greatly appreciated.

Sincerely yours,

Dorothy P. Rice
Director
National Center for Health Statistics

P

Figure IX. Cover letter for attendants at delivery

1980 NATIONAL NATALITY SURVEY (NNS)

SPONSORSHIP

The National Natality Survey is a major research effort of the National Center for Health Statistics of The United States Public Health Service. Six other Public Health Service agencies are also participating in and financially supporting these surveys:

- The Bureau of Radiological Health (Food and Drug Administration)
- The National Institute for Occupational Safety and Health (Center for Disease Control)
- The National Institute of Child Health and Human Development (National Institutes of Health)
- The National Institute on Drug Abuse (Alcohol, Drug Abuse, and Mental Health Administration)
- The National Institute on Alcohol Abuse and Alcoholism (Alcohol, Drug Abuse, and Mental Health Administration)
- The Bureau of Community Health Services (Health Services Administration)

Their participation eliminates the need for these agencies to do their own special natality surveys, and consequently reduces respondent burden for surveys of this type.

BACKGROUND AND OBJECTIVES

This survey is necessary to provide current and comprehensive data for the analysis of natality, maternal health, and infant health information. It is based on nationwide samples of live births and fetal deaths of 28 weeks gestation or more as registered through the 52 State and independent registration systems in the U.S. Deliveries from the principal months of January 1980 through December 1980 are being studied. National Natality Surveys have been conducted in 1963, 1964-66, 1967-69, and in 1972. The 1980 National Natality Survey has been specifically designed to study the following major health care areas: x-ray, ultrasound, and nuclear medicine diagnosis and treatment during the year before delivery; occupational and educational characteristics of parents as they affect health; prenatal maternal health behavior and natality; delivery episode information; and postpartum health care.

STUDY DESIGN

The live birth component of the study is a 1-in-425 nationally representative sample of about 11,000 U.S. live births and the mothers, physicians, hospitals, and other medical sources associated with those births. Low-birth-weight infants (under 2500 grams) have been oversampled in order to conduct special studies on high-risk infants. The fetal death component of the study is a 2-in-5 nationwide sample of 8,000 fetal deaths of 28 weeks or more gestation and the mothers, physicians, hospitals, and other medical sources associated with those fetal deaths. Although these are primarily mail surveys, telephone followup will be used in the case of nonresponse.

AUTHORIZING LEGISLATION AND CONFIDENTIALITY

All information collected is confidential and will be used only to prepare statistical summaries and for health care research. No information which will identify an individual or health care provider will be released, as required by Section 308(d) of the Public Health Service Act (42 United States Code, Section 242m), as stated in Public Law 95-623, which authorizes NCHS data collection. All NCHS employees working on these surveys are required to observe certain essential rules for protection of confidentiality of records as published in *Staff Manual on Confidentiality: NCHS*, DHEW Publication No. (PHS) 78-1244, U.S. Department of Health, Education, and Welfare, Public Health Service, Hyattsville, Maryland 20782, July 1978. Furthermore, this survey fully conforms to the provisions of the *1974 Federal Privacy Act.*

In addition to numerous reports that will be published by NCHS after all data are collected, statistical data generated from this survey will be available on public use tapes—after the survey is completed, and without information that identifies study participants—to persons or organizations wishing to use them.

FREE REPORTS

To receive information about your obtaining free reports on a wide variety of health topics, write your name and address on a piece of paper with the words: "FREE NCHS HEALTH REPORTS-P," and enclose it in the envelope with your returned questionnaire.

PHS-T489-2 (4/80)

OMB Clearance No. 68-S-78027

P

Information is requested for the patient named at right concerning the care she received during the specified twelve-month time period. *(Note that her medical file may be listed under her last or middle [maiden] name.)*

The second date shown is the delivery date.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

1980 NATIONAL NATALITY SURVEY

INFORMATION RESTRICTIONS. This survey is being conducted under the authority of the Public Health Service Act (42 USC 242K). The information you provide will be used for statistical purposes only. Any releases of information or publication by the National Center for Health Statistics will in no way identify any individuals or any medical facilities participating in the survey. Your assistance is voluntary and there is no penalty for declining to participate in whole or in part. Return of this questionnaire acknowledges your agreement to the uses by NCHS in the manner outlined above.

Do you have any prenatal records for this patient?

☐ **Yes** *(Please continue.)*

☐ **No** *(Go to question 17a and return this form to us.)*

PART I. PRENATAL AND POSTPARTUM VISITS

In this part, we are interested in some of the medical characteristics of the woman before and after delivery.

1a. Was a hematocrit value obtained at any prenatal visit?

1101 ☐ **Yes** → *Go to question 1b.*

2 ☐ **No** → *Go to question 2a.*

b. Please indicate the highest hematocrit value obtained and the date on which it was recorded. *(If only one hematocrit value was obtained, record it and the date on which it was taken, then go to question 2a.)*

_____ **% (Highest or only hematocrit)**
CC111-114

month	day	year
CC115-116	117-118	119-120

1c. If more than one value was obtained, please indicate the lowest hematocrit value and the date it was recorded.

_____ **% (Lowest hematocrit)**
CC121-124

month	day	year
CC125-126	127-128	129-130

PLEASE DO NOT WRITE IN THIS AREA — FOR OFFICE USE ONLY P

Figure X. Attendant-at-delivery questionnaire (P form)

2a. Was a hemoglobin level obtained at any prenatal visit?

131 1 ☐ Yes ——→ *Go to question 2b.*
:2 ☐ No ——→ *Go to question 3.*

b. Please indicate the highest hemoglobin level obtained and the date on which it was recorded *(If only one hemoglobin level was obtained, record it and the date on which it was taken; then to to question 3.)*

_____ (Highest or only hemoglobin level)
(grams/100cc)
CC132-135

month CC136-137 _____ day 138-139 _____ year 140-141

c. If more than one hemoglobin level was obtained, please indicate the lowest level and the date it was recorded.

_____ (Lowest hemoglobin)
(grams/100cc)
CC142-145

month CC146-147 _____ day 148-149 _____ year 150-151

3. Was amniocentesis performed during this pregnancy?

152.1 ☐ Yes
:2 ☐ No

4a. During her recent pregnancy, was the woman advised to: *(Check all that apply.)*

153:1 ☐ Use diuretics
154:1 ☐ Restrict salt intake
155:1 ☐ Use a vitamin-mineral supplement
156:1 ☐ Use a calorically-restricted diet

b. If calorically-restricted diet was advised, how many calories per day? *(If NO diet advised, go to question 5.)*

_____ Calories per day
CC157-160
or
.8888 ☐ Diet advised but no number of calories specified

5. In pounds, what was the woman's:

a. Pre-pregnant weight _____ lbs. CC161-163
b. Weight at first prenatal visit _____ lbs. CC164-166
c. Weight at last prenatal visit _____ lbs. CC167-169
d. Weight at time of delivery _____ lbs. CC 170-172

Write "NA" if any weight is not known.

6. *Instructions: From your records for this patient, please list the dates of all her prenatal care visits in question 6a and her first postpartum visit in question 6b. For each visit listed, please record 1) the lowest systolic/diastolic blood pressure reading obtained, and 2) the results of the urine protein test conducted at that visit. Please circle "NA" to indicate that a given procedure was not done on a given date. Please list the earliest prenatal visit first.*

If you did not provide this patient with any prenatal care, please check here.

178 1 ☐ **NO PRENATAL CARE PROVIDED** ——→ *Go to question 6b*

6a. All prenatal care visits

Dates of visits	Lowest blood pressure reading on that date (systolic/diastolic)	Results of test for urine protein (circle one)
mo. ___ day ___ yr. ___ CC 179-184	___/___ CC 185-190 or NA	+ — NA CC 191
mo. ___ day ___ yr. ___ CC 192-197	___/___ CC 198 203 or NA	+ — NA CC 204
mo. ___ day ___ yr. ___ CC 205-210	___/___ CC 211-216 or NA	+ — NA CC 217
mo. ___ day ___ yr. ___ CC 218-223	___/___ CC 224-229 or NA	+ — NA CC 230
mo. ___ day ___ yr. ___ CC 231-236	___/___ CC 237-242 or NA	+ — NA CC 243
mo. ___ day ___ yr. ___ CC 244-249	___/___ CC 250-255 or NA	+ — NA CC 256
mo. ___ day ___ yr. ___ CC 257 262	___/___ CC 263-268 or NA	+ — NA CC 269
mo. ___ day ___ yr. ___ CC 270-275	___/___ CC 276-281 or NA	+ — NA CC 282
mo. ___ day ___ yr. ___ CC 283-288	___/___ CC 289-294 or NA	+ — NA CC 295
mo. ___ day ___ yr. ___ CC 296-301	___/___ CC 302-307 or NA	+ — NA CC 308
mo. ___ day ___ yr. ___ CC 309-314	___/___ CC 315-320 or NA	+ — NA CC 321
mo. ___ day ___ yr. ___ CC 322-327	___/___ CC 328-333 or NA	+ — NA CC 334
mo. ___ day ___ yr. ___ CC 335-340	___/___ CC 341-346 or NA	+ — NA CC 347
mo. ___ day ___ yr. ___ CC 348-353	___/___ CC 354-359 or NA	+ — NA CC 360
mo. ___ day ___ yr. ___ CC 361-366	___/___ CC 367-372 or NA	+ — NA CC 373
mo. ___ day ___ yr. ___ CC 374-379	___/___ CC 380-385 or NA	+ — NA CC 386
mo. ___ day ___ yr. ___ CC 387-392	___/___ CC 393-398 or NA	+ — NA CC 399
mo. ___ day ___ yr. ___ CC 400-405	___/___ CC 406-411 or NA	+ — NA CC 412
mo. ___ day ___ yr. ___ CC 413-418	___/___ CC 419-424 or NA	+ — NA CC 425
mo. ___ day ___ yr. ___ CC 426-431	___/___ CC 432-437 or NA	+ — NA CC 438

If more space is needed, please continue on a separate sheet of paper.

b. First postpartum visit

mo. ___ day ___ yr. ___ CC 439-444 ___/___ CC 445-450 or NA + — NA CC 451

PART II. X-RAY, ULTRASOUND, NUCLEAR MEDICINE, ETC.

SECTION A. Examinations or treatments during the one-year period prior to delivery.

7. Did the woman receive from you or anyone at your facility any x-ray, ultrasound, nuclear medicine, short wave (radio-frequency), or microwave examination or treatment at any time during the one-year period specified on page one including procedures performed at the time of delivery? *(Also include any procedures done elsewhere at your prescription or by another medical or dental facility.)*

561 1 ☐ Yes 2 ☐ No ——→ *Go to question 17a.*

8. Please indicate whether the procedures listed were used for examination, treatment, or not used. *(Check all that apply.)*

a. X-ray	562 1	☐	Exam	563 1	☐	Treatment	564 1 ☐ Not Used
b. Ultrasound	565 1	☐	Exam	566 1	☐	Treatment	567 1 ☐ Not Used
c. Nuclear Medicine	568 1	☐	Exam	569 1	☐	Treatment	570 1 ☐ Not Used
d. Short Wave (Radio-frequency)	571 1	☐	Exam	572 1	☐	Treatment	573 1 ☐ Not Used
e. Microwave	574 1	☐	Exam	575 1	☐	Treatment	576 1 ☐ Not Used

If only short-wave or microwave was checked in question 8, go to SECTION E; otherwise, continue.

Instructions for SECTIONS B, C, and D

- *Complete a separate block for EACH x-ray, ultrasound, or nuclear medicine procedure performed during the ONE-YEAR PERIOD specified on page 1.*
- *IF the same type of procedure was performed more than once, please report each separately.*
- *IF more than one procedure was performed on the same date, report each separately.*
- *In reporting NUMBER OF FILMS, include those which may have been technically unsatisfactory.*
- *If additional space is needed, continue on a separate sheet of paper.*

SECTION B. Medical X-Rays

Complete a separate block for EACH x-ray examination or treatment performed on this patient during the one-year period preceding her delivery.

If NO x-ray exam or treatment was performed, check box and go to SECTION C.

577 1 ☐ NO X-RAYS

9a. Date x-ray procedure was performed: ___ ___ month CC578-579 ___ ___ day 580-581 ___ ___ year 582-583

b. Indications for x-ray: *(For example, fetal age or position determination, trauma, etc.)* _____ CC584-585

c. Type of procedure: *(For example, routine chest x-ray, pelvimetry, pyelogram, etc.)* _____ CC586-588

d. Primary area of body examined: *(For example, chest, upper abdomen, shoulder, etc.)* _____ CC589-590

e. Was this x-ray: *(Check one only.)* 591 1 ☐ Radiographic 3 ☐ Photofluorographic 2 ☐ Fluoroscopic 4 ☐ Therapeutic

f. Number of films: *(Include spot films and those technically unsatisfactory.)* _____ CC592-593 Films

g. Place where x-ray was performed: 594 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

10a. Date x-ray procedure was performed: month CC595-596 / day 597-598 / year 599-600

b. Indications for x-ray: *(For example, fetal age or position determination, trauma, etc.)* CC601-602

c. Type of procedure: *(For example, routine chest x-ray, pelvimetry, pyelogram, etc.)* CC603-605

d. Primary area of body examined: *(For example, chest, upper abdomen, shoulder, etc.)* CC606-607

e. Was this x-ray: *(Check one only.)*
608:1 ☐ Radiographic
:2 ☐ Fluoroscopic
:3 ☐ Photofluorographic
4 ☐ Therapeutic

f. Number of films: *(Include spot films and those technically unsatisfactory.)* _____ Films CC609-610

g. Place where x-ray was performed:
611:1 ☐ At this location
(or)

Name of physician, hospital or clinic

Address

City State Zip Code

Section C. Ultrasound

Complete a separate block for EACH ultrasound examination or treatment performed on this patient during the one-year period preceding her delivery.

If NO ultrasound exam or treatment was performed, check box and go to SECTION D.

629.1 ☐ **NO ULTRASOUND**

11a. Date ultrasound procedure was performed: month CC630-631 / day 632-633 / year 634-635

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC636-637

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC638-639

d. Ultrasound was used for: 640:1 ☐ Examination or :2 ☐ Treatment

e. Ultrasound procedure was: 641:1 ☐ Doppler or :2 ☐ Pulse Echo

f. Place where ultrasound was performed: 642:1 ☐ At this location
(or)

Name of physician, hospital or clinic

Address

City State Zip Code

12a. Date ultrasound procedure was performed: month CC643-644 / day 645-646 / year 647-648

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC649-650

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC651-652

d. Ultrasound was used for: 653:1 ☐ Examination or :2 ☐ Treatment

e. Ultrasound procedure was: 654:1 ☐ Doppler or :2 ☐ Pulse Echo

f. Place where ultrasound was performed: 655:1 ☐ At this location
(or)

Name of physician, hospital or clinic

Address

City State Zip Code

13a. Date ultrasound procedure was performed: month CC656-657 / day 658 659 / year 660-661

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC662-663

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC664-665

d. Ultrasound was used for: 666 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 667 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 668 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

14a. Date ultrasound procedure was performed: month CC669-670 / day 671-672 / year 673-674

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC675-676

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC677-678

d. Ultrasound was used for: 679 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 680 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 681 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

15a. Date ultrasound procedure was performed: month CC682-683 / day 684-685 / year 686-687

b. Indications for ultrasound: *(For example, pregnancy diagnosis, fetal distress detection, labor monitor, etc.)* CC688-689

c. Type of procedure: *(For example, fetal age scan, echocardiography, amniocentesis guidance, echogram for pregnancy scan, etc.)* CC690-691

d. Ultrasound was used for: 692 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 693 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 694 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

SECTION D. Nuclear Medicine

Complete a separate block for EACH nuclear medicine examination or treatment performed on this patient during the one-year period preceding her delivery.

If NO nuclear medicine exam or treatment was performed, check box and go to SECTION E.

695 1 ☐ **NO NUCLEAR MEDICINE**

16a. Date procedure was performed: ___ ___ month CC696 697 ___ ___ day 698-699 ___ ___ year 700-701

b. Indications for nuclear medicine: *(For example, tumor localization, determination of renal function, etc.)* _____ CC702-703

c. Type of procedure: *(For example, thyroid uptake, brain scan, placental scan, etc.)* _____ CC704-705

d. Was this nuclear medicine procedure used for: 706 1 ☐ Examination or 2 ☐ Treatment

e. Amount of Radionuclide used: _____ mCi CC707-712

f. Type of Radionuclide used: *(Specify 13_I, $99M_{Tc}$, etc.)* _____ CC713-714

g. Place where nuclear medicine procedure was performed: 715 1 ☐ At this location (or)

_____
Name of physician, hospital or clinic

_____
Address

_____
City State Zip Code

SECTION E. Person Completing This Form.

17a. Name *(Please print)*: _____

b. Address *(If different from address on front of this questionnaire)*:

_____
Street

_____ _____ ___ ___
City State Zip Code

c. Telephone Number: _____ (Area code) _____ Number

18. Date this form completed: ___ ___ month CC716-717 ___ ___ day 718-719 ___ ___ year 720-721

19. If your facility has no prenatal records for this patient, can you tell us where she obtained most of her prenatal care?

_____
Name of physician, hospital or clinic

_____
Address

_____ _____ _____
City State Zip Code

THANK YOU FOR YOUR COOPERATION

OMB Clearance No.
68-S-78027

X

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

Dear Doctor:

Your assistance is needed in a national health survey being conducted by the Public Health Service with the approval of your State Health Department.

The primary purpose of this survey is to determine the proportion of women in the childbearing ages who undergo x-ray, ultrasound, or nuclear medicine procedures. Sources of information include physicians, hospitals, and the women patients themselves. According to one of these sources, the patient named on the questionnaire label was seen by you during the one-year period specified on the label.

Please be assured that all information which you report about this woman will be kept completely confidential. No information which identifies either the patient or you will be disclosed to any person or any other agency. The data we collect will be used in statistical studies and will be published in reports on the characteristics of women receiving x-ray, ultrasound, and nuclear medicine examination and treatment.

Completion of this form is designed to require only a minimum amount of time. If certain information is not available, please write "NA" rather than leave the question blank. Will you or someone in your facility please examine your records, fill out the enclosed form, and return it in the enclosed postage-free envelope within one week to the following address:

National Center for Health Statistics/SRCB
Center Building--Prince George Center
3700 East-West Highway
Hyattsville, Maryland 20782

If you should have any questions, please feel free to contact any member of The Followback Survey Staff collect at (301) 436-6117.

Your cooperation in this study is greatly appreciated.

Sincerely yours,

Dorothy P. Rice
Director
National Center for Health Statistics

X

Figure XI. Cover letter for secondary radiation sources

1980 NATIONAL RADIATION SURVEY

SPONSORSHIP

The National Radiation Survey is a major research effort of the National Center for Health Statistics of The United States Public Health Service. Six other Public Health Service agencies are also participating in and financially supporting this survey:

- The Bureau of Radiological Health (Food and Drug Administration)
- The National Institute for Occupational Safety and Health (Center for Disease Control)
- The National Institute of Child Health and Human Development (National Institutes of Health)
- The National Institute on Drug Abuse (Alcohol, Drug Abuse, and Mental Health Administration)
- The National Institute on Alcohol Abuse and Alcoholism (Alcohol, Drug Abuse, and Mental Health Administration)
- The Bureau of Community Health Services (Health Services Administration)

Their participation eliminates the need for these agencies to do their own special radiation surveys, and consequently reduces respondent burden for surveys of this type.

BACKGROUND AND OBJECTIVES

This survey is necessary to provide current data for the comprehensive analysis of the health of women in the childbearing ages who undergo x-ray, ultrasound, and/or nuclear medicine diagnosis or treatment. Sources of information include physicians, hospitals, and the women patients themselves.

STUDY DESIGN

You were contacted because you were identified on a questionnaire returned by the patient, her physician, or her hospital as having provided her with medical care during the one-year period specified on the questionnaire label.

Approximately 19,000 women are being studied nationwide to assess the type and extent of medical treatment they received during 1979 and 1980. Although primarily a mail survey, telephone followup will be used in the case of nonresponse.

CONFIDENTIALITY AND AVAILABILITY OF REPORTS AND DATA

All information collected is confidential and will be used only to prepare statistical summaries and for health care research. No information which will identify an individual or health care provider will be released, as required by Section 308(d) of the Public Health Service Act (42 United States Code, Section 242m), as stated in Public Law 95-623, which authorizes NCHS data collection. All NCHS employees working on this survey are required to observe certain essential rules for protection of confidentiality of records as published in *Staff Manual on Confidentiality: NCHS*, DHEW Publication No. (PHS) 78-1244, U.S. Department of Health, Education, and Welfare, Public Health Service, Hyattsville, Maryland 20782, July 1978. Furthermore, this survey fully conforms to the provisions of the *1974 Federal Privacy Act*.

In addition to numerous reports that will be published by NCHS after all data are collected, statistical data generated from this survey will be available on public use tapes—after the survey is completed, and without information that identifies study participants—to persons or organizations wishing to use them.

FREE REPORTS

To receive information about your obtaining free reports on a wide variety of health topics, write your name and address on a piece of paper with the words: "FREE NCHS HEALTH REPORTS-X," and enclose it in the envelope with your returned questionnaire.

PHS-T489-3 (4/80) OMB Clearance No. 68-S-78027

X

Information is requested for the patient named at right concerning the care she received during the specified twelve-month time period. *(Note that her medical file may be listed under her last or middle [maiden] name.)*

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

1980 NATIONAL RADIATION SURVEY

INFORMATION RESTRICTIONS This survey is being conducted under the authority of the Public Health Service Act (42 USC 242k). The information you provide will be used for statistical purposes only. Any releases of information or publication by the National Center for Health Statistics will in no way identify any individuals or any medical facilities participating in the survey. Your assistance is voluntary and there is no penalty for declining to participate in whole or in part. Return of this questionnaire acknowledges your agreement to the uses by NCHS in the manner outlined above.

SECTION A. Examinations or treatments during the one-year period specified on the label above.

1. **Did the woman receive from you or anyone at your facility any x-ray, ultrasound, nuclear medicine, short wave (radio-frequency), or microwave examination or treatment at any time during the one-year period specified on the label above?** *(also include any procedures done elsewhere at your prescription or by another medical or dental facility.)*

15 1 ☐ Yes 2 ☐ No ——→ *Go to question 15a*

2. **Please indicate whether the procedures listed were used for examination, treatment, or not used.** *(Check all that apply.)*

a. Medical x-ray	16 1 ☐ Exam	17 1 ☐ Treatment	18 1 ☐ Not Used
b. Dental x-ray	19 1 ☐ Exam	20 1 ☐ Treatment	21 1 ☐ Not Used
c. Ultrasound	22 1 ☐ Exam	23 1 ☐ Treatment	24 1 ☐ Not Used
d. Nuclear Medicine	25 1 ☐ Exam	26 1 ☐ Treatment	27 1 ☐ Not Used
e. Short Wave (Radio-frequency)	28 1 ☐ Exam	29 1 ☐ Treatment	30 1 ☐ Not Used
f. Microwave	31 1 ☐ Exam	32 1 ☐ Treatment	33 1 ☐ Not Used

If only short-wave or microwave was checked in question 2, go to SECTION F; otherwise, continue.

PLEASE DO NOT WRITE IN THIS AREA — FOR OFFICE USE ONLY X

Figure XII. Radiation questionnaire (X form)

Instructions for SECTION B, C, D, and E

- *Complete a separate block for EACH x-ray, ultrasound, or nuclear medicine procedure performed during the ONE-YEAR PERIOD specified on page 1.*
- *IF the same type of procedure was performed more than once, please report each separately.*
- *IF more than one procedure was performed on the same date, report each separately.*
- *In reporting NUMBER OF FILMS, include those which may have been technically unsatisfactory.*
- *If additional space is needed, continue on a separate sheet of paper.*

SECTION B. Medical X-Rays

Complete a separate block for EACH x-ray examination or treatment performed on this patient during the one-year period specified on page 1. Dental x-ray questions are in Section E.

If NO x-ray exam or treatment was performed, check box and go to SECTION C.

34 1 ☐ **NO X-RAYS**

3a. Date x-ray procedure was performed: ___ ___ month CC35 36 ___ ___ day 37 38 ___ ___ year 39-40

b. Indications for x-ray: *(For example, trauma, urinary tract problems, etc.)* _____ CC41-42

c. Type of procedure: *(For example, routine chest x-ray, pelvimetry, pyelogram, etc.)* _____ CC43 45

d. Primary area of body examined: *(For example, chest, upper abdomen, shoulder, etc.)* _____ CC46 47

e. Was this x-ray: *(Check one only.)*
48 1 ☐ Radiographic 2 ☐ Fluoroscopic 3 ☐ Photofluorographic 4 ☐ Therapeutic

f. Number of films: *(Include spot films and those technically unsatisfactory.)* _____ CC49 50 Films

g. Place where x-ray was performed:
51 1 ☐ At this location (or)

Name of physician, hospital or clinic _____

Address _____

City _____ State _____ Zip Code _____

4a. Date x-ray procedure was performed: ___ ___ month CC52 53 ___ ___ day 54 55 ___ ___ year 56 57

b. Indications for x-ray: *(For example, trauma, urinary tract problems, etc.)* _____ CC58-59

c. Type of procedure: *(For example, routine chest x-ray, pelvimetry, pyelogram, etc.)* _____ CC60 62

d. Primary area of body examined: *(For example, chest, upper abdomen, shoulder, etc.)* _____ CC63 64

e. Was this x-ray: *(Check one only.)*
65 1 ☐ Radiographic 2 ☐ Fluoroscopic 3 ☐ Photofluorographic 4 ☐ Therapeutic

f. Number of films: *(Include spot films and those technically unsatisfactory.)* _____ CC66 67 Films

g. Place where x-ray was performed:
68 1 ☐ At this location (or)

Name of physician, hospital or clinic _____

Address _____

City _____ State _____ Zip Code _____

SECTION C. Ultrasound

Complete a separate block for EACH ultrasound examination or treatment performed on this patient during the one-year period specified on page 1.
If NO ultrasound exam or treatment was performed, check box and go to SECTION D.

69 1 ☐ **NO ULTRASOUND**

5a. Date ultrasound procedure was performed: ___ ___ month CC70 71 ___ ___ day 72 73 ___ ___ year 74 75

b. Indications for ultrasound: *(For example, localization of IUD, fibroid determination, etc.)* _____ CC76 77

c. Type of procedure: *(For example, fetal age scan, echocardiography, echogram for gall bladder scan, guidance for aspiration or biopsy, etc.)* _____ CC78 79

d. Ultrasound was used for: 80 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 81 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 82 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

6a. Date ultrasound procedure was performed: ___ ___ month CC83 84 ___ ___ day 85 86 ___ ___ year 87 88

b. Indications for ultrasound: *(For example, localization of IUD, fibroid determination, etc.)* _____ CC89 90

c. Type of procedure: *(For example, fetal age scan, echocardiography, echogram for gall bladder scan, guidance for aspiration or biopsy, etc.)* _____ CC91 92

d. Ultrasound was used for: 93 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 94 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 95 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

7a. Date ultrasound procedure was performed: ___ ___ month CC96 97 ___ ___ day 98 99 ___ ___ year 100 101

b. Indications for ultrasound: *(For example, localization of IUD, fibroid determination, etc.)* _____ CC102 103

c. Type of procedure: *(For example, fetal age scan, echocardiography, echogram for gall bladder scan, guidance for aspiration or biopsy, etc.)* _____ CC104 105

d. Ultrasound was used for: 106 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 107 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 108 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

8a. Date ultrasound procedure was performed: ___ month CC109-110 ___ day 111 112 ___ year 113-114

b. Indications for ultrasound: *(For example, localization of IUD, fibroid determination, etc.)* _____ CC115-116

c. Type of procedure: *(For example, fetal age scan, echocardiography, echogram for gall bladder scan, guidance for aspiration or biopsy, etc.)* _____ CC117 118

d. Ultrasound was used for: 119 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 120 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 121 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

9a. Date ultrasound procedure was performed: ___ month CC122 123 ___ day 124 125 ___ year 126 127

b. Indications for ultrasound: *(For example, localization of IUD, fibroid determination, etc.)* _____ CC128 129

c. Type of procedure: *(For example, fetal age scan, echocardiography, echogram for gall bladder scan, guidance for aspiration or biopsy, etc.)* _____ CC130 131

d. Ultrasound was used for: 132 1 ☐ Examination or 2 ☐ Treatment

e. Ultrasound procedure was: 133 1 ☐ Doppler or 2 ☐ Pulse Echo

f. Place where ultrasound was performed: 134 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

SECTION D. Nuclear Medicine

Complete a separate block for EACH nuclear medicine examination or treatment performed on this patient during the one-year period specified on page 1.

If NO nuclear medicine exam or treatment was performed, check box and go to SECTION E.

135 1 ☐ **NO NUCLEAR MEDICINE**

10a. Date procedure was performed: ___ month CC136 137 ___ day 138 139 ___ year 140 141

b. Indications for nuclear medicine: *(For example tumor localization, determination of renal function, etc.)* _____ CC142 143

c. Type of procedure: *(For example, thyroid uptake, brain scan, placental scan, etc.)* _____ CC144-145

d. Was this nuclear medicine procedure used for: 146 1 ☐ Examination or 2 ☐ Treatment

e. Amount of Radionuclide used: _____ mCi CC147 152

f. Type of Radionuclide used: *(Specify 131_I, $99M_{Tc}$, etc.)* _____ CC153-154

g. Place where nuclear medicine procedure was performed: 155 1 ☐ At this location (or)

Name of physician, hospital or clinic

Address

City State Zip Code

SECTION E. Dental X-Rays

Complete a separate block for EACH dental x-ray examination performed on this patient during the one-year period specified on page 1.

If NO dental x-ray examination was performed, check box and go to SECTION F.

156 1 ☐ **NO DENTAL X-RAYS**

11a. Date x-ray procedure was performed: month CC157-158 day 159-160 year 161-162

b. Indications for dental x-ray: *(For example, diagnosis of dental caries, abscesses, periodontal diseases, etc.)* CC163 164

c. Type of procedure: *(Specify bitewing, periapical, full mouth, etc.)* CC165-167

d. Number of films: *(Include those that were technically unsatisfactory.)* CC168-170 Films

e. Place where procedure was done: 171 1 ☐ At this location

(or)

Name of physician, hospital or clinic

Address

City State Zip Code

12a. Date x-ray procedure was performed: month CC172 173 day 174-175 year 176-177

b. Indications for dental x-ray: *(For example, diagnosis of dental caries, abscesses, periodontal diseases, etc.)* CC178-179

c. Type of procedure: *(Specify bitewing, periapical, full mouth, etc.)* CC180-182

d. Number of films: *(Include those that were technically unsatisfactory.)* CC183-185 Films

e. Place where procedure was done: 186 1 ☐ At this location

(or)

Name of physician, hospital or clinic

Address

City State Zip Code

13a. Date x-ray procedure was performed: month CC187-188 day 189-190 year 191-192

b. Indications for dental x-ray: *(For example, diagnosis of dental caries, abscesses, periodontal diseases, etc.)* CC193 194

c. Type of procedure: *(Specify bitewing, periapical, full mouth, etc.)* CC195 197

d. Number of films: *(Include those that were technically unsatisfactory.)* CC198-200 Films

e. Place where procedure was done: 201 1 ☐ At this location

(or)

Name of physician, hospital or clinic

Address

City State Zip Code

14a. Date x-ray procedure was performed: ___ ___ month CC202-203 ___ ___ day 204-206 ___ ___ year 206-207

b. Indications for dental x-ray: *(For example, diagnosis of dental caries, abscesses, periodontal diseases, etc.)* _____ CC208-209

c. Type of procedure: *(Specify bitewing, periapical, full mouth, etc.)* _____ CC210-212

d. Number of films: *(Include those that were technically unsatisfactory.)* _____ CC213-215 **Films**

e. Place where procedure was done: 216 ☐ **At this location**

(or)

_____
Name of physician, hospital or clinic

_____
Address

_____
City **State** **Zip Code**

SECTION F. Person Completing This Form

15a. Name *(Please print)*: _____

b. Address *(If different from address on front of this questionnaire)*:

_____
Street

_____ _____ _____
City **State** **Zip Code**

c. Telephone number: _____
(Area code) **Number**

16. Date this form completed: ___ ___ month CC217-218 ___ ___ day 219-220 ___ ___ year 221-222

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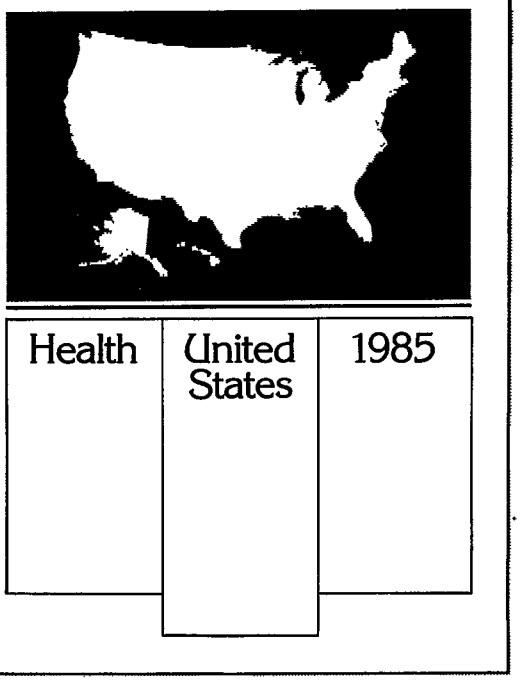

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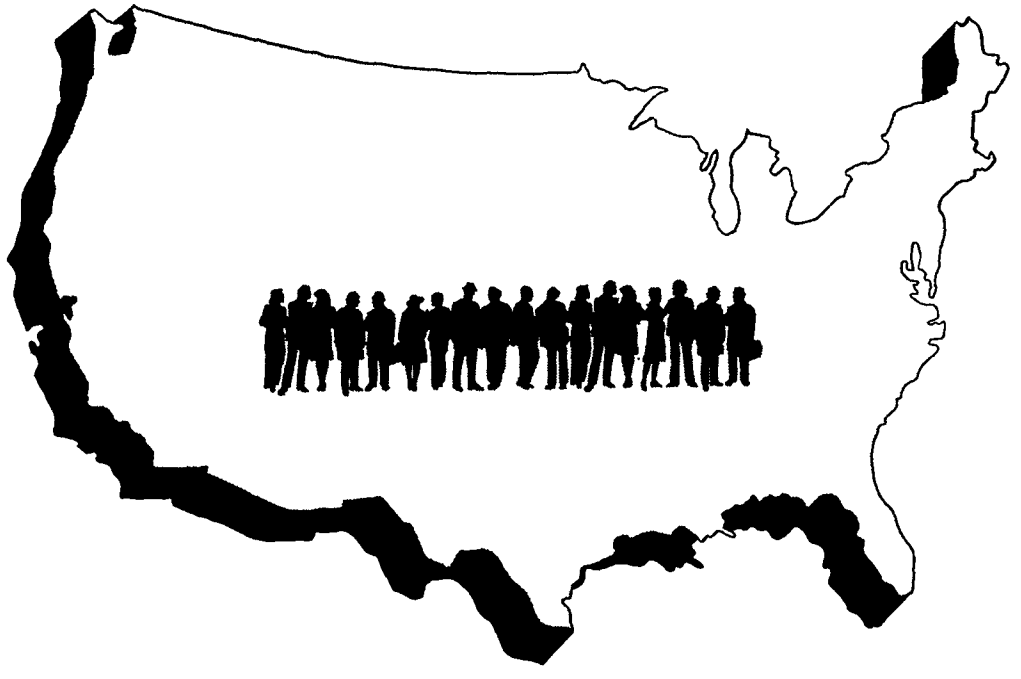

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