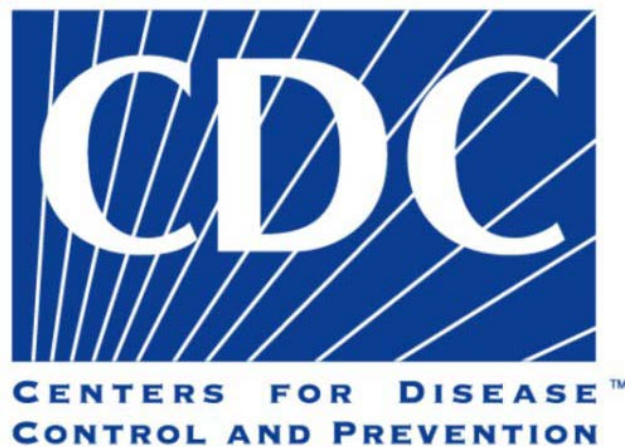


User Guide to the 2017 Period Linked Birth/Infant Death Public Use File



DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics
Division of Vital Statistics

2017 Period Linked Birth/Infant Death Data Set

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Introduction

The linked birth/infant death data set (linked file) is released in two formats - period data and birth cohort data. This documentation is for the 2017 period linked file.

Period file - The 2017 period linked birth/infant death data set includes two data files. The first file is the “numerator” file, which consists of all infant deaths occurring in 2017 linked to their corresponding birth certificates, whether the birth occurred in 2016 or 2017. The second file is the “denominator” file, which consists of all births occurring in 2017. It is used to provide denominators for rate computations. These same two data files are also available for Puerto Rico and Guam.

Incomplete National Reporting - Using Reporting Flags

As a result of the delayed, phased transition to the 2003 U.S. Standard Certificate of Live Birth, the 2017 linked file includes data for reporting areas that use the 2003 revision of the U.S. Standard Certificate of Live Birth (revised) and data for reporting areas that use the 1989 Standard Certificate of Live Birth (unrevised) (see the [2017 Natality User Guide](#)). Although many data items are comparable across certificate revisions and are available for the entire United States, five items have more limited reporting areas. In addition, the 2017 numerator file contains information on infants born in both 2016 and 2017. As reporting areas changed between 2016 and 2017, this complicates the file. Also, birth data are collected by place of occurrence but are typically tabulated by mother’s place of residence. Reporting flags were developed to help the user more readily identify reporting areas for items with less than national reporting for the entirety of 2016 and 2017. Reporting flags are included in the file to assist in accurately excluding records from areas that do not report items when tabulating data by mother’s place of residence.

Reporting areas for the 2017 linked file may be different from those for the 2017 birth file, as items had to be reported by a state in both 2016 and 2017 to be able to provide complete data. Thus, data for non-comparable items from states that revised in 2017 are excluded from all tabulations. Positions for reporting flags are noted along with each data item in the file layout. Reporting flags should be used to generate accurate numbers by residence for items which are not reported by all states. Where applicable, reporting flags are shown in the column “Reporting Flag Position” in the file layout. Reporting flag codes are 0 (item not reported in either the current and/or previous year) and 1 (item reported in both current and previous year). When using these data, select reporting flag=1 to get valid and complete data for an item (see SAS code examples below). The five items (and flags) with limited reporting area for the 2017 period linked file, for which flags must be used, are:

PAY (F_PAY)
RF_ART (F_RF_ART)
RF_DRUG (F_RD_DRUG)
RF_EHYPE (F_RF_EHYPE)
BFED (F_BFED).

Translating “blanks” - In the 2017 linked file, for data items which are not common or comparable across certificate revisions, events to residents of a revised state occurring in an unrevised state, and events to residents in an unrevised state occurring in a revised state, are often represented by “blanks.” Blanks should be treated as “unknowns” for tabulations.

The correct use of reporting flags and translation of blanks will result in an accurate tally of births and infant deaths for items with incomplete national reporting.

Example of SAS code using reporting flags (and translating blanks)

An example of SAS code that may be used to incorporate the correct use of reporting flags and the translation of blanks is shown below. This example is for the revised prenatal care item. Prenatal care data based on the revised certificate are not considered comparable with data based on the unrevised certificate.

Sample SAS program

```
DATA work;  
INFILE 'C:VS17LINK.USNUMPUB' LRECL=1743;  
INPUT  
RESTATUS 104  
PAY 435 PAY_R 436 F_PAY 437  
RECWT 1377-1384;  
  
IF restatus NE 4; /* exclude foreign residents */  
IF F_pay = 1; /* select reporting area */  
IF pay=. then pay=9; /*convert blanks into unknown category*/  
RUN;  
  
PROC FREQ; TABLES PAY; WEIGHT RECWT; /* numerator data must be  
weighted */  
  
RUN;
```

In this example, “restatus” is used to exclude births to foreign residents (this is standard practice for all NCHS tabulations).

Single, Multiple, and Bridged Race

In 1997, the Office of Management and Budget (OMB) issued revised standards requiring Federal collection programs to allow respondents to select *one or more race categories*. Starting in 2016 data, all states and DC reported multiple race data, representing 100% of all U.S. births (see [User's Guide for the 2017 Natality File](#)).

Prior to 2017, in order to provide uniformity and comparability of the data before all or most of the data are available in the new multiple-race format, it was necessary to “bridge” the responses of those for whom more than one race was reported (multiple race) to one, single race.

Weighting

A weight is added to the linked numerator file to correct in part for biases in percent of records linked by major characteristics. The number of infant deaths in the linked file are weighted to equal the sum of the linked plus unlinked infant deaths by age at death and state. The formula for computing the weights is as follows:

$$\frac{\text{number of linked infant deaths} + \text{number of unlinked infant deaths}}{\text{number of linked infant deaths}}$$

A separate weight is computed for each state of residence of birth and each age at death category (<7 days, 7-27 days, 28 days-1 year). Thus, weights are 1.0 for states which link all of their infant deaths. The denominator file is not weighted. Weights are not computed for the Puerto Rico and Guam file.

Marital

National estimates of births to unmarried women are based on two methods of determining marital status. In 2017, marital status was based on a direct question in 48 states, the District of Columbia, and New York City. New York (excluding New York City) used inferential procedures to compile birth statistics by marital status; a birth is categorized as nonmarital if either of these factors, listed in priority-of-use order, is present: a paternity acknowledgement was received or the father's name is missing. Beginning in 2017, NCHS cannot release record-level data on the marital status of the mother for births occurring in California to residents or non-residents due to state statutory restrictions.

Birthweight

An imputation for not-stated birthweight is added to the data set to reduce potential bias in the computation of birthweight-specific infant mortality rates. If birthweight is not stated and the period of gestation is known, birthweight is

assigned the value from the previous record with the same period of gestation, race, sex, and plurality. The total number of records with birthweight imputed is 899 in the numerator file and 764 in the denominator file. The addition of this imputation has reduced the percent of not-stated responses for birthweight from 4.09 to 0.83% in the numerator file, and from 0.07 to 0.06% in the denominator file, thus reducing the potential for underestimation when computing birthweight-specific infant mortality rates.

Period of gestation

Information on period of gestation is available for the entire United States. Beginning with the 2014 data year, NCHS transitioned to a new standard for estimating the gestational age of the newborn. The new measure – the obstetric estimate of gestation at delivery (OE) replaces the measure based on the data of the last normal menses (LMP). Accordingly, gestational age data in standard tables are based on the OE. However, LMP-based data are also available in data files.

Comparisons of infant mortality data from the linked file with infant mortality data from the vital statistics mortality file

Although the time periods are the same, numbers of infant deaths and infant mortality rates by characteristics are not always identical between the period linked file and the vital statistics mortality file. Differences in numbers of infant deaths between the two data sources are primarily due to geographic coverage differences. For the vital statistics mortality file, all deaths occurring in the 50 states and the District of Columbia are included regardless of the place of birth of the infant. In contrast, to be included in the linked file, both the birth and death must occur in the 50 states and the District of Columbia. Also, although every effort has been made to design weights that will accurately reflect the distribution of deaths by characteristics, weighting may contribute to small differences in numbers and rates by specific variables between these two data sets. In most cases, differences between numbers of infant deaths and infant mortality rates between the linked file and those computed from the vital statistics mortality file are negligible.

Computation of rates

Infant mortality rates are the most commonly used index for measuring the risk of dying during the first year of life. For the linked birth/infant death dataset they are calculated by dividing the number of infant deaths in a calendar year by the number of live births registered for the same period and are presented as rates per 1,000 or per 100,000 live births. Both the mortality file and the linked birth/infant death file use this computation method but due to unique numbers of infant deaths, as explained in the section above on the comparison of these two files, the rates will often differ for specific variables (particularly for race and

ethnicity). Infant mortality rates in the linked file use the number of live births in the denominator to approximate the population at risk of dying before the first birthday. In contrast to the infant mortality rates based on live births, infant death rates, used only in age-specific death rates with the mortality file, use the estimated population of persons under one year of age as the denominator.

Rates per 1,000 live births display two digits after the decimal place to provide a more precise and sensitive measurement. For rates per 100,000 live births (by cause of death) the infant mortality rate is shown for one decimal place. Adding an additional decimal for rates per 100,000 does not increase precision as it does for rates per 1,000.

As stated previously, infant death records for the 50 States and the District of Columbia in the US linked file are weighted so that the infant mortality rates are not underestimated for those areas that did not successfully link all records.

Random variation in infant mortality rates

The number of infant deaths and live births reported for an area represent complete counts of such events. As such, they are not subject to sampling error, although they are subject to nonsampling error in the registration process. However, when the figures are used for analytic purposes, such as the comparison of rates over time, for different areas, or among different subgroups, the number of events that actually occurred may be considered as one of a large series of possible results that could have arisen under the same circumstances (61). As a result, numbers of births, deaths, and infant mortality rates are subject to random variation. The probable range of values may be estimated from the actual figures according to certain statistical assumptions.

In general, distributions of vital events may be assumed to follow the normal distribution. When the number of events is large, the relative standard error is usually small. When the number of events is small (i.e., less than 100) and the probability of such an event is small, considerable caution must be observed in interpreting the data. Such infrequent events may be assumed to follow a Poisson probability distribution (3,4). Estimates of relative standard errors (RSE's) and 95-percent confidence intervals are shown below.

The formula for the RSE of infant deaths and live births is:

$$\text{RSE}(D)=100*\sqrt{\frac{1}{D}} \quad \text{where } D \text{ is the number of deaths and}$$

$$\text{RSE}(B)=100*\sqrt{\frac{1}{B}} \quad \text{where } B \text{ is the number of births.}$$

For example, if for group A the number of infant deaths was 497 while the number of live births was 81,555 yielding an infant mortality rate of 6.09 infant deaths per 1,000 live births.

The RSE of the deaths = $100 * \sqrt{\frac{1}{497}} = 4.49$, while the RSE of the births = $100 * \sqrt{\frac{1}{81,555}} = 0.35$.

The formula for the RSE of the IMR is:

$$\text{RSE(IMR)} = 100 * \sqrt{\frac{1}{D} + \frac{1}{B}}$$

The RSE of the IMR for the example above

$$= 100 * \sqrt{\frac{1}{497} + \frac{1}{81,555}} = 4.50.$$

Normal distribution—When the number of events is greater than 100, the normal distribution is used to estimate the 95-percent confidence intervals as follows:

$$\text{Lower: } R_1 - 1.96 * R_1 * \frac{\text{RSE}(R_1)}{100}$$

$$\text{Upper: } R_1 + 1.96 * R_1 * \frac{\text{RSE}(R_1)}{100}$$

Thus, for Group A:

$$\text{Lower: } 6.09 - (1.96 * 6.09 * \frac{4.50}{100}) = 5.55$$

$$\text{Upper: } 6.09 + (1.96 * 6.09 * \frac{4.50}{100}) = 6.63$$

Thus the chances are 95 out of 100 that the true IMR for Group A lies somewhere in the 5.55–6.63 interval.

Poisson distribution—When the number of events in the numerator is less than 100 the confidence interval for the rate can be estimated based on the Poisson distribution using the values in Table II.

Lower: $\text{IMR} * L(.95, D_{\text{adj}})$

Upper: $\text{IMR} * U(.95, D_{\text{adj}})$

where D_{adj} is the adjusted number of infant deaths (rounded to the nearest integer) used to take into account the RSE of the number of infant deaths and live births, and is computed as follows:

$$D_{\text{adj}} = \frac{D * B}{D + B}$$

$L(.95, D_{\text{adj}})$ and $U(.95, D_{\text{adj}})$ refer to the values in Table II corresponding to the value of D_{adj} .

For example, let us say that for Group B the number of infant deaths was 53, the number of live births was 9,241, and the infant mortality rate was 5.74.

$$D_{\text{adj}} = \frac{53 * 9,241}{53 + 9,241} = 53$$

Therefore the 95-percent confidence interval (using the formula in Table II for 1–99 infant deaths) =

$$\text{Lower: } 5.74 * 0.74907 = 4.30$$

$$\text{Upper: } 5.74 * 1.30802 = 7.51$$

Comparison of two infant mortality rates—If either of the two rates to be compared is based on less than 100 deaths, compute the confidence intervals for both rates and check to see if they overlap. If so, the difference is not statistically significant at the 95-percent level. If they do not overlap, the difference is statistically significant. If both of the two rates (R_1 and R_2) to be compared are based on 100 or more deaths, the following z-test may be used to define a significance test statistic:

$$z = \frac{R_1 - R_2}{\sqrt{R_1^2 \left(\frac{RSE(R_1)}{100} \right)^2 + R_2^2 \left(\frac{RSE(R_2)}{100} \right)^2}}$$

If $|z| \geq 1.96$, then the difference is statistically significant at the 0.05 level and if $|z| < 1.96$, the difference is not significant.

Methodology

The methodology used to create the national file of linked birth and infant death records uses two data sources:

1. State linked files for the identification of linked birth and infant death certificates; and
2. NCHS natality and mortality computerized statistical files, the source of computer records for the two linked certificates.

States routinely link infant death certificates to their corresponding birth certificates for legal and statistical purposes. When the birth and death of an infant occur in different states, copies of the records are exchanged by the state of death and state of birth in order to effect a link. In addition, if a third state is identified as the state of residence at the time of birth or death that state is also sent a copy of the appropriate certificate by the state where the birth or death occurred.

The NCHS natality and mortality files, produced annually, include statistical data from birth and death certificates that are provided to NCHS by states under the Vital Statistics Cooperative Program (VSCP). The data have been coded according to uniform coding specifications, have passed quality control

standards, have been edited and reviewed, and are the basis for official U.S. birth and death statistics.

To initiate processing, NCHS obtained matching birth certificate numbers from states for all infant deaths that occurred in their jurisdiction. We use this information to extract final, edited mortality and natality data from the NCHS natality and mortality statistical files. Individual birth and death records were selected from their respective files and linked into a single statistical record, thereby establishing a national linked record file.

Percent of Records Linked

The 2017 linked file for the 50 States and D.C. includes 22,280 linked infant death records and 92 unlinked infant death records (99.6% linked and 0.4% unlinked of all infant deaths). The linked file is weighted to the sum of linked plus unlinked records, thus the total number of weighted infant deaths by place of occurrence is 22,372.

Thirty-six jurisdictions (34 states, New York City, and D.C.) linked 100% of their infant deaths; 16 states have below a 100% linkage rate. Five states have a linkage of under 99%; Alaska (98.0%), California (98.3%), Texas (98.7%), Connecticut (98.8%), and Arizona (98.9%). When a high percentage of deaths remain unlinked, unweighted infant mortality rates computed for these states are underestimated. It is for this reason that weights are added to the file to correct for biases in the data due to poor data linkage for particular states.

Confidentiality

To minimize the risk of disclosure of individual or institutional information, NCHS public-use data files do not contain the actual day of the birth or the dates of birth of the mother or father. Also, for public-use files from 2005 forward, no U.S. geographic detail is identified.

Documents

The documents listed below describe in detail the procedures employed for demographic classification on both the birth and death records and medical classification on death records. These documents, while not absolutely essential to the proper interpretation of the data for a number of general applications, should nevertheless be studied carefully prior to any detailed analysis of demographic or medical data variables. In particular, there are a number of details about multiple cause-of-death coding which, if not understood and analyzed properly, may result in faulty analysis of the data. Volumes 1, 2 and 3 of the ICD-10 may be purchased from the World Health Organization (WHO) Publication Center USA, see <http://www.cdc.gov/nchs/icd/icd10.htm> . Many of the

instruction manuals listed below are available electronically on the NCHS website.

- A. National Center for Health Statistics. Vital statistics, Instructions for Classifying the Underlying Cause-of-Death, ICD-10, 2017. NCHS Instruction Manual, Part 2a. Hyattsville, Maryland: Public Health Service.
- B. National Center for Health Statistics. Vital statistics, Instructions for Classifying Multiple Cause-of-Death, ICD-10, 2017. NCHS Instruction Manual, Part 2b. Hyattsville, Maryland: Public Health Service.
- C. National Center for Health Statistics. Vital statistics, ICD-10 ACME Decision Tables for Classifying Underlying Causes-of-Death, 2016. NCHS Instruction Manual, Part 2c. Hyattsville, Maryland: Public Health Service.
- D. National Center for Health Statistics. Specifications for U.S. Standard Certificate of Birth – 2003 Revision. NCHS Instruction manual, Part 3A. Hyattsville, Maryland: Public Health Service.
- E. National Center for Health Statistics. Specifications for U.S. Standard Certificate of Death – 2003 Revision. NCHS Instruction manual, Part 4. Hyattsville, Maryland: Public Health Service.
- F. National Center for Health Statistics. Vital statistics, Computer Edits for Natality Data, Effective 1993. NCHS Instruction Manual Part 12. Hyattsville, Maryland: Public Health Service.
- G. National Center for Health Statistics. Vital statistics, ICD-10 Computer Edits for Mortality Data, Effective 2014. NCHS Instruction Manual Part 11. Hyattsville, Maryland: Public Health Service.

Instructions manuals are available at:

http://www.cdc.gov/nchs/nvss/instruction_manuals.htm

Also see: http://www.cdc.gov/nchs/nvss/vital_certificate_revisions.htm for the most recent information about revised certificates.

Cause of Death Classification

The mortality statistics presented in this report were compiled in accordance with the World Health Organization (WHO) regulations, which specify that member nations classify and code causes of death in accordance with the current revision of the International Statistical Classification of Diseases. The ICD provides the basic guidance used in virtually all countries to code and classify causes of death. The ICD not only details disease classification but also provides definitions, tabulation lists, the format of the death certificate, and the rules for

coding cause of death. Cause-of-death data presented in this report were coded by procedures outlined in annual issues of the NCHS Instruction Manual.

About every 10-20 years, the International Classification of Diseases is revised to take into account advances in medical knowledge. Effective with deaths occurring in 1999, the United States began using the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) (5); during the period 1979-98, causes were coded and classified according to the Ninth Revision (ICD-9).

Changes in classification of causes of death due to these revisions may result in discontinuities in cause-of-death trends. Measures of this discontinuity are essential to the interpretation of mortality trends, and are discussed in detail in other NCHS publications (see [Mortality Data internet page](#)).

Underlying Cause of Death Data

Mortality statistics by cause of death are compiled from entries on the medical certification portion of the death certificate. Causes of death include “all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced these injuries”. The medical certification of death is divided into two sections. In Part I, the physician is asked to provide the causal chain of morbid conditions that led to death, beginning with the condition most proximate to death on line (a) and working backwards to the initiating condition. Part I of the medical certification is designed to facilitate the selection of the underlying cause of death when two or more causes are recorded on the certificate. The underlying cause of death is defined by the WHO in the ICD-10 as “(a) the disease or injury which initiated the chain of morbid events leading directly to death, or (b) the circumstances of the accident or violence that produced the fatal injury” and is generally considered the most useful cause from a public health standpoint. Part II of the cause-of-death section of the death certificate solicits other conditions that the certifier believed contributed to death, but were not in the causal chain. While some details of the death certificate vary by state, all states use the same general format for medical certification outlined in the U.S. Standard Certificate. The U.S. Standard Certificate, in turn, closely follows the format recommended by the WHO.

For a given death, the underlying cause is selected from the condition or conditions recorded by the certifier in the cause-of-death section of the death certificate. NCHS is bound by international agreement to make the selection of the underlying cause through the use of the ICD-10 classification structure, and the selection and modification rules contained in this revision of the ICD. Additional information on the underlying cause of death can be found at <http://www.cdc.gov/nchs/data/dvs/mort99doc.pdf> .

Multiple Cause of Death Data

The limitations of the underlying cause concept and the need for more comprehensive data suggested the need for coding and tabulating all conditions listed on the death certificate. Coding all listed conditions on the death certificate was designed with two objectives in mind. First, to facilitate studies of the relationships among conditions reported on the death certificate, which require presenting each condition and its location on the death certificate in the exact manner given by the certifier. Secondly, the coding needed to be carried out in a manner by which the underlying cause-of-death could be assigned using the WHO coding rules. Thus, the approach in developing multiple cause data was to provide two fields: 1) entity axis and 2) record axis. For entity axis, NCHS suspends the provisions of the ICD that create linkages between conditions for the purpose of coding each individual condition, or entity, with minimum regard to other conditions present on the death certificate.

Record axis is designed for the generation of person-based multiple cause statistics. Person-based analysis requires that each condition be coded within the context of every other condition on the same death certificate and modified or linked to such conditions as provided by ICD-10. By definition, the entity data cannot meet this requirement since the linkage provisions modify the character and placement of the information originally recorded by the certifier. Essentially, the axis of the classification has been converted from an entity basis to a record (or person) basis. The record axis codes are assigned in terms of the set of codes that best describe the overall medical certification portion of the death certificate. Additional information on multiple cause data processing can be found at <http://www.cdc.gov/nchs/data/dvs/mort99doc.pdf> .

Entity Axis Codes

The original conditions coded for selection of the underlying cause-of-death are reformatted and edited prior to creating the public-use data file. The following paragraphs describe the format and application of entity axis data.

1. Format. Each entity-axis code is displayed as an overall seven byte code with subcomponents as follows:

1. Line indicator: The first byte represents the line of the death certificate on which the code appears. Six lines (1-6) are allowable with the fourth and fifth denoting one or two written in "due to"s beyond the three lines provided in Part I of the U.S. standard death certificate. Line "6" represents Part II of the death certificate.

2. Position indicator: The next byte indicates the position of the code on the line, i.e., it is the first (1), second (2), third (3) ... eighth (8) code on the line.

3. Cause category: The next four bytes represent the ICD-10 cause code.

4. The last byte is blank.

A maximum of 20 of these seven byte codes are captured on a record for multiple cause purposes. This may consist of a maximum of 8 codes on any given line with up to 20 codes distributed across three or more lines depending on where the subject conditions are located on the certificate. Codes may be omitted from one or more lines, e.g., line 1 with one or more codes, line 2 with no codes, line 3 with one or more codes.

In writing out these codes, they are ordered as follows: line 1 first code, line 1 second code, etc. ----- line 2 first code, line 2 second code, etc. ----- line 3 ---- line 4 ----- line 5 ----- line 6. Any space remaining in the field is left blank. The specifics of locations are contained in the record layout given later in this document.

2. Edit. The original conditions are edited to remove invalid codes, reverify the coding of certain rare causes of death, and assure age/cause and sex/cause compatibility. Detailed information relating to the edit criteria and the sets of cause codes which are valid to underlying cause coding and multiple cause coding are provided in NCHS Instruction Manual Part 11.

3. Entity Axis Applications. The entity axis multiple cause data file is appropriate for analyses that require that each condition be coded as a stand alone entity without linkage to other conditions and/or require information on the placement of such conditions in the death certificate. Within this framework, the entity data are appropriate to examine relationships among conditions and the validity of traditional assumptions in underlying cause selection. Additionally, the entity data provide in certain categories a more detailed code assignment that could be excluded in creating record axis data. Where such detail is needed for a study, the user should use entity data. Finally, the researcher may not wish to be bound by the assumptions used in the axis translation process.

The main limitation of entity axis data is that it does not necessarily reflect the best code for a condition when considered within the context of the medical certification as a whole. As a result, certain entity codes can be misleading or even contradict other codes in the record. For example, category K80.2 is titled "Calculus of gallbladder without cholecystitis." Within the framework of entity codes this is interpreted to mean that the codable entity itself contained no mention of cholecystitis rather than that cholecystitis was not mentioned anywhere on the record. Tabulation of records with a "K80.2" as a count of persons having Calculus of gallbladder without cholecystitis would therefore be erroneous. This illustrates the fact that under entity coding the ICD-10 titles cannot be taken literally. The user should study the rules for entity coding as they

relate to his/her research prior to use of entity data. The user is further cautioned that the inclusion notes in ICD-10 that relate to modifying and combining categories are seldom applicable to entity coding (except where provided in NCHS Instruction Manual Part 2b).

In tabulating the entity axis data, one may count codes with an individual code representing the number of times the condition(s) appears in the file. In this kind of tabulation of morbid conditions, the counts among categories may be added together to produce counts for groups of codes. Alternatively, subject to the limitations given above, one may count persons having mention of the disease represented by a code or codes. In this instance it is not correct to add counts for individual codes to create person counts for groups of codes. Since more than one code in the researcher's interest may appear together on the certificate, totaling must account for higher order interactions among codes. Up to 20 codes may be assigned on a record; therefore, a 20-way interaction is theoretically possible. All totaling must be based on mention of one or more of the categories under investigation.

Record Axis Codes

The following paragraphs describe the format and application of record-axis data. Part 2f of the Instruction Manual Series (ICD-10 TRANSAX Disease Reference Tables for classifying Multiple Causes-of-Death) describes the TRANSAX process for creating record axis data from entity axis data.

1. Format. Each record (or person) axis code is displayed in five bytes. Location information is not relevant. The Code consists of the following components:

1. Cause category: The first four bytes represent the ICD-10 cause code.
2. The last byte is blank.

Again, a maximum of 20 codes are captured on a record for multiple cause purposes. The codes are written in a 100-byte field in ascending code number (5 bytes) order with any unused bytes left blank.

2. Edit. The record axis codes are edited for rare causes and age/cause and sex/cause compatibility. Likewise, individual code validity is checked. The valid code set for record axis coding is the same as that for entity coding.

3. Record Axis Applications. The record axis multiple cause data are the basis for NCHS core multiple cause tabulations. Location of codes is not relevant to this data, and conditions have been linked into the most meaningful categories for the certification. The most immediate consequence for the user is that the codes on the record already represent mention of a disease assignable to that particular ICD-10 category. This is in contrast to the entity code which is

assigned each time such a disease is reported on different lines of the certification. Secondly, the linkage implies that within the constraints of ICD-10 the most meaningful code has been assigned. The translation process creates for the user a data file that is edited for contradictions, duplicate codes, and imprecisions. In contrast to entity axis data, record axis data are classified in a manner comparable to underlying cause of death classification thereby facilitating joint analysis of these variables. A potential disadvantage of record axis data is that some detail is sacrificed in a number of the linkages.

The user can take the record axis codes as literally representing the information conveyed in ICD-10 category titles. While knowledge of the rules for combining and linking and coding conditions is useful, it is not a prerequisite to meaningful analysis of the data as long as one is willing to accept the assumptions of the axis translation process. The user is cautioned, however, that due to special rules in mortality coding, not all linkage notes in ICD-10 are used. (NCHS Instruction Manual Part 2f).

The user should proceed with caution in using record axis data to count conditions as opposed to people with conditions, since linkages have been invoked and duplicate codes have been eliminated. As with entity data, person-based tabulations that combine individual cause categories must take into account the possible interaction of up to 20 codes on a single certificate.

Additional Information

In using the NCHS multiple cause data files, the user is urged to review the information in this document and its references. The instructional material does change from year to year and ICD revision to ICD revision. The user is cautioned that coding of specific ICD-10 categories should be checked in the appropriate instruction manual. What may appear on the surface to be the correct code by ICD-10 may in fact not be correct as given in the instruction manuals.

If on the surface it is not obvious whether entity axis or record axis data should be employed in a given application, detailed examination of NCHS Instruction Manual Part 2f and its attachments will probably provide the necessary information to make a decision. It allows the user to determine the extent of the trade-offs between the two sets of data in terms of specific categories and the assumption of axis translation. In certain situations, a combination of entity and record axis data may be the more appropriate alternative.

2017 Period Linked Birth/Infant Death Data Set

Numerator Files:

United States

A. Record count (occurrence, unweighted):	22,280
B. Record length:	1,743

Territories

A. Record count (occurrence):	193
B. Record length:	1,743

Denominator Files:

United States

A. Record count (occurrence):	3,864,781
B. Record length:	1,346

Territories

A. Record count (occurrence):	27,673
B. Record length:	1,346

2017 Linked Public Use File Layout

Position	Len	File*	Field	Description	Flag Position	Values	Definition
1-7	1		FILLER01	Filler		Blank	
8	1		LATEREC	Late Record Flag		0, blank 1	Not late record Late record
9-12	4	P,G	DOB_YY	Birth Year		2013	2014
13-14	2	P,G	DOB_MM	Birth Month		01 02 03 04 05 06 07 08 09 10 11 12	January February March April May June July August September October November December
15-18	4		FILLER02	Filler		Blank	
19-22	4	P,G	DOB_TT	Time of Birth	126	0000-2359 9999	Time of Birth Not Stated
23	1	P,G	DOB_WK	Birth Day of Week		1 2 3 4 5 6 7	Sunday Monday Tuesday Wednesday Thursday Friday Saturday
24-31	8		FILLER03	Filler		Blank	
32	1	P,G	BFACIL	Birth Place (Revised) Revised data only. See field 1330 for national data.	33	1 2 3 4 5 6 7 9	Hospital Freestanding Birth Center Home (intended) Home (not intended) Home (unknown if intended) Clinic / Doctor's Office Other Unknown

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
33	1	P,G	F_BFACIL	Reporting Flag for Birth Place			See footnote
34-49	16		FILLER04	Filler			Blank
50	1	P,G	BFACIL3	Facility Recode		1 2 3	In Hospital Not in Hospital Unknown or Not Stated
51-72	22		FILLER05	Filler			Blank
73	1	P,G	MAGEIMP	Mother's Age Imputed Due to missing data, age imputed.		Blank 1	Age not imputed Age imputed
74	1	P,G	MAGEREP	Reported Age of Mother Used Flag Due to missing date of birth, reported age used.		Blank 1	Reported age not used Reported age used
75-76	2	P,G	MAGER	Mother's Age Recode 41			12 10 – 12 years, 13 13 years, 14 14 years, 15 15 years, 16 16 years, 17 17 years, 18 18 years, 19 19 years, 20 20 years, 21 21 years, 22 22 years, 23 23 years, 24 24 years, 25 25 years, 26 26 years, 27 27 years, 28 28 years, 29 29 years, 30 30 years, 31 31 years, 32 32 years, 33 33 years, 34 34 years, 35 35 years, 36 36 years, 37 37 years, 38 38 years, 39 39 years, 40 40 years, 41 41 years, 42 42 years, 43 43 years, 44 44 years, 45 45 years, 46 46 years, 47 47 years, 48 48 years, 49 49 years, 50 50 years and over
77-78	2	P,G	MAGER14	Mother's Age Recode 14		01 03 04 05 06 07 08 09 10 11 12 13 14	Under 15 Years 15 years 16 years 17 years 18 years 19 years 20-24 years 25-29 years 30-34 years 35-39 years 40-44 years 45-49 years 50-54 years
79	1	P,G	MAGER9	Mother's Age Recode 9		1 2 3 4 5 6	Under 15 years 15-19 years 20-24 years 25-29 years 30-34 years 35-39 years

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
						7	40-44 years
						8	45-49 years
						9	50-54 years
80-83	2		FILLER06	Filler		Blank	
84	1	P,G	MBSTATE_REC	Mother's Nativity		1	Born in the U.S. (50 US States)
						2	Born outside the U.S. (includes possessions)
						3	Unknown or Not Stated
85-103	19		FILLER07	Filler		Blank	
104	1	P,G	RESTATUS	Residence Status			
				<u>United States</u>		1	RESIDENT: State and county of occurrence and residence are the same.
						2	INTRASTATE NONRESIDENT: State of occurrence and residence are the same but county is different.
						3	INTERSTATE NONRESIDENT: State of occurrence and residence are different but both are one of the 50 US states or District of Columbia.
						4	FOREIGN RESIDENT: The state of residence is not one of the 50 US states or District of Columbia.
				<u>U.S. Territories</u>		1	RESIDENT: State and county of occurrence and residence residence are the same. (Unique to Guam, all US residents are considered residents of Guam and thus are assigned 1.)
						2	INTRATERRITORY NONRESIDENT: Territory of occurrence and residence are the same but county is different.
						2	INTERTERRITORY RESIDENT: Territory of occurrence and residence are different but both are US Territories.
						3	FOREIGN RESIDENT: The residence is not a US Territory.
105-106	2	P,G	MRACE31	Mother's Race Recode 31			
				<u>United States and all Outlying Areas of the United States except Puerto Rico</u>		01	White (only) [only one race reported]
						02	Black (only)
						03	AIAN (American Indian or Alaskan Native) (only)
						04	Asian (only)
						05	NHOPI (Native Hawaiian or Other Pacific Islander) (only)
						06	Black and White
						07	Black and AIAN
						08	Black and Asian
						09	Black and NHOPI
						10	AIAN and White
						11	AIAN and Asian
						12	AIAN and NHOPI

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
						13	Asian and White
						14	Asian and NHOPI
						15	NHOPI and White
						16	Black, AIAN, and White
						17	Black, AIAN, and Asian
						18	Black, AIAN, and NHOPI
						19	Black, Asian, and White
						20	Black, Asian, and NHOPI
						21	Black, NHOPI, and White
						22	AIAN, Asian, and White
						23	AIAN, NHOPI, and White
						24	AIAN, Asian, and NHOPI
						25	Asian, NHOPI, and White
						26	Black, AIAN, Asian, and White
						27	Black, AIAN, Asian, and NHOPI
						28	Black, AIAN, NHOPI, and White
						29	Black, Asian, NHOPI, and White
						30	AIAN, Asian, NHOPI, and White
						31	Black, AIAN, Asian, NHOPI, and White
107	1	P,G	MRACE6	Mother's Race Recode 6			
				<u>United States and all Outlying Areas</u>		1	White (only)
				<u>of the United States except Puerto</u>		2	Black (only)
				<u>Rico</u>		3	AIAN (only)
						4	Asian (only)
						5	NHOPI (only)
						6	More than one race
108-109	2	P,G	MRACE15	Mother's Race Recode 15			
				<u>United States and all Outlying Areas</u>		01	White (only)
				<u>of the United States except Puerto</u>		02	Black (only)
				<u>Rico</u>		03	AIAN (only)
						04	Asian Indian (only)
						05	Chinese (only)
						06	Filipino (only)
						07	Japanese (only)
						08	Korean (only)
						09	Vietnamese (only)
						10	Other Asian (only)
						11	Hawaiian (only)
						12	Guamanian (only)
						13	Samoan (only)
						14	Other Pacific Islander (only)
						15	More than one race

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
110	1	P,G	MBRACE	Bridged Race Mother Includes individuals reporting only one race and individuals reporting more than one race bridged to a single race.			
				<u>United States and all Outlying Areas of the United States except Puerto Rico</u>		1 2 3 4	White Black American Indian or Alaskan Native Asian or Pacific Islander
				<u>Puerto Rico</u>		1 2 0	White Black Other (not classified as White or Black)
111	1	P,G	MRACEIMP	Mother's Race Imputed		Blank 1 2	Mother's race not imputed Unknown race imputed All other races, formerly coded 09, imputed.
112-114	3		FILLER08	Filler		Blank	
115	1	P,G	MHISP_R	Mother's Hispanic Origin Recode		0 1 2 3 4 5 9	Non-Hispanic Mexican Puerto Rican Cuban Central and South American Other and Unknown Hispanic origin Hispanic origin not stated
				116			
116	1	P,G	F_MHISP	Reporting Flag for Mother's Origin			See footnote
117	1	P,G	MRACEHISP	Mother's Race/Hispanic Origin Based on single/multiple-race (fields 105-106, 107, and 108-109); for coding to create bridged-race categories (field 110) see "Coding for bridge-race and Hispanic origin categories" in the Detailed Technical Notes.		1 2 3 4 5 6 7 8	Non-Hispanic White (only) Non-Hispanic Black (only) Non-Hispanic AIAN (only) Non-Hispanic Asian (only) Non-Hispanic NHOPI (only) Non-Hispanic more than one race Hispanic Origin unknown or not stated
118	1		FILLER09	Filler		Blank	
119	1	P,G	MAR_P	Paternity Acknowledged	123	Y N U X	Yes No Unknown Not Applicable

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
120	1	P,G	DMAR	Marital Status			
				<u>United States and all Outlying Areas</u>		1	Married
				<u>Of the United States except Puerto Rico</u>		2	Unmarried
				<u>Rico</u>		9	Unknown, NS
				<u>Puerto Rico</u>		1	Yes
						2	Unmarried parents living together
						3	Unmarried parents not living together
						9	Unknown or not stated
121	1	P,G	MAR_IMP	Mother's Marital Status Imputed		Blank	Marital Status not imputed
						1	Marital Status imputed
122	1		FILLER10	Filler		Blank	
123	1	P,G	F_MAR_P	Reporting Flag for Paternity Acknowledged			See footnote
124	1	P,G	MEDUC	Mother's Education			
						1	8 th grade or less
						2	9 th through 12 th grade with no diploma
						3	High school graduate or GED completed
						4	Some college credit, but not a degree.
						5	Associate degree (AA,AS)
						6	Bachelor's degree (BA, AB, BS)
						7	Master's degree (MA, MS, MEng, MEd, MSW, MBA)
						8	Doctorate (PhD, EdD) or Professional Degree (MD, DDS, DVM, LLB, JD)
						9	Unknown
125	1		FILLER11	Filler		Blank	
126	1	P,G	F_MEDUC	Reporting Flag for Education of Mother			See footnote
127-141	15		FILLER11	Filler		Blank	
142	1	P,G	FAGERPT_FLG	Father's Reported Age Used		Blank	Father's reported age not used
						1	Father's reported age used
143-146	4		FILLER12	Filler		Blank	
147-148	2	P,G	FAGECOMB	Father's Combined Age (Revised)		09-98	Father's combined age in years
						99	Unknown or not stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
149-150	2	P,G	FAGE11	Father's Age Recode 11		01 02 03 04 05 06 07 08 09 10 11	Under 15 years 15-19 years 20-24 years 25-29 years 30-34 years 35-39 years 40-44 years 45-49 years 50-54 years 55-98 years Not stated
151-152	2	P,G	FRACE31	Father's Race Recode 31		01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 99	White (only) [only one race reported] Black (only) AIAN (American Indian or Alaskan Native) (only) Asian (only) NHOPI (Native Hawaiian or Other Pacific Islander) (only) Black and White Black and AIAN Black and Asian Black and NHOPI AIAN and White AIAN and Asian AIAN and NHOPI Asian and White Asian and NHOPI NHOPI and White Black, AIAN, and White Black, AIAN, and Asian Black, AIAN, and NHOPI Black, Asian, and White Black, Asian, and NHOPI Black, NHOPI, and White AIAN, Asian, and White AIAN, NHOPI, and White AIAN, Asian, and NHOPI Asian, NHOPI, and White Black, AIAN, Asian, and White Black, AIAN, Asian, and NHOPI Black, AIAN, NHOPI, and White Black, Asian, NHOPI, and White AIAN, Asian, NHOPI, and White Black, AIAN, Asian, NHOPI, and White Unknown or Not Stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
153	1	P,G	FRACE6	Father's Race Recode 6		1 2 3 4 5 6 9	White (only) Black (only) AIAN (only) Asian (only) NHOPI (only) More than one race Unknown or Not Stated
154-155	2	P,G	FRACE15	Father's Race Recode 15		01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 99	White (only) Black (only) AIAN (only) Asian Indian (only) Chinese (only) Filipino (only) Japanese (only) Korean (only) Vietnamese (only) Other Asian (only) Hawaiian (only) Guamanian (only) Samoan (only) Other Pacific Islander (only) More than one race Unknown or Not Stated
156	1	P,G	FBRACE	Bridged Race Father Includes individuals reporting only one race and individuals reporting more than one race bridged to a single race.			
				<u>United States and all Outlying Areas of the United States except Puerto Rico</u>		1 2 3 4	White Black American Indian or Alaskan Native Asian or Pacific Islander
				<u>Puerto Rico</u>		1 2 0	White Black Other (not classified as White or Black)
157-159	3		FILLER13	Filler			Blank

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
160	1	P,G	FHISP_R	Father's Hispanic Origin Recode	161	0 1 2 3 4 5 9	Non-Hispanic Mexican Puerto Rican Cuban Central and South American Other and Unknown Hispanic origin Hispanic origin not stated
161	1	P,G	F_FHISP	Reporting Flag for Father's Origin			See footnote
162	1	P,G	FRACEHISP	Father's Race/Hispanic Origin Based on single/multiple-race (fields 151-152, 153, and 154-155); for coding to create bridged-race categories (field 156) see "Coding for bridge-race and Hispanic origin categories" in the Detailed Technical Notes		1 2 3 4 5 6 7 8 9	Non-Hispanic White (only) Non-Hispanic Black (only) Non-Hispanic AIAN (only) Non-Hispanic Asian (only) Non-Hispanic NHOPI (only) Non-Hispanic more than one race Hispanic Origin unknown or not stated Race unknown or not stated (Non-Hispanic)
163	1	P,G	FEDUC	Father's Education	165	1 2 3 4 5 6 7 8 9	8 th grade or less 9 th through 12 th grade with no diploma High school graduate or GED completed Some college credit, but not a degree. Associate degree (AA,AS) Bachelor's degree (BA, AB, BS) Master's degree (MA, MS, MEng, MEd, MSW, MBA) Doctorate (PhD, EdD) or Professional Degree (MD, DDS, DVM, LLB, JD) Unknown
164	1		FILLER14	Filler			Blank
165	1	P,G	F_FEDUC	Reporting Flag for Education of Father			See footnote
166-170	5		FILLER15	Filler			Blank
171-172	2	P,G	PRIORLIVE	Prior Births Now Living		00-30 99	Number of children still living from previous live births Unknown or not stated
173-174	2	P,G	PRIORDEAD	Prior Births Now Dead		00-30 99	Number of children dead from previous live births Unknown or not stated
175-176	2	P,G	PRIORTERM	Prior Terminations/Fetal Death		0-30 99	Number of terminations/fetal deaths Unknown or not stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
177-178	2		FILLER16	Filler		Blank	
179	1	P,G	LBO_REC	Live Birth Order Recode		1-7 8 9	Live birth order 8 or more live births Unknown or not stated
180-181	2		FILLER17	Filler		Blank	
182	1	P,G	TPO_REC	Total Pregnancy Order Recode		1-7 8 9	Total pregnancy order 8 or more total pregnancies Unknown or not stated
183-197	15		FILLER18	Filler		Blank	
198-200	3	P,G	ILLB_R	Interval of Last Live Birth Recode	126	000-003 004-300 888 999	Plural delivery Months since last live birth Not applicable / 1 st live birth Unknown or not stated
201-202	2	P,G	ILLB_R11	Interval Since Last Live Birth Recode 11	126	00 01 02 03 04 05 06 07 08 88 99	Zero to 3 months (plural delivery) 4 to 11 months 12 to 17 months 18 to 23 months 24 to 35 months 36 to 47 months 48 to 59 months 60 to 71 months 72 months and over Not applicable (1 st live birth) Unknown or not stated
203-205	3		FILLER19	Filler		Blank	
206-208	3	P,G	ILOO_R	Interval Since Last Other Outcome Recode	126	000-003 004-300 888 999	Plural delivery Months since last other pregnancy outcome Not applicable / 1 st natality event Unknown or not stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
209-210	2	P,G	ILOO_R11	Interval Since Last Other Outcome Recode 11	126	00 01 02 03 04 05 06 07 08 88 99	Zero to 3 months (plural delivery) 4 to 11 months 12 to 17 months 18 to 23 months 24 to 35 months 36 to 47 months 48 to 59 months 60 to 71 months 72 months and over Not applicable (1 st natality event) Unknown or not stated
211-213	3		FILLER20	Filler		Blank	
214-216	3	P,G	ILP_R	Interval Since Last Pregnancy Recode	126	000-003 004-300 888 999	Plural delivery Months since last live birth Not applicable / no previous pregnancy Unknown or not stated
217-218	2	P,G	ILP_R11	Interval Since Last Pregnancy Recode 11	126	00 01 02 03 04 05 06 07 08 88 99	Zero to 3 months (plural delivery) 4 to 11 months 12 to 17 months 18 to 23 months 24 to 35 months 36 to 47 months 48 to 59 months 60 to 71 months 72 months and over Not applicable (no previous pregnancy) Unknown or not stated
219-223	5		FILLER21	Filler		Blank	
224-225	2	P,G	PRECARE	Month Prenatal Care	226	00 01-10 99	No prenatal care Month prenatal care began Unknown or not stated
226	1	P,G	F_MPCB	Reporting Flag for Month Prenatal Care Began			See footnote
227	1	P,G	PRECARE5	Month Prenatal Care Began Recode	226	1 2 3 4	1 st to 3 rd month 4 th to 6 th month 7 th to final month No prenatal care

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
228-237	10		FILLER22	Filler		5 Blank	Unknown or not stated
238-239	2	P,G	PREVIS	Number of Prenatal Visits (Revised) See field 242-243 for national data		00-98 99	Number of prenatal visits Unknown or not stated
240-241	2		FILLER23	Filler		Blank	
242-243	2	P,G	PREVIS_REC	Number of Prenatal Visits Recode 244		01 02 03 04 05 06 07 08 09 10 11 12	No visits 1 to 2 visits 3 to 4 visits 5 to 6 visits 7 to 8 visits 9 to 10 visits 11 to 12 visits 13 to 14 visits 15 to 16 visits 17 to 18 visits 19 or more visits Unknown or not stated
244	1	P,G	F_TPCV	Reporting Flag for Total Prenatal Care Visits			See footnote
245-250	6		FILLER24	Filler		Blank	
251	1	P,G	WIC	WIC	252	Y N U	Yes No Unknown or not stated
252	1	P,G	F_WIC	Reporting Flag for WIC		0 1	Non-Reporting Reporting
253-254	2	P,G	CIG_0	Cigarettes Before Pregnancy 265		00-97 98 99	Number of cigarettes daily 98 or more cigarettes daily Unknown or not stated
255-256	2	P,G	CIG_1	Cigarettes 1st Trimester 266		00-97 98 99	Number of cigarettes daily 98 or more cigarettes daily Unknown or not stated
257-258	2	P,G	CIG_2	Cigarettes 2nd Trimester 267		00-97 98 99	Number of cigarettes daily 98 or more cigarettes daily Unknown or not stated
259-260	2	P,G	CIG_3	Cigarettes 3rd Trimester 268		00-97 98	Number of cigarettes daily 98 or more cigarettes daily

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
						99	Unknown or not stated
261	1	P,G	CIG0_R	Cigarettes Before Pregnancy Recode 265		0 1 2 3 4 5 6	Nonsmoker 1-5 6-10 11-20 21-40 41 or more Unknown or not stated
262	1	P,G	CIG1_R	Cigarettes 1st Trimester Recode 266		0 1 2 3 4 5 6	Nonsmoker 1-5 6-10 11-20 21-40 41 or more Unknown or not stated
263	1	P,G	CIG2_R	Cigarettes 2nd Trimester Recode 267		0 1 2 3 4 5 6	Nonsmoker 1-5 6-10 11-20 21-40 41 or more Unknown or not stated
264	1	P,G	CIG3_R	Cigarettes 3rd Trimester Recode 268		0 1 2 3 4 5 6	Nonsmoker 1-5 6-10 11-20 21-40 41 or more Not stated / Not on certificate
265	1	P,G	F_CIGS_0	Reporting Flag for Cigarettes before Pregnancy			See footnote
266	1	P,G	F_CIGS_1	Reporting Flag for Cigarettes 1st Trimester			See footnote
267	1	P,G	F_CIGS_2	Reporting Flag for Cigarettes 2nd Trimester			See footnote
268	1	P,G	F_CIGS_3	Reporting Flag for Cigarettes 3rd Trimester			See footnote
269	1	P,G	CIG_REC	Cigarette Recode (Revised) 270		Y N U	Yes No Unknown or not stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
270	1	P,G	F_TOBACO	Reporting Flag for Tobacco use			See footnote
271-279	9		FILLER25	Filler		Blank	
280-281	2	P,G	MHTR	Mother's Height in Inches (Recode)	282	30-78 99	Height in inches Unknown or not stated
282	1	P,G	F_M_HT	Reporting Flag for Mother's Height			See footnote
283-286	4	P,G	BMI	BMI	282	13.0-69.9 99.9	Body Mass Index Unknown or not stated
287	1	P,G	BMI_R	Body Mass Index Recode	282	1 2 3 4 5 6 9	Underweight <18.5 Normal 18.5-24.9 Overweight 25.0-29.9 Obesity I 35.0-39.9 Obesity II 35.0-39.9 Extreme Obesity III ≥ 40.0 Unknown or not stated
288-291	4		FILLER26	Filler		Blank	
292-294	3	P,G	PWgt_R	Pre-pregnancy Weight Recode	295	075-375 999	Weight in pounds Unknown or not stated
295	1	P,G	F_PWGT	Reporting Flag for Pre-pregnancy Weight			See footnote
296-298	3		FILLER27	Filler		Blank	
299-301	3	P,G	DWGT_R	Delivery Weight Recode	303	999	100-400 Weight in pounds Unknown or not stated
302	1		FILLER28	Filler		Blank	
303	1	P,G	F_DWGT	Reporting Flag for Delivery Weight			See footnote
304-305	2	P,G	WTGAIN	Weight Gain	307	00-97 98 99	Weight gain in pounds 98 pounds and over Unknown or not stated
306	1	P,G	WTGAIN_REC	Weight Gain Recode	307	1 2 3 4 5	Less than 11 pounds 11 to 20 pounds 21 to 30 pounds 31 to 40 pounds 41 to 98 pounds

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
						9	Unknown or not stated
307	1	P,G	F_WTGAIN	Reporting Flag for Weight Gain			See footnote
308-312	5		FILLER29	Filler		Blank	

The following checkbox fields 313-432 include data for revised states only. For national data for items that are comparable across revisions see fields 1330-1345.

313-338	30		<u>Risk Factors</u>				
	313	1	P,G	RF_PDIAB	Pre-pregnancy Diabetes	319	Y Yes
	314	1	P,G	RF_GDIAB	Gestational Diabetes	320	N No
	315	1	P,G	RF_PHYPE	Pre-pregnancy Hypertension	321	U Unknown or not stated
	316	1	P,G	RF_GHYPE	Gestational Hypertension	322	
	317	1	P,G	RF_EHYPE	Hypertension Eclampsia	323	
	318	1	P,G	RF_PPB	Previous Preterm Birth	324	
	319	1	P,G	F_RF_PDIAB	Reporting Flag for Pre-pregnancy Diabetes		See footnote
	320	1	P,G	F_RF_GDIAB	Reporting Flag for Gestational Diabetes		
	321	1	P,G	F_RF_PHYPE	Reporting Flag for Pre-pregnancy Hypertension		
	322	1	P,G	F_RF_GHYPE	Reporting Flag for Gestational Hypertension		
	323	1	P,G	F_RF_EHYPE	Reporting Flag for Hypertension Eclampsia		
	324	1	P,G	F_RF_PPB	Reporting Flag for Previous Preterm Birth		
	325	1	P,G	RF_INFT	Infertility Treatment	328	Y Yes
					Use reporting flag in field 319 for 2014	N No	
						U Unknown or not stated	
	326	1	P,G	RF_DRG	Fertility Enhancing Drugs	329	Y Yes
						N No	
						X Not applicable	
						U Unknown or not stated	
	327	1	P,G	RF_ART	Asst. Reproductive Technology	330	Y Yes
						N No	
						X Not applicable	
						U Unknown or not stated	
	328	1		FILLER30	Filler		Blank
	329	1	P,G	F_RF_DRG	Reporting Flag for Fertility Enhance Drugs		See footnote
	330	1	P,G	F_RF_ART	Reporting Flag for Reproductive Technology		See footnote
	331	1	P,G	RF_CESAR	Previous Cesareans	335	Y Yes
						N No	

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition	
						U	Unknown or not stated	
332-333	2	P,G	RF_CESARN	Number of Previous Cesareans	336	00 01-30 99	None Number of previous cesareans Unknown or not stated	
334	1		FILLER30	Filler		Blank		
335	1	P,G	F_RF_CESAR	Reporting Flag for Previous Cesarean			See footnote	
336	1	P,G	F_RF_NCESAR	Reporting Flag for Number of Previous Cesareans			See footnote	
337	1	P,G	NO_RISKS	No Risk Factors Checked	126	1 0 9	True False Not Reported	
338-342	4		FILLER31	Filler		Blank		
343-358	15		<u>Infections Present</u>					
343	1	P,G	IP_GON	Gonorrhea	348	Y	Yes	
344	1	P,G	IP_SYPH	Syphilis	349	N	No	
345	1	P,G	IP_CHLAM	Chlamydia	350	U	Unknown or not stated	
346	1	P,G	IP_HEPB	Hepatitis B	351			
347	1	P,G	IP_HEPC	Hepatitis C	352			
348	1	P,G	F_IP_GON	Reporting Flag for Gonorrhea			See footnote	
349	1	P,G	F_IP_SYPH	Reporting Flag for Syphilis				
350	1	P,G	F_IP_CHLAM	Reporting Flag for Chlamydia				
351	1	P,G	F_IP_HEPB	Reporting Flag for Hepatitis B				
352	1	P,G	F_IP_HEPC	Reporting Flag for Hepatitis C				
353	1	P,G	NO_INFEC	No Infections Checked	126	1 0 9	True False Not Reported	
354-359	6		FILLER32	Filler		Blank		
360-364	12		<u>Obstetric Procedures</u>					
360	1	P,G	OB_SUCC	Successful External Cephalic Version	363	Y N U	Yes No Unknown or not stated	
361	1	P,G	OB_FAIL	Failed External Cephalic Version	364	Y N	Yes No	

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
						U	Unknown or not stated
362	1		FILLER33	Filler		Blank	
363	1	P,G	F_OB_SUCC	Reporting Flag for Successful External Cephalic Version			See footnote
364	1	P,G	F_OB_FAIL	Reporting Flag for Failed External Cephalic Version			See footnote
365-371	7	P,G	CO_SEQNUM	Cohort Sequence Number		xxx,xxx- xxx,xxx	
372-375	4	P,G	CO_DODYY	Cohort Year of Death		20XX	
376-382	7	P,G	FILLER34	Filler		Blank	
383-400	18			<u>Characteristics of Labor and Delivery</u>			
383	1	P,G	LD_INDL	Induction of Labor	389	Y	Yes
384	1	P,G	LD_AUGM	Augmentation of Labor	390	N	No
385	1	P,G	LD_STER	Steroids	391	U	Unknown or not stated
386	1	P,G	LD_ANTB	Antibiotics	392		
387	1	P,G	LD_CHOR	Chorioamnionitis	393		
388	1	P,G	LD_ANES	Anesthesia	394		
389	1	P,G	F_LD_INDL	Reporting Flag for Induction of Labor			See footnote
390	1	P,G	F_LD_AUGM	Reporting Flag for Augmentation of Labor			
391	1	P,G	F_LD_STER	Reporting Flag for Steroids			
392	1	P,G	F_LD_ANTB	Reporting Flag for Antibiotics			
393	1	P,G	F_LD_CHOR	Reporting Flag for Chorioamnionitis			
394	1	P,G	F_LD_ANES	Reporting Flag for Anesthesia			
395	1	P,G	NO_LBRDLV	No Characteristics of Labor Checked		1 0 9	True False Not Reported
					126		
396-400	5		FILLER35	Filler		Blank	
401-409	9			<u>Method of Delivery</u>			
401	1	P,G	ME_PREP	Fetal Presentation	404	1 2 3 9	Cephalic Breech Other Unknown or not stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition	
402	1	P,G	ME_ROUT	Final Route & Method of Delivery	405	1 2 3 4 9	Spontaneous Forceps Vacuum Cesarean Unknown or not stated	
403	1	P,G	ME_TRIAL	Trial of Labor Attempted	406	Y N X U	Yes No Not applicable Unknown or not stated	
404	1	P,G	F_ME_PREP	Reporting Flag for Fetal Presentation			See footnote	
405	1	P,G	F_ME_ROUT	Reporting Flag for Final Route and Method of Delivery			See footnote	
406	1	P,G	F_ME_TRIAL	Reporting Flag for Trial of Labor Attempted			See footnote	
407	1	P,G	RDMETH_REC	Delivery Method Recode	409	1 2 3 4 5 6 9	Vaginal (excludes vaginal after previous C-section) Vaginal after previous c-section Primary C-section Repeat C-section Vaginal (unknown if previous c-section) C-section (unknown if previous c-section) Not stated	
408	1	P,G	DMETH_REC	Delivery Method Recode Combined		1 2 9	Vaginal C-Section Unknown	
409	1	P,G	F_DMETH_REC	Reporting Flag for Method of Delivery Recode			See footnote	
410-414	5		FILLER36	Filler			Blank	
415-427	18		<u>Maternal Morbidity</u>					
415	1	P,G	MM_MTR	Maternal Transfusion	421	Y	Yes	
416	1	P,G	MM_PLAC	Perineal Laceration	422	N	No	
417	1	P,G	MM_RUPT	Ruptured Uterus	423	U	Unknown or not stated	
418	1	P,G	MM_UHYST	Unplanned Hysterectomy	424			
419	1	P,G	MM_AICU	Admit to Intensive Care	425			
420	1		FILLER37	Filler			Blank	
421	1	P,G	F_MM_MTR	Reporting Flag for Maternal Transfusion			See footnote	

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
422	1	P,G	F_MM_PLAC	Reporting Flag for Perineal Laceration			
423	1	P,G	F_MM_RUPT	Reporting Flag for Ruptured Uterus			
424	1	P,G	F_MM_UHYST	Reporting Flag for Unplanned Hysterectomy			
425	1	P,G	F_MM_AICU	Reporting Flag for Admission to Intensive Care			
426	1		FILLER38	Filler			Blank
427	1	P,G	NO_MMORB	No Maternal Morbidity Checked	126	1 0 9	True False Not Reported
428-432	5		FILLER39	Filler			Blank
433	1	P,G	ATTEND	Attendant		1 2 3 4 5 9	Doctor of Medicine (MD) Doctor of Osteopathy (DO) Certified Nurse Midwife (CNM) Other Midwife Other Unknown or not stated
434	1	P,G	MTRAN	Mother Transferred	126	Y N U	Yes No Unknown
435	1	P,G	PAY	Payment Source	437	1 2 3 4 5 6 8 9	Medicaid Private Insurance Self-Pay Indian Health Service CHAMPUS/TRICARE Other Government (Federal, State, Local) Other Unknown
436	1	P,G	PAY_REC	Payment Recode	438	1 2 3 4 9	Medicaid Private Insurance Self Pay Other Unknown
437	1	P,G	F_PAY	Reporting Flag for Source of Payment			See footnote
438	1	P,G	F_PAY_REC	Reporting Flag for Payment Recode			See footnote
439-443	5		FILLER40	Filler			Blank
444-445	2	P,G	APGAR5	Five Minute APGAR Score	447	00-10 99	A score of 0-10 Unknown or not stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
446	1	P,G	APGAR5R	Five Minute APGAR Recode		1 2 3 4 5	A score of 0-3 A score of 4-6 A score of 7-8 A score of 9-10 Unknown or not stated
					447		
447	1	P,G	F_APGAR5	Reporting Flag for Five minute APGAR			See footnote
448-449	2	P,G	APGAR10	Ten Minute APGAR Score		00-10 88 99	A score of 0-10 Not applicable Unknown or not stated
				Use reporting flag in field 126 for 2014			
450	1	P,G	APGAR10R	Ten Minute APGAR Recode		1 2 3 4 5	A score of 0-3 A score of 4-6 A score of 7-8 A score of 9-10 Not stated/not applicable
				Use reporting flag in field 126 for 2014			
451-453	1		FILLER41	Filler		Blank	
454	1	P,G	DPLURAL	Plurality Recode		1 2 3 4 5	Single Twin Triplet Quadruplet Quintuplet or higher
455	1		FILLER42	Filler		Blank	
456	1	P,G	IMP_PLUR	Plurality Imputed		Blank 1	Plurality is imputed Plurality is not imputed
457-458	2		FILLER43	Filler		Blank	
459	1	P,G	SETORDER_R	Set Order Recode	126	1 1 st , 2 2 nd , 3 3 rd , 4 4 th , 5 5 th to 16 th 9	Unknown or not stated
460-474	15		FILLER44	Filler		Blank	
475	1	P,G	SEX	Sex of Infant		M F	Male Female
476	1	P,G	IMP_SEX	Imputed Sex		Blank 1	Infant Sex not Imputed Infant Sex is Imputed
477-478	2	P,G	DLMP_MM	Last Normal Menses Month		01	January

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
						02	February
						03	March
						04	April
						05	May
						06	June
						07	July
						08	August
						09	September
						10	October
						11	November
						12	December
						99	Unknown or not stated
479-480	2		FILLER45	Filler		Blank	
481-484	4	P,G	DLMP_YY	Last Normal Menses Year		nnnn 9999	Year of last normal menses Unknown or not stated
485-487	3		FILLER46	Filler		Blank	
487	1		COMPGST_IMP	Computed Gestation Imputation Flag		Blank 1	Computed Gestation is not imputed Computed Gestation is imputed
488	1	P,G	COMBGST_IMP	Combined Gestation Imputed		Blank 1	Combined Gestation is not imputed Combined Gestation is imputed
489	1	P,G	OBGEST_FLG	Obstetric Estimate of Gestation Used Flag		Blank 1	Clinical Estimate is not used Clinical Estimate is used
490-491	2	P,G	COMBGEST	Combined Gestation – Detail in Weeks		17-47 99	17 th through 47 th week of Gestation Unknown
492-493	2	P,G	GESTREC10	Combined Gestation Recode 10		01 02 03 04 05 06 07 08 09 10 99	Under 20 weeks 20-27 weeks 28-31 weeks 32-33 weeks 34-36 weeks 37-38 weeks 39 weeks 40 weeks 41 weeks 42 weeks and over Unknown
494	1	P,G	GESTREC3	Combined Gestation Recode 3		1 2	Under 37 weeks 37 weeks and over

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
						3	Not stated
495-497	3		FILLER47	Filler		Blank	
498	1	P,G	LMPUSED	Computed (LMP) Gestation Used Flag		Blank 1	LMP not used for gestation LMP used for gestation
499-500	2	P,G	OEGest_Comb	Obstetric Estimate Edited (NCHS Standard item)		17-47 99	Weeks of gestation Not stated
501-502	2	P,G	OEGest_R10	Obstetric Estimate Recode10 (NCHS Standard item)		01 02 03 04 05 06 07 08 09 10 99	Under 20 weeks 20-27 weeks 28-31 weeks 32-33 weeks 34-36 weeks 37-38 weeks 39 weeks 40 weeks 41 weeks 42 weeks and over Unknown
503	1	P,G	OEGest_R3	Obstetric Estimate Recode 3 (NCHS Standard Item)		1 2 3	Under 37 weeks 37 weeks and over Not stated
504-507	4	P,G	DBWT	Birth Weight – Detail in Grams (Edited)		0227-8165 9999	Number of grams Not stated birth weight
508	1		FILLER48	Filler		Blank	
509-510	2	P,G	BWTR14	Birth Weight Recode 14		01 02 03 04 05 06 07 08 09 10 11 12 13 14	227 - 499 grams 500 – 749 grams 750 – 999 grams 1000 - 1249 grams 1250 – 1499 grams 1500 – 1999 grams 2000 – 2499 grams 2500 – 2999 grams 3000 – 3499 grams 3500 – 3999 grams 4000 – 4499 grams 4500 – 4999 grams 5000 – 8165 grams Not Stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
511	1	P,G	BWTR4	Birth Weight Recode 4		1 2 3 4	227 - 1499 grams 1500 – 2499 grams 2500 - 8165 grams Unknown or not stated
512-515	4	P,G	BRTHWGT	Imputed Birth Weight		0227-8165 9999	Number of grams Not stated birth weight
516	1	P,G	BWTIMP	Birth Weight Imputed Flag		Blank 1	Birth Weight is not imputed Birth Weight is imputed

The following checkbox fields 517-566 include data for revised states only. For national data for items that are comparable across revisions see fields 1340-1345.

517-536	20	<u>Abnormal Conditions of the Newborn</u>					
517	1	P,G	AB_AVEN1	Assisted Ventilation	524	Y	Yes
518	1	P,G	AB_AVEN6	Assisted Ventilation > 6 hrs	525	N	No
519	1	P,G	AB_NICU	Admission to NICU	526	U	Unknown or not stated
520	1	P,G	AB_SURF	Surfactant	527		
521	1	P,G	AB_ANTI	Antibiotics	528		
522	1	P,G	AB_SEIZ	Seizures	529		
523	1		FILLER50	Filler		Blank	
524	1	P,G	F_AB_AVEN1	Reporting Flag for Assisted Ventilation			See footnote
525	1	P,G	F_AB_AVEN6	Reporting Flag for Assisted Ventilation >6 hrs			
526	1	P,G	F_AB_NICU	Reporting Flag for Admission to NICU			
527	1	P,G	F_AB_SURF	Reporting Flag for Surfactant			
528	1	P,G	F_AB_ANTI	Reporting Flag for Antibiotics			
529	1	P,G	F_AB_SEIZ	Reporting Flag for Seizures			
530	1		FILLER51	Filler		Blank	
531	1	P,G	NO_ABNORM	No Abnormal Conditions Checked	126	1 0 9	True False Not Reported
532-536	5		FILLER52	Filler		Blank	
537-566	30	<u>Congenital Anomalies of the Newborn</u>					
537	1	P,G	CA_ANEN	Anencephaly	543	Y	Yes
538	1	P,G	CA_MNSB	Meningomyelocele / Spina Bifida	544	N	No

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
539	1	P,G	CA_CCHD	Cyanotic Congenital Heart Disease	545	U	Unknown or not stated
540	1	P,G	CA_CDH	Congenital Diaphragmatic Hernia	546		
541	1	P,G	CA_OMP	Omphalocele	547		
542	1	P,G	CA_GAST	Gastroschisis	548		
543	1	P,G	F_CA_ANEN	Reporting Flag for Anencephaly			See footnote
544	1	P,G	F_CA_MNSB	Flag for Meningocele/Spina Bifida			
545	1	P,G	F_CA_CCHD	Reporting Flag for Cyanotic Congenital Heart Disease			
546	1	P,G	F_CA_CDH	Reporting Flag for Congenital Diaphragmatic Hernia			
547	1	P,G	F_CA_OMP	Reporting Flag for Omphalocele			
548	1	P,G	F_CA_GAST	Reporting Flag for Gastroschisis			
549	1	P,G	CA_LIMB	Limb Reduction Defect	555	Y	Yes
550	1	P,G	CA_CLEFT	Cleft Lip w/ or w/o Cleft Palate	556	N	No
551	1	P,G	CA_CLPAL	Cleft Palate alone	557	U	Unknown or not stated
552	1	P,G	CA_DOWN	Down Syndrome	558	C P N U	Confirmed Pending No Unknown
553	1	P,G	CA_DISOR	Suspected Chromosomal Disorder	559	C P N U	Confirmed Pending No Unknown
554	1	P,G	CA_HYPO	Hypospadias	560	Y N U	Yes, anomaly reported No, anomaly not reported Unknown
555	1	P,G	F_CA_LIMB	Reporting Flag for Limb Reduction Defect			See footnote
556	1	P,G	F_CA_CLEFT	Flag for Cleft Lip with or without Cleft Palate			
557	1	P,G	F_CA_CLPAL	Reporting Flag for Cleft Plate Alone			
558	1	P,G	F_CA_DOWN	Reporting Flag for Down Syndrome			
559	1	P,G	F_CA_DISOR	Reporting Flag for Suspected Chromosomal Disorder			
560	1	P,G	F_CA_HYPO	Reporting Flag for Hypospadias			
561	1	P,G	NO_CONGEN	No Congenital Anomalies Checked	126	1 0 9	True False Not Reported
562-566	5		FILLER53	Filler			Blank
567	1	P,G	ITRAN	Infant Transferred	126	Y N U	Yes No Unknown or not stated

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
568	1	P,G	ILIVE	Infant Living at Time of Report	126	Y N U	Yes No Unknown or not stated
569	1	P,G	BFED	Infant Being Breastfed	570	Y N U	Yes No Unknown or not stated
570	1	P,G	F_BFED	Reporting Flag for Breastfed at Discharge			See footnote
571-1329	759	P,G	FILLER54	Filler		Blank	

The following items (fields 1330-1338 and 1340-1345) are comparable across revisions and include data for revised and unrevised reporting areas.

1330	1	P,G	uBFacil	Place of birth		1 2 3 4 5 9	Hospital Freestanding Birthing Center Clinic / Doctor's Office Residence Other Unknown
1331-1345			Unrevised Check Boxes	All checkbox items below follow this coding structure:		1 2 9	Yes No Unknown
1331	1	P,G	uRF_Diab	Diabetes			
1332	1	P,G	uRF_Chype	Chronic Hypertension			
1333	1	P,G	uRF_Phype	Prepregnancy Associated Hypertension			
1334	1	P,G	uRf_Ehype	Eclampsia	338		
1335	1	P,G	uME_Forc	Forceps			
1336	1	P,G	uME_Vacu	Vacuum			
1337	1	P,G	uOB_Indu	Induction of Labor			
1338	1	P,G	uLD_Bree	Breech			
1339	1		FILLER54	Filler		Blank	
1340	1	P,G	uCA_Anen	Anencephaly			
1341	1	P,G	uCA_Spina	Spina Bifida / Meningocele			
1342	1	P,G	uCA_Omph	Omphalocele / Gastroschisis			
1343	1	P,G	uCA_Clip	Cleft Lip / Palate			
1344	1	P,G	uCA_Hern	Diaphragmatic Hernia			
1345	1	P,G	uCA_Down	Down Syndrome			
1346	1	P,G	FLGND	Match Status		1 Blank	Record in both files Record not in both files

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
Here ends the Denominator file. Documentation of the Mortality Section of the Numerator (Linked) file begins on the next page.							
1347-1355	9	P,G	FILLER55	Filler			Blank
1356-1358	3	P,G	AGED	Age at Death in Days		000-365	Number of days
1359	1	P,G	AGER5	Infant age recode 5		1 2 3 4 5	Under 1 hour 1 – 23 hours 1 – 6 days 7 – 27 days (late neonatal) 28 days and over (postneonatal)
1360-1361	2	P,G	AGER22	Infant age recode 22		Blank 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22	Age 1 year and over or not stated Under 1 hour (includes not stated hours and minutes) 1 – 23 hours 1 day (includes not stated days) 2 days 3 days 4 days 5 days 6 days 7 days (includes not stated weeks) 14 – 20 days 21 – 27 days 1 month (includes not stated months) 2 months 3 months 4 months 5 months 6 months 7 months 8 months 9 months 10 months 11 months
1362	1	P,G	MANNER	Manner of Death		1 2 3 4 5 6 7 Blank	Accident Suicide Homicide Pending investigation Could not determine Self-inflicted Natural Not specified

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
1363	1	P,G	DISPO	Method of Disposition		B C O U	Burial Cremation Other Unknown
1364	1	P,G	AUTOPSY	Autopsy		Y N U	Yes No Unknown
1365	1	P,G	FILLER56	Filler			Blank
1366	1	P,G	PLACE	Place of injury for causes W00-Y34, except Y06.- and Y07.-		0 1 2 3 4 5 6 7 8 9 Blank	Home Residential institution School, other institution and public administrative area Sports and athletics area Street and highway Trade and service area Industrial and construction area Farm Other Specified Places Unspecified place Cause other than W00-Y34, except Y06.- and Y07.-
1367	1	P,G	FILLER57	Filler			Blank
<u>UNDERLYING CAUSE OF DEATH</u>							
1368-1371	4	P,G	UC0D	ICD Code (10 th Revision) See the <u>International Classification of Diseases</u> , 1992 Revision, Volume 1.			
1372	1	P,G	FILLER57	Filler			Blank
1373-1375	3	P,G	UCODR130	130 Infant Cause Recode			
1376	1	P,G	FILLER58	Filler			Blank
1377-1384	8	P,G	RECWT	Record Weight (no weights computed for possessions file)			1.XXXXXXX
1385-1386	2	P,G	FILLER59	Filler			Blank
<u>MULTIPLE CONDITIONS</u>							

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
1387-1388	2	P,G	EANUM	Number of Entity-Axis Conditions		00-20	Code range
1389-1528	140	P,G	ENTITY	Entity-Axis Conditions Space has been provided for a maximum of 20 conditions. Each condition takes 7 positions in the record. The 7 th position will be blank. Records that do not have 20 conditions are blank in the unused area.			
				Position 1: Part/line number on certificate			
				1 ... Part I, line 1 (a)			
				2 ... Part I, line 2 (b)			
				3 ... Part I, line 3 (c)			
				4 ... Part I, line 4 (d)			
				5 ... Part I, line 5 (e)			
				6 ... Part II,			
				Position 2: Sequence of condition within part/line			
				1-7 ... Code range			
				Position 3 – 6: Condition code			
1389-1395	7	P,G		1 st Condition			
1396-1402	7	P,G		2 nd Condition			
1403-1409	7	P,G		3 rd Condition			
1410-1416	7	P,G		4 th Condition			
1417-1423	7	P,G		5 th Condition			
1424-1430	7	P,G		6 th Condition			
1431-1437	7	P,G		7 th Condition			
1438-1444	7	P,G		8 th Condition			
1445-1451	7	P,G		9 th Condition			
1452-1458	7	P,G		10 th Condition			
1459-1465	7	P,G		11 th Condition			
1466-1472	7	P,G		12 th Condition			
1473-1479	7	P,G		13 th Condition			
1480-1486	7	P,G		14 th Condition			
1487-1493	7	P,G		15 th Condition			
1494-1500	7	P,G		16 th Condition			
1501-1507	7	P,G		17 th Condition			
1508-1514	7	P,G		18 th Condition			
1515-1521	7	P,G		19 th Condition			
1522-1528	7	P,G		20 th Condition			
1529-1530	2	P,G	FILLER60	Filler			Blank
1531-1532	2	P,G	RANUM	Number of Record-Axis Conditions		00-20	Code range

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
1533-1632	100	P,G	RECORD	Record-Axis Conditions Space has been provided for a maximum of 20 conditions. Each condition takes 5 positions in the record. The 5 th position will be blank. Records that do not have 20 conditions are blank in the unused area. Positions 1 – 4: Condition Code			
1533-1537	5	P,G		1 st Condition			
1538-1542	5	P,G		2 nd Condition			
1543-1547	5	P,G		3 rd Condition			
1548-1552	5	P,G		4 th Condition			
1553-1557	5	P,G		5 th Condition			
1558-1562	5	P,G		6 th Condition			
1563-1567	5	P,G		7 th Condition			
1568-1572	5	P,G		8 th Condition			
1573-1577	5	P,G		9 th Condition			
1578-1582	5	P,G		10 th Condition			
1583-1587	5	P,G		11 th Condition			
1588-1592	5	P,G		12 th Condition			
1593-1597	5	P,G		13 th Condition			
1598-1602	5	P,G		14 th Condition			
1603-1607	5	P,G		15 th Condition			
1608-1612	5	P,G		16 th Condition			
1613-1617	5	P,G		17 th Condition			
1618-1622	5	P,G		18 th Condition			
1623-1627	5	P,G		19 th Condition			
1628-1632	5	P,G		20 th Condition			
1633-1669	37	P,G	FILLER61	Filler			Blank
1670	1	P,G	HOSPD	<u>Place of Death and Decedent's Status</u>		1 2 3 4 5 6 7 9	Hospital, clinic or Medical Center – Inpatient Hospital, clinic or Medical Center – Outpatient or admitted to Emergency Room Hospital, clinic or Medical Center – Dead on Arrival Decedent's home Hospice facility Nursing home/long term care Other Place of death unknown
1671	1	P,G	DWEEKDAY	<u>Day of Week of Death</u>		1 2 3 4 5	Sunday Monday Tuesday Wednesday Thursday

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

Position	Len	File*	Field	Description	Flag Position	Values	Definition
						6	Friday
						7	Saturday
						9	Unknown
1672-1675	4	P,G	DOD_YY	<u>Data Year</u>		2017	2017
1676-1741	66	P,G	FILLER62	Filler			
1742-1743	2	P,G	DOD_MM	<u>Month of Death</u>		01	January
						02	February
						03	March
						04	April
						05	May
						06	June
						07	July
						08	August
						09	September
						10	October
						11	November
						12	December

1/ Flag Definitions: 0 Not reported either year, or not reported in either the previous or the current year, 1 Reported both years

ST: 1 = Subtotal Limited: Sex: 1 = Males; 2 = Females
Age: 1 = 5 and over; 2 = 10-54; 3 = 28 days and over
4 = Under 1 year; 5 = 1-4 years; 6 = 1 year and over
7 = 10 years and over

***** Cause Subtotals are not identified in this file *****

130 S Limited

Recode T Sex Age Cause Title and ICD-10 Codes Included

056		Influenza (J10-J11)
057		Pneumonia (J12-J18)
058		Acute bronchitis and acute bronchiolitis (J20-J21)
059		Bronchitis, chronic and unspecified (J40-J42)
060		Asthma (J45-J46)
061		Pneumonitis due to solids and liquids (J69)
062		Other and unspecified diseases of respiratory system (J22,J30-J39,J43-J44,J47-J68,J70-J98)
063	1	Diseases of the digestive system (K00-K92)
064		Gastritis, duodenitis, and noninfective enteritis and colitis (K29,K50-K55)
065		Hernia of abdominal cavity and intestinal obstruction without hernia (K40-K46,K56)
066		All other and unspecified diseases of digestive system (K00-K28,K30-K38,K57-K92)
067	1	Diseases of the genitourinary system (N00-N95)
068		Renal failure and other disorders of kidney (N17-N19,N25,N27)
069		Other and unspecified diseases of genitourinary system (N00-N15,N20-N23,N26,N28-N95)
070	1	Certain conditions originating in the perinatal period (P00-P96)
071	1	Newborn affected by maternal factors and by complications of pregnancy, labor and delivery (P00-P04)
072		Newborn affected by maternal hypertensive disorders (P00.0)
073		Newborn affected by other maternal conditions which may be unrelated to present pregnancy (P00.1-P00.9)
074	1	Newborn affected by maternal complications of pregnancy (P01)
075		Newborn affected by incompetent cervix (P01.0)
076		Newborn affected by premature rupture of membranes (P01.1)
077		Newborn affected by multiple pregnancy (P01.5)
078		Newborn affected by other maternal complications of pregnancy (P01.2-P01.4,P01.6-P01.9)
079	1	Newborn affected by complications of placenta, cord and membranes (P02)
080		Newborn affected by complications involving placenta (P02.0-P02.3)
081		Newborn affected by complications involving cord (P02.4-P02.6)
082		Newborn affected by chorioamnionitis (P02.7)
083		Newborn affected by other and unspecified abnormalities of membranes (P02.8-P02.9)
084		Newborn affected by other complications of labor and delivery (P03)
085		Newborn affected by noxious influences transmitted via placenta or breast milk (P04)
086	1	Disorders related to length of gestation and fetal malnutrition (P05-P08)
087		Slow fetal growth and fetal malnutrition (P05)
088	1	Disorders related to short gestation and low birthweight, not elsewhere classified (P07)
089		Extremely low birthweight or extreme immaturity (P07.0,P07.2)
090		Other low birthweight or preterm (P07.1,P07.3)
091		Disorders related to long gestation and high birthweight (P08)
092		Birth trauma (P10-P15)
093	1	Intrauterine hypoxia and birth asphyxia (P20-P21)
094		Intrauterine hypoxia (P20)
095		Birth asphyxia (P21)
096		Respiratory distress of newborn (P22)
097	1	Other respiratory conditions originating in the perinatal period (P23-P28)
098		Congenital pneumonia (P23)
099		Neonatal aspiration syndromes (P24)
100		Interstitial emphysema and related conditions originating in the perinatal period (P25)
101		Pulmonary hemorrhage originating in the perinatal period (P26)
102		Chronic respiratory disease originating in the perinatal period (P27)
103		Atelectasis (P28.0-P28.1)
104		All other respiratory conditions originating in the perinatal period (P28.2-P28.9)
105	1	Infections specific to the perinatal period (P35-P39)
106		Bacterial sepsis of newborn (P36)
107		Omphalitis of newborn with or without mild hemorrhage (P38)

Documentation Table 1. Live births and infant death by state of occurrence of birth and by state of residence at birth United States, Puerto Rico, Virgin Islands, and Guam, 2017 Period Data.
(Residence of birth is of the Mother)

State	Live Births		Infant Deaths				Infant Mortality Rate
	Occurrence	Residence	Unweighted		Weighted 1/		
			Occurrence	Residence	Occurrence	Residence	
United States /2	3,864,781	3,855,500	22,280	22,249	22,372	22,341	5.79
Alabama	57,469	58,941	423	435	423	435	7.38
Alaska	10,353	10,445	51	59	52	60	5.74
Arizona	82,829	81,872	456	461	462	467	5.70
Arkansas	36,179	37,520	292	304	292	304	8.10
California	472,820	471,658	1,966	1,951	1,997	1,981	4.20
Colorado	64,964	64,382	304	289	304	289	4.49
Connecticut	36,712	35,221	160	159	160	159	4.51
Delaware	11,265	10,855	67	68	67	68	6.26
Dist of Columbia	14,603	9,560	132	78	132	78	8.16
Florida	223,608	223,630	1,363	1,361	1,366	1,364	6.10
Georgia	130,183	129,243	954	926	956	928	7.18
Hawaii	17,519	17,517	92	95	92	95	5.42
Idaho	21,825	22,181	93	101	93	101	4.55
Illinois	145,700	149,390	855	914	856	915	6.12
Indiana	83,122	82,170	566	590	569	593	7.22
Iowa	38,284	38,430	174	204	174	204	5.31
Kansas	38,013	36,519	200	220	200	220	6.02
Kentucky	52,410	54,752	334	360	335	361	6.59
Louisiana	61,204	61,018	434	431	434	431	7.06
Maine	12,072	12,298	71	72	71	72	5.85
Maryland	68,156	71,641	427	461	427	461	6.43
Massachusetts	71,428	70,702	275	259	275	259	3.66
Michigan	110,450	111,426	746	754	747	755	6.78
Minnesota	67,546	68,595	343	329	343	329	4.80
Mississippi	36,564	37,357	282	326	282	326	8.73
Missouri	73,869	73,034	536	454	539	457	6.26
Montana	11,752	11,799	63	65	63	65	5.51
Nebraska	26,237	25,821	157	142	158	143	5.54
Nevada	35,466	35,756	208	209	208	209	5.85
New Hampshire	12,064	12,116	45	51	45	51	4.21
New Jersey	98,955	101,250	421	450	422	451	4.45
New Mexico	22,343	23,767	128	139	128	139	5.85
New York	113,347	118,006	550	569	552	571	4.84
New York City	117,015	111,731	501	482	501	482	4.31
North Carolina	122,103	120,125	855	844	856	845	7.03
North Dakota	12,391	10,737	57	47	57	47	4.38
Ohio	137,460	136,832	1,030	983	1,030	983	7.18
Oklahoma	48,833	50,214	370	391	370	391	7.79
Oregon	44,161	43,631	244	233	244	233	5.34
Pennsylvania	136,916	137,745	856	837	856	837	6.08
Rhode Island	11,198	10,638	72	66	72	66	6.20
South Carolina	53,579	57,029	338	372	338	372	6.52
South Dakota	12,809	12,134	103	94	103	94	7.75
Tennessee	86,721	81,016	693	591	693	591	7.29

Documentation Table 1. Live births and infant death by state of occurrence of birth and by state of residence at birth United States, Puerto Rico, Virgin Islands, and Guam, 2017 Period Data -Con.
 (Residence of birth is of the Mother)

State	Live Births		Infant Deaths				Infant Mortality Rate
	Occurrence	Residence	Unweighted		Weighted 1/		
			Occurrence	Residence	Occurrence	Residence	
Texas	390,056	382,050	2,236	2,208	2,264	2,236	5.85
Utah	49,651	48,585	289	284	291	286	5.89
Vermont	5,518	5,655	24	27	24	27	4.77
Virginia	99,476	100,391	561	589	564	592	5.90
Washington	87,331	87,562	342	339	343	340	3.88
West Virginia	19,252	18,675	119	129	120	130	6.96
Wisconsin	64,728	64,975	401	415	401	415	6.39
Wyoming	6,272	6,903	21	32	21	32	4.64
Puerto Rico	24,381	24,310	168	164	168	164	6.75
Guam	3,292	3,287	25	24	25	24	7.30

1/ Figures are based on weighted data rounded to the nearest infant, so categories may not add to totals

2/ Excludes data for Puerto Rico, Virgin Islands, and Guam.

Documentation Table 2. Live births, infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2017 Period Data.

[Rates are per 1,000 live births]

Race of mother and sex	Total	<500 grams	500-749 grams	750-999 grams	1000- 1249 grams	1250- 1499 grams	1500- 1999 grams	2000- 2499 grams	2500 grams or more	Not Stated
All races										
Both sexes										
Live births.....	3,855,500	6,189	9,471	10,625	12,709	15,995	62,617	202,142	3,533,652	2,100
Infant deaths.....	22,341	5,314	3,410	1,318	801	645	1,556	1,931	7,188	178
Infant Mortality Rate.....	5.79	858.62	360.05	124.05	63.03	40.33	24.85	9.55	2.03	84.76
Male										
Live births.....	1,972,885	3,226	4,789	5,458	6,392	8,050	30,413	92,322	1,821,119	1,116
Infant deaths.....	12,467	2,853	1,969	811	469	357	817	1,002	4,073	117
Infant Mortality Rate.....	6.32	884.38	411.15	148.59	73.37	44.35	26.86	10.85	2.24	104.84
Female										
Live births.....	1,882,615	2,963	4,682	5,167	6,317	7,945	32,204	109,820	1,712,533	984
Infant deaths.....	9,874	2,461	1,441	507	332	288	739	929	3,115	61
Infant Mortality Rate.....	5.24	830.58	307.77	98.12	52.56	36.25	22.95	8.46	1.82	61.99
Non-Hispanic White										
Both sexes										
Live births.....	1,992,461	1,985	3,235	4,038	5,239	6,765	27,973	90,416	1,851,905	905
Infant deaths.....	9,306	1,717	1,228	544	358	304	694	894	3,499	67
Infant Mortality Rate.....	4.67	864.99	379.60	134.72	68.33	44.94	24.81	9.89	1.89	74.03
Male										
Live births.....	1,022,316	1,027	1,643	2,066	2,625	3,366	13,523	41,186	956,397	483
Infant deaths.....	5,281	918	716	343	212	170	384	457	2,031	49
Infant Mortality Rate.....	5.17	893.87	435.79	166.02	80.76	50.51	28.40	11.10	2.12	101.45
Female										
Live births.....	970,145	958	1,592	1,972	2,614	3,399	14,450	49,230	895,508	422
Infant deaths.....	4,025	799	512	201	146	135	310	437	1,468	18
Infant Mortality Rate.....	4.15	834.03	321.61	101.93	55.85	39.72	21.45	8.88	1.64	*
Non-Hispanic Black										
Both sexes										
Live births.....	560,715	2,285	3,280	3,355	3,650	4,280	15,232	46,044	482,265	324
Infant deaths.....	6,152	1,925	1,029	356	185	152	355	450	1,641	59
Infant Mortality Rate.....	10.97	842.45	313.72	106.11	50.68	35.51	23.31	9.77	3.40	182.10
Male										
Live births.....	285,040	1,206	1,650	1,703	1,777	2,112	7,051	20,437	248,927	177
Infant deaths.....	3,423	1,051	608	222	108	78	179	242	898	38
Infant Mortality Rate.....	12.01	871.48	368.48	130.36	60.78	36.93	25.39	11.84	3.61	214.69

Documentation Table 2. Live births, infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2017 Period Data -Con.

[Rates are per 1,000 live births]

Race of mother and sex	Total	<500 grams	500-749 grams	750-999 grams	1000- 1249 grams	1250- 1499 grams	1500- 1999 grams	2000- 2499 grams	2500 grams or more	Not Stated
Female										
Live births.....	275,675	1,079	1,630	1,652	1,873	2,168	8,181	25,607	233,338	147
Infant deaths.....	2,728	874	421	134	76	74	176	207	743	21
Infant Mortality Rate.....	9.90	810.01	258.28	81.11	40.58	34.13	21.51	8.08	3.18	142.86
Non-Hispanic American Indian or Alaskan Native /1										
Both sexes										
Live births.....	29,957	50	74	77	100	129	516	1,533	27,463	15
Infant deaths.....	276	42	26	18	8	13	25	17	124	2
Infant Mortality Rate.....	9.21	840.00	351.35	*	*	*	48.45	*	4.52	*
Male										
Live births.....	15,310	32	39	38	53	78	269	716	14,077	8
Infant deaths.....	159	28	14	7	5	8	15	10	70	2
Infant Mortality Rate.....	10.39	875.00	*	*	*	*	*	*	4.97	*
Female										
Live births.....	14,647	18	35	39	47	51	247	817	13,386	7
Infant deaths.....	116	14	12	11	3	5	10	7	54	-
Infant Mortality Rate.....	7.92	*	*	*	*	*	*	*	4.03	-
Non-Hispanic Asian										
Both sexes										
Live births.....	249,250	275	476	516	679	906	3,920	14,487	227,910	81
Infant deaths.....	943	242	187	63	30	23	60	88	246	3
Infant Mortality Rate.....	3.78	880.00	392.86	122.09	44.18	25.39	15.31	6.07	1.08	*
Male										
Live births.....	128,520	151	233	275	355	463	2,055	6,770	118,176	42
Infant deaths.....	530	137	112	36	15	12	34	43	137	3
Infant Mortality Rate.....	4.12	907.28	480.69	130.91	*	*	16.55	6.35	1.16	*
Female										
Live births.....	120,730	124	243	241	324	443	1,865	7,717	109,734	39
Infant deaths.....	413	105	76	27	15	11	26	45	108	-
Infant Mortality Rate.....	3.42	846.77	312.76	112.03	46.30	24.83	13.94	5.83	0.98	-
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Both sexes										
Live births.....	9,426	14	24	15	28	29	162	459	8,691	4
Infant deaths.....	72	12	10	1	5	2	6	7	27	2
Infant Mortality Rate.....	7.64	*	*	*	*	*	*	*	3.11	*

Documentation Table 2. Live births, infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2017 Period Data -Con.

[Rates are per 1,000 live births]

Race of mother and sex	Total	<500 grams	500-749 grams	750-999 grams	1000-1249 grams	1250-1499 grams	1500-1999 grams	2000-2499 grams	2500 grams or more	Not Stated
Male										
Live births.....	4,954	6	12	7	16	16	91	219	4,584	3
Infant deaths.....	39	4	5	1	4	1	4	2	16	2
Infant Mortality Rate.....	7.87	*	*	*	*	*	*	*	*	*
Female										
Live births.....	4,472	8	12	8	12	13	71	240	4,107	1
Infant deaths.....	33	8	5	-	1	1	2	5	11	-
Infant Mortality Rate.....	7.38	*	*	-	*	*	*	*	*	-
Hispanic										
Both sexes										
Live births.....	898,764	1,279	2,044	2,210	2,557	3,353	12,774	42,720	831,573	254
Infant deaths.....	4,584	1,103	782	276	180	133	350	402	1,344	13
Infant Mortality Rate.....	5.10	862.39	382.58	124.89	70.39	39.67	27.40	9.41	1.62	*
Male										
Live births.....	457,788	651	1,046	1,154	1,321	1,732	6,440	19,923	425,391	130
Infant deaths.....	2,473	573	437	168	107	79	166	202	736	7
Infant Mortality Rate.....	5.40	880.18	417.78	145.58	81.00	45.61	25.78	10.14	1.73	*
Female										
Live births.....	440,976	628	998	1,056	1,236	1,621	6,334	22,797	406,182	124
Infant deaths.....	2,110	531	345	108	74	54	184	201	609	6
Infant Mortality Rate.....	4.78	845.54	345.69	102.27	59.87	33.31	29.05	8.82	1.50	*

* Figure does not meet standard of reliability or precision: based on fewer than 20 deaths in the numerator

- Quantity zero

1/ Includes Aleut and Eskimos

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 period data
 [Rates are per 1,000 live births]

Birthweight	Gestation									
	Total	<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	Not Stated
All Races										
Total										
Live births.....	3,855,500	25,913	35,476	45,028	276,309	2,434,939	781,645	240,871	12,560	2,759
Infant deaths.....	22,341	9,961	1,553	923	2,350	5,786	1,113	364	50	241
Infant Mortality Rate.....	5.79	384.40	43.78	20.50	8.50	2.38	1.42	1.51	3.98	87.35
Less than 2,500 grams										
Live births.....	319,748	25,715	34,489	41,459	119,415	93,318	4,173	737	97	345
Infant deaths.....	14,975	9,955	1,521	824	1,473	1,031	83	23	8	57
Infant Mortality Rate.....	46.83	387.13	44.10	19.88	12.34	11.05	19.89	31.21	*	165.22
Less than 500 grams										
Live births.....	6,189	6,081	77	1	3	1	-	-	-	26
Infant deaths.....	5,314	5,257	33	1	-	-	-	-	-	23
Infant Mortality Rate.....	858.62	864.50	428.57	*	-	-	-	-	-	884.62
500-749 grams										
Live births.....	9,471	8,672	729	37	13	2	-	-	-	18
Infant deaths.....	3,410	3,276	110	13	3	-	-	-	-	8
Infant Mortality Rate.....	360.05	377.77	150.89	*	*	-	-	-	-	*
750-999 grams										
Live births.....	10,625	7,213	3,051	195	68	67	11	5	1	14
Infant deaths.....	1,318	1,039	227	22	16	5	1	-	-	7
Infant Mortality Rate.....	124.05	144.05	74.40	112.82	*	*	*	-	-	*
1,000-1,249 grams										
Live births.....	12,709	3,071	7,808	1,208	396	168	30	8	-	20
Infant deaths.....	801	289	361	68	58	18	3	-	-	3
Infant Mortality Rate.....	63.03	94.11	46.23	56.29	146.46	*	*	-	-	*
1,250-1,499 grams										
Live births.....	15,995	485	9,514	3,804	1,781	335	49	11	2	14
Infant deaths.....	645	62	316	125	103	35	2	-	-	2
Infant Mortality Rate.....	40.33	127.84	33.21	32.86	57.83	104.48	*	-	-	*
1,500-1,999 grams										
Live births.....	62,617	121	11,860	20,870	24,076	5,351	212	56	10	61
Infant deaths.....	1,556	28	383	361	510	247	15	3	1	7
Infant Mortality Rate.....	24.85	231.40	32.29	17.30	21.18	46.16	*	*	*	*
2,000-2,499 grams										
Live births.....	202,142	72	1,450	15,344	93,078	87,394	3,871	657	84	192
Infant deaths.....	1,931	3	90	234	784	725	61	20	7	7
Infant Mortality Rate.....	9.55	*	62.07	15.25	8.42	8.30	15.76	30.44	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 period data -Con.
 [Rates are per 1,000 live births]

Birthweight	Gestation									
	Total	<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	Not Stated
2,500 grams or more										
Live births.....	3,533,652	87	924	3,526	156,788	2,341,101	777,190	240,058	12,452	1,526
Infant deaths.....	7,188	3	31	98	875	4,752	1,029	341	42	16
Infant Mortality Rate.....	2.03	*	33.55	27.79	5.58	2.03	1.32	1.42	3.37	*
Not Stated										
Live births.....	2,100	111	63	43	106	520	282	76	11	888
Infant deaths.....	178	3	1	1	1	3	1	-	-	168
Infant Mortality Rate.....	84.76	*	*	*	*	*	*	-	-	189.19
Non-Hispanic White										
Total										
Live births.....	1,992,461	9,200	15,429	21,132	134,561	1,237,324	424,118	141,621	8,025	1,051
Infant deaths.....	9,306	3,492	676	420	1,123	2,761	538	189	26	81
Infant Mortality Rate.....	4.67	379.57	43.81	19.88	8.35	2.23	1.27	1.33	3.24	77.07
Less than 2,500 grams										
Live births.....	139,651	9,121	15,012	19,386	54,489	39,385	1,724	345	51	138
Infant deaths.....	5,740	3,489	659	372	694	457	36	9	7	16
Infant Mortality Rate.....	41.10	382.52	43.90	19.19	12.74	11.60	20.88	*	*	*
Less than 500 grams										
Live births.....	1,985	1,944	28	1	3	-	-	-	-	9
Infant deaths.....	1,717	1,697	11	1	-	-	-	-	-	8
Infant Mortality Rate.....	864.99	872.94	*	*	-	-	-	-	-	*
500-749 grams										
Live births.....	3,235	2,916	288	20	5	1	-	-	-	5
Infant deaths.....	1,228	1,175	42	8	2	-	-	-	-	1
Infant Mortality Rate.....	379.60	402.95	145.83	*	*	-	-	-	-	*
750-999 grams										
Live births.....	4,038	2,660	1,215	91	24	32	7	3	1	5
Infant deaths.....	544	431	85	11	10	2	1	-	-	3
Infant Mortality Rate.....	134.72	162.03	69.96	*	*	*	*	-	-	*
1,000-1,249 grams										
Live births.....	5,239	1,311	3,116	530	181	75	15	3	-	8
Infant deaths.....	358	137	155	28	28	8	-	-	-	1
Infant Mortality Rate.....	68.33	104.50	49.74	52.83	154.70	*	-	-	-	*
1,250-1,499 grams										
Live births.....	6,765	215	3,989	1,592	785	150	20	6	-	8
Infant deaths.....	304	32	144	59	50	18	1	-	-	-
Infant Mortality Rate.....	44.94	148.84	36.10	37.06	63.69	*	*	-	-	-

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 period data -Con.
 [Rates are per 1,000 live births]

Birthweight	Gestation									
	Total	<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	Not Stated
1,500-1,999 grams										
Live births.....	27,973	51	5,639	9,407	10,352	2,372	97	23	10	22
Infant deaths.....	694	14	177	152	233	107	7	1	1	1
Infant Mortality Rate.....	24.81	*	31.39	16.16	22.51	45.11	*	*	*	*
2,000-2,499 grams										
Live births.....	90,416	24	737	7,745	43,139	36,755	1,585	310	40	81
Infant deaths.....	894	2	44	112	371	322	27	8	6	2
Infant Mortality Rate.....	9.89	*	59.70	14.46	8.60	8.76	17.03	*	*	*
2,500 grams or more										
Live births.....	1,851,905	41	387	1,718	80,005	1,197,621	422,218	141,221	7,967	727
Infant deaths.....	3,499	1	17	47	428	2,302	500	180	19	4
Infant Mortality Rate.....	1.89	*	*	27.36	5.35	1.92	1.18	1.27	*	*
Not Stated										
Live births.....	905	38	30	28	67	318	176	55	7	186
Infant deaths.....	67	2	-	1	1	1	1	-	-	61
Infant Mortality Rate.....	74.03	*	-	*	*	*	*	-	-	327.96
Non-Hispanic Black										
Total										
Live births.....	560,715	8,548	9,070	9,656	50,750	355,389	97,486	27,786	1,585	445
Infant deaths.....	6,152	3,250	404	217	504	1,372	239	70	15	80
Infant Mortality Rate.....	10.97	380.21	44.54	22.47	9.93	3.86	2.45	2.52	*	179.78
Less than 2,500 grams										
Live births.....	78,126	8,491	8,875	9,112	26,910	23,476	996	155	25	86
Infant deaths.....	4,452	3,248	398	199	338	234	10	5	-	20
Infant Mortality Rate.....	56.98	382.52	44.85	21.84	12.56	9.97	*	*	-	232.56
Less than 500 grams										
Live births.....	2,285	2,252	22	-	-	-	-	-	-	11
Infant deaths.....	1,925	1,909	7	-	-	-	-	-	-	9
Infant Mortality Rate.....	842.45	847.69	*	-	-	-	-	-	-	*
500-749 grams										
Live births.....	3,280	3,037	226	10	3	-	-	-	-	4
Infant deaths.....	1,029	986	35	5	1	-	-	-	-	2
Infant Mortality Rate.....	313.72	324.66	154.87	*	*	-	-	-	-	*
750-999 grams										
Live births.....	3,355	2,284	982	50	15	20	1	1	-	2
Infant deaths.....	356	283	67	2	2	2	-	-	-	-
Infant Mortality Rate.....	106.11	123.91	68.23	*	*	*	-	-	-	-

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 period data -Con.
 [Rates are per 1,000 live births]

Birthweight	Gestation									
	Total	<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	Not Stated
500-749 grams										
Live births.....	74	68	5	-	-	-	-	-	-	1
Infant deaths.....	26	24	2	-	-	-	-	-	-	-
Infant Mortality Rate.....	351.35	352.94	*	-	-	-	-	-	-	-
750-999 grams										
Live births.....	77	55	20	1	1	-	-	-	-	-
Infant deaths.....	18	15	2	1	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	-	-	-	-	-	-
1,000-1,249 grams										
Live births.....	100	28	59	8	4	-	-	-	-	1
Infant deaths.....	8	3	3	1	1	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	-	-	-	-	-
1,250-1,499 grams										
Live births.....	129	7	69	26	18	7	2	-	-	-
Infant deaths.....	13	1	6	2	3	-	1	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	-	*	-	-	-
1,500-1,999 grams										
Live births.....	516	3	117	170	183	39	4	-	-	-
Infant deaths.....	25	2	6	7	8	2	-	-	-	-
Infant Mortality Rate.....	48.45	*	*	*	*	*	-	-	-	-
2,000-2,499 grams										
Live births.....	1,533	-	21	155	736	578	31	4	-	8
Infant deaths.....	17	-	-	1	8	6	1	-	-	1
Infant Mortality Rate.....	*	-	-	*	*	*	*	-	-	*
2,500 grams or more										
Live births.....	27,463	2	12	45	1,680	18,525	5,495	1,580	80	44
Infant deaths.....	124	-	-	2	19	76	15	10	-	2
Infant Mortality Rate.....	4.52	-	-	*	*	4.10	*	*	-	*
Not Stated										
Live births.....	15	1	-	1	-	5	2	1	-	5
Infant deaths.....	2	-	-	-	-	-	-	-	-	2
Infant Mortality Rate.....	*	-	-	-	-	-	-	-	-	*
Non-Hispanic Asian										
Total										
Live births.....	249,250	1,246	1,751	2,456	15,797	165,095	50,033	12,439	366	67
Infant deaths.....	943	483	52	36	98	223	33	11	-	6
Infant Mortality Rate.....	3.78	387.64	29.70	14.66	6.20	1.35	0.66	*	-	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 period data -Con.

[Rates are per 1,000 live births]

Birthweight	Gestation									
	Total	<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	Not Stated
Less than 2,500 grams										
Live births.....	21,259	1,232	1,700	2,309	7,818	7,810	329	48	5	8
Infant deaths.....	694	482	51	34	67	51	4	1	-	3
Infant Mortality Rate.....	32.64	391.23	30.00	14.72	8.57	6.53	*	*	-	*
Less than 500 grams										
Live births.....	275	270	4	-	-	1	-	-	-	-
Infant deaths.....	242	240	2	-	-	-	-	-	-	-
Infant Mortality Rate.....	880.00	888.89	*	-	-	-	-	-	-	-
500-749 grams										
Live births.....	476	432	42	-	1	-	-	-	-	1
Infant deaths.....	187	181	5	-	-	-	-	-	-	1
Infant Mortality Rate.....	392.86	418.98	*	-	-	-	-	-	-	*
750-999 grams										
Live births.....	516	337	157	9	6	4	1	-	-	2
Infant deaths.....	63	47	12	-	2	-	-	-	-	2
Infant Mortality Rate.....	122.09	139.47	*	-	*	-	-	-	-	*
1,000-1,249 grams										
Live births.....	679	162	402	79	23	10	3	-	-	-
Infant deaths.....	30	10	9	6	4	1	-	-	-	-
Infant Mortality Rate.....	44.18	*	*	*	*	*	-	-	-	-
1,250-1,499 grams										
Live births.....	906	20	474	258	129	21	4	-	-	-
Infant deaths.....	23	4	7	7	4	1	-	-	-	-
Infant Mortality Rate.....	25.39	*	*	*	*	*	-	-	-	-
1,500-1,999 grams										
Live births.....	3,920	7	567	1,221	1,695	412	12	5	-	1
Infant deaths.....	60	-	12	15	23	9	1	-	-	-
Infant Mortality Rate.....	15.31	-	*	*	13.57	*	*	-	-	-
2,000-2,499 grams										
Live births.....	14,487	4	54	742	5,964	7,362	309	43	5	4
Infant deaths.....	88	-	4	6	34	40	3	1	-	-
Infant Mortality Rate.....	6.07	-	*	*	5.70	5.43	*	*	-	-
2,500 grams or more										
Live births.....	227,910	5	50	146	7,977	157,259	49,689	12,389	361	34
Infant deaths.....	246	1	1	2	31	172	29	10	-	-
Infant Mortality Rate.....	1.08	*	*	*	3.89	1.09	0.58	*	-	-

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 period data -Con.

[Rates are per 1,000 live births]

Birthweight	Gestation									
	Total	<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	Not Stated
Not Stated										
Live births.....	81	9	1	1	2	26	15	2	-	25
Infant deaths.....	3	-	-	-	-	-	-	-	-	3
Infant Mortality Rate.....	*	-	-	-	-	-	-	-	-	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Total										
Live births.....	9,426	51	79	122	740	5,916	1,831	629	42	16
Infant deaths.....	72	25	5	2	8	22	7	-	-	3
Infant Mortality Rate.....	7.64	490.20	*	*	*	3.72	*	-	-	*
Less than 2,500 grams										
Live births.....	731	51	79	105	241	236	15	1	-	3
Infant deaths.....	43	25	5	2	4	5	1	-	-	1
Infant Mortality Rate.....	58.82	490.20	*	*	*	*	*	-	-	*
Less than 500 grams										
Live births.....	14	14	-	-	-	-	-	-	-	-
Infant deaths.....	12	12	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	-	-	-	-	-	-	-	-
500-749 grams										
Live births.....	24	20	4	-	-	-	-	-	-	-
Infant deaths.....	10	10	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	-	-	-	-	-	-	-	-
750-999 grams										
Live births.....	15	10	4	-	-	-	-	-	-	1
Infant deaths.....	1	-	-	-	-	-	-	-	-	1
Infant Mortality Rate.....	*	-	-	-	-	-	-	-	-	*
1,000-1,249 grams										
Live births.....	28	7	16	5	-	-	-	-	-	-
Infant deaths.....	5	3	2	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	-	-	-	-	-	-	-
1,250-1,499 grams										
Live births.....	29	-	19	6	3	1	-	-	-	-
Infant deaths.....	2	-	2	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	-	*	-	-	-	-	-	-	-
1,500-1,999 grams										
Live births.....	162	-	29	57	53	18	4	-	-	1
Infant deaths.....	6	-	1	2	1	2	-	-	-	-
Infant Mortality Rate.....	*	-	*	*	*	*	-	-	-	-

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 period data -Con.

[Rates are per 1,000 live births]

Birthweight	Gestation									
	Total	<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	Not Stated
2,000-2,499 grams										
Live births.....	459	-	7	37	185	217	11	1	-	1
Infant deaths.....	7	-	-	-	3	3	1	-	-	-
Infant Mortality Rate.....	*	-	-	-	*	*	*	-	-	-
2,500 grams or more										
Live births.....	8,691	-	-	17	499	5,680	1,816	628	42	9
Infant deaths.....	27	-	-	-	4	17	6	-	-	-
Infant Mortality Rate.....	3.11	-	-	-	*	*	*	-	-	-
Not Stated										
Live births.....	4	-	-	-	-	-	-	-	-	4
Infant deaths.....	2	-	-	-	-	-	-	-	-	2
Infant Mortality Rate.....	*	-	-	-	-	-	-	-	-	*
Hispanic										
Live births.....	898,764	5,605	7,635	9,785	63,368	582,315	178,815	48,752	2,034	455
Infant deaths.....	4,584	2,140	339	199	481	1,106	229	61	6	22
Infant Mortality Rate.....	5.10	381.80	44.40	20.34	7.59	1.90	1.28	1.25	*	48.35
Less than 2,500 grams										
Live births.....	66,937	5,570	7,348	8,838	25,255	18,775	934	151	11	55
Infant deaths.....	3,226	2,140	331	177	297	240	26	5	-	9
Infant Mortality Rate.....	48.19	384.20	45.05	20.03	11.76	12.78	27.84	*	-	*
Less than 500 grams										
Live births.....	1,279	1,257	17	-	-	-	-	-	-	5
Infant deaths.....	1,103	1,088	10	-	-	-	-	-	-	5
Infant Mortality Rate.....	862.39	865.55	*	-	-	-	-	-	-	*
500-749 grams										
Live births.....	2,044	1,900	129	6	4	1	-	-	-	4
Infant deaths.....	782	757	21	-	-	-	-	-	-	3
Infant Mortality Rate.....	382.58	398.42	162.79	-	-	-	-	-	-	*
750-999 grams										
Live births.....	2,210	1,562	580	36	20	10	1	1	-	-
Infant deaths.....	276	212	53	8	2	1	-	-	-	-
Infant Mortality Rate.....	124.89	135.72	91.38	*	*	*	-	-	-	-
1,000-1,249 grams										
Live births.....	2,557	681	1,533	222	76	32	10	1	-	2
Infant deaths.....	180	62	79	16	15	5	3	-	-	-
Infant Mortality Rate.....	70.39	91.04	51.53	*	*	*	*	-	-	-

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 period data -Con.

[Rates are per 1,000 live births]

Birthweight	Gestation									
	Total	<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	Not Stated
1,250-1,499 grams										
Live births.....	3,353	118	2,066	770	311	71	13	3	-	1
Infant deaths.....	133	13	67	21	21	10	-	-	-	-
Infant Mortality Rate.....	39.67	*	32.43	27.27	67.52	*	-	-	-	-
1,500-1,999 grams										
Live births.....	12,774	35	2,681	4,286	4,750	958	41	12	-	11
Infant deaths.....	350	7	78	80	110	70	3	1	-	1
Infant Mortality Rate.....	27.40	*	29.09	18.67	23.16	73.07	*	*	-	*
2,000-2,499 grams										
Live births.....	42,720	17	342	3,518	20,094	17,703	869	134	11	32
Infant deaths.....	402	1	22	53	149	153	20	4	-	-
Infant Mortality Rate.....	9.41	*	64.33	15.07	7.42	8.64	23.01	*	-	-
2,500 grams or more										
Live births.....	831,573	16	274	941	38,101	563,463	177,837	48,593	2,022	326
Infant deaths.....	1,344	-	7	21	184	865	203	56	6	2
Infant Mortality Rate.....	1.62	-	*	22.32	4.83	1.54	1.14	1.15	*	*
Not Stated										
Live births.....	254	19	13	6	12	77	44	8	1	74
Infant deaths.....	13	-	-	-	-	2	-	-	-	11
Infant Mortality Rate.....	*	-	-	-	-	*	-	-	-	*

-/ Quality Zero

*/ Figure does not meet standard of reliability or precision: based on fewer than 20 deaths in the numerator

1/ Includes Aleuts and Eskimos

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2017 period data.

[Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 1,000 live births]

Birthweight and race of mother	Live Births	Infant	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
All Races						
Total (all birthweights)	3,855,500	22,341	14,844	11,971	2,873	7,497
Rate		5.79	3.85	3.10	0.75	1.94
Less than 2,500 grams	319,748	14,975	12,177	10,304	1,873	2,798
Rate		46.83	38.08	32.23	5.86	8.75
Less than 500 grams	6,189	5,314	5,192	5,012	180	122
Rate		858.62	838.91	809.82	29.08	19.71
500-749 grams	9,471	3,410	2,892	2,207	685	519
Rate		360.05	305.35	233.03	72.33	54.80
750-999 grams	10,625	1,318	1,022	725	297	296
Rate		124.05	96.19	68.24	27.95	27.86
1,000-1,249 grams	12,709	801	574	446	128	227
Rate		63.03	45.16	35.09	10.07	17.86
1,250-1,499 grams	15,995	645	456	366	90	188
Rate		40.33	28.51	22.88	5.63	11.75
1,500-1,749 grams	23,872	741	507	410	97	234
Rate		31.04	21.24	17.17	4.06	9.80
1,750-1,999 grams	38,745	815	511	399	112	304
Rate		21.03	13.19	10.30	2.89	7.85
2,000-2,499 grams	202,142	1,931	1,023	739	284	908
Rate		9.55	5.06	3.66	1.40	4.49
2,500 grams or more	3,533,652	7,188	2,501	1,509	992	4,687
Rate		2.03	0.71	0.43	0.28	1.33
Not Stated	2,100	178	166	159	7	12
Rate		84.76	79.05	75.71	*	*
Non-Hispanic White						
Total (all birthweights)	1,992,461	9,306	6,060	4,754	1,306	3,246
Rate		4.67	3.04	2.39	0.66	1.63

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2017 period data -Con.

[Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 1,000 live births]

Birthweight and race of mother	Live Births	Infant	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
Less than 2,500 grams	139,651	5,740	4,676	3,901	774	1,064
Rate		41.10	33.48	27.93	5.54	7.62
Less than 500 grams	1,985	1,717	1,687	1,619	68	30
Rate		864.99	849.87	815.62	34.26	15.11
500-749 grams	3,235	1,228	1,065	818	247	163
Rate		379.60	329.21	252.86	76.35	50.39
750-999 grams	4,038	544	438	312	126	105
Rate		134.72	108.47	77.27	31.20	26.00
1,000-1,249 grams	5,239	358	265	210	55	93
Rate		68.33	50.58	40.08	10.50	17.75
1,250-1,499 grams	6,765	304	229	191	38	75
Rate		44.94	33.85	28.23	5.62	11.09
1,500-1,749 grams	10,551	323	236	186	50	87
Rate		30.61	22.37	17.63	4.74	8.25
1,750-1,999 grams	17,422	371	255	206	49	116
Rate		21.29	14.64	11.82	2.81	6.66
2,000-2,499 grams	90,416	894	501	360	141	394
Rate		9.89	5.54	3.98	1.56	4.36
2,500 grams or more	1,851,905	3,499	1,320	791	529	2,179
Rate		1.89	0.71	0.43	0.29	1.18
Not Stated	905	67	64	62	2	3
Rate		74.03	70.72	68.51	*	*
Non-Hispanic Black Total (all birthweights)	560,715	6,152	4,012	3,278	734	2,140
Rate		10.97	7.16	5.85	1.31	3.82
Less than 2,500 grams	78,126	4,452	3,521	2,981	539	931
Rate		56.98	45.07	38.16	6.90	11.92
Less than 500 grams	2,285	1,925	1,865	1,786	79	60
Rate		842.45	816.19	781.62	34.57	26.26

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2017 period data -Con.
 [Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 1,000 live births]

Birthweight and race of mother	Live Births	Infant	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
500-749 grams	3,280	1,029	832	608	224	196
Rate		313.72	253.66	185.37	68.29	59.76
750-999 grams	3,355	356	246	169	77	110
Rate		106.11	73.32	50.37	22.95	32.79
1,000-1,249 grams	3,650	185	120	91	29	64
Rate		50.68	32.88	24.93	7.95	17.53
1,250-1,499 grams	4,280	152	93	67	26	59
Rate		35.51	21.73	15.65	6.07	13.79
1,500-1,749 grams	5,974	179	102	78	24	77
Rate		29.96	17.07	13.06	4.02	12.89
1,750-1,999 grams	9,258	175	91	66	25	84
Rate		18.90	9.83	7.13	2.70	9.07
2,000-2,499 grams	46,044	450	169	114	55	280
Rate		9.77	3.67	2.48	1.19	6.08
2,500 grams or more	482,265	1,641	436	241	195	1,205
Rate		3.40	0.90	0.50	0.40	2.50
Not Stated	324	59	55	55	0	4
Rate		182.10	169.75	169.75	-	*
Non-Hispanic American Indian or Alaskan Native /1						
Total (all birthweights)	29,957	276	144	118	26	132
Rate		9.21	4.81	3.94	0.87	4.41
Less than 2,500 grams	2,479	150	113	96	17	36
Rate		60.51	45.58	38.73	*	14.52
Less than 500 grams	50	42	41	39	2	1
Rate		840.00	820.00	780.00	*	*
500-749 grams	74	26	22	17	5	4
Rate		351.35	297.30	*	*	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2017 period data -Con.

[Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 1,000 live births]

Birthweight and race of mother	Live Births	Infant	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
750-999 grams	77	18	14	13	1	4
Rate		*	*	*	*	*
1,000-1,249 grams	100	8	5	3	2	3
Rate		*	*	*	*	*
1,250-1,499 grams	129	13	10	8	2	3
Rate		*	*	*	*	*
1,500-1,749 grams	209	13	10	9	1	3
Rate		*	*	*	*	*
1,750-1,999 grams	307	12	8	4	4	4
Rate		*	*	*	*	*
2,000-2,499 grams	1,533	17	3	3	0	14
Rate		*	*	*	-	*
2,500 grams or more	27,463	124	28	19	9	96
Rate		4.52	1.02	*	*	3.50
Not Stated	15	2	2	2	0	0
Rate		*	*	*	-	-
Non-Hispanic Asian						
Total (all birthweights)	249,250	943	675	560	115	268
Rate		3.78	2.71	2.25	0.46	1.08
Less than 2,500 grams	21,259	694	571	488	83	123
Rate		32.64	26.86	22.95	3.90	5.79
Less than 500 grams	275	242	235	233	2	7
Rate		880.00	854.55	847.27	*	*
500-749 grams	476	187	155	121	34	32
Rate		392.86	325.63	254.20	71.43	67.23
750-999 grams	516	63	48	32	16	15
Rate		122.09	93.02	62.02	*	*
1,000-1,249 grams	679	30	21	17	4	9
Rate		44.18	30.93	*	*	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2017 period data -Con.
 [Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 1,000 live births]

Birthweight and race of mother	Live Births	Infant	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
1,250-1,499 grams	906	23	20	15	5	3
Rate		25.39	22.08	*	*	*
1,500-1,749 grams	1,424	27	21	18	3	6
Rate		18.96	14.75	*	*	*
1,750-1,999 grams	2,496	33	19	13	6	14
Rate		13.22	*	*	*	*
2,000-2,499 grams	14,487	88	51	38	13	37
Rate		6.07	3.52	2.62	*	2.55
2,500 grams or more	227,910	246	102	70	32	144
Rate		1.08	0.45	0.31	0.14	0.63
Not Stated	81	3	3	3	0	0
Rate		*	*	*	-	-
Non-Hispanic Native Hawaiian or Other Pacific Islander						
Total (all birthweights)	9,426	72	36	29	7	36
Rate		7.64	3.82	3.08	*	3.82
Less than 2,500 grams	731	43	29	26	3	14
Rate		58.82	39.67	35.57	*	*
Less than 500 grams	14	12	12	12	0	0
Rate		*	*	*	-	-
500-749 grams	24	10	7	5	2	3
Rate		*	*	*	*	*
750-999 grams	15	1	1	1	0	0
Rate		*	*	*	-	-
1,000-1,249 grams	28	5	2	1	1	3
Rate		*	*	*	*	*
1,250-1,499 grams	29	2	2	2	0	0
Rate		*	*	*	-	-
1,500-1,749 grams	56	4	2	2	0	2
Rate		*	*	*	-	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2017 period data -Con.

[Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 1,000 live births]

Birthweight and race of mother	Live Births	Infant	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
1,750-1,999 grams	106	2	2	2	0	0
Rate		*	*	*	-	-
2,000-2,499 grams	459	7	1	1	0	6
Rate		*	*	*	-	*
2,500 grams or more	8,691	27	5	1	4	22
Rate		3.11	*	*	*	2.53
Not Stated	4	2	2	2	0	0
Rate		*	*	*	-	*
Hispanic						
Total (all birthweights)	898,764	4,584	3,200	2,640	560	1,384
Rate		5.10	3.56	2.94	0.62	1.54
Less than 2,500 grams	66,937	3,226	2,688	2,311	377	538
Rate		48.19	40.16	34.53	5.63	8.04
Less than 500 grams	1,279	1,103	1,082	1,060	22	21
Rate		862.39	845.97	828.77	17.20	16.42
500-749 grams	2,044	782	679	535	144	102
Rate		382.58	332.19	261.74	70.45	49.90
750-999 grams	2,210	276	227	167	60	49
Rate		124.89	102.71	75.57	27.15	22.17
1,000-1,249 grams	2,557	180	133	100	33	47
Rate		70.39	52.01	39.11	12.91	18.38
1,250-1,499 grams	3,353	133	86	70	16	47
Rate		39.67	25.65	20.88	*	14.02
1,500-1,749 grams	4,912	165	117	101	16	48
Rate		33.59	23.82	20.56	*	9.77
1,750-1,999 grams	7,862	184	114	89	25	70
Rate		23.40	14.50	11.32	3.18	8.90
2,000-2,499 grams	42,720	402	249	189	60	153
Rate		9.41	5.83	4.42	1.40	3.58

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2017 period data -Con.

[Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 1,000 live births]

Birthweight and race of mother	Live Births	Infant	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
2,500 grams or more	831,573	1,344	501	318	183	843
Rate		1.62	0.60	0.38	0.22	1.01
Not Stated	254	13	11	11	0	2
Rate		*	*	*	-	*

*/ Figure does not meet standard of reliability or precision: based on fewer than 20 deaths in the numerator

-/ Quantity zero

Documentation Table 5. Infant deaths and infant mortality rates by age of death and birthweight for 10 major causes of infant death: United States, 2017 period data
 [Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 100,000 live births]

Cause of death and birthweight	Live Births	Total Infant Deaths	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
All birthweights						
All Causes	3,855,500	22,341	14,844	11,971	2,873	7,497
		579.5	385.0	310.5	74.5	194.4
Congenital malformations (Q00-Q99).....		4,596	3,356	2,684	672	1,240
		119.2	87.0	69.6	17.4	32.2
Short gestation and low birthweight nec (P07).....		3,757	3,653	3,535	118	104
		97.4	94.7	91.7	3.1	2.7
Maternal complications of pregnancy (P01).....		1,436	1,425	1,411	14	11
		37.2	37.0	36.6	*	*
Sudden infant death syndrome (R95).....		1,360	122	26	96	1,237
		35.3	3.2	0.7	2.5	32.1
Accidents (unintentional injures) (V01-X59).....		1,313	111	21	90	1,202
		34.1	2.9	0.5	2.3	31.2
Complications of placenta, cord, membranes (P02).....		840	830	796	34	10
		21.8	21.5	20.6	0.9	*
Bacterial sepsis of newborn (P36).....		593	577	258	319	16
		15.4	15.0	6.7	8.3	*
Respiratory distress of newborn (P22).....		441	420	340	80	21
		11.4	10.9	8.8	2.1	0.5
Diseases of the circulatory system (I00-I99).....		447	86	46	40	361
		11.6	2.2	1.2	1.0	9.4
Neonatal hemorrhage (P50-P52, P54).....		382	370	259	111	12
		9.9	9.6	6.7	2.9	*
All other causes.....		7,176	3,893	2,595	1,298	3,283
		186.1	101.0	67.3	33.7	85.2
Less than 2,500 grams						
All Causes	319,748	14,975	12,177	10,303	1,873	2,798
		4683.4	3808.3	3222.2	585.8	875.1
Congenital malformations (Q00-Q99).....		2,865	2,290	1,960	329	575
		896.0	716.2	613.0	102.9	179.8
Short gestation and low birthweight nec (P07).....		3,671	3,569	3,451	118	102
		1148.1	1116.2	1079.3	36.9	31.9
Maternal complications of pregnancy (P01).....		1,377	1,366	1,354	12	11
		430.7	427.2	423.5	*	*
Sudden infant death syndrome (R95).....		298	23	6	17	275
		93.2	7.2	*	*	86.0
Accidents (unintentional injures) (V01-X59).....		241	20	5	15	221
		75.4	6.3	*	*	69.1
Complications of placenta, cord, membranes (P02).....		731	724	699	25	7
		228.6	226.4	218.6	7.8	*
Bacterial sepsis of newborn (P36).....		538	523	222	301	15
		168.3	163.6	69.4	94.1	*

Documentation Table 5. Infant deaths and infant mortality rates by age of death and birthweight for 10 major causes of infant death: United States, 2017 period data -Con.

[Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 100,000 live births]

Cause of death and birthweight	Live Births	Total	Total	Early	Late	Post-
		Infant	Neonatal	Neonatal	Neonatal	Neonatal
Respiratory distress of newborn (P22).....		435	414	336	78	21
		136.0	129.5	105.1	24.4	6.6
Diseases of the circulatory system (I00-I99).....		214	41	19	22	172
		66.9	12.8	*	6.9	53.8
Neonatal hemorrhage (P50-P52, P54).....		350	339	243	96	11
		109.5	106.0	76.0	30.0	*
All other causes.....		4,255	2,868	2,008	860	1,388
		1330.7	897.0	628.0	269.0	434.1
2,500 grams or more						
All Causes	3,533,652	7,188	2,501	1,509	992	4,687
		203.4	70.8	42.7	28.1	132.6
Congenital malformations (Q00-Q99).....		1,720	1,059	720	339	660
		48.7	30.0	20.4	9.6	18.7
Short gestation and low birthweight nec (P07).....		12	11	11	0	1
		*	*	*	-	*
Maternal complications of pregnancy (P01).....		20	20	19	1	0
		0.6	0.6	*	*	-
Sudden infant death syndrome (R95).....		1,061	99	20	79	962
		30.0	2.8	0.6	2.2	27.2
Accidents (unintentional injuries) (V01-X59).....		1,071	91	16	75	980
		30.3	2.6	*	2.1	27.7
Complications of placenta, cord, membranes (P02).....		90	87	78	9	3
		2.5	2.5	2.2	*	*
Bacterial sepsis of newborn (P36).....		55	54	36	18	1
		1.6	1.5	1.0	*	*
Respiratory distress of newborn (P22).....		6	6	4	2	0
		*	*	*	*	-
Diseases of the circulatory system (I00-I99).....		231	43	26	17	188
		6.5	1.2	0.7	*	5.3
Neonatal hemorrhage (P50-P52, P54).....		32	31	16	15	1
		0.9	0.9	*	*	*
All other causes.....		2,888	998	562	436	1,890
		81.7	28.2	15.9	12.3	53.5

*/Figure does not meet standard of reliability or precision; based on fewer than 20 deaths in the numerator.

-/ Quantity zero

Documentation Table 6. Live births, infant deaths, and infant mortality rates by gestational age and age at death: United States, 2017 period data
 [Rates are per 1,000 live births]

Age at Death	Total	Gestation								Not Stated
		<28 Weeks	28-31 Weeks	32-33 Weeks	34-36 Weeks	37-39 Weeks	40 Weeks	41 Weeks	42 Weeks or more	
Total										
Live births.....	3,855,500	25,913	35,476	45,028	276,309	2,434,939	781,645	240,871	12,560	2,759
Infant deaths.....	22,341	9,961	1,553	923	2,350	5,786	1,113	364	50	241
Infant Mortality Rate.....	5.79	384.40	43.78	20.50	8.50	2.38	1.42	1.51	3.98	87.35
Early Neonatal										
Live births.....	3,855,500	25,913	35,476	45,028	276,309	2,434,939	781,645	240,871	12,560	2,759
Infant deaths.....	11,971	7,920	842	493	935	1,222	213	106	24	216
Infant Mortality Rate.....	3.10	305.64	23.73	10.95	3.38	0.50	0.27	0.44	1.91	78.29
Late Neonatal										
Live births.....	3,855,500	25,913	35,476	45,028	276,309	2,434,939	781,645	240,871	12,560	2,759
Infant deaths.....	2,873	1,142	257	120	339	807	139	49	9	10
Infant Mortality Rate.....	0.75	44.07	7.24	2.67	1.23	0.33	0.18	0.20	*	*
Postneonatal										
Live births.....	3,855,500	25,913	35,476	45,028	276,309	2,434,939	781,645	240,871	12,560	2,759
Infant deaths.....	7,497	899	454	310	1,075	3,757	761	209	17	15
Infant Mortality Rate.....	1.94	34.69	12.80	6.88	3.89	1.54	0.97	0.87	*	*

*/ Figure does not meet standard of reliability or precision: based on fewer than 20 deaths in the numerator