User Guide to the 2020 Period/2019 Cohort Linked Birth/Infant Death Public Use File

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Centers for Disease Control and Prevention
National Center for Health Statistics
Division of Vital Statistics

2020 Period/2019 Cohort Linked Birth/Infant Death Data Set

Contents

External Links

User Guide to the 2020 Natality Public Use File (cdc.gov)

User's Guide for the 2019 Natality File

Mortality Data internet page

Introduction

The linked birth/infant death data sets (linked files) for 2017 through 2020 are released in one format that can be used for both period data and birth cohort data. This documentation is for both the 2020 period linked file and the 2019 cohort linked file.

Period file - The 2020 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 2020 linked to their corresponding birth certificates, whether the birth occurred in 2019 or 2020. The second file is the "denominator" file, which consists of all births occurring in 2020. It is used to provide denominators for rate computations. These same two data files are also available for Puerto Rico and Guam.

User Created Cohort file - The 2019 birth cohort linked birth/infant death data set includes three data files. The numerator for the 2019 birth cohort linked file consists of deaths to infants born in 2019 linked to their corresponding birth certificates, whether the death occurred in 2019 or 2020 (each is a separate file the user can append together). The denominator for this data set is all births occurring in 2019.

Starting with the 2017 period/ 2016 cohort data files release, users can create their own cohort files using the year 1 denominator file and years 1 and 2 numerator files (e.g., 2016 denominator and 2016 and 2017 numerator files).

For most purposes, differences between the birth cohort and period linked files are negligible. However, birth cohort files are preferred for multivariate and some other types of detailed analysis because they follow a given cohort of births for an entire year to ascertain their mortality experience. This is generally considered to be a more robust methodology than using the period file, which is essentially cross-sectional in nature. Details on creating cohort files can be found in the "User Created Cohort File" section, beginning on page 17.

Weighting

For period file use: A weight is added when using the period 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:

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

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.

For cohort file use: When creating your own cohort file, do not apply the weight included in the file. Applying the weight in a cohort file upweights the number of births and infant deaths, and accordingly, the birth count would not match the actual number of births in the US for the given year.

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 the 2017 linked file, 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. Bridged race is not available in the linked file beginning with the 2020 data year. The race and Hispanic-origin groups shown in the user guide follow the 1997 standards and differ from the bridged-race categories shown in previous user guides that are based on data from 2016 and earlier. The new categories are: non-Hispanic single-race white, non-Hispanic single-race black or African American, non-Hispanic single-race American Indian or Alaska Native, non-Hispanic single-race Asian, non-Hispanic single-race Native Hawaiian or Other Pacific Islander, and Hispanic.

Age of death

Historically, the linked birth/infant death files have included information on age of the infant's death (AOD) from the general mortality file. However, a comparison of AOD information based on date of birth from the death certificate, and a calculated AOD based on the date and time of birth from the birth certificate indicates better data quality when AOD is calculated from the data and time of birth from the birth certificate. Accordingly, beginning with the 2019 data year the linked file includes revised AOD variables based on the birth date and time of birth from the natality file. The revised variables (AGED, AGER5 and AGER22) more accurately reflect AOD for those infants who lived less than 24 hours. For 2019, this change resulted in an additional 550 infant death records reported with an age of death of less than 1 day and 550 fewer records for the age of death category of 1 day. Additionally, in cases where date of birth was recorded as after the date of death, records were coded as less than 1 hour for AGER5 and AGER22, and as zero days for AGED. This revision resulted in changes for 2

records in both 2019 and 2020. Note that as a result of these changes, the AOD variables for 2019 and later are not perfectly comparable with those from 2018 and earlier years for infants who lived less than 24 hours or for 1 day for years 2018 and earlier.

Marital status

National estimates of births to unmarried women are based on two methods of determining marital status. In 2020, 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 with 2017 data, 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. Accordingly, California data on marital status are not included in this file.

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 continue to be available in data files. See Measuring Gestational Age in Vital Statistics Data: Transitioning to the Obstetric Estimate for more detailed information about the transition from the LMP to the OE.

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 for 2020 was 901 in the numerator and 1,092 in the denominator. The addition of this imputation has reduced the percent of not-stated responses for birthweight from 5.24 to 0.62% in the numerator file, and from 0.09 to 0.05% in the denominator file, thus reducing the potential for underestimation when computing birthweight-specific infant mortality rates.

To only include records with birthweight that was provided on the birth certificate, users can use one of the two following examples in SAS code:

IF bwtimp^=1;
OR
IF bwtimp NE 1;

Incomplete National Reporting in the Period file - Using Reporting Flags

Reporting flags were developed to help the user more readily identify reporting areas for items with less than national reporting; five items in the 2020 period file have limited reporting areas. 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 2020 linked file may be different from those for the 2020 birth file, as items had to be reported by a state in both 2019 and 2020 to be able to provide complete data. Thus, data for non-comparable items from states that revised in 2020 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) and 1 (item reported). When using these data, select reporting flag=1 to get valid and complete data for an item (see SAS code examples below).

Translating "blanks" - In the 2020 period/2019 cohort linked files, 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 principal source of payment item.

Sample SAS program

```
DATA work;
INFILE 'C:VS2020LINK.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;   /* when using the period file,
numerator data should be weighted */

RUN;
```

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

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 can differ for specific variables (e.g. age at death).

Rates per 1,000 live births are shown at the second 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.

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:

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

$$RSE(B)=100*\sqrt{\frac{1}{B}}$$ where *B* 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:

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

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:

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

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

Thus, for Group A:

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

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 I.

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

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

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:

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

$L(.95, D_{adj})$ and $U(.95, D_{adj})$ refer to the values in Table I 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.

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

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

Lower: 5.74*0.74907 = 4.30

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| ≥ 1.96, then the difference is statistically significant at the 0.05 level and if |z| < 1.96, the difference is not significant.

Methodology

States routinely link infant death certificates to their corresponding birth certificates for legal and statistical purposes. When the birth and death of an infant occurs in different states, copies of the records are exchanged by the state of death and state of birth to establish a link. 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 annual NCHS natality and mortality files include statistical data from birth and death certificates that are provided to NCHS by states under the Vital Statistics Cooperative Program (VSCP); these files are the basis for official U.S. birth and death statistics. These data have been coded according to uniform coding specifications, have passed quality control standards and have been edited and reviewed. NCHS obtains matching birth certificate numbers from states for all infant deaths that occurred in their jurisdiction. NCHS then uses this information to extract final, edited mortality and natality data from the NCHS natality and mortality statistical files. Individual birth and death records are selected from the respective files and linked into a single statistical record to create a national linked birth-death record file.

Percent of Records Linked

The 2020 period linked file for the 50 States and D.C. includes 19,475 linked infant death records and 132 unlinked infant death records (99.3% linked and 0.7% unlinked) by place of occurrence. The period linked file is weighted to the sum of linked plus unlinked records resulting in a total number of 19,607 weighted infant deaths by place of occurrence.

For 2020, twenty-seven jurisdictions (26 states and D.C.) linked 100% of their infant deaths; 24 jurisdictions had less than a 100% linkage rate. Eight states

had a linkage of under 99%; New Mexico (95.7%), New Jersey (96.9%), Kentucky (97.4%), Texas (97.4%), Alaska (97.9%), South Dakota (98.7%), Oklahoma (98.9%), and California (98.9%). When a high percentage of deaths are unlinked, unweighted infant mortality rates computed for these states are underestimated. Accordingly, weights are added to the file to correct for biases in the data due to lower data linkage for particular states.

The 2019 cohort linked file for the 50 States and D.C. by place of occurrence includes 20,681 linked infant death records and 156 unlinked infant death records (99.3% linked, 0.7% unlinked). The cohort linked file should not be weighted using the weight variable (recwt) in the file, as this upweights the number of births in a particular state, potentially leading to greater bias than leaving the infant death unweighted.

Confidentiality

To minimize the risk of disclosure of individual or institutional information, NCHS public-use data files do not contain the day of the birth of the newborn 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, 2021. 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, 2021. 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. Replacement - 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. Replacement - Specifications for U.S. Standard Certificate of Death – 2003 Revision. NCHS Instruction manual, Part 4. Hyattsville, Maryland: Public Health Service.

F. Computer Edits for Mortality Data, Including Separate Section for Fetal Deaths Effective 2020. 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.

For more detailed information on filling out birth certificate information, see the Facility worksheet for the live birth certificate and the Applying Best Practices for Reporting Medical and Health Information on Birth Certificates training.

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.

A maximum of 20 codes are captured on a record for multiple cause purposes. The codes are written in a 100-byte field with the underlying cause of death listed first, followed by ascending code order (5 bytes), 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.

User Created Cohort File

To create a cohort file, combine the 2019 denominator file with the 2019 and 2020 numerator files using the Cohort Sequence Number (co_seqnum in position 365-371) and Year of Death (co_yod in position 372-375) variables. Below are examples of code that can be used to combine files using SAS and Stata. The SAS uses a two-step merge approach whereas the Stata example appends the two numerator files and then merges the combined 2019-2020 numerator with the 2019 denominator file.

SAS code example for creating a cohort file

```
FILENAME B19 '   ';          /* put working directory path here */
FILENAME D19 '   ';          /* put working directory path here */
```

```
FILENAME D20 '   ';          /* put working directory path here */

DATA BORN19;                 /* pull in 2019 denominator file */
INFILE B19;
INPUT
RESTATUS 104      SEQNUM_CO         365-371        CO_YOD   372-375;
IF RESTATUS < 4;

PROC SORT; BY SEQNUM_CO DOD_YY; RUN;

DATA DIED19;                 /* includes infants born 2018 and 2019 */
INFILE D19;
INPUT
DOB_YY      9-12   RESTATUS 104      SEQNUM_CO         365-371
CO_YOD   372-375;
IF RESTATUS < 4 AND DOB_YY = 2019;        /* limit to infants born in 2019 */

PROC SORT; BY SEQNUM_CO DOD_YY; RUN;

DATA DIED20;                          /* includes infants born 2019 and 2020 */
INFILE D20;
INPUT
DOB_YY      9-12   RESTATUS 104      SEQNUM_CO         365-371
CO_YOD   372-375;
IF RESTATUS < 4 AND DOB_YY = 2019;        /* limit to infants born in 2019 */

PROC SORT; BY SEQNUM_CO CO_YOD; RUN;

/* merge 2019 births to those infants that were born and died in 2019 */

DATA B19D19;
MERGE BORN19 DIED19; BY SEQNUM_CO DOD_YY;

/* merge 2019 births/linked deaths to 2019 births that died in 2020 */
DATA B19D1920;
MERGE B19D19 DIED20; BY SEQNUM_CO DOD_YY;
RUN;
```

Stata code example for creating a cohort file

```
set more off
cd /* put working directory path here*/
log using "cohortfromperiod2019.log", replace
                        *NUMERATOR FILES*
*2019
local dat_name "VS19LINK.DETAILUS "
```

```
** The following line should contain the name of the output '.dta' file ;
local dta_name1 "alldat2019num"
** The following line should contain the name of the data dictionary file ;
local dct_name "numer_dct_2019.dct"
infile using "`dct_name'", using("`dat_name'") clear
compress
tempfile `dta_name1'
save "`dta_name1'", replace

*2020
local dat_name "VS20LINK.DETAILUS"
** The following line should contain the name of the output '.dta' file ;
local dta_name2 "alldat2020num"
** The following line should contain the name of the data dictionary file ;
local dct_name "numer_dct_2019.dct"
infile using "`dct_name'", using("`dat_name'") clear
compress
tempfile `dta_name2'
save "`dta_name2'", replace
*********APPEND TWO NUMERATOR FILES**********
append using "`dta_name1'"

egen linkid=concat(SEQNUM_CO CO_YOD)
tempfile `dta_name2'
save "`dta_name2'", replace
                                    *DENOMINATOR FILE*
*2019
local dat_name "VS19LINK.DENOMUS"
** The following line should contain the name of the output '.dta' file ;
local dta_name1d "alldat2019den"
** The following line should contain the name of the data dictionary file ;
local dct_name "denom_dct_2019.dct"
infile using "`dct_name'", using("`dat_name'") clear
compress
tempfile `dta_name1d'
save "`dta_name1d'", replace

* merge denominator data with appended numerator file

egen linkid=concat(SEQNUM_CO CO_YOD)
/* Stata will not merge when there are missing values on the merge variable,
so create a new ID number that is all negative when the SEQNUM_CO variable
is missing */
gen newidmis=_n*(-1) if SEQNUM_CO==""
tostring newidmis, replace
```

```
/* check to make sure all the new ID numbers are negative (so will not link to
records from the numerator file */
codebook newidmis
/* replace linking ID with this newly generated value for records that have missing
SEQNUM_CO (that do not link to the numerator file(s) */
replace linkid=newidmis  if SEQNUM_CO==""
/* merge the denominator file with the appended numerator records for 2 years */
merge 1:1 linkid using "`dta_name2'", gen(_mgnumden)
/* check the year of birth variable by merge status */
tab DOB_YY if _mgnumden==1  /* denominator only: 2019 */
tab DOB_YY if _mgnumden==2  /* numerator only: 2019 and 2020 */
tab DOB_YY if _mgnumden==3  /* matched 2019 records */

/* check the year of death variable for merged records */
tab CO_YOD if _mgnumden==3  /* matched 2019 records: Year of death 2019-
2020 */

/* drop records that did not match, deaths where the year of
birth was either 2018 or 2020 */
drop if _mgnumden==2
save "mergedcohort_2019.dta", replace
log close
```

2019 Period Linked Birth/Infant Death Data Set

2020 Period Numerator Files:

United States

A. Record count (occurrence, unweighted):	19,475
B. Record length:	1,743

Territories

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

2020 Period Denominator Files:

United States

A. Record count (occurrence):	3,619,826
B. Record length:	1,346

Territories

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

2019 Cohort Numerator Files:

United States

A. Record count (occurrence, unweighted):	20,681
B. Record length:	1,743

2019 Cohort Denominator Files:

United States

A. Record count (occurrence):	3,757,582
B. Record length:	1,346

2020 Period/ 2019 Cohort 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	Not late record
						1	Late record
9-12	4	P,G	DOB_YY	**Birth Year**		2019-2020	Birth year
13-14	2	P,G	DOB_MM	**Birth Month**		01	January
						02	February
						03	March
						04	April
						05	May
						06	June
						07	July
						08	August
						09	September
						10	October
						11	November
						12	December
15-18	4		FILLER02	**Filler**		Blank	
19-22	4	P,G	DOB_TT	**Time of Birth**	126	0000-2359	Time of Birth
						9999	Not Stated
23	1	P,G	DOB_WK	**Birth Day of Week**		1	Sunday
						2	Monday
						3	Tuesday
						4	Wednesday
						5	Thursday
						6	Friday
						7	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	Hospital
						2	Freestanding Birth Center
						3	Home (intended)
						4	Home (not intended)
						5	Home (unknown if intended)
						6	Clinic / Doctor’s Office
						7	Other

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
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	Under 15 years 15-19 years 20-24 years 25-29 years 30-34 years

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
						6	35-39 years
						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**			
				United States		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.S. Territories		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**			
				United States and all Outlying Areas of the United States except Puerto Rico		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

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
						12	AIAN and NHOPI
						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**			
				United States and all Outlying Areas of the United States except Puerto Rico		1	White (only)
						2	Black (only)
						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**			
				United States and all Outlying Areas of the United States except Puerto Rico		01	White (only)
						02	Black (only)
						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

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
110	1		FILLER				
111	1	P,G	MRACEIMP	**Mother's Race Imputed**		Blank	Mother's race not imputed
						1	Unknown race imputed
						2	All other races, formerly coded 09, imputed.
112	1	P,G	MHISPX	**Mother's Hispanic Origin Recode**		0	Non-Hispanic
					116	1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central and South American
						5	Dominican
						6	Other and Unknown Hispanic origin
						9	Hispanic origin not stated
113-114	2		FILLER08	**Filler**		Blank	
115	1	P,G	MHISP_R	**Mother's Hispanic Origin Recode**		0	Non-Hispanic
					116	1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central and South American
						5	Other and Unknown Hispanic origin
						9	Hispanic origin not stated
116	1	P,G	F_MHISP	**Reporting Flag for Mother's Origin**			See footnote
117	1	P,G	MRACEHISP	**Mother's Race/Hispanic Origin**		1	Non-Hispanic White (only)
				Based on single/multiple-race (fields 105-106,		2	Non-Hispanic Black (only)
				107, and 108-109)		3	Non-Hispanic AIAN (only)
						4	Non-Hispanic Asian (only)
						5	Non-Hispanic NHOPI (only)
						6	Non-Hispanic more than one race
						7	Hispanic
						8	Origin unknown or not stated
118	1		FILLER09	**Filler**		Blank	
119	1	P,G	MAR_P	**Paternity Acknowledged**	123	Y	Yes
						N	No
						U	Unknown
						X	Not Applicable

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
120	1	P,G	DMAR	**Marital Status**			
				United States and all Outlying Areas Of the United States except Puerto Rico		1	Married
						2	Unmarried
						9	Unknown, NS
				Puerto Rico		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	8th grade or less
						2	9th through 12th 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

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
149-150	2	P,G	FAGE11	**Father's Age Recode 11**		01	Under 15 years
						02	15-19 years
						03	20-24 years
						04	25-29 years
						05	30-34 years
						06	35-39 years
						07	40-44 years
						08	45-49 years
						09	50-54 years
						10	55-98 years
						11	Not stated
151-152	2	P,G	FRACE31	**Father's Race Recode 31**		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
						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
						99	Unknown or Not Stated

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
153	1	P,G	FRACE6	**Father's Race Recode 6**		1	White (only)
						2	Black (only)
						3	AIAN (only)
						4	Asian (only)
						5	NHOPI (only)
						6	More than one race
						9	Unknown or Not Stated
154-155	2	P,G	FRACE15	**Father's Race Recode 15**		01	White (only)
						02	Black (only)
						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
						99	Unknown or Not Stated
156-159	4		FILLER13	**Filler**		Blank	
159	1	P,G	FHISPX	**Father's Hispanic Origin Recode**		0	Non-Hispanic
					116	1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central and South American
						5	Dominican
						6	Other and Unknown Hispanic origin
						9	Hispanic origin not stated
160	1	P,G	FHISP_R	**Father's Hispanic Origin Recode**		0	Non-Hispanic
					161	1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central and South American
						5	Other and Unknown Hispanic origin
						9	Hispanic origin 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
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)		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	8th grade or less 9th through 12th 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
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	

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

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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	Zero to 3 months (plural delivery)
						01	4 to 11 months
						02	12 to 17 months
						03	18 to 23 months
						04	24 to 35 months
						05	36 to 47 months
						06	48 to 59 months
						07	60 to 71 months
						08	72 months and over
						88	Not applicable (1st natality event)
						99	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	Plural delivery
						004-300	Months since last live birth
						888	Not applicable / no previous pregnancy
						999	Unknown or not stated
217-218	2	P,G	ILP_R11	**Interval Since Last Pregnancy Recode 11**	126	00	Zero to 3 months (plural delivery)
						01	4 to 11 months
						02	12 to 17 months
						03	18 to 23 months
						04	24 to 35 months
						05	36 to 47 months
						06	48 to 59 months
						07	60 to 71 months
						08	72 months and over
						88	Not applicable (no previous pregnancy)
						99	Unknown or not stated
219-223	5		FILLER21	**Filler**		Blank	
224-225	2	P,G	PRECARE	**Month Prenatal Care**	226	00	No prenatal care
						01-10	Month prenatal care began
						99	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	1st to 3rd month
						2	4th to 6th month
						3	7th to final month
						4	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
						5	Unknown or not stated
228-237	10		FILLER22	**Filler**		Blank	
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	Nonsmoker
						1	1-5
						2	6-10
						3	11-20
						4	21-40
						5	41 or more
						6	Unknown or not stated
262	1	P,G	CIG1_R	**Cigarettes 1st Trimester Recode**	266	0	Nonsmoker
						1	1-5
						2	6-10
						3	11-20
						4	21-40
						5	41 or more
						6	Unknown or not stated
263	1	P,G	CIG2_R	**Cigarettes 2nd Trimester Recode**	267	0	Nonsmoker
						1	1-5
						2	6-10
						3	11-20
						4	21-40
						5	41 or more
						6	Unknown or not stated
264	1	P,G	CIG3_R	**Cigarettes 3rd Trimester Recode**	268	0	Nonsmoker
						1	1-5
						2	6-10
						3	11-20
						4	21-40
						5	41 or more
						6	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	Yes
						N	No
						U	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_TOBACCO	**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	100-400 999	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

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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	**Risk Factors**					
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		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**		Y	Yes
					330	N	No
						X	Not applicable
						U	Unknown or not stated
328	1	P,G	F_RF_INFT	**Reporting Flag for Infertility Treatment**			See footnote
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**		00	None
					336	01-30	Number of previous cesareans
						99	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	True
						0	False
						9	Not Reported
338-342	4		FILLER31	**Filler**		Blank	
343-358	15	**Infections Present**					
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	True
						0	False
						9	Not Reported
354-359	6		FILLER32	**Filler**		Blank	
360-364	12	**Obstetric Procedures**					
360	1	P,G	OB_SUCC	**Successful External Cephalic Version**		Y	Yes
					363	N	No
						U	Unknown or not stated
361	1	P,G	OB_FAIL	**Failed External Cephalic Version**		Y	Yes
					364	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
	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_YOD	**Cohort Year of Death**		20XX	
376-382		7	P,G	FILLER34	**Filler**		Blank	
383-400	18	**Characteristics of Labor and Delivery**						
	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	True
						126	0	False
							9	Not Reported
	396-400	5		FILLER35	**Filler**		Blank	
401-409		9	**Method of Delivery**					
	401	1	P,G	ME_PRES	**Fetal Presentation**	404	1	Cephalic
							2	Breech
							3	Other
							9	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	Spontaneous
						2	Forceps
						3	Vacuum
						4	Cesarean
						9	Unknown or not stated
403	1	P,G	ME_TRIAL	**Trial of Labor Attempted**	406	Y	Yes
						N	No
						X	Not applicable
						U	Unknown or not stated
404	1	P,G	F_ME_PRES	**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	Vaginal (excludes vaginal after previous C-section)
						2	Vaginal after previous c-section
						3	Primary C-section
						4	Repeat C-section
						5	Vaginal (unknown if previous c-section)
						6	C-section (unknown if previous c-section)
						9	Not stated
408	1	P,G	DMETH_REC	**Delivery Method Recode Combined**		1	Vaginal
						2	C-Section
						9	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		**Maternal Morbidity**				
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**		1	True
					126	0	False
						9	Not Reported
428-432	5		FILLER39	**Filler**		Blank	
433	1	P,G	ATTEND	**Attendant**		1	Doctor of Medicine (MD)
						2	Doctor of Osteopathy (DO)
						3	Certified Nurse Midwife (CNM)
						4	Other Midwife
						5	Other
						9	Unknown or not stated
434	1	P,G	MTRAN	**Mother Transferred**	126	Y	Yes
						N	No
						U	Unknown
435	1	P,G	PAY	**Payment Source**	437	1	Medicaid
						2	Private Insurance
						3	Self-Pay
						4	Indian Health Service
						5	CHAMPUS/TRICARE
						6	Other Government (Federal, State, Local)
						8	Other
						9	Unknown
436	1	P,G	PAY_REC	**Payment Recode**	438	1	Medicaid
						2	Private Insurance
						3	Self Pay
						4	Other
						9	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	A score of 0-10
						99	Unknown or not stated

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
446	1	P,G	APGAR5R	**Five Minute APGAR Recode**	447	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	1	P,G	F_APGAR5	**Reporting Flag for Five minute APGAR**			See footnote
448-449	2	P,G	APGAR10	**Ten Minute APGAR Score** Use reporting flag in field 126 for 2018		00-10 88 99	A score of 0-10 Not applicable Unknown or not stated
450	1	P,G	APGAR10R	**Ten Minute APGAR Recode** Use reporting flag in field 126 for 2018		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
451	1	P,G	f_APGAR10	**Reporting Flag for Ten minute APGAR Score**			See footnote
452-453	3		FILLER41	**FILLER**		Blank	
454	1	P,G	DPLURAL	**Plurality Recode**		1 2 3 4	Single Twin Triplet Quadruplet 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 1st , 2 2nd, 3 3rd, 4 4th, 5 5th to 16th 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

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
477-478	2	P,G	DLMP_MM	**Last Normal Menses Month**		01	January
						02	February
						03	March
						04	April
						05	May
						06	June
						07	July
						08	August
						09	September
						10	October
						11	November
						12	December
						99	Unknown or not stated
479-480	2		FILLER45	**Filler**		Blank	
481-484	4	P,G	DLMP_YY	**Last Normal Menses Year**		nnnn	Year of last normal menses
						9999	Unknown or not stated
485-487	3		FILLER46	**Filler**		Blank	
487	1		COMPGST_IMP	**Computed Gestation Imputation Flag**		Blank	Computed Gestation is not imputed
						1	Computed Gestation is imputed
488	1	P,G	COMBGST_IMP	**Combined Gestation Imputed**		Blank	Combined Gestation is not imputed
						1	Combined Gestation is imputed
489	1	P,G	OBGEST_FLG	**Obstetric Estimate of Gestation Used Flag**		Blank	Clinical Estimate is not used
						1	Clinical Estimate is used
490-491	2	P,G	COMBGEST	**Combined Gestation – Detail in Weeks**		17-47	17^{th} through 47^{th} week of Gestation
						99	Unknown
492-493	2	P,G	GESTREC10	**Combined Gestation Recode 10**		01	Under 20 weeks
						02	20-27 weeks
						03	28-31 weeks
						04	32-33 weeks
						05	34-36 weeks
						06	37-38 weeks
						07	39 weeks
						08	40 weeks
						09	41 weeks
						10	42 weeks and over
						99	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
494	1	P,G	GESTREC3	**Combined Gestation Recode 3**		1 2 3	Under 37 weeks 37 weeks and over 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
504-508	5		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	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

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
						14	Not Stated
511	1	P,G	BWTR4	**Birth Weight Recode 4**		1	227 - 1499 grams
						2	1500 – 2499 grams
						3	2500 - 8165 grams
						4	Unknown or not stated
512-515	4	P,G	BRTHWGT	**Imputed Birth Weight**		0227-8165	Number of grams
						9999	Not stated birth weight
516	1	P,G	BWTIMP	**Birth Weight Imputed Flag**		Blank	Birth Weight is not imputed
						1	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**	**Abnormal Conditions of the Newborn**					
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**		1	True
					126	0	False
						9	Not Reported
532-536	5		FILLER52	**Filler**		Blank	
537-566	30	**Congenital Anomalies of the Newborn**					
537	1	P,G	CA_ANEN	**Anencephaly**	543	Y	Yes

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
538	1	P,G	CA_MNSB	**Meningomyelocele / Spina Bifida**	544	N	No
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_OMPH	**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 Meningomyelocele/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_OMPH	**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	Confirmed
						P	Pending
						N	No
						U	Unknown
553	1	P,G	CA_DISOR	**Suspected Chromosomal Disorder**		C	Confirmed
					559	P	Pending
						N	No
						U	Unknown
554	1	P,G	CA_HYPO	**Hypospadias**	560	Y	Yes, anomaly reported
						N	No, anomaly not reported
						U	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**		1	True
					126	0	False
						9	Not Reported
562-566	5		FILLER53	**Filler**		Blank	
567	1	P,G	ITRAN	**Infant Transferred**	126	Y	Yes
						N	No

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
						U	Unknown or not stated
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
571-1345	759	P,G	FILLER54	**Filler**		Blank	
1346	1	P,G	FLGND	**Match Status**		1 Blank	Record in both files Record not in both files

The Denominator file section of the files ends here. Documentation of the Mortality Section of the Numerator (Linked) file begins on the next page.

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	
1347-1355	9	P,G	FILLER55	**Filler**			Blank	
1356-1358	3	P,G	AGEDX	Age at Death in Days			000-365	Number of days
1359	1	P,G	AGER5X	Infant age recode 5			1	Under 1 hour
							2	1 – 23 hours
							3	1 – 6 days
							4	7 – 27 days (late neonatal)
							5	28 days and over (postneonatal)
1360-1361	2	P,G	AGER22X	Infant age recode 22			Blank	Age 1 year and over or not stated
							01	Under 1 hour (includes not stated hours and minutes)
							02	1 – 23 hours
							03	1 day (includes not stated days)
							04	2 days
							05	3 days
							06	4 days
							07	5 days
							08	6 days
							09	7 days (includes not stated weeks)
							10	14 – 20 days
							11	21 – 27 days
							12	1 month (includes not stated months)
							13	2 months
							14	3 months
							15	4 months
							16	5 months
							17	6 months
							18	7 months
							19	8 months
							20	9 months
							21	10 months
							22	11 months
1362	1	P,G	MANNER	Manner of Death			1	Accident
							2	Suicide
							3	Homicide
							4	Pending investigation
							5	Could not determine
							6	Self-inflicted
							7	Natural
							Blank	Not specified
1363	1	P,G	DISPO	Method of Disposition			B	Burial

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Position	Len	File*	Field	Description	Flag Position	Values	Definition	
							C	Cremation
							O	Other
							U	Unknown
1364	1	P,G	AUTOPSY	Autopsy			Y	Yes
							N	No
							U	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	Home
							1	Residential institution
							2	School, other institution and public administrative area
							3	Sports and athletics area
							4	Street and highway
							5	Trade and service area
							6	Industrial and construction area
							7	Farm
							8	Other Specified Places
							9	Unspecified place
							Blank	Cause other than W00-Y34, except Y06.- and Y07.-
1367	1	P,G	FILLER57	**Filler**			Blank	
		UNDERLYING CAUSE OF DEATH						
1368-1371	4	P,G	UCOD	ICD Code (10th Revision) See the International Classification of Diseases, 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 for period file			1.0-1.XXXXXX	
1385-1386	2	P,G	FILLER59	**Filler**			Blank	
		MULTIPLE CONDITIONS						
1387-1388	2	P,G	EANUM	Number of Entity-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
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 7th 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		1st Condition			
1396-1402	7	P,G		2nd Condition			
1403-1409	7	P,G		3rd Condition			
1410-1416	7	P,G		4th Condition			
1417-1423	7	P,G		5th Condition			
1424-1430	7	P,G		6th Condition			
1431-1437	7	P,G		7th Condition			
1438-1444	7	P,G		8th Condition			
1445-1451	7	P,G		9th Condition			
1452-1458	7	P,G		10th Condition			
1459-1465	7	P,G		11th Condition			
1466-1472	7	P,G		12th Condition			
1473-1479	7	P,G		13th Condition			
1480-1486	7	P,G		14th Condition			
1487-1493	7	P,G		15th Condition			
1494-1500	7	P,G		16th Condition			
1501-1507	7	P,G		17th Condition			
1508-1514	7	P,G		18th Condition			
1515-1521	7	P,G		19th Condition			
1522-1528	7	P,G		20th Condition			
1529-1530	2	P,G	FILLER60	**Filler**		Blank	
1531-1532	2	P,G	RANUM	Number of Record-Axis Conditions		00-20	Code range

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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 5th 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		1st Condition			
1538-1542	5	P,G		2nd Condition			
1543-1547	5	P,G		3rd Condition			
1548-1552	5	P,G		4th Condition			
1553-1557	5	P,G		5th Condition			
1558-1562	5	P,G		6th Condition			
1563-1567	5	P,G		7th Condition			
1568-1572	5	P,G		8th Condition			
1573-1577	5	P,G		9th Condition			
1578-1582	5	P,G		10th Condition			
1583-1587	5	P,G		11th Condition			
1588-1592	5	P,G		12th Condition			
1593-1597	5	P,G		13th Condition			
1598-1602	5	P,G		14th Condition			
1603-1607	5	P,G		15th Condition			
1608-1612	5	P,G		16th Condition			
1613-1617	5	P,G		17th Condition			
1618-1622	5	P,G		18th Condition			
1623-1627	5	P,G		19th Condition			
1628-1632	5	P,G		20th Condition			
1633-1669	37	P,G	FILLER61	**Filler**		Blank	
1670	1	P,G	HOSPD	Place of Death and Decendent's Status		1	Hospital, clinic or Medical Center – Inpatient
						2	Hospital, clinic or Medical Center – Outpatient or admitted to Emergency Room
						3	Hospital, clinic or Medical Center – Dead on Arrival
						4	Decedent's home
						5	Hospice facility
						6	Nursing home/long term care
						7	Other
						9	Place of death unknown
1671	1	P,G	DWEEKDAY	Day of Week of Death		1	Sunday
						2	Monday
						3	Tuesday
						4	Wednesday
						5	Thursday
						6	Friday
						7	Saturday
						9	Unknown

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Position	Len	File*	Field	Description	Flag Position	Values	Definition	
1672-1675	4	P,G	DOD_YY	Death Year			2020	2020
1676-1741	66	P,G	FILLER62	**Filler**				
1742-1743	2	P,G	DOD_MM	Month of Death			01	January
							02	February
							03	March
							04	April
							05	May
							06	June
							07	July
							08	August
							09	September
							10	October
							11	November
							12	December

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
ADDENDUM Detailed geographic information for the territories.							
24-25	2	T,G	OSTATE	**Occurrence Postal State** U.S. Territories		GU Guam, PR Puerto Rico	
28-30	3	T,G	OCNTYFIPS	**Occurrence FIPS County**		000-nnn	County of Occurrence
31	1	T,G	OCNTYPOP	**Occurrence County Population**		0 1 2 9	County of 1,000,000 or more County of 500,000 to 1,000,000 County of 250,000 to 500,000 County less than 250,000
80-81	2	T,G	MBCNTRY	**Mother's Birth Country**		AA-ZZ	See Geographic Documentation
85-86	2	G	MRCNTRY	**Mother's Residence Country**		AA-ZZ	See Geographic Documentation
89-90	2	T,G	MRSTATEPSTL	**Mother's Residence Postal State** U.S. Territories Foreign		GU Guam, PR Puerto Rico CC Canada, CU Cuba, MX Mexico, XX Not Applicable, ZZ Not Classifiable	
91-93	3	T,G	MRCNTYFIPS	**Mother's FIPS County**		000-998 999	See Geographic Tables Foreign
99	1	T,G	RCNTY_POP	**Population of Residence County**		0 1 2 9 Z	County of 1,000,000 or more County of 500,000 to 1,000,000 County of 250,000 to 500,000 County less than 250,000 Foreign resident
100	1	G	RCITY_POP	**Population of Residence City**		0 1 2 9 Z	City of 1,000,000 or more City of 500,000 to 1,000,000 City of 250,000 to 500,000 All other areas in the US Foreign resident
103	1	T,G	RECTYPE	**Record Type**		1 2	RESIDENT: State and county of occurrence and residence are the same. NONRESIDENT: State and county of occurrence and residence are different.
1635	1	D_RESTATUS		**Death Resident Status** Puerto Rico Occurrence		1	RESIDENTS Territory and County-equivalent of

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
							Occurrence and Residence are the same.
						2	INTRASTATE NONRESIDENTS Territory of Occurrence and Residence are the same, but County-equivalent is different.
						3	INTERTERRITORY NONRESIDENTS Territory of occurrence and residence are different, but both are a Territory.
						4	FOREIGN RESIDENTS Occurred in Puerto Rico to a resident of any other place.
				Guam Occurrence		1	RESIDENTS Occurred in Guam to a resident of Guam or to a resident of the U.S.
						3	INTERTERRITORY NONRESIDENTS Territory of occurrence and residence are different, but both are a Territory.
						4	FOREIGN RESIDENTS Occurred in Guam to a resident of any place other than Guam or the U.S.
1636-1637	2	DOSTATE		**State of Occurrence (FIPS) of Death**			
						PR	Puerto Rico
						GU	Guam
1638-1640	3	DOCNTY		**County of Occurrence (FIPS) of Death** Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State and identify each county. (Note: To uniquely identify a county, both the state and county codes must be used.) A complete list of counties is shown in the Geographic Code Outline further back in this document.			
						001-nnn	Code range
1641-1643	3	FILLER048		**FILLER**		Blank	
1644-1645	2	DRSTATE		**State of Residence (FIPS)**			
						PR	Puerto Rico
						GU	Guam
				Puerto Rico Occurrence		PR	Puerto Rico
						AL-WY, VI,AS,GU, MP,ZZ	Foreign residents: refer to U.S. for specific code structure.
				Guam Occurrence		GU	Guam
						AL-WY	U.S. resident. Also considered a resident of Guam.
						PR,AS, VI,MP, ZZ	Foreign residents: refer to U.S. for specific code structure.

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Position	Len	File* Field	Description	Flag Position	Values	Definition
1646-1647	2	FILLER049	**FILLER**			Blank
1648-1649	2	DRSTCNTRY	**State/Country of Residence of Death Recode**			
			Territorial resident		PR	Puerto Rico
					GU	Guam
			Foreign residents			
					CC	Canada
					MX	Mexico
					CU	Cuba
					YY	Remainder of the world
			Puerto Rico Occurrence		PR	Puerto Rico
					AL-ZZ	Foreign residents: refer to U.S. for specific code structure.
			Guam Occurrence		GU	Guam
					AL-WY	U.S. resident. Also considered a resident of Guam
					PR,VI,AS, MP,ZZ	Foreign residents: refer to U.S. for specific code structure.
1650-1652	3	DRCNTY	**County of Residence (FIPS) of Death** (To uniquely identify a county, both the state and county codes must be used.)			
					000	Foreign residents
					001-nnn	Code range
1653-1665	13	FILLER69	**FILLER**		Blank	
1666	1	DRCNTYPOP	**Population Size of County of Residence of Death**			
			Based on the results of the 2010 Census		0	County of 1,000,000 or more
					1	County of 500,000 to 1,000,000
					2	County of 250,000 to 500,000
					9	County of less than 250,000
					Z	Foreign residents

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

130 Recode	S T	Limited Sex	Age	Cause Title and ICD-10 Codes Included
001	1			Certain infectious and parasitic diseases (A00-B99)
002				Certain intestinal infectious diseases (A00-A08)
003				Diarrhea and gastroenteritis of infectious origin (A09)
004				Tuberculosis (A16-A19)
005				Tetanus (A33,A35)
006				Diphtheria (A36)
007				Whooping cough (A37)
008				Meningococcal infection (A39)
009			3	Septicemia (A40-A41)
010				Congenital syphilis (A50)
011				Gonococcal infection (A54)
012	1			Viral diseases (A80-B34)
013				Acute poliomyelitis (A80)
014				Varicella (chickenpox) (B01)
015				Measles (B05)
016				Human immunodeficiency virus (HIV) disease (B20-B24)
017				Mumps (B26)
018				Other and unspecified viral diseases (A81-B00,B02-B04,B06-B19,B25,B27-B34)
019				Candidiasis (B37)
020				Malaria (B50-B54)
021				Pneumocystosis (B59)
022				All other and unspecified infectious and parasitic diseases (A20-A32,A38,A42-A49,A51-A53,A55-A79,B35-B36,B38-B49,B55-B58,B60-B99)
023	1			Neoplasms (C00-D48)
024	1			Malignant neoplasms (C00-C97)
025				Hodgkin's disease and non-Hodgkin's lymphomas (C81-C85)
026				Leukemia (C91-C95)
027				Other and unspecified malignant neoplasms (C00-C80,C88,C90,C96-C97)
028				In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior (D00-D48)
029	1			Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D89)
030				Anemias (D50-D64)
031				Hemorrhagic conditions and other diseases of blood and blood-forming organs (D65-D76)
032				Certain disorders involving the immune mechanism (D80-D89)
033	1			Endocrine, nutritional and metabolic diseases (E00-E88)
034				Short stature, not elsewhere classified (E34.3)
035				Nutritional deficiencies (E40-E64)
036				Cystic fibrosis (E84)
037			3	Volume depletion, disorders of fluid, electrolyte and acid-base balance (E86-E87)
038				All other endocrine, nutritional and metabolic diseases (E00-E32,E34.0-E34.2,E34.4-E34.9,E65-E83,E85,E88)
039	1			Diseases of the nervous system (G00-G98)
040				Meningitis (G00,G03)
041				Infantile spinal muscular atrophy, type I (Werdnig-Hoffman) (G12.0)
042				Infantile cerebral palsy (G80)
043				Anoxic brain damage, not elsewhere classified (G93.1)
044				Other diseases of nervous system (G04,G06-G11,G12.1-G12.9,G20-G72,G81-G92,G93.0,G93.2-G93.9,G95-G98)
045				Diseases of the ear and mastoid process (H60-H93)
046	1			Diseases of the circulatory system (I00-I99)
047				Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)
048				Pericarditis, endocarditis and myocarditis (I30,I33,I40)
049				Cardiomyopathy (I42)
050				Cardiac arrest (I46)
051				Cerebrovascular diseases (I60-I69)
052				All other diseases of circulatory system (I00-I25,I31,I34-I38,I44-I45,I47-I51,I70-I99)
053	1			Diseases of the respiratory system (J00-J98)
054				Acute upper respiratory infections (J00-J06)
055	1			Influenza and pneumonia (J10-J18)

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130 Recode	S T	Limited 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)

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130 Recode	S T	Limited Sex	Age	Cause Title and ICD-10 Codes Included
108				All other infections specific to the perinatal period (P35,P37,P39)
109	1			Hemorrhagic and hematological disorders of newborn (P50-P61)
110				Neonatal hemorrhage (P50-P52,P54)
111				Hemorrhagic disease of newborn (P53)
112				Hemolytic disease of newborn due to isoimmunization and other perinatal jaundice (P55-P59)
113				Hematological disorders (P60-P61)
114				Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (P70.0-P70.2)
115				Necrotizing enterocolitis of newborn (P77)
116				Hydrops fetalis not due to hemolytic disease (P83.2)
117				Other perinatal conditions (P29,P70.3-P70.9,P71-P76,P78-P81,P83.0-P83.1, P83.3-P83.9,P90-P96)
118	1			Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)
119				Anencephaly and similar malformations (Q00)
120				Congenital hydrocephalus (Q03)
121				Spina bifida (Q05)
122				Other congenital malformations of nervous system (Q01-Q02,Q04,Q06-Q07)
123				Congenital malformations of heart (Q20-Q24)
124				Other congenital malformations of circulatory system (Q25-Q28)
125				Congenital malformations of respiratory system (Q30-Q34)
126				Congenital malformations of digestive system (Q35-Q45)
127				Congenital malformations of genitourinary system (Q50-Q64)
128				Congenital malformations and deformations of musculoskeletal system, limbs and integument (Q65-Q85)
129				Down's syndrome (Q90)
130				Edward's syndrome (Q91.0-Q91.3)
131				Patau's syndrome (Q91.4-Q91.7)
132				Other congenital malformations and deformations (Q10-Q18,Q86-Q89)
133				Other chromosomal abnormalities, not elsewhere classified (Q92-Q99)
134	1			Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)
135				Sudden infant death syndrome (R95)
136				Other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R53,R55-R94,R96-R99)
137				All other diseases (Residual) (F01-F99,H00-H57,L00-M99)
138	1			External causes of mortality (*U01,V01-Y84)
139	1			Accidents (unintentional injuries) (V01-X59)
140	1			Transport accidents (V01-V99)
141				Motor vehicle accidents(V02-V04,V09.0,V09.2,V12-V14,V19.0-V19.2, V19.4-V19.6,V20-V79,V80.3-V80.5,V81.0-V81.1,V82.0-V82.1,V83-V86, V87.0-V87.8,V88.0-V88.8,V89.0,V89.2)
142				Other and unspecified transport accidents (V01,V05-V06,V09.1,V09.3-V09.9,V10-V11,V15-V18,V19.3, V19.8-V19.9,V80.0-V80.2,V80.6-V80.9,V81.2-V81.9,V82.2-V82.9, V87.9,V88.9,V89.1,V89.3,V89.9,V90-V99)
143				Falls (W00-W19)
144				Accidental discharge of firearms (W32-W34)
145				Accidental drowning and submersion (W65-W74)
146				Accidental suffocation and strangulation in bed (W75)
147				Other accidental suffocation and strangulation (W76-W77,W81-W84)
148				Accidental inhalation and ingestion of food or other objects causing obstruction of respiratory tract (W78-W80)
149				Accidents caused by exposure to smoke, fire and flames (X00-X09)
150				Accidental poisoning and exposure to noxious substances (X40-X49)
151				Other and unspecified accidents (W20-W31,W35-W64,W85-W99,X10-X39,X50-X59)
152	1			Assault (homicide) (*U01,X85-Y09)
153				Assault (homicide) by hanging, strangulation and suffocation (X91)
154				Assault (homicide) by discharge of firearms (*U01.4,X93-X95)
155				Neglect, abandonment and other maltreatment syndromes (Y06-Y07)
156				Assault (homicide) by other and unspecified means (*U01.0-*U01.3,*U01.5-*U01.9,X85-X90,X92,X96-X99,Y00-Y05,Y08-Y09)
157				Complications of medical and surgical care (Y40-Y84)

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 Recode	S T	Limited Sex	Age	Cause Title and ICD-10 Codes Included
158				Other external causes (X60-X84,Y10-Y36)

Table I. Values of L and U for calculating 95-percent confidence limits for numbers of events and rates when the number of events is less than 100

N	*L*	*U*	*N*	*L*	*U*
1	0.02532	5.57164	51	0.74457	1.31482
2	0.12110	3.61234	52	0.74685	1.31137
3	0.20622	2.92242	53	0.74907	1.30802
4	0.27247	2.56040	54	0.75123	1.30478
5	0.32470	2.33367	55	0.75334	1.30164
6	0.36698	2.17658	56	0.75539	1.29858
7	0.40205	2.06038	57	0.75739	1.29562
8	0.43173	1.97040	58	0.75934	1.29273
9	0.45726	1.89831	59	0.76125	1.28993
10	0.47954	1.83904	60	0.76311	1.28720
11	0.49920	1.78928	61	0.76492	1.28454
12	0.51671	1.74680	62	0.76669	1.28195
13	0.53246	1.71003	63	0.76843	1.27943
14	0.54671	1.67783	64	0.77012	1.27698
15	0.55969	1.64935	65	0.77178	1.27458
16	0.57159	1.62394	66	0.77340	1.27225
17	0.58254	1.60110	67	0.77499	1.26996
18	0.59266	1.58043	68	0.77654	1.26774
19	0.60207	1.56162	69	0.77806	1.26556
20	0.61083	1.54442	70	0.77955	1.26344
21	0.61902	1.52861	71	0.78101	1.26136
22	0.62669	1.51401	72	0.78244	1.25933
23	0.63391	1.50049	73	0.78384	1.25735
24	0.64072	1.48792	74	0.78522	1.25541
25	0.64715	1.47620	75	0.78656	1.25351
26	0.65323	1.46523	76	0.78789	1.25165
27	0.65901	1.45495	77	0.78918	1.24983
28	0.66449	1.44528	78	0.79046	1.24805
29	0.66972	1.43617	79	0.79171	1.24630
30	0.67470	1.42756	80	0.79294	1.24459
31	0.67945	1.41942	81	0.79414	1.24291
32	0.68400	1.41170	82	0.79533	1.24126
33	0.68835	1.40437	83	0.79649	1.23965
34	0.69253	1.39740	84	0.79764	1.23807
35	0.69654	1.39076	85	0.79876	1.23652
36	0.70039	1.38442	86	0.79987	1.23499
37	0.70409	1.37837	87	0.80096	1.23350
38	0.70766	1.37258	88	0.80203	1.23203
39	0.71110	1.36703	89	0.80308	1.23059
40	0.71441	1.36172	90	0.80412	1.22917
41	0.71762	1.35661	91	0.80514	1.22778
42	0.72071	1.35171	92	0.80614	1.22641
43	0.72370	1.34699	93	0.80713	1.22507
44	0.72660	1.34245	94	0.80810	1.22375
45	0.72941	1.33808	95	0.80906	1.22245
46	0.73213	1.33386	96	0.81000	1.22117
47	0.73476	1.32979	97	0.81093	1.21992
48	0.73732	1.32585	98	0.81185	1.21868
49	0.73981	1.32205	99	0.81275	1.21746
50	0.74222	1.31838			

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, 2020 Period Data.
(Residence of birth is of the Mother)

	Live Births		Infant Deaths				
			Unweighted		Weighted 1/		
State	Occurrence	Residence	Occurrence	Residence	Occurrence	Residence	Infant Mortality Rate
United States /2	3,619,826	3,613,647	19,475	19,446	19,607	19,578	5.42
Alabama	56333	57647	406	402	407	403	6.99
Alaska	9400	9469	47	47	48	48	5.07
Arizona	77489	76947	394	399	394	399	5.19
Arkansas	34334	35251	248	260	248	260	7.38
California	420900	420259	1639	1630	1657	1648	3.92
Colorado	62067	61494	318	295	318	295	4.80
Connecticut	34982	33460	143	144	144	145	4.33
Delaware	10789	10392	54	53	54	53	5.10
Dist of Columbia	12405	8874	74	46	74	46	5.18
Florida	209866	209671	1222	1217	1222	1217	5.80
Georgia	123310	122473	768	769	768	769	6.28
Hawaii	15783	15785	78	77	78	77	4.88
Idaho	21297	21533	93	109	93	109	5.06
Illinois	129982	133298	684	732	685	733	5.50
Indiana	79046	78616	513	529	515	531	6.75
Iowa	35966	36114	156	160	156	160	4.43
Kansas	35874	34376	207	227	207	227	6.60
Kentucky	49548	51668	300	323	310	332	6.43
Louisiana	57463	57328	434	435	434	435	7.59
Maine	11295	11539	75	73	75	73	6.33
Maryland	65536	68554	379	390	382	393	5.73
Massachusetts	67205	66428	257	260	259	262	3.94
Michigan	103122	104074	690	700	698	708	6.80
Minnesota	62603	63443	272	262	272	262	4.13
Mississippi	34479	35473	252	287	253	288	8.12
Missouri	69960	69285	467	406	469	408	5.89
Montana	10820	10791	53	54	53	54	5.00
Nebraska	24654	24291	139	136	141	138	5.68
Nevada	33250	33653	156	155	157	156	4.64
New Hampshire	11841	11791	47	52	47	52	4.41
New Jersey	95498	97954	340	382	350	392	4.00
New Mexico	20519	21903	102	111	107	116	5.30
New York	109052	112699	484	508	490	514	4.56
New York City	100021	96639	379	341	379	341	3.53
North Carolina	118616	116730	804	787	807	790	6.77
North Dakota	11551	10059	59	55	59	55	5.47
Ohio	129730	129191	898	864	899	865	6.70
Oklahoma	46092	47623	267	277	271	281	5.90
Oregon	40370	39820	190	168	190	168	4.22
Pennsylvania	129642	130693	747	729	747	729	5.58
Rhode Island	10646	10101	52	40	52	40	3.96
South Carolina	52076	55704	332	369	333	370	6.64
South Dakota	11620	10960	79	80	79	80	7.30
Tennessee	84393	78689	566	500	568	502	6.38

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, 2020 Period Data, continued.
(Residence of birth is of the Mother)

	Live Births		Infant Deaths				
			Unweighted		Weighted 1/		
State	Occurrence	Residence	Occurrence	Residence	Occurrence	Residence	Infant Mortality Rate
Texas	374613	368190	1942	1904	1985	1946	5.29
Utah	46933	45702	260	247	261	248	5.43
Vermont	4953	5133	14	18	14	18	*
Virginia	94794	94749	534	544	536	546	5.76
Washington	82821	83086	367	374	368	375	4.51
West Virginia	18372	17323	121	127	121	127	7.33
Wisconsin	60293	60594	354	360	354	360	5.94
Wyoming	5622	6128	19	32	19	32	5.22
Puerto Rico							#DIV/0!
Guam							#DIV/0!

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, 2020 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.....	3,613,647	5,560	8,264	9,654	11,303	14,454	58,180	191,132	3,313,212	1,888
Infant deaths.....	19,578	4,573	2,823	1,111	690	570	1,352	1,762	6,559	138
Infant Mortality Rate.....	5.42	822.48	341.60	115.08	61.05	39.44	23.24	9.22	1.98	73.09
Male										
Live births.....	1,848,092	2,747	4,102	4,897	5,761	7,235	28,091	86,862	1,707,359	1,038
Infant deaths.....	10,844	2,345	1,629	698	371	327	694	905	3,792	84
Infant Mortality Rate.....	5.87	853.66	397.12	142.54	64.40	45.20	24.71	10.42	2.22	80.92
Female										
Live births.....	1,765,555	2,813	4,162	4,757	5,542	7,219	30,089	104,270	1,605,853	850
Infant deaths.....	8,734	2,228	1,194	414	319	243	658	858	2,767	54
Infant Mortality Rate.....	4.95	792.04	286.88	87.03	57.56	33.66	21.87	8.23	1.72	63.53
Non-Hispanic White										
Both sexes										
Live births.....	1,843,432	1,736	2,778	3,516	4,470	5,942	24,888	82,982	1,716,327	793
Infant deaths.....	8,115	1,483	1,037	463	317	246	607	796	3,123	44
Infant Mortality Rate.....	4.40	854.26	373.29	131.68	70.92	41.40	24.39	9.59	1.82	55.49
Male										
Live births.....	945,464	845	1,370	1,810	2,267	3,003	11,895	37,600	886,239	435
Infant deaths.....	4,505	744	592	282	170	141	306	410	1,837	23
Infant Mortality Rate.....	4.76	880.47	432.12	155.80	74.99	46.95	25.73	10.90	2.07	52.87
Female										
Live births.....	897,968	891	1,408	1,706	2,203	2,939	12,993	45,382	830,088	358
Infant deaths.....	3,611	739	446	181	147	105	301	386	1,286	21
Infant Mortality Rate.....	4.02	829.41	316.76	106.10	66.73	35.73	23.17	8.51	1.55	58.66
Non-Hispanic Black										
Both sexes										
Live births.....	529,811	2,098	2,984	3,034	3,323	4,037	14,789	45,157	454,184	205
Infant deaths.....	5,501	1,666	848	302	165	152	318	448	1,566	36
Infant Mortality Rate.....	10.38	794.09	284.18	99.54	49.65	37.65	21.50	9.92	3.45	175.61
Male										
Live births.....	269,341	1,046	1,441	1,478	1,639	1,947	6,894	20,167	234,612	117
Infant deaths.....	3,020	868	480	188	86	89	163	230	897	20
Infant Mortality Rate.....	11.21	829.83	333.10	127.20	52.47	45.71	23.64	11.40	3.82	170.94

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2020 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.....	260,470	1,052	1,543	1,556	1,684	2,090	7,895	24,990	219,572	88
Infant deaths.....	2,481	798	368	115	79	62	156	218	669	16
Infant Mortality Rate.....	9.53	758.56	238.50	73.91	46.91	29.67	19.76	8.72	3.05	*
Non-Hispanic American Indian or Alaska Native /1										
Both sexes										
Live births.....	26,813	42	56	83	69	95	413	1,372	24,670	13
Infant deaths.....	206	31	20	10	2	6	11	23	102	1
Infant Mortality Rate.....	7.68	738.10	357.14	*	*	*	*	16.76	4.13	*
Male										
Live births.....	13,779	24	34	36	35	47	231	638	12,728	6
Infant deaths.....	116	19	16	6	1	3	3	11	55	1
Infant Mortality Rate.....	4.33	*	*	*	*	*	*	*	2.23	*
Female										
Live births.....	13,034	18	22	47	34	48	182	734	11,942	7
Infant deaths.....	90	12	4	4	1	3	8	12	46	-
Infant Mortality Rate.....	6.91	*	*	*	*	*	*	*	3.85	*
Non-Hispanic Asian										
Both sexes										
Live births.....	219,068	218	343	456	547	738	3,383	13,059	200,282	42
Infant deaths.....	688	175	120	45	31	19	56	65	173	3
Infant Mortality Rate.....	3.14	802.75	349.85	98.68	56.67	*	16.55	4.98	0.86	*
Male										
Live births.....	112,795	107	178	236	285	375	1,783	6,064	103,744	23
Infant deaths.....	374	92	78	23	18	10	27	31	94	1
Infant Mortality Rate.....	3.32	859.81	438.20	97.46	*	*	15.14	5.11	0.91	*
Female										
Live births.....	106,273	111	165	220	262	363	1,600	6,995	96,538	19
Infant deaths.....	314	83	42	22	13	9	29	33	80	2
Infant Mortality Rate.....	2.95	747.75	254.55	100.00	*	*	18.13	4.72	0.83	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Both sexes										
Live births.....	9,626	17	20	22	41	46	157	512	8,807	4
Infant deaths.....	69	16	5	3	6	-	4	8	26	-
Infant Mortality Rate.....	7.17	*	*	*	*	*	*	*	2.95	*

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2020 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.....	4,922	7	10	13	23	25	71	266	4,504	3
Infant deaths.....	38	6	5	1	4	-	3	5	14	-
Infant Mortality Rate.....	7.72	*	*	*	*	*	*	*	*	*
Female										
Live births.....	4,704	10	10	9	18	21	86	246	4,303	1
Infant deaths.....	30	10	-	2	2	-	1	3	12	-
Infant Mortality Rate.....	6.38	*	*	*	*	*	*	*	*	*
Hispanic										
Both sexes										
Live births.....	866,713	1,173	1,761	2,164	2,413	3,050	12,398	41,356	802,216	182
Infant deaths.....	4,063	967	651	238	139	122	305	347	1,272	22
Infant Mortality Rate.....	4.69	824.38	369.68	109.98	57.60	40.00	24.60	8.39	1.59	120.88
Male										
Live births.....	441,401	576	896	1,136	1,273	1,569	6,183	19,089	410,562	117
Infant deaths.....	2,243	489	374	164	75	69	163	178	714	18
Infant Mortality Rate.....	5.08	848.96	417.41	144.37	58.92	43.98	26.36	9.32	1.74	*
Female										
Live births.....	425,312	597	865	1,028	1,140	1,481	6,215	22,267	391,654	65
Infant deaths.....	1,820	478	277	74	65	53	141	169	558	4
Infant Mortality Rate.....	4.28	800.67	320.23	71.98	57.02	35.79	22.69	7.59	1.42	*

* 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, 2020 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	3,613,647	23,286	32,463	41,671	267,067	2,403,945	657,711	176,163	8,863	2,478
Infant deaths	19,578	8,462	1,343	838	2,115	5,418	897	279	37	188
Infant Mortality Rate	5.42	363.39	41.37	20.11	7.92	2.25	1.36	1.58	4.17	75.87
Less than 2,500 grams										
Live births	298,547	23,084	31,486	38,093	112,467	89,563	3,073	453	65	263
Infant deaths	12,881	8,455	1,299	727	1,287	1,027	29	14	3	40
Infant Mortality Rate	43.15	366.27	41.26	19.08	11.44	11.47	9.44	*	*	152.09
Less than 500 grams										
Live births	5,560	5,477	57	4	3	4	-	-	-	15
Infant deaths	4,573	4,530	28	1	-	1	-	-	-	13
Infant Mortality Rate	822.48	827.10	491.23	*	*	*	*	*	*	*
500-749 grams										
Live births	8,264	7,605	618	14	14	3	-	-	-	10
Infant deaths	2,823	2,705	106	4	2	-	-	-	-	6
Infant Mortality Rate	341.60	355.69	171.52	*	*	*	*	*	*	*
750-999 grams										
Live births	9,654	6,511	2,840	178	52	43	12	2	-	16
Infant deaths	1,111	881	184	21	16	4	-	-	-	5
Infant Mortality Rate	115.08	135.31	64.79	117.98	*	*	*	*	*	*
1,000-1,249 grams										
Live births	11,303	2,910	6,845	1,023	297	189	26	3	2	8
Infant deaths	690	255	310	68	38	12	1	-	-	5
Infant Mortality Rate	61.05	87.63	45.29	66.47	127.95	*	*	*	*	*
1,250-1,499 grams										
Live births	14,454	407	8,737	3,407	1,528	322	33	5	1	14
Infant deaths	570	52	289	110	91	22	4	-	-	2
Infant Mortality Rate	39.44	127.76	33.08	32.29	59.55	68.32	*	*	*	*
1,500-1,999 grams										
Live births	58,180	107	10,871	19,272	22,700	4,989	164	24	4	49
Infant deaths	1,352	23	303	342	420	254	2	1	-	6
Infant Mortality Rate	23.24	214.95	27.87	17.75	18.50	50.91	*	*	*	*
2,000-2,499 grams										
Live births	191,132	67	1,518	14,195	87,873	84,013	2,838	419	58	151
Infant deaths	1,762	9	79	180	720	734	22	13	3	3
Infant Mortality Rate	9.22	*	52.04	12.68	8.19	8.74	7.75	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2020 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	3,313,212	86	899	3,489	154,424	2,314,017	654,470	175,648	8,780	1,399
Infant deaths	6,559	4	44	111	828	4,391	868	265	34	14
Infant Mortality Rate	1.98	*	48.94	31.81	5.36	1.90	1.33	1.51	3.87	*
Not Stated										
Live births	1,888	116	78	89	176	365	168	62	18	816
Infant deaths	138	3	-	-	1	-	-	-	-	134
Infant Mortality Rate	73.09	*	*	*	*	*	*	*	*	164.22
Non-Hispanic White										
Total										
Live births	1,843,432	8,043	13,681	18,914	127,041	1,216,622	350,445	101,848	5,837	1,001
Infant deaths	8,115	2,992	601	383	959	2,555	410	133	18	66
Infant Mortality Rate	4.40	372.00	43.93	20.25	7.55	2.10	1.17	1.31	*	65.93
Less than 2,500 grams										
Live births	126,312	7,964	13,237	17,142	49,692	36,640	1,261	228	32	116
Infant deaths	4,948	2,989	574	325	556	472	9	7	1	15
Infant Mortality Rate	39.17	375.31	43.36	18.96	11.19	12.88	*	*	*	*
Less than 500 grams										
Live births	1,736	1,701	26	2	1	1	-	-	-	5
Infant deaths	1,483	1,464	15	-	-	-	-	-	-	4
Infant Mortality Rate	854.26	860.67	*	*	*	*	*	*	*	*
500-749 grams										
Live births	2,778	2,522	239	6	6	1	-	-	-	4
Infant deaths	1,037	988	43	2	1	-	-	-	-	3
Infant Mortality Rate	373.29	391.75	179.92	*	*	*	*	*	*	*
750-999 grams										
Live births	3,516	2,329	1,074	61	17	23	5	1	-	6
Infant deaths	463	375	68	8	6	3	-	-	-	2
Infant Mortality Rate	131.68	161.01	63.31	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births	4,470	1,158	2,674	403	131	85	12	2	2	3
Infant deaths	317	123	136	35	13	7	1	-	-	2
Infant Mortality Rate	70.92	106.22	50.86	86.85	*	*	*	*	*	*
1,250-1,499 grams										
Live births	5,942	185	3,581	1,356	643	152	11	5	1	8
Infant deaths	246	25	120	42	44	13	-	-	-	1
Infant Mortality Rate	41.40	135.14	33.51	30.97	68.43	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2020 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	24,888	41	4,935	8,193	9,464	2,144	72	14	2	23
Infant deaths	607	11	145	147	179	123	-	1	-	1
Infant Mortality Rate	24.39	*	29.38	17.94	18.91	57.37	*	*	*	*
2,000-2,499 grams										
Live births	82,982	28	708	7,121	39,430	34,234	1,161	206	27	67
Infant deaths	796	3	47	91	312	326	8	6	1	2
Infant Mortality Rate	9.59	*	66.38	12.78	7.91	9.52	*	*	*	*
2,500 grams or more										
Live births	1,716,327	33	402	1,728	77,248	1,179,735	349,065	101,575	5,790	751
Infant deaths	3,123	2	26	57	403	2,083	401	126	17	8
Infant Mortality Rate	1.82	*	64.68	32.99	5.22	1.77	1.15	1.24	*	*
Not Stated										
Live births										
Infant deaths	793	46	42	44	101	247	119	45	15	134
Infant Mortality Rate	44	1	-	-	-	-	-	-	-	43
	55.49	*	*	*	*	*	*	*	*	320.90
Non-Hispanic Black										
Total										
Live births	529,811	7,802	8,381	9,354	50,522	350,572	81,986	19,799	1,095	300
Infant deaths	5,501	2,771	353	192	507	1,361	203	56	10	48
Infant Mortality Rate	10.38	355.17	42.12	20.53	10.04	3.88	2.48	2.83	*	160.00
Less than 2,500 grams										
Live births	75,422	7,749	8,213	8,816	26,447	23,268	772	83	20	54
Infant deaths	3,899	2,770	347	177	329	255	6	2	2	12
Infant Mortality Rate	51.70	357.47	42.25	20.08	12.44	10.96	*	*	*	*
Less than 500 grams										
Live births	2,098	2,075	15	2	-	1	-	-	-	5
Infant deaths	1,666	1,654	6	1	-	1	-	-	-	4
Infant Mortality Rate	794.09	797.11	*	*	*	*	*	*	*	*
500-749 grams										
Live births	2,984	2,754	220	2	4	1	-	-	-	3
Infant deaths	848	815	31	1	-	-	-	-	-	1
Infant Mortality Rate	284.18	295.93	140.91	*	*	*	*	*	*	*
750-999 grams										
Live births	3,034	2,006	926	69	15	12	1	-	-	5
Infant deaths	302	229	58	8	4	1	-	-	-	2
Infant Mortality Rate	99.54	114.16	62.63	*	*	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2020 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
1,000-1,249 grams										
Live births.....	3,323	771	2,109	309	80	47	4	1	-	2
Infant deaths.....	165	51	88	13	11	-	-	-	-	2
Infant Mortality Rate.....	49.65	66.15	41.73	*	*	*	*	*	*	*
1,250-1,499 grams										
Live births.....	4,037	101	2,412	1,024	408	78	10	-	-	4
Infant deaths.....	152	13	86	33	15	2	1	-	-	1
Infant Mortality Rate.....	37.65	*	35.66	32.23	*	*	*	*	*	*
1,500-1,999 grams										
Live births.....	14,789	25	2,313	4,877	6,134	1,373	48	3	2	14
Infant deaths.....	318	7	68	82	101	56	1	-	-	2
Infant Mortality Rate.....	21.50	*	29.40	16.81	16.47	40.79	*	*	*	*
2,000-2,499 grams										
Live births.....	45,157	17	218	2,533	19,806	21,756	709	79	18	21
Infant deaths.....	448	1	9	38	197	195	4	2	2	-
Infant Mortality Rate.....	9.92	*	*	15.00	9.95	8.96	*	*	*	*
2,500 grams or more										
Live births.....	454,184	18	150	518	24,056	327,260	81,202	19,715	1,075	190
Infant deaths.....	1,566	1	6	15	178	1,106	197	54	8	1
Infant Mortality Rate.....	3.45	*	*	*	7.40	3.38	2.43	2.74	*	*
Not Stated										
Live births.....	205	35	18	20	19	44	12	1	-	56
Infant deaths.....	36	-	-	-	1	-	-	-	-	35
Infant Mortality Rate.....	175.61	*	*	*	*	*	*	*	*	625.00
Non-Hispanic American Indian or Alaskan Native /1										
Total										
Live births.....	26,813	177	261	379	2,292	18,128	4,349	1,127	57	43
Infant deaths.....	206	62	10	8	27	81	14	3	1	1
Infant Mortality Rate.....	7.68	350.28	*	*	11.78	4.47	*	*	*	*
Less than 2,500 grams										
Live births.....	2,130	173	247	316	766	593	25	3	1	6
Infant deaths.....	104	62	10	5	15	10	2	-	-	0
Infant Mortality Rate.....	48.83	358.38	*	*	*	*	*	*	*	*
Less than 500 grams										
Live births.....	42	42	-	-	-	-	-	-	-	-
Infant deaths.....	31	31	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	738.10	738.10	*	*	*	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2020 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	56	54	2	-	-	-	-	-	-	-
Infant deaths	20	20	-	-	-	-	-	-	-	-
Infant Mortality Rate	357.14	370.37	*	*	*	*	*	*	*	*
750-999 grams										
Live births	83	57	24	1	-	1	-	-	-	-
Infant deaths	10	8	2	-	-	-	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births	69	17	44	6	1	1	-	-	-	-
Infant deaths	2	1	1	-	-	-	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
1,250-1,499 grams										
Live births	95	2	55	27	10	1	-	-	-	-
Infant deaths	6	1	3	1	1	-	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
1,500-1,999 grams										
Live births	413	1	105	133	127	44	2	1	-	-
Infant deaths	11	-	2	-	6	3	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
2,000-2,499 grams										
Live births	1,372	-	17	149	628	546	23	2	1	6
Infant deaths	23	-	2	4	8	7	2	-	-	-
Infant Mortality Rate	16.76	*	*	*	*	*	*	*	*	*
2,500 grams or more										
Live births	24,670	4	14	62	1,522	17,532	4,323	1,123	56	34
Infant deaths	102	-	-	3	12	70	12	3	1	-
Infant Mortality Rate	4.13	*	*	*	*	3.99	*	*	*	*
Not Stated										
Live births	13	-	-	1	4	3	1	1	-	3
Infant deaths	1	-	-	-	-	-	-	-	-	1
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
Non-Hispanic Asian										
Total										
Live births	219,068	960	1,517	2,079	14,076	152,255	39,743	8,239	163	36
Infant deaths	688	334	52	28	80	153	27	8	1	4
Infant Mortality Rate	3.14	347.92	34.28	13.47	5.68	1.00	0.68	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2020 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	18,744	955	1,469	1,948	6,895	7,229	218	20	4	6
Infant deaths	512	334	52	27	63	33	1	-	-	-
Infant Mortality Rate	27.32	349.74	35.40	13.86	9.14	4.56	*	*	*	*
Less than 500 grams										
Live births	218	216	2	-	-	-	-	-	-	-
Infant deaths	175	174	1	-	-	-	-	-	-	-
Infant Mortality Rate	802.75	805.56	*	*	*	*	*	*	*	*
500-749 grams										
Live births	343	308	32	2	1	-	-	-	-	-
Infant deaths	120	112	7	-	1	-	-	-	-	-
Infant Mortality Rate	349.85	363.64	*	*	*	*	*	*	*	*
750-999 grams										
Live births	456	284	150	15	4	3	-	-	-	-
Infant deaths	45	36	8	-	1	-	-	-	-	-
Infant Mortality Rate	98.68	126.76	*	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births	547	126	322	64	24	8	3	-	-	-
Infant deaths	31	10	15	2	4	-	-	-	-	-
Infant Mortality Rate	56.67	*	*	*	*	*	*	*	*	*
1,250-1,499 grams										
Live births	738	13	413	202	92	15	2	-	-	1
Infant deaths	19	-	8	6	5	-	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
1,500-1,999 grams										
Live births	3,383	4	482	1,072	1,487	328	10	-	-	-
Infant deaths	56	1	12	14	20	9	-	-	-	-
Infant Mortality Rate	16.55	*	*	*	*	*	*	*	*	*
2,000-2,499 grams										
Live births	13,059	4	68	593	5,287	6,875	203	20	4	5
Infant deaths	65	1	1	5	32	24	1	-	-	-
Infant Mortality Rate	4.98	*	*	*	6.05	3.49	*	*	*	*
2,500 grams or more										
Live births	200,282	2	46	129	7,172	145,013	39,518	8,219	158	25
Infant deaths	173	-	-	1	16	120	26	8	1	1
Infant Mortality Rate	0.86	*	*	*	*	0.83	0.66	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2020 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.....	42	3	2	2	9	13	7	-	1	5
Infant deaths.....	3	-	-	-	-	-	-	-	-	3
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Total										
Live births.....	9,626	72	98	126	862	6,162	1,746	517	30	13
Infant deaths.....	69	27	6	3	8	18	3	3	-	-
Infant Mortality Rate.....	7.17	375.00	*	*	*	*	*	*	*	*
Less than 2,500 grams										
Live births.....	815	71	96	112	307	219	7	1	1	1
Infant deaths.....	42	27	6	2	5	2	-	-	-	-
Infant Mortality Rate.....	51.53	380.28	*	*	*	*	*	*	*	*
Less than 500 grams										
Live births.....	17	17	-	-	-	-	-	-	-	-
Infant deaths.....	16	16	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
500-749 grams										
Live births.....	20	19	1	-	-	-	-	-	-	-
Infant deaths.....	5	5	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
750-999 grams										
Live births.....	22	18	4	-	-	-	-	-	-	-
Infant deaths.....	3	2	1	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births.....	41	16	21	3	1	-	-	-	-	-
Infant deaths.....	6	4	1	-	1	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
1,250-1,499 grams										
Live births.....	46	1	30	9	4	2	-	-	-	-
Infant deaths.....	-	-	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
1,500-1,999 grams										
Live births.....	157	-	31	56	54	16	-	-	-	-
Infant deaths.....	4	-	3	-	1	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2020 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	512	-	9	44	248	201	7	1	1	1
Infant deaths	8	-	1	2	3	2	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
2,500 grams or more										
Live births	8,807	-	2	14	553	5,943	1,739	515	29	12
Infant deaths	26	-	-	1	3	16	3	3	-	-
Infant Mortality Rate	2.95	-	-	*	*	*	*	*	-	*
Not Stated										
Live births	4	1	-	-	2	-	-	1	-	-
Infant deaths	-	-	-	-	-	-	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
Hispanic										
Live births	866,713	5,241	7,273	9,276	63,434	584,438	157,185	38,205	1,313	348
Infant deaths	4,063	1,850	267	189	446	1,014	204	56	4	33
Infant Mortality Rate	4.69	352.99	36.71	20.38	7.03	1.74	1.30	1.47	*	94.83
Less than 2,500 grams										
Live births	64,315	5,194	7,014	8,330	24,458	18,479	682	95	6	57
Infant deaths	2,768	1,847	257	160	263	214	11	5	-	11
Infant Mortality Rate	43.04	355.60	36.64	19.21	10.75	11.58	*	*	*	192.98
Less than 500 grams										
Live births	1,173	1,152	13	-	2	2	-	-	-	4
Infant deaths	967	958	5	-	-	-	-	-	-	4
Infant Mortality Rate	824.38	831.60	*	*	*	*	*	*	*	*
500-749 grams										
Live births	1,761	1,645	105	4	3	1	-	-	-	3
Infant deaths	651	627	21	1	-	-	-	-	-	2
Infant Mortality Rate	369.68	381.16	200.00	*	*	*	*	*	*	*
750-999 grams										
Live births	2,164	1,565	548	26	13	4	5	1	0	2
Infant deaths	238	192	37	3	4	-	-	-	-	1
Infant Mortality Rate	109.98	122.68	67.52	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births	2,413	699	1,421	197	49	39	7	-	-	1
Infant deaths	139	55	59	15	6	3	-	-	-	1
Infant Mortality Rate	57.60	78.68	41.52	*	*	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2020 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	3,050	91	1,906	673	308	63	8	-	-	1
Infant deaths	122	9	63	22	20	5	3	-	-	-
Infant Mortality Rate	40.00	*	33.05	32.69	64.94	*	*	*	*	*
1,500-1,999 grams										
Live births	12,398	29	2,577	4,201	4,628	919	32	6	-	6
Infant deaths	305	4	58	88	95	56	1	-	-	2
Infant Mortality Rate	24.60	*	22.51	20.95	20.53	60.94	*	*	*	*
2,000-2,499 grams										
Live births	41,356	13	444	3,229	19,455	17,451	630	88	6	40
Infant deaths	347	2	13	31	138	149	7	5	-	1
Infant Mortality Rate	8.39	*	*	9.60	7.09	8.54	*	*	*	*
2,500 grams or more										
Live births	802,216	27	245	931	38,945	565,922	156,487	38,102	1,307	250
Infant deaths	1,272	1	10	28	183	801	193	51	4	1
Infant Mortality Rate	1.59	*	*	30.08	4.70	1.42	1.23	1.34	*	*
Not Stated										
Live births	182	20	14	15	31	37	16	8	-	41
Infant deaths	22	2	-	-	-	-	-	-	-	20
Infant Mortality Rate	120.88	*	*	*	*	*	*	*	*	487.80

-/ 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, 2020 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)	3,613,647	19,578	12,866	10,348	2,518	6,712
Rate		5.42	3.56	2.86	0.70	1.86
Less than 2,500 grams	298,547	12,881	10,457	8,812	1,645	2,424
Rate		43.15	35.03	29.52	5.51	8.12
Less than 500 grams	5,560	4,573	4,462	4,301	161	111
Rate		822.48	802.52	773.56	28.96	19.96
500-749 grams	8,264	2,823	2,405	1,827	578	418
Rate		341.60	291.02	221.08	69.94	50.58
750-999 grams	9,654	1,111	868	610	258	243
Rate		115.08	89.91	63.19	26.72	25.17
1,000-1,249 grams	11,303	690	535	418	117	155
Rate		61.05	47.33	36.98	10.35	13.71
1,250-1,499 grams	14,454	570	406	308	98	164
Rate		39.44	28.09	21.31	6.78	11.35
1,500-1,749 grams	22,062	640	418	336	82	222
Rate		29.01	18.95	15.23	3.72	10.06
1,750-1,999 grams	36,118	711	450	358	92	261
Rate		19.69	12.46	9.91	2.55	7.23
2,000-2,499 grams	191,132	1,762	911	653	257	852
Rate		9.22	4.77	3.42	1.34	4.46
2,500 grams or more	3,313,212	6,559	2,278	1,408	870	4,281
Rate		1.98	0.69	0.42	0.26	1.29
Not Stated	1,888	138	131	128	3	7
Rate		73.09	69.39	67.80	*	*
Non-Hispanic White						
Total (all birthweights)	1,842,432	8,115	5,290	4,180	1,111	2,825
Rate		4.40	2.87	2.27	0.60	1.53

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2020 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	126,312	4,948	4,065	3,394	671	884
Rate		39.17	32.18	26.87	5.31	7.00
Less than 500 grams	1,736	1,483	1,456	1,396	59	27
Rate		854.26	838.71	804.15	33.99	15.55
500-749 grams	2,778	1,037	921	703	217	116
Rate		373.29	331.53	253.06	78.11	41.76
750-999 grams	3,516	463	375	270	105	87
Rate		131.68	106.66	76.79	29.86	24.74
1,000-1,249 grams	4,470	317	257	199	58	60
Rate		70.92	57.49	44.52	12.98	13.42
1,250-1,499 grams	5,942	246	198	159	39	47
Rate		41.40	33.32	26.76	6.56	7.91
1,500-1,749 grams	9,337	304	210	175	35	94
Rate		32.56	22.49	18.74	3.75	10.07
1,750-1,999 grams	15,551	303	204	167	37	99
Rate		19.48	13.12	10.74	2.38	6.37
2,000-2,499 grams	82,982	796	445	325	120	351
Rate		9.59	5.36	3.92	1.45	4.23
2,500 grams or more	1,716,327	3,123	1,182	743	440	1,940
Rate		1.82	0.69	0.43	0.26	1.13
Not Stated	793	44	43	43	-	1
Rate		55.49	54.22	54.22	*	*
Non-Hispanic Black						
Total (all birthweights)	529,811	5,501	3,472	2,800	673	2,028
Rate		10.38	6.55	5.28	1.27	3.83
Less than 2,500 grams	75,422	3,899	3,045	2,551	494	854
Rate		51.70	40.37	33.82	6.55	11.32
Less than 500 grams	2,098	1,666	1,615	1,552	63	51
Rate		794.09	769.78	739.75	30.03	24.31

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2020 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	2,984	848	678	500	178	170
Rate		284.18	227.21	167.56	59.65	56.97
750-999 grams	3,034	302	218	138	80	84
Rate		99.54	71.85	45.48	26.37	27.69
1,000-1,249 grams	3,323	165	111	84	27	54
Rate		49.65	33.40	25.28	8.13	16.25
1,250-1,499 grams	4,037	152	89	60	29	62
Rate		37.65	22.05	14.86	7.18	15.36
1,500-1,749 grams	5,704	139	70	52	18	68
Rate		24.37	12.27	9.12	*	11.92
1,750-1,999 grams	9,085	180	91	62	29	88
Rate		19.81	10.02	6.82	3.19	9.69
2,000-2,499 grams	45,157	448	172	103	69	276
Rate		9.92	3.81	2.28	1.53	6.11
2,500 grams or more	454,184	1,566	392	214	178	1,174
Rate		3.45	0.86	0.47	0.39	2.58
Not Stated	205	36	36	35	1	-
Rate		175.61	175.61	170.73	*	*
Non-Hispanic American Indian or Alaskan Native /1						
Total (all birthweights)	26,813	206	102	75	27	104
Rate		7.68	3.80	2.80	1.01	3.88
Less than 2,500 grams	2,130	104	76	62	14	28
Rate		48.83	35.68	29.11	*	13.15
Less than 500 grams	42	31	30	28	2	1
Rate		738.10	714.29	666.67	*	*
500-749 grams	56	20	16	12	4	4
Rate		357.14	*	*	*	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2020 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	83	10	8	7	1	2
Rate		*	*	*	*	*
1,000-1,249 grams	69	2	2	-	2	-
Rate		*	*	*	*	*
1,250-1,499 grams	95	6	3	3	-	3
Rate		*	*	*	*	*
1,500-1,749 grams	164	6	2	1	1	4
Rate		*	*	*	*	*
1,750-1,999 grams	249	5	5	5	-	-
Rate		*	*	*	*	*
2,000-2,499 grams	1,372	23	9	5	4	14
Rate		16.76	*	*	*	*
2,500 grams or more	24,670	102	25	12	13	76
Rate		4.13	1.01	*	*	3.08
Not Stated	13	1	1	1	-	-
Rate		*	*	*	*	*
Non-Hispanic Asian						
Total (all birthweights)	219,068	688	503	410	93	185
Rate		3.14	2.30	1.87	0.42	0.84
Less than 2,500 grams	18,744	512	430	363	67	81
Rate		27.32	22.94	19.37	3.57	4.32
Less than 500 grams	218	175	173	170	3	2
Rate		802.75	793.58	779.82	*	*
500-749 grams	343	120	101	75	26	19
Rate		349.85	294.46	218.66	75.80	*
750-999 grams	456	45	39	28	11	6
Rate		98.68	85.53	61.40	*	*
1,000-1,249 grams	547	31	28	23	5	3
Rate		56.67	51.19	42.05	*	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2020 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	738	19	10	6	4	9
Rate		*	*	*	*	*
1,500-1,749 grams	1,195	19	13	9	4	6
Rate		*	*	*	*	*
1,750-1,999 grams	2,188	37	27	24	3	10
Rate		16.91	12.34	10.97	*	*
2,000-2,499 grams	13,059	65	39	28	11	26
Rate		4.98	2.99	2.14	*	1.99
2,500 grams or more	200,282	173	70	44	26	103
Rate		0.86	0.35	0.22	0.13	0.51
Not Stated	42	3	3	3	-	-
Rate		*	*	*	*	*
Non-Hispanic Native Hawaiian or Other Pacific Islander						
Total (all birthweights)	9,626	69	41	33	8	27
Rate		7.17	4.26	3.43	*	2.80
Less than 2,500 grams	815	42	34	29	5	8
Rate		51.53	41.72	35.58	*	*
Less than 500 grams	17	16	15	14	1	1
Rate		*	*	*	*	*
500-749 grams	20	5	3	3	-	2
Rate		*	*	*	*	*
750-999 grams	22	3	2	2	-	1
Rate		*	*	*	*	*
1,000-1,249 grams	41	6	6	5	1	-
Rate		*	*	*	*	*
1,250-1,499 grams	46	-	-	-	-	-
Rate		*	*	*	*	*
1,500-1,749 grams	58	2	1	1	-	1
Rate		*	*	*	*	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2020 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	99	2	1	-	1	1
Rate		*	*	*	*	*
2,000-2,499 grams	512	8	6	4	2	2
Rate		*	*	*	*	*
2,500 grams or more	8,807	26	7	4	3	19
Rate		2.95	*	*	*	*
Not Stated	4	-	-	-	-	-
Rate		*	*	*	*	*
Hispanic						
Total (all birthweights)	866,713	4,063	2,828	2,326	502	1,235
Rate		4.69	3.26	2.68	0.58	1.42
Less than 2,500 grams	64,315	2,768	2,300	1,967	333	468
Rate		43.04	35.76	30.58	5.18	7.28
Less than 500 grams	1,173	967	943	918	25	24
Rate		824.38	803.92	782.61	21.31	20.46
500-749 grams	1,761	651	563	431	132	87
Rate		369.68	319.70	244.75	74.96	49.40
750-999 grams	2,164	238	183	132	51	54
Rate		109.98	84.57	61.00	23.57	24.95
1,000-1,249 grams	2,413	139	109	87	22	30
Rate		57.60	45.17	36.05	9.12	12.43
1,250-1,499 grams	3,050	122	87	68	19	35
Rate		40.00	28.52	22.30	*	11.48
1,500-1,749 grams	4,787	141	101	83	18	40
Rate		29.45	21.10	17.34	*	8.36
1,750-1,999 grams	7,611	163	109	89	20	54
Rate		21.42	14.32	11.69	2.63	7.09
2,000-2,499 grams	41,356	347	204	159	45	143
Rate		8.39	4.93	3.84	1.09	3.46

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2020 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	802,216	1272	505	336	169	767
Rate		1.59	0.63	0.42	0.21	0.96
Not Stated	182	22	22	22	-	-
Rate		120.88	120.88	120.88	*	*

*/ 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, 2020 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	3,613,647	19,578	12,866	10,348	2,518	6,712
		541.8	356.0	286.4	69.7	185.7
Congenital malformations (Q00-Q99)		4,047	2,875	2,298	577	1,172
		112.0	79.6	63.6	16.0	32.4
Short gestation and low birthweight nec (P07)		3,152	3,080	2,991	89	72
		87.2	85.2	82.8	2.5	2.0
Maternal complications of pregnancy (P01)		1,115	1,100	1,074	26	14
		30.9	30.4	29.7	0.7	*
Sudden infant death syndrome (R95)		1,386	142	19	123	1,243
		38.4	3.9	*	3.4	34.4
Accidents (unintentional injures) (V01-X59)		1,192	115	37	78	1,076
		33.0	3.2	1.0	2.2	29.8
Complications of placenta, cord, membranes (P02)		695	682	649	33	13
		19.2	18.9	18.0	0.9	*
Bacterial sepsis of newborn (P36)		543	523	240	282	20
		15.0	14.5	6.6	7.8	0.6
Respiratory distress of newborn (P22)		389	385	307	78	4
		10.8	10.7	8.5	2.2	*
Diseases of the circulatory system (I00-I99)		383	80	46	34	302
		10.6	2.2	1.3	0.9	8.4
Neonatal hemorrhage (P50-P52, P54)		319	312	235	77	7
		8.8	8.6	6.5	2.1	*
All other causes		6,359	3,571	2,451	1,120	2,788
		176.0	98.8	67.8	31.0	77.2
Less than 2,500 grams						
All Causes	298,547	12,881	10,457	8,812	1,645	2,424
		4314.6	3502.6	2951.6	551.0	811.9
Congenital malformations (Q00-Q99)		2,513	1,944	1,644	300	568
		841.7	651.2	550.7	100.5	190.3
Short gestation and low birthweight nec (P07)		3,074	3,002	2,914	88	71
		1029.7	1005.5	976.1	29.5	23.8
Maternal complications of pregnancy (P01)		1,067	1,053	1,027	26	14
		357.4	352.7	344.0	8.7	*
Sudden infant death syndrome (R95)		270	19	-	19	251
		90.4	*	*	*	84.1
Accidents (unintentional injures) (V01-X59)		228	24	12	12	204
		76.4	8.0	*	*	68.3
Complications of placenta, cord, membranes (P02)		605	597	575	22	8
		202.7	200.0	192.6	7.4	*
Bacterial sepsis of newborn (P36)		479	460	211	249	18
		160.4	154.1	70.7	83.4	*

Documentation Table 5. Infant deaths and infant mortality rates by age of death and birthweight for 10 major causes of infant death: United States, 2020 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 Infant Deaths	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
Respiratory distress of newborn (P22).....		379	375	298	77	4
		127.0	125.6	99.8	25.8	*
Diseases of the circulatory system (I00-I99).....		172	39	26	13	133
		57.6	13.1	8.7	*	44.6
Neonatal hemorrhage (P50-P52, P54).....		290	285	219	66	5
		97.1	95.5	73.4	22.1	*
All other causes.....		3,805	2,657	1,886	771	1,148
		1274.5	890.0	631.7	258.3	384.5
2,500 grams or more						
All Causes	3,313,212	6,559	2,278	1,408	870	4,281
		198.0	68.8	42.5	26.3	129.2
Congenital malformations (Q00-Q99).....		1,527	924	649	275	602
		46.1	27.9	19.6	8.3	18.2
Short gestation and low birthweight nec (P07).....		9	8	7	1	1
		*	*	*	*	*
Maternal complications of pregnancy (P01).....		20	20	20	-	-
		0.6	0.6	0.6	*	*
Sudden infant death syndrome (R95).....		1,115	123	19	104	991
		33.7	3.7	*	3.1	29.9
Accidents (unintentional injures) (V01-X59).....		961	90	24	66	870
		29.0	2.7	0.7	2.0	26.3
Complications of placenta, cord, membranes (P02).....		82	77	65	11	5
		2.5	2.3	2.0	*	*
Bacterial sepsis of newborn (P36).....		64	62	29	33	2
		1.9	1.9	0.9	1.0	*
Respiratory distress of newborn (P22).....		8	8	7	1	-
		*	*	*	*	*
Diseases of the circulatory system (I00-I99).....		209	40	20	20	169
		6.3	1.2	0.6	0.6	5.1
Neonatal hemorrhage (P50-P52, P54).....		27	26	15	11	1
		0.8	0.8	*	*	*
All other causes.....		2,537	899	551	347	1,639
		76.6	27.1	16.6	10.5	49.5

*/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, 2020 period data
[Rates are per 1,000 live births]

	Gestation									
Age at Death	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
Total										
Live births.....	3,613,647	23,286	32,463	41,671	267,067	2,403,945	657,711	176,163	8,863	2,478
Infant deaths.....	19,578	8,462	1,343	838	2,115	5,418	897	279	37	188
Infant Mortality Rate.....	5.42	363.39	41.37	20.11	7.92	2.25	1.36	1.58	4.17	75.87
Early Neonatal										
Live births.....	3,613,647	23,286	32,463	41,671	267,067	2,403,945	657,711	176,163	8,863	2,478
Infant deaths.....	10,348	6,746	743	436	817	1,144	186	94	15	166
Infant Mortality Rate.....	2.86	289.70	22.89	10.46	3.06	0.48	0.28	0.53	*	66.99
Late Neonatal										
Live births.....	3,613,647	23,286	32,463	41,671	267,067	2,403,945	657,711	176,163	8,863	2,478
Infant deaths.....	2,518	982	246	107	315	732	89	30	8	8
Infant Mortality Rate.....	0.70	42.17	7.58	2.57	1.18	0.30	0.14	0.17	*	*
Postneonatal										
Live births.....	3,613,647	23,286	32,463	41,671	267,067	2,403,945	657,711	176,163	8,863	2,478
Infant deaths.....	6,712	734	354	294	983	3,542	622	155	14	14
Infant Mortality Rate.....	1.86	31.52	10.90	7.06	3.68	1.47	0.95	0.88	*	*

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

Documentation Table 1. Live births and infant death by state of occurrence of birth and by state of residence at birth: United States, 2019 Cohort Data.
(Residence at birth is of the mother)

	Live Births		Infant Deaths		
State	Occurrence	Residence	Occurrence	Residence	Infant Mortality Rate
United States	3,757,582	3,747,540	20,681	20,639	5.51
Alabama	57,224	58,615	434	434	7.40
Alaska	9,735	9,822	51	52	5.29
Arizona	80,371	79,375	396	396	4.99
Arkansas	35,314	36,564	245	259	7.08
California	447,653	446,479	1,816	1,819	4.07
Colorado	63,520	62,869	320	297	4.72
Connecticut	35,557	34,258	143	141	4.12
Delaware	10,935	10,562	60	60	5.68
Dist of Columbia	13,384	9,079	80	43	4.74
Florida	220,230	220,002	1,375	1,360	6.18
Georgia	127,255	126,371	905	901	7.13
Hawaii	16,827	16,797	81	80	4.76
Idaho	21,762	22,063	93	97	4.40
Illinois	136,602	140,128	729	783	5.59
Indiana	81,354	80,859	514	524	6.48
Iowa	37,558	37,649	177	188	4.99
Kansas	36,986	35,395	183	192	5.42
Kentucky	50,874	53,069	276	278	5.24
Louisiana	59,111	58,941	463	469	7.96
Maine	11,509	11,779	67	66	5.60
Maryland	66,793	70,178	376	394	5.61
Massachusetts	69,916	69,117	259	255	3.69
Michigan	106,918	107,886	680	690	6.40
Minnesota	65,082	66,027	286	287	4.35
Mississippi	35,663	36,636	287	324	8.84
Missouri	72,912	72,127	505	444	6.16
Montana	11,122	11,079	50	46	4.15
Nebraska	25,146	24,755	137	124	5.01
Nevada	34,731	35,072	185	184	5.25
New Hampshire	11,825	11,839	30	36	3.04
New Jersey	96,906	99,585	387	417	4.19
New Mexico	21,574	22,960	124	132	5.75
New York	111,904	116,138	498	547	4.71
New York City	110,443	105,401	426	395	3.75
North Carolina	120,577	118,725	823	815	6.86
North Dakota	12,022	10,454	82	77	7.37
Ohio	134,854	134,461	957	938	6.98
Oklahoma	47,667	49,143	323	334	6.80
Oregon	42,288	41,858	203	198	4.73
Pennsylvania	133,589	134,230	834	793	5.91
Rhode Island	10,708	10,175	63	57	5.60

Documentation Table 1. Live births and infant death by state of occurrence of birth and by state of residence at birth: United States, 2019 Cohort Data.
(Residence at birth is of the mother)

	Live Births		Infant Deaths		
State	Occurrence	Residence	Occurrence	Residence	Infant Mortality Rate
South Carolina	53,448	57,038	376	393	6.89
South Dakota	12,223	11,449	85	76	6.64
Tennessee	86,066	80,450	625	562	6.99
Texas	386,178	377,599	1,971	1,950	5.16
Utah	48,023	46,826	276	249	5.32
Vermont	5,193	5,361	14	15	*
Virginia	97,400	97,429	547	567	5.82
Washington	84,764	84,895	354	363	4.28
West Virginia	19,004	18,136	121	120	6.62
Wisconsin	62,961	63,270	363	368	5.82
Wyoming	5,921	6,565	26	50	7.62

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

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2019 cohort 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.....	3,747,540	5,904	8,879	10,098	12,326	15,403	61,226	198,317	3,432,666	2,721
Infant deaths.....	20,639	5,037	3,062	1,160	727	609	1,434	1,837	6,634	139
Infant Mortality Rate.....	5.51	853.15	344.86	114.87	58.98	39.54	23.42	9.26	1.93	51.08
Male										
Live births.....	1,917,446	3,014	4,434	5,072	6,207	7,673	29,528	90,306	1,769,733	1,479
Infant deaths.....	11,476	2,664	1,786	712	401	319	723	931	3,845	95
Infant Mortality Rate.....	5.99	883.88	402.80	140.38	64.60	41.57	24.49	10.31	2.17	64.23
Female										
Live births.....	1,830,094	2,890	4,445	5,026	6,119	7,730	31,698	108,011	1,662,933	1,242
Infant deaths.....	9,163	2,373	1,276	448	326	290	711	906	2,789	44
Infant Mortality Rate.....	5.01	821.11	287.06	89.14	53.28	37.52	22.43	8.39	1.68	35.43
Non-Hispanic White										
Both sexes										
Live births.....	1,915,912	1,805	2,980	3,727	4,837	6,386	26,583	85,951	1,782,422	1,221
Infant deaths.....	8,521	1,579	1,138	490	335	267	632	841	3,199	40
Infant Mortality Rate.....	4.45	874.79	381.88	131.47	69.26	41.81	23.77	9.78	1.79	32.76
Male										
Live births.....	981,620	938	1,513	1,911	2,493	3,161	12,834	38,810	919,300	660
Infant deaths.....	4,771	851	668	303	192	133	316	429	1,857	22
Infant Mortality Rate.....	4.86	907.25	441.51	158.56	77.02	42.08	24.62	11.05	2.02	33.33
Female										
Live births.....	934,292	867	1,467	1,816	2,344	3,225	13,749	47,141	863,122	561
Infant deaths.....	3,750	728	470	187	143	134	316	412	1,342	18
Infant Mortality Rate.....	4.01	839.68	320.38	102.97	61.01	41.55	22.98	8.74	1.55	*
Non-Hispanic Black										
Both sexes										
Live births.....	548,075	2,222	3,132	3,221	3,677	4,147	15,263	46,125	469,917	371
Infant deaths.....	5,808	1,857	943	314	169	153	366	451	1,518	37
Infant Mortality Rate.....	10.60	835.73	301.09	97.49	45.96	36.89	23.98	9.78	3.23	99.73
Male										
Live births.....	278,494	1,118	1,519	1,561	1,777	1,986	7,018	20,541	242,778	196
Infant deaths.....	3,158	973	553	183	83	78	184	225	852	27
Infant Mortality Rate.....	11.34	870.30	364.06	117.23	46.71	39.27	26.22	10.95	3.51	137.76

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2019 cohort 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
Female										
Live births.....	269,581	1,104	1,613	1,660	1,900	2,161	8,245	25,584	227,139	175
Infant deaths.....	2,650	884	390	131	86	75	182	226	666	10
Infant Mortality Rate.....	9.83	800.72	241.79	78.92	45.26	34.71	22.07	8.83	2.93	*
Non-Hispanic American Indian or Alaskan Native /1										
Both sexes										
Live births.....	28,450	36	61	65	82	127	449	1,472	26,147	11
Infant deaths.....	217	31	23	8	8	6	13	22	106	-
Infant Mortality Rate.....	7.63	861.11	377.05	*	*	*	*	14.95	4.05	*
Male										
Live births.....	14,500	20	23	29	45	57	233	677	13,409	7
Infant deaths.....	121	16	9	5	5	3	6	10	67	-
Infant Mortality Rate.....	8.34	*	*	*	*	*	*	*	5.00	*
Female										
Live births.....	13,950	16	38	36	37	70	216	795	12,738	4
Infant deaths.....	96	15	14	3	3	3	7	12	39	-
Infant Mortality Rate.....	6.88	*	*	*	*	*	*	*	3.06	*
Non-Hispanic Asian										
Both sexes										
Live births.....	238,769	272	411	496	617	838	3,679	14,425	217,903	128
Infant deaths.....	777	238	147	42	26	19	46	61	188	10
Infant Mortality Rate.....	3.25	875.00	357.66	84.68	42.14	*	12.50	4.23	0.86	*
Male										
Live births.....	123,806	140	216	243	310	448	1,873	6,859	113,642	75
Infant deaths.....	432	124	85	27	14	13	19	30	114	6
Infant Mortality Rate.....	3.49	885.71	393.52	111.11	*	*	*	4.37	1.00	*
Female										
Live births.....	114,963	132	195	253	307	390	1,806	7,566	104,261	53
Infant deaths.....	345	114	62	15	12	6	27	31	74	4
Infant Mortality Rate.....	3.00	863.64	317.95	*	*	*	14.95	4.10	0.71	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Both sexes										
Live births.....	9,770	21	28	22	26	37	142	466	9,021	7
Infant deaths.....	75	19	12	5	1	1	4	1	32	-
Infant Mortality Rate.....	7.68	*	*	*	*	*	*	*	3.55	*

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2019 cohort 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
Male										
Live births.....	5,026	13	16	9	14	19	64	201	4,685	5
Infant deaths.....	53	12	8	5	1	1	2	1	23	-
Infant Mortality Rate.....	10.55	*	*	*	*	*	*	*	4.91	*
Female										
Live births.....	4,744	8	12	13	12	18	78	265	4,336	2
Infant deaths.....	22	7	4	-	-	-	2	-	9	-
Infant Mortality Rate.....	4.64	*	*	*	*	*	*	*	*	*
Hispanic										
Both sexes										
Live births.....	886,467	1,256	1,942	2,213	2,680	3,309	12,873	42,821	818,991	382
Infant deaths.....	4,316	1,056	665	244	160	134	316	390	1,323	28
Infant Mortality Rate.....	4.87	840.76	342.43	110.26	59.70	40.50	24.55	9.11	1.62	73.30
Male										
Live births.....	452,492	631	977	1,143	1,369	1,736	6,465	19,961	419,988	222
Infant deaths.....	2,409	550	383	152	91	73	168	194	774	24
Infant Mortality Rate.....	5.32	871.63	392.02	132.98	66.47	42.05	25.99	9.72	1.84	108.11
Female										
Live births.....	433,975	625	965	1,070	1,311	1,573	6,408	22,860	399,003	160
Infant deaths.....	1,907	506	282	92	69	61	148	196	549	4
Infant Mortality Rate.....	4.39	809.60	292.23	85.98	52.63	38.78	23.10	8.57	1.38	*

* 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, 2019 cohort 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										
Live births.....	3,747,540	24,758	34,748	44,253	279,302	2,455,393	702,999	194,246	9,435	2,406
Infant deaths.....	20,639	9,194	1,446	828	2,246	5,480	929	278	53	185
Infant Mortality Rate.....	5.51	371.35	41.61	18.71	8.04	2.23	1.32	1.43	5.62	76.89
Non-Hispanic White										
Live births.....	1,915,912	8,487	14,735	20,310	133,807	1,243,141	376,525	111,869	6,114	924
Infant deaths.....	8,521	3,195	668	379	1,020	2,582	458	128	32	59
Infant Mortality Rate.....	4.45	376.46	45.33	18.66	7.62	2.08	1.22	1.14	5.23	63.85
Non-Hispanic Black										
Live births.....	548,075	8,332	8,927	9,804	51,766	357,489	87,995	22,261	1,175	326
Infant deaths.....	5,808	3,067	350	213	547	1,314	202	59	9	47
Infant Mortality Rate.....	10.60	368.10	39.21	21.73	10.57	3.68	2.30	2.65	*	144.17
Non-Hispanic American Indian or Alaskan Native /1										
Live births.....	28,450	162	284	378	2,468	18,766	5,013	1,260	73	46
Infant deaths.....	217	63	16	10	24	89	11	3	1	-
Infant Mortality Rate.....	7.63	388.89	*	*	9.72	4.74	*	*	*	*
Non-Hispanic Asian										
Live births.....	238,769	1,118	1,766	2,208	15,725	162,699	45,110	9,854	238	51
Infant deaths.....	777	426	48	32	64	156	28	10	1	12
Infant Mortality Rate.....	3.25	381.04	27.18	14.49	4.07	0.96	0.62	*	*	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Live births.....	9,770	82	80	121	805	6,279	1,853	512	23	15
Infant deaths.....	75	34	5	2	9	19	6	-	-	-
Infant Mortality Rate.....	7.68	414.63	*	*	*	*	*	*	*	*
Hispanic										
Live births.....	886,467	5,620	7,699	9,797	65,238	591,269	163,551	41,513	1,436	344
Infant deaths.....	4,316	1,962	290	166	496	1,105	190	62	10	35
Infant Mortality Rate.....	4.87	349.11	37.67	16.94	7.60	1.87	1.16	1.49	*	101.74

* 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 4. Infant deaths and infant mortality rates by age of death and birthweight for 10 major causes of infant death: United States, 2019 cohort 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	3,747,540	20,639	13,690	10,998	2,692	6,949
		550.7	365.3	293.5	71.8	185.4
Congenital malformations (Q00-Q99)		4,246	3,035	2,436	599	1,211
		113.3	81.0	65.0	16.0	32.3
Short gestation and low birthweight nec (P07)		3,438	3,360	3,267	93	78
		91.7	89.7	87.2	2.5	2.1
Maternal complications of pregnancy (P01)		1,237	1,231	1,211	20	6
		33.0	32.9	32.3	0.5	*
Sudden infant death syndrome (R95)		1,277	136	30	106	1,141
		34.1	3.6	0.8	2.8	30.5
Accidents (unintentional injures) (V01-X59)		1,206	136	29	107	1,070
		32.2	3.6	0.8	2.9	28.6
Complications of placenta, cord, membranes (P02)		729	717	692	25	12
		19.5	19.1	18.5	0.7	*
Bacterial sepsis of newborn (P36)		601	580	263	317	21
		16.0	15.5	7.0	8.5	0.6
Respiratory distress of newborn (P22)		414	404	314	90	10
		11.1	10.8	8.4	2.4	*
Diseases of the circulatory system (I00-I99)		386	78	48	30	308
		10.3	2.1	1.3	0.8	8.2
Neonatal hemorrhage (P50-P52, P54)		346	337	252	85	9
		9.2	9.0	6.7	2.3	*
All other causes		6,759	3,676	2,456	1,220	3,083
		180.4	98.1	65.5	32.6	82.3
Less than 2,500 grams						
All Causes	312,153	13,866	11,230	9,465	1,765	2,636
		4442.1	3597.6	3032.2	565.4	844.5
Congenital malformations (Q00-Q99)		2,693	2,080	1,777	303	613
		862.7	666.3	569.3	97.1	196.4
Short gestation and low birthweight nec (P07)		3,363	3,288	3,195	93	75
		1077.4	1053.3	1023.5	29.8	24.0
Maternal complications of pregnancy (P01)		1,181	1,175	1,157	18	6
		378.3	376.4	370.7	*	*
Sudden infant death syndrome (R95)		282	28	6	22	254
		90.3	9.0	*	7.1	81.4
Accidents (unintentional injures) (V01-X59)		230	31	9	22	199
		73.7	9.9	*	7.1	63.8

Documentation Table 4. Infant deaths and infant mortality rates by age of death and birthweight for 10 major causes of infant death: United States, 2018 cohort 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
Complications of placenta, cord, membranes (P02)..		643	635	618	17	8
		206.0	203.4	198.0	*	*
Bacterial sepsis of newborn (P36).....		540	520	236	284	20
		173.0	166.6	75.6	91.0	6.4
Respiratory distress of newborn (P22).....		408	399	309	90	9
		130.7	127.8	99.0	28.8	*
Diseases of the circulatory system (I00-I99).....		189	36	26	10	153
		60.6	11.5	8.3	3.2	49.0
Neonatal hemorrhage (P50-P52, P54).....		318	309	236	73	9
		101.9	99.0	75.6	23.4	*
All other causes.....		4,019	2,729	1,896	833	1,290
		1287.5	874.3	607.4	266.9	413.3
2,500 grams or more						
All Causes	3,432,666	6,634	2,331	1,406	925	4,303
		193.3	67.9	41.0	27.0	125.4
Congenital malformations (Q00-Q99).....		1,548	951	656	295	597
		45.1	27.7	19.1	8.6	17.4
Short gestation and low birthweight nec (P07).....		15	12	12	-	3
		*	*	*	*	*
Maternal complications of pregnancy (P01).....		22	22	20	2	-
		0.6	0.6	0.6	*	*
Sudden infant death syndrome (R95).....		993	108	24	84	885
		28.9	3.2	0.7	2.5	25.8
Accidents (unintentional injures) (V01-X59).....		974	105	20	85	869
		28.4	3.1	0.6	2.5	25.3
Complications of placenta, cord, membranes (P02)..		76	72	64	8	4
		2.2	2.1	1.9	*	*
Bacterial sepsis of newborn (P36).....		61	60	27	33	1
		1.8	1.8	0.8	1.0	*
Respiratory distress of newborn (P22).....		6	5	5	-	1
		*	*	*	*	*
Diseases of the circulatory system (I00-I99).....		195	42	22	20	153
		5.7	1.2	0.6	0.6	4.5
Neonatal hemorrhage (P50-P52, P54).....		28	28	16	12	-
		0.8	0.8	*	*	*
All other causes.....		2,716	926	540	386	1,790
		79.1	27.0	15.7	11.2	52.2

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

-/ Quantity zero