User Guide to the 2018 Period/2017 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

2018 Period/2017 Cohort Linked Birth/Infant Death Data Set

Contents

External Links

User’s Guide for the 2018 Natality File

User’s Guide for the 2017 Natality File

Mortality Data internet page

Introduction

The linked birth/infant death data set (linked file) is now being released in one format that can be used for both period data and birth cohort data. This documentation is for both the 2018 period linked file and the 2017 cohort linked file.

Period file - The 2018 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 2018 linked to their corresponding birth certificates, whether the birth occurred in 2017 or 2018. The second file is the “denominator” file, which consists of all births occurring in 2018. 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 2017 birth cohort linked birth/infant death data set includes three data files. The numerator for the 2017 birth cohort linked file consists of deaths to infants born in 2017 linked to their corresponding birth certificates, whether the death occurred in 2017 or 2018 (each is a separate file the user can merge or append together). The denominator for this data set is all births occurring in 2017.

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 the period file, which is essentially cross-sectional in nature.

User Created Cohort File

To create a cohort file l combine the 2017 denominator file with the 2017 and 2018 numerator files using the Cohort Sequence Number (co_seqnum) and Year of Death (dod_yy) 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 2017-2018 numerator with the 2017 denominator file.

SAS code example for creating a cohort file

```
FILENAME B17 '   ';          /* put working directory path here */
FILENAME D17 '   ';          /* put working directory path here */
```

```
FILENAME D18 '   ';          /* put working directory path here */

DATA BORN17;                 /* pull in 2017 denominator file */
INFILE B17;
INPUT
RESTATUS 104      SEQNUM_CO         365-371        DOD_YY   372-375;
IF RESTATUS < 4;

PROC SORT; BY SEQNUM_CO DOD_YY; RUN;

DATA DIED17;                 /* includes infants born 2016 and 2017 */
INFILE D17;
INPUT
DOB_YY      9-12   RESTATUS 104      SEQNUM_CO         365-371
DOD_YY   372-375;
IF RESTATUS < 4 AND DOB_YY = 2017;        /* limit to infants born in 2017 */

PROC SORT; BY SEQNUM_CO DOD_YY; RUN;

DATA DIED18;                         /* includes infants born 2017 and 2018 */
INFILE D18;
INPUT
DOB_YY      9-12   RESTATUS 104      SEQNUM_CO         365-371
DOD_YY   372-375;

IF RESTATUS < 4 AND DOB_YY = 2017;        /* limit to infants born in 2017 */

PROC SORT; BY SEQNUM_CO DOD_YY; RUN;

/* merge 2017 births to those infants that were born and died in 2017 */

DATA B17D17;
MERGE BORN17 DIED17; BY SEQNUM_CO DOD_YY;

/* merge 2017 births/linked deaths to 2017 births that died in 2018 */
DATA B17D1718;
MERGE B17D17 DIED18; 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 "cohortfromperiod2017.log", replace
                        *NUMERATOR FILES*
*2017
```

```
local dat_name "VS17LINK.DETAILUS "
** The following line should contain the name of the output '.dta' file ;
local dta_name1 "alldat2017num"
** The following line should contain the name of the data dictionary file ;
local dct_name "numer_dct_2017.dct"
infile using "`dct_name'", using("`dat_name'") clear
compress
tempfile `dta_name1'
save "`dta_name1'", replace

*2018
local dat_name "VS17LINK.DETAILUS"
** The following line should contain the name of the output '.dta' file ;
local dta_name2 "alldat2018num"
** The following line should contain the name of the data dictionary file ;
local dct_name "numer_dct_2017.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 DOD_YY)
tempfile `dta_name2'
save "`dta_name2'", replace
                                *DENOMINATOR FILE*
*2017
local dat_name "VS16LINK.DENOMUS"
** The following line should contain the name of the output '.dta' file ;
local dta_name1d "alldat2017den"
** The following line should contain the name of the data dictionary file ;
local dct_name "denom_dct_2017.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 DOD_YY)
/* 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: 2017 */
tab DOB_YY if _mgnumden==2  /* numerator only: 2016 and 2018 */
tab DOB_YY if _mgnumden==3  /* matched 2017 records */

/* check the year of death variable for merged records */
tab DOD_YY if _mgnumden==3  /* matched 2017 records: Year of death 2017-
2018 */

/* drop records that did not match, deaths where the year of
birth was either 2016 or 2018 */
drop if _mgnumden==2
save "mergedcohort_2017.dta", replace
log close
```

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 2018 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 2018 linked file may be different from those for the 2018 birth file, as items had to be reported by a state in both 2017 and 2018 to be able to provide complete data. Thus, data for non-comparable items from states that revised in 2018 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 2018 period/2017 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 principle source of payment item.

Sample SAS program

```
DATA work;
INFILE ‘C:VS18LINK.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).

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. 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 AIAN, non-Hispanic single-race Asian, non-Hispanic single-race NHOPI, and Hispanic.

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. Weights are not computed for the Puerto Rico and Guam file.

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.

Marital status

National estimates of births to unmarried women are based on two methods of determining marital status. In 2018, 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.

Birthweight

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

birthweight is not stated and the period of gestation is known, birthweight is assigned the value from the previous record with the same period of gestation, race, sex, and plurality. The total number of records with birthweight imputed is 892 in the numerator file and 860 in the denominator file. The addition of this imputation has reduced the percent of not-stated responses for birthweight from 4.17 to 0.71% in the numerator file, and from 0.07 to 0.06% in the denominator file, thus reducing the potential for underestimation when computing birthweight-specific infant mortality rates.

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;
```

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.

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

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

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 II.

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 II corresponding to the value of D_{adj}.

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

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

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

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

Methodology

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 2018 period linked file for the 50 States and D.C. includes 21,390, linked infant death records and 141 unlinked infant death records (99.3% linked and 0.7% unlinked). The period linked file is weighted to the sum of linked plus unlinked records resulting in a total number of 21,498 weighted infant deaths by place of occurrence.

For 2018, twenty-nine jurisdictions (28 states and D.C.) linked 100% of their infant deaths; 23 jurisdictions had less than a 100% linkage rate. Five states have a linkage of under 99%; Texas (96.7%), Arizona (97.8%), Indiana (98.5%), California (98.6%), and Kentucky (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 2017 cohort linked file for the 50 States and D.C. includes 22,197 linked infant death records and 95 unlinked infant death records (99.6% linked, 0.4% 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, 2017. NCHS Instruction Manual, Part 2a. Hyattsville, Maryland: Public Health Service.

B. National Center for Health Statistics. Vital statistics, Instructions for Classifying Multiple Cause-of-Death, ICD-10, 2017. NCHS Instruction Manual, Part 2b. Hyattsville, Maryland: Public Health Service.

C. National Center for Health Statistics. Vital statistics, ICD-10 ACME Decision Tables for Classifying Underlying Causes-of-Death, 2016. NCHS Instruction Manual, Part 2c. Hyattsville, Maryland: Public Health Service.

D. National Center for Health Statistics. 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. National Center for Health Statistics. Vital statistics, ICD-10 Computer Edits for Mortality Data, Effective 2014. NCHS Instruction Manual Part 11. Hyattsville, Maryland: Public Health Service.

Instructions manuals are available at:
http://www.cdc.gov/nchs/nvss/instruction_manuals.htm

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

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.

2018 Period Linked Birth/Infant Death Data Set

2018 Period Numerator Files:

United States

A. Record count (occurrence, unweighted):	21,390
B. Record length:	1,743

Territories

A. Record count (occurrence):	179
B. Record length:	1,743

2018 Period Denominator Files:

United States

A. Record count (occurrence):	3,801,534
B. Record length:	1,346

Territories

A. Record count (occurrence):	24,657
B. Record length:	1,346

2017 Cohort Numerator Files:

United States

A. Record count (occurrence, unweighted):	22,197
B. Record length:	1,743

2017 Cohort Denominator Files:

United States

A. Record count (occurrence):	3,864,754
B. Record length:	1,346

2018 Period/ 2017 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 1	Not late record Late record
9-12	4	P,G	DOB_YY	**Birth Year**		2017	2018
13-14	2	P,G	DOB_MM	**Birth Month**		01 02 03 04 05 06 07 08 09 10 11 12	January February March April May June July August September October November December
15-18	4		FILLER02	**Filler**		Blank	
19-22	4	P,G	DOB_TT	**Time of Birth**	126	0000-2359 9999	Time of Birth Not Stated
23	1	P,G	DOB_WK	**Birth Day of Week**		1 2 3 4 5 6 7	Sunday Monday Tuesday Wednesday Thursday Friday Saturday
24-31	8		FILLER03	**Filler**		Blank	
32	1	P,G	BFACIL	**Birth Place (Revised)** Revised data only. See field 1330 for national data.	33	1 2 3 4	Hospital Freestanding Birth Center Home (intended) Home (not intended)

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	Home (unknown if intended)
						6	Clinic / Doctor's Office
						7	Other
						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	In Hospital
						2	Not in Hospital
						3	Unknown or Not Stated
51-72	22		FILLER05	**Filler**		Blank	
73	1	P,G	MAGEIMP	**Mother's Age Imputed**		Blank	Age not imputed
				Due to missing data, age imputed.		1	Age imputed
74	1	P,G	MAGEREP	**Reported Age of Mother Used Flag**		Blank	Reported age not used
				Due to missing date of birth, reported age used.		1	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	Under 15 Years
						03	15 years
						04	16 years
						05	17 years
						06	18 years
						07	19 years
						08	20-24 years
						09	25-29 years
						10	30-34 years
						11	35-39 years
						12	40-44 years
						13	45-49 years
						14	50-54 years
79	1	P,G	MAGER9	**Mother's Age Recode 9**		1	Under 15 years
						2	15-19 years

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

Position	Len	File*	Field	Description	Flag Position	Values	Definition
						3	20-24 years
						4	25-29 years
						5	30-34 years
						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

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
						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
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)

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	Other Pacific Islander (only)
						15	More than one race
110	1	P,G	MBRACE	**Bridged Race Mother** Includes individuals reporting only one race and individuals reporting more than one race bridged to a single race.			
				United States and all Outlying Areas of the United States except Puerto Rico		1	White
						2	Black
						3	American Indian or Alaskan Native
						4	Asian or Pacific Islander
				Puerto Rico		1	White
						2	Black
						0	Other (not classified as White or Black)
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.
112-114	3		FILLER08	**Filler**		Blank	
115	1	P,G	MHISP_R	**Mother's Hispanic Origin Recode**	116	0	Non-Hispanic
						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** Based on single/multiple-race (fields 105-106, 107, and 108-109); for coding to create bridged-race categories (field 110) see "Coding for bridge-race and Hispanic origin categories" in the Detailed Technical Notes.		1	Non-Hispanic White (only)
						2	Non-Hispanic Black (only)
						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

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
						N	No
						U	Unknown
						X	Not Applicable
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

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

Position	Len	File*	Field	Description	Flag Position	Values	Definition
149-150	2	P,G	FAGE11	**Father's Age Recode 11**		01	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

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
						31	Black, AIAN, Asian, NHOPI, and White
						99	Unknown or Not Stated
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	1	P,G	FBRACE	**Bridged Race Father** Includes individuals reporting only one race and individuals reporting more than one race bridged to a single race.			
				United States and all Outlying Areas of the United States except Puerto Rico		1	White
						2	Black
						3	American Indian or Alaskan Native
						4	Asian or Pacific Islander
				Puerto Rico		1	White
						2	Black
						0	Other (not classified as White or Black)
157-159	3		FILLER13	**Filler**		Blank	

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

Position	Len	File*	Field	Description	Flag Position	Values	Definition
160	1	P,G	FHISP_R	**Father's Hispanic Origin Recode**	161	0	Non-Hispanic
						1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central and South American
						5	Other and Unknown Hispanic origin
						9	Hispanic origin not stated
161	1	P,G	F_FHISP	**Reporting Flag for Father's Origin**			See footnote
162	1	P,G	FRACEHISP	**Father's Race/Hispanic Origin** Based on single/multiple-race (fields 151-152, 153, and 154-155); for coding to create bridged-race categories (field 156) see "Coding for bridge-race and Hispanic origin categories" in. the Detailed Technical Notes		1	Non-Hispanic White (only)
						2	Non-Hispanic Black (only)
						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
						9	Race unknown or not stated (Non-Hispanic)
163	1	P,G	FEDUC	**Father's Education**	165	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
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	Number of children still living from previous live births
						99	Unknown or not stated
173-174	2	P,G	PRIORDEAD	**Prior Births Now Dead**		00-30	Number of children dead from previous live births
						99	Unknown or not stated
175-176	2	P,G	PRIORTERM	**Prior Terminations/Fetal Death**		0-30	Number of terminations/fetal deaths
						99	Unknown or not stated

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

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

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

Position	Len	File*	Field	Description	Flag Position	Values	Definition
209-210	2	P,G	ILOO_R11	**Interval Since Last Other Outcome Recode 11**	126	00	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		FILLER30	**Filler**		Blank	
329	1	P,G	F_RF_DRG	**Reporting Flag for Fertility Enhance Drugs**			See footnote
330	1	P,G	F_RF_ART	**Reporting Flag for Reproductive Technology**			See footnote
331	1	P,G	RF_CESAR	**Previous Cesareans**	335	Y	Yes
						N	No

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

Position	Len	File*	Field	Description	Flag Position	Values	Definition
						U	Unknown or not stated
332-333	2	P,G	RF_CESARN	**Number of Previous Cesareans**		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_DODYY	**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

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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
451-453	1		FILLER41	**Filler**		Blank	
454	1	P,G	DPLURAL	**Plurality Recode**		1 2 3 4 5	Single Twin Triplet Quadruplet Quintuplet or higher
455	1		FILLER42	**Filler**		Blank	
456	1	P,G	IMP_PLUR	**Plurality Imputed**		Blank 1	Plurality is imputed Plurality is not imputed
457-458	2		FILLER43	**Filler**		Blank	
459	1	P,G	SETORDER_R	**Set Order Recode**	126	1 9	1 1st , 2 2nd, 3 3rd, 4 4th, 5 5th to 16th Unknown or not stated
460-474	15		FILLER44	**Filler**		Blank	
475	1	P,G	SEX	**Sex of Infant**		M F	Male Female
476	1	P,G	IMP_SEX	**Imputed Sex**		Blank 1	Infant Sex not Imputed Infant Sex is Imputed
477-478	2	P,G	DLMP_MM	**Last Normal Menses Month**		01	January

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
						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	17th through 47th 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
494	1	P,G	GESTREC3	**Combined Gestation Recode 3**		1	Under 37 weeks
						2	37 weeks and over

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

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
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**	126	1	True
						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
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

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
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
						U	Unknown or not stated

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
568	1	P,G	ILIVE	**Infant Living at Time of Report**	126	Y N U	Yes No Unknown or not stated
569	1	P,G	BFED	**Infant Being Breastfed**	570	Y N U	Yes No Unknown or not stated
570	1	P,G	F_BFED	**Reporting Flag for Breastfed at Discharge**			See footnote
571-1345	759	P,G	FILLER54	**Filler**		Blank	
1346	1	P,G	FLGND	**Match Status**		1 Blank	Record in both files Record not in both files

Here ends the Denominator file. 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	AGED	Age at Death in Days			000-365	Number of days
1359	1	P,G	AGER5	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	AGER22	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	UC0D	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

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

Position	Len	File*	Field	Description	Flag Position	Values	Definition
1533-1632	100	P,G	RECORD	Record-Axis Conditions Space has been provided for a maximum of 20 conditions. Each condition takes 5 positions in the record. The 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	Data Year			2018	2018
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 3 4 5 6 9	County of 1,000,000 or more County of 500,000 to 1,000,000 County of 250,000 to 500,000 County of 100,000 to 250,000 County of 50,000 to 100,000 County of 25,000 to 50,000 County of 10,000 to 25,000 County less than 10,000
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 3 4 5 6 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 of 100,000 to 250,000 County of 50,000 to 100,000 County of 25,000 to 50,000 County of 10,000 to 25,000 County less than 10,000 Foreign resident
100	1	G	RCITY_POP	**Population of Residence City**		0 1 2 3 4 5	City of 1,000,000 or more City of 500,000 to 1,000,000 City of 250,000 to 500,000 City of 100,000 to 250,000 City of 50,000 to 100,000 City of 25,000 to 50,000

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
						6	City of 10,000 to 25,000
						9	All other areas in the US
						Z	Foreign resident
103	1	T,G	RECTYPE	**Record Type**		1	RESIDENT: State and county of occurrence and residence are the same.
						2	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 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

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
						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.	
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
						3	County of 100,000 to 250,000

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Position	Len	File*	Field	Description	Flag Position	Values	Definition
						4	County of 50,000 to 100,000
						5	County of 25,000 to 50,000
						6	County of 10,000 to 25,000
						9	County of less than 10,000
						Z	Foreign residents

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Age: 1 = 5 and over; 2 = 10-54; 3 = 28 days and over
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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)

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, 2018 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	3,801,534	3,791,662	21,390	21,357	21,531	21,498	5.62
Alabama	56,504	57,761	385	401	385	401	6.94
Alaska	9,961	10,086	60	63	60	63	6.25
Arizona	81,816	80,723	458	451	468	461	5.71
Arkansas	35,849	37,018	256	277	257	278	7.51
California	456,083	454,920	1,890	1,891	1,916	1,917	4.21
Colorado	63,468	62,885	313	299	313	299	4.75
Connecticut	36,154	34,725	154	146	154	146	4.20
Delaware	10,961	10,621	67	63	67	63	5.93
Dist of Columbia	13,463	9,212	102	68	102	68	7.38
Florida	221,772	221,542	1,353	1,339	1,353	1,339	6.04
Georgia	127,051	126,172	892	888	893	889	7.05
Hawaii	17,018	16,972	118	114	119	115	6.78
Idaho	21,128	21,403	92	108	92	108	5.05
Illinois	141,062	144,815	880	949	880	949	6.55
Indiana	82,146	81,646	535	540	544	549	6.72
Iowa	37,641	37,785	168	188	168	188	4.98
Kansas	37,770	36,261	217	231	217	231	6.37
Kentucky	51,603	53,922	280	323	283	326	6.05
Louisiana	59,815	59,615	448	456	448	456	7.65
Maine	11,998	12,311	65	68	65	68	5.52
Maryland	68,160	71,080	410	427	411	428	6.02
Massachusetts	69,808	69,109	290	288	291	289	4.18
Michigan	109,091	110,032	671	683	672	684	6.22
Minnesota	66,412	67,344	346	341	346	341	5.06
Mississippi	36,137	37,000	300	311	300	311	8.41
Missouri	74,099	73,269	535	463	537	465	6.35
Montana	11,505	11,513	51	55	51	55	4.78
Nebraska	25,886	25,488	154	146	155	147	5.77
Nevada	35,369	35,682	212	219	212	219	6.14
New Hampshire	11,977	11,995	44	42	44	42	3.50
New Jersey	98,792	101,223	356	384	357	385	3.80
New Mexico	21,711	23,039	125	130	126	131	5.69
New York	112,604	117,298	556	591	557	592	5.05
New York City	114,295	108,940	417	386	418	387	3.55
North Carolina	120,802	118,954	825	803	825	803	6.75
North Dakota	12,216	10,636	68	60	68	60	5.64
Ohio	135,728	135,134	983	934	987	938	6.94
Oklahoma	48,342	49,800	341	350	344	353	7.09
Oregon	42,705	42,188	188	178	188	178	4.22
Pennsylvania	135,010	135,673	824	804	826	806	5.94
Rhode Island	11,063	10,506	60	52	60	52	4.95
South Carolina	53,054	56,669	368	403	368	403	7.11
South Dakota	12,574	11,893	81	70	81	70	5.89
Tennessee	86,484	80,751	630	555	631	556	6.89

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, 2018 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	387,003	378,624	2,038	2,009	2,106	2,075	5.48
Utah	48,209	47,209	271	257	273	259	5.49
Vermont	5,327	5,432	31	35	31	35	6.44
Virginia	99,106	99,843	539	560	539	560	5.61
Washington	85,843	86,085	405	404	405	404	4.69
West Virginia	19,038	18,248	123	127	123	127	6.96
Wisconsin	63,932	64,098	392	392	392	392	6.12
Wyoming	5,989	6,562	23	35	23	35	5.33
Puerto Rico	21,482	21,424	142	140	142	140	6.53
Guam	3,175	3,165	37	37	37	37	11.69

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, 2018 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	3,791,712	5,966	9,041	10,029	12,232	15,699	61,522	200,079	3,475,072	2,072
Infant deaths	21,498	5,126	3,264	1,149	758	670	1,533	1,936	6,908	152
Infant Mortality Rate	5.67	859.20	361.02	114.57	61.97	42.68	24.92	9.68	1.99	73.36
Male										
Live births	1,938,179	3,136	4,515	5,098	6,230	7,800	29,686	91,401	1,789,238	1,075
Infant deaths	12,105	2,777	1,892	704	441	380	814	1,019	3,979	99
Infant Mortality Rate	6.25	885.52	419.05	138.09	70.79	48.72	27.42	11.15	2.22	92.09
Female										
Live births	1853533	2,830	4,526	4,931	6,002	7,899	31,836	108,678	1,685,834	997
Infant deaths	9,393	2,350	1,372	445	317	290	719	917	2,929	53
Infant Mortality Rate	5.07	830.39	303.14	90.25	52.82	36.71	22.58	8.44	1.74	53.16
Non-Hispanic White										
Both sexes										
Live births	1,956,413	1,949	3,039	3,709	4,863	6,582	26,972	88,353	1,819,997	949
Infant deaths	9,059	1,707	1,202	477	350	282	658	914	3,420	50
Infant Mortality Rate	4.63	875.83	395.52	128.61	71.97	42.84	24.40	10.34	1.88	52.69
Male										
Live births	1,003,045	1,018	1,509	1,900	2,500	3,284	12,868	40,027	939,461	478
Infant deaths	5104	911	699	310	199	159	341	465	1988	31
Infant Mortality Rate	5.09	894.89	463.22	163.16	79.60	48.42	26.50	11.62	2.12	64.85
Female										
Live births	953,368	931	1,530	1,809	2,363	3,298	14,104	48,326	880,536	471
Infant deaths	3,955	796	503	166	151	123	317	449	1,432	19
Infant Mortality Rate	4.15	854.99	328.76	91.76	63.90	37.30	22.48	9.29	1.63	*
Non-Hispanic Black										
Both sexes										
Live births	552,029	2,159	3,208	3,235	3,559	4,232	15,412	46,048	473,877	299
Infant deaths	5,933	1,832	1,020	302	186	175	387	475	1,514	42
Infant Mortality Rate	10.75	848.54	317.96	93.35	52.26	41.35	25.11	10.32	3.19	140.47
Male										
Live births	279,914	1,140	1,575	1,589	1,755	2,014	7,240	20,651	243,784	166
Infant deaths	3,365	996	592	175	102	102	206	262	899	32
Infant Mortality Rate	12.02	873.68	375.87	110.13	58.12	50.65	28.45	12.69	3.69	192.77

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2018 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.....	272,115	1,019	1,633	1,646	1,804	2,218	8,172	25,397	230,093	133
Infant deaths.....	2,568	836	428	127	83	73	182	214	615	10
Infant Mortality Rate.....	9.44	820.41	262.09	77.16	46.01	32.91	22.27	8.43	2.67	*
Non-Hispanic American Indian or Alaskan Native /1										
Both sexes										
Live births.....	29,092	40	53	81	92	136	461	1,473	26,741	15
Infant deaths.....	237	31	21	9	8	9	17	24	116	2
Infant Mortality Rate.....	8.15	775.00	396.23	*	*	*	*	16.29	4.34	*
Male										
Live births.....	14,806	20	33	41	48	75	221	691	13,672	5
Infant deaths.....	132	18	14	7	3	6	10	12	60	1
Infant Mortality Rate.....	8.92	*	*	*	*	*	*	*	4.39	*
Female										
Live births.....	14,286	20	20	40	44	61	240	782	13,069	10
Infant deaths.....	106	13	7	2	5	3	7	12	55	1
Infant Mortality Rate.....	7.42	*	*	*	*	*	*	*	4.21	*
Non-Hispanic Asian										
Both sexes										
Live births.....	240,798	271	414	490	640	883	3,697	14,295	220,045	63
Infant deaths.....	874	231	149	49	29	33	61	82	234	4
Infant Mortality Rate.....	3.63	852.40	359.90	100.00	45.31	37.37	16.50	5.74	1.06	*
Male										
Live births.....	124,082	154	216	273	321	450	1,846	6,580	114,208	34
Infant deaths.....	484	127	81	28	20	16	34	44	130	3
Infant Mortality Rate.....	3.90	824.68	375.00	102.56	62.31	*	18.42	6.69	1.14	*
Female										
Live births.....	116,716	117	198	217	319	433	1,851	7,715	105,837	29
Infant deaths.....	390	103	69	21	9	17	27	38	105	1
Infant Mortality Rate.....	3.34	880.34	348.48	96.77	*	*	14.59	4.93	0.99	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Both sexes										
Live births.....	9,476	15	29	26	26	47	164	545	8,618	6
Infant deaths.....	89	13	17	3	2	2	4	7	39	1
Infant Mortality Rate.....	9.39	*	*	*	*	*	*	*	4.53	*

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2018 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.....	4,790	10	15	11	14	22	78	256	4,381	3
Infant deaths.....	51	9	8	1	1	1	1	5	25	-
Infant Mortality Rate.....	10.65	*	*	*	*	*	*	*	5.71	*
Female										
Live births.....	4,686	5	14	15	12	25	86	289	4,237	3
Infant deaths.....	37	4	9	2	1	1	3	2	14	1
Infant Mortality Rate.....	7.90	*	*	*	*	*	*	*	*	*
Hispanic										
Both sexes										
Live births.....	886,210	1,222	1,926	2,133	2,632	3,254	12,709	42,599	819,525	210
Infant deaths.....	4,303	1,040	686	253	157	138	340	361	1,307	22
Infant Mortality Rate.....	4.86	851.06	356.18	118.61	59.65	42.41	26.75	8.47	1.59	104.76
Male										
Live births.....	450,950	640	971	1,121	1,368	1,658	6,418	20,092	418,571	111
Infant deaths.....	2,405	573	391	155	98	77	185	193	717	16
Infant Mortality Rate.....	5.33	895.31	402.68	138.27	71.64	46.44	28.83	9.61	1.71	*
Female										
Live births.....	435,260	582	955	1,012	1,264	1,596	6,291	22,507	400,954	99
Infant deaths.....	1,898	466	294	98	59	61	155	168	590	6
Infant Mortality Rate.....	4.36	800.69	307.85	96.84	46.68	38.22	24.64	7.46	1.47	*

* 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, 2018 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	3,791,712	24,945	34,386	44,700	275,746	2,425,627	748,794	223,689	11,318	2,507
Infant deaths	21,498	9,534	1,489	981	2,263	5,610	1,075	293	61	190
Infant Mortality Rate	5.67	382.20	43.30	21.95	8.21	2.31	1.44	1.31	5.39	75.79
Less than 2,500 grams										
Live births	314,568	24,685	33,449	41,108	119,273	91,361	3,665	658	89	280
Infant deaths	14,437	9,531	1,433	877	1,387	1,076	76	13	11	32
Infant Mortality Rate	45.89	386.10	42.84	21.33	11.63	11.78	20.74	*	*	114.29
Less than 500 grams										
Live births	5,966	5,859	67	3	7	8	-	-	-	22
Infant deaths	5,126	5,078	32	1	-	-	-	-	-	15
Infant Mortality Rate	859.20	866.70	477.61	*	*	*	*	*	*	*
500-749 grams										
Live births	9,041	8,286	693	31	12	7	-	-	-	12
Infant deaths	3,264	3,135	107	5	6	2	-	-	-	9
Infant Mortality Rate	361.02	378.35	154.40	*	*	*	*	*	*	*
750-999 grams										
Live births	10,029	6,833	2,914	177	43	38	10	2	-	12
Infant deaths	1,149	908	192	30	14	2	-	-	-	2
Infant Mortality Rate	114.57	132.88	65.89	169.49	*	*	*	*	*	*
1,000-1,249 grams										
Live births	12,232	3,040	7,476	1,139	346	189	26	8	1	7
Infant deaths	758	298	329	79	40	9	-	-	-	2
Infant Mortality Rate	61.97	98.03	44.01	69.36	115.61	*	*	*	*	*
1,250-1,499 grams										
Live births	15,699	463	9,621	3,625	1,596	314	42	16	2	20
Infant deaths	670	70	343	125	99	30	1	1	1	1
Infant Mortality Rate	42.68	151.19	35.65	34.48	62.03	95.54	*	*	*	*
1,500-1,999 grams										
Live births	61,522	138	11,313	20,668	23,996	5,107	190	46	8	56
Infant deaths	1,533	36	351	382	450	289	18	4	1	1
Infant Mortality Rate	24.92	260.87	31.03	18.48	18.75	56.59	*	*	*	*
2,000-2,499 grams										
Live births	200,079	66	1,365	15,465	93,273	85,698	3,397	586	78	151
Infant deaths	1,936	6	79	253	777	744	57	8	9	2
Infant Mortality Rate	9.68	*	57.88	16.36	8.33	8.68	16.78	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2018 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	3,475,072	95	877	3,537	156,347	2,333,736	744,880	222,951	11,209	1,440
Infant deaths	6,908	1	53	104	876	4,533	998	280	50	13
Infant Mortality Rate	1.99	*	60.43	29.40	5.60	1.94	1.34	1.26	4.46	*
Not Stated										
Live births	2,072	165	60	55	126	530	249	80	20	787
Infant deaths	152	2	2	1	-	1	1	-	-	145
Infant Mortality Rate	73.36	*	*	*	*	*	*	*	*	184.24
Non-Hispanic White										
Total										
Live births	1,956,413	8,665	14,764	20,858	133,555	1,232,483	406,842	131,041	7,281	924
Infant deaths	9,059	3,394	641	458	1,077	2,729	508	158	34	60
Infant Mortality Rate	4.63	391.69	43.42	21.96	8.06	2.21	1.25	1.21	4.67	64.94
Less than 2,500 grams										
Live births	135,467	8,580	14,325	18,991	53,790	37,766	1,546	319	41	109
Infant deaths	5,589	3,391	616	400	650	490	25	6	2	9
Infant Mortality Rate	41.26	395.22	43.00	21.06	12.08	12.97	16.17	*	*	*
Less than 500 grams										
Live births	1,949	1,908	29	-	2	4	-	-	-	6
Infant deaths	1,707	1,687	15	-	-	-	-	-	-	5
Infant Mortality Rate	875.83	884.17	*	*	*	*	*	*	*	*
500-749 grams										
Live births	3,039	2,734	278	14	5	5	-	-	-	3
Infant deaths	1,202	1,156	41	1	2	1	-	-	-	1
Infant Mortality Rate	395.52	422.82	147.48	*	*	*	*	*	*	*
750-999 grams										
Live births	3,709	2,435	1,156	76	21	12	5	1	-	3
Infant deaths	477	366	90	13	7	1	-	-	-	-
Infant Mortality Rate	128.61	150.31	77.85	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births	4,863	1,220	2,914	482	140	84	12	7	1	3
Infant deaths	350	133	148	44	23	2	-	-	-	-
Infant Mortality Rate	71.97	109.02	50.79	91.29	164.29	*	*	*	*	*
1,250-1,499 grams										
Live births	6,582	199	4,087	1,480	651	133	16	10	-	6
Infant deaths	282	27	135	54	49	14	1	-	-	1
Infant Mortality Rate	42.84	135.68	33.03	36.49	75.27	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2018 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	26,972	56	5,189	9,201	10,189	2,193	88	28	5	23
Infant deaths	658	22	142	154	206	125	8	1	-	0
Infant Mortality Rate	24.40	392.86	27.37	16.74	20.22	57.00	*	*	*	*
2,000-2,499 grams										
Live births	88,353	28	672	7,738	42,782	35,335	1,425	273	35	65
Infant deaths	914	1	45	134	363	346	16	5	2	2
Infant Mortality Rate	10.34	*	66.96	17.32	8.48	9.79	*	*	*	*
2,500 grams or more										
Live births	1,819,997	37	405	1,835	79,687	1,194,347	405,119	130,659	7,228	680
Infant deaths	3,420	1	25	57	427	2,238	481	152	32	6
Infant Mortality Rate	1.88	*	61.73	31.06	5.36	1.87	1.19	1.16	4.43	*
Not Stated										
Live births										
Infant deaths	949	48	34	32	78	370	177	63	12	135
Infant Mortality Rate	50	2	-	1	-	1	1	-	-	45
	52.69	*	*	*	*	*	*	*	*	333.33
Non-Hispanic Black										
Total										
Live births	552,029	8,348	8,804	9,856	50,931	353,077	93,655	25,584	1,390	384
Infant deaths	5933	3139	379	233	506	1327	236	49	11	54
Infant Mortality Rate	10.75	376.02	43.05	23.64	9.94	3.76	2.52	1.92	*	140.63
Less than 2,500 grams										
Live births	77,853	8,264	8,632	9,341	27,290	23,215	903	116	22	70
Infant deaths	4,377	3,139	376	222	317	284	21	3	6	10
Infant Mortality Rate	56.22	379.84	43.56	23.77	11.62	12.23	23.26	*	*	*
Less than 500 grams										
Live births	2,159	2,128	20	1	-	2	-	-	-	8
Infant deaths	1,832	1,816	10	1	-	-	-	-	-	5
Infant Mortality Rate	848.54	853.38	*	*	*	*	*	*	*	*
500-749 grams										
Live births	3,208	2,958	237	6	2	1	-	-	-	4
Infant deaths	1,020	977	36	1	1	-	-	-	-	4
Infant Mortality Rate	317.96	330.29	151.90	*	*	*	*	*	*	*
750-999 grams										
Live births	3,235	2,231	930	52	8	10	1	-	-	3
Infant deaths	302	253	38	8	2	1	-	-	-	-
Infant Mortality Rate	93.35	113.40	40.86	*	*	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2018 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	3,559	790	2,291	322	92	55	7	-	-	2
Infant deaths	186	66	91	20	5	3	-	-	-	-
Infant Mortality Rate	52.26	83.54	39.72	62.11	*	*	*	*	*	*
1,250-1,499 grams										
Live births	4,232	112	2,532	1,064	419	87	12	1	-	5
Infant deaths	175	20	101	25	19	10	-	-	-	-
Infant Mortality Rate	41.35	178.57	39.89	23.50	*	*	*	*	*	*
1,500-1,999 grams										
Live births	15,412	31	2,392	5,141	6,377	1,397	46	7	1	20
Infant deaths	387	4	91	110	101	76	2	1	-	1
Infant Mortality Rate	25.11	*	38.04	21.40	15.84	54.40	*	*	*	*
2,000-2,499 grams										
Live births	46,048	14	230	2,755	20,392	21,663	837	108	21	28
Infant deaths	475	2	8	56	188	193	19	2	6	-
Infant Mortality Rate	10.32	*	*	20.33	9.22	8.91	*	*	*	*
2,500 grams or more										
Live births	473,877	23	163	502	23,617	329,792	92,728	25,463	1,366	223
Infant deaths	1,514	-	3	11	189	1,044	215	46	5	2
Infant Mortality Rate	3.19	*	*	*	8.00	3.17	2.32	1.81	*	*
Not Stated										
Live births	299	61	9	13	24	70	24	5	2	91
Infant deaths	42	-	-	-	-	-	-	-	-	42
Infant Mortality Rate	140.47	*	*	*	*	*	*	*	*	461.54
Non-Hispanic American Indian or Alaskan Native /1										
Total										
Live births	29,092	180	306	433	2,424	18,950	5,237	1,413	83	66
Infant deaths	237	62	23	8	28	84	22	4	-	5
Infant Mortality Rate	8.15	344.44	75.16	*	11.55	4.43	4.20	*	*	*
Less than 2,500 grams										
Live births	2,336	177	293	380	809	640	23	3	1	10
Infant deaths	120	62	22	7	10	15	2	-	-	1
Infant Mortality Rate	51.37	350.28	75.09	*	*	*	*	*	*	*
Less than 500 grams										
Live births	40	39	-	-	-	-	-	-	-	1
Infant deaths	31	30	-	-	-	-	-	-	-	1
Infant Mortality Rate	775.00	769.23	*	*	*	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2018 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	53	51	2	-	-	-	-	-	-	-
Infant deaths	21	19	2	-	-	-	-	-	-	-
Infant Mortality Rate	396.23	*	*	*	*	*	*	*	*	*
750-999 grams										
Live births	81	57	22	2	-	-	-	-	-	-
Infant deaths	9	8	1	-	-	-	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births	92	24	57	8	2	1	-	-	-	-
Infant deaths	8	3	5	-	-	-	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
1,250-1,499 grams										
Live births	136	5	87	29	11	3	-	-	-	1
Infant deaths	9	1	6	2	-	-	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
1,500-1,999 grams										
Live births	461	1	109	164	143	41	-	-	-	3
Infant deaths	17	1	7	1	7	1	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
2,000-2,499 grams										
Live births	1,473	-	16	177	653	595	23	3	1	5
Infant deaths	24	-	1	4	3	14	2	-	-	-
Infant Mortality Rate	16.29	*	*	*	*	*	*	*	*	*
2,500 grams or more										
Live births	26,741	1	12	52	1,614	18,307	5,212	1,410	82	51
Infant deaths	116	-	1	1	18	69	20	4	-	2
Infant Mortality Rate	4.34	*	*	*	*	3.77	3.84	*	*	*
Not Stated										
Live births	15	2	1	1	1	3	2	-	-	5
Infant deaths	2	-	-	-	-	-	-	-	-	2
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
Non-Hispanic Asian										
Total										
Live births	240,798	1,124	1,739	2,226	15,540	161,362	47,129	11,302	319	57
Infant deaths	874	423	66	37	95	196	35	11	3	7
Infant Mortality Rate	3.63	376.33	37.95	16.62	6.11	1.21	0.74	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2018 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	20,690	1,108	1,690	2,097	7,759	7,723	259	37	6	11
Infant deaths	636	423	63	36	63	40	6	-	-	3
Infant Mortality Rate	30.74	381.77	37.28	17.17	8.12	5.18	*	*	*	*
Less than 500 grams										
Live births	271	262	5	-	1	-	-	-	-	3
Infant deaths	231	227	2	-	-	-	-	-	-	2
Infant Mortality Rate	852.40	866.41	*	*	*	*	*	*	*	*
500-749 grams										
Live births	414	372	40	1	-	-	-	-	-	1
Infant deaths	149	143	4	1	-	-	-	-	-	1
Infant Mortality Rate	359.90	384.41	*	*	*	*	*	*	*	*
750-999 grams										
Live births	490	314	163	7	3	3	-	-	-	-
Infant deaths	49	38	10	-	1	-	-	-	-	-
Infant Mortality Rate	100.00	121.02	*	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births	640	139	379	88	25	8	1	-	-	-
Infant deaths	29	12	12	3	2	-	-	-	-	-
Infant Mortality Rate	45.31	*	*	*	*	*	*	*	*	*
1,250-1,499 grams										
Live births	883	14	512	211	130	12	3	-	1	-
Infant deaths	33	1	19	6	7	-	-	-	-	-
Infant Mortality Rate	37.37	*	*	*	*	*	*	*	*	*
1,500-1,999 grams										
Live births	3,697	5	540	1,112	1,683	347	9	-	-	1
Infant deaths	61	2	13	18	16	10	2	-	-	-
Infant Mortality Rate	16.50	*	*	*	*	*	*	*	*	*
2,000-2,499 grams										
Live births	14,295	2	51	678	5,917	7,353	246	37	5	6
Infant deaths	82	-	3	8	37	30	4	-	-	-
Infant Mortality Rate	5.74	*	*	*	6.25	4.08	*	*	*	*
2,500 grams or more										
Live births	220,045	5	48	127	7,778	153,622	46,857	11,264	313	31
Infant deaths	234	-	3	1	31	156	29	11	3	-
Infant Mortality Rate	1.06	*	*	*	3.99	1.02	0.62	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2018 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.....	63	11	1	2	3	17	13	1	-	15
Infant deaths.....	4	-	-	-	-	-	-	-	-	4
Infant Mortality Rate.....	63.49	*	*	*	*	*	*	*	*	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Total										
Live births.....	9,476	72	119	149	776	5,970	1,810	533	34	13
Infant deaths.....	89	34	3	4	6	29	8	1	1	2
Infant Mortality Rate.....	9.39	472.22	*	*	*	4.86	*	*	*	*
Less than 2,500 grams										
Live births.....	852	72	109	126	286	237	17	3	-	2
Infant deaths.....	48	34	2	3	4	5	-	-	-	-
Infant Mortality Rate.....	56.34	472.22	*	*	*	*	*	*	*	*
Less than 500 grams										
Live births.....	15	14	-	-	-	1	-	-	-	-
Infant deaths.....	13	13	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
500-749 grams										
Live births.....	29	29	-	-	-	-	-	-	-	-
Infant deaths.....	17	17	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
750-999 grams										
Live births.....	26	19	6	1	-	-	-	-	-	-
Infant deaths.....	3	3	-	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births.....	26	8	17	1	-	-	-	-	-	-
Infant deaths.....	2	1	1	-	-	-	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
1,250-1,499 grams										
Live births.....	47	1	28	15	1	1	-	1	-	-
Infant deaths.....	2	-	-	-	1	1	-	-	-	-
Infant Mortality Rate.....	*	*	*	*	*	*	*	*	*	*
1,500-1,999 grams										
Live births.....	164	1	47	62	43	10	-	-	-	1
Infant deaths.....	4	-	1	1	1	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, 2018 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	545	-	11	47	242	225	17	2	-	1
Infant deaths	7	-	-	2	2	3	-	-	-	-
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
2,500 grams or more										
Live births	8,618	-	10	23	489	5,732	1,792	529	34	9
Infant deaths	39	-	1	1	2	24	8	1	1	1
Infant Mortality Rate	4.53	*	*	*	*	*	*	*	*	*
Not Stated										
Live births	6	-	-	-	1	1	1	1	-	2
Infant deaths	1	-	-	-	-	-	-	-	-	1
Infant Mortality Rate	*	*	*	*	*	*	*	*	*	*
Hispanic										
Live births	886,210	5,490	7,467	9,680	63,549	581,425	170,467	46,013	1,737	382
Infant deaths	4,303	1,978	310	208	444	1,058	209	59	8	29
Infant Mortality Rate	4.86	360.29	41.52	21.49	6.99	1.82	1.23	1.28	*	75.92
Less than 2,500 grams										
Live births	66,475	5,429	7,245	8,781	25,261	18,746	800	147	13	53
Infant deaths	2,974	1,978	291	182	278	216	17	4	1	7
Infant Mortality Rate	44.74	364.34	40.17	20.73	11.01	11.52	*	*	*	*
Less than 500 grams										
Live births	1,222	1,200	12	2	3	1	-	-	-	4
Infant deaths	1,040	1,033	4	-	-	-	-	-	-	2
Infant Mortality Rate	851.06	860.83	*	*	*	*	*	*	*	*
500-749 grams										
Live births	1,926	1,798	110	9	5	1	-	-	-	3
Infant deaths	686	658	19	2	3	1	-	-	-	2
Infant Mortality Rate	356.18	365.96	*	*	*	*	*	*	*	*
750-999 grams										
Live births	2,133	1,520	552	35	9	11	3	-	-	3
Infant deaths	253	193	49	7	3	-	-	-	-	1
Infant Mortality Rate	118.61	126.97	88.77	*	*	*	*	*	*	*
1,000-1,249 grams										
Live births	2,632	738	1,574	204	74	33	6	1	-	2
Infant deaths	157	67	64	11	10	2	-	-	-	2
Infant Mortality Rate	59.65	90.79	40.66	*	*	*	*	*	*	*

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2018 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.....	3,254	117	2,023	717	309	70	9	3	-	6
Infant deaths.....	138	16	63	35	20	3	-	1	-	-
Infant Mortality Rate.....	42.41	*	31.14	48.81	64.72	*	*	*	*	*
1,500-1,999 grams										
Live births.....	12,709	36	2,633	4,270	4,754	956	41	10	2	7
Infant deaths.....	340	6	76	86	93	70	5	2	1	-
Infant Mortality Rate.....	26.75	*	28.86	20.14	19.56	73.22	*	*	*	*
2,000-2,499 grams										
Live births.....	42,599	20	341	3,544	20,107	17,674	741	133	11	28
Infant deaths.....	361	3	15	41	148	140	12	1	-	-
Infant Mortality Rate.....	8.47	*	*	11.57	7.36	7.92	*	*	*	*
2,500 grams or more										
Live births.....	819,525	26	213	894	38,274	562,622	169,644	45,859	1,721	272
Infant deaths.....	1,307	-	17	25	166	842	192	55	7	2
Infant Mortality Rate.....	1.59	*	*	27.96	4.34	1.50	1.13	1.20	*	*
Not Stated										
Live births.....	210	35	9	5	14	57	23	7	3	57
Infant deaths.....	22	-	2	-	-	-	-	-	-	20
Infant Mortality Rate.....	104.76	*	*	*	*	*	*	*	*	350.88

-/ 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, 2018 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)	3,791,712	21,498	14,329	11,578	2,751	7,169
Rate		5.67	3.78	3.05	0.73	1.89
Less than 2,500 grams	314,568	14,437	11,752	9,960	1,792	2,685
Rate		45.89	37.36	31.66	5.70	8.54
Less than 500 grams	5,966	5,126	5,007	4,834	173	119
Rate		859.20	839.26	810.26	29.00	19.95
500-749 grams	9,041	3,264	2,780	2,147	633	484
Rate		361.02	307.49	237.47	70.01	53.53
750-999 grams	10,029	1,149	892	628	265	257
Rate		114.57	88.94	62.62	26.42	25.63
1,000-1,249 grams	12,232	758	574	436	137	185
Rate		61.97	46.93	35.64	11.20	15.12
1,250-1,499 grams	15,699	670	475	376	99	195
Rate		42.68	30.26	23.95	6.31	12.42
1,500-1,749 grams	23,329	763	517	407	109	247
Rate		32.71	22.16	17.45	4.67	10.59
1,750-1,999 grams	38,193	770	464	368	96	306
Rate		20.16	12.15	9.64	2.51	8.01
2,000-2,499 grams	200,079	1,936	1,044	764	279	892
Rate		9.68	5.22	3.82	1.39	4.46
2,500 grams or more	3,475,072	6,908	2,437	1,482	956	4,471
Rate		1.99	0.70	0.43	0.28	1.29
Not Stated	2,072	152	139	136	3	13
Rate		73.36	67.08	65.64	*	*
Non-Hispanic White						
Total (all birthweights)	1,956,413	9,059	5,873	4,676	1,196	3,186
Rate		4.63	3.00	2.39	0.61	1.63

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2018 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	135,467	5,589	4,544	3,841	703	1,045
Rate		41.26	33.54	28.35	5.19	7.71
Less than 500 grams	1,949	1,707	1,667	1,612	55	40
Rate		875.83	855.31	827.09	28.22	20.52
500-749 grams	3,039	1,202	1,028	804	224	173
Rate		395.52	338.27	264.56	73.71	56.93
750-999 grams	3,709	477	373	263	110	103
Rate		128.61	100.57	70.91	29.66	27.77
1,000-1,249 grams	4,863	350	267	212	55	83
Rate		71.97	54.90	43.59	11.31	17.07
1,250-1,499 grams	6,582	282	212	176	36	70
Rate		42.84	32.21	26.74	5.47	10.64
1,500-1,749 grams	10,145	344	257	209	48	87
Rate		33.91	25.33	20.60	4.73	8.58
1,750-1,999 grams	16,827	314	208	168	40	105
Rate		18.66	12.36	9.98	2.38	6.24
2,000-2,499 grams	88,353	914	532	398	134	382
Rate		10.34	6.02	4.50	1.52	4.32
2,500 grams or more	1,819,997	3,420	1,281	789	493	2,138
Rate		1.88	0.70	0.43	0.27	1.17
Not Stated	949	50	47	46	1	3
Rate		52.69	49.53	48.47	*	*
Non-Hispanic Black						
Total (all birthweights)	552,029	5,933	3,897	3,152	745	2,037
Rate		10.75	7.06	5.71	1.35	3.69
Less than 2,500 grams	77,853	4,377	3,459	2,910	549	919
Rate		56.22	44.43	37.38	7.05	11.80
Less than 500 grams	2,159	1,832	1,783	1,711	72	49
Rate		848.54	825.85	792.50	33.35	22.70

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2018 period data -Con.
[Infant deaths are under 1 year. Neonatal deaths are under 28 days; early neonatal, 0-6 days; late neonatal, 7-27 days. Postneonatal deaths are 28 days to less than 12 months. Rates are per 1,000 live births]

Birthweight and race of mother	Live Births	Infant	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
500-749 grams	3,208	1,020	838	607	231	181
Rate		317.96	261.22	189.21	72.01	56.42
750-999 grams	3,235	302	217	143	74	85
Rate		93.35	67.08	44.20	22.87	26.28
1,000-1,249 grams	3,559	186	134	96	38	52
Rate		52.26	37.65	26.97	10.68	14.61
1,250-1,499 grams	4,232	175	104	78	26	71
Rate		41.35	24.57	18.43	6.14	16.78
1,500-1,749 grams	5,933	181	100	74	26	81
Rate		30.51	16.85	12.47	4.38	13.65
1,750-1,999 grams	9,479	207	96	69	27	110
Rate		21.84	10.13	7.28	2.85	11.60
2,000-2,499 grams	46,048	475	187	133	54	289
Rate		10.32	4.06	2.89	1.17	6.28
2,500 grams or more	473,877	1,514	397	201	196	1,117
Rate		3.19	0.84	0.42	0.41	2.36
Not Stated	299	42	41	41	-	1
Rate		140.47	137.12	137.12	*	*
Non-Hispanic American Indian or Alaskan Native /1						
Total (all birthweights)	29,092	237	120	92	28	117
Rate		8.15	4.12	3.16	0.96	4.02
Less than 2,500 grams	2,336	120	91	75	16	29
Rate		51.37	38.96	32.11	*	12.41
Less than 500 grams	40	31	31	29	2	-
Rate		775.00	775.00	725.00	*	*
500-749 grams	53	21	20	15	5	1
Rate		396.23	377.36	*	*	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2018 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	81	9	8	4	4	1
Rate		*	*	*	*	*
1,000-1,249 grams	92	8	6	5	1	2
Rate		*	*	*	*	*
1,250-1,499 grams	136	9	5	4	1	4
Rate		*	*	*	*	*
1,500-1,749 grams	173	6	6	6	-	-
Rate		*	*	*	*	*
1,750-1,999 grams	288	11	4	4	-	7
Rate		*	*	*	*	*
2,000-2,499 grams	1,473	24	10	7	3	14
Rate		16.29	*	*	*	*
2,500 grams or more	26,741	116	27	16	11	88
Rate		4.34	1.01	*	*	3.29
Not Stated	15	2	2	1	1	-
Rate		*	*	*	*	*
Non-Hispanic Asian						
Total (all birthweights)	240,798	874	643	504	139	231
Rate		3.63	2.67	2.09	0.58	0.96
Less than 2,500 grams	20,690	636	527	434	93	108
Rate		30.74	25.47	20.98	4.49	5.22
Less than 500 grams	271	231	228	218	10	3
Rate		852.40	841.33	804.43	*	*
500-749 grams	414	149	127	98	29	22
Rate		359.90	306.76	236.71	70.05	53.14
750-999 grams	490	49	41	32	9	8
Rate		100.00	83.67	65.31	*	*
1,000-1,249 grams	640	29	27	17	10	2
Rate		45.31	42.19	*	*	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2018 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	883	33	21	12	9	12
Rate		37.37	23.78	*	*	*
1,500-1,749 grams	1,340	31	19	12	7	12
Rate		23.13	*	*	*	*
1,750-1,999 grams	2,357	30	19	17	2	11
Rate		12.73	*	*	*	*
2,000-2,499 grams	14,295	82	44	27	17	38
Rate		5.74	3.08	1.89	*	2.66
2,500 grams or more	220,045	234	112	66	46	122
Rate		1.06	0.51	0.30	0.21	0.55
Not Stated	63	4	4	4	-	-
Rate		*	*	*	*	*
Non-Hispanic Native Hawaiian or Other Pacific Islander						
Total (all birthweights)	9,476	89	51	46	5	38
Rate		9.39	5.38	4.85	*	4.01
Less than 2,500 grams	852	48	38	35	3	10
Rate		56.34	44.60	41.08	*	*
Less than 500 grams	15	13	13	13	-	-
Rate		*	*	*	*	*
500-749 grams	29	17	16	14	2	1
Rate		*	*	*	*	*
750-999 grams	26	3	1	1	-	2
Rate		*	*	*	*	*
1,000-1,249 grams	26	2	2	1	1	-
Rate		*	*	*	*	*
1,250-1,499 grams	47	2	2	2	-	-
Rate		*	*	*	*	*
1,500-1,749 grams	82	2	-	-	-	2
Rate		*	*	*	*	*

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2018 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	82	2	1	1	-	1
Rate		*	*	*	*	*
2,000-2,499 grams	545	7	3	3	-	4
Rate		*	*	*	*	*
2,500 grams or more	8,618	39	11	9	2	28
Rate		4.53	*	*	*	3.25
Not Stated	6	1	1	1	-	-
Rate		*	*	*	*	*
Hispanic						
Total (all birthweights)	886,210	4,303	3,036	2,500	536	1,267
Rate		4.86	3.43	2.82	0.60	1.43
Less than 2,500 grams	66,475	2,974	2,510	2,144	366	464
Rate		44.74	37.76	32.25	5.51	6.98
Less than 500 grams	1,222	1,040	1,017	988	29	22
Rate		851.06	832.24	808.51	23.73	18.00
500-749 grams	1,926	686	601	480	121	85
Rate		356.18	312.05	249.22	62.82	44.13
750-999 grams	2,133	253	205	145	59	48
Rate		118.61	96.11	67.98	27.66	22.50
1,000-1,249 grams	2,632	157	122	95	27	35
Rate		59.65	46.35	36.09	10.26	13.30
1,250-1,499 grams	3,254	138	108	85	23	30
Rate		42.41	33.19	26.12	7.07	9.22
1,500-1,749 grams	4,856	166	115	90	24	51
Rate		34.18	23.68	18.53	4.94	10.50
1,750-1,999 grams	7,853	174	113	91	22	61
Rate		22.16	14.39	11.59	2.80	7.77
2,000-2,499 grams	42,599	361	230	170	60	131
Rate		8.47	5.40	3.99	1.41	3.08

Documentation Table 4. Live births, infant deaths and infant mortality rates by birthweight, race of mother, and age at death: United States, 2018 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	819,525	1307	506	335	171	801
Rate		1.59	0.62	0.41	0.21	0.98
Not Stated	210	22	20	20	-	2
Rate		104.76	95.24	95.24	*	*

*/ 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, 2018 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	Total Infant Deaths	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
All birthweights					
All Causes	21,498	14,329	11,578	2,751	7,169
	567.0	377.9	305.4	72.6	189.1
Congenital malformations (Q00-Q99)	4,501	3,284	2,599	684	1,218
	118.7	86.6	68.5	18.0	32.1
Short gestation and low birthweight nec (P07)	3,683	3,597	3,490	107	85
	97.1	94.9	92.0	2.8	2.2
Maternal complications of pregnancy (P01)	1,371	1,366	1,350	16	5
	36.2	36.0	35.6	*	*
Sudden infant death syndrome (R95)	1,331	136	21	115	1,195
	35.1	3.6	0.6	3.0	31.5
Accidents (unintentional injures) (V01-X59)	1,169	104	21	83	1,065
	30.8	2.7	0.6	2.2	28.1
Complications of placenta, cord, membranes (P02)	723	714	682	32	9
	19.1	18.8	18.0	0.8	*
Bacterial sepsis of newborn (P36)	582	561	239	323	20
	15.4	14.8	6.3	8.5	0.5
Respiratory distress of newborn (P22)	391	382	306	76	9
	10.3	10.1	8.1	2.0	*
Diseases of the circulatory system (I00-I99)	427	84	42	42	343
	11.3	2.2	1.1	1.1	9.1
Neonatal hemorrhage (P50-P52, P54)	377	367	263	104	10
	9.9	9.7	6.9	2.7	*
All other causes	6,942	3,731	2,563	1,168	3,211
	183.1	98.4	67.6	30.8	84.7
Less than 2,500 grams					
All Causes	14,437	11,752	9,960	1,792	2,685
	4589.5	3735.9	3166.3	569.7	853.6
Congenital malformations (Q00-Q99)	2,845	2,256	1,905	352	589
	904.4	717.2	605.6	111.9	187.2
Short gestation and low birthweight nec (P07)	3,604	3,521	3,415	106	83
	1145.7	1119.3	1085.6	33.7	26.4
Maternal complications of pregnancy (P01)	1,317	1,313	1,299	14	4
	418.7	417.4	413.0	*	*
Sudden infant death syndrome (R95)	279	22	2	20	257
	88.7	7.0	*	6.4	81.7
Accidents (unintentional injures) (V01-X59)	203	22	8	14	180
	64.5	7.0	*	*	57.2
Complications of placenta, cord, membranes (P02)	635	626	604	22	9
	201.9	199.0	192.0	7.0	*
Bacterial sepsis of newborn (P36)	520	502	210	292	18
	165.3	159.6	66.8	92.8	*

Documentation Table 5. Infant deaths and infant mortality rates by age of death and birthweight for 10 major causes of infant death: United States, 2018 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	Total Infant Deaths	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
Respiratory distress of newborn (P22).....	378	369	298	71	9
	120.2	117.3	94.7	22.6	*
Diseases of the circulatory system (I00-I99).....	210	47	24	23	162
	66.8	14.9	7.6	7.3	51.5
Neonatal hemorrhage (P50-P52, P54).....	334	326	235	90	8
	106.2	103.6	74.7	28.6	*
All other causes.....	4,113	2,748	1,959	789	1,365
	1307.5	873.6	622.8	250.8	433.9
2,500 grams or more					
All Causes	6,908	2,347	1,482	956	4,471
	198.8	67.5	42.7	27.5	128.7
Congenital malformations (Q00-Q99).....	1,650	1,023	691	333	627
	47.5	29.4	19.9	9.6	18.0
Short gestation and low birthweight nec (P07).....	13	11	10	1	2
	*	*	*	*	*
Maternal complications of pregnancy (P01).....	20	19	17	2	1
	0.6	*	*	*	*
Sudden infant death syndrome (R95).....	1,050	113	18	95	937
	30.2	3.3	*	2.7	27.0
Accidents (unintentional injures) (V01-X59).....	962	81	12	69	881
	27.7	2.3	*	2.0	25.4
Complications of placenta, cord, membranes (P02).....	81	81	71	10	-
	2.3	2.3	2.0	*	*
Bacterial sepsis of newborn (P36).....	61	59	28	31	2
	1.8	1.7	0.8	0.9	*
Respiratory distress of newborn (P22).....	13	13	8	5	-
	*	*	*	*	*
Diseases of the circulatory system (I00-I99).....	216	37	18	19	178
	6.2	1.1	*	*	5.1
Neonatal hemorrhage (P50-P52, P54).....	42	40	26	14	2
	1.2	1.2	0.8	*	*
All other causes.....	2,799	959	582	377	1,841
	80.6	27.6	16.8	10.9	53.0

*/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, 2018 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	3,791,712	24,945	34,386	44,700	275,746	2,425,627	748,794	223,689	11,318	2,507
Infant deaths	21,498	9,534	1,489	981	2,263	5,610	1,075	293	61	190
Infant Mortality Rate	5.67	382.20	43.30	21.95	8.21	2.31	1.44	1.31	5.39	75.79
Early Neonatal										
Live births	3,791,712	24,945	34,386	44,700	275,746	2,425,627	748,794	223,689	11,318	2,507
Infant deaths	11,578	7,646	812	492	910	1,207	227	84	28	170
Infant Mortality Rate	3.05	306.51	23.61	11.01	3.30	0.50	0.30	0.38	2.47	67.81
Late Neonatal										
Live births	3,791,712	24,945	34,386	44,700	275,746	2,425,627	748,794	223,689	11,318	2,507
Infant deaths	2,751	1,082	235	166	306	781	129	40	7	5
Infant Mortality Rate	0.73	43.38	6.83	3.71	1.11	0.32	0.17	0.18	*	*
Postneonatal										
Live births	3,791,712	24,945	34,386	44,700	275,746	2,425,627	748,794	223,689	11,318	2,507
Infant deaths	7,169	806	442	323	1,047	3,622	719	169	26	15
Infant Mortality Rate	1.89	32.31	12.85	7.23	3.80	1.49	0.96	0.76	2.30	*

*/ 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, 2017 Cohort Data.
(Residence at birth is of the mother)

	Live Births		Infant Deaths		
State	Occurrence	Residence	Occurrence	Residence	Infant Mortality Rate
United States	3,864,754	3,855,500	22,197	22,167	5.75
Alabama	57,469	58,941	421	431	7.31
Alaska	10,353	10,445	53	60	5.74
Arizona	82,829	81,872	455	459	5.61
Arkansas	36,179	37,520	285	300	8.00
California	472,820	471,658	1,952	1,935	4.10
Colorado	64,964	64,382	299	283	4.40
Connecticut	36,712	35,221	151	147	4.17
Delaware	11,265	10,855	69	70	6.45
Dist of Columbia	14,602	9,560	129	81	8.47
Florida	223,601	223,630	1,386	1,382	6.18
Georgia	130,183	129,243	927	904	6.99
Hawaii	17,519	17,517	94	96	5.48
Idaho	21,825	22,181	94	101	4.55
Illinois	145,700	149,390	862	933	6.25
Indiana	83,122	82,170	542	559	6.80
Iowa	38,284	38,430	188	218	5.67
Kansas	38,013	36,519	208	227	6.22
Kentucky	52,410	54,752	324	355	6.48
Louisiana	61,203	61,018	408	406	6.65
Maine	12,072	12,298	75	75	6.10
Maryland	68,154	71,641	428	459	6.41
Massachusetts	71,426	70,702	275	262	3.71
Michigan	110,449	111,426	735	746	6.70
Minnesota	67,545	68,595	332	315	4.59
Mississippi	36,563	37,357	295	337	9.02
Missouri	73,869	73,034	550	468	6.41
Montana	11,752	11,799	50	52	4.41
Nebraska	26,237	25,821	161	146	5.65
Nevada	35,466	35,756	220	223	6.24
New Hampshire	12,064	12,116	41	46	3.80
New Jersey	98,952	101,250	421	452	4.46
New Mexico	22,343	23,767	120	132	5.55
New York	113,345	118,006	549	574	4.86
New York City	117,013	111,731	497	476	4.26
North Carolina	122,103	120,125	865	857	7.13
North Dakota	12,391	10,737	62	51	4.75
Ohio	137,460	136,832	1,031	982	7.18
Oklahoma	48,833	50,214	380	399	7.95
Oregon	44,161	43,631	248	236	5.41
Pennsylvania	136,916	137,745	854	831	6.03
Rhode Island	11,198	10,638	73	67	6.30
South Carolina	53,579	57,029	335	368	6.45
South Dakota	12,809	12,134	112	104	8.57
Tennessee	86,721	81,016	687	582	7.18
Texas	390,053	382,050	2,204	2,176	5.70
Utah	49,651	48,585	295	288	5.93
Vermont	5,518	5,655	27	30	5.31

Documentation Table 1. Live births and infant death by state of occurrence of birth and by state of residence at birth: United States, 2017 Cohort Data.
(Residence at birth is of the mother)

	Live Births		Infant Deaths		
State	Occurrence	Residence	Occurrence	Residence	Infant Mortality Rate
Virginia	99,475	100,391	544	569	5.67
Washington	87,331	87,562	326	328	3.75
West Virginia	19,252	18,675	118	124	6.64
Wisconsin	64,728	64,975	417	431	6.63
Wyoming	6,272	6,903	23	34	4.93

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2017 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	3,855,500	6,189	9,471	10,625	12,709	15,995	62,617	202,142	3,533,652	2,100
Infant deaths	22,167	5,282	3,393	1,306	782	647	1,551	1,914	7,115	177
Infant Mortality Rate	5.75	853.45	358.25	122.92	61.53	40.45	24.77	9.47	2.01	84.29
Male										
Live births	1,972,885	3,226	4,789	5,458	6,392	8,050	30,413	92,322	1,821,119	1,116
Infant deaths	12,351	2,832	1,964	804	462	360	809	978	4,025	117
Infant Mortality Rate	6.26	877.87	410.11	147.31	72.28	44.72	26.60	10.59	2.21	104.84
Female										
Live births	1,882,615	2,963	4,682	5,167	6,317	7,945	32,204	109,820	1,712,533	984
Infant deaths	9,816	2,450	1,429	502	320	287	742	936	3,090	60
Infant Mortality Rate	5.21	826.86	305.21	97.16	50.66	36.12	23.04	8.52	1.80	60.98
Non-Hispanic White										
Both sexes										
Live births	1,992,461	1,985	3,235	4,038	5,239	6,765	27,973	90,416	1,851,905	905
Infant deaths	22,167	5,282	3,393	1,306	782	647	1,551	1,914	7,115	177
Infant Mortality Rate	11.13	2660.96	1048.84	323.43	149.27	95.64	55.45	21.17	3.84	195.58
Male										
Live births	1,022,316	1,027	1,643	2,066	2,625	3,366	13,523	41,186	956,397	483
Infant deaths	12,351	2,832	1,964	804	462	360	809	978	4,025	117
Infant Mortality Rate	12.08	2757.55	1195.37	389.16	176.00	106.95	59.82	23.75	4.21	242.24
Female										
Live births	970,145	958	1,592	1,972	2,614	3,399	14,450	49,230	895,508	422
Infant deaths	9,816	2,450	1,429	502	320	287	742	936	3,090	60
Infant Mortality Rate	10.12	2557.41	897.61	254.56	122.42	84.44	51.35	19.01	3.45	142.18
Non-Hispanic Black										
Both sexes										
Live births	560,715	2,285	3,280	3,355	3,650	4,280	15,232	46,044	482,265	324
Infant deaths	6,085	1,913	1,024	350	181	157	369	449	1,585	57
Infant Mortality Rate	10.85	837.20	312.20	104.32	49.59	36.68	24.23	9.75	3.29	175.93
Male										
Live births	285,040	1,206	1,650	1,703	1,777	2,112	7,051	20,437	248,927	177
Infant deaths	3,376	1,043	610	213	109	86	189	231	857	38
Infant Mortality Rate	11.84	864.84	369.70	125.07	61.34	40.72	26.80	11.30	3.44	214.69

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2017 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.....	275,675	1,079	1,630	1,652	1,873	2,168	8,181	25,607	233,338	147
Infant deaths.....	2,709	870	414	137	72	71	180	218	728	19
Infant Mortality Rate.....	9.83	806.30	253.99	82.93	38.44	32.75	22.00	8.51	3.12	*
Non-Hispanic American Indian or Alaskan Native /1										
Both sexes										
Live births.....	29,957	50	74	77	100	129	516	1,533	27,463	15
Infant deaths.....	275	42	25	18	7	13	24	19	125	2
Infant Mortality Rate.....	9.18	840.00	337.84	*	*	*	46.51	*	4.55	*
Male										
Live births.....	15,310	32	39	38	53	78	269	716	14,077	8
Infant deaths.....	152	28	15	7	5	8	14	11	62	2
Infant Mortality Rate.....	9.93	875.00	*	*	*	*	*	*	4.40	*
Female										
Live births.....	14,647	18	35	39	47	51	247	817	13,386	7
Infant deaths.....	123	14	10	11	2	5	10	8	63	-
Infant Mortality Rate.....	8.40	*	*	*	*	*	*	*	4.71	*
Non-Hispanic Asian										
Both sexes										
Live births.....	249,250	275	476	516	679	906	3,920	14,487	227,910	81
Infant deaths.....	913	239	184	60	26	29	58	79	235	3
Infant Mortality Rate.....	3.66	869.09	386.55	116.28	38.29	32.01	14.80	5.45	1.03	*
Male										
Live births.....	128,520	151	233	275	355	463	2,055	6,770	118,176	42
Infant deaths.....	520	135	110	33	14	16	35	41	133	3
Infant Mortality Rate.....	4.05	894.04	472.10	120.00	*	*	17.03	6.06	1.13	*
Female										
Live births.....	120,730	124	243	241	324	443	1,865	7,717	109,734	39
Infant deaths.....	393	104	74	27	12	13	23	38	102	-
Infant Mortality Rate.....	3.26	838.71	304.53	112.03	*	*	12.33	4.92	0.93	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Both sexes										
Live births.....	9,426	14	24	15	28	29	162	459	8,691	4
Infant deaths.....	62	12	8	1	3	2	6	5	23	2
Infant Mortality Rate.....	6.58	*	*	*	*	*	*	*	2.65	*

Documentation Table 2. Live births,infant deaths and infant mortality rates by race of mother, sex and birthweight of child: United States, 2017 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.....	4,954	6	12	7	16	16	91	219	4,584	3
Infant deaths.....	32	4	4	1	2	1	3	2	13	2
Infant Mortality Rate.....	6.46	*	*	*	*	*	*	*	*	*
Female										
Live births.....	4,472	8	12	8	12	13	71	240	4,107	1
Infant deaths.....	30	8	4	-	1	1	3	3	10	-
Infant Mortality Rate.....	6.71	*	*	*	*	*	*	*	*	*
Hispanic										
Both sexes										
Live births.....	898,764	1,279	2,044	2,210	2,557	3,353	12,774	42,720	831,573	254
Infant deaths.....	4,519	1,092	779	270	179	127	343	393	1,323	13
Infant Mortality Rate.....	5.03	853.79	381.12	122.17	70.00	37.88	26.85	9.20	1.59	*
Male										
Live births.....	457,788	651	1,046	1,154	1,321	1,732	6,440	19,923	425,391	130
Infant deaths.....	2,428	567	439	163	105	72	162	190	723	7
Infant Mortality Rate.....	5.30	870.97	419.69	141.25	79.49	41.57	25.16	9.54	1.70	*
Female										
Live births.....	440,976	628	998	1,056	1,236	1,621	6,334	22,797	406,182	124
Infant deaths.....	2,091	525	340	107	74	55	181	203	600	6
Infant Mortality Rate.....	4.74	835.99	340.68	101.33	59.87	33.93	28.58	8.90	1.48	*

* Figure does not meet standard of reliability or precision: based on fewer than 20 deaths in the numerator
- Quantity zero
1/ Includes Aleut and Eskimos

Documentation Table 3. Live births, infant deaths, and infant mortality rates by birthweight, race of mother, and gestational age: United States, 2017 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.....	3,855,500	25,913	35,476	45,028	276,309	2,434,939	781,645	24,871	12,560	2,759
Infant deaths.....	22,167	9,908	1,511	929	2,348	5,759	1,089	335	53	235
Infant Mortality Rate.....	5.75	382.36	42.59	20.63	8.50	2.37	1.39	13.47	4.22	85.18
Non-Hispanic White										
Live births.....	1,992,461	9,200	15,429	21,132	134,561	1,237,324	424,118	141,621	8,025	1,051
Infant deaths.....	9,294	3,493	664	413	1,123	2,782	537	179	25	78
Infant Mortality Rate.....	4.66	379.67	43.04	19.54	8.35	2.25	1.27	1.26	3.12	74.22
Non-Hispanic Black										
Live births.....	560,715	8,548	9,070	9,656	50,750	355,389	97,486	27,786	1,585	445
Infant deaths.....	6,085	3,234	385	226	514	1,339	226	62	19	80
Infant Mortality Rate.....	10.85	378.33	42.45	23.41	10.13	3.77	2.32	2.23	*	179.78
Non-Hispanic American Indian or Alaskan Native /1										
Live births.....	29,957	213	304	406	2,622	19,154	5,534	1,585	80	59
Infant deaths.....	275	86	16	16	33	86	26	7	-	5
Infant Mortality Rate.....	9.18	403.76	*	*	12.59	4.49	4.70	*	*	*
Non-Hispanic Asian										
Live births.....	249,250	1,246	1,751	2,456	15,797	165,095	50,033	12,439	366	67
Infant deaths.....	913	476	50	37	98	200	33	12	1	6
Infant Mortality Rate.....	3.66	382.02	28.56	15.07	6.20	1.21	0.66	*	*	*
Non-Hispanic Native Hawaiian or Other Pacific Islander										
Live births.....	9,426	51	79	122	740	5,916	1,831	629	42	16
Infant deaths.....	62	22	3	3	6	19	5	-	1	3
Infant Mortality Rate.....	6.58	431.37	*	*	*	*	*	*	*	*
Hispanic										
Live births.....	898,764	5,605	7,635	9,785	63,368	582,315	178,815	48,752	2,034	455
Infant deaths.....	4,519	2,122	334	197	471	1,101	213	55	4	22
Infant Mortality Rate.....	5.03	378.59	43.75	20.13	7.43	1.89	1.19	1.13	*	48.35

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, 2017 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	Total Infant Deaths	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
All birthweights					
All Causes	22,167	14,789	11,899	2,890	7,378
	574.9	383.6	308.6	75.0	191.4
Congenital malformations (Q00-Q99)	4,578	3,327	2,664	663	1,251
	118.7	86.3	69.1	17.2	32.4
Short gestation and low birthweight nec (P07)	3,745	3,642	3,520	122	103
	97.1	94.5	91.3	3.2	2.7
Maternal complications of pregnancy (P01)	1,426	1,415	1,401	14	11
	37.0	36.7	36.3	*	*
Sudden infant death syndrome (R95)	1,318	124	26	98	1,194
	34.2	3.2	0.7	2.5	31.0
Accidents (unintentional injures) (V01-X59)	1,272	112	21	91	1,160
	33.0	2.9	0.5	2.4	30.1
Complications of placenta, cord, membranes (P02)	837	828	792	36	9
	21.7	21.5	20.5	0.9	*
Bacterial sepsis of newborn (P36)	593	576	256	320	17
	15.4	14.9	6.6	8.3	*
Respiratory distress of newborn (P22)	440	421	337	84	19
	11.4	10.9	8.7	2.2	*
Diseases of the circulatory system (I00-I99)	446	88	47	41	358
	11.6	2.3	1.2	1.1	9.3
Neonatal hemorrhage (P50-P52, P54)	384	373	257	116	11
	10.0	9.7	6.7	3.0	*
All other causes	7,128	3,883	2,578	1,305	3,245
	184.9	100.7	66.9	33.8	84.2
Less than 2,500 grams					
All Causes	14,875	12,134	10,240	1,894	2,741
	4652.1	3794.9	3202.5	592.3	857.2
Congenital malformations (Q00-Q99)	2,871	2,270	1,944	326	601
	897.9	709.9	608.0	102.0	188.0
Short gestation and low birthweight nec (P07)	3,659	3,557	3,435	122	102
	1144.3	1112.4	1074.3	38.2	31.9
Maternal complications of pregnancy (P01)	1,367	1,357	1,345	12	10
	427.5	424.4	420.6	*	*
Sudden infant death syndrome (R95)	281	26	6	20	255
	87.9	8.1	*	6.3	79.8
Accidents (unintentional injures) (V01-X59)	218	20	5	15	198
	68.2	6.3	*	*	61.9
Complications of placenta, cord, membranes (P02)	730	722	696	26	8
	228.3	225.8	217.7	8.1	*
Bacterial sepsis of newborn (P36)	537	521	220	301	16
	167.9	162.9	68.8	94.1	*
Respiratory distress of newborn (P22)	434	415	333	82	19
	135.7	129.8	104.1	25.6	*
Diseases of the circulatory system (I00-I99)	213	42	19	23	171
	66.6	13.1	*	7.2	53.5
Neonatal hemorrhage (P50-P52, P54)	352	343	241	102	9
	110.1	107.3	75.4	31.9	*
All other causes	4,213	2,861	1,996	865	1,352
	1317.6	894.8	624.2	270.5	422.8

Documentation Table 4. Infant deaths and infant mortality rates by age of death and birthweight for 10 major causes of infant death: United States, 2017 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	Total Infant Deaths	Total Neonatal	Early Neonatal	Late Neonatal	Post-Neonatal
2,500 grams or more					
All Causes	7,115	2,489	1,500	989	4,626
	201.3	70.4	42.4	28.0	130.9
Congenital malformations (Q00-Q99)	1,699	1,051	716	335	648
	48.1	29.7	20.3	9.5	18.3
Short gestation and low birthweight nec (P07)	12	11	11	-	1
	*	*	*	*	*
Maternal complications of pregnancy (P01)	21	20	19	1	1
	0.6	0.6	*	*	*
Sudden infant death syndrome (R95)	1,035	98	20	78	937
	29.3	2.8	0.6	2.2	26.5
Accidents (unintentional injures) (V01-X59)	1,053	92	16	76	961
	29.8	2.6	*	2.2	27.2
Complications of placenta, cord, membranes (P02)	89	88	78	10	1
	2.5	2.5	2.2	*	*
Bacterial sepsis of newborn (P36)	56	55	36	19	1
	1.6	1.6	1.0	*	*
Respiratory distress of newborn (P22)	6	6	4	2	-
	*	*	*	*	*
Diseases of the circulatory system (I00-I99)	229	44	27	17	185
	6.5	1.2	0.8	*	5.2
Neonatal hemorrhage (P50-P52, P54)	32	30	16	14	2
	0.9	0.8	*	*	*
All other causes	2,883	994	557	437	1,889
	81.6	28.1	15.8	12.4	53.5

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

-/ Quantity zero