

# **User Guide to the 2022 Fetal Death Public Use File**



# **2022 Fetal Death Data Set**

## **User's Guide**

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Questions on the documentation or substantive questions concerning the data should be directed to the Reproductive Statistics Branch, Division of Vital Statistics, NCHS, 3311 Toledo Road, Hyattsville, MD 20782-2003 (1-800) 232-4636.

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Division of Vital Statistics

# **2022 Fetal Death Data Set**

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Fetal Mortality: United States, 2021

<https://www.cdc.gov/nchs/data/nvsr/nvsr72/nvsr72-08.pdf>

Perinatal Mortality in the United States, 2020–2021

<https://www.cdc.gov/nchs/data/databriefs/db489.pdf>

Cause-of-Death Data from the Fetal Death File, 2018–2020

<https://www.cdc.gov/nchs/data/nvsr/nvsr71/nvsr71-07.pdf>

Births: Final Data for 2022

<https://www.cdc.gov/nchs/data/nvsr/nvsr73/nvsr73-02.pdf>

Infant Mortality in the United States: Provisional Data From the 2022 Period Linked Birth/Infant Death File

<https://wcms-wp.cdc.gov/nchs/data/vsrr/vsrr033.pdf>

User Guide to the 2022 Period Linked Birth/Infant Death Public Use File (Forthcoming)

## **Introduction**

This User Guide is for use with the 2022 fetal death public use data. The 2022 fetal death micro-data file may be downloaded at:

[http://www.cdc.gov/nchs/data\\_access/VitalStatsOnline.htm](http://www.cdc.gov/nchs/data_access/VitalStatsOnline.htm) [1]. The micro-data fetal death file for the U.S. does not include geographic detail (e.g., state or county of birth). The territories file contains selected geographic detail. Selected fetal death data for 2005-2021, including some geographic data and cause of death data, are available in CDC WONDER (<http://wonder.cdc.gov>), an interactive online data access tool. Selected fetal death data for 2022 are expected to be available in WONDER in early 2024.

For 2022, fetal death data are included on the file for all 50 states, the District Columbia, Guam and Puerto Rico. American Samoa did not report data for 2022 and data for the Northern Marianas and the U.S. Virgin Islands are excluded from the file due to the small number of events reported (6 and 14, respectively).

## **Definition of fetal death**

“Fetal death” means death prior to the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy and which is not an induced termination of pregnancy. The death is indicated by the fact that after such expulsion or extraction, the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps.

This definition [2] has been adopted by the Centers for Disease Control and Prevention’s National Center for Health Statistics (NCHS) as the nationally recommended standard and is

based on the definition published by the World Health Organization in 1950 and revised in 1988. The term “fetal death” is defined on an all-inclusive basis to end confusion arising from the use of such terms as stillbirth, spontaneous abortion, and miscarriage. All U.S. states and registration areas have definitions similar to the standard definition, except for Puerto Rico and Wisconsin, which have no formal definition [3]. Fetal deaths do not include induced terminations of pregnancy.

### **Reporting requirements for fetal death data**

Reporting requirements for fetal deaths vary by state, and these differences can have implications for comparisons of fetal and perinatal mortality rates by state [2]. Table A shows the period of gestation at which fetal death reporting is required for each reporting area for 2022. All jurisdictions require reporting of fetal deaths of at least 20 weeks of gestation or more, or a minimum of 350 grams birthweight (roughly equivalent to 20 weeks), or some combination of the two, but some require reporting at earlier gestational ages. Six states (Colorado, Georgia, Hawaii, New York, Rhode Island, and Virginia), American Samoa, and the U.S. Virgin Islands require reporting of fetal deaths at all periods of gestation (although one of these does not send data for fetal deaths at less than 20 weeks to NCHS), two states require reporting beginning at 12 weeks of gestation (although one of these does not send data for fetal deaths at less than 20 weeks to NCHS), and one state requires reporting beginning at 16 weeks of gestation.

User Guides for the Fetal Death Public Use files for 2007-2020 (Table A) indicated that South Dakota reported fetal deaths with birthweights of 500 grams or more (approximately 22 weeks of gestation or more). Over this period and to the present, however, South Dakota has reported fetal deaths at 20 weeks of gestation or more. Note that numbers of fetal deaths in the public use fetal death file reflect the correct reporting period of 20 weeks of gestation or more.

### **Classification of fetal deaths at 20 weeks of gestation or greater**

To maximize the comparability of data by year and by state while including as much meaningful data as possible, most tables published by NCHS are based on fetal deaths occurring at gestations of 20 weeks or more. These tabulations also include fetal deaths for which gestation is not stated for those states requiring reporting at 20 weeks of gestation or more only. Fetal deaths of not-stated gestation are excluded for states requiring reporting of all products of conception, except for those with a stated birthweight of 350 grams or more. In 2022, this rule was applied to the following reporting areas: Arkansas, Colorado, Georgia, Hawaii, New York (including New York City), Oklahoma, Pennsylvania, Rhode Island, and Virginia. American Samoa and the Virgin Islands also requiring reporting of all products of conception when data are available (see Table A). The summation of these rules results in the creation of the tabulation flag (position 10), which, when invoked, produces the number of records with a stated or presumed period of gestation of 20 weeks or more.

Data for fetal deaths occurring before 20 weeks of gestation should be used with caution, if at all, as they represent a limited, subnational reporting area and are not evaluated for data quality due to limited resources.

### **Classification of fetal deaths by occurrence and residence**

In tabulations by place of residence, fetal deaths occurring within the United States to U.S. citizens and to residents who are not citizens are allocated to the usual place of residence of the mother in the United States, as reported on the report of fetal death. Fetal deaths to U.S. residents occurring outside this country are not included in tabulations by place of residence or place of occurrence. Accordingly, the total count of fetal deaths for the United States by place of residence and by place of occurrence will not be identical. Fetal deaths to nonresidents of the

United States are included in data by place of occurrence but excluded from data by place of residence, as previously indicated. See Tables 2 and 3, respectively, for the number of fetal deaths by residence and occurrence for the 50 states and the District of Columbia for 2022.

*Geographic classification:* The geographic code structure for the 2022 fetal death file is given in the NCHS manual, “Vital Records Geographic Classification, 2014,” and in the country, county, and place geographic code files [4]. The geographic code structure on the 2022 file is based on results of the 2010 Census of Population.

### **Standard Report of Fetal Death**

The U.S. Standard Report of Fetal Death, issued by the U.S. Department of Health and Human Services, has served for many years as the principal means for attaining uniformity in the content of the documents used to collect information on fetal deaths in the United States. The U.S. Standard Report of Fetal Death has historically been revised every 10-15 years. Most state reports conform closely in content to the standard report but are modified to the extent required by the particular state's needs or by special provisions of the state's vital statistics law.

*The 2003 revision:* In 2003, a revised U.S. Standard Report of Fetal Death was adopted (Figure 1). For more information on the 2003 standard report and details regarding the certificate revision and links to the documents referenced below, see the NCHS website of the 2003 report revision at [http://www.cdc.gov/nchs/nvss/vital\\_certificate\\_revisions.htm](http://www.cdc.gov/nchs/nvss/vital_certificate_revisions.htm). The 2003 report of fetal death replaces the previous 1989 U.S. Standard Report of Fetal Death [5,6]. Implementation of the 2003 U.S. Standard Report of Fetal Death (revised) by the states and independent reporting areas was phased in from 2003 to 2018. All states, the District of Columbia, Guam, the Northern Marianas, Puerto Rico, and the Virgin Islands reported data based on the 2003 U.S. Standard Report of fetal Death as of 2018.

The 2003 Revision of the U.S. Standard Report of Fetal Death introduced substantial changes to data content and quality. Many key data items are common between revisions; however, a number of items were substantively modified. The 2003 revision also includes many new items never before collected on the Standard Report [5,6]. For details on data items comparable between revisions see the User Guide to the 2013 Fetal Death Public Use File [7].

A key aspect of the 2003 revision of the U.S. Standard Report of Fetal Death was the reengineering of the data collection and transmission system to improve data quality, speed of data collection and transmission, and to enhance standardization of data [5,8]. To encourage collection of data from the best sources, two worksheets were developed: the “Patient’s Worksheet” (available at: <https://www.cdc.gov/nchs/data/dvs/fetal-death-mother-worksheet-english-2019-508.pdf>) [9] and the “Facility Worksheet” (available at: <https://www.cdc.gov/nchs/data/dvs/fetal-death-facility-worksheet-2019-508.pdf>) [10]. For the Patient’s Worksheet, data are directly obtained from the mother and include items such as race, Hispanic origin, and educational attainment. For the Facility Worksheet, data are obtained directly from the medical records of the mother for items such as date of first prenatal care visit, pregnancy risk factors, and method of delivery. To assist hospital staff in completing the Facility Worksheet, a comprehensive instruction manual was developed: Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death (2003 Revision) (“Guide to the Facility Worksheet”; available at: <https://www.cdc.gov/nchs/data/dvs/GuidetoCompleteFacilityWks.pdf>) [11]. Detailed definitions and instructions for data items that are collected from the Facility Worksheet are in the “Guide to the Facility Worksheet”.

Additionally, a review of 2003-based report of fetal death revision items in 2014 by a collaborative effort among representatives from several vital statistics jurisdictions: The



National Association for Public Health Statistics and Information Systems (NAPHSIS), and NCHS, resulted in the decision to drop a number of items from the national report of fetal death data file for reasons of poor data quality. For more information on this effort and for a full list of items that were dropped, see:

[https://www.cdc.gov/nchs/nvss/deleted\\_items\\_from\\_birth\\_fetal\\_death\\_files.htm](https://www.cdc.gov/nchs/nvss/deleted_items_from_birth_fetal_death_files.htm).

The first ever eLearning training, “Applying Best Practices for Reporting Medical and Health Information on Birth Certificates,” on completing the medical and health information for the birth certificate and report of fetal death was launched in October 2016 and has recently been updated. The training emphasizes the importance and uses of birth certificate and report of fetal death data and best practices for collecting specific medical and health items, including cause of fetal death. The audience for the training includes birth information specialists, physicians, nurses, and hospital administrators. Continuing education credits for nurses, physicians, and non-clinical staff are also available. The training is internet-based and approximately 45 minutes in length. It is available at: [www.cdc.gov/nchs/training/BirthCertificateElearning](http://www.cdc.gov/nchs/training/BirthCertificateElearning).

### **Fetal death data files**

Micro-data files: Fetal death micro-data files for data years 1982-2022 may be downloaded at: [http://www.cdc.gov/nchs/data\\_access/VitalStatsOnline.htm](http://www.cdc.gov/nchs/data_access/VitalStatsOnline.htm). The general rules used to classify characteristics of fetal deaths are presented in several NCHS manuals [4, 8, 12]. These instructions are for states to use to collect and code the data items; they do not include NCHS edit recodes.

The 2003-2006 fetal death micro-data files include data items common to both the 1989 and 2003 revisions of the U.S. Standard Report of Fetal Death, as well as items exclusive to the 2003 revision. For 2007-2013, in an effort to improve the timeliness of fetal death data, the fetal

death files only included items that were comparable across the 1989 and 2003 revisions of the U.S. Standard Report of Fetal Death. From 2014-2017, the fetal mortality files again included data comparable between the two revisions, as well as items exclusive to the 2003 revision. Beginning with 2018, the fetal death file only includes data exclusive to the 2003 revision.

The U.S. micro-data fetal death files for 2005 through 2022 do not include geographic detail (e.g., mother's state of residence). Tabulations of fetal death data by state-level geographic detail and many other demographic and health items are available in the CDC WONDER web application (<http://wonder.cdc.gov/>) for data years 2005-2021. Additionally, certain geographic level data may also be available upon request: See "NCHS Data Release and Access Policy for Micro-data and Compressed Vital Statistics Files", available at:

[http://www.cdc.gov/nchs/nvss/dvs\\_data\\_release.htm](http://www.cdc.gov/nchs/nvss/dvs_data_release.htm).

The territories file includes data on fetal deaths occurring in Guam and Puerto Rico (American Samoa did not report data for 2022 and data for the Northern Marianas and the Virgin Islands were excluded due to small numbers). It includes limited geographical data such as information identifying individual territories and counties (or their equivalent) with populations of 100,000 or more by place of occurrence and residence.

### **Race of Mother**

The 2003 revision of the U.S. Standard Report of Fetal Death allows the reporting of the five race categories either alone (i.e., single-race) or in combination (i.e., more than one race or multiple races) for the mother [6], in accordance with the revised standards issued by the Office of Management and Budget (OMB) in 1997 [13]. The five categories for race specified in the revised standards are: American Indian or Alaska Native (AIAN), Asian, Black or African

American, Native Hawaiian or Other Pacific Islander (NHOPI), and White. Information on this change is presented elsewhere [14-16]. Starting in 2018, all states and the District of Columbia, in addition to Puerto Rico, Guam, the Northern Marianas, and the Virgin Islands, began reporting race according to the 1997 revised OMB standards.

Prior to 2018, to provide uniformity and comparability of the data before all or most of the data were 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. Beginning in 2018, data by race are shown according to the 1997 OMB standards. Bridged-race data are no longer available on the public use file beginning with the 2020 data year.

### **Hispanic Origin of Mother**

Hispanic origin and race: Hispanic origin and race are reported separately on the birth certificate (Figure 1). It is recommended that this information be reported directly by the mother via the Patient’s Worksheet [9]. For 1989 through 2018, data on the public use file and in NCHS reports for specified Hispanic groups are shown in most cases for five specified Hispanic groups: Mexican, Puerto Rican, Cuban, Central and South American, and “other and unknown Hispanic.” Starting with 2019, data are presented for the additional Hispanic group, Dominican (see item MHISPX in file position 143). This subgroup was previously included in “other and unknown Hispanic.” In tabulations of fetal death data by race and Hispanic origin, data for persons of Hispanic origin are not further classified by race because the vast majority of Hispanic women are reported as white. In tabulations of fetal death data by race only, data for persons of Hispanic origin are included in the data for each race group according to the mother’s reported race. In tabulations that include Hispanic origin, data for non-Hispanic persons are classified according to the race of the mother.

Beginning in 2022, records for which mother's detailed Hispanic origin is coded to "Latin American" will be recoded to "Other and Unknown Hispanic origin" instead of "Central and South American" for the mother's Hispanic origin recodes at positions 142 and 143 in the file layout.

### **Cause of Death Data**

A cause-of-fetal death item has been included on the report of fetal death since 1939 because it was considered critical information. However, the data were not released on public-use files or published until 2014 due to resource constraints and quality concerns. National data on cause of death are now released annually and are available for 2014-2022.

A major redesign of the cause of death (COD) section of the U.S. Standard Report of Fetal Death was undertaken with the 2003 revision. The goals of the redesign were to be consistent with instructions in the World Health Organization's (WHO) International Classification of Diseases (ICD) [17], and to thereby improve the quality and specificity of COD information, provide additional reporting guidance, and retain the flexibility to report any cause of death [18].

As with other deaths, the intent is for an attending physician or medical examiner or coroner to report cause of death [17]. The cause-of-fetal-death item requests a medical opinion from this person on the conditions and diseases resulting in or contributing to death, but also asks the medical certifier to report one cause separately (item 18a) from all other causes (item 18b) reported on the fetal death report. The certifier may form this medical opinion upon various medical tests, investigations, and examinations as is the case with other deaths. However, the term "initiating cause" used to refer to the one cause reported separately is unique to fetal deaths

because of differences in the format of the cause item and how the initiating cause is determined for fetal deaths compared with the “underlying cause” term used with other deaths [18].

NCHS codes cause of fetal death reported by the certifier using the ICD-10 classification [17]. Coding is accomplished through a combination of automated and manual processes following the guidelines laid out in Instruction manual part 2k, Instructions for the Automated Classification of the Initiating and Multiple Causes of Fetal Deaths [19]. Literal text stated on the fetal death report is assigned ICD-10 codes, and a single cause of death, the initiating cause of death, is selected from the conditions entered by the medical certifier in the cause-of-death section of the fetal death report. One section of the report (18a) is for the medical certifier to state the single condition that he or she considers the cause that initiated or triggered problems that resulted in the fetus dying at this point in time, so this is anticipated to be the initiating cause of death. If more than one cause or condition is entered by the medical certifier, the initiating cause is determined by the placement of the condition on the report, provisions of the ICD, and associated selection rule and modifications. A second section of the report (18b) is for the medical certifier to state any other conditions or causes that he or she felt played a role in causing the fetal death. Since more medical information may be reported on the report than is directly reflected in the initiating cause of death, this additional information is captured in multiple cause-of-fetal-death data.

The fetal death data file also includes a cause of death data item for 124 Selected Causes of Fetal Death (fetal cause list) (tables 7A and 7B). The reporting area for these tables includes areas that used the 2003 revision format and where less than 50 percent of an area’s cause data were attributed to the Fetal death of unspecified cause (unspecified cause) (P95).

### **Incomplete national reporting: The use of reporting flags**

The 2022 national fetal death file includes items that are not reported by some vital statistics jurisdictions or are reported but have an unknown level of 50% or higher and are flagged as not reporting. Reporting flags were developed to help the user more readily identify the correct number of fetal deaths for items with less than full national reporting. Reporting flags are available for many items in the file, and positions for reporting flags are noted along with each data item in the file layout.

### ***Translating “blanks”***

In the 2022 fetal death file, for data items which are not reported by all states, fetal deaths to residents of a state reporting the item that occurred in a state not reporting the item, are represented by “blanks.” Blanks should be treated as “unknowns” for tabulations. In sum, the correct use of reporting flags and translation of blanks will result in an accurate tally of fetal deaths for items with incomplete national reporting. For an example of SAS code that may be used to incorporate the correct use of reporting flags and the translation of blanks, see below.

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

The example below is for the receipt of WIC item, for which data for 47 states and the District of Columbia are included for 2022 (New York City does not report this item and Hawaii, Indiana, and Rhode Island reported this item for 2022 but had unknown levels of 50% or higher and were flagged as not reporting).

### **Sample SAS program**

```
01    DATA work;  
02        INFILE 'c:fet22us.dat' LRECL=3150;  
03        INPUT  
04            oe_tabflg    10  
05            wic    $229
```

```

06          restatus 131
07          f_wic $377;
08
09          /*Include if 20 weeks gestation or more*/
10          IF oe_tabflg EQ 2;
11          /*Exclude foreign residents*/
12          IF restatus NE 4;
13          /*Select reporting area*/
14          IF f_wic=1;
15          /*Convert blanks to unknown*/
16          IF wic = ' ' THEN wic ='U';
17
18  PROC FREQ;
19          TABLE wic;
20  RUN;

```

In this example, “oe\_tabflg” is used to select fetal deaths of 20 weeks gestation or more. Also, “restatus” is used to exclude fetal deaths to foreign residents (this is standard practice for all NCHS tabulations). As well in this example, blanks are represented by character values SAS code = (‘ ’). However, for some items in the file, e.g., number of previous cesarean deliveries, blanks are represented by numeric values for which the SAS code is (‘.’).

## **Quality of Data**

### ***State-Specific Data Quality Issues***

These state-specific data quality issues are of concern due to potential underreporting and/or inaccurate reporting for 2022.

- Previous live births now dead – Florida-Some records erroneously reported the current fetal death as a previous live birth now dead. Data for this item for this state should be used with caution.
- Attendant – New Jersey-No records have been reported as having a certified nurse midwife as the attendant since mid-2021. Data for this item for this state should be used with caution.
- Plurality - Hawaii-The number of multiple deliveries may be underreported due to the high percentage of records reported as unknown plurality; records with unknown plurality are imputed to a singleton delivery. Data for this item for this state should be used with caution.

### **Percentage of unknown responses**

Information on the completeness of reporting of fetal death (with a stated or presumed period of gestation of 20 weeks or more) data is shown in Table B, which presents a listing of items and the percentage of records that were not stated for each reporting area: all 50 states, the District of Columbia, New York City, Puerto Rico, Guam, American Samoa, the Northern Marianas, and the Virgin Islands. In general, percentages of unknown responses are considerably higher for fetal deaths than for live births, and among fetal deaths the percentage unknown is higher for fetal deaths that occur earlier in the gestational period. In fetal mortality tables, unknown responses are shown in frequencies tables but are excluded from the computation of percent distributions and fetal and perinatal mortality rates. Thus, rates for variables with a substantial percentage of unknown responses (such as birthweight) may understate the “true” rates of fetal mortality for that characteristic.



As high levels of missing data are a data quality concern, beginning with the 2017 data year, jurisdictions with a 50% or greater unknown level for a particular item are flagged as not reporting that item.

### ***State Specific Issues***

The items below had unknown levels of 50% or higher for the jurisdiction(s) noted and are flagged as not reporting for those jurisdictions in 2022:

- Mother's education-Hawaii and Rhode Island
- Father's age- Alabama, Arkansas, the District of Columbia, Georgia, Hawaii, New York, Rhode Island, Virginia, and Guam
- Previous live births dead-Hawaii
- Live birth order-Hawaii
- Date of last live birth-Hawaii
- Date of first prenatal care-Hawaii and Rhode Island
- WIC-Hawaii, Indiana, Rhode Island, and Guam
- Mother's pre-pregnancy weight-Hawaii
- Mother's pre-pregnancy BMI-Hawaii and Guam
- All smoking items-Rhode Island and Guam
- Fetal presentation-Hawaii
- Route and method of delivery-Hawaii
- Trial of labor attempted-Hawaii
- Date of last normal menses-Colorado and Hawaii
- Estimated time of fetal death-District of Columbia, Hawaii, Kansas, Nevada, New York, Oklahoma, Virginia, and Guam

- Cause of death- Arizona, California, Georgia, Hawaii, Mississippi, New York City, North Dakota, Vermont, and Guam

### **Change in items reported by New York state**

Due to reinterpretation of state law, as of September 2022, New York state no longer reports data on the following items to NCHS:

- Day of delivery
- Mother's date of birth
- City of residence
- Inside city limits
- Father's date of birth
- Match number

In order to help data users generate correct counts, additional reporting flags have been added where appropriate.

### **Development of new imputation for day of delivery for New York state**

For all jurisdictions, when a record has an unknown value for the day of delivery, the day is imputed to 15. Because the date of delivery is used to create several derived data items, such as month prenatal care began, and the day of delivery is missing for all records that occurred in New York State after September 2022, a more robust imputation for day of delivery was developed for fetal deaths that occurred in New York state in order to create a more natural distribution. That is, for any record with an unknown day of delivery with a complete date of last normal menses and a valid value for the obstetric estimate of gestational age, a date of delivery is calculated. If the month of this calculated date matches the month of delivery

reported on the record or the calculated date falls within 4 days of the start of the reported month, then the calculated day of delivery is used. Otherwise, the day of delivery is imputed to 15.

### **Computation of rates**

Fetal mortality rates are computed as the number of fetal deaths at 20 weeks of gestation or more per 1,000 live births and fetal deaths at 20 weeks or more. Perinatal mortality rates are computed in a similar fashion, as shown below. The denominators for all fetal and perinatal mortality rates are live births plus fetal deaths in the specified gestational age group, thus representing the population at risk of the event [2].

$$\text{Fetal mortality rate} = \frac{\text{Fetal deaths at 20 weeks of gestation or more}}{\text{Live births and fetal deaths at 20 weeks or more}} \times 1,000$$

Perinatal mortality rate, definition I =

$$\frac{\text{Fetal deaths at 28 weeks or more and infant deaths under 7 days}}{\text{Live births and fetal deaths at 28 weeks or more}} \times 1,000$$

Perinatal mortality rate, definition II =

$$\frac{\text{Fetal deaths at 20 weeks or more and infant deaths under 28 days}}{\text{Live births and fetal deaths at 20 weeks or more}} \times 1,000$$

In each case, the fetal deaths included in the denominator of each rate mirror the fetal deaths included in the numerator. A previous NCHS report [20] contains information on the historical development of various perinatal measures. An asterisk (\*) is shown in place of any rate based on fewer than 20 fetal or perinatal deaths in the numerator.

## **Random variation in fetal and perinatal mortality**

The number of fetal deaths, perinatal 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 [21]. As a result, numbers of births, fetal deaths, perinatal deaths, and fetal and perinatal 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 (RSE) is usually small. When the number of events is small (perhaps less than 100) and the probability of such an event is small, considerable caution must be used in interpreting the data. Such infrequent events may be assumed to follow a Poisson probability distribution. Estimates of RSEs and 95% confidence intervals are shown below. In the formulas, D is the number of fetal or perinatal deaths and B is the number of live births plus fetal deaths used as the denominator in computing fetal and perinatal mortality rates.

The formulas for the two RSEs are as follows:

$$\text{RSE}(D)=100*\sqrt{\frac{1}{D}} \text{ and}$$

$$\text{RSE}(B)=100*\sqrt{\frac{1}{B}} .$$

For example, let us say that for group A the number of fetal deaths was 238, whereas the number of live births plus fetal deaths in the denominator was 32,650 yielding a fetal mortality rate of 7.29 fetal deaths per 1,000 live births and fetal deaths.

$$\text{The RSE of the deaths} = 100 * \sqrt{\frac{1}{238}} = 6.48,$$

whereas the RSE for the births plus fetal deaths in the denominator is

$$\text{RSE} = 100 * \sqrt{\frac{1}{32,650}} = 0.55.$$

The formula for the RSE of the fetal mortality rate is:

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

Thus the RSE for the example above is:

$$= 100 * \sqrt{\frac{1}{238} + \frac{1}{32,650}} = 6.51.$$

### **Normal distribution**

When the number of events is greater than 100, the normal distribution is used to estimate the 95 percent confidence intervals of a rate,  $R_I$ , as follows:

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

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

Thus, for Group A:

$$\text{Lower: } 7.29 - (1.96 * 7.29 * \frac{6.51}{100}) = 6.36$$

$$\text{Upper: } 7.29 + (1.96 * 7.29 * \frac{6.51}{100}) = 8.22$$

Thus the chances are 95 out of 100 that the true fetal or perinatal mortality rate for Group A lies somewhere in the 6.36–8.22 interval.

### **Poisson distribution**

When the number of events in the numerator is less than 100 the confidence interval for the rate,  $R_I$ , can be estimated based on the Poisson distribution using the values in Table III (2).

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

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

where  $D_{\text{adj}}$  is the adjusted number of fetal or perinatal deaths (rounded to the nearest integer) used to take into account the RSE of the number of deaths in the numerator and the number of live births plus fetal deaths in the denominator, and is computed as follows:

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

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

For example, let us say that for Group B the number of fetal deaths was 73, and the number of live births plus fetal deaths in the denominator was 11,422, and the fetal mortality rate was 6.39.

$$D_{\text{adj}} = \frac{73 * 11,422}{73 + 11,422} = 73$$

Therefore the 95 percent confidence interval (using the formula in Table III for 1\N99 infant deaths) =

$$\text{Lower: } 6.39 * 0.78384 = 5.01$$

$$\text{Upper: } 6.39 * 1.25735 = 8.03$$

### **Comparison of two fetal or perinatal 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 should 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.

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## Control Count of Records

### File Characteristics: Fetal Public Use File 2022

#### All files:

Record format:	Blocked, Fixed, Format
Code scheme:	Numeric/Alphabetic/Blank
Record length:	3150

#### **Record counts**

#### U.S. file record count:

##### Counts of all fetal deaths:

Record count	40,113
By occurrence	40,113
By residence	39,918
To foreign residents	195

##### Counts of 20 weeks or more:

Record count	20,368
By occurrence	20,368
By residence	20,202
To foreign residents	166

##### Counts of less than 20 weeks:

Record count	19,745
By occurrence	19,745
By residence	19,716
To foreign residents	29

#### U.S. territories file record count:

##### Counts of all fetal deaths:

Record count	259
By occurrence	259
By residence	254
To foreign residents	5

##### Counts of 20 weeks or more:

Record count	257
By occurrence	257
By residence	252
To foreign residents	5

##### Counts of less than 20 weeks:

Record count	2
By occurrence	2
By residence	2
To foreign residents	-

## 2022 LIST OF DATA ELEMENTS AND LOCATIONS

<u>Data Items</u>	<u>Locations</u>
1. General	
a) Tabulation flags (gestational age)	10
b) Data year	11-14
c) Resident status	131
2. Prenatal Care	
a) Month began	202-203
3. Fetus	
a) Sex	316
b) Plurality	301
c) Weight at delivery	349-355
d) Gestational age	340-344(NCHS Standard item), 331-335
e) Month/year of delivery	11-16
f) Time of delivery	21-24
g) Day of week of delivery	25
4. Mother	
a) Age	86-90
b) Race	132-136
c) Education	145
d) Hispanic origin	142-144
5. Pregnancy History	
a) Live birth order	187
b) Birth interval	197-201
6. Father	
a) Age	177-180
7. Other Items	
a) Attendant at delivery	283
b) Place of delivery	34, 52
c) WIC receipt	229
8. Medical and Health Data	
a) Method of delivery	274-277, 280
b) Medical risk factors	257-267
c) Other risk factors	
i. Tobacco	230-238
ii. Mother's pre-pregnancy body mass index (BMI)	245-249
d) Maternal morbidity	281-282
9. Residence reporting flags	372-445

10. Cause of Death

- |  |           |
|--|-----------|
| a.) Initiating cause or condition code   | 2603-2607 |
| b.) Initiating cause or condition recode | 2643-2645 |
| c.) Initiating cause or condition flag   | 2651      |

**2022 Fetal Death  
Public Use Record Layout**

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
1-6	6	FILLER					
7	1	VERSION	<b>Version</b>		A,S	A S	State used the 2003 version of the US Standard Report of Fetal Death (Revised) State used the 1989 version of the US Standard Report of Fetal Death (Unrevised)
8-9	2	FILLER					
10	1	OE_TABFLG	<b>Obstetric Estimate Tabulation Flag</b> (Use with NCHS Standard item)		A,S	1 2	Under 20 weeks (exclude) 20 weeks or more (include)
11-14	4	DOD_YY	<b>Delivery Year</b>		A,S	2014	Year of delivery
15-16	2	DOD_MM	<b>Delivery Month</b>		A,S	01 02 03 04 05 06 07 08 09 10 11 12	January February March April May June July August September October November December
17-20	4	FILLER					
21-24	4	DOD_TT	<b>Delivery Time</b>	c409	A	0000-2359 9999	Time of Birth Not Stated
25	1	DOD_WK	<b>Weekday</b>		A,S	1 2 3	Sunday Monday Tuesday

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						4	Wednesday
						5	Thursday
						6	Friday
						7	Saturday
26-27	2	OSTATE	<b>Territory of Occurrence</b> <i>(This item is available in the territory file only, geographic codes are not available in the U.S. file)</i>		A,S		
			<u>Territories</u>			AS	American Samoa
						GU	Guam
						MP	Northern Marianas
						PR	Puerto Rico
						VI	Virgin Islands
28-29	2	FILLER					
30-32	3	OCNTYFIPS	<b>Occurrence FIPS County</b> <i>(This item is available in the territory file only, geographic codes are not available in the U.S. file) Data are suppressed if population &lt; 100,000</i>		A,S		
						000	No county level geography
						001-998	County of Occurrence (See Geographic Table)
						999	County of less than 100,000
33	1	OCNTYPOP	<b>Occurrence Territory County Population</b> <i>(This item is available in the territory file only, geographic codes are not available in the U.S. file)</i>		A,S		
						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

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards



Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						9	County less than 100,000
34	1	BFACIL	<b>Delivery Place (Revised)</b>	409	A	1 2 3 4 5 6 7 9	Hospital Freestanding Birth Center Home (intended) Home (not intended) Home (unknown if intended) Clinic/Doctor's Office Other Unknown
35-51	17	FILLER					
52	1	BFACIL3	<b>Delivery Place Recode</b>		A,S	1 2 3	In Hospital Not in Hospital Unknown/not stated
53-83	31	FILLER					
84	1	MAGE_IMPFLG	<b>Mother's Age Imputed</b>		A,S	Blank 1	Age not imputed Age imputed
85	1	MAGE_REPFLG	<b>Reported Age of Mother Flag</b>		A,S	Blank 1	Reported age not used Reported age used
86-87	2	MAGER	<b>Mother's Single Year of Age</b>	432	A,S	12 13 14 15 16	12 years and under 13 years 14 years 15 years 16 years

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						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
88-89	2	MAGER14	<b>Mother's Age Recode 14</b>	432	A,S	01	Under 15 Years
						03	15 years
						04	16 years
						05	17 years
						06	18 years
						07	19 years

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						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
90	1	MAGER9	<b>Mother's Age Recode 9</b>	432	A,S	1	Under 15 years
						2	15-19 years
						3	20-24 years
						4	25-29 years
						5	30-34 years
						6	35-39 years
						7	40-44 years
						8	45-49 years
						9	50-54 years
91-92	2	MBCNTRY	<b>Mother's Birth Country</b> c409 <i>(This item is available in the territory file only, geographic codes are not available in the U.S. file)</i>		A	AA-ZZ	See Geographic Documentation
93-96	4	FILLER					
97	1	MBSTATE_REC	<b>Mother's Birth State Recode</b> c409		A	1	Native born (50 U.S. States)
						2	Foreign born (includes territories)
						3	Unknown or Not Stated
98-101	4	FILLER					
102-103	2	MRSTATEPSTL	<b>Mother's Residence Postal State</b> <i>(This item is available in the territory file only, geographic codes are not available in the U.S. file)</i>		A,S		
			<u>United States</u>			AK	Alaska
						AL	Alabama
						AR	Arkansas

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						AZ	Arizona
						CA	California
						CO	Colorado
						CT	Connecticut
						DE	Delaware
						DC	District of Columbia
						FL	Florida
						GA	Georgia
						HI	Hawaii
						ID	Idaho
						IL	Illinois
						IN	Indiana
						IA	Iowa
						KS	Kansas
						KY	Kentucky
						LA	Louisiana
						MA	Massachusetts
						MD	Maryland
						ME	Maine
						MI	Michigan
						MN	Minnesota
						MO	Missouri
						MS	Mississippi
						MT	Montana
						NC	North Carolina
						ND	North Dakota
						NE	Nebraska
						NH	New Hampshire
						NJ	New Jersey
						NM	New Mexico
						NV	Nevada
						NY	New York
						OH	Ohio
						OK	Oklahoma
						OR	Oregon
						PA	Pennsylvania
						RI	Rhode Island
						SC	South Carolina
						SD	South Dakota
						TN	Tennessee
						TX	Texas

\* For the Version column (Vers) the following codes apply:

A      2003 Version of US Standard Birth Certificate  
S      1989 Version of US Standard Birth Certificate  
s      1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						UT	Utah
						VA	Virginia
						VT	Vermont
						WA	Washington
						WI	Wisconsin
						WV	West Virginia
						WY	Wyoming
			<u>Territories</u>			AS	American Samoa
						GU	Guam
						MP	Northern Marianas
						PR	Puerto Rico
						VI	Virgin Islands
			<u>Canadian Provinces</u>			AB	Alberta
						BC	British Columbia
						MB	Manitoba
						NB	New Brunswick
						NL	Newfoundland and Labrador
						NT	Northwest Territories
						NS	Nova Scotia
						NU	Nunavut
						ON	Ontario
						PE	Prince Edward Island
						QC	Quebec
						SK	Saskatchewan
						YT	Yukon Territory
			<u>Foreign</u>			XX	Foreign (Rest of world)
						ZZ	Not Classifiable
104-106	3	MRCNTYFIPS	<b>Mother's FIPS County of Residence</b> A,s (This item is available in the territory file only, geographic codes are not available in the U.S. file) Data are suppressed if population < 100,000			000	No county level geography
						001-998	County of residence (See Geographic Table)

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						999	County of less than 100,000
107-111	5	FILLER					
112	1	RCNTY_POP	<b>Population of Residence County</b> <i>(This item is available in the territory file only, geographic codes are not available in the U.S. file)</i>		A,S		
						0	County of 1,000,000 or more
						1	County of 500,000 to 1,000,000
						2	County of 250,000 to 500,000
						3	County of 100,000 to 250,000
						9	County less than 100,000
						Z	Foreign resident
113-129	17	FILLER					
130	1	RECTYPE	<b>Record Type</b> <i>(This item is available in the territory file only, geographic codes are not available in the U.S. file)</i>		A,S		
						1	RESIDENT: State and county of occurrence and residence are the same.
						2	NONRESIDENT: State and county of occurrence and residence are different.
131	1	RESTATUS	<b>Residence Status</b> <u>United States</u>		A,S		
						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>Territories</u>			1	RESIDENT: State and county of occurrence and residence

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
							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.
					3		INTERTERRITORY RESIDENT: Territory of occurrence and residence are different but both are US Territories.
					4		FOREIGN RESIDENT: The residence is not a US Territory.
132-133	2	MRACE31	<b>Mother's Race Recode 31</b>	425	A	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	White (alone) Black (alone) AIAN (American Indian or Alaskan Native) (alone) Asian (alone) NHOPI (Native Hawaiian or Other Pacific Islander) (alone) Black And White Black and AIAN Black and Asian Black and NHOPI AIAN and White AIAN and Asian AIAN and NHOPI Asian and White Asian and NHOPI NHOPI and White Black, AIAN, and White Black, AIAN, and Asian Black, AIAN, and NHOPI Black, Asian, and White Black, Asian, and NHOPI Black, NHOPI, and White AIAN, Asian, and White AIAN, NHOPI, and White AIAN, Asian, and NHOPI Asian, NHOPI, and White Black, AIAN, Asian, and White Black, AIAN, Asian, and NHOPI Black, AIAN, NHOPI, and White Black, Asian, NHOPI, and White AIAN, Asian, NHOPI, and White Black, AIAN, Asian, NHOPI, and White

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
134	1	MRACE6	<b>Mother's Race Recode 6</b>	425	A	1 2 3 4 5 6	White (alone) Black (alone) AIAN (alone) Asian (alone) NHOPI (alone) More than one race
135-136	2	MRACE15	<b>Mother's Race Recode 15</b>	425	A	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15	White (alone) Black (alone) AIAN (alone) Asian Indian (alone) Chinese (alone) Filipino (alone) Japanese (alone) Korean (alone) Vietnamese (alone) Other Asian (alone) Hawaiian (alone) Guamanian (alone) Samoan (alone) Other Pacific Islander (alone) More than one race
137	1	FILLER					
138	1	MRACEIMP	<b>Mother's Race Imputed</b>		A,S	Blank 1 2	Mother's race not imputed Unknown race imputed All other races, formerly coded 09, imputed.
139-141	3	FILLER					
142	1	UMHISP	<b>Mother's Hispanic Origin</b>	424	A,S	0	Non-Hispanic

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards



Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central or South American
						5	Other and Unknown Hispanic
						9	Origin unknown or not stated
143	1	MHISPX	<b>Mother's Hispanic Origin</b>			0	Non-Hispanic
						1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central or South American
						5	Dominican
						6	Other and Unknown Hispanic
						9	Origin unknown or not stated
144	1	SR_MRACEHISP	<b>Mother's Race/Hispanic Origin</b>	c425	A	1	Non-Hispanic White (alone)
						2	Non-Hispanic Black (alone)
						3	Non-Hispanic AIAN (alone)
						4	Non-Hispanic Asian (alone)
						5	Non-Hispanic NHOPI (alone)
						6	Non-Hispanic more than one race
						7	Hispanic
						8	Origin unknown or not stated
145	1	MEDUC	<b>Mother's Educ-Revised</b>	372	A	1	8 <sup>th</sup> grade or less
						2	9 <sup>th</sup> through 12 <sup>th</sup> 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
146-171	26	FILLER					
			* For the Version column (Vers) the following codes apply:				
		A	2003 Version of US Standard Birth Certificate				
		S	1989 Version of US Standard Birth Certificate				
		s	1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards				

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
172	1	FAGERPT_FLG	<b>Father's Reported Age Used</b>		A,S	Blank 1	Father's reported age not used Father's reported age used
173-176	4	FILLER					
177-178	2	FAGECOMB	<b>Father's Combined Age</b>	426	A,S	09-98 99	Father's combined age in years Unknown or not stated
179-180	2	FAGEREC11	<b>Father's Age Recode 11</b>	426	A,S	01 02 03 04 05 06 07 08 09 10 11	Under 15 years 15-19 years 20-24 years 25-29 years 30-34 years 35-39 years 40-44 years 45-49 years 50-54 years 55-98 years Not stated
181-182	2	PRIORLIVE	<b>Prior Births Now Living</b>	440	A,S	00-30 99	Number of children still living from previous live births. Unknown or not stated
183-184	2	PRIORDEAD	<b>Prior Births Now Dead</b>	441	A,S	00-30 99	Number of children dead from previous live births. Unknown or not stated
185-186	2	FILLER					
187	1	LBO_REC	<b>Live Birth Order Recode</b>	441	A,S	0-7 8 9	Number of live birth order. 8 or more live births Unknown or not stated

\* For the Version column (Vers) the following codes apply:

A 2003 Version of US Standard Birth Certificate

S 1989 Version of US Standard Birth Certificate

s 1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
188-196	9	FILLER					
197-199	3	ILLB_R	<b>Interval Since Last Live Birth Recode</b> 427	A	000-003 004-300 888 999	Plural delivery Months since last live birth Not applicable Unknown or not stated	
200-201	2	ILLB_R11	<b>Interval Since Last Live Birth Recode 11</b> 427	A	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 Unknown or not stated	
202-203	2	PRECARE	<b>Month Prenatal Care Began (Revised)</b> 403	A	00 01-10 99	No prenatal care Month prenatal care began Unknown or not stated	
204	1	PRECARE_REC	<b>Month Prenatal Care Began Recode (Revised)</b> 403	A	1 2 3 4 5	1 <sup>st</sup> to 3 <sup>rd</sup> month 4 <sup>th</sup> to 6 <sup>th</sup> month 7 <sup>th</sup> to final month No prenatal care Unknown or not stated	
205-228	24	FILLER					
229	1	WIC	<b>WIC</b> 377	A	Y N	Yes No	

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						U	Unknown or not stated
230-231	2	CIG_0	<b>Cigarettes Before Pregnancy</b>	405	A	00-97 98 99	Number of cigarettes daily 98 or more cigarettes daily Unknown or not stated
232-233	2	CIG_1	<b>Cigarettes 1<sup>st</sup> Trimester</b>	406	A	00-97 98 99	Number of cigarettes daily 98 or more cigarettes daily Unknown or not stated
234-235	2	CIG_2	<b>Cigarettes 2<sup>nd</sup> Trimester</b>	407	A	00-97 98 99	Number of cigarettes daily 98 or more cigarettes daily Unknown or not stated
236-237	2	CIG_3	<b>Cigarettes 3<sup>rd</sup> Trimester</b>	408	A	00-97 98 99	Number of cigarettes daily 98 or more cigarettes daily Unknown or not stated
238	1	CIG_REC	<b>Cigarette Recode (Revised)</b>	374	A	Y N U	Yes No Unknown or not stated
239-242	4	FILLER					
243-244	2	M_Ht_In	<b>Mother's Height in Inches</b>	375	A	30-78 99	Height in inches Unknown or not stated
245-248	4	BMI	<b>BMI (prepregnancy)</b>	445	A	13.0-69.9 99.9	Body Mass Index Unknown or not stated
249	1	BMI_R	<b>Body Mass Index Recode (prepregnancy)</b>	445	A	1 2 3 4	Underweight <18.5 Normal 18.5-24.9 Overweight 25.0-29.9 Obesity I 30.0-34.9

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						5	Obesity II 35.0-39.9
						6	Extreme Obesity III ≥ 40.0
						9	Unknown or not stated
250-252	3	FILLER					
253-255	3	PWgt_R	<b>Prepregnancy Weight Recode</b>	376	A	075-375 999	Weight in pounds Unknown or not stated
256	1	FILLER					
257-262	6	<b><u>Risk Factors (Revised)</u></b>			A		
			The checkbox items indented below follow this code structure:				Y      Yes
						N      No	
						U      Unknown or not stated	
257	1	RF_DIAB	<b>Prepregnancy Diabetes</b>	378			
258	1	RF_GEST	<b>Gestational Diabetes</b>	379			
259	1	RF_PHYP	<b>Prepregnancy Hypertension</b>	380			
260	1	RF_GHYP	<b>Gestational Hypertension</b>	381			
261	1	RF_ECLAM	<b>Hypertension Eclampsia</b>	382			
262	1	RF_INFTR	<b>Infertility Treatment</b>	383			
263	1	RF_FEDRG	<b>Fertility Enhancing Drugs</b>	384	A	Y N X U	Yes No Not applicable Unknown or not stated
264	1	RF_ARTEC	<b>Asst. Reproductive Technology</b>	385	A	Y N X U	Yes No Not applicable Unknown
265	1	RF_CESAR	<b>Previous Cesareans</b>	386	A	Y N U	Yes No Unknown or not stated

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S      1989 Version of US Standard Birth Certificate

s      1989 Version of US Standard Birth Certificate but this element conforms to the 2003 standards

Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
266-267	2	RF_CESARN	<b>Previous Cesareans Num</b>	387	A	00 01-30 99	None Number of previous cesareans Unknown or not stated
268-273	6	FILLER					
274-277	6	<b><u>Method of Delivery (Revised)</u></b>					
274	1	ME_PREP	<b>Fetal Presentation</b>	388	A	1 2 3 9	Cephalic Breech Other Unknown or not stated
275	1	ME_ROUT	<b>Route &amp; Method of Delivery</b>	389	A	1 2 3 4 9	Spontaneous Forceps Vacuum Cesarean Unknown or not stated
276	1	ME_TRIAL	<b>Trial of Labor Attempted</b>	390	A	Y N X U	Yes No Not applicable Unknown or not stated
277	1	RDMETH_REC	<b>Delivery Method Recode (Revised)</b>	c389	A	1 2 3 4 5 6 9	Vaginal (excludes vaginal after previous C section) Vaginal after previous c-section Primary C-section Repeat C-section Vaginal (unknown if previous c-section) (2003 Standard only) C-section (unknown if previous c-section) (2003 Standard only) Not stated
278-279	2	FILLER					

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
280	1	DMETH_REC	<b>Delivery Method Recode</b>	410	A,S	1 2 9	Vaginal C-section Not stated
281-282	2	<b><u>Maternal Morbidity</u></b> The checkbox items indented below follow this structure:			A	Y N U	Yes No Unknown or not stated
281	1	MM_RUPT	<b>Ruptured Uterus</b>	391			
282	1	MM_ICU	<b>Admit to Intensive Care</b>	392			
283	1	ATTEND	<b>Attendant</b>	433	A,S	1 2 3 4 5 9	Doctor of Medicine (MD) Doctor of Osteopathy (DO) Certified Nurse Midwife (CNM) Other Midwife Other Unknown or not stated
284-300	17	FILLER					
301	1	DPLURAL	<b>Plurality Recode</b>		A,S	1 2 3 4	Single Twin Triplet Quadruplet or higher
302	1	FILLER					
303	1	IMP_PLUR	<b>Plurality Imputed</b>		A,S	Blank 1	Plurality is not imputed Plurality is imputed
304-315	12	FILLER					

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
316	1	SEX	<b>Sex of Infant</b>		A,S	M F	Male Female
317	1	IMP_SEX	<b>Sex Imputed</b> Only where gestation is stated or presumed to be 20 weeks or more		A,S	Blank 1	Infant Sex not Imputed Infant Sex is Imputed
		<b><u>Gestation</u></b>					
318-319	2	DLMP_MM	<b>Last Normal Menses Month</b>	429	A,S	01 02 03 04 05 06 07 08 09 10 11 12 99	January February March April May June July August September October November December Unknown or not stated
320-321	2	FILLER					
322-325	4	DLMP_YY	<b>Last Normal Menses Year</b>	431	A,S	nnnn 9999	Year of last normal menses Unknown or not stated
326-328	3	FILLER					
329	1	GEST_IMP	<b>Gestation Imputed Flag</b>		A,S	Blank 1	Gestation is not imputed Gestation is imputed
330	1	OBGEST_FLG	<b>Obstetric Estimate of Gestation Used Flag</b>		A,S	Blank 1	Obstetric Estimate is not used Obstetric Estimate is used
331-332	2	COMBGEST	<b>Gestation – Detail in Weeks</b>	404	A,S	02-47 99	2 <sup>nd</sup> through 47 <sup>th</sup> week of Gestation Unknown

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
333-334	2	GESTREC12	<b>Gestation Recode 12</b>	404	A,S	01 02 03 04 05 06 07 08 09 10 11 12	Under 16 weeks 16-19 weeks 20-23 weeks 24-27 weeks 28-31 weeks 32-33 weeks 34-36 weeks 37-38 weeks 39-40 weeks 41 weeks 42 weeks and over Unknown
335	1	GESTREC5	<b>Gestation Recode 5</b>	404	A,S	1 2 3 4 5	Under 20 weeks 20-23 weeks 24-27 weeks 28 weeks and over Unknown
336-337	2	OEGest_Unedt	<b>Obstetric Gestation 373</b>	A,S		0-98 02-47 99	Range of obstetric estimate of gestation - revised Range of clinical estimate of gestation - unrevised Unknown or not stated
338	1	FILLER					
339	1	COMBGEST_USED	<b>Combined Gestation Used Flag</b>		A,S	blank 1	Combined gestation not used Combined gestation used
340-341	2	OEGest_Comb	<b>Obstetric Estimate Edited</b> (NCHS Standard item)	373	A,S	02-47 99	Weeks of gestation Not stated
342-343	2	OEGest_R12	<b>Obstetric Estimate Recode12</b> (NCHS Standard item)	373	A,S	01  02 03 04 05 06 07 08	Under 16 weeks  16-19 weeks 20-23 weeks 24-27 weeks 28-31 weeks 32-33 weeks 34-36 weeks 37-38 weeks

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						09	39-40 weeks
						10	41 weeks
						11	42 weeks and over
						12	Unknown
344	1	OEGest_R5	<b>Obstetric Estimate Recode 5</b> (NCHS Standard item)	373	A,S	1	Under 20 weeks
						2	20-23 weeks
						3	24-27 weeks
						4	28 weeks and over
						5	Unknown
345-348	4	FILLER					
349-352	4	DBWT	<b>Birth Weight – Detail in Grams</b>	442	A,S	0001-8165 9999	Number of grams Not stated birth weight
353-354	2	BWTR14	<b>Birth Weight Recode 14</b>	442	A,S	01 02 03 04 05 06 07 08 09 10 11 12 13 14	0249 grams or less 0250 – 0349 grams 0350 – 0499 grams 0500 – 0999 grams 1000 – 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 Unknown or Not Stated
355	1	BWTR4	<b>Birth Weight Recode 4</b>	442	A,S	1 2	1499 grams or less 1500 – 2499 grams

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
						3 4	2500 - 8165 grams Unknown or not stated
356	1	FILLER					
357	1	ESTOFD	<b>Estimated Time of Fetal Death</b>	435	A	N L A U	At assessment, no labor At assessment, labor Labor, no assessment Unknown
358	1	AUTOPSY	<b>Was Autopsy Performed?</b>	436	A	Y N P	Yes No Planned
359	1	HISTOPF	<b>Was Histological Placental Exam Performed?</b>	437	A	Y N P	Yes No Planned
360	1	AUTOPF	<b>Was Autop/Hist results used in cause?</b>	438	A	Y N X	Yes No Not applicable
361-371	11	FILLER					
372-438		<b><u>Flag File for Reporting Flags</u></b> The reporting flags indented below follow this coding structure:				0 1	Not reporting Reporting
372	1	F_MEDUC	Education of Mother		A		
373	1	F_CLINEST	Obstetric Estimate of Gestation		A,S		
374	1	F_TOBACO	Tobacco Use		A		
375	1	F_M_HT	Mother's Height		A		
376	1	F_PWGT	Prepregnancy Weight		A		
377	1	F_WIC	WIC		A		
378	1	F_RF_PDIAB	Prepregnancy Diabetes		A		
379	1	F_RF_GDIAB	Gestational Diabetes		A		
380	1	F_RF_PHYPER	Prepregnancy Hypertension		A		
381	1	F_RF_GHYPER	Gestational Hypertension		A		
382	1	F_RF_ECLAMP	Hypertension Eclampsia		A		

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
383	1	F_RF_INFT	Infertility Treatment		A		
384	1	F_RF_INFT_DRG	Fertility Enhance Drug		A		
385	1	F_RF_INFT_ART	Reproductive Technology		A		
386	1	F_RF_CESAR	Previous Cesarean		A		
387	1	F_RF_NCESAR	Number of Previous Cesareans		A		
388	1	F_MD_PRESENT	Fetal Presentation		A		
389	1	F_MD_ROUTE	Final Route and Method of Delivery		A		
390	1	F_MD_TRIAL	Trial of Labor Attempted		A		
391	1	F_MM RUPTUR	Ruptured Uterus		A		
392	1	F_MM_ICU	Admission to Intensive Care		A		
393-402	10	FILLER					
403	1	F_MPCB	Month Prenatal Care Began		A		
404	1	F_CMBGST	Combined Gestation		A,S		
405	1	F_CIGS_0	Cigarettes Before Pregnancy		A		
406	1	F_CIGS_1	Cigarettes 1 <sup>st</sup> Trimester		A		
407	1	F_CIGS_2	Cigarettes 2 <sup>nd</sup> Trimester		A		
408	1	F_CIGS_3	Cigarettes 3 <sup>rd</sup> Trimester		A		
409	1	F_FACILITY	Facility		A		
410	1	DelMethRecF	Delivery Method Recode Flag		A,S		
411-423	13	FILLER					
424	1	F_MORIGIN	Mother's Hispanic origin		A,S		
425	1	F_MRACE_R	Mother's Race (Revised)		A		
426	1	F_FAGE_u	Father's Age		A,S		
427	1	F_DLLB_MM	Last Live Birth Month (Revised)		A		
428	1	FILLER					
429	1	F_DLMP_MM	Last normal menses month		A,S		
430	1	FILLER					
431	1	F_DLMP_YY	Last normal menses year		A,S		
432	1	F_MAGE	Mother's Age		A,S		
433	1	F_ATTENDANT	Attendant		A,S		
434	1	FILLER					
435	1	F_ESTOFD	Estimated Time of Fetal Death (Revised)		A		
436	1	F_AUTOPSY	Autopsy (Revised)		A		
437	1	F_HISTOPF	Histological Placental Exam (Revised)		A		
438	1	F_AUTOPF	Autopsy/Histological Exam Used in Cause		A		
439	1	F_MRACEREC	Mother's Bridged Race Recode		A,S		
440	1	F_PLBL	Number of previous live births living			A,S	
441	1	F_PLBD	Number of previous live births dead			A,S	
442	1	F_DBWT	Birthweight	A,S			
443-444	2	FILLER					
445	1	F_BMI	Body mass index	A			

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Position	Len	Field	Description	Reporting Flag Position	Vers*	Values	Definition
446-2602	2164	FILLER					
2603-2642		40	<b><u>Coded Causes &amp; Conditions</u></b>			A	
			The fields indented below follow this structure:			ICD10 Blank	Code Coded Value None reported
2603-2607		5	IICOD	Initiating Cause or Condition Code	2651		
2608-2642		35	FILLER				
2643-2645	3	IC_124_Fetal	Initiating Fetal Recode 124	2651		A	001-124
2646-2650	5	FILLER					
2651			<b><u>Flag File for Reporting Flags</u></b>				
			The reporting flags indented below follow this coding structure:			0 1	Not reporting Reporting
2651	1	F_ICOD	Init Cause or condition	A			
2652-3150	499	FILLER					
3150		END OF RECORD					

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**Table 1. Number of fetal deaths and fetal mortality rates: United States, 2014-2022**

	Fetal deaths			Fetal mortality rate\1		
	Total\2	20-27 weeks\3	28 weeks or more\3	Total\2	20-27 weeks\3	28 weeks or more\3
Obstetric estimate of gestation\4						
2022	20,202	10,246	9,956	5.48	2.79	2.71
2021	21,105	10,824	10,281	5.73	2.95	2.80
2020	20,854	10,764	10,090	5.74	2.97	2.78
2019	21,478	11,216	10,262	5.70	2.98	2.73
2018	22,459	11,844	10,615	5.89	3.11	2.79
2017	22,827	11,861	10,966	5.89	3.07	2.84
2016	23,880	12,486	11,394	6.02	3.15	2.88
2015	23,776	12,407	11,369	5.94	3.11	2.85
2014	23,980	12,652	11,328	5.98	3.16	2.83
LMP-based gestation\5						
2014	23,999	11,948	12,051	5.98	2.99	3.01

\1Rate is number of fetal deaths in specified group per 1,000 live births and fetal deaths.

\2Fetal deaths with stated or presumed period of gestation of 20 weeks or more.

\3Not stated gestational age proportionally distributed.

\4Beginning with the 2014 data year, the obstetric estimate of gestation at delivery replaces the measure based on the date of last normal menses as the standard for measuring gestational age.

\5Date of last normal menses (LMP) was used for measuring gestational age.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

**Table 2. Fetal Deaths by Period of Gestation: United States, Each State and Territory, 2022**

[Nonresidents of the United States are excluded]

State/territory of residence	Fetal Deaths with Stated or Presumed Gestation of 20 weeks or More			
	Total	20-27 Weeks	28 Weeks and Over	Not stated
United States\1	20,202	10,173	9,886	143
Alabama	426	233	193	-
Alaska	54	27	27	-
Arizona	492	246	242	4
Arkansas	265	148	116	1
California	2,115	992	1,103	20
Colorado	305	162	143	-
Connecticut	175	83	92	-
Delaware	56	26	29	1
District of Columbia	65	43	22	-
Florida	1,548	803	685	60
Georgia	1,000	533	463	4
Hawaii	97	55	38	4
Idaho	91	33	58	-
Illinois	737	444	292	1
Indiana	439	207	228	4
Iowa	163	76	87	-
Kansas	205	98	105	2
Kentucky	283	120	163	-
Louisiana	300	141	159	-
Maine	63	38	25	-
Maryland	366	205	161	-
Massachusetts	284	117	167	-
Michigan	614	312	301	1
Minnesota	351	183	168	-
Mississippi	320	183	134	3
Missouri	358	167	187	4
Montana	54	26	28	-
Nebraska	110	50	59	1
Nevada	235	126	109	-
New Hampshire	56	23	33	-
New Jersey	498	269	229	-
New Mexico	69	26	43	-
New York	577	302	272	3
New York City	634	366	268	-
North Carolina	696	345	345	6
North Dakota	47	25	22	-
Ohio	741	364	377	-
Oklahoma	293	151	140	2
Oregon	195	90	102	3
Pennsylvania	663	345	318	-
Rhode Island	52	22	30	-
South Carolina	288	114	173	1

South Dakota	54	24	30	-
Tennessee	538	263	273	2
Texas	1,613	753	853	7
Utah	252	124	128	-
Vermont	21	7	14	-
Virginia	497	257	233	7
Washington	421	213	208	-
West Virginia	70	26	44	-
Wisconsin	320	171	147	2
Wyoming	36	16	20	-
American Samoa	---	---	---	---
Guam	34	12	21	1
Northern Marianas	---	---	---	---
Puerto Rico	218	144	73	1
Virgin Islands	---	---	---	---

NOTE: American Samoa did not report data for 2022. Data for the Northern Marianas and the Virgin Islands were excluded due to small numbers.

- Quantity zero.

--- Data unavailable.

\1Excludes data for the territories.

SOURCE: National Center for Health Statistics, National Vital Statistics System.



**Table 3. Fetal Deaths by Period of Gestation and State/Territory of Occurrence: United States, 2022**

State / territory	All Fetal Deaths			
	Total	Under 20 Weeks	20 Weeks and Over	Not stated
United States\1	40,113	18,424	20,218	1,471
Alabama	410	–	410	–
Alaska	53	2	51	–
Arizona	497	6	487	4
Arkansas	484	230	253	1
California	2,144	1	2,119	24
Colorado	325	4	321	–
Connecticut	180	–	180	–
Delaware	57	–	56	1
District of Columbia	99	2	97	–
Florida	1,570	3	1,504	63
Georgia	8,214	6,477	1,006	731
Hawaii	474	286	96	92
Idaho	114	30	84	–
Illinois	733	–	732	1
Indiana	446	1	441	4
Iowa	160	1	159	–
Kansas	215	–	212	3
Kentucky	274	–	274	–
Louisiana	349	58	291	–
Maine	57	–	57	–
Maryland	351	–	351	–
Massachusetts	285	–	285	–
Michigan	611	7	603	1
Minnesota	360	–	360	–
Mississippi	316	6	307	3
Missouri	380	7	369	4
Montana	52	–	52	–
Nebraska	107	–	106	1
Nevada	238	4	234	–
New Hampshire	54	–	54	–
New Jersey	487	–	487	–
New Mexico	68	5	63	–
New York	4,228	3,372	509	347
New York City	5,058	4,351	701	6
North Carolina	708	2	700	6
North Dakota	53	–	53	–
Ohio	742	–	742	–
Oklahoma	287	1	283	3
Oregon	235	41	191	3
Pennsylvania	1,035	369	663	3
Rhode Island	361	233	60	68
South Carolina	263	1	262	–
South Dakota	64	2	62	–
Tennessee	587	3	582	2
Texas	1,948	247	1,694	7

Utah	258	-	258	-
Vermont	18	-	18	-
Virginia	3,250	2,665	494	91
Washington	433	-	433	-
West Virginia	84	6	78	-
Wisconsin	301	1	298	2
Wyoming	36	-	36	-
American Samoa	---	---	---	---
Guam	34	-	33	1
Northern Marianas	---	---	---	---
Puerto Rico	225	2	222	1
Virgin Islands	---	---	---	---

NOTE: American Samoa did not report data for 2022. Data for the Northern Marianas and the Virgin Islands were excluded due to small numbers.

- Quantity zero.

--- Data unavailable.

\1Excludes data for the territories.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

**Table 4. Number and percentage of fetal deaths by race and Hispanic origin of mother: United States, 2022**

[Fetal deaths include only those with stated or presumed period of gestation of 20 weeks or more.]

Race	Number		Percentage	
	Total\1	Non-Hispanic	Total\1	Non-Hispanic
All races\2	20,202	14,926	100.0	100.0
One race	19,777	14,580	97.9	97.7
White	12,714	8,280	62.9	55.5
Black	5,764	5,194	28.5	34.8
American Indian and Alaska Native (AIAN)	224	187	1.1	1.3
Asian	925	813	4.6	5.4
Native Hawaiian and Other Pacific Islander (NHOPI)	150	106	0.7	0.7
More than one race	425	346	2.1	2.3
Two races	377	311	1.9	2.1
Black and White	197	157	1.0	1.1
Black and AIAN	15	14	0.1	0.1
Black and Asian	11	10	0.1	0.1
Black and NHOPI	3	3	0.0	0.0
AIAN and White	51	45	0.3	0.3
AIAN and Asian	2	1	0.0	0.0
AIAN and NHOPI	2	2	0.0	0.0
Asian and White	73	63	0.4	0.4
Asian and NHOPI	12	9	0.1	0.1
NHOPI and White	11	7	0.1	0.0
Three races	46	35	0.2	0.2
Black, AIAN and White	16	13	0.1	0.1
Black AIAN and Asian	-	-	-	-
Black, AIAN and NHOPI	1	1	0.0	0.0
Black, Asian and White	8	8	0.0	0.1
Black, Asian and NHOPI	1	1	0.0	0.0
Black, NHOPI, and White	1	1	0.0	0.0
AIAN, Asian and White	-	-	-	-
AIAN, NHOPI and White	-	-	-	-
AIAN, Asian and NHOPI	-	-	-	-
Asian, NHOPI and White	19	11	0.1	0.1
Four races	2	-	0.0	-
Black, AIAN, Asian and White	-	-	-	-
Black, AIAN, Asian, and NHOPI	-	-	-	-
Black, AIAN, NHOPI and White	1	-	0.0	-
Black, Asian, NHOPI and White	-	-	-	-
AIAN, Asian, NHOPI and White	1	-	0.0	-
Five races	-	-	-	-
Black, AIAN, Asian, NHOPI and White	-	-	-	-

- Quantity zero.

0.0 Quantity more than zero but less than 0.05.

\1 Includes fetal deaths to race and origin groups not shown separately, such as Hispanic, single-race white, Hispanic, single-race black, non-Hispanic, multiple-race women, and fetal deaths with origin not stated.

\2 Race and Hispanic origin are reported separately on reports of fetal death. Persons of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

**Table 5A. Number and percentage of fetal deaths by selected demographic and health characteristics: United States, 2022**

[Fetal deaths include only those with stated or presumed period of gestation of 20 weeks or more.]

	Number	Percent
Day of week		
Total	20,202	100.0
Sunday	2,138	10.6
Monday	2,361	11.7
Tuesday	3,064	15.2
Wednesday	3,182	15.8
Thursday	3,265	16.2
Friday	3,336	16.5
Saturday	2,856	14.1
Month of delivery		
Total	20,202	100.0
January	1,829	9.1
February	1,521	7.5
March	1,711	8.5
April	1,659	8.2
May	1,702	8.4
June	1,692	8.4
July	1,762	8.7
August	1,672	8.3
September	1,666	8.2
October	1,645	8.1
November	1,655	8.2
December	1,688	8.4
Place of delivery		
Total	20,202	100.0
Hospital\1	19,617	97.1
Freestanding birthing center	15	0.1
Clinic or doctor's office	42	0.2
Residence	357	1.8
Other	137	0.7
Not specified	34	0.2
Age of mother		
Total	20,202	100.0
<15	16	0.1
15-19	991	4.9
20-24	3,631	18.0
25-29	5,071	25.1
30-34	5,634	27.9
35-39	3,613	17.9
40-44	1,138	5.6
45-49	96	0.5
50-54	12	0.1
Race and Hispanic origin of mother		
Total\2	20,202	100.0
Non-Hispanic, single race\3		
Non-Hispanic white	8,280	41.0
Non-Hispanic black	5,194	25.7
Non-Hispanic American Indian or Alaska Native	187	0.9
Non-Hispanic Asian	813	4.0
Non-Hispanic Native Hawaiian or Other Pacific Islander	106	0.5
Non-Hispanic multiple race	346	1.7
Hispanic\4	4,359	21.6
Unknown	917	4.5

Hispanic origin of mother		
Total	20,202	100.0
Non-Hispanic	14,926	73.9
Mexican	2,400	11.9
Puerto Rican	323	1.6
Cuban	102	0.5
Central or South American	779	3.9
Dominican	142	0.7
Other and unknown Hispanic	613	3.0
Unknown	917	4.5
Education of mother\5		
Total	20,053	100.0
8th grade or less	780	3.9
9th-12th grade with no diploma	1,696	8.5
High school graduate\6	6,121	30.5
Some college credit, but no degree	3,123	15.6
Associate's degree\7	1,300	6.5
Bachelor's degree\8	2,746	13.7
Master's degree\9	1,173	5.8
Doctorate or professional degree\10	333	1.7
Unknown	2,781	13.9
Age of father\11		
Total	17,223	100.0
<15	4	0.0
15-19	320	1.9
20-24	1,664	9.7
25-29	2,932	17.0
30-34	3,734	21.7
35-39	2,723	15.8
40-44	1,421	8.3
45-49	483	2.8
50-54	177	1.0
55-98	119	0.7
Unknown	3,646	21.2
Trimester prenatal care began\12		
Total	20,053	100.0
1st trimester	12,391	61.8
2nd trimester	2,896	14.4
3rd trimester	339	1.7
No care	1,945	9.7
Unknown	2,482	12.4
Mother received WIC food for herself during this pregnancy\13		
Total	18,980	100.0
Yes	3,676	19.4
No	12,527	66.0
Not stated	2,777	14.6
Tobacco use during pregnancy\14		
Total	20,150	100.0
Yes	1,318	6.5
No	17,126	85.0
Unknown	1,706	8.5
Maternal pre-pregnancy body mass index\15		
Total	20,105	100.0
Underweight (BMI less than 18.5)	465	2.3
Normal weight (BMI of 18.5 to 24.9)	5,303	26.4
Overweight (BMI of 25.0 to 29.9)	4,581	22.8
Obese (BMI of 30.0 and over)	7,118	35.4
Not stated	2,638	13.1

Method of delivery\16		
Total	20,105	100.0
Vaginal (excludes vaginal after previous C-section)	13,608	67.7
Vaginal after previous C-section	1,602	8.0
Primary C-section	1,959	9.7
Repeat C-section	1,255	6.2
Vaginal (unknown if previous c-section)	617	3.1
C-section (unknown if previous c-section)	124	0.6
Not stated	940	4.7
Attendant at delivery		
Total	20,202	100.0
Doctor of medicine	16,865	83.5
Doctor of osteopathy	1,804	8.9
Certified nurse midwife	720	3.6
Other midwife	44	0.2
Other	567	2.8
Unspecified	202	1.0
Plurality		
Total	20,202	100.0
Singleton	18,805	93.1
Twin	1,326	6.6
Triplet	65	0.3
Quadruplet or higher	6	0.0
Sex		
Total	20,202	100.0
Male	10,519	52.1
Female	9,683	47.9
Obstetric estimate of gestation		
Total	20,202	100.0
20-23 weeks	7,087	35.1
24-27 weeks	3,086	15.3
28-31 weeks	2,487	12.3
32-33 weeks	1,425	7.1
34-36 weeks	2,613	12.9
37-38 weeks	1,873	9.3
39-40 weeks	1,275	6.3
41 weeks	159	0.8
42 weeks and over	54	0.3
Unknown	143	0.7
Birthweight		
Total	20,202	100.0
<500 grams	6,554	32.4
0500 - 0999 grams	3,321	16.4
1000 - 1499 gram	1,915	9.5
1500 - 1999 gram	1,698	8.4
2000 - 2499 gram	1,595	7.9
2500 - 2999 gram	1,553	7.7
3000 - 3499 gram	1,141	5.6
3500 - 3999 gram	573	2.8
4000 - 4499 gram	207	1.0
4500 - 4999 gram	92	0.5
5000 - 8165 gram	59	0.3
Unknown	1,494	7.4

0.0 Quantity more than zero but less than 0.05.

- Quantity zero.

\1Includes fetal deaths occurring en route to or on arrival at hospital.

\2Includes fetal deaths to race and origin groups not shown separately, such as Hispanic, single-race white, Hispanic, single-race black, and non-Hispanic, multiple-race women, and fetal deaths with origin not stated.

\3Race and Hispanic origin are reported separately on reports of fetal death; persons of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards. Single-race is defined as only one race reported on the report of fetal death.

\4Includes all persons of Hispanic origin of any race.

\5Hawaii and Rhode Island reported education of mother for 2022 but had an unknown level of 50% or higher and were flagged as not reporting.

\6Includes General Educational Development (GED).

\7Includes Associate in Arts and Associate in Science.

\8Includes Bachelor in Arts and Bachelor in Science.

\9Includes Master in Arts, Master in Science, Master of Engineering, Master of Education, Master of Social Work, and Master of Business Administration.

\10Includes Doctor of Philosophy, Doctor of Education, Doctor of Medicine, Doctor of Dental Surgery, Doctor of Veterinary Medicine, Doctor of Laws, and Juris Doctor.

\11Alabama, Arkansas, the District of Columbia, Georgia, Hawaii, New York, Rhode Island, and Virginia reported father's age for 2022 but had an unknown level of 50% or higher and were flagged as not reporting.

\12Hawaii and Rhode Island reported date of first prenatal care for 2022 but had unknown levels of 50% or higher and were flagged as not reporting.

\13Mother received WIC food for herself during this pregnancy is not reported by New York City. Hawaii, Indiana, and Rhode Island reported WIC for 2022 but had an unknown level of 50% or higher and were flagged as not reporting.

\14Rhode Island reported tobacco use during pregnancy for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\15Hawaii reported maternal pre-pregnancy body mass index for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\16Hawaii reported method of delivery for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

**Table 5B. Number and percentage of fetal deaths by selected demographic and health characteristics: Guam and Puerto Rico, 2022**

[Fetal deaths include only those with stated or presumed period of gestation of 20 weeks or more.]

	Number	Percent
Day of week		
Total	252	100.0
Sunday	27	10.7
Monday	27	10.7
Tuesday	43	17.1
Wednesday	49	19.4
Thursday	37	14.7
Friday	43	17.1
Saturday	26	10.3
Month of delivery		
Total	252	100.0
January	29	11.5
February	19	7.5
March	16	6.3
April	13	5.2
May	26	10.3
June	30	11.9
July	21	8.3
August	19	7.5
September	17	6.7
October	21	8.3
November	24	9.5
December	17	6.7
Place of delivery		
Total	252	100.0
Hospital\1	246	97.6
Freestanding birthing center	-	-
Clinic or doctor's office	-	-
Residence	3	1.2
Other	2	0.8
Not specified	1	0.4
Age of mother		
Total	252	100.0
<15	-	-
15-19	17	6.7
20-24	55	21.8
25-29	78	31.0
30-34	59	23.4
35-39	28	11.1
40-44	14	5.6
45-49	1	0.4
50-54	-	-
Race and Hispanic origin of mother		
Total\2	252	100.0
Non-Hispanic, single race\3		
Non-Hispanic white	3	1.2
Non-Hispanic black	1	0.4
Non-Hispanic American Indian or Alaska Native	-	-
Non-Hispanic Asian	5	2.0
Non-Hispanic Native Hawaiian or Other Pacific Islander	27	10.7
Non-Hispanic multiple race	2	0.8
Hispanic\4	214	84.9
Unknown	-	-



Hispanic origin of mother		
Total	252	100.0
Non-Hispanic	38	15.1
Mexican	1	0.4
Puerto Rican	207	82.1
Cuban	-	-
Central or South American	1	0.4
Dominican	5	2.0
Other and unknown Hispanic	-	-
Unknown	-	-
Education of mother		
Total	252	100.0
8th grade or less	4	1.6
9th-12th grade with no diploma	23	9.1
High school graduate\5	81	32.1
Some college credit, but no degree	27	10.7
Associate's degree\6	36	14.3
Bachelor's degree\7	62	24.6
Master's degree\8	15	6.0
Doctorate or professional degree\9	2	0.8
Unknown	2	0.8
Age of father\10		
Total	218	100.0
<15	-	-
15-19	8	3.7
20-24	33	15.1
25-29	39	17.9
30-34	33	15.1
35-39	29	13.3
40-44	17	7.8
45-49	4	1.8
50-54	3	1.4
55-98	-	-
Unknown	52	23.9
Trimester prenatal care began		
Total	252	100.0
1st trimester	185	73.4
2nd trimester	36	14.3
3rd trimester	1	0.4
No care	15	6.0
Unknown	15	6.0
Mother received WIC food for herself during this pregnancy\11		
Total	218	100.0
Yes	152	69.7
No	57	26.1
Not stated	9	4.1
Tobacco use during pregnancy\12		
Total	218	100.0
Yes	1	0.5
No	216	99.1
Unknown	1	0.5
Maternal pre-pregnancy body mass index\13		
Total	218	100.0
Underweight (BMI less than 18.5)	6	2.8
Normal weight (BMI of 18.5 to 24.9)	61	28.0
Overweight (BMI of 25.0 to 29.9)	63	28.9
Obese (BMI of 30.0 and over)	82	37.6
Not stated	6	2.8

Method of delivery		
Total	252	100.0
Vaginal (excludes vaginal after previous C-section)	190	75.4
Vaginal after previous C-section	24	9.5
Primary C-section	26	10.3
Repeat C-section	7	2.8
Vaginal (unknown if previous c-section)	-	-
C-section (unknown if previous c-section)	1	0.4
Not stated	4	1.6
Attendant at delivery		
Total	252	100.0
Doctor of medicine	243	96.4
Doctor of osteopathy	5	2.0
Certified nurse midwife	-	-
Other midwife	-	-
Other	-	-
Unspecified	4	1.6
Plurality		
Total	252	100.0
Singleton	239	94.8
Twin	13	5.2
Triplet	-	-
Quadruplet or higher	-	-
Sex		
Total	252	100.0
Male	128	50.8
Female	124	49.2
Obstetric estimate of gestation		
Total	252	100.0
20-23 weeks	122	48.4
24-27 weeks	34	13.5
28-31 weeks	25	9.9
32-33 weeks	11	4.4
34-36 weeks	22	8.7
37-38 weeks	20	7.9
39-40 weeks	12	4.8
41 weeks	3	1.2
42 weeks and over	1	0.4
Unknown	2	0.8
Birthweight		
Total	252	100.0
<500 grams	103	40.9
0500 - 0999 grams	59	23.4
1000 - 1499 gram	18	7.1
1500 - 1999 gram	16	6.3
2000 - 2499 gram	12	4.8
2500 - 2999 gram	17	6.7
3000 - 3499 gram	9	3.6
3500 - 3999 gram	10	4.0
4000 - 4499 gram	3	1.2
4500 - 4999 gram	1	0.4
5000 - 8165 gram	1	0.4
Unknown	3	1.2

0.0 Quantity more than zero but less than 0.05.

- Quantity zero.

\1Includes fetal deaths occurring en route to or on arrival at hospital.

\2Includes fetal deaths to race and origin groups not shown separately, such as Hispanic, single-race white, Hispanic, single-race black, and non-Hispanic, multiple-race women, and fetal deaths with origin not stated.

\3Race and Hispanic origin are reported separately on reports of fetal death; persons of Hispanic origin may be of any race. In this table, non-Hispanic women are classified by race. Race categories are consistent with the 1997 Office of Management and Budget standards. Single-race is defined as only one race reported on the report of fetal death.

\4Includes all persons of Hispanic origin of any race.

\5Includes General Educational Development (GED).

\6Includes Associate in Arts and Associate in Science.

\7Includes Bachelor in Arts and Bachelor in Science.

\8Includes Master in Arts, Master in Science, Master of Engineering, Master of Education, Master of Social Work, and Master of Business Administration.

\9Includes Doctor of Philosophy, Doctor of Education, Doctor of Medicine, Doctor of Dental Surgery, Doctor of Veterinary Medicine, Doctor of Laws, and Juris Doctor.

\10Guam reported father's age for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\11Guam reported mother received WIC food for herself during this pregnancy for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\12Guam reported tobacco use during pregnancy for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\13Guam reported maternal pre-pregnancy body mass index for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

**Table 6A. Number and percentage of fetal deaths by selected health characteristics:  
United States, 2022**

[Fetal deaths include only those with stated or presumed period of gestation of 20 weeks or more.]

Risk factor	Total	Number reported	Unknown	Per 1,000
Diabetes				
Prepregnancy (Diagnosis prior to this pregnancy)	20,202	871	1,084	45.6
Gestational (Diagnosis in this pregnancy)	20,202	959	1,084	50.2
Hypertension				
Prepregnancy (Chronic)	20,202	1,334	1,084	69.8
Gestational (PIH, preeclampsia)	20,202	1,598	1,084	83.6
Eclampsia	20,202	141	1,084	7.4
Pregnancy resulted from infertility treatment	20,202	567	1,084	29.7
Mother had a previous cesarean delivery\1	20,202	2,916	1,084	15.3
Maternal morbidity\2				
Ruptured uterus	20,202	145	1,217	763.8
Admission to intensive care unit	20,202	465	1,217	2,449.3

\1 Mother had a previous cesarean delivery per 100 fetal deaths.

\2 Maternal morbidities per 100,000 fetal deaths.

NOTE: PIH is pregnancy-induced hypertension.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

**Table 6B. Number and percentage of fetal deaths by selected health characteristics:  
Guam and Puerto Rico, 2022**

[Fetal deaths include only those with stated or presumed period of gestation of 20 weeks or more.]

Risk factor	Total	Number reported	Unknown	Per 1,000
Diabetes				
Prepregnancy (Diagnosis prior to this pregnancy)	252	17	3	68.3
Gestational (Diagnosis in this pregnancy)	252	12	3	48.2
Hypertension				
Prepregnancy (Chronic)	252	14	3	56.2
Gestational (PIH, preeclampsia)	252	13	3	52.2
Eclampsia	252	3	3	12.0
Pregnancy resulted from infertility treatment	252	5	3	20.1
Mother had a previous cesarean delivery\1	252	31	3	12.4
Maternal morbidity\2				
Ruptured uterus	252	1	13	418.4
Admission to intensive care unit	252	-	13	-

- Quantity zero.

\1 Mother had a previous cesarean delivery per 100 fetal deaths.

\2 Maternal morbidities per 100,000 fetal deaths.

NOTE: PIH is pregnancy-induced hypertension.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

Table 7A. Deaths according to 124 selected causes of fetal death: 43 states and the District of Columbia, 2022

[Fetal deaths include only those with stated or presumed period of gestation of 20 weeks or more.]

Cause of death (based on ICD-10)	Number
All causes <sup>1</sup> .....	15,476
Certain infectious and parasitic diseases.....A00-B99	5
Congenital syphilis.....A50	2
Human immunodeficiency virus (HIV) disease.....B20-B24	-
Other viral diseases.....A80-B19,B25-B34	3
Other and unspecified infectious and parasitic diseases.....A00-A49,A51-A79,B35-B99	-
Malignant neoplasms.....C00-C97	2
In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior.....D00-D48	85
Anemias.....D50-D64	5
Endocrine, nutritional and metabolic diseases.....E00-E88	2
Short stature, not elsewhere classified.....E34.3	-
Cystic fibrosis.....E84	2
Other endocrine, nutritional and metabolic diseases .....E00-E32,E34.0-E34.2,E34.4-E34.9,E40-E83,E85-E88	-
Meningitis.....G00,G03	-
Other diseases of nervous system and sense organs.....G04-H93	4
Umbilical hernia.....K42	-
Other hernia.....K40-K41,K43-K46	-
Other and unspecified diseases of digestive system.....K00-K38,K50-K92	1
All other diseases, excluding perinatal conditions, congenital anomalies, and symptoms, signs and ill-defined conditions.....D65-D89,I00-J98,L00-N98,U0	7
Certain conditions originating in the perinatal period.....P00-P96	13,845
Fetus affected by maternal conditions that may be unrelated to present pregnancy...P00	1,740
Fetus affected by maternal hypertensive disorders.....P00.0	908
Fetus affected by maternal renal and urinary tract diseases.....P00.1	19
Fetus affected by maternal infectious and parasitic diseases.....P00.2	267
Fetus affected by other maternal circulatory and respiratory diseases.....P00.3	69
Fetus affected by maternal nutritional disorders.....P00.4	2
Fetus affected by maternal injury.....P00.5	51
Fetus affected by surgical procedure on mother.....P00.6	7
Fetus affected by other medical procedures and maternal conditions.....P00.7-P00.8	417
Fetus affected by unspecified maternal condition.....P00.9	-
Fetus affected by maternal complications of pregnancy.....P01	1,804
Fetus affected by incompetent cervix.....P01.0	259
Fetus affected by premature rupture of membranes.....P01.1	1,180
Fetus affected by oligohydramnios.....P01.2	65
Fetus affected by polyhydramnios.....P01.3	37
Fetus affected by ectopic pregnancy.....P01.4	2
Fetus affected by multiple pregnancy.....P01.5	206
Fetus affected by maternal death.....P01.6	19
Fetus affected by malpresentation before labor.....P01.7	6
Fetus affected by other and unspecified maternal complications of pregnancy.....P01.8-P01.9	30
Fetus affected by complications of placenta, cord and membranes.....P02	3,743
Fetus affected by placenta previa.....P02.0	35
Fetus affected by other forms of placental separation and hemorrhage.....P02.1	1,351
Fetus affected by other and unspecified morphological and functional abnormalities of placenta.....P02.2	669
Fetus affected by placental transfusion syndromes.....P02.3	112
Fetus affected by prolapsed cord.....P02.4	100
Fetus affected by other compression of umbilical cord.....P02.5	838
Fetus affected by other and unspecified conditions of umbilical cord.....P02.6	244
Fetus affected by chorioamnionitis.....P02.7	389
Fetus affected by other and unspecified abnormalities of membranes.....P02.8-P02.9	5
Fetus affected by other complications of labor and delivery.....P03	136
Fetus affected by breech delivery and extraction.....P03.0	6
Fetus affected by other malpresentation, malposition and disproportion during labor and delivery.....P03.1	9
Fetus affected by forceps delivery.....P03.2	-
Fetus affected by delivery by vacuum extractor (ventouse).....P03.3	-
Fetus affected by cesarean delivery.....P03.4	4
Fetus affected by precipitate delivery.....P03.5	-
Fetus affected by abnormal uterine contractions.....P03.6	5
Fetus affected by other and unspecified complications of labor and delivery.....P03.8-P03.9	112
Fetus affected by noxious influences transmitted via placenta.....P04	141
Slow fetal growth and fetal malnutrition.....P05	205
Disorders related to short gestation and low birth weight, not elsewhere classified.....P07	242
Extremely low birth weight or extreme immaturity.....P07.0,P07.2	143
Other low birth weight and preterm.....P07.1,P07.3	99
Disorders related to long gestation and high birth weight.....P08	4
Exceptionally large size and other heavy for gestational age fetus.....P08.0-P08.1	2
Post-term, not heavy for gestational age fetus.....P08.2	2
Birth trauma.....P10-P15	1
Intracranial laceration and hemorrhage due to birth injury and other injuries to central nervous system.....P10-P11	-
Other birth trauma.....P12-P15	1
Intrauterine hypoxia and birth asphyxia.....P20-P21	3
Intrauterine hypoxia first noted before onset of labor.....P20.0	-
Intrauterine hypoxia first noted during labor and delivery.....P20.1	-
Intrauterine hypoxia, unspecified.....P20.9	3
Birth asphyxia.....P21	-
Other respiratory conditions originating in the perinatal period....P22.8-P22.9,P23-P28	3
Congenital pneumonia.....P23	1
Aspiration syndromes.....P24	1
Interstitial emphysema and related conditions originating in the perinatal period.....P25	-
Atelectasis.....P28.0-P28.1	-
Other respiratory system disorders.....P22.8-P22.9,P26-P27,P28.2-P28.9	1
Infections specific to the perinatal period.....P35-P39	6
Congenital rubella syndrome.....P35.0	-
Congenital cytomegalovirus infection.....P35.1	2
Congenital herpesviral (herpes simplex) infection.....P35.2	-
Congenital viral hepatitis.....P35.3	-
Bacterial sepsis.....P36	-
Congenital tuberculosis.....P37.0	-
Congenital toxoplasmosis.....P37.1	1
Other infections specific to the perinatal period.....P35.8-P35.9,P37.2-P37.9,P38-P39	3
Fetal hemorrhage.....P50-P54	11
Hemolytic disease of fetus.....P55-P56	8
Rh isoimmunization of fetus.....P55.0	6
ABO isoimmunization of fetus.....P55.1	-
Other hemolytic disease of fetus.....P55.8-P55.9	2
Hydrops fetalis due to hemolytic disease.....P56	-
Perinatal jaundice.....P57-P59	-
Hematological disorders.....P60-P61	2
Transitory endocrine and metabolic disorders specific to fetus.....P70-P74	451
Syndrome of infant of a diabetic mother and neonatal diabetes mellitus...P70.0-P70.2	451
Other transitory endocrine and metabolic disorders specific to fetus.....P70.3-P70.9,P71-P74	-
Digestive system disorders of fetus.....P76-P78	1
Other conditions originating in the perinatal period.....P29,P80-P96	5,345
Hydrops fetalis not due to hemolytic disease.....P83.2	187

Fetal death of unspecified cause.....	P95	5,142
Withdrawal symptoms from maternal use of drugs of addiction.....	P96.1	-
Termination of pregnancy.....	P96.4	-
Complications of intrauterine procedures, not elsewhere classified.....	P96.5	-
All other specified conditions originating in the perinatal period.....	P29, P83.0-P83.1, P83.3-P83.9, P91, P94, P96.0, P96.3, P96.8	16
Condition originating in the perinatal period, unspecified.....	P96.9	-
Congenital malformations, deformations and chromosomal abnormalities.....	Q00-Q99	1,502
Congenital malformations of nervous system.....	Q00-Q07	276
Anencephaly and similar malformations.....	Q00	128
Encephalocele.....	Q01	10
Microcephaly.....	Q02	-
Congenital hydrocephalus.....	Q03	52
Reduction deformities of brain.....	Q04.0-Q04.3	34
Other congenital malformations of brain.....	Q04.4-Q04.9	14
Spina bifida.....	Q05	16
Other congenital malformations of spinal cord and nervous system.....	Q06-Q07	22
Congenital malformations of eye, ear, face and neck.....	Q10-Q18	3
Congenital malformations of heart.....	Q20-Q24	201
Other congenital malformations of circulatory system.....	Q25-Q28	47
Congenital malformations of lung.....	Q33	8
Other congenital malformations of respiratory system.....	Q30-Q32, Q34	10
Congenital malformations of digestive system.....	Q35-Q45	24
Congenital malformations of genital organs.....	Q50-Q56	8
Congenital malformations of urinary system.....	Q60-Q64	88
Renal agenesis and other reduction defects of kidney.....	Q60	44
Cystic kidney disease.....	Q61	18
Other congenital malformations of urinary system.....	Q62-Q64	26
Congenital malformations and deformations of musculoskeletal system, limbs and integument.....	Q65-Q85	162
Other congenital malformations.....	Q86-Q89	92
Conjoined twins.....	Q89.4	-
Multiple congenital malformations, not elsewhere classified.....	Q89.7	33
All other congenital malformations.....	Q86-Q87, Q89.0-Q89.3, Q89.8-Q89.9	59
Chromosomal abnormalities, not elsewhere classified.....	Q90-Q99	583
Down's syndrome.....	Q90	112
Edward's syndrome.....	Q91.0-Q91.3	218
Patau's syndrome.....	Q91.4-Q91.7	57
Other chromosomal abnormalities, not elsewhere classified.....	Q92-Q99	196
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified.....	R00-R9	7
External causes of mortality.....	*U01, V01-Y84	11
Accidents (unintentional injuries).....	V01-X59	11
Assault (homicide).....	*U01, X85-Y09	-
Complications of medical and surgical care.....	Y40-Y84	-
Other external causes.....	Y10-Y36	-

- Quantity zero.

NOTE: Excludes data for jurisdictions (Arizona, Georgia, Hawaii, Mississippi, New York City, North Dakota, and Vermont) for which the cause of death was unspecified (P95) for 50% or more of records. Also excludes data for California which did not report cause of death based on the 2003 revision of the U.S. Standard Report of Fetal Death.  
Source: National Center for Health Statistics, National Vital Statistics System.

Table 7B. Deaths according to 124 selected causes of fetal death: Puerto Rico, 2022

[Fetal deaths include only those with stated or presumed period of gestation of 20 weeks or more.]

Cause of death (based on ICD-10)	Number
All causes <sup>1</sup> .....	218
Certain infectious and parasitic diseases.....A00-B99	-
Congenital syphilis.....A50	-
Human immunodeficiency virus (HIV) disease.....B20-B24	-
Other viral diseases.....A80-B19,B25-B34	-
Other and unspecified infectious and parasitic diseases.....A00-A49,A51-A79,B35-B99	-
Malignant neoplasms.....C00-C97	-
In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior.....D00-D48	1
Anemias.....D50-D64	-
Endocrine, nutritional and metabolic diseases.....E00-E88	-
Short stature, not elsewhere classified.....E34.3	-
Cystic fibrosis.....E84	-
Other endocrine, nutritional and metabolic diseases .....E00-E32,E34.0-E34.2,E34.4-E34.9,E40-E83,E85-E88	-
Meningitis.....G00,G03	-
Other diseases of nervous system and sense organs.....G04-H93	-
Umbilical hernia.....K42	-
Other hernia.....K40-K41,K43-K46	-
Other and unspecified diseases of digestive system.....K00-K38,K50-K92	-
All other diseases, excluding perinatal conditions, congenital anomalies, and symptoms, signs and ill-defined conditions.....D65-D89,I00-J98,L00-N98,U04	2
Certain conditions originating in the perinatal period.....P00-P96	187
Fetus affected by maternal conditions that may be unrelated to present pregnancy...P00	32
Fetus affected by maternal hypertensive disorders.....P00.0	14
Fetus affected by maternal renal and urinary tract diseases.....P00.1	2
Fetus affected by maternal infectious and parasitic diseases.....P00.2	3
Fetus affected by other maternal circulatory and respiratory diseases.....P00.3	-
Fetus affected by maternal nutritional disorders.....P00.4	-
Fetus affected by maternal injury.....P00.5	2
Fetus affected by surgical procedure on mother.....P00.6	-
Fetus affected by other medical procedures and maternal conditions.....P00.7-P00.8	11
Fetus affected by unspecified maternal condition.....P00.9	-
Fetus affected by maternal complications of pregnancy.....P01	52
Fetus affected by incompetent cervix.....P01.0	23
Fetus affected by premature rupture of membranes.....P01.1	23
Fetus affected by oligohydramnios.....P01.2	4
Fetus affected by polyhydramnios.....P01.3	1
Fetus affected by ectopic pregnancy.....P01.4	-
Fetus affected by multiple pregnancy.....P01.5	1
Fetus affected by maternal death.....P01.6	-
Fetus affected by malpresentation before labor.....P01.7	-
Fetus affected by other and unspecified maternal complications of pregnancy.....P01.8-P01.9	-
Fetus affected by complications of placenta, cord and membranes.....P02	55
Fetus affected by placenta previa.....P02.0	2
Fetus affected by other forms of placental separation and hemorrhage.....P02.1	8
Fetus affected by other and unspecified morphological and functional abnormalities of placenta.....P02.2	13
Fetus affected by placental transfusion syndromes.....P02.3	3
Fetus affected by prolapsed cord.....P02.4	3
Fetus affected by other compression of umbilical cord.....P02.5	11
Fetus affected by other and unspecified conditions of umbilical cord.....P02.6	9
Fetus affected by chorioamnionitis.....P02.7	6
Fetus affected by other and unspecified abnormalities of membranes.....P02.8-P02.9	-
Fetus affected by other complications of labor and delivery.....P03	4
Fetus affected by breech delivery and extraction.....P03.0	-
Fetus affected by other malpresentation, malposition and disproportion during labor and delivery.....P03.1	-
Fetus affected by forceps delivery.....P03.2	-
Fetus affected by delivery by vacuum extractor (ventouse).....P03.3	-
Fetus affected by cesarean delivery.....P03.4	-
Fetus affected by precipitate delivery.....P03.5	-
Fetus affected by abnormal uterine contractions.....P03.6	-
Fetus affected by other and unspecified complications of labor and delivery.....P03.8-P03.9	4
Fetus affected by noxious influences transmitted via placenta.....P04	2
Slow fetal growth and fetal malnutrition.....P05	1
Disorders related to short gestation and low birth weight, not elsewhere classified.....P07	13
Extremely low birth weight or extreme immaturity.....P07.0,P07.2	2
Other low birth weight and preterm.....P07.1,P07.3	11
Disorders related to long gestation and high birth weight.....P08	-
Exceptionally large size and other heavy for gestational age fetus.....P08.0-P08.1	-
Post-term, not heavy for gestational age fetus.....P08.2	-
Birth trauma.....P10-P15	-
Intracranial laceration and hemorrhage due to birth injury and other injuries to central nervous system.....P10-P11	-
Other birth trauma.....P12-P15	-
Intrauterine hypoxia and birth asphyxia.....P20-P21	2
Intrauterine hypoxia first noted before onset of labor.....P20.0	-
Intrauterine hypoxia first noted during labor and delivery.....P20.1	-
Intrauterine hypoxia, unspecified.....P20.9	2
Birth asphyxia.....P21	-
Other respiratory conditions originating in the perinatal period...P22.8-P22.9,P23-P28	-
Congenital pneumonia.....P23	-
Aspiration syndromes.....P24	-
Interstitial emphysema and related conditions originating in the perinatal period.....P25	-
Atelectasis.....P28.0-P28.1	-
Other respiratory system disorders.....P22.8-P22.9,P26-P27,P28.2-P28.9	-
Infections specific to the perinatal period.....P35-P39	-
Congenital rubella syndrome.....P35.0	-
Congenital cytomegalovirus infection.....P35.1	-
Congenital herpesviral (herpes simplex) infection.....P35.2	-
Congenital viral hepatitis.....P35.3	-
Bacterial sepsis.....P36	-
Congenital tuberculosis.....P37.0	-
Congenital toxoplasmosis.....P37.1	-
Other infections specific to the perinatal period....P35.8-P35.9,P37.2-P37.9,P38-P39	-
Fetal hemorrhage.....P50-P54	-
Hemolytic disease of fetus.....P55-P56	-
Rh isoimmunization of fetus.....P55.0	-
ABO isoimmunization of fetus.....P55.1	-
Other hemolytic disease of fetus.....P55.8-P55.9	-
Hydrops fetalis due to hemolytic disease.....P56	-
Perinatal jaundice.....P57-P59	-
Hematological disorders.....P60-P61	-



Transitory endocrine and metabolic disorders specific to fetus.....	P70-P74	8
Syndrome of infant of a diabetic mother and neonatal diabetes mellitus....	P70.0-P70.2	8
Other transitory endocrine and metabolic disorders specific to fetus.....	P70.3-P70.9, P71-P74	-
Digestive system disorders of fetus.....	P76-P78	-
Other conditions originating in the perinatal period.....	P29, P80-P96	18
Hydrops fetalis not due to hemolytic disease.....	P83.2	1
Fetal death of unspecified cause.....	P95	15
Withdrawal symptoms from maternal use of drugs of addiction.....	P96.1	-
Termination of pregnancy.....	P96.4	-
Complications of intrauterine procedures, not elsewhere classified.....	P96.5	-
All other specified conditions originating in the perinatal period.....	P29, P83.0-P83.1, P83.3-P83.9, P91, P94, P96.0, P96.3, P96.8	2
Condition originating in the perinatal period, unspecified.....	P96.9	-
Congenital malformations, deformations and chromosomal abnormalities.....	Q00-Q99	28
Congenital malformations of nervous system.....	Q00-Q07	10
Anencephaly and similar malformations.....	Q00	1
Encephalocele.....	Q01	-
Microcephaly.....	Q02	-
Congenital hydrocephalus.....	Q03	1
Reduction deformities of brain.....	Q04.0-Q04.3	4
Other congenital malformations of brain.....	Q04.4-Q04.9	-
Spina bifida.....	Q05	3
Other congenital malformations of spinal cord and nervous system.....	Q06-Q07	1
Congenital malformations of eye, ear, face and neck.....	Q10-Q18	-
Congenital malformations of heart.....	Q20-Q24	1
Other congenital malformations of circulatory system.....	Q25-Q28	-
Congenital malformations of lung.....	Q33	-
Other congenital malformations of respiratory system.....	Q30-Q32, Q34	-
Congenital malformations of digestive system.....	Q35-Q45	1
Congenital malformations of genital organs.....	Q50-Q56	-
Congenital malformations of urinary system.....	Q60-Q64	4
Renal agenesis and other reduction defects of kidney.....	Q60	-
Cystic kidney disease.....	Q61	4
Other congenital malformations of urinary system.....	Q62-Q64	-
Congenital malformations and deformations of musculoskeletal system, limbs and integument.....	Q65-Q85	4
Other congenital malformations.....	Q86-Q89	2
Conjoined twins.....	Q89.4	-
Multiple congenital malformations, not elsewhere classified.....	Q89.7	1
All other congenital malformations.....	Q86-Q87, Q89.0-Q89.3, Q89.8-Q89.9	1
Chromosomal abnormalities, not elsewhere classified.....	Q90-Q99	6
Down's syndrome.....	Q90	2
Edward's syndrome.....	Q91.0-Q91.3	3
Patau's syndrome.....	Q91.4-Q91.7	-
Other chromosomal abnormalities, not elsewhere classified.....	Q92-Q99	1
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified.....	R00-R99	-
External causes of mortality.....	*U01, V01-Y84	-
Accidents (unintentional injuries).....	V01-X59	-
Assault (homicide).....	*U01, X85-Y09	-
Complications of medical and surgical care.....	Y40-Y84	-
Other external causes.....	Y10-Y36	-
- Quantity zero.		

NOTE: Excludes data for Guam, for which the cause of death was unspecified (P95) for 50% or more of records. American Samoa did not report data for 2022 and data for the Northern Marianas and the Virgin Islands were excluded due to small numbers.  
Source: National Center for Health Statistics, National Vital Statistics System.

**MOTHER**

1. NAME OF FETUS (optional-at the discretion of the parents )		2. TIME OF DELIVERY (24hr)		3. SEX (M/F/Unk)		4. DATE OF DELIVERY (Mo/Day/Yr)	
5a. CITY, TOWN, OR LOCATION OF DELIVERY		7. PLACE WHERE DELIVERY OCCURRED (Check one) <input type="checkbox"/> Hospital <input type="checkbox"/> Freestanding birthing center <input type="checkbox"/> Home Delivery: Planned to deliver at home? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Clinic/Doctor's office <input type="checkbox"/> Other (Specify) _____		8. FACILITY NAME (If not institution, give street and number)			
5b. ZIP CODE OF DELIVERY							
6. COUNTY OF DELIVERY							
10a. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)				10b. DATE OF BIRTH (Mo/Day/Yr)			
10c. MOTHER'S NAME PRIOR TO FIRST MARRIAGE (First, Middle, Last, Suffix)				10d. BIRTHPLACE (State, Territory, or Foreign Country)			
11a. RESIDENCE OF MOTHER-STATE		11b. COUNTY		11c. CITY, TOWN, OR LOCATION			
11d. STREET AND NUMBER		11e. APT. NO.		11f. ZIP CODE		11g. INSIDE CITY LIMITS? <input type="checkbox"/> Yes <input type="checkbox"/> No	

**FATHER****DISPOSITION****ATTENDANT  
AND  
REGISTRATION  
INFORMATION**

12a. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)		12b. DATE OF BIRTH (Mo/Day/Yr)		12c. BIRTHPLACE (State, Territory, or Foreign Country)	
13. METHOD OF DISPOSITION: <input type="checkbox"/> Burial <input type="checkbox"/> Cremation <input type="checkbox"/> Hospital Disposition <input type="checkbox"/> Donation <input type="checkbox"/> Removal from State <input type="checkbox"/> Other (Specify) _____					
14. ATTENDANT'S NAME, TITLE, AND NPI NAME: _____ NPI: _____ TITLE: <input type="checkbox"/> MD <input type="checkbox"/> DO <input type="checkbox"/> CNM/CM <input type="checkbox"/> OTHER MIDWIFE <input type="checkbox"/> OTHER (Specify) _____		15. NAME AND TITLE OF PERSON COMPLETING REPORT Name _____ Title _____		16. DATE REPORT COMPLETED ____/____/____ MM DD YYYY	
				17. DATE RECEIVED BY REGISTRAR ____/____/____ MM DD YYYY	

**18. CAUSE/CONDITIONS CONTRIBUTING TO FETAL DEATH****CAUSE  
OF  
FETAL  
DEATH**

18a. INITIATING CAUSE/CONDITION (AMONG THE CHOICES BELOW, PLEASE SELECT THE <u>ONE</u> WHICH MOST LIKELY BEGAN THE SEQUENCE OF EVENTS RESULTING IN THE DEATH OF THE FETUS) Maternal Conditions/Diseases (Specify) _____  Complications of Placenta, Cord, or Membranes <input type="checkbox"/> Rupture of membranes prior to onset of labor <input type="checkbox"/> Abruptio placenta <input type="checkbox"/> Placental insufficiency <input type="checkbox"/> Prolapsed cord <input type="checkbox"/> Chorioamnionitis <input type="checkbox"/> Other (Specify) _____ Other Obstetrical or Pregnancy Complications (Specify) _____ Fetal Anomaly (Specify) _____ Fetal Injury (Specify) _____ Fetal Infection (Specify) _____ Other Fetal Conditions/Disorders (Specify) _____ <input type="checkbox"/> Unknown		18b. OTHER SIGNIFICANT CAUSES OR CONDITIONS (SELECT OR SPECIFY ALL OTHER CONDITIONS CONTRIBUTING TO DEATH IN ITEM 18b) Maternal Conditions/Diseases (Specify) _____  Complications of Placenta, Cord, or Membranes <input type="checkbox"/> Rupture of membranes prior to onset of labor <input type="checkbox"/> Abruptio placenta <input type="checkbox"/> Placental insufficiency <input type="checkbox"/> Prolapsed cord <input type="checkbox"/> Chorioamnionitis <input type="checkbox"/> Other (Specify) _____ Other Obstetrical or Pregnancy Complications (Specify) _____ Fetal Anomaly (Specify) _____ Fetal Injury (Specify) _____ Fetal Infection (Specify) _____ Other Fetal Conditions/Disorders (Specify) _____ <input type="checkbox"/> Unknown	
18c. WEIGHT OF FETUS (grams preferred, specify unit) _____ <input type="checkbox"/> grams <input type="checkbox"/> lb/oz		18e. ESTIMATED TIME OF FETAL DEATH <input type="checkbox"/> Dead at time of first assessment, no labor ongoing <input type="checkbox"/> Dead at time of first assessment, labor ongoing <input type="checkbox"/> Died during labor, after first assessment <input type="checkbox"/> Unknown time of fetal death	
18d. OBSTETRIC ESTIMATE OF GESTATION AT DELIVERY _____ (completed weeks)		18f. WAS AN AUTOPSY PERFORMED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Planned	
		18g. WAS A HISTOLOGICAL PLACENTAL EXAMINATION PERFORMED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Planned	
		18h. WERE AUTOPSY OR HISTOLOGICAL PLACENTAL EXAMINATION RESULTS USED IN DETERMINING THE CAUSE OF FETAL DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> No	

Mother's Name \_\_\_\_\_

Mother's Medical Record No. \_\_\_\_\_

# MOTHER

<b>19. MOTHER'S EDUCATION</b> (Check the box that best describes the highest degree or level of school completed at the time of delivery)  <input type="checkbox"/> 8th grade or less <input type="checkbox"/> 9th - 12th grade, no diploma <input type="checkbox"/> High school graduate or GED completed <input type="checkbox"/> Some college credit but no degree <input type="checkbox"/> Associate degree (e.g., AA, AS) <input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS) <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)		<b>20. MOTHER OF HISPANIC ORIGIN?</b> (Check the box that best describes whether the mother is Spanish/Hispanic/Latina. Check the "No" box if mother is not Spanish/Hispanic/Latina)  <input type="checkbox"/> No, not Spanish/Hispanic/Latina <input type="checkbox"/> Yes, Mexican, Mexican American, Chicana <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, other Spanish/Hispanic/Latina (Specify) _____		<b>21. MOTHER'S RACE</b> (Check one or more races to indicate what the mother considers herself to be)  <input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribe) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Other (Specify) _____																					
<b>22. MOTHER MARRIED?</b> (At delivery, conception, or anytime between) <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>23a. DATE OF FIRST PRENATAL CARE VISIT</b> MM / DD / YYYY <input type="checkbox"/> No Prenatal Care		<b>23b. DATE OF LAST PRENATAL CARE VISIT</b> MM / DD / YYYY																					
<b>24. TOTAL NUMBER OF PRENATAL VISITS FOR THIS PREGNANCY</b> _____ (If none, enter "0".)		<b>25. MOTHER'S HEIGHT</b> _____ (feet/inches)		<b>26. MOTHER'S PREPREGNANCY WEIGHT</b> _____ (pounds)																					
<b>27. MOTHER'S WEIGHT AT DELIVERY</b> _____ (pounds)		<b>28. DID MOTHER GET WIC FOOD FOR HERSELF DURING THIS PREGNANCY?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>29. NUMBER OF PREVIOUS LIVE BIRTHS</b> 29a. Now Living Number _____ <input type="checkbox"/> None 29b. Now Dead Number _____ <input type="checkbox"/> None																					
<b>30. NUMBER OF OTHER PREGNANCY OUTCOMES</b> (spontaneous or induced losses or ectopic pregnancies) 30a. Other Outcomes Number (Do not include this fetus) _____ <input type="checkbox"/> None		<b>31. CIGARETTE SMOKING BEFORE AND DURING PREGNANCY</b> For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked. IF NONE, ENTER "0". <table border="0"> <tr> <td></td> <td>Average number of cigarettes or packs of cigarettes smoked per day.</td> <td># of cigarettes</td> <td># of packs</td> </tr> <tr> <td>Three Months Before Pregnancy</td> <td></td> <td>_____ OR _____</td> <td></td> </tr> <tr> <td>First Three Months of Pregnancy</td> <td></td> <td>_____ OR _____</td> <td></td> </tr> <tr> <td>Second Three Months of Pregnancy</td> <td></td> <td>_____ OR _____</td> <td></td> </tr> <tr> <td>Third Trimester of Pregnancy</td> <td></td> <td>_____ OR _____</td> <td></td> </tr> </table>					Average number of cigarettes or packs of cigarettes smoked per day.	# of cigarettes	# of packs	Three Months Before Pregnancy		_____ OR _____		First Three Months of Pregnancy		_____ OR _____		Second Three Months of Pregnancy		_____ OR _____		Third Trimester of Pregnancy		_____ OR _____	
	Average number of cigarettes or packs of cigarettes smoked per day.	# of cigarettes	# of packs																						
Three Months Before Pregnancy		_____ OR _____																							
First Three Months of Pregnancy		_____ OR _____																							
Second Three Months of Pregnancy		_____ OR _____																							
Third Trimester of Pregnancy		_____ OR _____																							
<b>29c. DATE OF LAST LIVE BIRTH</b> MM / YYYY		<b>30b. DATE OF LAST OTHER PREGNANCY OUTCOME</b> MM / YYYY		<b>32. DATE LAST NORMAL MENSES BEGAN</b> MM / DD / YYYY																					
<b>33. PLURALITY - Single, Twin, Triplet, etc.</b> (Specify) _____		<b>34. IF NOT SINGLE BIRTH- Born First, Second, Third, etc.</b> (Specify) _____																							
<b>35. MOTHER TRANSFERRED FOR MATERNAL MEDICAL OR FETAL INDICATIONS FOR DELIVERY?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No IF YES, ENTER NAME OF FACILITY MOTHER TRANSFERRED FROM: _____																									

# MEDICAL AND HEALTH INFORMATION

<b>36. RISK FACTORS IN THIS PREGNANCY</b> (Check all that apply):  <b>Diabetes</b> <input type="checkbox"/> Prepregnancy (Diagnosis prior to this pregnancy) <input type="checkbox"/> Gestational (Diagnosis in this pregnancy)  <b>Hypertension</b> <input type="checkbox"/> Prepregnancy (Chronic) <input type="checkbox"/> Gestational (PIH, preeclampsia) <input type="checkbox"/> Eclampsia  <input type="checkbox"/> Previous preterm birth  <input type="checkbox"/> Other previous poor pregnancy outcome (Includes perinatal death, small-for-gestational age/intrauterine growth restricted birth)  <input type="checkbox"/> Pregnancy resulted from infertility treatment-If yes, check all that apply: <input type="checkbox"/> Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination  <input type="checkbox"/> Assisted reproductive technology (e.g., in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))  <input type="checkbox"/> Mother had a previous cesarean delivery If yes, how many _____  <input type="checkbox"/> None of the above		<b>37. INFECTIONS PRESENT AND/OR TREATED DURING THIS PREGNANCY</b> (Check all that apply)  <input type="checkbox"/> Gonorrhea  <input type="checkbox"/> Syphilis  <input type="checkbox"/> Chlamydia  <input type="checkbox"/> Listeria  <input type="checkbox"/> Group B Streptococcus  <input type="checkbox"/> Cytomegalovirus  <input type="checkbox"/> Parvovirus  <input type="checkbox"/> Toxoplasmosis  <input type="checkbox"/> None of the above  <input type="checkbox"/> Other (Specify) _____	
<b>38. METHOD OF DELIVERY</b> A. Was delivery with forceps attempted but unsuccessful? <input type="checkbox"/> Yes <input type="checkbox"/> No B. Was delivery with vacuum extraction attempted but unsuccessful? <input type="checkbox"/> Yes <input type="checkbox"/> No C. Fetal presentation at delivery <input type="checkbox"/> Cephalic <input type="checkbox"/> Breech <input type="checkbox"/> Other D. Final route and method of delivery (Check one) <input type="checkbox"/> Vaginal/Spontaneous <input type="checkbox"/> Vaginal/Forceps <input type="checkbox"/> Vaginal/Vacuum <input type="checkbox"/> Cesarean If cesarean, was a trial of labor attempted? <input type="checkbox"/> Yes <input type="checkbox"/> No E. Hysterotomy/Hysterectomy <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>39. MATERNAL MORBIDITY</b> (Check all that apply) (Complications associated with labor and delivery)  <input type="checkbox"/> Maternal transfusion  <input type="checkbox"/> Third or fourth degree perineal laceration  <input type="checkbox"/> Ruptured uterus  <input type="checkbox"/> Unplanned hysterectomy  <input type="checkbox"/> Admission to intensive care unit  <input type="checkbox"/> Unplanned operating room procedure following delivery  <input type="checkbox"/> None of the above	
<b>40. CONGENITAL ANOMALIES OF THE FETUS</b> (Check all that apply)  <input type="checkbox"/> Anencephaly <input type="checkbox"/> Meningocele/Spina bifida <input type="checkbox"/> Cyanotic congenital heart disease <input type="checkbox"/> Congenital diaphragmatic hernia <input type="checkbox"/> Omphalocele <input type="checkbox"/> Gastroschisis <input type="checkbox"/> Limb reduction defect (excluding congenital amputation and dwarfing syndromes) <input type="checkbox"/> Cleft Lip with or without Cleft Palate <input type="checkbox"/> Cleft Palate alone <input type="checkbox"/> Down Syndrome <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending <input type="checkbox"/> Suspected chromosomal disorder <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending <input type="checkbox"/> Hypospadias <input type="checkbox"/> None of the anomalies listed above			

Table A. Period of gestation and weight minimums at which fetal death reporting is required, by reporting areas: United States, 2022

Area	All periods of gestation	12 weeks	16 weeks	20 weeks	20 weeks or 350 grams	20 weeks or 400 grams	20 weeks or 500 grams	350 grams
Alabama				X				
Alaska				X				
Arizona					X			
Arkansas		X						
California				X				
Colorado	X <sup>1</sup>							
Connecticut				X				
Delaware								X <sup>2</sup>
District of Columbia							X	
Florida				X				
Georgia	X							
Hawaii	X							
Idaho					X			
Illinois				X				
Indiana				X				
Iowa				X				
Kansas				X				
Kentucky					X			
Louisiana					X			
Maine				X				
Maryland				X <sup>3</sup>				
Massachusetts					X			
Michigan						X		
Minnesota				X				
Mississippi					X			
Missouri					X			
Montana								X <sup>2</sup>
Nebraska				X				
Nevada				X				
New Hampshire					X			
New Jersey				X				
New Mexico				X <sup>3</sup>				
New York	X							
New York (excluding New York City )	X							
New York City	X							
North Carolina				X				
North Dakota				X				
Ohio				X				
Oklahoma		X <sup>4</sup>						
Oregon				X				
Pennsylvania			X					
Rhode Island	X							
South Carolina					X			
South Dakota				X				
Tennessee					X			
Texas				X				
Utah				X				
Vermont				X <sup>5</sup>				
Virginia	X							
Washington				X				
West Virginia				X				
Wisconsin					X			
Wyoming				X				
American Samoa	X							
Guam					X			
Northern Marianas								X <sup>2</sup>
Puerto Rico					X			
Virgin Islands	X							

1 Although State law requires the reporting of fetal deaths of all periods of gestation, only data for fetal deaths of 20 weeks of gestation or more are provided to NCHS.

2 If weight is unknown, 20 completed weeks of gestation or more.

3 If gestational age is unknown, weight of 350 grams or more.

4 Although State law requires the reporting of fetal deaths at 12 weeks of gestation or more, only data for fetal deaths of 20 weeks of gestation or more are provided to NCHS.

5 If gestational age is unknown, weight of 400 grams or more, 15 ounces or more.

SOURCE: National Center for Health Statistics, National Vital Statistics System.

Table B. Percent of fetal death records on which specified items were not stated: United States and each state and territory, New York City, and the District of Columbia, 2022

[By place of residence]

[Fetal deaths include only those with stated or presumed period of gestation of 20 weeks or more.]

Reporting areas	Total Fetal deaths	Time of birth	Mother's birthplace	Education of mother <sup>2</sup>	Father's age <sup>3</sup>	Mother's Hispanic origin
Total of reporting areas <sup>1</sup>	20,202	1.7	5.6	14.2	26.7	4.5
Alabama	426	-	-	5.4	64.1	-
Alaska	54	3.7	3.7	14.8	35.2	7.4
Arizona	492	1.8	0.6	4.1	13.8	1.8
Arkansas	265	1.5	3.0	11.3	50.9	1.1
California	2,115	1.3	5.0	13.0	12.0	6.0
Colorado	305	-	16.7	34.1	13.1	1.0
Connecticut	175	4.0	1.7	26.3	9.1	4.6
Delaware	56	-	1.8	14.3	32.1	1.8
District of Columbia	65	1.5	46.2	40.0	60.0	1.5
Florida	1,548	2.8	9.0	8.1	16.5	6.5
Georgia	1,000	1.1	0.2	23.1	59.1	1.7
Hawaii	97	25.8	38.1	55.7	56.7	47.4
Idaho	91	1.1	-	2.2	13.2	1.1
Illinois	737	2.6	8.8	19.9	16.7	0.3
Indiana	439	-	3.4	7.3	27.8	1.4
Iowa	163	-	-	17.8	7.4	-
Kansas	205	1.5	1.0	6.3	11.7	1.5
Kentucky	283	-	1.1	4.9	46.3	-
Louisiana	300	-	0.7	4.3	24.7	-
Maine	63	1.6	6.3	7.9	20.6	-
Maryland	366	1.9	12.6	20.8	19.9	11.7
Massachusetts	284	0.7	20.1	39.8	34.2	22.2
Michigan	614	0.2	3.3	6.4	18.4	2.3
Minnesota	351	0.9	0.9	3.4	10.5	2.0
Mississippi	320	-	1.6	7.2	42.5	-
Missouri	358	0.6	2.0	5.6	17.9	2.2
Montana	54	1.9	-	-	13.0	-
Nebraska	110	1.8	0.9	40.0	7.3	4.5
Nevada	235	-	2.1	6.8	11.1	-
New Hampshire	56	1.8	7.1	8.9	23.2	3.6
New Jersey	498	1.6	1.2	7.6	8.4	5.8
New Mexico	69	1.4	-	2.9	44.9	1.4
New York (excluding New York City)	577	8.7	1.9	30.7	58.1	18.0
New York City	634	3.8	11.4	26.5	45.7	10.4
North Carolina	696	1.1	0.4	1.9	42.0	-
North Dakota	47	-	2.1	2.1	17.0	-
Ohio	741	0.1	3.4	2.8	11.3	1.6
Oklahoma	293	0.7	5.5	6.1	19.1	5.1
Oregon	195	2.1	3.6	9.7	16.4	5.1
Pennsylvania	663	5.1	3.6	15.8	14.5	0.2
Rhode Island	52	3.8	-	63.5	75.0	9.6
South Carolina	288	-	0.3	7.3	24.7	2.4
South Dakota	54	-	1.9	7.4	3.7	1.9
Tennessee	538	1.5	12.3	19.7	47.4	4.1
Texas	1,613	0.1	12.3	24.8	24.6	7.3
Utah	252	-	2.0	9.5	8.3	-
Vermont	21	-	4.8	14.3	23.8	4.8
Virginia	497	3.2	1.6	18.3	56.1	5.6
Washington	421	2.4	13.3	9.7	12.8	5.5
West Virginia	70	1.4	-	-	8.6	-
Wisconsin	320	1.3	1.9	8.4	45.3	0.3
Wyoming	36	-	-	8.3	11.1	2.8
American Samoa	---	---	---	---	---	---
Guam	34	-	2.9	2.9	73.5	-
Northern Marianas	---	---	---	---	---	---
Puerto Rico	218	0.9	0.9	0.5	23.9	-
Virgin Islands	---	---	---	---	---	---

See footnotes at end of table.

Table E. Percent of fetal death records on which specified items were not stated: United States and each state and territory, New York City, and the District of Columbia, 2022  
[By place of residence]

Reporting areas	Place of delivery	Attendant at delivery	Month prenatal care began\4	Mother's height	Mother's pre-pregnancy weight\5	Did mother get WIC food for herself during this pregnancy\6	Live-birth order\7
Total of reporting areas <sup>1</sup>	0.2	1.0	12.7	6.3	12.2	16.0	5.5
Alabama	-	-	2.8	0.9	5.9	3.8	-
Alaska	1.9	-	9.3	7.4	14.8	13.0	7.4
Arizona	0.2	1.2	3.9	3.0	6.1	7.1	3.3
Arkansas	-	-	4.2	2.3	14.7	3.0	2.6
California	0.7	-	14.1	8.5	15.5	21.6	7.1
Colorado	-	2.6	46.9	22.6	34.1	42.3	21.3
Connecticut	-	1.1	7.4	2.9	6.9	23.4	2.3
Delaware	-	10.7	7.1	5.4	10.7	16.1	3.6
District of Columbia	-	-	18.5	6.2	32.3	47.7	-
Florida	-	0.1	14.5	9.5	14.1	17.7	7.0
Georgia	0.1	0.2	18.9	6.7	14.5	24.6	8.2
Hawaii	-	1.0	64.9	41.2	64.9	72.2	54.6
Idaho	-	-	3.3	3.3	3.3	7.7	5.5
Illinois	0.1	0.5	16.0	4.2	17.2	1.2	0.9
Indiana	-	11.8	11.6	4.3	9.6	52.8	8.0
Iowa	-	-	3.1	0.6	3.7	27.0	-
Kansas	-	-	4.4	2.4	7.3	15.1	-
Kentucky	-	0.4	1.8	0.4	1.8	6.7	0.4
Louisiana	-	-	3.7	0.7	6.0	18.7	0.3
Maine	-	-	7.9	3.2	12.7	9.5	-
Maryland	-	0.5	16.4	4.1	7.4	26.2	0.8
Massachusetts	-	-	3.9	2.8	14.8	48.9	-
Michigan	-	0.3	5.4	1.0	4.9	9.9	2.3
Minnesota	-	0.9	2.0	2.0	9.7	3.4	2.0
Mississippi	-	0.6	7.8	1.3	5.0	10.0	-
Missouri	0.3	-	6.7	2.0	6.1	8.4	1.7
Montana	-	-	1.9	1.9	3.7	5.6	-
Nebraska	0.9	0.9	10.0	10.0	11.8	21.8	5.5
Nevada	-	0.4	5.5	5.5	6.8	6.8	0.9
New Hampshire	-	-	3.6	-	1.8	8.9	-
New Jersey	-	-	11.6	2.8	8.4	15.9	1.8
New Mexico	-	-	4.3	1.4	14.5	8.7	-
New York (excluding New York City)	0.3	-	36.9	21.7	27.7	44.7	12.8
New York City	-	-	29.5	4.9	14.8	---	11.8
North Carolina	-	1.6	2.6	1.3	5.6	4.0	-
North Dakota	-	-	4.3	-	4.3	10.6	-
Ohio	-	0.5	4.0	3.0	6.3	6.2	0.8
Oklahoma	-	-	7.5	7.2	15.4	10.9	28.7
Oregon	-	-	4.6	5.6	6.2	8.7	6.2
Pennsylvania	-	-	15.1	9.2	16.6	25.9	6.2
Rhode Island	-	1.9	51.9	11.5	19.2	88.5	19.2
South Carolina	-	2.1	5.6	2.4	3.8	12.8	3.1
South Dakota	-	-	3.7	-	3.7	13.0	7.4
Tennessee	-	-	9.5	3.9	8.4	21.0	0.9
Texas	0.7	4.6	14.9	8.1	7.7	0.6	4.3
Utah	-	0.4	3.2	1.6	6.0	0.4	0.4
Vermont	-	-	14.3	-	4.8	14.3	-
Virginia	0.2	0.4	19.5	16.1	34.0	3.0	1.0
Washington	-	1.7	17.6	10.0	18.5	17.1	30.6
West Virginia	-	2.9	5.7	2.9	4.3	5.7	1.4
Wisconsin	-	-	4.1	1.6	5.3	8.8	0.3
Wyoming	-	-	19.4	-	-	2.8	-
American Samoa	---	---	---	---	---	---	---
Guam	-	-	29.4	44.1	47.1	50.0	8.8
Northern Marianas	---	---	---	---	---	---	---
Puerto Rico	0.5	1.8	2.3	2.3	0.9	4.1	5.0
Virgin Islands	---	---	---	---	---	---	---

See footnotes at end of table.

Table E. Percent of fetal death records on which specified items were not stated: United States and each state and territory, New York City, and the District of Columbia, 2022  
[By place of residence]

Reporting areas	Birth interval\8	Cigarette smoking before and during pregnancy\9	Risk Factors in this Pregnancy	Method of Delivery	
				Fetal presentation\10	Final route and method of delivery\11
Total of reporting areas <sup>1</sup>	11.8	8.6	5.4	10.7	4.9
Alabama	3.8	1.9	0.9	1.9	0.9
Alaska	14.8	24.1	5.6	3.7	-
Arizona	4.9	4.3	3.5	5.7	1.6
Arkansas	9.8	2.3	0.4	0.8	0.4
California	13.9	13.3	10.8	34.1	10.2
Colorado	33.1	33.8	-	15.4	14.4
Connecticut	12.6	-	2.3	5.7	1.7
Delaware	8.9	5.4	3.6	1.8	3.6
District of Columbia	21.5	12.3	1.5	3.1	-
Florida	14.0	6.5	7.6	17.8	8.7
Georgia	13.9	10.5	12.8	15.9	3.3
Hawaii	56.7	22.7	17.5	53.6	52.6
Idaho	9.9	6.6	2.2	3.3	3.3
Illinois	5.2	1.6	0.1	8.7	6.1
Indiana	13.7	12.5	12.1	26.7	14.1
Iowa	3.1	0.6	-	1.2	1.2
Kansas	2.0	7.3	-	0.5	-
Kentucky	3.2	2.1	2.8	4.6	1.4
Louisiana	5.3	1.7	-	-	-
Maine	3.2	1.6	-	7.9	-
Maryland	4.1	1.6	0.3	0.5	-
Massachusetts	6.7	4.6	-	0.7	1.8
Michigan	11.4	4.6	3.9	6.8	0.7
Minnesota	4.3	2.0	1.4	4.0	1.7
Mississippi	1.6	1.3	5.3	4.7	0.3
Missouri	8.1	5.9	-	5.9	1.1
Montana	11.1	1.9	-	1.9	1.9
Nebraska	14.5	9.1	3.6	-	-
Nevada	5.5	3.4	-	0.9	0.9
New Hampshire	-	-	-	-	-
New Jersey	6.8	1.2	1.8	6.8	1.0
New Mexico	2.9	2.9	-	-	-
New York (excluding New York City)	25.8	21.5	4.2	27.0	22.9
New York City	25.4	11.4	19.4	20.7	10.1
North Carolina	2.3	0.4	-	0.1	0.3
North Dakota	2.1	2.1	2.1	14.9	-
Ohio	14.3	-	0.3	2.0	1.8
Oklahoma	19.1	10.2	7.5	-	-
Oregon	9.7	6.2	-	1.5	1.0
Pennsylvania	6.6	28.2	6.3	11.3	9.0
Rhode Island	23.1	55.8	9.6	11.5	7.7
South Carolina	10.8	8.7	5.9	2.4	1.4
South Dakota	7.4	5.6	1.9	1.9	1.9
Tennessee	10.8	7.2	0.4	0.2	-
Texas	9.7	13.6	8.2	0.2	1.3
Utah	6.0	0.8	-	-	-
Vermont	9.5	4.8	4.8	4.8	-
Virginia	18.5	9.5	-	0.8	-
Washington	35.6	10.9	14.3	19.7	10.5
West Virginia	5.7	4.3	1.4	7.1	2.9
Wisconsin	1.6	3.1	0.9	4.7	0.6
Wyoming	30.6	13.9	-	-	-
American Samoa	---	---	---	---	---
Guam	20.6	50.0	-	44.1	2.9
Northern Marianas	---	---	---	---	---
Puerto Rico	9.2	0.5	1.4	2.8	1.4
Virgin Islands	---	---	---	---	---

See footnotes at end of table.

Table E. Percent of fetal death records on which specified items were not stated: United States and each state and territory, New York City, and the District of Columbia, 2022  
[By place of residence]

Reporting areas	Maternal morbidity	Weight of fetus	Obstetric estimate of gestation	Cause of death\12
Total of reporting areas <sup>1</sup>	6.0	7.4	0.7	37.2
Alabama	0.7	4.7	-	33.3
Alaska	1.9	13.0	-	35.2
Arizona	3.3	1.8	0.8	50.6
Arkansas	0.8	8.3	0.4	44.9
California	19.0	5.9	0.9	---
Colorado	-	24.6	-	41.6
Connecticut	-	11.4	-	23.4
Delaware	3.6	-	1.8	32.1
District of Columbia	-	4.6	-	15.4
Florida	9.1	13.5	3.9	17.8
Georgia	7.9	11.8	0.4	67.6
Hawaii	18.6	49.5	4.1	73.2
Idaho	-	3.3	-	26.4
Illinois	0.3	9.4	0.1	19.5
Indiana	7.1	10.3	0.9	32.6
Iowa	-	2.5	-	33.7
Kansas	-	1.5	1.0	23.9
Kentucky	1.4	2.1	-	47.0
Louisiana	-	4.3	-	22.3
Maine	-	14.3	-	20.6
Maryland	1.1	3.6	-	32.8
Massachusetts	0.4	5.6	-	29.2
Michigan	20.4	2.0	0.2	51.5
Minnesota	0.6	4.6	-	36.5
Mississippi	5.0	2.2	0.9	57.2
Missouri	-	4.2	1.1	32.1
Montana	-	1.9	-	27.8
Nebraska	0.9	10.0	0.9	22.7
Nevada	0.4	2.6	-	42.6
New Hampshire	-	-	-	21.4
New Jersey	4.8	4.2	-	45.2
New Mexico	-	2.9	-	26.1
New York (excluding New York City)	4.5	21.3	0.5	48.5
New York City	19.9	12.3	-	57.9
North Carolina	-	5.6	0.9	49.3
North Dakota	-	2.1	-	51.1
Ohio	2.8	4.0	-	33.3
Oklahoma	6.1	4.4	0.7	29.7
Oregon	-	1.5	1.5	43.6
Pennsylvania	7.5	15.5	-	24.7
Rhode Island	11.5	15.4	-	40.4
South Carolina	7.6	1.4	0.3	43.4
South Dakota	-	7.4	-	31.5
Tennessee	0.2	1.3	0.4	43.1
Texas	4.0	0.8	0.4	25.5
Utah	-	9.5	-	29.4
Vermont	4.8	4.8	-	57.1
Virginia	0.4	6.4	1.4	46.7
Washington	-	14.7	-	25.4
West Virginia	7.1	4.3	-	40.0
Wisconsin	0.3	5.3	0.6	43.8
Wyoming	-	2.8	-	33.3
American Samoa	---	---	---	---
Guam	5.9	-	2.9	82.4
Northern Marianas	---	---	---	---
Puerto Rico	5.0	1.4	0.5	6.9
Virgin Islands	---	---	---	---

0.0 Quantity more than zero but less than 0.05.

---Data not available.

- Quantity zero.

NOTE: American Samoa did not report data for 2022. Data for the Commonwealth of Northern Marianas and the Virgin Islands were excluded due to small numbers. Reporting areas with levels of unknown data for an item of 50% and higher (based on counts by residence) are flagged in the file as not reporting.

1\Excludes data for American Samoa, Guam, the Commonwealth of the Northern Marianas, Puerto Rico, and the Virgin Islands.

\2Hawaii and Rhode Island reported education of mother for 2022 but had an unknown level of 50% or higher and were flagged as not reporting.

\3Alabama, Arkansas, the District of Columbia, Georgia, Hawaii, New York, Rhode Island, Virginia, and Guam reported father's age for 2022 but had an unknown level of 50% or higher and were flagged as not reporting.

\4Hawaii and Rhode Island reported date of first prenatal care for 2022 but had unknown levels of 50% or higher and were flagged as not reporting.

\5Hawaii reported mother's pre-pregnancy weight for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\6New York City does not report WIC and Hawaii, Indiana, Rhode Island, and Guam reported this item for 2022 but had unknown levels of 50% or higher and were flagged as not reporting

\7Hawaii reported live birth order for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\8Hawaii reported birth interval for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\9Rhode Island and Guam reported cigarette smoking before and during pregnancy for 2022 but had an unknown level of 50% or higher and were flagged as not reporting.

\10Hawaii reported fetal presentation for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\11Hawaii reported final route and method of delivery for 2022 but had an unknown level of 50% or higher and was flagged as not reporting.

\12Arizona, Georgia, Hawaii, Mississippi, North Dakota, New York City, Vermont, and Guam reported cause of death for 2022 but had an unknown level of 50% or higher and were flagged as not reporting. California did not report cause of death based on the 2003 revision of the U.S. Standard Report of Fetal Death and was also flagged as not reporting.

SOURCE: National Center for Health Statistics, National Vital Statistics System.