

Cause-of-death Data From the Fetal Death File, 2015–2017

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Abstract

Objectives—This report presents data on fetal cause of death by maternal age, maternal race and Hispanic origin, fetal sex, period of gestation, birthweight, and plurality.

Methods—Descriptive tabulations of data collected on the 2003 U.S. Standard Report of Fetal Death are presented for fetal deaths occurring at 20 weeks of gestation or more for 2015–2017 in a reporting area of 34 states and the District of Columbia, in which less than 50% of deaths were attributed to Fetal death of unspecified cause (P95). Cause-of-death reporting in this area was based on the 2003 fetal death report revision and represents 60% of fetal deaths occurring in the United States during this time. Causes of death are processed in accordance with the *International Classification of Diseases, 10th Revision*.

Results—Five selected causes account for 89.5% of fetal deaths in the reporting area: Fetal death of unspecified cause; Fetus affected by complications of placenta, cord and membranes; Fetus affected by maternal complications of pregnancy; Congenital malformations, deformations and chromosomal abnormalities; and Fetus affected by maternal conditions that may be unrelated to present pregnancy.

Conclusions—Cause-of-fetal-death data reported on vital records enable new comparisons of maternal and fetal characteristics and provide information for a larger proportion of the country than other studies. While limited variation was seen among the selected causes across the maternal and fetal characteristics examined, many of the observed variations are consistent with associations that have been documented in the research literature.

Keywords: fetal mortality • initiating cause of death • selected cause of death • National Vital Statistics System

Introduction

Fetal deaths, which are involuntary losses of fetuses during pregnancy, outnumber infant deaths (1). The risk of fetal loss differs by both maternal and fetal characteristics, and cause of fetal death can provide additional insight into why fetuses die. This report on the cause of fetal death is the second ever released from the National Vital Statistics System (NVSS) and includes 3 years of cause-of-fetal-death data. Three years are included in this report because of the recent release of multiple years of fetal death files (2–4).

A cause-of-fetal-death item has been included on the form used to obtain details on fetal deaths, known as the fetal death report, since 1939 because it is considered critical information. However, the data had never been released in public-use files or published, partly due to resource constraints and quality concerns, until 2014. For example, there has been uncertainty over whether coding was being done in a standardized fashion and concern with how much of the unknown cause might reflect lack of care in completing the fetal death report rather than appropriate reporting that the cause was unknown.

Internal and external developments have resulted in more committed resources and changes to improve quality. For example, the cause-of-death item on the fetal death report was redesigned for the 2003 U.S. Standard Report of Fetal Death (5) that is produced as a model for the vital statistics jurisdictions (6). The goal of the redesign was to improve the quality and specificity of information reported for cause of death. It was designed to be consistent with instructions in the World Health Organization's (WHO) *International Classification of Diseases (ICD) (7)*, while providing more guidance on desired information and retaining flexibility to report any cause.

A national fetal death file that includes cause of death is now routinely released. Although the data are of sufficient quality to report, work will need to continue to focus on how to improve data quality (e.g., increase number of areas submitting the information, increase reporting of specified information, and improve the multiple-cause data fields). This report provides



background on the new data and the information available in that data. Releasing the data opens access and gives researchers the opportunity to not only use the data but also to explore opportunities to improve it.

The subject of this report is cause of fetal deaths occurring at 20 weeks of gestation or more. The reporting area includes areas reporting cause of death based on the 2003 revision where less than 50% of an area's cause data were attributed to Fetal death of unspecified cause (unspecified cause) (P95) for each of the data years 2015, 2016, and 2017.

Methods

As of January 1, 2017, 48 states, the District of Columbia (D.C.), and New York City had implemented the 2003 U.S. Standard Report of Fetal Death. This represented 97% of fetal deaths at 20 weeks of gestation or more in 2017. However, this report includes 2015–2017 data for the 35 areas (Alabama, Alaska, Arizona, Arkansas, Colorado, Delaware, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Texas, Utah, Washington, Wyoming, and D.C.) that implemented the 2003 revision of the U.S. Standard Report of Fetal Death on or before January 1, 2015, and met the reporting requirement of having less than 50% of records assigned to unspecified cause (P95) for all 3 years 2015, 2016, and 2017. This reporting area represented 60% of all 2015–2017 fetal deaths at 20 weeks of gestation or more occurring in the United States. Statistics based on a subnational area may not be generalizable to the entire United States, particularly if characteristics differ by geographic area ([Technical Notes](#)). The fetal mortality rate by occurrence for the reporting area (587.8 fetal deaths per 100,000 live births and fetal deaths) is not statistically different than the rate for the United States (594.8).

As with other deaths, the intent is for an attending physician, medical examiner, or coroner to report cause of death (7). 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 form. As with other deaths, the certifier may form this medical opinion based upon various medical tests, investigations, and examinations. 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.

The National Center for Health Statistics (NCHS) codes the cause of fetal death reported by the certifier using the *International Classification of Diseases, 10th Revision* (ICD–10) (7). 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, 2014” (8). Literal text stated on the fetal death report form 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 form. One section of the fetal death report form (Item 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, 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 fetal death report form, provisions of ICD, and associated selection rules and modifications. A second section of the fetal death report form (Item 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. Because more medical information may be reported on the fetal death report form than is directly reflected in the initiating cause of death, this additional information is captured in multiple cause-of-fetal-death data.

In this publication, causes of death are tabulated by the List of 124 Selected Causes of Fetal Death (fetal cause list) and by 5 selected causes drawn from a subset of the fetal cause list (9). The selected causes are in descending order according to the number of deaths assigned to each cause. The 45 causes from the fetal cause list (including unspecified) from which the selected causes were drawn are defined in the fetal cause list in Instruction manual, part 9 (9).

This report presents numbers and percentages of fetal deaths at 20 weeks of gestation or more for the selected causes of death by selected maternal and fetal characteristics. Tabulations of cause-of-fetal-death statistics are based solely on the initiating cause of death. The fetal mortality rate is briefly described for the reporting area. Fetal mortality rates are expressed as the number of fetal deaths per 100,000 total live births and fetal deaths to women in the specified group. Birth data used in this report to calculate rates are based on 100% of the birth certificates registered in the reporting area. The rates provide a measure of the risk of having a fetal death for reported pregnancies (i.e., pregnancies ending in a live birth or fetal death of 20 or more weeks of gestation). Autopsy information is available in the data but was not included in this report (see reference 5 to learn more about autopsy data).

Most fetal deaths occur early in pregnancy. However, reporting requirements and completeness of reporting for fetal death data vary across areas, and these variations have implications for data quality and completeness. Most areas require reporting of fetal deaths at 20 weeks of gestation or more, or a minimum of 350 grams birthweight (roughly equivalent to 20 weeks), or some combination of the two. However, several areas require reporting of fetal deaths at all periods of gestation, two require reporting beginning at 12 weeks, and one requires reporting beginning at 16 weeks. At the other end of the spectrum, one area requires reporting of fetal deaths with birthweights of 500 grams or more (roughly equivalent to 22 weeks of gestation) (2). Reporting completeness may account in part for differences in fetal and perinatal mortality rates across states.

Research studies find that cause of fetal death is often unknown (10–16). In the 35 reporting areas that met the reporting criteria for 2015–2017, the percentage of fetal deaths at 20 weeks of gestation or more with unknown cause for individual areas ranged from 17.1% to 43.5%, with an average of 30.2% and a median of 28.1%.

Results

In 2015–2017, a total of 41,788 fetal deaths at 20 weeks of gestation or more occurred in the 35 areas included in this report. The fetal mortality rate was 587.8 fetal deaths per 100,000 live births and fetal deaths (Table). Fetal mortality rates for the individual years are also shown in the Table. The rate for 2017 was statistically significantly less than the rate for 2016.

Table. Number and rate of fetal mortality: 35 areas, 2015–2017

Year	Number	Rate
2015–2017.....	41,788	587.8
2015.....	14,209	591.2
2016.....	14,136	593.4
2017.....	13,443	578.6

SOURCE: NCHS, National Vital Statistics System, Fetal Death.

Table 1 shows cause in detail; five selected causes of fetal death accounted for 89.5% of fetal deaths in these areas (Tables 1 and 2, Figure 1). By order of frequency, these were: Fetal death of unspecified cause (unspecified cause); Fetus affected by complications of placenta, cord and membranes (placental, cord, and membrane complications); Fetus affected by maternal complications of pregnancy (maternal complications); Congenital malformations, deformations and chromosomal abnormalities (congenital malformations); and Fetus affected by maternal conditions that may be unrelated to present pregnancy (maternal conditions unrelated to pregnancy).

These same five selected causes were generally the most common when examining fetal causes with respect to various maternal and fetal characteristics, although the relative order sometimes differed and the percentage of all deaths for a particular cause often varied.

Race and Hispanic origin

The five most common selected causes of fetal death and the top two causes were the same by race and Hispanic origin, while the ranking of the other causes differed (Table 2). Unspecified cause and placental, cord, and membrane complications were the two most common of the selected causes for all groups (Figure 2). Congenital malformations was the third most common for non-Hispanic white fetal deaths, followed by maternal complications and maternal conditions unrelated to pregnancy. For non-Hispanic black fetal deaths, maternal complications was the third most common, maternal conditions unrelated to pregnancy was fourth, and congenital malformations was

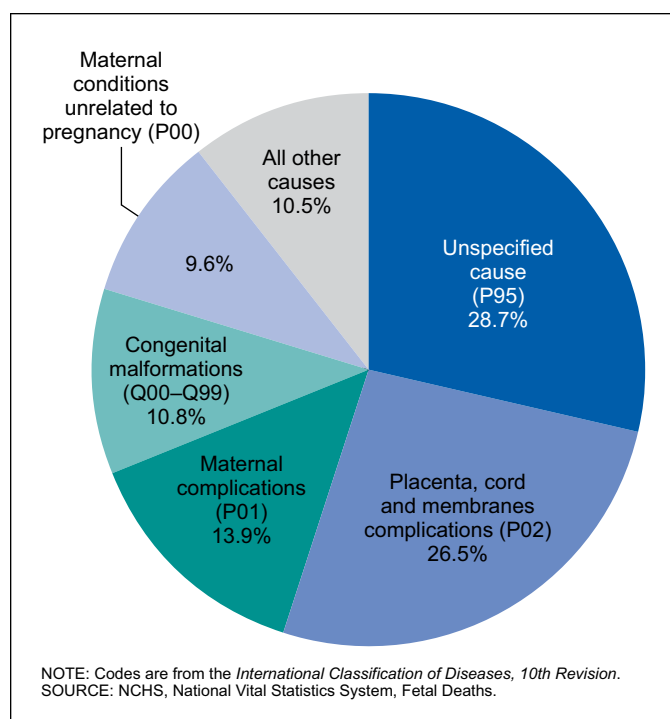


Figure 1. Fetal deaths, by selected causes: 35 areas, 2015–2017

fifth. For Hispanic fetal deaths, maternal complications was the third most common, congenital malformations was fourth, and maternal conditions unrelated to pregnancy was fifth.

Maternal age

The most frequent selected causes and order were the same for women under 20 and those aged 20–39. In descending order, these were: unspecified cause; placental, cord, and membrane complications; maternal complications; congenital malformations; and maternal conditions unrelated to pregnancy (Table 3). For women aged 40 and over, unspecified cause was most common; placental, cord, and membrane complications was the second most common; congenital malformations was third; maternal complications was fourth; and maternal conditions unrelated to pregnancy was fifth.

Sex of fetus

When aggregated into the selected cause groupings shown in this report, the five most common selected causes and the order were the same for male and female fetal deaths (Table 4). These were: unspecified cause; placental, cord, and membrane complications; maternal complications; congenital malformations; and maternal conditions unrelated to pregnancy.

Period of gestation

Three of the same causes (unspecified cause; placental, cord, and membrane complications; and congenital malformations) were among the five most common selected causes for all of the gestational age groups shown, although the order often differed

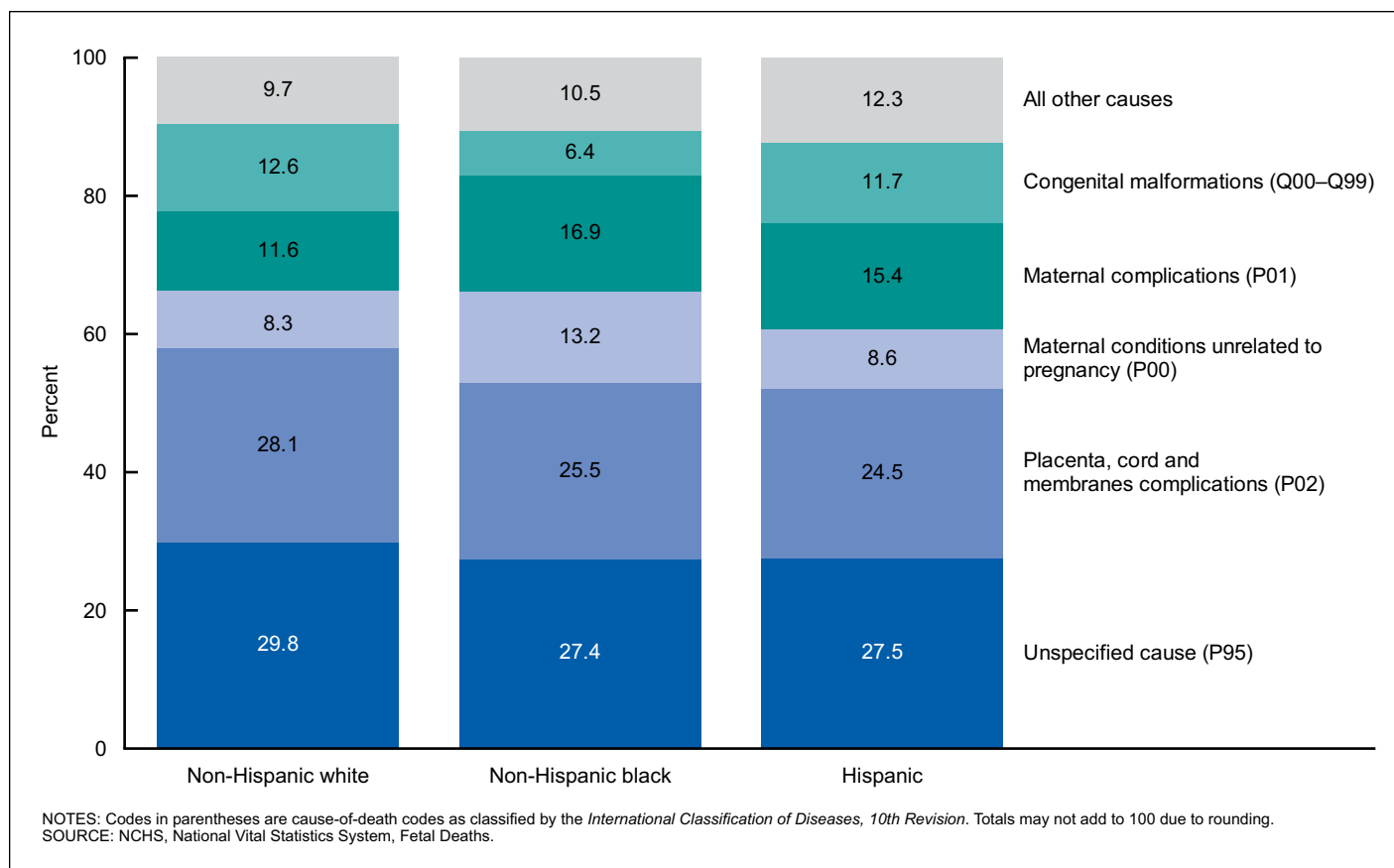


Figure 2. Comparison of distribution of 5 selected causes, by race and Hispanic origin: 35 areas, 2015–2017

(Table 5). Maternal complications was the most common selected cause at 20–23 weeks of gestation and among the five most common at 24–27 and 28–31 weeks, but it was not among the five most common causes at 34–36, 37–38, and 39–40 weeks of gestation. Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (diabetes mellitus) was among the five most common causes at gestational ages 34–36, 37–38, 39–40, and 42 weeks or more (Figure 3).

Birthweight

The most common selected causes of fetal death vary by birthweight (Table 6). Unspecified cause; placental, cord, and membrane complications; and maternal conditions unrelated to pregnancy were among the most common selected causes for all the weight categories, although the order was not consistent. Maternal complications was the third and fifth most common of the selected causes for fetuses with birthweight less than 1,500 grams and 1,500–2,499 grams, respectively, and was not among the most common selected causes for fetuses of higher birthweights. Diabetes mellitus was not among the most common selected causes at the lower birthweights but was the fourth most common cause for fetuses with birthweights of 2,500–3,999 grams and the most common cause for those weighing 4,000 grams or more. With respect to percentage, diabetes accounted for 6.9% of fetal deaths with birthweights of 2,500–3,999 grams and 30.6% of fetal deaths weighing 4,000 grams or more.

Plurality

Certain causes of fetal death were specific to multiple deliveries and, accordingly, the order of the most common selected causes of death differed by plurality (Table 7). Maternal complications accounted for 43.7% of deaths in multiple deliveries compared with 11.4% of single deliveries; this can be attributed to the subcategory of maternal complications, Fetus and newborn affected by multiple pregnancy (P01.5), which is often reported as a cause for multiple deliveries.

Discussion

The fetal mortality rate was 587.8 fetal deaths per 100,000 live births and fetal deaths in 2015–2017 for the 35 areas considered in this publication. This reporting area accounts for 60% of the fetal deaths that occur in the United States, but the fetal mortality rate is not statistically different from that for the entire United States during these 3 years (594.8 per 100,000 live births and fetal deaths). Non-Hispanic white fetal deaths were overrepresented in the reporting area, while Hispanic and non-Hispanic black fetal deaths were underrepresented compared with the total United States. Additionally, women in the reporting area were more likely to be under age 20 and 20–24 and less likely to be 35–39 and 40 and over when compared with the total United States. The distributions of fetal deaths for women aged 25–29 and 30–34 were similar.

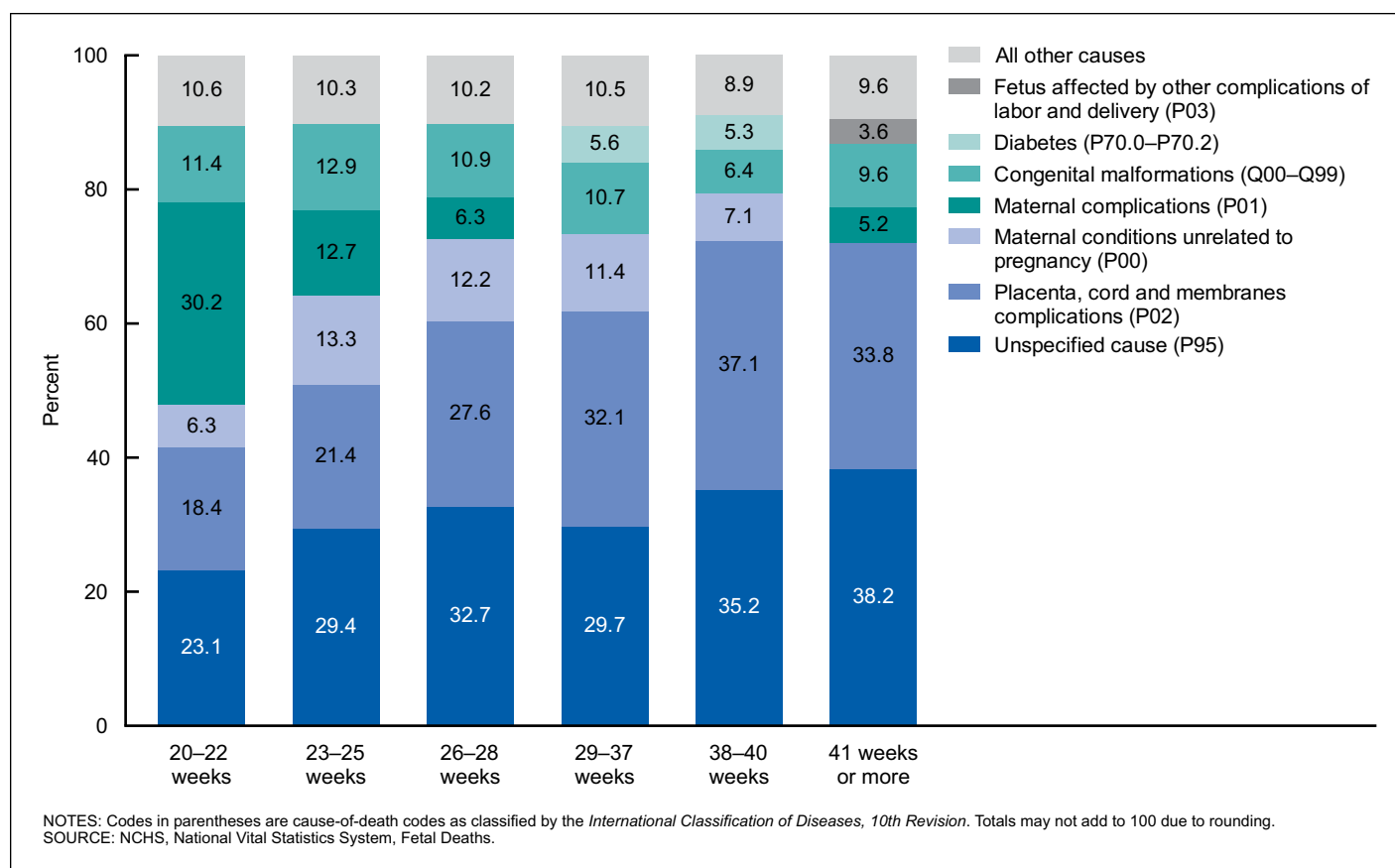


Figure 3. Comparison of distribution of 5 selected causes, by period of gestation: 35 areas, 2015–2017

Five selected causes accounted for 89.5% of all fetal deaths. With so many deaths concentrated in a few broad causes, including unspecified, these same five causes are among the selected causes for most of the characteristics studied (e.g., maternal age, sex of fetus, and plurality). Some differences in order and percentage of deaths were seen across the different causes. The variables for which the five causes differed most were gestational age and birthweight. Diabetes mellitus, which combines types of diabetes, including pre-existing and gestational diabetes, emerged as a selected cause, and maternal complications dropped below the top five selected causes for fetuses with gestations of 34–36, 37–38, and 39–40 weeks and heavier delivery weights of 2,500–3,999 grams and 4,000 grams or more.

Even without large variation among the most common selected causes, the variations observed are consistent with known medical relationships. For instance, diabetes during pregnancy is associated with larger fetuses and fetal death (14,17), so the increase in the relative frequency of diabetes with concurrent increases in gestational age and birthweight is consistent. The larger proportion of congenital malformations from Edwards and Down syndrome among women aged 40 and over is consistent with the increasing risk of these malformations as maternal age increases (18,19). There are fetal deaths reported due to Edwards syndrome, which is a chromosomal abnormality that usually results in death before birth (19).

Possible reasons for data limitations

Attention on reproductive loss has historically concentrated on infant mortality, in part due to the less robust knowledge about the incidence, etiology, and prevention strategies for fetal mortality. There have been longstanding concerns about data quality and completeness (13,14), and fewer resources committed and less priority given to fetal death data collection and research (14,20). Some studies (21,22) have singled out perceptions of importance and work burden as factors affecting the quality of information entered in fetal death vital records and concluded that a broad educational effort is needed to improve the quality of vital statistics cause-of-fetal-death data.

A relatively high level of unknown cause is a typical finding in research efforts (10–15,20). A study in New York City (21) identified level of physician engagement as a factor in whether ill-defined cause of fetal death is reported in vital statistics. Although the 2014 vital statistics report (5) did not clearly reflect this, others find that the ability to identify cause is improved when additional workup has been done. Miller et al. (15) found that a cause of death could be identified based on clinical and laboratory information alone in 24% of cases, 61% if the examination also included placental pathologic examination, and 74% if an autopsy was done in addition to the other types of assessment. Improvement in diagnostic capability over time also may lead to reductions in the level of unknown cause reported (23). Specialized studies on cause of fetal death can ensure that comprehensive, standardized examination protocols are

followed to maximize the information available (13,24). Vital statistics data encompass events occurring in more variable situations with different levels of examination (5).

Efforts to improve reporting

The redesign of the cause-of-death section on the 2003 standard report reflects the efforts of a group of stakeholders to improve cause-of-fetal-death data. Some research notes decreases in reporting of ill-defined causes with the new form (25). Another study recommended reducing the amount of information collected (21), and many items have been dropped from the national fetal death file in the hope of reducing reporting burden and improving the quality of the remaining items, including cause of death (26). The need for more education and awareness efforts targeted to clinicians and information management staff reporting information on fetal deaths is a common call to action (21,22,25). Variability between facilities and discrepancies between medical records and fetal death reports point to areas where reporting could be improved (27). NCHS has developed e-learning training for birth and fetal death data that includes a special section on reporting fetal cause of death (<https://www.cdc.gov/nchs/training/BirthCertificateElearning/>). Specific areas addressed in this training expand visibility, reinforce importance, and target some reporting issues.

NCHS also revised instructions on coding fetal cause of death in 2012, developed a system for processing cause, and took on responsibility for coding fetal cause of death in 2010. In addition, a new system that includes reduced manual interventions was introduced for use beginning with 2015 data to improve how cause data flows through NCHS' system as coding is occurring.

Interest in fetal mortality is increasing. Several additional initiatives are examining the etiology and prevention of fetal death, such as the Stillbirth Collaborative Research Network and CDC's active fetal death surveillance program (10). Causes of fetal death vary in studies because of limitations with cause-of-death information, variations in methodology, and use of multiple classifications. Yet, cause-of-death analyses are important for identifying preventable risks. Management, obstetric care, and diagnostic methods have contributed to shifting patterns over time (23). Further improvements in diagnostic methods provide the opportunity to better identify cause, and the resulting knowledge can potentially influence clinical management and development of new prevention strategies (13–16,27).

As research continues using smaller studies with more tightly controlled study protocols, the sustained surveillance of fetal mortality levels and trends through NVSS will remain critical. NVSS has a unique advantage in measuring the national scale of fetal mortality. The addition of cause of death to the public-use data in 2014 was an important enhancement to these data. The number of areas with the revised format for cause is almost complete, although the number of areas with less than 50% of records assigned to unspecified cause fluctuates. Increasing access to the data should increase the utility and visibility of these data. New efforts to improve data quality should further enhance the usefulness of these data.

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Table 1. Deaths according to 124 selected causes of fetal death: 35 areas, 2015–2017[By place of occurrence. An asterisk (*) preceding a cause-of-death code indicates that the code is not included in the *International Classification of Diseases, 10th Revision (ICD–10)*]

Cause of death (based on ICD–10)	Number	Percent
All causes.....	41,788	100.0
Certain infectious and parasitic diseases..... (A00–B99)	4	†
Congenital syphilis..... (A50)	1	†
Human immunodeficiency virus (HIV) disease..... (B20–B24)	–	†
Other viral diseases..... (A80–B19, B25–B34)	2	†
Other and unspecified infectious and parasitic diseases..... (A00–A49, A51–A79, B35–B99)	1	†
Malignant neoplasms..... (C00–C97)	10	†
In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior..... (D00–D48)	275	0.7
Anemias..... (D50–D64)	15	†
Endocrine, nutritional and metabolic diseases..... (E00–E88)	15	†
Short stature, not elsewhere classified..... (E34.3)	5	†
Cystic fibrosis..... (E84)	2	†
Other endocrine, nutritional and metabolic diseases..... (E00–E32, E34.0–E34.2, E34.4–E34.9, E40–E83, E85–E88)	8	†
Meningitis..... (G00, G03)	–	†
Other diseases of nervous system and sense organs..... (G04–H93)	10	†
Umbilical hernia..... (K42)	–	†
Other hernia..... (K40–K41, K43–K46)	1	†
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, U04)	31	0.1
Certain conditions originating in the perinatal period..... (P00–P96)	36,851	88.2
Fetus affected by maternal conditions that may be unrelated to present pregnancy..... (P00)	4,024	9.6
Fetus affected by maternal hypertensive disorders..... (P00.0)	2,162	5.2
Fetus affected by maternal renal and urinary tract diseases..... (P00.1)	73	0.2
Fetus affected by maternal infectious and parasitic diseases..... (P00.2)	280	0.7
Fetus affected by other maternal circulatory and respiratory diseases..... (P00.3)	194	0.5
Fetus affected by maternal nutritional disorders..... (P00.4)	5	†
Fetus affected by maternal injury..... (P00.5)	168	0.4
Fetus affected by surgical procedure on mother..... (P00.6)	17	†
Fetus affected by other medical procedures and maternal conditions..... (P00.7–P00.8)	1,123	2.7
Fetus affected by unspecified maternal condition..... (P00.9)	2	†
Fetus affected by maternal complications of pregnancy..... (P01)	5,788	13.9
Fetus affected by incompetent cervix..... (P01.0)	848	2.0
Fetus affected by premature rupture of membranes..... (P01.1)	3,595	8.6
Fetus affected by oligohydramnios..... (P01.2)	268	0.6
Fetus affected by polyhydramnios..... (P01.3)	102	0.2
Fetus affected by ectopic pregnancy..... (P01.4)	–	†
Fetus affected by multiple pregnancy..... (P01.5)	860	2.1
Fetus affected by maternal death..... (P01.6)	24	0.1
Fetus affected by malpresentation before labor..... (P01.7)	14	†
Fetus affected by other and unspecified maternal complications of pregnancy..... (P01.8–P01.9)	77	0.2
Fetus affected by complications of placenta, cord and membranes..... (P02)	11,082	26.5
Fetus affected by placenta previa..... (P02.0)	82	0.2
Fetus affected by other forms of placental separation and hemorrhage..... (P02.1)	3,380	8.1
Fetus affected by other and unspecified morphological and functional abnormalities of placenta..... (P02.2)	2,156	5.2
Fetus affected by placental transfusion syndromes..... (P02.3)	342	0.8
Fetus affected by prolapsed cord..... (P02.4)	250	0.6
Fetus affected by other compression of umbilical cord..... (P02.5)	2,545	6.1
Fetus affected by other and unspecified conditions of umbilical cord..... (P02.6)	1,090	2.6
Fetus affected by chorioamnionitis..... (P02.7)	1,213	2.9
Fetus affected by other and unspecified abnormalities of membranes..... (P02.8–P02.9)	24	0.1
Fetus affected by other complications of labor and delivery..... (P03)	379	0.9
Fetus affected by breech delivery and extraction..... (P03.0)	11	†
Fetus affected by other malpresentation, malposition and disproportion during labor and delivery..... (P03.1)	14	†
Fetus affected by forceps delivery..... (P03.2)	–	†
Fetus affected by delivery by vacuum extractor (ventouse)..... (P03.3)	–	†
Fetus affected by cesarean delivery..... (P03.4)	1	†
Fetus affected by precipitate delivery..... (P03.5)	7	†
Fetus affected by abnormal uterine contractions..... (P03.6)	5	†
Fetus affected by other and unspecified complications of labor and delivery..... (P03.8–P03.9)	341	0.8

Table 1. Deaths according to 124 selected causes of fetal death: 35 areas, 2015–2017—Con.[By place of occurrence. An asterisk (*) preceding a cause-of-death code indicates that the code is not included in the *International Classification of Diseases, 10th Revision (ICD–10)*]

Cause of death (based on ICD–10)	Number	Percent
Fetus affected by noxious influences transmitted via placenta (P04)	382	0.9
Slow fetal growth and fetal malnutrition (P05)	360	0.9
Disorders related to short gestation and low birth weight, not elsewhere classified (P07)	797	1.9
Extremely low birth weight or extreme immaturity (P07.0,P07.2)	417	1.0
Other low birth weight and preterm (P07.1,P07.3)	380	0.9
Disorders related to long gestation and high birth weight (P08)	8	†
Exceptionally large size and other heavy for gestational age fetus (P08.0–P08.1)	4	†
Post-term, not heavy for gestational age fetus (P08.2)	4	†
Birth trauma (P10–P15)	3	†
Intracranial laceration and hemorrhage due to birth injury and other injuries to central nervous system (P10–P11)	–	†
Other birth trauma (P12–P15)	3	†
Intrauterine hypoxia and birth asphyxia (P20–P21)	31	0.1
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)	30	0.1
Birth asphyxia (P21)	1	†
Other respiratory conditions originating in the perinatal period (P22.8–P22.9,P23–P28)	29	0.1
Congenital pneumonia (P23)	1	†
Aspiration syndromes (P24)	10	†
Interstitial emphysema and related conditions originating in the perinatal period (P25)	–	†
Atelectasis (P28.0–P28.1)	2	†
Other respiratory system disorders (P22.8–P22.9,P26–P27,P28.2–P28.9)	16	†
Infections specific to the perinatal period (P35–P39)	34	0.1
Congenital rubella syndrome (P35.0)	–	†
Congenital cytomegalovirus infection (P35.1)	14	†
Congenital herpesviral (herpes simplex) infection (P35.2)	–	†
Congenital viral hepatitis (P35.3)	–	†
Bacterial sepsis (P36)	4	†
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)	15	†
Fetal hemorrhage (P50–P54)	61	0.1
Hemolytic disease of fetus (P55–P56)	28	0.1
Rh isoimmunization of fetus (P55.0)	19	†
ABO isoimmunization of fetus (P55.1)	–	†
Other hemolytic disease of fetus (P55.8–P55.9)	9	†
Hydrops fetalis due to hemolytic disease (P56)	–	†
Perinatal jaundice (P57–P59)	2	†
Hematological disorders (P60–P61)	8	†
Transitory endocrine and metabolic disorders specific to fetus (P70–P74)	1,274	3.0
Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (P70.0–P70.2)	1,274	3.0
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)	12,561	30.1
Hydrops fetalis not due to hemolytic disease (P83.2)	478	1.1
Fetal death of unspecified cause (P95)	12,001	28.7
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)	78	0.2
Condition originating in the perinatal period, unspecified (P96.9)	3	†
Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	4,493	10.8
Congenital malformations of nervous system (Q00–Q07)	818	2.0
Anencephaly and similar malformations (Q00)	360	0.9
Encephalocele (Q01)	41	0.1
Microcephaly (Q02)	18	†
Congenital hydrocephalus (Q03)	160	0.4
Reduction deformities of brain (Q04.0–Q04.3)	94	0.2
Other congenital malformations of brain (Q04.4–Q04.9)	43	0.1
Spina bifida (Q05)	55	0.1
Other congenital malformations of spinal cord and nervous system (Q06–Q07)	47	0.1

Table 1. Deaths according to 124 selected causes of fetal death: 35 areas, 2015–2017—Con.[By place of occurrence. An asterisk (*) preceding a cause-of-death code indicates that the code is not included in the *International Classification of Diseases, 10th Revision (ICD–10)*]

Cause of death (based on ICD–10)	Number	Percent
Congenital malformations of eye, ear, face and neck (Q10–Q18)	21	0.1
Congenital malformations of heart (Q20–Q24)	459	1.1
Other congenital malformations of circulatory system (Q25–Q28)	147	0.4
Congenital malformations of lung (Q33)	21	0.1
Other congenital malformations of respiratory system (Q30–Q32,Q34)	12	†
Congenital malformations of digestive system (Q35–Q45)	86	0.2
Congenital malformations of genital organs (Q50–Q56)	20	0.0
Congenital malformations of urinary system (Q60–Q64)	351	0.8
Renal agenesis and other reduction defects of kidney (Q60)	192	0.5
Cystic kidney disease (Q61)	84	0.2
Other congenital malformations of urinary system (Q62–Q64)	75	0.2
Congenital malformations and deformations of musculoskeletal system, limbs and integument (Q65–Q85)	513	1.2
Other congenital malformations (Q86–Q89)	347	0.8
Conjoined twins (Q89.4)	20	0.0
Multiple congenital malformations, not elsewhere classified (Q89.7)	136	0.3
All other congenital malformations (Q86–Q87,Q89.0–Q89.3,Q89.8–Q89.9)	191	0.5
Chromosomal abnormalities, not elsewhere classified (Q90–Q99)	1,698	4.1
Down syndrome (Q90)	332	0.8
Edwards syndrome (Q91.0–Q91.3)	639	1.5
Patau syndrome (Q91.4–Q91.7)	182	0.4
Other chromosomal abnormalities, not elsewhere classified (Q92–Q99)	545	1.3
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00–R99)	45	0.1
External causes of mortality (*U01,V01–Y84)	36	0.1
Accidents (unintentional injuries) (V01–X59)	36	0.1
Assault (homicide) (*U01,X85–Y09)	–	†
Complications of medical and surgical care (Y40–Y84)	–	†
Other external causes (Y10–Y36)	–	†

† Percentage not shown when the number of deaths is fewer than 20.

– Quantity zero.

0.0 Quantity more than zero but less than 0.05.

SOURCE: NCHS, National Vital Statistics System, Fetal Deaths.

Table 2. Fetal deaths and percentage of total deaths for the 5 selected causes, by race and ethnicity: 35 areas, 2015–2017

[By place of occurrence]

Rank	Cause of death (based on the <i>International Classification of Diseases, 10th Revision</i>)	Number	Percent
All races and ethnicities ¹			
...	All causes.....	41,788	100.0
1	Fetal death of unspecified cause..... (P95)	12,001	28.7
2	Fetus affected by complications of placenta, cord and membranes..... (P02)	11,082	26.5
3	Fetus affected by maternal complications of pregnancy..... (P01)	5,788	13.9
4	Congenital malformations, deformations and chromosomal abnormalities..... (Q00–Q99)	4,493	10.8
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy..... (P00)	4,024	9.6
...	All other causes..... (residual)	4,400	10.5
Non-Hispanic white			
...	All causes.....	20,239	100.0
1	Fetal death of unspecified cause..... (P95)	6,024	29.8
2	Fetus affected by complications of placenta, cord and membranes..... (P02)	5,683	28.1
3	Congenital malformations, deformations and chromosomal abnormalities..... (Q00–Q99)	2,552	12.6
4	Fetus affected by maternal complications of pregnancy..... (P01)	2,352	11.6
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy..... (P00)	1,672	8.3
...	All other causes..... (residual)	1,956	9.7
Non-Hispanic black			
...	All causes.....	10,835	100.0
1	Fetal death of unspecified cause..... (P95)	2,973	27.4
2	Fetus affected by complications of placenta, cord and membranes..... (P02)	2,759	25.5
3	Fetus affected by maternal complications of pregnancy..... (P01)	1,836	16.9
4	Fetus affected by maternal conditions that may be unrelated to present pregnancy..... (P00)	1,430	13.2
5	Congenital malformations, deformations and chromosomal abnormalities..... (Q00–Q99)	697	6.4
...	All other causes..... (residual)	1,140	10.5
Hispanic			
...	All causes.....	7,815	100.0
1	Fetal death of unspecified cause..... (P95)	2,152	27.5
2	Fetus affected by complications of placenta, cord and membranes..... (P02)	1,918	24.5
3	Fetus affected by maternal complications of pregnancy..... (P01)	1,205	15.4
4	Congenital malformations, deformations and chromosomal abnormalities..... (Q00–Q99)	913	11.7
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy..... (P00)	669	8.6
...	All other causes..... (residual)	958	12.3

... Category not applicable.

¹Includes other races not shown and origin not stated.

NOTE: Totals may not add to 100 due to rounding.

SOURCE: NCHS, National Vital Statistics System, Fetal Deaths.

Table 3. Fetal deaths and percentage of total deaths for the 5 selected causes, by maternal age: 35 areas, 2015–2017

[By place of occurrence]

Rank	Cause of death (based on the <i>International Classification of Diseases, 10th Revision</i>)	Number	Percent
All ages			
...	All causes	41,788	100.0
1	Fetal death of unspecified cause (P95)	12,001	28.7
2	Fetus affected by complications of placenta, cord and membranes (P02)	11,082	26.5
3	Fetus affected by maternal complications of pregnancy (P01)	5,788	13.9
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	4,493	10.8
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	4,024	9.6
...	All other causes (residual)	4,400	10.5
Under 20			
...	All causes	2,967	100.0
1	Fetal death of unspecified cause (P95)	957	32.3
2	Fetus affected by complications of placenta, cord and membranes (P02)	741	25.0
3	Fetus affected by maternal complications of pregnancy (P01)	434	14.6
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	290	9.8
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	258	8.7
...	All other causes (residual)	287	9.7
20–39			
...	All causes	36,752	100.0
1	Fetal death of unspecified cause (P95)	10,557	28.7
2	Fetus affected by complications of placenta, cord and membranes (P02)	9,860	26.8
3	Fetus affected by maternal complications of pregnancy (P01)	5,091	13.9
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	3,812	10.4
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	3,527	9.6
...	All other causes (residual)	3,905	10.6
40 and over			
...	All causes	2,069	100.0
1	Fetal death of unspecified cause (P95)	487	23.5
2	Fetus affected by complications of placenta, cord and membranes (P02)	481	23.2
3	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	391	18.9
4	Fetus affected by maternal complications of pregnancy (P01)	263	12.7
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	239	11.6
...	All other causes (residual)	208	10.1

... Category not applicable.

NOTE: Totals may not add to 100 due to rounding.

SOURCE: NCHS, National Vital Statistics System, Fetal Deaths.

Table 4. Fetal deaths and percentage of total deaths for the 5 selected causes, by sex: 35 areas, 2015–2017

[By place of occurrence]

Rank	Cause of death (based on the <i>International Classification of Diseases, 10th Revision</i>)	Number	Percent
Both sexes			
...	All causes	41,788	100.0
1	Fetal death of unspecified cause (P95)	12,001	28.7
2	Fetus affected by complications of placenta, cord and membranes (P02)	11,082	26.5
3	Fetus affected by maternal complications of pregnancy (P01)	5,788	13.9
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	4,493	10.8
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	4,024	9.6
...	All other causes (residual)	4,400	10.5
Male			
...	All causes	21,606	100.0
1	Fetal death of unspecified cause (P95)	6,275	29.0
2	Fetus affected by complications of placenta, cord and membranes (P02)	5,762	26.7
3	Fetus affected by maternal complications of pregnancy (P01)	3,136	14.5
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	2,131	9.9
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	2,074	9.6
...	All other causes (residual)	2,228	10.3
Female			
...	All causes	20,182	100.0
1	Fetal death of unspecified cause (P95)	5,726	28.4
2	Fetus affected by complications of placenta, cord and membranes (P02)	5,320	26.4
3	Fetus affected by maternal complications of pregnancy (P01)	2,652	13.1
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	2,362	11.7
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	1,950	9.7
...	All other causes (residual)	2,172	10.8

... Category not applicable.

NOTE: Totals may not add to 100 due to rounding.

SOURCE: NCHS, National Vital Statistics System, Fetal Deaths.

Table 5. Fetal deaths and percentage of total deaths for the 5 selected causes, by gestational age: 35 areas, 2015–2017

[By place of occurrence]

Rank	Cause of death (based on the <i>International Classification of Diseases, 10th Revision</i>)	Number	Percent
Total, 20 weeks or more ¹			
...	All causes	41,788	100.0
1	Fetal death of unspecified cause (P95)	12,001	28.7
2	Fetus affected by complications of placenta, cord and membranes (P02)	11,082	26.5
3	Fetus affected by maternal complications of pregnancy (P01)	5,788	13.9
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	4,493	10.8
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	4,024	9.6
...	All other causes (residual)	4,400	10.5
20–23 weeks			
...	All causes	15,096	100.0
1	Fetus affected by maternal complications of pregnancy (P01)	4,264	28.2
2	Fetal death of unspecified cause (P95)	3,520	23.3
3	Fetus affected by complications of placenta, cord and membranes (P02)	2,780	18.4
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	1,839	12.2
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	1,081	7.2
...	All other causes (residual)	1,612	10.7
24–27 weeks			
...	All causes	6,244	100.0
1	Fetal death of unspecified cause (P95)	2,043	32.7
2	Fetus affected by complications of placenta, cord and membranes (P02)	1,549	24.8
3	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	858	13.7
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	679	10.9
5	Fetus affected by maternal complications of pregnancy (P01)	480	7.7
...	All other causes (residual)	635	10.2
28–31 weeks			
...	All causes	5,051	100.0
1	Fetal death of unspecified cause (P95)	1,565	31.0
2	Fetus affected by complications of placenta, cord and membranes (P02)	1,507	29.8
3	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	615	12.2
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	569	11.3
5	Fetus affected by maternal complications of pregnancy (P01)	314	6.2
...	All other causes (residual)	481	9.5
32–33 weeks			
...	All causes	2,923	100.0
1	Fetus affected by complications of placenta, cord and membranes (P02)	931	31.9
2	Fetal death of unspecified cause (P95)	830	28.4
3	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	380	13.0
4	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	350	12.0
5	Fetus affected by maternal complications of pregnancy (P01)	166	5.7
...	All other causes (residual)	266	9.1
34–36 weeks			
...	All causes	5,165	100.0
1	Fetus affected by complications of placenta, cord and membranes (P02)	1,686	32.6
2	Fetal death of unspecified cause (P95)	1,534	29.7
3	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	572	11.1
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	499	9.7
5	Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (P70.0–P70.2)	380	7.4
...	All other causes (residual)	494	9.6

Table 5. Fetal deaths and percentage of total deaths for the 5 selected causes, by gestational age: 35 areas, 2015–2017—Con.

[By place of occurrence]

Rank	Cause of death (based on the <i>International Classification of Diseases, 10th Revision</i>)	Number	Percent
37–38 weeks			
...	All causes	4,061	100.0
1	Fetus affected by complications of placenta, cord and membranes (P02)	1,463	36.0
2	Fetal death of unspecified cause (P95)	1,308	32.2
3	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	335	8.2
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	311	7.7
5	Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (P70.0–P70.2)	305	7.5
...	All other causes (residual)	339	8.3
39–40 weeks			
...	All causes	2,685	100.0
1	Fetus affected by complications of placenta, cord and membranes (P02)	997	37.1
2	Fetal death of unspecified cause (P95)	977	36.4
3	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	191	7.1
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	168	6.3
5	Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (P70.0–P70.2)	104	3.9
...	All other causes (residual)	248	9.2
41 weeks			
...	All causes	284	100.0
1	Fetal death of unspecified cause (P95)	114	40.1
2	Fetus affected by complications of placenta, cord and membranes (P02)	96	33.8
3	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	27	9.5
4	Fetus affected by maternal complications of pregnancy (P01)	12	4.2
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	10	3.5
...	All other causes (residual)	25	8.8
42 weeks or more			
...	All causes	80	100.0
1	Fetus affected by complications of placenta, cord and membranes (P02)	27	33.8
2	Fetal death of unspecified cause (P95)	25	31.3
3	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	8	10.0
4	Fetus affected by maternal complications of pregnancy (P01)	7	8.8
5	Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (P70.0–P70.2)	4	5.0
...	All other causes (residual)	9	11.3

... Category not applicable.

¹Includes gestation not stated.

NOTE: Totals may not add to 100 due to rounding.

SOURCE: NCHS, National Vital Statistics System, Fetal Deaths.

Table 6. Fetal deaths and percentage of total deaths for the 5 selected causes, by birthweight: 35 areas, 2015–2017

[By place of occurrence]

Rank	Cause of death (based on the <i>International Classification of Diseases, 10th Revision</i>)	Number	Percent
All birthweights ¹			
...	All causes	41,788	100.0
1	Fetal death of unspecified cause (P95)	12,001	28.7
2	Fetus affected by complications of placenta, cord and membranes (P02)	11,082	26.5
3	Fetus affected by maternal complications of pregnancy (P01)	5,788	13.9
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	4,493	10.8
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	4,024	9.6
...	All other causes (residual)	4,400	10.5
Less than 1,500 grams			
...	All causes	25,148	100.0
1	Fetal death of unspecified cause (P95)	6,734	26.8
2	Fetus affected by complications of placenta, cord and membranes (P02)	5,566	22.1
3	Fetus affected by maternal complications of pregnancy (P01)	4,823	19.2
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	3,031	12.1
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	2,512	10.0
...	All other causes (residual)	2,482	9.9
1,500–2,499 grams			
...	All causes	6,598	100.0
1	Fetus affected by complications of placenta, cord and membranes (P02)	2,258	34.2
2	Fetal death of unspecified cause (P95)	2,013	30.5
3	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	754	11.4
4	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	700	10.6
5	Fetus affected by maternal complications of pregnancy (P01)	301	4.6
...	All other causes (residual)	572	8.7
2,500–3,999 grams			
...	All causes	6,761	100.0
1	Fetus affected by complications of placenta, cord and membranes (P02)	2,557	37.8
2	Fetal death of unspecified cause (P95)	2,301	34.0
3	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	547	8.1
4	Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (P70.0–P70.2)	467	6.9
5	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	289	4.3
...	All other causes (residual)	600	8.9
4,000 grams or more			
...	All causes	735	100.0
1	Syndrome of infant of a diabetic mother and neonatal diabetes mellitus (P70.0–P70.2)	225	30.6
2	Fetal death of unspecified cause (P95)	223	30.3
3	Fetus affected by complications of placenta, cord and membranes (P02)	158	21.5
4	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	48	6.5
5	Fetus affected by other complications of labor and delivery (P03)	22	3.0
...	All other causes (residual)	59	8.0

... Category not applicable.

¹Includes birthweight not stated.

NOTE: Totals may not add to 100 due to rounding.

SOURCE: NCHS, National Vital Statistics System, Fetal Deaths.

Table 7. Fetal deaths and percentage of total deaths for the 5 selected causes, by plurality: 35 areas, 2015–2017

[By place of occurrence]

Rank	Cause of death (based on the <i>International Classification of Diseases, 10th Revision</i>)	Number	Percent
All pluralities ¹			
...	All causes	41,788	100.0
1	Fetal death of unspecified cause (P95)	12,001	28.7
2	Fetus affected by complications of placenta, cord and membranes (P02)	11,082	26.5
3	Fetus affected by maternal complications of pregnancy (P01)	5,788	13.9
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	4,493	10.8
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	4,024	9.6
...	All other causes (residual)	4,400	10.5
Single delivery			
...	All causes	38,587	100.0
1	Fetal death of unspecified cause (P95)	11,597	30.1
2	Fetus affected by complications of placenta, cord and membranes (P02)	10,173	26.4
3	Fetus affected by maternal complications of pregnancy (P01)	4,390	11.4
4	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	4,315	11.2
5	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	3,841	10.0
...	All other causes (residual)	4,271	11.1
Multiple delivery			
...	All causes	3,201	100.0
1	Fetus affected by maternal complications of pregnancy (P01)	1,398	43.7
2	Fetus affected by complications of placenta, cord and membranes (P02)	909	28.4
3	Fetal death of unspecified cause (P95)	404	12.6
4	Fetus affected by maternal conditions that may be unrelated to present pregnancy (P00)	183	5.7
5	Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	178	5.6
...	All other causes (residual)	129	4.0

... Category not applicable.

¹Includes plurality not stated.

NOTE: Totals may not add to 100 due to rounding.

SOURCE: NCHS, National Vital Statistics System, Fetal Deaths.

Technical Notes

The National Vital Statistics System encompasses several databases of statistical information on vital events such as fetal deaths, births, and deaths. These data sources allow the federal government, the research community, and the public at large to be aware of and monitor basic trends occurring within the population. Data in this report are drawn from two different National Center for Health Statistics (NCHS) vital statistics data files: the 2015–2017 fetal death data set and the 2015–2017 birth data set. More than 99% of births occurring in this country are registered (28). However, this report is based on a subset of the fetal data.

NCHS adopted the World Health Organization (WHO) definition of fetal death as the recommended standard for use in the early 1950s. The following inclusive definition was developed by WHO in 1950 to end confusion arising from the use of such terms as stillbirth, spontaneous abortion, and miscarriage:

Death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation, 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.

The use of the term stillbirth has increased in recent years in research literature. In part, this responds to sensitivity concerns among people who have experienced this, as they often prefer the term stillbirth instead of fetal death.

The states use a consistent definition of fetal death, but the registration of a fetal death in most states is required only for those fetal deaths occurring at 20 or more weeks of gestation. National fetal death statistics are compiled from state fetal death reports received by NCHS every year and are typically tabulated for those deaths of 20 or more weeks of gestation. Statistics on induced terminations of pregnancies for live fetuses (abortions) are excluded from national fetal death statistics and are not included in this report.

Gestational age is measured by obstetric estimate of gestation at delivery. There are several conventional groupings often used for gestational age. However, in this report, the categories are generally collapsed into 3-week periods. Records with gestational age not stated are excluded from the report.

Maternal race and Hispanic origin are captured with two separate items. As of 2003, jurisdictions began collecting multiple-race data. However, this report presents bridged data in which multiple-race persons were reassigned to single-race categories (1). Other races, multiple race, and origin not stated are not shown in the table on race and Hispanic origin.

The number of fetal 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.

Because fetal deaths in the reporting area are not a random sample of all fetal deaths, the findings are not generalizable to the entire United States. Note that the race and Hispanic origin and maternal age distributions of fetal deaths for the 34 states and the

District of Columbia are somewhat different from those for the entire United States (Table). In the reporting areas included in this report, non-Hispanic white women were overrepresented, while Hispanic and non-Hispanic black women were underrepresented when compared with the total United States. Additionally, women in the reporting area were more likely to be under age 20 and 20–24 and less likely to be aged 35–39 and 40 and over when compared with the total United States. The distributions for all other age groups were similar.

For additional information on measurement of data items shown in this report and statistical methods, see the “User Guide to the 2017 fetal death public use file” (2).

Table. Characteristics of the 35 reporting areas and of all fetal deaths, by selected demographic characteristics: United States, 2015–2017

[By place of occurrence]

Characteristic of mother	35 reporting areas		Total United States	
	Number	Percent	Number	Percent
Race and Hispanic origin				
All ¹	41,788	100.0	70,592	100.0
Non-Hispanic white ²	20,239	†49.3	30,933	45.3
Non-Hispanic black ²	10,835	†26.4	18,991	27.8
Hispanic ³	7,815	†19.0	14,075	20.6
Age group				
All ages	41,788	100.0	70,592	100.0
Under 20	2,967	†7.1	4,777	6.8
20–24	8,765	†21.0	14,489	20.5
25–29	11,308	27.1	18,903	26.8
30–34	10,503	25.1	17,812	25.2
35–39	6,176	†14.8	10,876	15.4
40 and over	2,069	†5.0	3,735	5.3

† Difference significant at $p = 0.05$.¹Includes other races not shown and origin not stated.²Race and Hispanic origin are reported separately on the fetal death report. Race categories are consistent with the 1977 Office of Management and Budget standards.³Includes all persons of Hispanic origin of any race.

SOURCE: NCHS, National Vital Statistics System, Fetal Deaths.

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