



National Vital Statistics System Improvements

About NCHS

The National Center for Health Statistics (NCHS) is the nation's principal health statistics agency, providing data to identify and address health issues. NCHS compiles statistical information to help guide public health and health policy decisions.

Collaborating with other public and private health partners, NCHS uses a variety of data collection mechanisms, including the National Vital Statistics System, to obtain accurate information from multiple sources. This process provides a broad perspective on the population's health, influences on health, and health outcomes.

National Vital Statistics System

The National Vital Statistics System (NVSS) provides the nation's official vital statistics based on the collection and registration of birth and death events at the state and local

level. This system contains information on all births and deaths in the United States and provides the most complete and continuous data available to public health officials at the national, state, and local levels, and in the private sector. Vital statistics provide insight into important trends in health, including the impact of changes in the incidence of non-medically indicated cesarean deliveries and preterm birth, chronic conditions, progress on reducing deaths due to motor vehicle accidents, and the evolving challenge of substance abuse. Jurisdictions rely on birth and death records for a variety of administrative needs, and also use vital statistics to inform decisions aimed at improving health and health care.

NVSS is used to produce important health indicators from birth and death data including, teen births and birth rates, cesarean delivery, preterm birth and infant mortality rates, leading causes of death, and life expectancy. Vital statistics data have diverse uses—they serve as a base for public health, social service, and economic planning and program development and are used to track progress toward health goals.

Improvements to the NVSS

Each year, NVSS collects information on the 6.7 million births, deaths, and fetal deaths occurring in the 57 U.S. vital registration areas (50 states, New York City, District of Columbia, and five U.S. territories). NCHS also works with each vital registration area and the National Association for Public Health Statistics and Information Systems (NAPHSIS)—representing state vital statistics offices—to collect vital registration data and to improve timeliness and data quality.

Efforts to improve vital records are ongoing—they involve NCHS' support of states in implementing electronic birth and death registration systems and completing the implementation of the 2003 revised standard certificates in all jurisdictions. Electronic birth and death records will improve timeliness of data, allow for transfer of data between states, and integrate vital

statistics with public health surveillance systems. As of 2013, NCHS completed the funding of remaining states seeking assistance for development and implementation of a web-based electronic birth registration system (EBRS). Similar progress has not been made with electronic death registration systems (EDRS). As of January 1, 2018, 46 of the 57 vital registration areas have an operating EDRS, although some of these systems are still not operating statewide and many data providers (especially physicians) are not using them to enter death information.

As of January 1, 2016, all vital registration areas had implemented the 2003 U.S. Standard Certificate of Live Birth, resulting in the availability of national data for many new data items such as tobacco use before and during pregnancy and source of payment for the delivery. A collaborative effort between NCHS and its state partners also led to the dropping of a number of nonperforming items from the national

birth and fetal death files. This effort, along with other important enhancements, improved data quality.

In 2017, 5-year contracts with the vital registration areas were renewed. These contracts are very similar to the previous contracts and continue to allow NCHS to fund a variety of special projects to enhance the timeliness and quality of the vital statistics system. Projects were funded to:

- Implement new EBRS and complete the establishment of EBRS in every state.
- Test the feasibility of electronic data exchange between vital registration systems and electronic medical records.
- Improve physician participation with electronic death registration.
- Assist in the development of electronic death registration systems and increase the percentage of physicians signing death certificates using the electronic system.

Improved timeliness

Timeliness of data for the provisional and final vital statistics reports is calculated from the end of the data year (e.g., December 31, 2017, is the end of the 2017 data year) to publication on the web.

- To allow for timely public health planning and response, NCHS releases the annual provisional birth report when it has received 95% or more of all birth records from vital registration areas.
- Annual provisional birth data for 2016 were released 6 months after the end of data collection; and the final 2016 birth data were released 9 months after the end of data collection.
- Final 2016 mortality data were released 12 months after the end of the data year.

Improved data quality

NCHS works to improve data quality through special studies and expanded outreach to physicians and others completing birth and death certificates. Projects to improve data quality include:

- The 2003 Revisions of the U.S. Standard Certificates for live birth, death, and fetal death. These revisions encourage uniformity in data collection across registration areas. State adoption of the revised certificates enhances the ability to analyze and track crucial indicators, including demographic characteristics, health care utilization, and outcomes such as cesarean delivery.
- Improved data transfer systems developed between vital registration areas and between vital registration areas and NCHS.
- Data standards developed to transfer data between electronic medical records and vital registration systems.
- Web-based tutorials to assist physicians in completing death certificates.

- Web-based training for clinical and nonclinical hospital staff in completing the medical and health data for birth certificates and fetal deaths and offers continuing education credits for physicians, nurses and nonmedical staff.
- Automated coding systems for cause of death developed to speed data availability.

Monitoring high risk births and infant deaths

NVSS is a critical source of reliable and increasingly timely data on adverse pregnancy outcomes, such as preterm delivery and fetal and infant mortality. Recent reports from NVSS have, for example, tracked the recent increase in the rate of preterm birth, identified the leading causes of fetal mortality, described a higher risk of infant death in rural compared with urban areas, and examined trends in infant mortality by race and Hispanic origin.

National information on factors potentially related to pregnancy outcome have recently become available with the release of the 2016 birth file, the first year in which all states were using the 2003 revisions of the birth certificate. Detailed national data on tobacco use before and during pregnancy, the use of infertility treatment, the timing of prenatal care, maternal body mass index, the receipt of WIC food for the pregnancy, and admission to a NICU should ultimately contribute to our understanding of how to improve pregnancy outcomes in the United States.

Vital Statistics Rapid Release Program and public health surveillance

As timeliness and data quality improve, NCHS continues to strengthen methods to identify and report births and deaths of high public health interest. The Vital Statistics Rapid Release program provides access to

the timeliest vital statistics for public health surveillance, through releases of:

- Quarterly Provisional Estimates of birth, deaths, and infant death
- Vital Statistics Rapid Release Reports providing methodological information and in-depth analysis of provisional data
- Focused surveillance activities, including:
 - Weekly pneumonia and influenza mortality reporting
 - Monthly provisional counts of drug overdose deaths
- State and national provisional control counts of births, deaths, and infant deaths

Using the provisional data, NCHS produces more timely estimates of important health indicators for public health practitioners, researchers, and health policy-makers than would be possible using final annual data.

Improvements in the National Death Index

The National Death Index (NDI), a self-supporting service of NCHS, is a component of NVSS. NDI is a centralized database of death record information compiled from state vital statistics offices. NCHS, in collaboration with state offices, established NDI as a resource for epidemiological follow-up studies and other types of health and medical research that require determination of the mortality status of study subjects.

To facilitate faster access, NCHS established the NDI Early Release Program in 2014. Through the NDI Early Release Program, death records for a particular calendar year will be available for searches when approximately 90% of the year's death records have been received and processed. The Early Release Program facilitates the work of health researchers to determine the vital status, and also causes of death, of their study participants more quickly. Currently, NDI Early Release 2016 is available.

