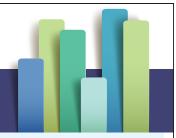# National Death Index

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 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 Death Index

The National Death Index (NDI), a self-supporting service of NCHS, is a component of the National Vital Statistics System. 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. These mortality data are provided by the states, under contracts with NCHS that specify how these data may be used, for what purposes, and at what costs. Currently, NDI contains about 98 million records from 1979 through 2017 from 50 states, the District of Columbia, New York City, Puerto Rico, and the U.S. Virgin Islands. As of 2017, Guam, American Samoa, and the Northern Marianas are also included. Recently, information on deaths from belated records, and out-of-country deaths of U.S. military personnel were added. Currently, there is no updated information on out-of-country deaths of civilian U.S. citizens.

Who uses NDI?

NDI clients represent all sectors of health and medical research, spanning federal and state agencies, private sector entities, and academia. The service is not accessible to anyone for legal, administrative, or genealogical purposes.

The NDI process

NCHS receives more than 100 applications to use NDI each year. The average time to complete the application review process and receive approval is 2 to 3 months.

- The researcher submits an application to NDI to ensure that the death information is being used solely for statistical purposes in medical and health research; data confidentiality is adequately secured; approval by an Institutional Review Board (IRB) is current; and an acceptable explanation of the final disposition of data is specified.

- The NDI advisors review the application to ensure it meets the minimum criteria for data use as specified in the state contracts, in addition to meeting other requirements related to confidentiality; IRB approval; and data retention, storage, and access. The Advisors review board consists of two groups of eight members, each from state vital statistics offices, the National Institutes of Health, Centers for Medicare & Medicaid Services, Veterans Administration, Centers for Disease Control and Prevention, and nonfederal researchers, which have the authority to approve applicant proposals to use NDI data.

- If the application is approved, the researcher searches the NDI file to determine which NDI death records qualify as possible matches with a particular user record. The matching criteria are intended to maximize the number of true matches that can be found.

  - A true match is identified through one of two mechanisms: 1) a high score through the computerized scoring algorithm, or 2) a match with the greatest number of variables matching perfectly, including a minimum number of specific variables such as Social Security number; month, day, and year of birth; first and last name; middle initial; and, if the subject is female, the father's surname. In addition to these data items, NDI results return an indication of agreement for up to five additional data items: age at death, race, marital status, state of residence, and state of birth.

  - NDI records involved in matches based on any of the matching criteria should only be considered possible matches. The researcher must determine

which matches are true matches, false matches, and questionable matches requiring further investigation.

- The success of the NDI matching process is determined by the effectiveness of the seven matching criteria, the quality and completeness of the data on the researcher's study subjects, the quality and completeness of the state death certificate data provided to the NDI file, and the ability of the researcher to assess the quality of the resulting matches.

- For all matches, NDI provides the names of the states in which the deaths occurred, the dates of death, and the corresponding death certificate numbers. Investigators can make arrangements with appropriate state offices to obtain copies of death certificates or specific statistical information, such as additional details about cause of death. Such efforts are independent of NDI.

- Cause-of-death codes may also be obtained using the NDI Plus service. NDI Plus was established in 1997 following negotiations with the states that permit NCHS to release underlying cause-of-death codes and multiple cause-of-death codes, at an additional cost to the researcher. These are provided for "true matches," not all matches.

How long does it take for deaths to be included in NDI?

Death records are added to the NDI file annually, approximately 11 months after the end of the calendar year. Historically, before a particular calendar year of deaths can be made available for NDI routine searches, NCHS must receive, process, and edit death records from all vital statistics offices. This delays the creation of the final NDI file for a particular year. 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 at least 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 2018 is available.

How are NDI data used?

Since 1979, there have been more than 1,000 uses of NDI in health research publications. NDI has been used to determine the mortality status of participants for studies, including:

- Survival time among people with health conditions (e.g., cancer and heart disease)
- Mortality risk among certain occupations (e.g., radiologists, pesticide applicators, and auto workers)
- Effectiveness of surgeries (e.g., gastric bypass and bone marrow transplants)
- Impact of dietary factors (e.g., sodium, vitamins, coffee, and antioxidants) on risks of death
- Intersection of health care and mortality, such as the costs associated with end-of-life intensive care
- Mortality risks among vulnerable populations, such as children and adolescents with developmental disabilities, people released from prison, and psychiatric patients

U.S. STANDARD CERTIFICATE OF DEATH

REV. 11/2003