

# Opportunities for the National Vital Statistics System and the National Death Index

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The National Vital Statistics System (NVSS) is a critical data source for understanding the health of the nation, conducting public health surveillance of diseases and epidemics, and understanding the effectiveness of the healthcare and health financing systems. The National Death Index (NDI) is an invaluable tool for facilitating patient-outcomes research. Yet, both of these systems face serious structural and financial challenges.

**Current Situation:** Birth, death, and fetal death records are collected under the auspices of state, not Federal, laws and statutes. The National Center for Health Statistics (NCHS) obtains access to these records through the Vital Statistics Cooperative Program (VSCP) Contract, which provides base funding in return for their “use” for statistical and research purposes, and through the NDI contract which enables the receipt of personally identifiable information for each death event. Through the VSCP contract, NCHS obtains birth, death and fetal death records from the 57 registration jurisdictions, paying a total of \$21.1 million per year (\$9.5 million per year for births, \$8.5 million for deaths, \$1.1 million for fetal deaths, and \$2.0 million for infant/death linkages). NCHS pays jurisdictions another \$1.7 to \$2.5 million per year through NDI receipts for the matching of researcher records to the NDI database.

While birth records are generally transmitted to NCHS well within the desired time frames for analysis and surveillance purposes, that is not the case for deaths and fetal deaths. About 44% of death records are transmitted to NCHS within 10 days of the date of death, up from only 7% in 2010. Transmission of fetal death records continue to be lag far beyond the death percentages. Improvements in timeliness performance has primarily occurred through the automation in both NCHS and the jurisdictions and enhancement of the jurisdictions’ business practices. These actions have enabled NCHS to: a) release the mortality statistics and the NDI files much earlier, from 30 months in 2011 to less than 12 months in 2016; b) release the detailed provisional birth measures within 6 months after the close of a calendar year and the final birth file within 9 months, and c) release reliable quarterly provisional rate estimates for mortality including, but not limited to, reliable provisional counts for flu surveillance and monthly surveillance counts of drug overdose deaths.

**Challenge:** While we have achieved a faster reporting system for health status assessment and the surveillance of some births and deaths of immediate public health concern, further steps are needed. Improvements to date have been principally financed through one time receipts, making it imperative that sustainability of these gains be a top priority. Continual gains are critically needed for timely and higher quality birth, death and fetal death data, and for the retrieval of additional information on the death certificate. Finally, we need to make the National Death Index (NDI) more affordable and nimble for health research.

**Opportunities:** To transform the NVSS and the NDI systems even further, we must:

1. Increase the rate of mortality records transmitted to NCHS within 10 days from 44% in 2016 to at least 80% by incentivizing improved state performance and targeting large underperforming jurisdictions;

2. Initiate new special projects at the jurisdictional level to improve data quality of birth, death, and fetal death information on certificates. Projects such as the following need to be implemented:
  - Expansion of the NCHS Validation and Interactive Web Service to more jurisdictions to identify and alert the data provider of problem cause-of-death entries as they are being first entered on an EDRS by the data provider;
  - Implementation and/or enhancement of quality assurance programs in each of the 57 jurisdictions;
  - Establishment of performance-based accreditation program for jurisdiction's vital records/statistics agencies;
  - Development of a Cause of Death Decision-Support Tool for physicians to assist them in determining cause of death;
  - Implementation of birth, death and fetal death e-learning systems for clinical and non-clinical hospital and medical staffs.
3. Improve the value and use of vital statistics systems by:
  - Expanding the NCHS Vital Statistics Rapid Release Program to include selected health indicators, and **weekly** counts and/or analyses of drug overdose deaths (including specific drugs involved) and other urgent emerging health threats; and
  - Expanding a rapid release type program using provisional data at the state level.
4. Modernize the NCHS Medical Mortality Coding System to:
  - Code a larger proportion of records electronically;
  - Use machine-learning and natural language approaches to conduct rapid analysis of literal text data for inclusion in the NVSS statistical and NDI databases and to improve the coding of records; and
  - Undertake quicker analysis of drugs and other important health topics.
5. Improve the electronic linkage of jurisdictional vital registration systems with other electronic systems using nationally approved standards including:
  - Linkage of electronic birth systems with electronic medical records to abstract the relevant medical information recorded on birth certificates;
  - Linkage of electronic death registration systems with Medical Examiner and Coroner Case Management System to enable the timely flow of relevant mortality-related information between the two entities;
  - Linkage of electronic death registration systems with hospital-based electronic medical records system.

The electronic transfer of information between electronic medical records and electronic vital registration systems provides an opportunity to improve the quality of medical information on birth and death certificates and the opportunity for physicians to more easily complete the cause of death. The development and national approval of exchange standards for births, deaths, and fetal deaths will be required.

6. Improve NDI by reducing the cost to researchers for data matching services while maintaining NDI payments for states (*the charging for services is largest perceived barrier to the use of the NDI for research*), minimizing where feasible the barriers to NDI access and use, and creating an NDI Portal to enable electronic processing of applications for the purposes of reducing review time.
7. Expand the financial resources for state vital records/statistics programs. Funding of state vital records/statistics programs beyond NCHS and SSA is critically. Where critical health outcome information is needed for national or state program management and evaluation, Federal agencies should incorporate into their respective corporate agreements or contracts with their state counterparts a priority that their funds can be used to support state vital record/statistics programs. The Office of Public Health Preparedness and Response is an example of this action. With the exploding demands for timely, high quality data, the rising costs for securing and maintaining technology systems, and the increasing proportion of state vital records/statistics programs that must “live or die” on their receipts, Federal entities can no longer assume that the provision of birth, death and fetal death information can or should be free or at very small marginal costs.
8. Improve the performance of state vital records/statistics programs. Wide gaps exist between the highest and lowest performing jurisdictions. Steps should be taken to ensure that a minimal performance level exist across all jurisdictions. Tying contract awards to timeliness and quality performance, initiating an accreditation program of state vital records/statistics agencies, and initiating/targeting performance enhancement projects for poorly performing are some of the initiatives or policy changes that should be considered. These initiatives should be conducted in concert with the state health officers and their association.

**Results:** Undertaking and completing these opportunities will result in a vital statistics system that can be an effective, high quality tool for health status assessment, near real-time surveillance of events of immediate public health importance, and research impacting the health of the nation. Moreover, these opportunities can help minimize the structural and financial plight of this Nation’s state vital records/statistics programs.