

National Notifiable Diseases Surveillance System (NNDSS)

Supporting Statement Section B

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B. Collections of Information Employing Statistical Methods

1. Respondent Universe and Sampling Methods

The respondent universe consists of 57 jurisdictions that voluntarily submit case notifications for nationally notifiable conditions to CDC: health departments in every U.S. state, New York City, Washington DC, and 5 U.S. territories (American Samoa, the Commonwealth of Northern Mariana Islands, Guam, Puerto Rico, and the U.S. Virgin Islands). No statistical sampling is done. The response rate is 100 percent. All 57 jurisdictions voluntarily submit nationally notifiable condition case notifications. The anticipated response rate is 100 percent. The previous actual response rate was 100 percent. All 57 jurisdictions participate.

The NNDSS is based on data collected at the state, territorial and local levels as a result of legislation and regulations in those jurisdictions that require health care providers, medical laboratories and other entities to submit health-related data on reportable conditions to those public health departments. These reportable conditions, which include infectious and non-infectious diseases, vary by jurisdiction depending upon each jurisdiction's health priorities and needs. Currently approximately 300 conditions are reportable in one or more of the states.

Since infectious disease agents and environmental hazards often cross geographical boundaries, public health departments have to be able to share data on certain conditions across jurisdictions

and to coordinate program activities to prevent and control the conditions. Each year, the Council of State and Territorial Epidemiologists (CSTE) performs an assessment of conditions reported to state, territorial and local jurisdictions to determine which should be designated nationally notifiable conditions. For conditions that CSTE determines to be nationally notifiable, case notifications are voluntarily submitted to CDC by the jurisdictions so that information can be shared across jurisdictional boundaries and both surveillance and prevention and control activities can be coordinated at regional and national levels.

2. Procedures for the Collection of Information

No statistical sampling methods are used.

Public health departments at the state, territorial and local levels review, process and analyze reportable conditions data and voluntarily submit case notification data on nationally notifiable conditions to CDC. CSTE determines which conditions are nationally notifiable.

CDC provides financial and programmatic support to public health department for their infectious reportable disease surveillance systems including developing and maintaining information technology (IT) systems for their use. For different reportable conditions, some health departments use systems supplied by the Center for Surveillance, Epidemiology and Laboratory Services (CSELS), Centers within the Office of Infectious Diseases (OID), or the Center for Global Health (CGH), some use vendor-supplied systems and some use systems developed by the jurisdiction.

Given the way that surveillance systems for nationally notifiable diseases were developed at CDC historically, state, territorial and local health departments have transmitted and continue to transmit nationally notifiable disease data to different systems and programs at CDC including CSELS, Centers within OID, and CGH.

Case Notification to NNDSS

The transmission of data to CSELS NNDSS is supported by several interconnected frameworks for the exchange of electronic information and IT systems and platforms. The majority of case notifications are encrypted and submitted to CSELS NNDSS electronically from already existing databases via automated electronic transfers through a secure network. On occasion, when electronic transmission is not possible or when public health departments prefer, weekly case counts are provided by telephone, fax, mail, and email, primarily to meet weekly deadlines for publication in the *Morbidity and Mortality Weekly Report (MMWR)*. The submission and receipt of these data follow current best practices and standards available, as described in Section A.10, below.

OID and CGH receive data through several electronic surveillance systems. As state health departments develop computer capabilities, additional report formats are being developed for electronic transmission. For many conditions, OID and CGH do not receive data electronically. Most case report forms are mailed or faxed to CDC by state, local and territorial health departments. In certain circumstances, such as outbreak situations, reports are first made by telephone, and then followed by a written report. On occasion, reports are emailed by state health departments via secure email systems. These data are entered into electronic databases.

Once case notification data are received by NNDSS, CDC data analysts conduct quality control assessments, including evaluating the information submitted against an established case definition. Analysts standardize the data and then share the data with CDC Program subject matter experts who have responsibility for prevention and control of those diseases. Data are used by CDC subject matter experts to monitor the occurrence of the conditions, identify populations or geographic areas at high risk, plan prevention and control programs and policies, allocate resources appropriately, and evaluate the effectiveness of programs and policies. Information is also shared with jurisdictions. In addition, information is collected that allows OID and CGH to trace cases and their contacts and their travel histories, or other linkages necessary to describe and manage outbreaks or conduct public health follow-up to minimize the spread of disease.

CDC uses NNDSS data also for weekly publication in the *Morbidity and Mortality Weekly Report (MMWR)*. The number of cases of nationally notifiable diseases reported to state health departments by local city or county health departments during the preceding "reporting week" is included in the morbidity report. CDC also publishes an annual summary presenting finalized official incidence data for these diseases in the *Morbidity and Mortality Weekly Report (MMWR)* series entitled *Summary of Notifiable Diseases, United States*. NNDSS provides the official source of statistics in the United States for nationally notifiable conditions and CDC is the sole repository for these national, population-based data.

CDC also uses the notifiable disease data to publish surveillance summaries and other reports in *MMWR* and in scientific, public health and medical journals.

In its analyses of data, CDC uses the actual notifiable conditions counts. No pre-determined sample sizes are required and statistical power calculations are not conducted.

3. Methods to Maximize Response Rates and Deal with No response

Jurisdictions voluntarily submit notifications to CDC. The response rate is 100 percent. All 57 jurisdictions submit case notifications.

4. Tests of Procedures or Methods to be Undertaken

To reduce burden and improve the efficacy and efficiency of the notification process, CDC consults with the jurisdictions and other external stakeholders in various ways. Consultations with state epidemiologists and health officers are conducted routinely through CSTE and the Association of State and Territorial Health Officers. CDC has collaborated with CSTE since CSTE's inception in 1951, and it is through the CSTE annual conference that the cooperation of all states is formally maintained. Although formal CSTE meetings are usually held only once a year, CSTE-CDC surveillance working groups exist to regularly address issues throughout the year that require federal-state collaboration. Telephone and e-mail communication between CDC and CSTE groups and individual members of those organizations continue on a regular basis throughout the year.

Since OMB last approved the NNDSS surveillance system in January 2011(NEDSS), OMB Control No. 0920-0728, CDC has requested and obtained two independent external peer reviews of NNDSS following CDC guidance on external review of scientific programs. The CDC guidance references OMB Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies http://www.whitehouse.gov/omb/fedreg/final_information_quality_guidelines.html/. Through a cooperative agreement with CDC, the Public Health Informatics Institute selected and funded an independent external peer review panel that conducted review of NNDSS systems, frameworks and processes for infectious diseases within CDC. In addition, through a cooperative agreement with CDC, CSTE selected and funded independent external peer review panel to review state and local systems, frameworks and processes for reportable conditions and for submission of information on notifiable infectious diseases to CDC. These reviews provided a number of recommendations to CDC to improve the use of information technology and related frameworks and systems.

In response to these independent reviews, CSELS in collaboration with OID and CGH has initiated a number of improvements for NNDSS. Those improvements will include increasing communication and coordination within the agency and with public health departments. Enhancements include transitioning from non-electronic to automated electronic submission of information to CDC. Changes will include more consistently using common national standards for electronic health records and messaging, including vocabulary and code sets, content structure, transport, security and service (providing the right information to the right people). This will increase interoperability among public health departments and with CDC and increase interoperability between systems in public health and with electronic systems in medical care. In addition, data elements, definitions and value sets for notifiable conditions will be reviewed and harmonized. The enhancements will, over time, reduce duplication of data submission to CDC and the number of locations to which data on NNDs are sent and standardize the methods by which the data is submitted to CDC. The improvements will increase efficiency of the data management and transmission process and the timeliness, completeness and accuracy of data, making the data more useful for disease prevention and control activities.

5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

The CDC's Center for Surveillance, Epidemiology and Laboratory Services, Office of Infectious Diseases, and Center for Global Health collect and analyze the information.