

National Notifiable Diseases Surveillance System

The National Notifiable Diseases Surveillance System (NNDSS) is a nationwide collaboration that enables all levels of public health—local, state, territorial, federal, and international—to share notifiable disease-related health information. Public health uses this information to monitor, control, and prevent the occurrence and spread of state-reportable and nationally notifiable infectious and noninfectious diseases and conditions and outbreaks.



NNDSS

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NNDSS is a multifaceted program that includes the surveillance system for collection, analysis, and sharing of health data. It also includes policies, laws, electronic messaging standards, people, partners, information systems, processes, and resources at the local, state, territorial, and national levels.

Supporting Public Health Surveillance in Jurisdictions and at CDC



Notifiable disease surveillance begins at the level of local, state, and territorial public health departments (also known as jurisdictions). Jurisdictional laws and regulations mandate reporting of cases of specified infectious and noninfectious conditions to health departments. The health departments work with healthcare providers, laboratories, hospitals, and other partners to obtain the information needed to monitor, control, and prevent the occurrence and spread of these health conditions. In addition, health departments notify CDC about the occurrence of certain conditions.

The CDC Division of Health Informatics and Surveillance (DHIS) supports NNDSS by receiving, securing, processing, and providing nationally notifiable infectious diseases data to disease-specific CDC programs. DHIS also supports local, state, and territorial public health departments in helping them collect, manage, and submit case notification data to CDC for NNDSS. DHIS provides this support through funding, health information exchange standards and frameworks, electronic health information systems, and technical support through the NNDSS web site, tools, and training. Together, DHIS and the CDC programs prepare annual summaries of infectious and noninfectious diseases and conditions, which are published in the CDC *Morbidity and Mortality Weekly Report*.

These programs collaborate with the Council of State and Territorial Epidemiologists (CSTE) to determine which conditions reported to local, state, and territorial public health departments are nationally notifiable. The CDC programs, in collaboration with subject matter experts in CSTE and in health departments, determine what data elements are included in national notifications. Health departments participating in NNDSS voluntarily submit infectious disease data to DHIS and also submit some data directly to CDC programs.

CDC programs responsible for national surveillance, prevention, and control of infectious and noninfectious conditions

- Center for Global Health (CGH)
- National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)
- National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
- National Center for Environmental Health (NCEH)
- National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP)
- National Center for Immunization and Respiratory Diseases (NCIRD)
- National Institute for Occupational Safety and Health (NIOSH)

NNDSS Modernization Initiative

With the evolution of technology and data and exchange standards, CDC now has the opportunity to strengthen and modernize the infrastructure supporting NNDSS. As part of the CDC Surveillance Strategy (<http://www.cdc.gov/surveillance/>), the NNDSS Modernization Initiative (NMI) will enhance the system's ability to provide more comprehensive, timely, and higher quality data than ever before for public health decision making.

Through this multi-year initiative, CDC seeks to increase the robustness of the NNDSS technological infrastructure so that it is based on interoperable, standardized data and exchange mechanisms.

Center for Surveillance, Epidemiology, and Laboratory Services

Division of Health Informatics and Surveillance



NNDSS Data Sources and Reporting

Integrated surveillance information systems in reporting jurisdictions that are based on the National Electronic Disease Surveillance System (NEDSS) architectural standards are primary data sources for NNDSS. Jurisdictions use these information systems to create and send standards-based case notifications to CDC for NNDSS. Currently, case notifications can be sent using three different standards; CDC's NNDSS Modernization Initiative will provide a single, new standard to transmit data to CDC.

Connecting the Healthcare System to Public Health



By encouraging the use of standards-based public health surveillance systems and helping to support these systems, NEDSS helps public health agencies accept the electronic data exchanges from the healthcare system to public health departments.

NEDSS standards help connect the healthcare system to public health departments and those health departments to CDC by

- providing leadership and resources to local, state, and territorial public health departments to adopt standards-based systems needed to support national disease surveillance strategy;
- defining the content—such as clinical disease information, risk factor information, lab confirmation results, and patient demographics—of data messages sent by using the Health Level Seven (HL7) messaging standard;
- implementing content standards that the healthcare industry currently uses (for example, LOINC as the standard for transmitting laboratory test names and SNOMED as the standard for transmitting test results) for increased interoperability between public health departments and the healthcare industry; and
- providing the NEDSS Base System (NBS), a CDC-developed information system, to help reporting jurisdictions manage reportable disease data and send notifiable diseases data to CDC.

NEDSS Base System

NBS is a CDC-developed integrated information system that helps local, state, and territorial public health departments manage reportable disease data and send notifiable disease data to CDC.

NBS provides a tool to support the public health investigation workflow and to process, analyze, and share disease-related health information. NBS also provides reporting jurisdictions with a NEDSS-compatible information system to transfer epidemiologic, laboratory, and clinical data efficiently and securely over the Internet.

Built and maintained by CDC, NBS integrates data from many sources on multiple public health conditions to help local, state, and territorial public health officials identify and track cases of disease over time. This capability allows public health to provide

appropriate interventions to help limit the severity and spread of disease.

NBS facilitates the adoption of national consensus standards used across public health and healthcare—including vocabulary standards such as LOINC, SNOMED, and RXNORM and messaging standards such as HL7—and helps local, state, and territorial public health departments use standards when sending information to CDC about notifiable diseases and conditions.

To date, 22 health departments (19 states; Washington, DC; Guam; and U.S. Virgin Islands) use NBS to manage public health investigations and transfer general communicable disease surveillance data to CDC.

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