

National Notifiable Diseases Surveillance System Modernization Initiative



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 some noninfectious diseases and conditions.

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.

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 the National Notifiable Diseases Surveillance System. As part of the CDC Surveillance Strategy (<http://www.cdc.gov/surveillance/>), the NNDSS Modernization Initiative (NMI) is underway to 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.

NMI has three key components:

- development of prioritized Message Mapping Guides (MMGs) for Health Level 7 (HL7) case notifications;
- development of the Message Validation, Processing, and Provisioning System (MVPS), software that will validate and process nationally notifiable disease data messages sent by jurisdictions and provision the data to CDC programs; and
- technical assistance for implementation of HL7 case notification messages in jurisdictions submitting case notifications to NNDSS.

The initiative to modernize NNDSS began in January 2014 and is planned for several years with short-term deliverables in the first phase and long-term activities in the following years. In the first phase of NMI, CDC's sexually transmitted diseases (STD), hepatitis, mumps, and pertussis programs—as well as programs representing 52 conditions covered by the Generic v2 MMG (see http://wwwn.cdc.gov/nndss/document/Conditions_to_Use_GenV2_Only_2015_Release1_20150529.xlsx for a list of conditions)—are expected to receive timely, complete, and high-quality data from certain jurisdictions through the MVPS. As NMI progresses, CDC will increase the number of conditions and jurisdictions using HL7 messages and the MVPS for NNDSS.

Effective planning, collaboration, and communication among all NNDSS stakeholders and partners are crucial for the success of NMI.

National Notifiable Diseases Surveillance System Modernization Initiative

NMI Key Components

- **Accelerate Standardization and Development of Message Mapping Guides**

Through collaboration and commitment from subject matter experts across multiple CDC national centers and involvement of jurisdiction partners and other key stakeholders, CDC will accelerate the development and adoption of new-generation Message Mapping Guides for HL7 case notifications.

With these guides, CDC will migrate from legacy messaging structures to the widely adopted HL7 standards that provide content standardization and interoperable message exchange structures. In addition to providing core data elements and data exchange formats, these new MMGs will satisfy CDC program requests for disease-specific variables for notifiable conditions.

CDC has prioritized the following six MMGs for development and adoption for the initial phase of NMI: Generic guide v.2, STD, Hepatitis, Congenital Syphilis, Pertussis, and Mumps. They will be followed with updated MMGs for Arboviral diseases and Varicella.

- **Develop the MVPS to Support the Electronic Exchange of Surveillance Data**

CDC will replace the existing NNDSS messaging infrastructure with a message validation, processing, and provisioning system—the MVPS—that facilitates the receipt and distribution of notifiable disease data. The MVPS will support collection of data through new guides and a data exchange system that will result in more comprehensive, timely, and more accurate information than ever before provided to CDC programs.

The MVPS will allow CDC programs to receive, process, store, access, share, and analyze health-related data, including electronic health record data, to further the agency's public health goals. Through the MVPS Dashboard, the system will provide submitting jurisdictions the ability to view the data they have submitted and identify data quality issues.

- **Provide Technical Assistance and Support for Program Implementation**

CDC has partnered with the Council of State and Territorial Epidemiologists (CSTE) and the Association of Public Health Laboratories (APHL) to provide and evaluate technical assistance to state and local jurisdictions to implement the initial six HL7 case notification messages.

Through this technical assistance, CDC and its partners will help jurisdictions adopt the MMGs and use them to send test case notification messages to the MVPS to ensure that these messages will be properly received, processed, and stored for analysis through this new system. The NMI Technical Assistance Team provides webinars, online technical guides, and other training materials to support implementation.

Once an MMG is finalized, all jurisdictions will be invited to adopt the finalized MMG, go through onboarding, and send case notification messages to CDC through the MVPS.

For more information, please access the NMI web site at <http://www.cdc.gov/nmi/>.

CONTACT US

Centers for Disease Control and
Prevention

1600 Clifton Road NE, Mailstop
E-97

Atlanta, GA 30333

Phone: 800-CDC-INFO (800-232-
4636)/ TTY: 888-232-6348

8AM–8PM ET, Monday–Friday;
Closed Holidays

E-mail: cdcinfo@cdc.gov

Web: www.cdc.gov

