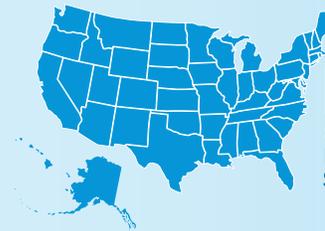


NNDSS Modernization Initiative

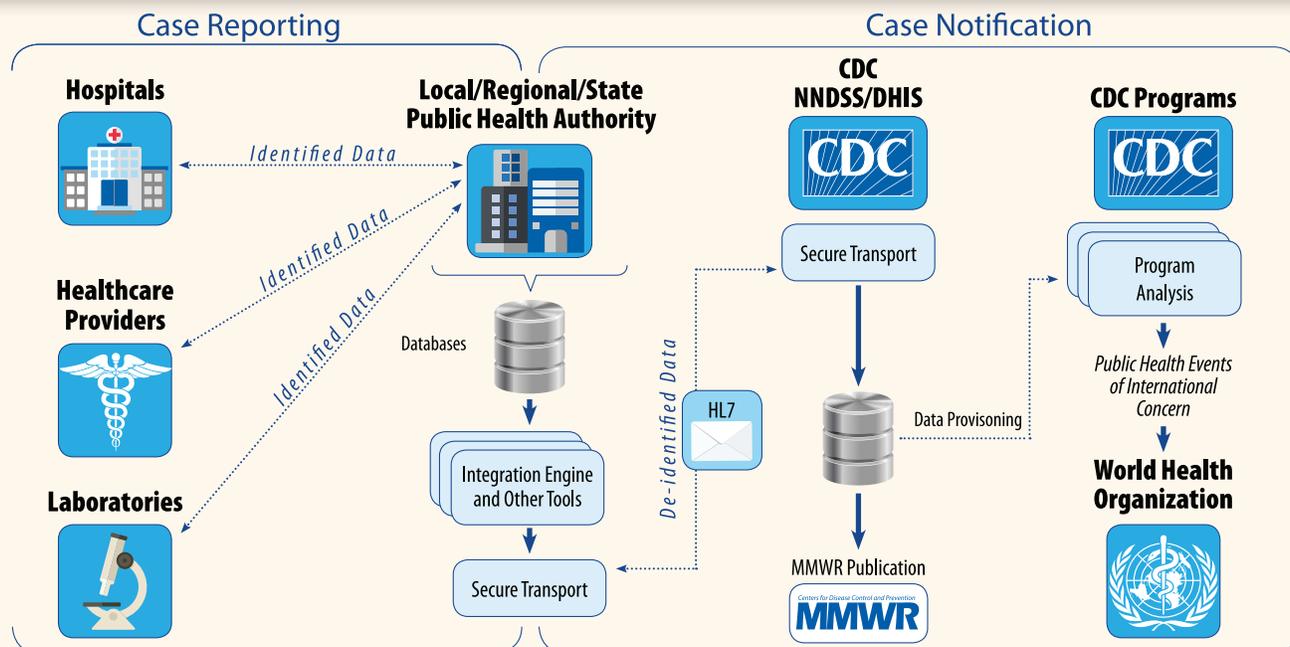
With the evolution of technology and data and exchange standards, CDC now has the opportunity to strengthen and modernize the infrastructure supporting the National Notifiable Diseases Surveillance System (NNDSS) (<http://www.cdc.gov/nndss/>). As part of the CDC Surveillance Strategy (<http://www.cdc.gov/surveillance/>), 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.



NNDSS

National Notifiable Diseases Surveillance System

National Notifiable Diseases Surveillance System Data Flow



In the NNDSS data flow, hospitals, healthcare providers, and laboratories send disease data to local and state public health departments. State health departments send data to CDC when persons are identified with one of about 90 different diseases. CDC scientists use these data to monitor disease trends, study risk factors, and evaluate prevention and control efforts. CDC has launched the NNDSS Modernization Initiative to enhance the system's ability to provide more comprehensive, timely, and higher quality data than ever before for public health decision making.

Improving the Technology Behind NNDSS

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 case notification 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 conditions covered by the Generic v2 MMG—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.

NMI Key Components

VADS Hyperlink: State or Province Exposure	Value Set Code	Valid Values	HL7 OBX segment OBX-3=I OBX-5=V OBX-3=INV504 OBX-5=String (u characters)
PHVS_StateProvince eOfExposure_CDC		US States FIPS Codes and ISO Country Subdivision codes for Canadian Provinces and Mexican States.	

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. Final message mapping guides are now available for Generic v2 and Hepatitis on the NNDSS HL7 Case Notification Resource Center at <https://www.cdc.gov/nndss/case-notification/>.

In addition, to support public health's emergency Arboviral response needs, CDC developed and published an updated Arboviral MMG (v1.3), which is now also available on the resource center.

Work also is underway on guides for Babesiosis, Congenital Rubella Syndrome, Cyclosporiasis, Malaria, Measles, Rubella, Trichinellosis, Foodborne and Diarrheal 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 and the Association of Public Health Laboratories to provide and evaluate technical assistance to state and local jurisdictions to implement 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.



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