

Division of Health Informatics and Surveillance

Vision

Health decisions and actions are guided by timely and useful information.

Mission

The Division of Health Informatics and Surveillance (DHIS) provides leadership and cross-cutting support in developing public health information systems, managing public health surveillance programs, and providing health-related data required to monitor, control, and prevent the occurrence and spread of diseases and other adverse health conditions.

National Surveillance Programs

DHIS manages two public health surveillance programs that have cross-cutting utility for multiple CDC programs and public health jurisdictions.



To protect Americans from serious disease, **the National Notifiable Diseases Surveillance System (NNDSS)** helps public health monitor, control, and prevent about 120 diseases. These diseases are important to monitor nationwide and include infectious diseases such as Zika, foodborne outbreaks such as *E. coli*, and noninfectious conditions such as lead poisoning. About 3,000 public health departments gather and use data on these diseases to protect their local communities. Through NNDSS, CDC receives and uses these data to keep people healthy and defend America from health threats.

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.

DHIS supports NNDSS by receiving, securing, processing, and providing national 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. DHIS and the CDC programs publish statistical data based on NNDSS to support recognition of outbreaks, monitoring of shifts in disease patterns, and evaluation of disease control activities.

The National Syndromic Surveillance Program (NSSP) promotes and advances development of a syndromic surveillance system for the timely exchange of syndromic data. These data are used to improve nationwide situational awareness and enhance responsiveness to hazardous events and disease outbreaks to protect America's health, safety, and security.

NSSP functions through collaboration among individuals and organizations at local, state, and federal levels of public health; federal agencies including the U.S. Department of Defense and the U.S. Department of Veterans Affairs; public health partner organizations such as the Association of State and Territorial Health Officials, Council of State and Territorial Epidemiologists, and International Society for Disease Surveillance; and hospitals and health professionals. NSSP features the BioSense Platform and the NSSP Community of Practice (CoP).



BioSense Platform—NSSP offers access to and use of the cloud-based BioSense Platform, a common electronic health information system with analytic tools and services that enable users to rapidly collect, store, share, and evaluate syndromic data. Syndromic data include patient encounter data from emergency departments, urgent care, ambulatory care, and inpatient healthcare settings, as well as pharmacy and laboratory data. A stakeholder group of partners and BioSense Platform users provides feedback to inform ongoing development and use of the BioSense Platform. The tools hosted on the BioSense Platform increase the capacity of state and local health departments to support the Centers for Medicare and Medicaid Services (CMS)' Meaningful Use (MU) program, which is intended to expand the use of electronic health records (EHR). The BioSense Platform provides health departments a common electronic platform for collecting, storing, and sharing syndromic surveillance data.

Community of Practice—NSSP facilitates knowledge sharing and collaboration among syndromic surveillance practitioners. The NSSP CoP includes NSSP funding recipients, nonfunded states and jurisdictions that contribute data to the BioSense Platform, public health practitioners using local syndromic surveillance systems, CDC programs, other federal agencies, partner organizations, hospitals, healthcare professionals, and academic institutions.



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CDC Data Hub



DHIS manages a data hub that includes multiple data sets for research. One example is **CDC WONDER**, an application that makes many health-related data sets available to CDC staff,

public health departments, researchers, and others. The data help with public health research, decision making, priority setting, program evaluation, and resource allocation.

The CDC Data Hub facilitates CDC staff access to

- **American Hospital Association (AHA)** survey data, which are acquired by DHIS and provided without cost to CDC programs. AHA administers topic-specific surveys to more than 6,500 hospitals throughout the United States each year. AHA survey data acquired for CDC cover hospital characteristics and demographics, healthcare IT, care systems and payments, population health, and financial data.
- **Centers for Medicare and Medicaid Services** data, which are provided through the Virtual Research Data Center or as shipped data to CDC researchers whose programs contribute to the annual agreement between CDC and CMS. CMS claims, assessments, surveys, enrollment/summary files, and other data have been used to study access to care, healthcare utilization, costs, practices, disease burden, and health outcomes.
- **Healthcare Cost and Utilization Project (HCUP)** data, which are acquired by DHIS and provided without cost to CDC programs. Developed through a federal-state-industry partnership and sponsored by the Agency for Healthcare Research and Quality, HCUP's four national and three state-level databases are built from hospital administrative data. These hospital discharge records include hospital inpatient, outpatient emergency department, and ambulatory surgery care.
- **MarketScan®** databases, software, and online tools, which are available to CDC researchers whose programs contribute to the annual contract with IBM/Watson Health's Truven Health Analytics. These databases contain individual-level, de-identified, healthcare claims information from employers, health plans, and hospitals for commercially insured persons and some Medicare and Medicaid beneficiaries. For some enrollees, MarketScan also provides laboratory results, details about insurance plan benefits, health risk assessments, and hospital discharge data.

- **National Emergency Medical Services Information System (NEMSIS)** data, which are provided at no cost to CDC by the National Highway Traffic Safety Administration. NEMSIS is the national database of standardized emergency medical services data from the U.S. states and territories. It includes all patient care information resulting from emergency 911 calls.

Information Systems

DHIS also develops information systems in support of public health programs used for data collection, exchange, and processing, including the following:

- **Countermeasure Tracking Systems**—multiple interoperating components that enhance the capacity of federal, state, and local public health agencies to track and manage medical and non-medical inventory and usage to support both daily operations and all-hazards events;
- **Epi Info™**—software used worldwide for the rapid assessment of disease outbreaks, for the development of small to mid-sized disease surveillance systems, and as ad hoc components integrated with other large-scale or enterprise-wide public health information systems;
- **Laboratory Response Network Results Messenger (LRN RM) and Results Viewer (LRN RV)**—software that provides LRN laboratories with the ability to manage and share standard laboratory results data securely with public health partners;
- **Message Quality Framework, Messaging System, and Vocabulary Access and Distribution System**—tools and resources that help increase the capacity of public health agencies to electronically exchange health data and information;
- **Message Validation, Processing, and Provisioning System**—software that validates and processes national notifiable disease case notification messages sent by jurisdictions and provisions data to CDC programs; and
- **National Electronic Disease Surveillance System Base System**—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.

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