

Surveillance Strategy

**A strategy for improving the Centers for Disease Control and
Prevention's activities in public health surveillance**

February 24, 2014

Introduction

Public health surveillance guides efforts to detect and monitor disease and injuries, assess the impact of interventions and assist in the management of and recovery from large-scale public health incidents. Today's ever-present, media-hungry environment pressures public health scientists, researchers and frontline practitioners to provide information, on an almost instantaneous basis, responsive to public and policy maker concerns about specific geographies and specific populations. Actions informed by surveillance information take many forms, such as policy changes, new program interventions, public communications and investments in research. Local, state and federal public health professionals, government leaders, public health partners and the public are dependent on high quality, timely and actionable public health surveillance data.

With a charge from the CDC Director, this Surveillance Strategy aims to improve CDC's overall surveillance capabilities, and by extension those of the public health system at large. The Strategy guides efforts to make essential surveillance systems more adaptable to the rapidly changing technology landscape, more versatile in meeting demands for expanding knowledge about evolving threats to health, and more able to meet the demands for timely and population-specific and geographically specific surveillance information. The Strategy will also facilitate work to consolidate systems, eliminate unnecessary redundancies in reporting, and reduce reporting burden.

These expectations compel this strategy and argue for CDC to lead the public health system in improving the timeliness and availability, as well as the quality and specificity of surveillance data to CDC programs, STLT agencies, and other stakeholders. To meet these expectations, CDC will:

- enhance accountability, resource use, workforce and innovation for surveillance by establishing a Surveillance Leadership Board, a surveillance workforce plan, and an innovation consortium
- accelerate the utilization of emerging tools and approaches to improve the availability, quality, and timeliness of surveillance data by establishing enhanced HIT policy engagement, HIT vendor forums, and informatics innovation projects
- initiate four cross cutting surveillance system initiatives to improve surveillance by addressing data availability, system usability, redundancies, and incorporation of new information technologies

Goals

CDC will collaborate with principal public health surveillance stakeholders, customers, and partners, and together will focus efforts to achieve three goals to improve CDC health surveillance activities and investments.

Goal 1. Enhance the accountability, resource use, workforce and innovation for surveillance at CDC and in support of STLT agencies

- **CDC Surveillance Leadership Board:** By April 2014, establish a CDC Surveillance Leadership Board charged with reviewing, guiding and overseeing the evolution of CDC surveillance systems in accordance with principles established in this strategy document. The CDC Surveillance Leadership Board will be chaired by the CDC Deputy Director for Public Health Scientific Services and composed of members appointed from CDC operating divisions responsible for aspects of disease, injury and condition surveillance. Through the board, we aim to enhance the Agency's accountability to policy makers and public health programs that should benefit from a robust surveillance information infrastructure. We also aim to optimize resource investments devoted to the emerging surveillance systems infrastructure by:
 - assuring coordination among partners and transparency in decision making,
 - harmonizing the Agency's efforts to work with health information technology standards development organizations and work towards streamlining requests for public health reporting functionality in commercial electronic health record systems.
 - monitoring progress in the implementation of new systems,
 - facilitating use of best practices
 - ensuring that the agency is making progress toward achieving its broad strategic goals.

- **Workforce Plan:** By September 2014, develop a federal and STLT workforce training and support plan that integrates CDC's strategy for improving surveillance systems and technological considerations practitioners will face with CDC workforce investments. This workforce plan will better prepare surveillance practitioners to assess new data sources, interface with technologies used by clinical healthcare providers, and evaluate commercial, governmental, and open source surveillance system products.

- **CDC Health Information Innovation Consortium (CHIC):** By May 2014, create a CDC Health Information Innovation Consortium that fosters and promotes creative solutions to surveillance challenges implemented through innovative projects in CDC programs and STLT agencies. This consortium will identify and accelerate emerging tools and approaches to improve the

availability, quality, and timeliness of surveillance data while also connecting these efforts to the other activities of the Surveillance Strategy.

Goal 2. Accelerate the utilization of emerging tools and approaches to improve the availability, quality, and timeliness of surveillance data

Emerging health information technology (HIT) improvements offer tremendous potential to improve the timeliness, quality, quantity, and efficiency, of public health data enabling decision makers to take action while also linking public health agencies and systems more effectively with clinical systems and healthcare professionals. The Health Information Technology for Economic and Clinical Health Act (HITECH) and the associated Meaningful Use requirements are an unprecedented opportunity for clinicians, healthcare providers, and public health systems to benefit from greater electronic connectivity, public health reporting, and population health monitoring.

The utilization and incorporation of emerging HIT tools and approaches by CDC and public health can be improved through more effective policy practice, vendor engagement and leveraging of emerging information technologies. In addition to the Innovation Consortium described above, OPHSS will work with CIOs and STLT agencies to improve our policy and vendor engagements and to provide support for innovation projects.

- **HIT policy engagements:** CDC has established two senior level positions in the Office of Public Health Scientific Services (OPHSS) to improve HIT policy engagement and awareness: the Chief Public Health Informatics Officer and the Senior Policy Advisor for Public Health Scientific Services. Supervised by the Deputy Director for Public Health Scientific Services, these two leaders will work with the CDC Surveillance Leadership Board, as well as CDC Washington and the Office of the Associate Director for Policy (OADP), CIOs, and external stakeholders to develop and implement a plan to improve our effectiveness on HIT related policy issues.
- **Strategic HIT vendor engagements:** By May 2014, CDC will develop a forum to systematically engage vendors regarding informatics technologies and tools that can advance surveillance practice and systems.
- **Support for innovative informatics projects:** Beginning in FY 2014, OPHSS will provide funding and technical support for small project awards generated through the CHIC to advance specific innovations in the major areas of interest. Projects to be funded should 1) advance innovation on a specific area related to data collection, transport, storage, analysis, visualization, or availability; 2) if successful, provide insights or tools that can be generalized to other surveillance systems or activities; 3) improve effectiveness or efficiency of existing surveillance systems by leveraging emerging information technologies

Goal 3. Through cross-cutting agency initiatives, improve surveillance by addressing data availability, system usability, redundancies, and incorporation of new information technologies in major systems or activities

To improve surveillance efforts at CDC and to make progress on the four strategic goals, CDC will initiate four cross cutting agency initiatives aimed at large surveillance systems and activities to make progress on 1 or more of the strategic goals.

For 2014, four major initiatives are proposed:

- **Initiative 1. National Notifiable Diseases Surveillance System (NNDSS) Modernization**
Initiative: The National Notifiable Diseases Surveillance System (NNDSS) is the nation’s public health surveillance system that enables all levels of public health (local, state, territorial, federal, and international) to monitor the occurrence and spread of the notifiable diseases and conditions. This complex system is supported and used by numerous stakeholders, and is expected to provide accurate, timely, and sufficient information for surveillance and public health preparedness and response on notifiable conditions. The National Electronic Disease Surveillance System (NEDSS) provides standards, IT infrastructure, and incentives for rapid electronic NNDSS reporting. The evolution of technology and data and exchange standards has caused CDC to re-examine and enhance its infrastructure supporting public health surveillance. The *NNDSS Modernization Initiative* will enhance surveillance capabilities in response to stakeholders’ concerns and needs for more comprehensive, timely, and higher quality data. It will also provide a robust infrastructure that is based on interoperable, standardized data and exchange mechanisms.
 - **Performance Objective:** By 2016, 90% of data reported through NNDSS will be by standard HL7 messages, thereby enhancing timeliness, standardization, availability and usability by CDC programs and STLT agencies
- **Initiative 2. BioSense Enhancement Initiative:** The BioSense program, established in 2003 after the events of 9/11 and subsequent anthrax attacks, is a surveillance system that provides data necessary for public health officials to monitor and respond to possible disease or hazardous conditions. It is an electronic health information system with standardized tools and procedures for rapidly collecting, sharing, and evaluating information about emergency department (ED) visits and other health related data from other sources and clinical care facilities. Findings from a recent investment internal review of BioSense highlighted the promise and potential that this surveillance system holds for public health, particularly around increasing use of electronic health records, strengthening our partnership with clinical healthcare, extending surveillance practices and methods, and reducing costs. The BioSense Enhancement Initiative will build on the successes of the past, fix areas that need improvement, and create a national view of syndromic surveillance which will also serve as a foundation for additional public health benefits.

- **Performance Objective:** By mid-2015, BioSense will provide enhanced public health situational awareness utilizing EHR data and active CDC and STLT analyses that support public health decisions and programs at the local, state, and national level.

- **Initiative 3. Accelerating Electronic Laboratory Reporting:** Electronic reporting of laboratory results to public health agencies can improve public health surveillance for reportable diseases and conditions by making reporting more timely and complete. At the end of July 2013, approximately 62% of 20 million laboratory reports were being received electronically, compared with 54% in 2012. Continued progress will require collaboration between clinical laboratories, laboratory information management system (LIMS) vendors, and public health agencies.
 - **Performance Objective:** By 2016, 80% of laboratory reports to public health agencies (CDC, States) will be received as electronic lab reports.

- **Initiative 4. Mortality Surveillance-Related initiatives with the National Vital Statistics System:** Modernizing and transforming the National Vital Statistics System (NVSS) into a system capable of supporting near real-time public health surveillance has been a long standing desire and need. While much progress has been made, substantial focus is needed to fully realize the NVSS's potential as a public health surveillance tool.
 - **Performance Objective:** By 2016, 80% of death reports occurring in at least 25 states will be transmitted electronically to public health within 1 day of registration and to CDC/NCHS (i.e., cause of death) within 10 days of the event.