Public Health Surveillance and Informatics Program Office (proposed)

Fiscal Years 2013–2016 Strategic Plan

Centers for Disease Control and Prevention

August 10, 2012

i. Message from the Director

I am pleased to present you with the Fiscal Years 2013-2016 Strategic Plan for the Public Health Surveillance and Informatics Program Office (PHSIPO). The ability of the American public health enterprise to protect the health of our nation depends on reliable and timely information about the health of the populations we serve. The challenges to public health in the 21st century include the familiar ones, such as epidemics, the effects of unhealthy behaviors, and the need to do more with fewer resources. However, there are also new opportunities for public health, including those arising from healthcare reform and the expanding automation of health information. PHSIPO began operations in December, 2011[1], resulting from the merger of what had been the Public Health Surveillance Program Office and the Public Health Informatics and Technology Program Office within CDC's Office of Surveillance, Epidemiology, and Laboratory Services. Our mission is to advance the science and practice of public health surveillance and informatics. Recent accomplishments of PHSIPO and its two predecessor offices include:

- launching BioSense 2.0, a redesign of the BioSense program that enables health departments to expand and strengthen their syndromic surveillance capacity and improves state-to-state and state-to-CDC information sharing using Internet "cloud" technology;
- launching an evaluation of the National Notifiable Diseases Surveillance System (NNDSS), which is ongoing but has already led to a new collaboration with the Office of Infectious Diseases to streamline and improve NNDSS data management, access, and use;
- fielding a Meaningful Use Technical Assistance Team and providing multiple tools and services to help state and local health departments achieve the population health objectives of the HHS program to expand the "Meaningful Use" of electronic health records;
- incorporating cell phone interviews into the Behavioral Risk Factor Surveillance System (BRFSS) and launching new pilot studies to test next-generation survey methods;
- introducing the Applied Public Health Research Cloud as part of our Informatics Research and Development Laboratory, a unique service at CDC provided to both internal and external partners that saves time and money through applied informatics research and innovation; and
- issuing *Morbidity and Mortality Weekly Report* supplements on the public health impacts of mental illness and the use of selected clinical preventive services from 2007–2010, which announced CDC's initiative to monitor the use of high-priority preventive services and provided pre-Affordable Care Act baseline information on each service.

We take pride in these accomplishments and have much more work to do to attain PHSIPO's mission. This Strategic Plan is the roadmap we will use to meet the challenges of fiscal years 2013-2016 and beyond, while recognizing that all strategic plans must remain flexible in a rapidly changing world.

The challenges facing public health surveillance and informatics in the 21st century will require novel solutions involving many disciplines. Together with our partners, we will work toward our vision of health decisions and actions being guided by timely and useful information.

Sincerely,

James W. Buehler

James W. Buehler, MD
Director, Public Health Surveillance and Informatics Program Office (proposed)

[1] Formally, PHSIPO is still considered a "Proposed" entity because its organization has not yet (as of August 2012) been formally approved by CDC.

ii. Executive Summary

Background:
People who are responsible for protecting and promoting public health need reliable, timely, and constant information about the health of the populations they serve and the programs they manage. The disciplines of public health surveillance and informatics connect to fulfill these needs in an environment that is increasingly shaped by expanding automation of health information.

PHSIPO Strategic Plan:
PHSIPO faces multiple challenges including the current difficult federal budget climate, the need to better support both state and local health departments and CDC programs, multiple priorities, and the rapid advancement of technology. PHSIPO is responsible for managing several large, national surveillance systems - the National Notifiable Disease Surveillance System, BioSense 2.0, and the Behavioral Risk Factor Surveillance System; for providing informatics and information technology services that support surveillance and other public health infrastructures; and for serving as the home at CDC for addressing cross-cutting issues in surveillance and informatics practice, such as supporting health departments and CDC programs in achieving the population health benefits of expanded uses of electronic health records.

Our strategic plan consists of vision and mission statements that are supported by core values, strategic goals, objectives, and strategies.

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

Mission: Advance the science and practice of public health surveillance and informatics.

Core Values: People, innovation, excellence, and service.

Goals:

1. Strengthen the quality and utility of public health surveillance.
2. Strengthen the ability of public health agencies to benefit from and manage advances in electronic health information.
3. Foster innovation, identify best practices, share knowledge, and serve as the primary resource for cross-cutting issues in public health surveillance and informatics.
4. Improve organizational capability.

For the coming year, our four strategic priorities will be to:

- Sustain, build upon, and expand the uses of BioSense 2.0, in collaboration with health departments, CDC programs, and other federal partners.
- Improve existing systems for the surveillance of notifiable diseases and expand access to the data they collect to monitor the public health effect of these diseases.
- Continue to implement new Behavioral Risk Factor Surveillance System survey methods and develop next-generation survey methods for use by states and CDC.

- Maximize the public health benefits of advances in health information technology through shared services and utilities, policy development, and innovation to support information sharing, collaboration, and advocacy.

To date, our strategic plan reflects the involvement of PHSIPO leadership and staff. We are now engaging our stakeholders and will use your feedback to refine our plan, improve our operations, strengthen our services, and communicate what we do. As we work toward achieving our goals and objectives, together with our partners, we will help CDC improve public health practice through the use of surveillance and informatics.

1.0 Introduction

This Fiscal Years 2013–2016 Strategic Plan is the roadmap that the Public Health Surveillance and Informatics Program Office (PHSIPO) (proposed) will use to carry out its mission.[2] The plan lays out PHSIPO's strategic goals and objectives for the next four years and describes how PHSIPO will achieve them and measure results. The plan also highlights PHSIPO's emphasis on strengthening its working relationships with state, local, territorial, and tribal health departments, other federal agencies, programs at the Centers for Disease Control and Prevention (CDC), and other key partners.

To create this plan, PHSIPO identified four strategic goals:

1. Strengthen the quality and utility of public health surveillance.
2. Strengthen the ability of public health agencies to benefit from and manage advances in electronic health information.
3. Foster innovation, identify best practices, share knowledge, and serve as the primary resource for cross-cutting issues in public health surveillance and informatics.
4. Improve organizational capability.

These goals define how PHSIPO will conduct public health surveillance and informatics planning, development, management, service delivery, and performance reporting. To track progress on the plan PHSIPO established key performance indicators (*Appendix C)* that depend on the plan's successful implementation.

This strategic plan is a living document. PHSIPO is now engaging its stakeholders in the planning process and it will use their feedback to refine the plan, improve operations, communicate services, and strengthen service delivery.

2.0 Background

2.1 Public Health Surveillance and Informatics Disciplines

People who are responsible for public health programs need reliable, timely, and constant information about the health of the populations they serve. This might include information about specific diseases or health problems, including their antecedents and consequences, or more general indicators of the overall health of populations. Public health surveillance systems fulfill this need by collecting, managing, analyzing, interpreting, and disseminating information to inform public health decision-making and actions. Public health informatics supports surveillance and public health management by bridging the worlds of information technology and information users, drawing upon expertise in information science, information technology, and public health practice. These two disciplines connect within a rapidly changing environment that includes the expanding use of electronic health records (EHRs) and personal health records in clinical practice, automated information management systems in laboratories, new methods and services for exchanging health information, and new information standards. These changes

[2] The Public Health Surveillance and Informatics Program Office (proposed) Fiscal Years 2013–2016 Strategic Plan was prepared and submitted in accordance with the Office of Management and Budget Circular A-11, the Government Performance and Results Act of 1993 (GPRA), and the GPRA Modernization Act of 2010.

hold great promise for improving personal healthcare services and population health[3] and for strengthening information sharing and collaboration between healthcare providers and public health officials.

2.2 Establishment of PHSIPO and Responsibilities

In 2009, CDC established the Office of Surveillance, Epidemiology, and Laboratory Services (OSELS). This reflected the priorities of the new CDC Director, Dr. Thomas Frieden, the first of which is "Excellence in surveillance, epidemiology, and laboratory science and services." In 2010, OSELS created the Public Health Surveillance Program Office (PHSPO) and the Public Health Informatics and Technology Program Office (PHITPO) as independent offices.

However, to capitalize on the connection between public health surveillance and informatics, OSELS directed PHSPO and PHITPO to begin functioning as a single office in December 2011, as the proposed PHSIPO *(Appendix A provides a functional organization chart)*. The combined office has the responsibility for:

1. managing three large, cross-cutting surveillance systems: the National Notifiable Diseases Surveillance System, BioSense 2.0, and the Behavioral Risk Factor Surveillance System;
2. providing informatics and information technology services that support health department and CDC surveillance systems and infrastructures;
3. serving as the "home" at CDC for addressing cross-cutting issues in public health surveillance and informatics, involving collaborating with partners within and beyond CDC;
4. supporting preparedness and emergency response efforts;
5. managing the CDC Assessment Initiative, which has over for over two decades supported health departments in developing new information sources and methods for population health assessment, as defined by the Institute of Medicine;
6. developing new and innovative approaches for population health monitoring, such as new information sources, new survey methods, and improved methods for data analysis and visualization;
7. developing new and innovative informatics and information technology tools, including uses of the Internet "cloud" and other approaches to foster information sharing and use, the development of mobile "apps" for public health, and new decision-support utilities;
8. supporting health departments and CDC programs in maximizing the benefits of expanding health information automation, including fulfilling the population health objectives of the federal Meaningful Use program, representing and engaging partners in nationwide discussions about standards for electronic data and information exchange, and assisting partners in interpreting and implementing new standards;
9. identifying and disseminating information about best practices in public health surveillance and informatics; and

[3] The term "population health" is being used increasingly to describe the work of public health agencies. For example, the HHS Meaningful Use program typically uses the term "population health" to describe its public health objectives. At the same time, the term "populations" is being used increasingly to describe groups of people who are served by individual healthcare providers or organizations, as part of efforts to encourage increasing attention to the quality and impact of healthcare services. Taken together, the growing use of the term "population" in these two contexts reflects attention to the shared interests of healthcare providers and public health in considering the health of the groups or populations they serve.

10. keeping an eye on the horizon for developments in healthcare, public health, or information technology that will affect surveillance and informatics practice.

2.3 Legislation and Funding

PHSIPO's core programs are authorized and funded through several legislative mandates and funding streams. BioSense and biosurveillance coordination are mandated through the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, Homeland Security Presidential Directive (HSPD) 21 and the Pandemic and All Hazards Preparedness Act (PAHPA) of 2006, respectively; and they are funded through the CDC preparedness budget line. Other core programs are authorized under the Public Health Services Act and are funded through the CDC Public Health Scientific Services budget line.

3.0 Strategic Plan

Building on the strategic planning efforts undertaken by both former program offices for surveillance and informatics/information technology, the PHSIPO FY2013–2016 Strategic Plan consists of vision and mission statements that are supported by core values, priorities, strategic goals, objectives, and strategies.

The strategic framework includes three cross-cutting, programmatic goals that serve CDC programs, health departments and other stakeholders and a fourth goal that is focused on developing PHSIPO capacities (Figure 1). Under each goal are the key strategic objectives that we will use to guide our work.

3.1 Vision and Mission

Vision:

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

Mission:

Advance the science and practice of public health surveillance and informatics.

3.2 Core Values

PHSIPO's core values govern its operations and how it works with internal stakeholders and those at the federal, state, local, territorial, and tribal levels:

People—We value our people and are committed to investing in them. We strive for the continual professional development and diversification of our workforce so that our employees can operate with the highest professional standards and maximize their contributions. We draw upon the collective expertise, strengths, and experience of our people to develop, implement, and maintain a cohesive, synergistic national and global public health surveillance and informatics strategy.

Innovation—We enhance public health surveillance and informatics by actively investigating novel scientific methods, services, and products and translating them to public health practice. We rigorously search for, evaluate, and implement optimal solutions to real-world public health problems.

Excellence—We are committed to developing and implementing public health surveillance and informatics practices that reflect the best science and management principles. We recognize that effective partnerships will help us lay the foundation for excellence in public health surveillance and informatics. As a result, we actively collaborate with external agencies and professional organizations who contribute their unique and vital complementary assets to achieve our shared vision.

Service—We provide public health surveillance and informatics solutions, assistance, and support to CDC programs and state, tribal, local, and territorial health departments.

3.3 Priorities

During the coming year, PHSIPO will focus on four priority activities.

	PHSIPO Strategic Priorities for 2012-2013
1.	Sustain, build upon, and maximize the use of BioSense 2.0, in collaboration with health departments, CDC programs, and other federal partners.
2.	Improve existing systems for the surveillance of notifiable diseases and expand access to the data they collect to monitor the public health effect of these diseases.
3.	Continue to implement new Behavioral Risk Factor Surveillance System survey methods and develop next-generation survey methods for use by states and CDC.
4.	Maximize the public health benefits of advances in health information technology through shared services and utilities, policy development, and innovation to support information sharing, collaboration, and advocacy.

3.4 Strategic Goals

PHSIPO's strategic goals were designed to help sustain and improve public health surveillance and informatics.

Figure 1 shows PHSIPO's Fiscal Years 2013–2016 Strategic Framework that illustrates a cascade from its mission and vision to its four strategic goals and key objectives. Further information on the goals and supporting strategies is provided in the next section. The goal and strategy descriptions are not all inclusive; however, they provide context for the reader.

Additionally, the strategic framework will be supported by annual activities that are in development and will be implemented in the beginning of FY13 to operationalize the plan.

Mission: Advance the science and practice of public health surveillance and informatics

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

Goal 1: Strengthen the quality and utility of public health surveillance.

Objective 1.1 – Redesign the National Notifiable Diseases Surveillance System (NNDSS) to meet user needs.

Objective 1.2 – Strengthen the Behavioral Risk Factor Surveillance System (BRFSS) to monitor high-priority or emerging public health threats and conditions.

Objective 1.3 – Expand usefulness of BioSense 2.0.

Objective 1.4 – Strengthen the National Public Health Surveillance and Biosurveillance Registry for Human Health.

Goal 2: Strengthen the ability of public health agencies to benefit from and manage advances in electronic health information.

Objective 2.1 – Provide support to increase the public health benefits of electronic health records (EHRs), automated laboratory information systems, and health information exchanges.

Objective 2.2 – Align informatics and IT services with national health information standards and architectures.

Goal 3: Foster innovation, identify best practices, share knowledge, and serve as the primary resource for cross-cutting issues in public health surveillance and informatics.

Objective 3.1 – Strengthen scientific leadership to foster innovation in public health surveillance and informatics, inside and outside CDC.

Objective 3.2 – Establish a cross-cutting vision and strategic direction for public health surveillance and informatics in the nation and identify best practices in public health surveillance and informatics.

Goal 4: Improve Organizational Capability

Objective 4.1 – Strengthen the PHSIPO workforce hiring, training, and development opportunities.

Objective 4.2 – Maximize use of PHSIPO financial resources.

Objective 4.3 – Promote products, services, and innovations of our programs and activities to stakeholders.

Objective 4.4 – Increase strategic partner engagement to enhance policy development.

Figure 1: The Public Health Surveillance and Informatics Program Office Fiscal Years 2013–2016 Strategic Framework

3.4.1– Strategic Goal 1

Strengthen the quality and utility of public health surveillance.

Policy and other key decision makers rely on public health surveillance data to shape policies, program direction, and resource levels. To fulfill these functions, the data must be of high quality. The ultimate test is whether decision makers use the data to make better decisions.

Objective 1.1 **– Redesign the National Notifiable Diseases Surveillance System (NNDSS) to meet user needs.**

Strategy 1.1.1 **– Collaborate with key stakeholders.**

PHSIPO is listening to users through a comprehensive evaluation of NNDSS and working with key partners at CDC and the Council of State and Territorial Epidemiologist (CSTE), the National Association of County and City Health Officials (NACCHO), state and local health departments, and others to address their concerns. The initial phase of this evaluation, which focused on internal CDC information management procedures, has been completed, and actions are now underway in collaboration with the Office of Infectious Diseases to improve our ability to synthesize and deliver the information we receive from states. The second phase of the evaluation, which is currently ongoing and will be completed by December 2012, is focused on how we can better support health department surveillance systems for reportable diseases.

Strategy 1.1.2 **– Improve quality, utility, and accessibility of notifiable diseases data.**

Notifiable disease surveillance is a cornerstone of national preparedness and prevention and is based on the authority of state and local health departments to mandate reporting for infectious and other diseases and conditions. Improving the timeliness, quality, accessibility, and usability of notifiable disease surveillance across the continuum of local-state-CDC uses is a top PHSIPO priority. Based on the currently ongoing evaluation of NNDSS and other efforts to gather and assess user insights, PHSIPO will also work with stakeholders to provide the services and tools needed to improve the NNDSS.

Strategy 1.1.3 **– Provide users with better tools for data collection, analysis, management, and dissemination.**

In addition to improving data collection and management function, strengthening the public health impact of notifiable disease surveillance will also require that PHSIPO provides users with new methods for analyzing, visualizing, and disseminating notifiable disease data.

Objective 1.2 **– Strengthen the Behavioral Risk Factor Surveillance System (BRFSS) to monitor high-priority or emerging public health threats and conditions.**

Strategy 1.2.1 **– Strengthen partnerships with states and stakeholders.**

PHSIPO depends on its relationships with the BRFSS state coordinators, who field the BRFSS survey and ensure the successful collection of survey responses, and those who use BRFSS data, including

federal agencies, national organizations, and state, tribal, local and territorial health departments. PHSIPO will expand its current efforts to understand and better meet the needs of its partners through evaluation and enhancing its website.

Strategy 1.2.2 **– Strengthen use of new survey and analysis methods.**

Methods for monitoring health behaviors must change with rapid shifts in telecommunication technology in order to assure that the BRFSS is representative of the United States population. PHSIPO will continue to explore and adopt multiple modes for designing and administering behavioral health surveys, including cell phones, Internet, and mail. BRFSS' inherent flexibility will be used to address emerging public health issues, building on successes in monitoring influenza vaccine behaviors during the H1N1 pandemic and assessing mental health status after the 2010 Gulf Oil Spill.

Strategy 1.2.3 **– Improve user access to data analysis tools.**

PHSIPO is updating the technology behind its Web-Enabled Analysis Tool (WEAT). PHSIPO will enable its BRFSS users to conduct analysis with the option of using distinct variables from its website using WEAT. PHSIPO will also enhance its technology to allow users to conduct logistic or cross-tabulation analysis using data for the entire nation or by state.

Strategy 1.2.4 **- Improve ability to collect and provide data for community-based health assessments.**

PHSIPO is exploring innovative means for providing data on an increasingly local level for use in local community health planning. PHSIPO's work with Small Area Estimation (SAE) modeling will help meet greater demand for local-level data.

Objective 1.3 **– Expand usefulness of BioSense 2.0.**

Strategy 1.3.1 **– Strengthen partnerships with health departments, key federal agencies, and other stakeholders.**

BioSense 2.0 integrates local- and state-level health data to provide a near real-time, nationwide, all-hazards approach to monitoring health problems as they evolve. The redesign of BioSense and subsequent launch of BioSense 2.0 is the result of successful, sustained, and iterative collaboration with multiple partners. PHSIPO will continue to enhance, strengthen and expand our partnerships with key stakeholders to meet their needs, increase national and regional situational awareness and advance the usability and capabilities of BioSense 2.0.

Strategy 1.3.2 **– Expand the number of BioSense 2.0 users.**

BioSense 2.0 enables participating local and state public health departments to simultaneously access and share existing data from health care organizations, providing a more complete picture of potential and actual health events, both locally and across jurisdictional boundaries. Since its launch, a growing number of health departments have elected to participate in BioSense 2.0. When they are onboard, the national coverage of BioSense 2.0 will be vastly enhanced. PHSIPO will continue efforts to expand the number of users participating in BioSense 2.0.

Strategy 1.3.3 **– Expand the data sources and the amount of data stored and shared in BioSense 2.0.**

With the launch of BioSense 2.0 in a secured cloud environment, PHSIPO is able to provide a platform for the public health community to provide an array of public health data that can be securely stored and shared. PHSIPO will continue to work with stakeholders to increase and expand the amount of data and types of data that can be stored in BioSense 2.0 for all hazards situational awareness. In addition, the use of Internet cloud technology by BioSense 2.0 provides a model that could be adopted by other CDC surveillance systems.

Through these collaborative efforts, the BioSense Program will also support development of state and local capability to conduct syndromic surveillance in accord with the EHR Incentive Program ("Meaningful Use") requirements. CDC and other federal agencies will benefit from access to data representing an improved regional and national picture of population health.

Strategy 1.3.4 **- Expand data analytic and visualization tools within BioSense 2.0.**

PHSIPO will work to increase the value of BioSense 2.0 through expanded analysis and visualization tools provided to users. Through this capability, CDC and other users will be able to quickly analyze and interpret public health data, be alerted to potential health threats, make informed decisions and develop appropriate and timely responses. Since these tools are deployed on a shared Internet cloud platform, they become available without major local and state investments in hardware or software.

Objective 1.4 **– Strengthen the National Public Health Surveillance and Biosurveillance Registry for Human Health.**

Strategy 1.4.1 **– Collaborate with key stakeholders to maintain currency of the registry.**

PHSIPO's National Public Health Surveillance and Biosurveillance Registry for Human Health (Registry) is a comprehensive electronic catalog of CDC's public health surveillance and biosurveillance assets related to human health. PHSIPO will continue to work with CDC programs to ensure this registry is kept current and accurate and continues to serve as a valuable resource to CDC programs.

Strategy 1.4.2 **– Strengthen web-based interactive registry tools**.

PHSIPO will expand the usability of the Registry by developing a web-based, user-friendly tool that enables users to update information on their surveillance assets and perform queries and analyses to meet their needs for information about CDC surveillance resources.

3.4.2– Strategic Goal 2

Strengthen the ability of public health agencies to benefit from and manage advances in electronic health information.

As health information is increasingly digitalized in electronic health records and other systems (sometimes described as Health Information Technology, or HIT), PHSIPO will continue to help public health departments and agencies exchange electronic information with health care providers and the public and to put information to use more efficiently and effectively. This involves staying abreast of fast-evolving industry standards, ensuring that national health data policies support public health needs, establishing the availability of secure information exchange and storage services, addressing data quality, and enabling multiple uses of information across interoperable systems to improve public health. The HHS Meaningful Use program is accelerating the use of electronic health records, automated health information exchange, and national health information standards, with explicit objectives to improve personal healthcare, and population health services.

Objective 2.1 **– Provide support to increase the public health benefits of electronic health records (EHRs), automated laboratory information systems, and health information exchanges.**

Strategy 2.1.1 **– Lead the CDC EHR-Meaningful Use Advisory Group.**

PHSIPO is reshaping the CDC Meaningful Use Advisory group (includes cross-CDC representation) to focus on larger EHR-related opportunities and challenges. This workgroup will establish and maintain a shared vision and strategic direction for public health use of EHR information.

Strategy 2.1.2 **– Provide technical assistance and guidance to health departments, health providers and CDC programs to help fulfill the public health objectives of the Meaningful Use program.**

To support achievement of the population health objectives of the Meaningful Use program, PHSIPO will continue to provide training, technical assistance, and guidance related to all stages of the Meaningful Use program. This will involve healthcare providers, health departments, and CDC programs. This effort will also identify gaps in current policy or practice that inhibit successful achievement of the Meaningful Use population health objectives. Support will be provided both directly and through cooperative agreements with other partners.

PHSIPO will also collaborate with other programs or organizations providing technical assistance (e.g., Office of the National Coordinator for Health Information Technology) to ensure a coordinated approach to supporting state and local health departments.

Strategy 2.1.3 **– Strengthen PHSIPO surveillance systems through greater use of information from EHRs, automated laboratory information systems, and health information exchanges**.

PHSIPO will seek ways to improve access to interoperable tools with minimal investment in hardware and software as cloud-based platforms and shared services become more practically available. Because the purpose of surveillance is to improve prevention, PHSIPO will also seek to

identify and evaluate successful models based both on efficiency and, when appropriate, actual improvements in population health.

Objective 2.2 **– Align informatics and IT services with national health information standards and architectures.**

Strategy 2.2.1 **– Provide health departments, CDC programs, and other stakeholders with informatics and information technology services and utilities that meet evolving health information and health information exchange standards.**

PHSIPO will support the capability of health departments and programs to use digital health information by facilitating public health participation in standards and specification development; providing access to supportive technical tools and services (e.g., vocabulary services, services to support message transport, validation, and consumption); and by helping assure that applications used by public health professionals are compliant with emerging interoperability standards as well as user needs. This will include participating with partners to develop easier-to-implement information exchange services and utilities that are similar to those within the healthcare industry. PHSIPO will continue to engage experts and stakeholders, to discuss ideas on improving functionality, standardization, and adoption.

Strategy 2.2.2 **– Support the development of technical specifications for information exchange, reporting, and certification for EHRs to help ensure that public health information needs are met.**

PHSIPO will provide leadership to stakeholders regarding the tools and services necessary to adopt/convert their systems to improve the electronic exchange of information. PHSIPO will also continue to collaborate with efforts regarding the development and adoption of message standards and the broad implementation of health information technology.

Strategy 2.2.3 **– Provide guidance for EHR-based clinical decision support and other tools that help achieve public health objectives.**

Public health clinical decision support (CDS) is a link between the public health and clinical communities to alert healthcare providers about issues of public health importance and share best practices and guidance for improved clinical decision making. PHSIPO will help CDC programs realize CDS' potential for improving population health by developing and delivering messages to providers and/or patients, thus translating health data into actionable information.

Additional efforts will include a CDS Community of Practice (CoP) to foster collaboration and serve as a platform for CDC programs to share experiences, form collaborations, develop strategies to establish and share best practices, and evaluate impact on clinical and population health outcomes. PHSIPO will also establish a liaison with the Office of National Coordinator (ONC) to develop standard approaches for expressing CDS in a more computable format.

3.4.3 – Strategic Goal 3

Foster innovation, identify best practices, share knowledge, and serve as the primary resource for cross-cutting issues in public health surveillance and informatics.

PHSIPO will continue to serve as a leader in identifying cutting-edge methods that strengthen public health surveillance and informatics through the creation of better or more effective processes, services, and technologies. PHSIPO will also serve as a key resource in facilitating collaborative efforts to resolve cross-cutting public health surveillance and informatics issues.

Objective 3.1 **– Strengthen scientific leadership to foster innovation in public health surveillance and informatics, inside and outside CDC.**

Strategy 3.1.1 **– Advance approaches for surveillance data collection, management, analysis, visualization, dissemination, integration, and evaluation.**

PHSIPO will serve as a key resource for the development of innovative methods for the collection, analysis and communication of public health surveillance information.

PHSIPO will develop and employ new techniques and methods to meet the increasing demand for local data, develop and transition to multi-mode methodology for BRFSS and other public health surveys, and expand automated sources of health information available for public health use.

Strategy 3.1.2 **– Increase the capacity of the PHSIPO Informatics Research and Development Laboratory.**

PHSIPO will strengthen the capacity of its Informatics Research and Development Laboratory to meet the need for new public health services and tools. PHSIPO will continue to support remote access to its resources such as consultation services and the research cloud, which provides a secure site to test new utilities. PHSIPO will continue to carry out applied research, share evaluations, identify best practices, and develop prototypes for new technologies. This includes development of mobile device software, web-based applications, and tools to enhance data visualization, user experience, data management, decision support, and other applications. Once new informatics solutions or techniques are demonstrated to be of value, PHSIPO will transfer the development of them to the appropriate public health program for formal deployment and implementation.

Strategy 3.1.3 **– Collaborate with stakeholders to research, develop, and disseminate new technologies for public health surveillance and informatics.**

PHSIPO will work closely with state and federal partners to identify, test, develop, employ, and share informatics techniques and methods that use innovative and/or emerging technologies and approaches. PHSIPO will ensure that the evaluations of new methods emphasize their usefulness for public health research and practice.

Objective 3.2 **– Establish a cross-cutting vision and strategic direction for public health surveillance and informatics in the nation and identify best practices in public health surveillance and informatics.**

Strategy 3.2.1 **– Establish and staff a new National Public Health Surveillance and Biosurveillance Advisory Committee.**

Public health surveillance provides a foundation for public health practice and is conducted by nearly every Center, Institute, or Office at CDC. Multiple CDC surveillance systems share many common challenges and opportunities, yet there has been no external advisory process that addresses these cross-cutting issues. PHSIPO will establish this new advisory committee, which will replace the National Biosurveillance Advisory Subcommittee, and is currently in the final stages of approval according to Federal Advisory Committee Act (FACA) standards.

Strategy 3.2.2 **– Monitor trends in healthcare and public health practice to identify changes in public health surveillance information needs and opportunities in informatics practice.**

Over time, the role of public health agencies will change, needs for population health information will evolve, and advances in technology will provide new opportunities for the practice of public health surveillance and informatics. PHSIPO will keep an eye on these developments to assure that our programs and services anticipate and meet evolving information needs.

Strategy 3.2.3 **– Develop cross-cutting guidelines for public health surveillance and informatics to help solve shared problems.**

Through its work in managing and improving its cross-cutting surveillance and information technology systems, as well as collaboration with key partners, PHSIPO will develop guidelines and best practices in surveillance and informatics. PHSIPO's Surveillance Resource Center is available to CDC programs currently and will be the home for disseminating newly-developed guidelines and identified best practices.

Strategy 3.2.4 **– Sponsor the CDC Surveillance Science Advisory Group (SurvSAG).**

PHSIPO will continue to sponsor SurvSAG—a CDC employee organization dedicated to providing advice and guidance to CDC. Its mission is to advance the science of public health surveillance and promote the appropriate and effective use of public health surveillance information in meeting CDC's overall mission of scientific excellence.

Strategic Goal 4

Improve organizational capability.

PHSIPO will increase its ability to manage and improve its human and financial resources, service delivery, and stakeholder relations.

Objective 4.1 **– Strengthen the PHSIPO workforce hiring, training, and development opportunities.**

Strategy 4.1.1 **– Develop, implement, and evaluate a Human Resource Capital Management Plan.**

Through its Human Resource Capital Management Plan, PHSIPO will conduct an assessment of its human resource needs and current competency alignment. PHSIPO will also identify alternative hiring mechanisms to subsidize staffing gaps. Leadership will collaborate with staff to identify new and efficient ways to obtain the necessary training to improve current abilities and obtain new skill sets with available resources.

Strategy 4.1.2 **– Develop and implement qualitative and quantitative tools to measure employee-level satisfaction in the workplace.**

PHSIPO recognizes that monitoring employee satisfaction levels is essential for the acquisition and retention of a quality workforce. PHSIPO will develop tools to track the attitudes and opinions of employees through its evaluation of employee satisfaction, PHSIPO will develop initiatives to increase morale and retain a highly motivated workforce.

Objective 4.2 **–** Maximize use of PHSIPO financial resources.

Strategy 4.2.1 **– Conduct multi-year financial and scenario planning to better prepare for changes in the financial environment.**

PHSIPO will proactively develop contingency plans based on various funding scenarios to better analyze stable and reduced funding impacts, and prepare for and position the program in a fiscally constrained environment.

Strategy 4.2.2 **– Measure and improve program productivity and efficiencies to ensure best use of resources and demonstrate program value.**

PHSIPO will conduct assessments to identify opportunities to improve efficiency and effectiveness of its programs and activities. This will include quarterly and annual performance management, evaluation and reporting of its operations using annual operational plans that are linked to its long-range initiatives.

PHSIPO will also increase operational efficiencies by maximizing budget and performance integration in order to better measure the overall effectiveness of its strategic direction.

Strategy 4.2.3 **– Make the case for sustainable financial support for program priorities.**

PHSIPO will identify opportunities to support sustainable funding of priorities and engage key decision makers to ensure their strategic understanding. Initiatives will also include identifying and implementing cost savings resulting from process improvements and resource reallocation plans throughout the Program Office.

Objective 4.3 **– Promote products, services, and innovations of our programs and activities to stakeholders.**

Strategy 4.3.1 **– Develop employees' ability to serve as PHSIPO ambassadors.**

PHSIPO will develop communication materials, tools, and training for employees to strengthen their ability to serve as ambassadors and proponents of surveillance and informatics programs, activities, services, and innovations in stakeholder meetings, conferences, media interviews, and other interpersonal exchanges.

Strategy 4.3.2 **– Develop communication plans and channels to promote PHSIPO products and services.**

PHSIPO will establish communication plans and appropriate channels to clearly communicate the organization's purpose and initiatives while positioning the organization as a trusted and valuable resource for internal and external stakeholders.

Objective 4.4 **– Increase strategic partner engagement to enhance policy development.**

Strategy 4.4.1 **–Increase coordination and strengthen partnership engagement.**

PHSIPO will identify and engage new and existing partnership organizations, and promote awareness of its surveillance and informatics programs and activities. The Program Office will also inform and coordinate policy development with CDC Programs, other federal agencies and partner organizations. Through this strategy, PHSIPO will also explore and develop methods and tools to enhance public health policy capabilities.

Strategy 4.4.2 **– Inform key policy makers and leaders about PHSIPO-related activities.**

PHSIPO will ensure that key policy makers and leaders are educated and informed of the various programs, projects, and services provided by and housed within PHSIPO. Through these efforts, PHSIPO will identify collaborative engagements to advance and promote the program office activities.

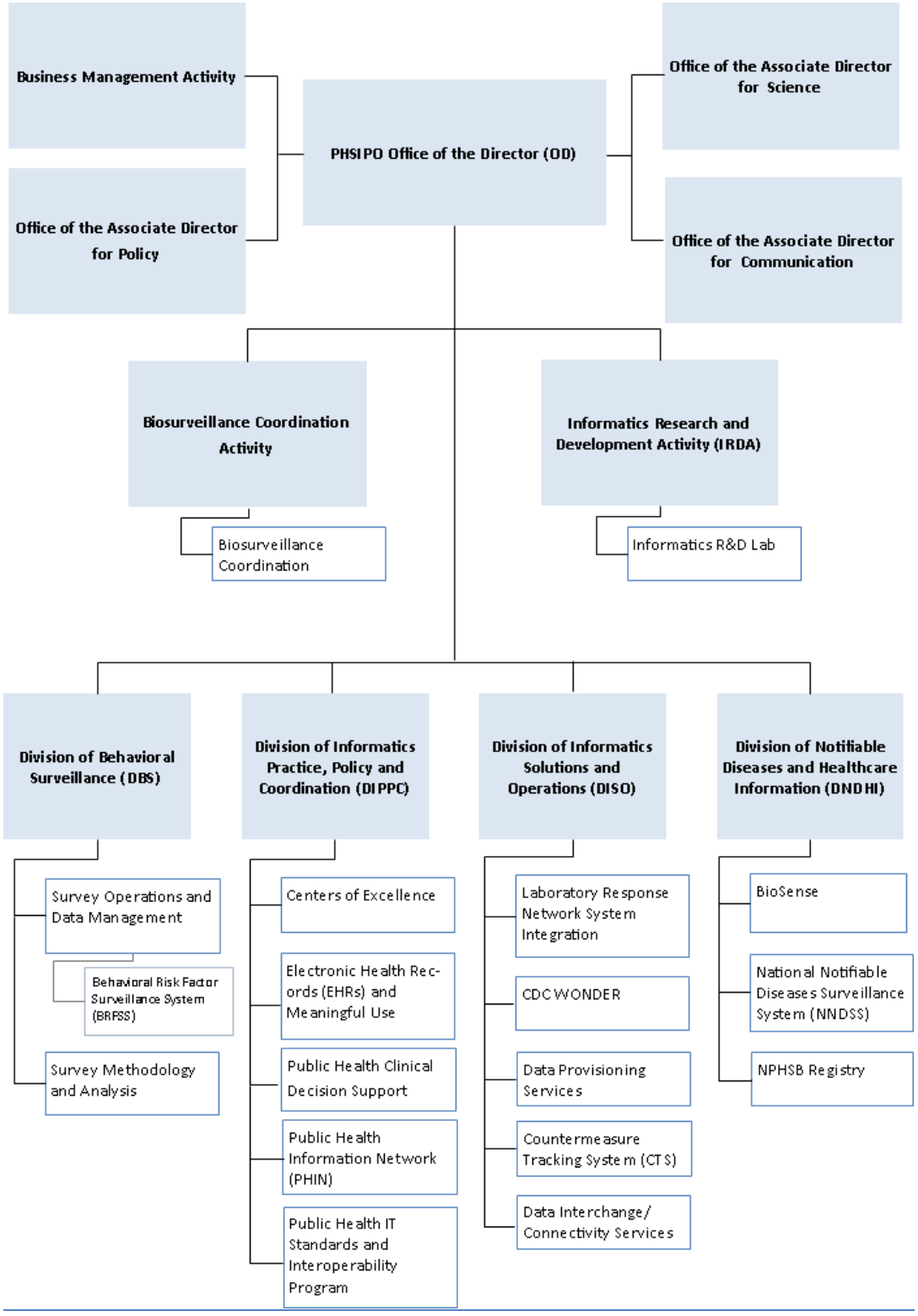
Strategy 4.4.3 **– Conduct outreach activities to identify collaboration opportunities.**

PHSIPO will expand and enhance outreach efforts to increase awareness of its products and services, provide updates to changes within surveillance and informatics, maintain existing stakeholder relations and collaborative efforts, and identify new collaboration opportunities to advance public health surveillance and informatics projects, policies, and initiatives.

Appendices

Appendix A – Organizational Elements

This chart depicts the Public Health Surveillance and Informatics Program Office in a functional organization layout that highlights the key functions and programs within each division and activity.



Public Health Surveillance Programs and Services

Notifiable Diseases Surveillance

The Centers for Disease Control and Prevention (CDC) has compiled nationally notifiable diseases surveillance data since the 1960s. PHSIPO manages this responsibility for CDC through the National Notifiable Diseases Surveillance System (NNDSS).

NNDSS is a multifaceted public health disease surveillance system that allows public health officials to monitor the occurrence and spread of infectious diseases. Each year, CDC partners with the Council of State and Territorial Epidemiologists to identify the notifiable conditions that jurisdictions should report. Through NNDSS, CDC compiles these reported data into a national-level notifiable disease data set for use by the entire public health community.

A key component of NNDSS is the National Electronic Disease Surveillance System (NEDSS). NEDSS provides data and IT standards, support, and leadership to state, local, and territorial health departments. CDC provides the NEDSS Base System at no cost, which allows participating jurisdictions to report their notifiable conditions according to required standards.

Syndromic Surveillance

PHSIPO administers the BioSense 2.0 program for CDC. BioSense 2.0 is the only surveillance system that uses hospital emergency department data for early detection and assessment of illness related to potential outbreaks and bioterrorism related events. BioSense 2.0 is also the first HHS system to move to a cutting edge and cost effective “cloud environment.”

Launched in November 2011, BioSense 2.0 is a collaborative syndromic surveillance system that integrates local and state health data to provide a near real-time regional and national health-hazards picture to local, state, and federal partners and CDC programs. For the increasing number of jurisdictions sharing their data in the system, BioSense 2.0 allows them to exchange syndromic surveillance data according to the standards of the Department of Health and Human Services’ Meaningful Use program.

Behavioral and Mental Health Surveillance

PHSIPO manages the Behavioral Risk Factor Surveillance System (BRFSS) for CDC and conducts other specialized surveys to support CDC programs and obtain data on important emerging health issues such as influenza and mental health.

BRFSS is the world's largest ongoing telephone health survey system. It is the only nationwide health survey that collects state and local information on the health status, risk behaviors, preventive health practices, and access to healthcare of adults. State and local health departments use BRFSS data to understand the public health needs of their populations and efficiently use public health resources.

As a state-based survey, BRFSS allows states to include questions specific to their needs, such as environmental health, mental health, and substance abuse questions. In addition, CDC programs, policy

makers, and health researchers rely on BRFSS data to track health trends and develop and evaluate public health programs and policies.

Biosurveillance Coordination

Through the Biosurveillance Coordination Activity, PHSIPO coordinates strategic biosurveillance efforts for CDC. PHSIPO pursues initiatives that address our biosurveillance capability which is the management of health-related data and information for early warning of threats and hazards, early detection of events, and rapid characterization of events which include natural disease outbreaks, environmental exposures, and acts of terrorism. In today's modern world of high-density population centers and global mass transit, such threats and hazards can have a sudden and significant effect on human health.

PHSIPO's key activities to improve biosurveillance include:

- promoting communication and collaboration among key biosurveillance information providers and stakeholders across the enterprise;
- supporting, identifying, and establishing priorities for the nation's next-generation biosurveillance capability to provide timely, comprehensive, and accessible information; and
- furthering the nation's ability to determine, track, and understand the nation's current biosurveillance capabilities.

Public Health Informatics Programs and Services

Electronic Health Information Meaningful Use and Exchange

PHSIPO defines and supports policies, standards, and services for rapid and secure electronic public health information access, exchange, and use among public health agencies and their clinical and other partners. This effort includes supporting the meaningful use of electronic health records.

For example, PHSIPO represents the interests of public health in collaboration with the Office of the National Coordinator for Health IT (ONC) and the Centers for Medicare and Medicaid Services (CMS). PHSIPO also helps assess and ensure the readiness of state public health agencies to electronically accept reportable lab results, immunization data, and syndromic surveillance data through the Meaningful Use Public Health Technical Assistance team.

PHSIPO also creates and operates widely used services and utilities for coding information, electronic information exchange, information dissemination, and public health management.

Public Health Clinical Decision Support

PHSIPO manages the Public Health Clinical Decision Support program, which helps CDC programs successfully use clinical decision support frameworks, tools, and best practices to improve population health. Information exchange between public health and the clinical community can help healthcare providers effectively manage their patient and population services.

Public health clinical decision support:

- promotes methods and solutions that provide clinicians with alerts and reminders of public health importance at the point of care,
- incorporates best practices and guidelines into clinical decision making, and
- integrates clinical and community data for decision making that improves population health.

Public Health IT Standards and Interoperability Program

PHSIPO manages the CDC Public Health IT (HIT) Standards and Interoperability program. The program's goal is to increase public health's ability to electronically exchange health information by promoting HIT standards and reusable solutions.

Public health data systems that work together provide a platform for exchanging meaningful information across all levels of public health**.** As a result, the program helps to improve public health practice, including public health surveillance, prevention, health promotion, and health education.

Public Health Informatics Research and Development Laboratory

PHSIPO manages CDC's Public Health Informatics Research and Development Laboratory, which advances public health informatics through applied research and innovation. The laboratory

- provides information, consultation, and support for new public health informatics solutions;
- creates prototype tools and solutions to facilitate the testing of hypotheses; and
- provides an optimal, flexible, and scalable environment for rapidly developing prototype public health informatics solutions for testing and evaluation.

The laboratory's Applied Public Health Informatics Research Cloud allows CDC scientists and public health partners to jointly develop, examine, and train on new tools and technologies, remotely or face to face. The lab's rapid prototyping of applications helps reduce the cost and improve the value of public health IT investments.

Appendix B – HHS Goal Cascade to PHSIPO Goals

This table depicts how the Public Health Surveillance and Informatics Program Office's strategic goals support those of the Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC).

	PHSIPO Organizational Goals			
	Goal One: Strengthen the quality and utility of public health surveillance.	**Goal Two**: Strengthen the ability of public health agencies to benefit from and manage advances in electronic health information.	**Goal Three:** Foster innovation, identify best practices, share knowledge, and serve as the primary resource for cross-cutting issues in public health surveillance and informatics.	**Goal Four:** Improve organizational capability.
HHS Organizational Goals				
Transform Health	•	•	•	
Advance Scientific Knowledge and Innovation	•	•	•	
Advance the Health, Safety and Well-Being of the American People	•	•	•	
Strengthen the Nation's Health and Human Service Infrastructure and Workforce				•
CDC Organizational Priorities				
Strengthen surveillance and epidemiology	•	•	•	•
Support state, tribal and local health departments	•	•		
Improve global health				
Advance Evidence-based health policies	•	•	•	
Prevent illness, injury, illness and premature death	•	•	•	

Appendix C - Long-term Strategic Performance Goals and Indicators

This section defines key performance indicators by goal for FY16. These will be driven by metrics reported in CDC's Quarterly Program Reviews and PHSIPO's performance budget-related measures. These indicators will be a means to track the overall success of the strategic plan.

Strategic Goal	Performance Indicators
Goal 1 – Strengthen the quality and utility of public health surveillance.	Increase the number of CDC Programs with access to comprehensive notifiable conditions data.
	Increase the proportion of jurisdictions contributing data into BioSense 2.0 to improve the national picture of population health.
	Increase the proportion of BioSense program funding used to support state and partner associations in the US.
	Increase the utility of BRFSS data as evidenced by:
	an increased number of downloads and
	an increased number of publication references
	Proportion of population measured at community levels.
Goal 2 – Strengthen the ability of public health agencies to benefit from and manage advances in electronic health information.	Increase the percentage of public health agencies that can receive production ELR/IIS/SS Meaningful Use compliant messages from certified Electronic Health Record (EHR) technology.
	Increase the number of CDC programs that use PHSIPO's shared services.
	Decrease the cost of intramural support for IT systems
	Increase the number of services migrated to cloud technology for use by CDC.
Goal 3 – Foster innovation, identify best practices, share knowledge, and serve as the primary resource for cross-cutting issues in public health surveillance and informatics.	Increase the annual number of engagements using the Applied Public Health Informatics Research Cloud
	Increase the annual number of partners using the Applied Public Health Informatics Research Cloud.
	Increase the number of surveillance and informatics best practices identified and disseminated for use in public health practice.
	Provide initial recommendations to strengthen biosurveillance operations as called for in national strategies and objectives that align with public health surveillance priorities.
Goal 4 – Improve Organizational Capability.	Increase PHSIPO employee satisfaction rate.
	Establish performance management as part of PHSIPO's daily operations to realize cost savings and increase productivity.
	Increase the number of visits to PHSIPO's internet/intranet sites.
	Increase the visibility of PHSIPO's work as evidenced by:
	an increase in the number of inquiries about various programs, products, services, activities, and innovations.
	an increase in the number of invitations to PHSIPO staff to speak at events.
	Establish a surveillance and informatics policy agenda supported by key partners.