Title: Joint Recommendations for the Public Health Informatics Infrastructure

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Across the nation, public health practitioners are in the midst of revolutionary change in the abundance and availability of public health data and information. Driven largely by Meaningful Use and Affordable Care Act incentives, healthcare professionals and hospitals are rapidly integrating electronic health record (EHR) technologies into clinical and administrative practices. These health information technologies (HIT) have already shown promise in improving the effectiveness of core public health services (e.g., childhood immunization rates, outbreak detection and control, and real-time awareness of the health impacts of emergencies or disasters). It is further expected that this growth will build new efficiencies that reduce public health data reporting efforts. In its April 2014 Joint Explanatory Statement (Fiscal Year 2014), Congress expressed these expectations, writing “The agreement notes that significant opportunities exist to create administrative and economic efficiencies in the reporting of public health data.”

The National Association of County and City Health Officials (NACCHO) is the voice of the 2,800 local health departments in the United States that work every day to protect and promote health and well-being for all people in their communities. NACCHO, along with the Association of State and Territorial Health officials (ASTHO), co-chairs the Joint Public Health Informatics Taskforce (JPHIT), a coalition of nine national public health associations working to build informatics capacities in local, state, and federal public health agencies. JPHIT and its partner organizations seek to ensure that public health priorities and needs are fully communicated and known to policymakers in national conversations regarding information technology development and use for public health.

JPHIT has three recommendations for actions that public health agencies and stakeholders must take to realize the full public health potential of this data revolution and significant federal investments in HIT. The JPHIT associations believe the following:

1. All levels of governmental public health must formulate enterprise-wide strategies using national standards for public health information system development, modernization, and maintenance;
2. Progress in public health informatics capacities is best stimulated through efforts that build on and strengthen successful systems that can then be leveraged by other public health services, as appropriate; and
3. Investments in public health workforce development must be increased and sustained for any gains to be made and sustained in governmental public health IT initiatives.

JPHIT applauds the Centers for Disease Control and Prevention (CDC) for embodying these recommendations in their Strategy for Surveillance. Developed in consultation with NACCHO, ASTHO, the Council of State and Territorial Epidemiologists, NAPHSIS, and others within the public health community, the strategy for CDC’s surveillance work promises to focus on efforts that build local and state capacities to use HIT data and thereby strengthen the effectiveness of public health services nationwide. The potential for CDC’s efforts to succeed, however, can be greatly multiplied if the above-mentioned recommendations are applied throughout the nation’s public health system.
**Formulate Enterprise Strategies**

Public health agencies must formulate enterprise-wide strategies to develop and manage the public health informatics infrastructure. As public health programs handle data that are moving faster, in greater volumes, and are sourced from a larger variety of entities, policymakers should promote and support the use of contemporary, agile IT development practices and interoperable and multi-purpose technologies, including market available “cloud-based” and state "shared services." Furthermore, the development of state, tribal, local, and territorial (STLT) public health infrastructure needs to be incentivized in a manner similar to that done for the healthcare sector. Many STLT health departments have built single-purpose, Web-based data systems required by categorical funding, therefore using technology that is becoming obsolete. The diversity of data and related systems adds complexity; many systems developed for individual programs are unique and are not designed to be interoperable. There is an accelerating need to further develop the capacity of STLT health departments to support standards-based electronic data exchange and interoperable systems that can sustain critical public health information systems now and in the future. The need for enterprise-level thinking is especially critical by those who fund public health IT infrastructure; STLT health departments and CDC need funding that is flexible enough to encourage enterprise-wide systems development across programs that today are siloed and stand alone.

**Stimulate Progress by Strengthening the Core**

Limited HIT resources should be focused to modernize public health systems with the greatest potential for improved efficiencies and value to STLT health departments. CDC’s Strategy for Surveillance models this approach by concentrating efforts on enhancing successful public health information systems. These systems include the National Notifiable Diseases Surveillance System; immunization registries; syndromic surveillance systems; and vital statistics systems, including birth and death registries. These four systems gather, manage, and provide mission-critical data that inform public health services throughout the nation. They are well-positioned to integrate rapid advancements in information technology, such as Meaningful Use EHR technologies.

As CDC focuses its resources on building technologies and solutions that strengthen these systems, it will simultaneously be building relationships and competence in informatics standards that are broadly applicable. For example, the BioSense 2.0 enhancement initiative supports a BioSense Governance Group made up of public health and healthcare stakeholders that links the CDC to the STLT user base to gather and evaluate application developments. In another example, CDC will work with STLT representatives on EHR data message standards by developing HL7 message mapping and implementation guides to support inter-agency data exchange among reporting jurisdictions and CDC programs. The goal is to increase to 90% the proportion of case reports in CDC’s National Notifiable Diseases Surveillance System that use HL7 standards.

**Invest in the Public Health Informatics Workforce**

Expertise in public health informatics is required for public health agencies to build and sustain information capabilities that meet evolving public expectations. Given the breadth of public health functions that rely on data and the rapid pace of technical advances, public health professionals at all levels of government should possess a core set informatics skills. In addition, agencies need Public Health Informaticians that work at junior and senior organizational levels to oversee the development and implementation of successful IT systems. In the face of limited budgets, hiring restrictions, and
competition with private sector salaries, STLT health departments are, unfortunately, challenged to train existing staff while also recruiting and retaining those with high-demand informatics skills.

STLT health departments need greater support and more resources to develop workforce competence in public health informatics. Modernization initiatives can improve the quality and effectiveness of the public health informatics infrastructure only as far as the public health workforce’s capacity allows.

**Local Health Departments and the CDC’s Surveillance Strategy**

These recommendations, as embodied by the CDC’s surveillance strategy, build upon the capacities that many local health departments have developed or are currently developing.

The Marion County Health Department in Indiana has developed an enterprise-wide system that receives Electronic Lab Reporting (ELR) data from its regional Health Information Exchange (HIE) and automatically directs data to the appropriate program within the department. The Florida Department of Health is developing a statewide master person index, allowing Florida county health departments to identify patients that access multiple county health systems. These types of enterprise-level activities increase efficiencies by reducing the burden of data acquisition and de-duplication efforts.

The New York City Department of Health and Mental Hygiene used patient addresses that were reported through an ELR system to track an outbreak of Legionnaire’s disease back to a water tower in the Bronx, potentially preventing additional morbidity or mortality. This outcome highlights not only the benefits of timely and complete laboratory reporting, but also the benefits of having trained personnel in place with the capacity to translate the data into actionable information that protects the public’s health.

The SHINE fellowship training program, led by a coalition of JPHIT members, is providing local health departments with opportunities to develop a 21st century workforce. The Informatics-Training in Place Program (I-TIPP) allows current local health department staff to receive applied informatics training while retaining their position within their health department. This program addresses the urgent need for informatics-savvy employees quickly and efficiently by training staff already embedded within the health department.

The previous examples highlight the alignment between the CDC’s surveillance strategy and local health department modernization efforts. However, it is essential to recognize that the environment for local health departments, characterized by funding cuts and staff layoffs, frustrates the provision of public health services, making enterprise modernization a secondary priority. For the surveillance strategy to be effective, CDC must be mindful of this reality to effectively build local public health capacity.

In summary, JPHIT encourages incorporating HIT systems across the public health enterprise, advocating to policymakers to incentivize HIT developments in public health, and identifying mechanisms to develop informatics skills and abilities in the public health workforce. These components are essential for protecting and improving the public’s health in the coming years.

**Citations & References**

1. FY 2014 Omnibus, Joint Explanatory Statement, page 133.