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Commentary

APIC advocacy on health information technology



The APIC Board of Directors

Health information technology (IT) includes a wide variety of technologies, services, and products, including electronic health records (EHRs), e-surveillance technology, medical devices, monitoring devices, sensors, mobile technology, applications, and more. Legislation passed in 2009 requires the federal Office of the National Coordinator for Health Information Technology to work with other federal agencies for alignment with the implementation of law on health IT.¹

APIC members, also known as infection preventionists (IPs), possess a unique skill set that is valuable to the public by preventing health care–associated infections (HAIs) and the development of multidrug-resistant organisms (MDROs), identifying and controlling new and emerging infectious disease threats, and partnering with colleagues not only across the care continuum, but also in public health.

To meet regulatory requirements and benefit from federal incentive programs, IPs have been required to electronically submit data to the Centers for Disease Control and Prevention's (CDC's) National Healthcare Safety Network (NHSN) since January 2011. This has primarily been without organizational IT support and has been achieved through manual data entry rather than through electronic data feeds. APIC believes that the burden of reporting cannot and should not prevent swift action to prevent and control HAIs or emerging infectious disease threats. Time is of the essence, and time is a limited resource for IPs and infection prevention and control (IPC) programs in institutions and public health settings.

APIC, since 2009, has and will continue to advocate the following:

- HAI surveillance to be included in the development of EHRs from the outset.
- Administrative data should not be used as the sole source of HAI determination.
- EHR Incentive Program should be phased-in to increase the likelihood of success.
- IPs and other stakeholders should be included in the EHR development process.
- EHRs should be accessible and interoperable across facilities and systems.

- HAI surveillance requirements in the EHR Incentive Program should be consistent with HAI reporting requirements by other federal agencies.
- HAI surveillance should be included in the Centers for Medicare and Medicaid Services' EHR Incentive Program to provide financial incentives to facilities that have had to implement NHSN reporting for the Centers for Medicare and Medicaid Services.

The following topics are currently at the forefront for IPs.

ADOPTION AND IMPLEMENTATION OF EHRs AND E-SURVEILLANCE TECHNOLOGY

The EHR contains a wealth of information that impacts patient safety, but it has not been widely integrated outside of acute care settings. IPs in all settings—acute care, long-term care, rehabilitation, behavioral health, ambulatory care, home care, and public health—lead patient safety and performance improvement initiatives related to reduction of HAIs and control of communicable diseases, including emerging threats. Without the interoperability of systems across all domains of care, the advances made in prevention and control in one care setting can become lost because care transitions occur without communication of key information. A standardized sustainable EHR can provide for seamless transitions of care between facility to facility transfers, facility and public health, facility and health care provider, facility and families, and health care providers and families. Information such as transmission prevention precautions, resistant organism colonization status, vaccination history, and antibiotic utilization are often overlooked when communication relies on a verbal- or paper-based dissemination of information. One example of a transition of care that proves challenging occurs when a patient's private physician is not affiliated with the inpatient care facility and information about inpatient care and treatment are not shared in a consistent manner at the time of discharge. Appropriate treatment and therapies, such as antibiotics, may be discontinued prematurely, thereby causing harm to the patient because of an inadequately treated infection or development of an MDRO.

With limited health care resources, IT departments are often understaffed. To date, their focus has been on meeting stage 1 and 2 measures of the EHR Incentive Program (also known as meaningful use). Despite the increasing number of IPC measures IPs have had to report to various regulatory and public health agencies, HAI

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surveillance has remained in stage 3. As a result, EHRs have been developed or purchased without consideration for infection surveillance needs and thereby lack interoperability with the CDC's NHSN, the system whose use is required by most federal and state agencies to comply with quality reporting programs. Therefore, IPC efforts have not benefited from the incentive program intended to encourage widespread adoption of health IT.

Our recommendations are as follows:

- APIC supports the use of federal funds to encourage widespread use of certified health IT products both inside and outside of acute care settings. Lessons learned from meaningful use implementation in the acute care setting should be used to more rapidly implement health IT in nonacute care environments.
- APIC supports expansion of the health IT workforce to promote implementation of hard-wired improvement initiatives or prevention interventions.
- APIC supports the expansion of the Office of the National Coordinator for Health Information Technology Health IT Certification program for products useful across the care continuum. As key stakeholders embedded in both acute and nonacute health care settings, behavioral health, rehabilitation, long-term care, home care, and public health, IPs have detailed knowledge of the proven clinical standards of care and practices used to identify and prevent HAIs and emerging infectious disease threats. IPs can provide valuable information in the clinical development and design of robust health IT systems aimed at implementing those standards.

SENDING, RECEIVING, FINDING, AND USING ELECTRONIC HEALTH INFORMATION

Most states require the reporting of communicable diseases to public health departments. Currently, this information must be communicated via inefficient methods, such as keystroke entry, fax, or through the United States Postal Service. Although there have been some efforts to improve these methods, they have largely been met with institutional resistance because of concerns for privacy. IPs would benefit from a Health Insurance Portability and Accountability Act-compliant health IT program that would seamlessly transmit microbiologic data and the pertinent pre-defined patient and treatment data elements. This would allow more time for IPs to focus on staff and patient education and prevention efforts.

One example of a useful system is at the Illinois Department of Public Health. The Illinois Department of Public Health has benefited from collaboration with the Medical Research Analytics and Informatics Alliance and the Chicago CDC Epicenter that created an infection control tool called the XDRO registry.² The purpose of the registry is to provide improved surveillance of carbapenem-resistant Enterobacteriaceae (CRE), a highly resistant and potentially deadly organism, and improve interfacility communication. The end goal of the registry is to implement regional control of an MDRO such as CRE, which the CDC refers to as a lethal threat.³ Currently, the registry allows acute and long-term care facilities to perform a query to identify patients infected or colonized with CRE. Once fully operational, the registry will push out an alert to acute and long-term care facilities when a patient with CRE is admitted. Of note, on the very first day of pilot testing in one organization, an alert was sent on a patient that the organization was not aware had CRE. The alert facilitated prompt identification of the patient and immediate initiation of contact isolation precautions, thereby limiting the possibility of

transmission. Systems such as this will allow IPs to use health IT to work smarter.

Development of specific data sets to share patient information among providers, public health, and regulatory agencies would increase the consistency and quality of care delivery. Such a standardized EHR system would provide a mechanism for interoperable health information sharing along with protection of privacy and security of critical health information, enabling transparency among all health care providers and facilities caring for the patient.

The work recently described by the New York State Department of Public Health in its hospital-acquired infection report⁴ highlights the importance of data validation as a way to assure equitable comparisons of HAIs at both the hospital and state level. The validation was performed through remote access to the EHRs through a regional health information system. The approach saved travel time and money, allowing the health department to use its resources to provide additional training related to the misunderstanding of HAI definitions and therefore improved the accuracy of data entered into the NHSN.

Our recommendation is as follows:

- APIC supports allowing individuals, providers, public health departments, and payers to find, securely exchange, and use vital health information to enhance care delivery, public health, and research and empower individuals to make informed choices regarding their health.

PROTECTING AND PROMOTING PUBLIC HEALTH AND HEALTHY COMMUNITIES

As acute care and other care settings become more efficient through the use of EHRs to track, trend, aggregate, and analyze data, regulatory agencies and public health need to become more efficient at accepting the data and using it in a timely and meaningful way. Real-time use of this epidemiologically important data is essential to identification of emerging threats and trends. Data mining systems using free text natural language processing, as described by Shah et al,⁵ are capable of searching on key words or phrases. The system can then electronically notify public health to track potential infectious disease threats during high-profile public events. For example, regional and national influenza-like illness surveillance has proven successful in predicting influenza, but in most cases reporting is at least a week delayed. The recent experiences with Ebola virus disease and measles are examples of the need to respond quickly to new, unusual, or highly infectious disease threats. Established mechanisms to report supply inventory, equipment availability, and available beds to public health in a just-in-time fashion facilitates a coordinated response to an influx of infectious patients in a single organization or region. Antibiotic resistance has been identified as a major public health threat. Regional control of MDROs relies on early identification of case clusters and initiation of interventions. Many of the MDRO prevention and control efforts to date have been grant funded and therefore not widely disseminated, implemented, or standardized. MDRO registries, such as the XDRO registry previously mentioned, can support communication of patients with MDROs that require timely initiation of isolation.

Our recommendations are as follows:

- APIC supports public health IT capacity expansion and subsequent timely analysis of the data to manage emerging infectious disease threats and HAI clusters.
- APIC agrees that integrated health IT platforms support mitigation of public health threats.

- Information and data lead to knowledge. Knowledge will in turn lead to informed decisions during disasters or emergencies. Therefore, APIC supports public health systems that use health IT to ensure continuity of care and services.

HAIs continue at a rate of 1 in 25 patients, with >75,000 deaths resulting annually in the United States, and remain a high priority for reducing harm.⁶ IPC is fundamental to reducing HAIs and integrating IP expertise as part of EHRs, and e-surveillance adoption and implementation is critical to success. Interoperable health IT will improve the provision of health care at all levels.

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