Researchers enable real-time reporting of public health cases

August 16 2012

IBM scientists are collaborating with the Center for Disease Control and Prevention (CDC) and the Public Health Data Standards Consortium (PHDSC) to further standardize the exchange and use of public health information to improve healthcare quality and coordination of care.

Controlling major outbreaks of infections such as whooping cough or tracking circulating flu strains is critical to public health. However, the lack of public health electronic reporting standards results in irregular and delayed reports that often create inconsistencies and duplication of efforts.

IBM Research is working with the CDC and PHDSC to develop a new approach to defining and delivering public health reporting by drawing insights from structured and unstructured data that currently exists in disparate systems. The scientists are creating templates for public health case reports that could work with electronic health record (EHR) systems, allowing critical information in the proper format to be easily shared among local, county, state and federal public health agencies to speed response times to public health issues.

The coordination and surveillance of public health information across organizations will aid in understanding and potentially preventing the spread of health threats by automating the process and ensuring consistent access to data anywhere in the country. This technology is being piloted with public health information systems in Delaware, New York State, and San Diego County to create, validate and exchange test

public health case reports originating from commercial EHR systems or health information exchanges (HIE).

"The state of a national healthcare infrastructure can be vastly improved through better management of data and an improved understanding of how healthcare services are delivered," said Dr. Nikolay Lipskiy, Health IT Standards and Interoperability Lead for the CDC. "This collaboration is an opportunity to reduce disparities, improve control of infectious diseases, with the aim of building standardized electronic healthcare systems that is accountable for the health of our communities and our country."

Clinicians need to report suspected or confirmed cases of infectious diseases, occupational acquired illnesses and other conditions to their local and state public health programs. This provides public health practitioners the ability to monitor and provide an appropriate response to health threats in the population. These reports are needed in addition to laboratory tests or other generated notifications as labs usually have very little clinical information.

Many of these reports are delivered today to public health by phone call, faxed or mailed paper forms, or electronic fill-in-the-blank forms which is time consuming and leads to underreporting, errors, and cannot scale up during a large event. To be effective, public health needs real-time, meaningful data that existing EHR systems are just starting to generate and exchange for care coordination.

"A huge investment has been made to implement standards for the exchange of electronic health records. These same records contain critical data that public health requires, and in time of crises they require it urgently," said Sondra Renly, Lead Scientist, Collaborative Public Health Transformation, IBM Research. "This community effort will bring near real-time automated reporting to public health and give public

health the information required to respond effectively."

Built on standards required by the Centers for Medicare and Medicaid Services EHR incentive program, the new public health report template tools developed by IBM Research could lower the cost of compliance for healthcare providers while improving public health's ability to monitor and respond to endemic and novel infectious diseases.

By leveraging existing templates, EHR systems can automatically capture most components of a public health case report, such as a doctor visit, a test result, or a prescribed medication. This approach provides public health professionals a way to publish and maintain jurisdiction-specific templates and EHR vendors a way to rapidly adopt these templates for reporting purposes. It could also greatly reduce the time needed to report new or updated case information to public health.

"We are committed to bringing a common voice from the public health community to the national efforts of standardizing health information technology and population health data to improve individual and community health," said Dr. Anna Orlova, Executive Director, Public Health Data Standards Consortium. "This standards-based integration of public health and clinical systems for electronic data exchanges will help improve the effectiveness of public health programs, the quality of care and the health of the public."

Provided by IBM