

# Working Toward EHR-Based Syndromic Surveillance

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## Public health researchers seek to identify data elements, standards

One of the great potential benefits of the meaningful use EHR incentive program is improved public health syndromic surveillance. As EHRs and health information exchanges mature, they promise to speed the dissemination and analysis of clinical data. Epidemiologists who used to have to wait for paper-based reports will soon have almost real-time access to data to monitor or identify infectious disease outbreaks, exacerbations of chronic disease conditions, and injuries.

The International Society for Disease Surveillance has formed a 10-person workgroup to guide the development of ISDS recommendations to support public health authorities in using inpatient and ambulatory EHR data for public health prevention and response.

But the nice thing is that the public health gains of sharing clinical data are already starting to happen. At the most recent ISDS annual conference in Atlanta in December, several presentations highlighted the use of electronic health records for public health surveillance. One team from the Indian Health Service (IHS) developed a surveillance system that identifies reportable cases, notifies providers and provides data to a dedicated national surveillance database. According to the conference abstract, the cases are found using a locally deployed extension to the local data system that searches for a combination of ICD-9 codes, clinical data and laboratory data on a nightly basis. "Reports for situational awareness and response are made locally, regionally and nationally using an a priori established priority ranking of the public health importance of a case or outbreak," the IHS team wrote. A review of medical records in one region of the country found that the system had a sensitivity of 96.4% and specificity of 97.8%.

"Because there is minimal action required on the part of healthcare providers," the research team noted, "EHR-based surveillance has the potential to improve the simplicity, flexibility, timeliness and reliability of most surveillance systems."

In another presentation, David Swenson of the New Hampshire Division of Public Health Services (DPHS) described how his agency worked with a vendor called Orion Health to build a Rhapsody integration engine portal to receive the three types of public health data, including syndromic surveillance. Using the portal allows hospitals to send data to the DPHS in whatever format they choose. The Rhapsody system converts these messages to the approved ONC standards for public health reporting. The New Hampshire team said they were able to build an expandable public health meaningful use infrastructure that can easily be integrated with the state health information exchange.

Encouraged by these promising studies, ISDS' meaningful use workgroup is seeking to determine which health indicators public health authorities should routinely monitor and which inpatient and ambulatory data elements are required for syndromic surveillance. Stay tuned as their recommendations are considered for stages 2 and 3 of meaningful use.