Meaningful Use Fact Sheet

PUBLIC HEALTH INFORMATION NETWORK

Syndromic Surveillance

Submission of electronic syndromic surveillance data to public health agencies

Background

One of the stated goals of the American Recovery and Reinvestment Act (ARRA), enacted in February 2009, is to increase the Meaningful Use (MU) of Electronic Health Record (EHR) technology among medical providers. The Centers for Medicare and Medicaid Services (CMS) established an incentive program using ARRA funds to encourage eligible providers and hospitals to adopt and use EHR technology.

To receive EHR-MU incentives, participating providers and facilities must meet various operational and public health criteria established by CMS with the Office of the National Coordinator for Health Information Technology (ONC). The incentives will be released in three stages over several years. Stage 1 MU final rule requirements have been divided into 15 core set objectives and 10 menu set objectives (where there is an option to pick 5 of 10).

The three public health objectives in Stage 1 are submission of electronic data to public health in the context of 1) Immunizations, 2) Reportable Laboratory Results (Eligible Hospitals only), and 3) Syndromic Surveillance. Unless an Eligible Professional (EP) or Eligible Hospital (EH) has an exception for all of the objectives, it is mandatory to complete at least one public health objective as part of their demonstration of the menu set in order to be a meaningful user of EHR technology.

Syndromic surveillance is defined as public health surveillance emphasizing the use of timely pre-diagnostic data and statistical tools to detect and characterize unusual activity for further public health investigation. Syndromic surveillance uses individual and population health indicators which are available before confirmed diagnoses or laboratory confirmation to identify outbreaks or health events and monitor the health status of a community. By automating public health data collection through MU, syndromic surveillance provides timely public health information, often sooner than a laboratory test can even be completed. Receiving information quickly allows local, state, and federal public health to detect and respond to more outbreaks and health events more quickly or monitor healthcare utilization for chronic conditions. In addition to the promise of rapid response, the automated syndromic surveillance data compiled through MU provides data streams for longer term, ongoing analysis of chronic conditions such as heart disease, diabetes, injuries, and the use of healthcare services.

The following public health information exchange policies, practices, standards, and services will support the implementation of Meaningful Use Stage 1 with respect to Syndromic Surveillance.

Policies

In order to fulfill the public health objective of capability to submit electronic syndromic surveillance data to a public health agency, hospitals must comply with two federal regulations:

- **CMS Final Rules EHR Incentive Program** (http://edocket.access.gpo.gov/2010/pdf/2010-17207.pdf)

Objective: Capability to submit electronic syndromic surveillance data to public health agencies and actual submission according to applicable law and practice.

Measure: Performed at least one test of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies and follow-up submission if the test is successful (unless none of the public health agencies to which an EP submits such information has the capacity to receive the information electronically).

Exclusion for EP: An EP who does not collect any syndromic information on their patients during the EHR reporting period or does not submit such information to any public health agency that has the capacity to receive the information electronically.

Exclusion for EH and Critical Access Hospitals (CAH): No public health agency to which the EH or CAH submits information has the capacity to receive the information electronically.

- **ONC Final Rules Health Information Technology Standards, Implementation Specifications, and Certification Criteria for EHR Technology** (http://edocket.access.gpo.gov/2010/pdf/2010-17210.pdf)

  Public Health Surveillance: In the Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology Final Rule published on July 28, 2010, the Secretary adopted two content exchange standards for electronic submission to public health agencies for surveillance and reporting, Health Level Seven (HL7) versions 2.3.1 and 2.5.1 (45CFR 170.205(d) (https://www.federalregister.gov/select-citation/2010/10/13/45-CFR-170.205)) and the following implementation specifications at 45 CFR 170.205(d)(2) for the HL7 2.5.1 standard: Public Health Information Network HL7 Version 2.5 Message Structure Specification for National Condition Reporting Final Version 1.0 and Errata and Clarifications National Notification Message Structural Specification. However, based on public comments, ONC concluded that the implementation specifications may have been adopted in error. The implementation specification did not provide the appropriate or requisite implementation guidance for the adopted standard, HL7 2.5.1. On October 13, 2010, ONC published an interim final rule in the Federal Register (75 FR 62686) with an immediate effective date to remove the implementation specifications adopted at 45 CFR 170.205(d)(2). For more details visit https://www.federalregister.gov/articles/2010/10/13/2010-25683/health-information-technology-revisions-to-initial-set-of-standards-implementation-specifications

Practices

The Centers for Disease Control and Prevention (CDC) recognized the absence of standards for the public health syndromic surveillance (PHSS) EHR certification "menu" objective. The CDC BioSense Program, in collaboration with the International Society for Disease Surveillance (ISDS), convened a MU workgroup of public health surveillance experts to quickly revive a standards development process to inform current and future MU stages. This workgroup was charged with documenting the syndromic surveillance practices utilizing electronic data from emergency departments and urgent care centers. Based on this assessment, a minimum data set and definitions were supplied to support syndromic surveillance practice. This provided

requirements for the development of an HL7 message implementation guide. CDC worked to translate these requirements into a "PHIN Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data Release 1.0" (HL7 Version 2.5.1 (Version 2.3.1 Compatible)) (http://www.cdc.gov/phin/library/guides/PHIN_MSG_Guide_for_SS_ED_and_UC_Data_v1_0.pdf).

In addition, utilizing input and guidance from local, state, and federal partners, CDC successfully redesigned the BioSense Program. The result of this redesign effort is BioSense 2.0, a web-based solution in the internet cloud where health officials at state and local public health agencies can monitor or assess syndromic activity within and beyond their jurisdictions. The adoption of the practices of BioSense 2.0 practices will enable state and local public health agencies to designate BioSense 2.0 as their local locker or "catcher's mitt". BioSense 2.0 can serve as a proxy for receiving syndromic surveillance messages in Stage 1 and 2 of MU, and enable a network of surveillance peers to share analyses and data. The BioSense 2.0 environment ensures state and local public health agencies have complete ownership of the data. State and local public health agencies have the option to share their jurisdiction's aggregate or record-level data with other local, state, or federal health officials to enhance awareness for public health response or to monitor healthcare utilization for chronic conditions. BioSense 2.0 provides national and regional situational awareness for all-hazard health-related threats (beyond bioterrorism) and supports national, state, and local responses to those threats. (For more information on BioSense 2.0 visit http://www.biosenseredesign.org/ or email info@biosen.se)

Standards

The standards referred to below support syndromic surveillance transactions to public health.

- **Messaging Guide**
  - Public Health Information Network (PHIN) Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data Release 1.0 (http://www.cdc.gov/phin/library/guides/PHIN_MSG_Guide_for_SS_ED_and_UC_Data_v1_0.pdf) has been proposed for use in stage 2 of MU.
  - Questions and Answers document (http://www.cdc.gov/ehrmeaningfuluse/docs/PHIN_Syndromic_Surveillance_Guide_Q_and_A_Release_1.pdf) about PHIN Messaging Guide for Syndromic Surveillance can provide additional guidance for implementers.
- **Transport:** In Stage 1 of MU no specification has been mandated for secure transport. However, several tools exist to support transport of public health data. See services for a list of transport options.

Services

The services and tools referred to below can facilitate achieving the capabilities to support MU:

- **PHIN Vocabulary Access and Distribution System (VADS):** All value sets associated with the PHIN messaging guide for Syndromic Surveillance can be accessed from CDC Vocabulary Server PHIN VADS. http://phinvads.cdc.gov

- **Biosense 2.0:** For more information on BioSense 2.0 visit http://www.biosenseredesign.org/ or email info@biosen.se

- **Transport:** Through Stage 1 of MU (October 2012 for Medicare hospitals) protocols for secure transport should be collaboratively agreed upon between the sender and the public health agency. The following are transport tools:

  - PHIN Messaging System (PHIN MS) (http://www.cdc.gov/phin/tools/PHINms/index.html) is software that securely sends and receives encrypted data over the Internet to public health information systems using Electronic Business Extensible Markup Language (ebXML) technology.

  - Nationwide Health Information Network (NwHIN) – NwHIN Connect Plus, NwHIN Connect, NwHIN Direct

  - Secure File Transfer Protocol (FTP)

  - Hyper Text Transfer Protocol Secure (HTTPS)

  - Virtual Private Network (VPN) e.g., Mirth Connect or Mirth VPN

- **Testing and Validation:** Public health reporters and receivers can make use of several tools and profiles to assist in testing the validity of messages. The tools are best used at different times in the testing process.

  - National Institute of Standards and Technology (NIST) Test Procedure for §170.302 (l) Public Health Surveillance (http://healthcare.nist.gov/docs/170.302.l_PublicHealthSurveillance_v1.2.pdf) and testing tools (http://xreg2.nist.gov:8080/HL7V2MuValidation2011/)

  - PHIN Message Quality Framework (MQF) (https://phinmqf.cdc.gov/) is an automated testing tool that ensures messages are adhering to standards defined in the messaging guides by: validating the structure of the message, validating that the messages are following the business rules defined for the message, and verifying that the vocabulary defined for the message is utilized. Note that PHIN MQF validates overall message construction, but may not yield identical results to the NIST test profile.