Recommendations for Syndromic Surveillance Using Inpatient and Ambulatory EHR Data

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Objective

To develop national Stage 2 Meaningful Use (MUse) recommendations for syndromic surveillance using hospital inpatient and ambulatory clinical care electronic health record (EHR) data.

Introduction

MUse will make EHR data increasingly available for public health surveillance. For Stage 2, the Centers for Medicare & Medicaid Services (CMS) regulations will require hospitals and offer an option for eligible professionals to provide electronic syndromic surveillance data to public health. Together, these data can strengthen public health surveillance capabilities and population health outcomes (Figure 1).

To facilitate the adoption and effective use of these data to advance population health, public health priorities and system capabilities must shape standards for data exchange. Input from all stakeholders is critical to ensure the feasibility, practicality, and, hence, adoption of any recommendations and data use guidelines.

Methods

ISDS, in collaboration with the Division of Informatics Solutions and Operations at the Centers for Disease Control and Prevention (CDC), and HLN Consulting, convened a multi-stakeholder Workgroup of clinicians, technologists, epidemiologists, and public health officials with expertise in syndromic surveillance. Recommended MUse guidelines were developed by performing an environmental scan of current practice and by using an iterative, expert and community input-driven process. The Workgroup developed initial guidelines and then solicited and received feedback from the stakeholder community via interview, e-mail, and structured surveys. Stakeholder feedback was analyzed using quantitative and qualitative methods and used to revise the recommendations.

Results

The MUse Workgroup defined electronic syndromic surveillance (ESS) characteristics. Specifically, data are characterized by their timeliness, sensitivity rather than specificity, population focus, limited personally identifiable information, and inclusion of all patient encounters within a specific healthcare setting (e.g., emergency department, inpatient, outpatient). Based on stakeholder input (n=125) and Workgroup expertise, the guidelines identify priority syndromic surveillance uses that can assist with:

1. Monitoring population health;
2. Informing public health services; and
3. Informing interventions, health education, and policy by characterizing the burden of chronic disease and health disparities.

Similarly, the Workgroup identified data elements to support these uses in the hospital inpatient setting and possibly in the ambulatory care setting. They were aligned to previously identified emergency department and urgent care center data elements and Stage 1-2 clinical MUse objectives. Core data elements (required for certification) cover treating facility; patient demographics; subjective and objective clinical findings, including chief complaint, body mass index, smoking history, diagnoses; and outcomes. Other data elements were designated as extended (not required for certification) or future (for future consideration). The data elements and their specifications are subject to change based on applicable state and local laws and practices.

Based on their findings and recommended guidelines detailed in the report, the Workgroup also identified community activities and additional investments that would best support public health agencies in using EHR technology with syndromic surveillance methodologies.

Conclusions

The widespread adoption of EHRs, catalyzed by MUse, has the potential to improve population health. By identifying and describing potential ESS uses of new sources of EHR data and associated data elements with the greatest utility for public health, the recommendations set forth by the ISDS MUse Workgroup will serve to facilitate the adoption of MUse policy by both healthcare and public health agencies.

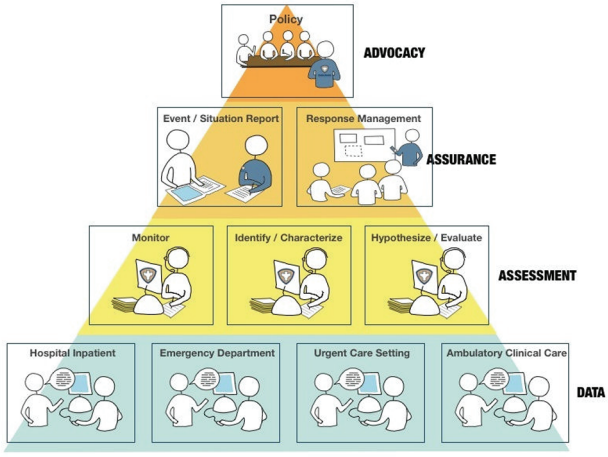

Figure 1: Syndromic surveillance data can inform public health functions.

Keywords

EHR; syndromic surveillance; Meaningful Use; inpatient; ambulatory

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