

Unstructured free-text data and Meaningful Use

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Objective

To better inform health IT standardization practices, specifically related to Meaningful Use, by describing how US public health agencies use unstructured, free-text EHR data to monitor, assess, investigate and manage issues of public health interest.

Introduction

In 2010, as rules for the Centers for Medicaid and Medicare Electronic Health Record (EHR) Incentive Programs (Meaningful Use) (1) were finalized, ISDS became aware of a trend toward new EHR systems capturing or sending emergency department (ED) chief complaint (CC) data as structured variables without including the free-text. This perceived shift in technology was occurring in the absence of consensus-based technical requirements for syndromic surveillance and survey data on the value of free-text CC to public health practice.

On January 31, 2011, ISDS, in collaboration with the CDC BioSense Program, recommended a core set of data for public health syndromic surveillance (PHSS) to support public health's participation in Meaningful Use. This study was conducted to better support a requirement for ED CC as free-text, by investigating the relationship between the unstructured, free-text form of CC data and its usefulness in public health practice.

Methods

PHSS analysts from 40 public health agencies that contribute syndromic data to the ISDS Distribute project were asked to take an online survey.

The survey, developed in consultation with state- and local-level syndromic surveillance experts and implemented using SurveyMonkey[®], consisted of 15 questions, which were crafted to obtain data in four areas: (1) basic system design and coverage; (2) CC data formatting and classification practices; (3) CC data use; and (4) impact of codifying CC on PHSS capabilities.

Participants had 2 weeks to complete the survey. ISDS staff contacted nonrespondents to encourage participation 7 and 3 days before the end of the survey period. Qualitative survey data from open-ended questions were reviewed and grouped into themes or categories.

Results

PHSS epidemiologists or analysts from 87.5% (35 out of 40) of the Distribute-contributing health authorities completed the survey. Within the respondent group, 9 cover local jurisdictions, 25 state jurisdictions, and one was from CDC BioSense. Combined, the 35 agencies captured EHR data from 1344 ED.

Survey results revealed that 97% of participants receive ED patient CC data in free-text (Fig. 1). ED triage staff presumably capture these data in an EHR, based on a patient's presenting condition as an open-ended, unstructured memo. Some survey participants also reported receiving ED CC in coded formats, either as ICD-9 codes (34%) or as text from a drop-down menu (20%).

A majority of survey respondents (74%) reported having used free-text CC to monitor public health in over 17 different emergencies over the past 2-3 years. Most frequently, free-text CC was used to monitor the impact of H1N1, heat waves, infectious disease outbreaks, and winter storms.

Conclusions

Through a national survey of PHSS epidemiologists, ISDS identified that public health agencies benefit from free-text CC data, and this format needs to be maintained. ISDS also learned that as newly certified EHR systems are switching CC from free-text to a structured format, the advantages for making this transition are not fully known to public health practitioners.

Keywords

Syndromic surveillance; Meaningful Use; free-text; EHR

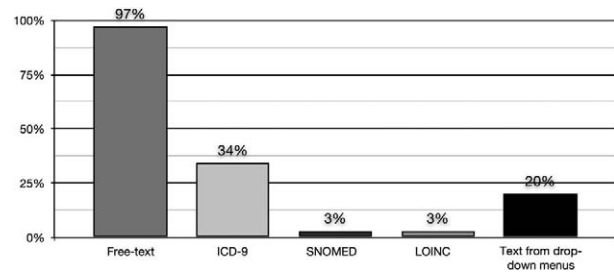


Fig. 1. Data formats in which ED CC are received by public health authorities for syndromic surveillance. Most syndromic surveillance practitioners (97%) receive and use ED CC data in a free-text format. A significant number of survey respondents also report receiving these data as ICD-9 (34%) or as text from a drop-down menu (20%).

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References

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