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ISDS 2014 Conference Abstracts

ISDS INTERNATIONAL SOCIETY FOR DISEASE SURVEILLANCE

Validation of the Michigan's Public Health Syndromic System Using Electronic Medical Records

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Objective

Validation of the syndromic system by comparing the chief complaint data to the electronic medical records (EMR) of a tertiary hospital.

Introduction

Michigan has been collecting chief complaint data from emergency departments statewide to support situational awareness activities related to communicable disease since 2004. We validated the syndromic system by comparing the chief complaint data to the electronic medical records (1,2,3) of a tertiary hospital in southeast Michigan to better understand the utility of the system for non-communicable disease situations.

Methods

We examined the Michigan Syndromic Surveillance System (MSSS) free text chief complaint data that were submitted over a 3-month period from December 2013 to February 2014. For a pilot test, we extracted a subset of HL7 messages (4) with unique identifiers and linked the MSSS data to the medical records of Hospital A. We compared the agreement of the MSSS data to ICD codes in the hospital EMR.

Results

A total of 22,336 HL7 message transactions were received during the three months. Of 144 HL7 messages in the pilot, 33 (22.9%) contained incomplete data and could not be linked to the EMR . Of the remaining 111 records that could be linked to the EMR, 5 self-reported chief complaints did not correlate with the ICD codes. The percent positive agreement was 94.34%.The results of the 400 randomized syndromic chief complaints will be presented, with further analysis of data quality, data completeness and accuracy.

Conclusions

Findings of this study will help determine the accuracy of the automated classification of data based on chief complaints. This study can add confidence in planning for public health preparedness activities and situational awareness.

Keywords

Validation; Syndromic System; Electronic Medical Records; HL7 messages

Acknowledgments

This report was supported by an appointment to the Health System Integration Fellowship Program administered by the Council of State and Territorial Epidemiologists (CSTE) and funded by the Centers for Disease Control and Prevent (CDC) Cooperative Agreement Number 5U38HM000414. The other partners in this project are ASTHO, NACCHO and PHII.

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