Using Syndromic Surveillance to Classify and Capture Non-Fatal Occupational Injuries and Illnesses

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Objective

To evaluate the use of a real-time surveillance tool to track a variety of occupationally-related emergency room visits through the state based syndromic surveillance system, EpiCenter.

Introduction

This study uses data from the New Jersey syndromic surveillance system (EpiCenter) as a data source to enhance surveillance of current non-fatal occupational injuries, illnesses, and poisonings. EpiCenter was originally developed for early detection and monitoring of the health of communities using chief complaints from people seeking acute care in hospital emergency rooms to identify health trends. Currently, syndromic surveillance has not been widely applied to identify occupational injuries and illnesses. Incorporating syndromic surveillance data from EpiCenter, along with hospital discharge data, will enhance the classification and capture of work-related non-fatal injuries with possible improved efforts at prevention.

Methods

EpiCenter Emergency Department data from January to December 2014 was evaluated, using work-related keywords and ICD-9 codes, to determine its ability to capture non-fatal work-related injuries. A collection of keywords and phrases specific to work-related injuries was developed by manually assessing the free text chief complaint data field's. Sensitivity, specificity, and positive predictive value (PPV), along with descriptive statistics was used to evaluate and summarize the occupational injuries identified in EpiCenter.

Results

Overall, 11,919 (0.3%) possible work-related injuries were identified via EpiCenter. Of these visits 956 (8%) indicated Workman's Compensation as payer. Events that resulted in the greatest number of ED visits were falls, slips, trips (1,679, 14%). Nature of injury included cuts, lacerations (1,041, 9%), burns (255, 2%), and sprains, strains, tears (185, 2). The part of the body most affected were the back (1,414, 12%). This work-related classifier achieved a sensitivity of 5.4%, a specificity of 99.8%, and a PPV of 2.8%.

Conclusions

Evaluating the ability and performance of a new and existing surveillance data source to capture work-related injuries can lead to enhancements in current data collection methods. This evaluation successfully demonstrated that the chief complaint reporting system can yield real-time knowledge of incidents and local conditions for use in identifying opportunities for prevention of work-related injuries.

Acknowledgement