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ISDS 2014 Conference Abstracts

ISDS INTERNATIONAL SOCIETY FOR DISEASE SURVEILLANCE

Utility and Acceptability of Influenza Surveillance amongst Emergency Providers

Andrea F. Dugas*[1], Howard Burkom[2], Anna L. DuVal[1], Richard Rothman[1] and a National Emergency Department Influenza Consortium[1]

[1]Johns Hopkins University, Baltimore, MD, USA; [2]Johns Hopkins Applied Physics Lab, Baltimore, MD, USA

Objective

To evaluate the utility and acceptability of a real-time cloud based influenza surveillance tool amongst emergency department (ED) providers.

Introduction

Each year, influenza affects approximately 5-20% of the United States population causing over 200,000 hospitalizations and 3,000 – 49,000 deaths [1-3]. As a key point of entry to the health care system, EDs are responsible for the initial management and treatment of a substantial proportion of these influenza patients, thus directly impacting overall public health. As the front line of influenza diagnosis and treatment, ED providers may benefit from real-time easily shared influenza surveillance information.

Methods

We created a real-time laboratory-based influenza surveillance system at two US academic emergency medicine departments. From November 2013 – April 2014 we systematically tested patients with acute respiratory illness at these two EDs using Cepheid Xpert Flu, a rapid highly sensitive PCR-based assay that provides significant improvement over traditional rapid antigen tests [4]. Test results were instantaneously uploaded to a cloud-based data aggregation system available to ED providers via a web-based interface. Providers also received bimonthly email updates summating year to date results. ED providers were surveyed prior to the start, and after the conclusion of the influenza season, to assess providers views regarding acceptability and utility of the internet and email-based surveillance provided throughout the influenza season.

Results

Influenza surveillance at the 2 sites identified 82 subjects with confirmed influenza among 1032 enrolled patients. Of 198 providers contacted, 151 (76%) responded to the pre-survey; and 86 (57%) of those completed the post-survey. Of the included participants, 42% were female, 11% were midlevel providers, 48% were resident physicians, and 40% were attending physicians. On the pre-survey, the majority of providers indicated that they sporadically obtain influenza surveillance actively (62%) and passively (48%), and that additional information on influenza prevalence would be useful (75%). On the post survey, most providers reported that they did not go to the provided surveillance website (54%), but the surveillance emails impacted their general awareness of influenza (72%), clinical diagnosis of influenza (24%), decision-making to test for influenza (31%), and decision-making to treat influenza (24%). Overall, the additional surveillance data impacted the providers' influenza testing (66%) and treatment (51%) practices.

Conclusions

The majority of ED providers found surveillance data useful and indicated the additional information impacted their clinical practice. Providers are more receptive to obtaining surveillance information via passive means such as emails than via active means such as visiting a website. Accurate and timely surveillance information, distributed in a provider-oriented format, can impact ED provider management of patients with suspected influenza.

Keywords

Influenza; Surveillance system; Clinical decision support

Acknowledgments

This work was supported by the Cooperative Agreement IDSEP130014-01-00 from The Assistant Secretary for Preparedness and Response. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of The Assistant Secretary for Preparedness and Response (within the U.S. Department of Health and Human Services).

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*Andrea F. Dugas
E-mail: adugas1@jhmi.edu