Preparing for ILINet 2.0

Joel Greenspan*

Martin, Blanck & Associates, Alexandria, VA, USA

Objective

This paper outlines the current state of ILINet (ILINet 1.0), the accepted national gold standard for outpatient influenza-like illness (ILI) surveillance, and demonstrates how ILINet 2.0 could be more automated, timely, and locally representative if it were to utilize increasingly available electronic healthcare data rather than a specific group of recruited sentinel providers.

Introduction

A Neolithic transformation is underway in public health, where the ubiquity of digital healthcare (HC) data is changing public health's traditional role as data hunter-gatherers to one of data farmers harvesting huge reserves of electronic data. ILINet 1.0 is the current U.S. outpatient ILI surveillance network dependent on ~2000 volunteer sentinel providers recruited by States to report syndromic ILI. ILINet 1.0 began in the 1980s and represents a largely unchanged, ongoing hunter-gatherer approach to ILI outpatient surveillance involving the independent efforts of all state health departments. Many significant changes have occurred in the U.S. healthcare system since ILINet 1.0 was initiated. For example, eCommerce standards emerged in the 1990s creating ubiquitous amounts of easily accessible electronic healthcare administrative data. Since 2001 new public health surveillance approaches and investments have emerged including methods for syndromic surveillance (e.g. BioSense). Most recently healthcare reform efforts hold great promise (as yet largely unrealized) for public health to access electronic information derived from EHRs/HIEs (e.g., Meaningful Use). Could and should the current U.S. gold standard for ILI outpatient surveillance benefit from these new opportunities, and if so, what approach should be used and who should be responsible?

Methods

Data reviewed for this analysis included: 1) each weekly national ILINet 1.0 report from CDC' FluView Interactive site for the 2013-1014 season; 2) aggregate data from the State of GA representing 85.5M medical and 213.5M pharmacy electronic healthcare reimbursement claims (eHRCs) from a commercial healthcare data warehouse; 3) ILINet 1.0 data from the GA Department of Community Health; and 4) all state influenza surveillance reports available online for week 2014_20.

Results

Weaknesses of the ILINet 1.0 model include duplicated costs of provider recruitment and data management, low practice coverage, duplicated efforts in provider practices, inconsistent weekly provider compliance, slow data turn-around, lack of publicly available MSA-level ILI data, and lack of forecasting capability during the current Epi-week. An alternative ILINet 2.0 model shows that 1) eHRCs can generate timely outpatient ILI signals without recruiting providers directly, 2) tracking anti-influenza prescription drugs provides a comparable signal to provider-office ILI signals; 3) ILI trends can be generated at local levels (e.g., MSAs); and 4) ILI trends for the current week can be accurately estimated before the Epi-week ends.

Conclusions

Big eHealth data can be harvested immediately to begin the evolution towards ILINet 2.0 and faster and more granular ILI surveillance for the U.S. public health and national security communities.

Keywords

ILINet; eHealth; ILINet

References

Dixon, B. The Neolithic Revolution in Pubic Health. PA TIMES Online 2013. http://patimes.org/neolithic-revolution-public-health/

*Joel Greenspan
E-mail: greenspan@comcast.net