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ABSTRACT

Evaluating University syndromic surveillance systems during the 2009 H1N1 influenza pandemic

Y Zhang[1,2], L May[1,2], and MA Stoto[1,2]

[1]*Georgetown University, Washington, DC, USA; and* [2]*George Washington University, Washington, DC, USA*
E-mail: yz62@georgetown.edu

Objective

To describe the 2009 H1N1 outbreak at Georgetown University (GU) and George Washington University (GWU) in Fall 2009. Identify the datasets that most accurately depict 2009 H1N1 disease in real time.

Introduction

Syndromic surveillance has been widely adopted as a real-time monitoring tool in early response to disease outbreaks. In order to provide real-time information on the impact of 2009 H1N1 during the Fall 2009 semester, GU and GWU employed syndromic surveillance systems incorporating a variety of data sources.

Methods

The data series include:

- Student influenza-like illness (ILI) cases reported to medical staff: ED visits (GU and GWU Hospital emergency room visits records for patients aged 17–24 years with ILI), SHC (total of visits to the GU and GWU student health centers), off-hour calls to the GU student health center, and calls to the nurse-operated GU H1N1 advice line.
- GU student absenteeism: ILI cases reported to deans at four undergraduate colleges, athletic trainers, and resident assistants.
- GU employee absenteeism data: Real-time employee absenteeism based on call-in sick log at the Facilities Office and Dining Services, and retrospective employee absenteeism in 2008 and 2009 based on payroll data.
- External surveillance data: American College Health Association Pandemic Influenza Surveillance Network, and the CDC ILINet.

Results

- ILI cases reported to medical staff, especially ED visits, peaked first in early September and dropped sharply afterwards. This is similar at GU and GWU, and corresponds to regional and national ACHA data, but

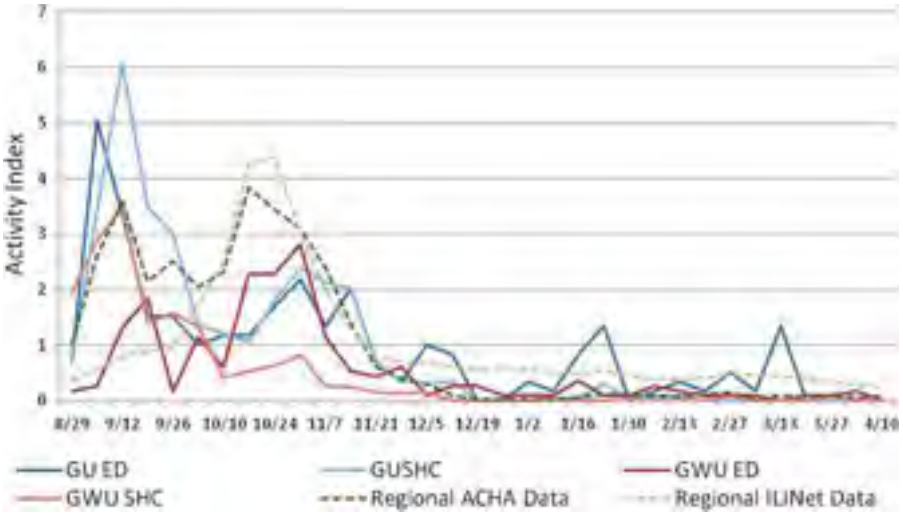

Figure 1 GU and GWU ILI cases.

not Region 3 (DE, DC, MD, PA, VA, WV) ILINet data (Figure 1).
- Student self-reports collected by deans exhibited a second peak in weeks around midterms.
- Retrospective employee absenteeism patterns are similar to those of the previous year (Figure 2).

Discussion

- 2009 H1N1 activity at both GU and GWU seems to peak right after school begins, which can be observed in a variety of data sources. The second peak in late October corresponds to regional ILINet data but does not show the same scope of impact on campus. This might reflect the epidemic in the community and the increasing need for student medical notes during midterm weeks (Figure 3).
- Syndromic surveillance data can be strongly influenced by factors that influence people's reporting behavior such as communication and intervention policies, and incentives and barriers associated with presenting oneself to the reporting system.

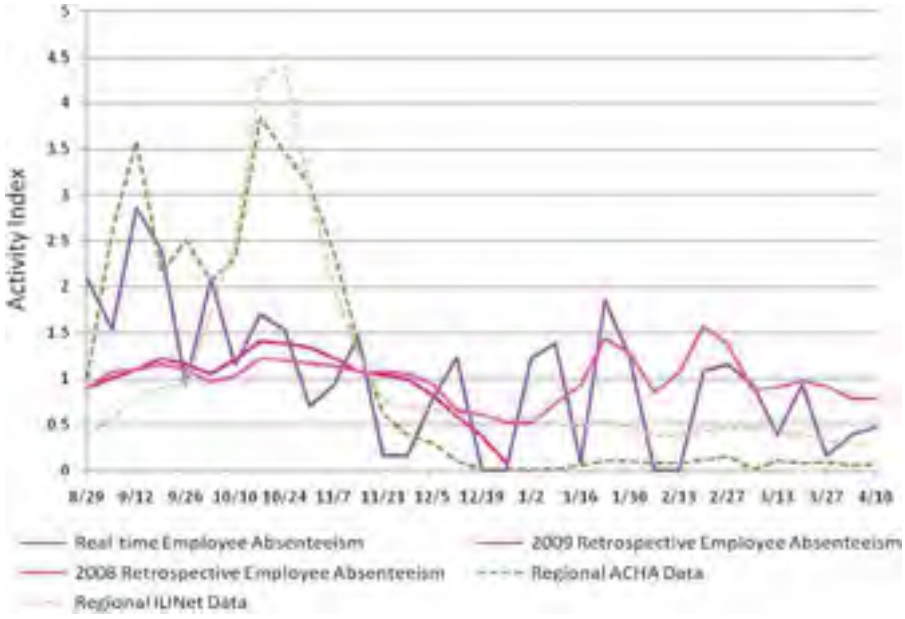

Figure 2 GU employee absenteeism data.

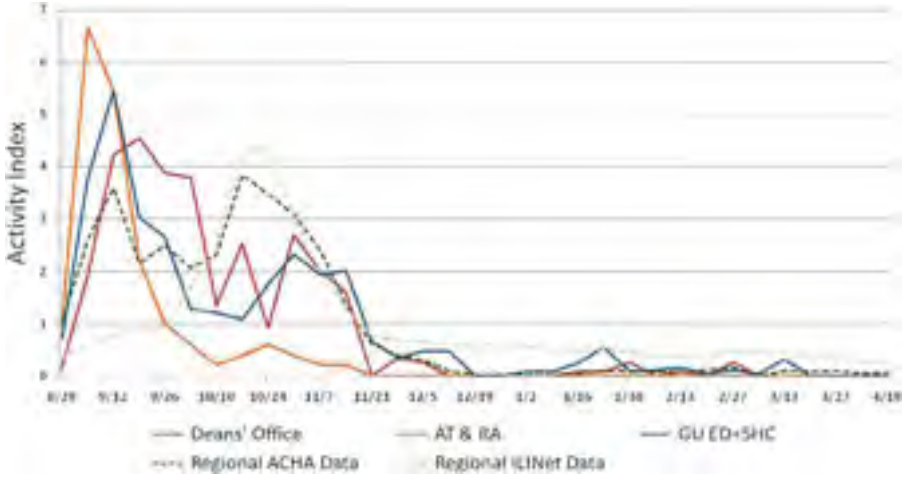

Figure 3 GU student absenteeism data.

- The SHC data may be the most reliable data source in the early stages of an outbreak, but completeness of reporting seems to fall off with policy changes and as students may subsequently see no value to seeking medical attention.

Acknowledgements

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