*Emerging Health Threats Journal* 2011, **4**:s127. **doi:** 10.3134/ehtj.10.127

www.eht-journal.org

ABSTRACT

# A comparison of the fever–flu syndrome category with the SC ILINet surveillance system in South Carolina: 2009–2010 influenza season

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## Objective

This paper compares the South Carolina Aberration Alerting Network's (SCAAN) hospital-based fever–flu syndrome category with the South Carolina Outpatient Influenza-like Illness Network (ILINet) provider surveillance system. This is the first comparison of South Carolina's syndromic surveillance SCAAN data with ILINet data since SCAAN's deployment.

## Introduction

SCAAN is a collaborative network of syndromic systems within South Carolina. Currently, SCAAN contains the following data sources: SC Hospital Emergency Department (ED) chief-complaint data, Poison Control Center call data, Over-the-Counter pharmaceutical sales surveillance, and CDC's BioSense biosurveillance system. ILINet is collaboration between the Centers for Disease Control, state health departments and health care providers. ILINet is one of several components of SC's influenza surveillance.[1,2]

## Methods

The inclusion criteria for this study were any individuals who visited a hospital facility or an ILI provider in South Carolina from 25 April 2009 to 26 June 2010.

As of July 2010, a total of 14 hospital facilities are enrolled in the SCAAN system. There is at least one hospital facility reporting ED data in five of the eight public health regions of the state.

Seventy South Carolina providers were enrolled in ILINet during the 2009–2010 season. Provider enrollment encompassed all eight DHEC public health regions.

The fever–flu syndrome category and SC ILI surveillance share the same definition: fever ($\geqslant 100^{\circ}$F) and cough and/or sore throat (in the absence of a known cause other than influenza).

The weekly fever–flu percentage was calculated by dividing the total number of ED visits with a fever–flu chief-complaint seen in all hospitals by the total number of ED visits seen by all hospitals.

The weekly state ILI percentage was calculated by dividing the total number of patients seen with ILI by the total number of patients seen.

The Pearson's correlation coefficient test was performed in SAS v.9.2 to assess the strength of association between the fever–flu syndromic surveillance and ILI surveillance. Additional analysis will be conducted to compare both surveillance methods geographically.

## Results

Figure 1 shows the weekly fever–flu and ILI percentage from 25 April 2009 through 26 June 2010. There was an initial increase in ILI-related visits to the hospital ED near the end of April 2009. This was also the same time period the H1N1 novel influenza media releases were occurring nationally and statewide.

A sharp increase in the number of visits related to ILI was evident around the beginning of September 2009 through the end of October 2009. During this time period, the mean for fever–flu and ILI percentage was 9.29%

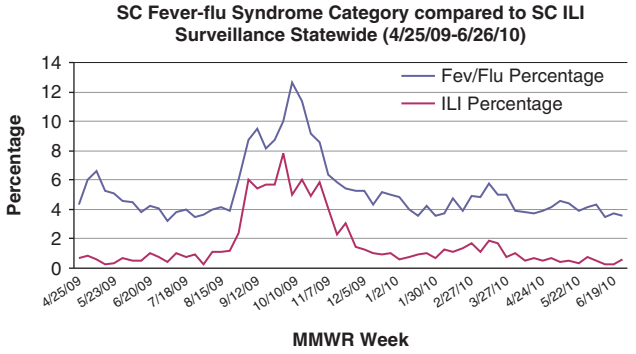


**Figure 1** South Carolina's weekly fever–flu and ILI percentage from 25 April 2009 to 26 June 2010.

(range: 6.05–12.67%) and 5.48% (range: 2.40–7.77%), respectively. A peak in the ILI percentage occurred slightly before the peak in fever–flu percentage. Excluding the peak period (September–October), the mean for fever–flu and ILI percentage was 4.44% (range: 3.22–6.66%) and 0.96% (range: 0.24–4.1%), respectively. There was a high correlation ($r = 0.891$) between fever–flu and ILI percentages. Additional correlation analysis will be conducted to account for the geographic distribution of the two data sources (hospital EDs and provider clinics).

## Conclusions

On the basis of these findings, the SCAAN fever–flu syndrome category offers an additional surveillance tool to the existing ILI surveillance system. It is useful to understand the population of SC residents who visit the hospital ED versus a private provider clinic for ILI-related issues. A phasing-out of ILI surveillance for the more reliable hospital ED fever–flu surveillance (daily automated analysis) may be a consideration once more hospitals join the SCAAN system.

## Acknowledgements

This paper was presented as a poster at the 2010 International Society for Disease Surveillance Conference, held in Park City, UT, USA, on 1–2 December 2010.

## References

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2 The Centers for Disease Control and Prevention. The Early Aberration Reporting System. http://emergency.cdc.gov/surveillance/ears/.