

# Nurse Call Data for Detection of Influenza-Like Illness

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## OBJECTIVE

Our purpose was to compare nurse call data for respiratory and influenza-like illness (ILI) against CDC national influenza surveillance data from the 2004-2005 season by region to determine if the call data were informative and might allow earlier detection of influenza activity.

## BACKGROUND

Influenza affects millions of people and causes about 36,000 deaths in the United States each winter. Pandemics of influenza emerge at irregular intervals. National influenza surveillance is used to detect the emergence and spread of influenza virus variants and to monitor influenza-related morbidity and mortality. Existing surveillance consists of seven data types, which are reported weekly. Newly available national electronic data sources created as part of the routine delivery of medical care might supplement current data sources [1-3]. Nurse call data offer national coverage, are timely, and do not require any extra manual data entry. Using such data for ILI surveillance may lead to earlier detection of ILI in the community, both because people with ILI may call a nurse line before seeking care at a health-care facility [4] and because the data are more timely than existing weekly data.

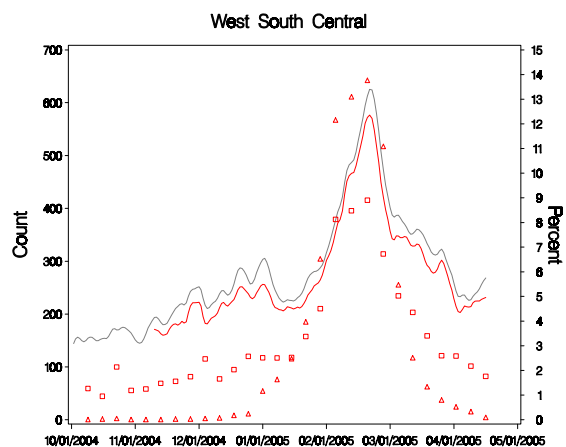
## METHODS

Optum, a UnitedHealth national nurse telephone triage company, sent counts of ILI and of respiratory illness by zip code to the National Bioterrorism Syndromic Surveillance Demonstration Program (NDP) on a daily basis [5]. We examined the period from October 3, 2004 through April 16, 2005 for the nine CDC influenza surveillance regions. CDC weekly data on number of influenza isolates and percentage of visits for ILI from sentinel providers were compared to rolling, seven-day totals of calls for ILI and respiratory syndromes, which were computed day by day for each preceding seven-day period.

## RESULTS

The peaks in the volume of calls for ILI and respiratory syndromes correlated well with those of the CDC indicators, falling within one week of the peak in influenza isolates, percentage ILI, or both indicators for all regions. The peak week for calls fell within one week of the peak week for CDC influenza isolates in eight of the nine regions, preceding the virologic peak in three regions. The peak week for

calls also fell within one week of the peak week for CDC percentage ILI in eight of the nine regions, preceding it in five.



CDC influenza isolates (triangles) and percent ILI (squares), with 7-day total nurse-call-center counts of respiratory syndrome (gray line) and ILI (red line), West South Central region, October 2004-April 2005.

## CONCLUSIONS

Peaks in seven-day totals of calls to nurse help services for ILI or respiratory illness fell within one week of those in weekly CDC influenza isolate or percentage ILI data for all regions. Call data therefore appear to corroborate CDC's traditional influenza surveillance methods and, as a timely source requiring no extra data entry, could supplement these methods, either on a routine basis or during pandemics or seasons with increased morbidity or mortality.

## REFERENCES

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