

ABSTRACT

Background. This report examines the findings of influenza surveillance conducted during the 2004-05 season by the New York State Department of Health (NYSDOH). The department used four established methods of influenza surveillance.

Methods. Hospitals and nursing homes reported nosocomial influenza-like illness (ILI) outbreaks. NYSDOH counted laboratory-confirmed nosocomial influenza reports as evidence of influenza activity. NYS has ~ 250 hospitals and ~ 675 nursing homes. Thirteen clinical virology laboratories reported weekly the number of respiratory specimens tested and the number positive for influenza, by type. Eighty providers participating in the U.S. Influenza Sentinel Provider Surveillance System reported the number of weekly outpatient visits for ILI vs. the total number of patients, and submitted specimens from a subset of patients to the NYSDOH public health laboratory for influenza virus testing. NYSDOH analyzed data from the above three surveillance methods to provide a weekly report of NYS influenza activity to CDC.

Results. Four hundred fifty-six laboratory-confirmed nosocomial flu reports were received, from week 36 to week 24. Peak activity occurred during week 1, when 69 reports were received. The thirteen laboratories tested 22,534 specimens, of which 2,805 were positive for flu. Positivity rates of $\geq 15\%$ were reported from week 51 to week 9. Peak activity occurred during week 6, when 23% of specimens were positive. Sentinel providers reported ILI activity above the 2.5% (epidemic) national baseline from week 51 to week 8. Sentinels reported peak ILI activity, of 3.8%, during week 5. Fifty-one sentinels submitted 155 specimens to NYSDOH for testing. NYSDOH reported widespread activity to CDC for 12 consecutive weeks, from week 49 to week 8, and regional activity for weeks 43-48 and 9-16.

Conclusions. The four surveillance methods demonstrated similar trends for NYS influenza activity for the 2005-06 season. Beginning week 43, NYS reported regional activity to CDC and continued to report regional or widespread activity for 24 consecutive weeks, until week 16. Nationally, influenza activity became regional beginning week 3 and continued at the regional or widespread level through week 13.

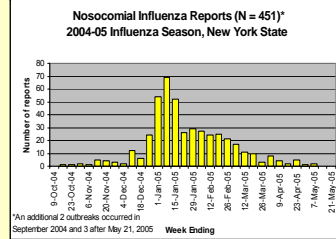
BACKGROUND

Over the past ten years, efforts by the NYSDOH have resulted in a more integrated influenza surveillance system. The introduction of new methods, as well as enhancements to existing systems, have improved our ability to closely monitor influenza activity, including circulating strains in real-time throughout the state.

Method #1 – Nosocomial Surveillance

- Hospitals and nursing homes are required to report nosocomial outbreaks, including influenza
- Laboratory testing is performed to confirm influenza

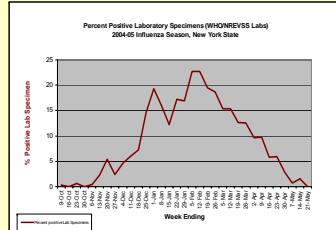
Figure 1. Nosocomial Surveillance Results



Method #2 – Laboratory Reports

- 13 virology laboratories in NYS, members of either the
 - World Health Organization (WHO) collaborating laboratories for influenza virus surveillance, or the
 - National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories
- Number of respiratory specimens tested and number positive for influenza, by type
- Subset of virus isolates submitted to CDC for strain characterization and antiviral resistance testing
- 7 (54%) laboratories report year-round

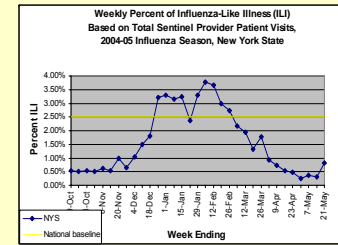
Figure 2. Laboratory Reports Results



Method #3 – Sentinel Provider Reports

- 80 sentinel providers in NYS
- Reported > 18,000 patient visits per week
- Reported > 550,000 patient visits during the season
- Influenza-like illness (ILI) percentages in excess of 2.5% correlate with epidemic activity
- 51 sentinels submitted 155 respiratory specimens to the NYSDOH Wadsworth Laboratories for testing
 - > 61 (39%) specimens tested positive for influenza
- 14 (18%) sentinels report year-round

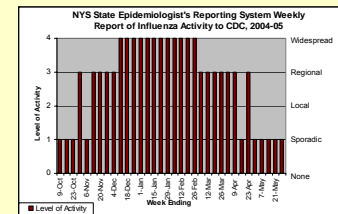
Figure 3. Sentinel Provider Reports Results



Method #4 – Influenza Activity as Assessed by State and Territorial Epidemiologists

- Using methods #1 through #3, NYSDOH categorizes NYS influenza activity and reports weekly to CDC.

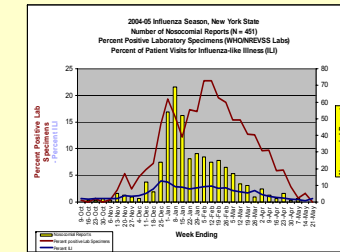
Figure 4. Reports to CDC



Comparison of Surveillance Methods

As illustrated in Figure 5, nosocomial influenza activity, as reflected in reports from hospitals and nursing homes, peaked earlier compared to community influenza activity, as reflected in reports from WHO/NREVSS laboratories and reports from sentinels.

Figure 5. Comparison of Surveillance Methods



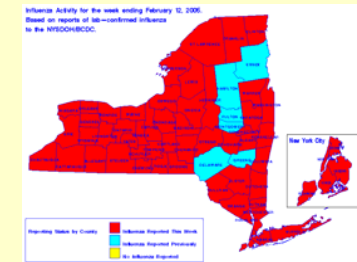
New Influenza Surveillance Methods

- On December 1, 2004, laboratory-confirmed influenza was added to the reportable disease list in NYS
 - Laboratory reporting
 - Positive influenza laboratory tests
 - Via the NYSDOH Electronic Clinical Laboratory Reporting System (ECLRS)
 - Hospital reporting
 - Numbers of patients hospitalized with laboratory-confirmed influenza
 - Via the NYSDOH Hospital Emergency Response Data System (HERDS)
 - Suspected and confirmed pediatric influenza-associated deaths

Results

- Laboratory reporting via ECLRS
 - Increased sensitivity
 - Monitor local activity
- Hospital reporting via HERDS
 - Influenza disease severity

Figure 6.



Conclusions

- Sensitive and comprehensive influenza surveillance system
- Each surveillance method shows a slightly different perspective of influenza activity, when combined, provides a more comprehensive picture of the timing and intensity of influenza activity across the state.
- Posted weekly on NYSDOH public website: www.health.state.ny.us/diseases/communicable/influenza/surveillance.htm
 - Surveillance report
 - Activity map
 - Readily available to stakeholders
 - Local health departments
 - Health care providers
 - Health care facilities
 - The general public
 - The media