Philadelphia Department of Public Health
Division of Disease Control

DONALD SCHWARZ, MD, MPH
Health Commissioner

JOSEPH C. CRONAUER
Executive Deputy

CAROLINE C. JOHNSON, M.D.
Director, Division of Disease Control

Health Update

Respiratory Virus Surveillance Report—Feb. 21st, 2008

Elevated influenza transmission locally

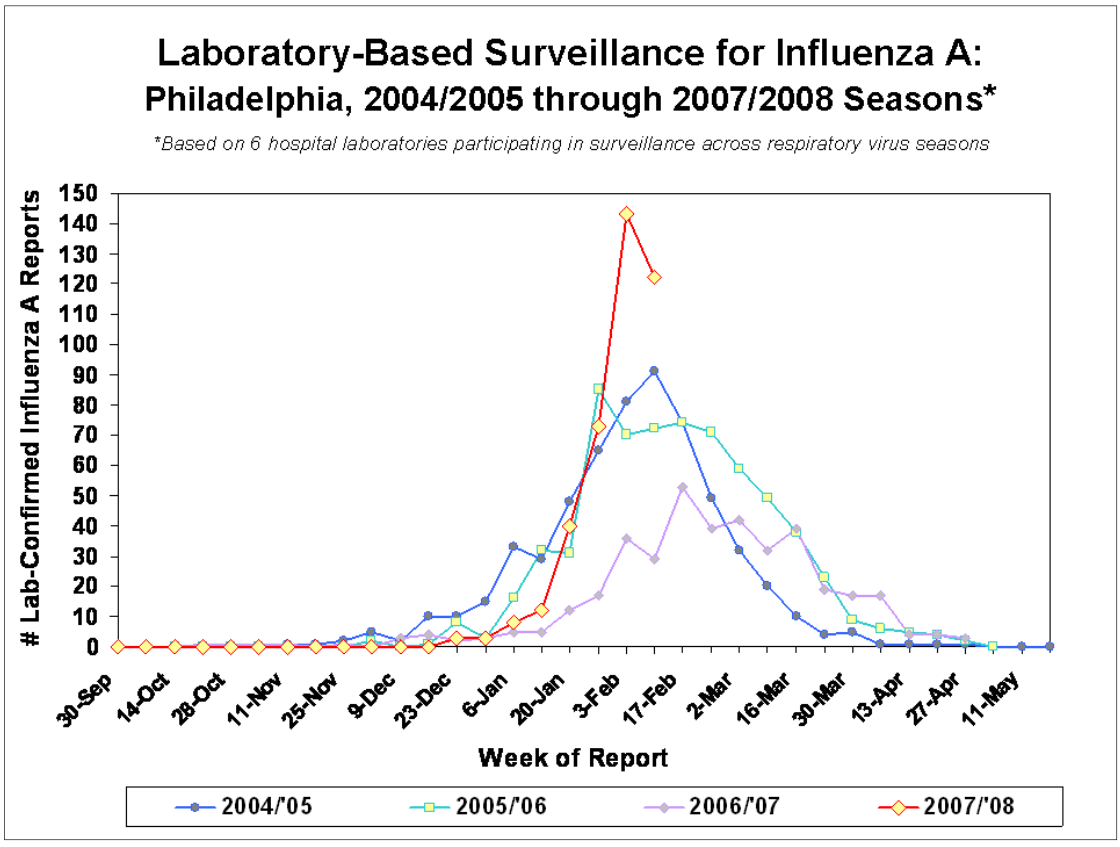
Surveillance

The Division of Disease Control (DDC) of the Philadelphia Department of Public Health (PDPH) monitors trends in the circulation of common respiratory viruses every year. Several local clinical laboratories voluntarily report weekly aggregate counts of select respiratory viruses.

During the last 3 weeks, the number of cases of laboratory-confirmed influenza reported to PDPH has markedly increased, surpassing historical counts for the same time period from previous influenza seasons (*see figure*). The majority (~88%) of these cases have been identified as influenza A. The Pennsylvania Department of Health (PADOH) has also reported high levels of influenza activity across the state, with a similar distribution of influenza A and B. PADOH has indicated that the circulating subtype of influenza A has changed from a predominance of A/H1 to A/H3 in recent weeks.

CDC has reported a similar shift in the distribution of positive influenza A specimens tested in their laboratories in recent weeks. In addition, CDC has reported that the majority of A/H3 influenza positive specimens that have been antigenically characterized are A/Brisbane/10/2007, an antigenic variant of the A/H3 component in this season's vaccine. The predominant circulating influenza B virus (Yamagata lineage) does not appear to match the vaccine component for influenza B (Victoria lineage). Nationally, virtually all states have reported widespread influenza activity according to local and state-level epidemiologists.

(cont. on next page)



Antiviral Medication Resistance

As of February 2, 2008, CDC has identified resistance to oseltamivir (Tamiflu) in 4.6% of all influenza isolates. All of these resistant isolates (16) were influenza A/H1N1, but accounted for only 8.1% of total H1N1 positive isolates. Only 0.7% of all isolates were resistant to oseltamivir during the previous season. No oseltamivir-resistant influenza A H3N2 or influenza B isolates have been found in the United States this season, and no resistance to zanamivir (Relenza) has been identified.

The recommendations for the use of antiviral medications for both treatment and prophylaxis of influenza have not changed. Oseltamivir remains the drug of first choice, and the adamantines (e.g., amantadine) are no longer recommended for use. Clinicians who believe they have patients infected with resistant strains of influenza, based on either clinical treatment failure or failure of prophylaxis when antivirals have been used appropriately, should report these cases to DDC (see contact information below).

Antiviral susceptibility testing for influenza viruses is not available locally, but DDC can assist with specimen transport to a public health reference laboratory, if indicated.

Influenza-Associated Mortality and *Staphylococcus aureus* Co-Infection

DDC has also received two reports this season of fatal cases of influenza-associated *Staphylococcus aureus* co-infection in young adults. Both patients had confirmed infections with influenza B, complicated by bacterial pneumonia and bacteremia; one of these individuals was infected with methicillin-resistant *S. aureus*. On January 30, 2008, the CDC issued a health advisory describing influenza-associated pediatric mortality and *S. aureus* co-infection. In light of these disease trends, DDC recommends that:

- Healthcare professionals should test persons hospitalized with infectious respiratory illness for influenza, including those with suspected community-acquired pneumonia
- Healthcare professionals should consider the possibility of bacterial co-infection in all patients with influenza, and obtain bacterial cultures (sputum, blood if appropriate) in patients who are severely ill or when community-acquired pneumonia is suspected.
- Healthcare professionals who choose empiric therapy for bacterial pneumonia in the setting of influenza should chose antibiotics that cover *S. aureus*, including methicillin resistant *S. aureus* (MRSA). The prevalence of MRSA among *S. aureus* isolates submitted to clinical microbiology laboratories in the city is estimated to range between 30-50%, including isolates obtained from both inpatient and outpatient populations in Philadelphia.
- Healthcare professionals are requested to report all fatal cases of influenza infection with *S. aureus* co-infection, in addition to all influenza-related pediatric mortality.

Vaccine Recommendations

Despite the sub-optimal match to circulating influenza viruses this season, the vaccine can still offer cross-protection for many people and can also prevent influenza-related complications. **It is not too late to receive or administer influenza vaccine**. Vaccination is especially critical this season for healthcare workers. DDC therefore strongly urges that all healthcare workers be vaccinated with seasonal influenza vaccine, particularly as 4-6 weeks likely remain in this transmission season. In addition, facilities should consider requiring all staff who decline influenza vaccine to sign a formal declination form (samples are available through DDC), and to wear respiratory protection at all times if there is influenza in the facility. Guidelines for the handling of institutional outbreaks of influenza are also available through DDC. For more information, please contact DDC at (215) 685-6748.

To report institutional outbreaks, pediatric mortality due to influenza, any event described above, or if you have questions or comments please contact DDC at (215) 685-6748.