



Chicago Flu Update



City of Chicago

June 5, 2014

Chicago Department of Public Health

Rahm Emanuel, Mayor

[Previous Chicago Flu Updates](#)

Bechara Choucair, MD, Commissioner

Influenza Surveillance Summary, 2013-2014 Season

This report is a supplement to the *Chicago Flu Update* and provides a brief summary of influenza activity in Chicago for the past several influenza seasons. Influenza activity in Chicago for the 2013-2014 season peaked later than the previous season. Overall, the number of positive influenza specimens and the number of influenza-associated ICU hospitalizations reported to CDPH this season were comparable to last season. Only the 2009 H1N1 pandemic saw more positive influenza specimens, but the second half of the pandemic had fewer ICU hospitalizations reported. This is the first season since the 2009 H1N1 pandemic during which the primary circulating strain was influenza A ([H1N1]pdm09).

In Chicago, influenza-associated hospitalizations have been mandated reportable conditions since 2009. A total of 197 influenza-associated ICU hospitalizations were reported for the 2013-2014 season. This marks a 7.7% increase in the number of cases reported last season (183) and is the highest number of reported ICU hospitalizations since the second half of the 2009 H1N1 pandemic (Figure 1). The peak number of ICU hospitalizations were reported in early January, only two weeks after the previous season where the peak number of ICU hospitalizations was reported in late December.

Similar to last season, the majority of ICU hospitalizations were positive for influenza A. The proportion of ICU hospitalizations that were positive for influenza A did decrease slightly from 92% in 2012-2013 to 86% in 2013-2014 (Table 1). However, influenza A ([H1N1]pdm09) was the primary influenza A subtype responsible for ICU hospitalizations this season (43%) unlike last season when influenza A (H3N2) was the predominant subtype. The number of ICU cases that tested positive for influenza B doubled from the previous season from 14 to 28 cases, 21(75%) of which were reported in the last 10 weeks of this season.

Influenza ICU hospitalizations were reported for Chicagoans of all ages this season. The median age of ICU hospitalizations decreased from 64 years (range: 8 months - 97 years) in 2012-2013 to 57 years (range: 2 months - 102 years) in 2013-2014. However, the median age for the second half of the 2009 H1N1 pandemic was 39 years (range: 3 weeks - 89 years). Additionally, the percentage of 2013-2014 ICU hospitalizations among individuals 50-64 years of age was 12 percentage points higher while the percentage among individuals 65 years and older was 25 percentage points lower when compared to the 2012-2013 season. These differences may be attributed to the large proportion of ICU hospitalizations caused by influenza A ([H1N1]pdm09) this year (Table 1).

Figure 1. Number of influenza-associated intensive care unit hospitalizations reported for Chicago residents, for current season (2013-2014) and last season (2012-2013), October-May.

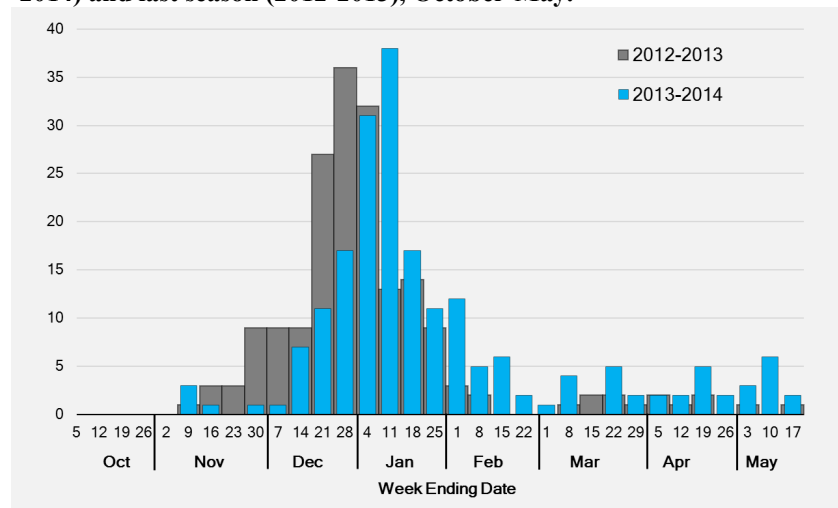


Table 1. Selected attributes of influenza-associated intensive care unit hospitalizations reported for Chicago residents for current season (2013-2014), last season (2012-2013) and 2009 H1N1 pandemic, October-May¹.

| Attribute | Influenza Season | | | | | |
|---------------------------------|------------------|-----|-----------|----|-----------|----|
| | 2009-2010 | | 2012-2013 | | 2013-2014 | |
| | No. | % | No. | % | No. | % |
| Influenza Type (subtype) | | | | | | |
| 2009 A (H1N1) | 111 | 100 | 7 | 4 | 84 | 43 |
| A (H3N2) | 0 | 0 | 71 | 39 | 2 | 1 |
| A (unknown subtype) | 0 | 0 | 91 | 50 | 83 | 42 |
| B | 0 | 0 | 14 | 8 | 28 | 14 |
| Age (in years) | | | | | | |
| 0-4 | 13 | 12 | 8 | 4 | 18 | 9 |
| 5-17 | 20 | 18 | 16 | 9 | 7 | 4 |
| 18-24 | 7 | 6 | 2 | 1 | 2 | 1 |
| 25-49 | 38 | 34 | 22 | 12 | 50 | 25 |
| 50-64 | 25 | 23 | 45 | 25 | 72 | 37 |
| 65+ | 8 | 7 | 90 | 49 | 48 | 24 |
| Race/Ethnicity | | | | | | |
| NH-Black | 49 | 44 | 67 | 37 | 87 | 44 |
| NH-White | 16 | 15 | 63 | 34 | 52 | 26 |
| Hispanic | 37 | 33 | 40 | 22 | 34 | 17 |
| Asian | 2 | 2 | 1 | <1 | 6 | 3 |
| Other/Unknown | 7 | 6 | 12 | 7 | 18 | 9 |

¹ Includes cases with specimen collection dates during October 3, 2009-May 22, 2010 (2009-2010 season), October 6, 2012-May 18, 2013 (2012-2013 season), and October 5, 2013-May 17, 2014 (2013-2014 season). Percents do not always add up to 100 due to rounding.

Among racial/ethnic groups, non-Hispanic blacks continue to represent the highest proportion of ICU hospitalizations since the 2009 H1N1 pandemic. In 2013-2014, almost half (44%) of all reported ICU hospitalizations were among non-Hispanic blacks, with a 7% increase from last season.

The three underlying medical conditions most frequently reported for the 2012-2013 and 2013-2014 seasons, and the 2009 H1N1 pandemic were chronic lung disease (including asthma), heart disease, and diabetes (Table 2). However, this season saw decreases in each of these categories compared to last season.

A total of 16 deaths were reported among ICU hospitalizations this season, including one pediatric death. Just over half of deaths (56%) were among 50 years of age or older unlike last season when the majority of deaths (93%) were 50 years or older. The proportion of deaths among Hispanics and NH-blacks increased from a combined 41% in 2012-2013 to 81% in 2013-2014. Of the deaths reported among ICU hospitalizations, 13% were non-Hispanic whites, a 14% decrease from last season.

Data on influenza virus test results are reported by Chicago laboratories performing influenza subtyping. The number of specimens tested this season (14,746) was slightly higher than last season (13,495). However, the number of positive specimens was lower in 2013-2014 than in 2012-2013 (Table 3). The percentage of positive specimens for this season peaked at 22%, which was lower than the peak reached in 2012-2013 (31%). The total number of specimens that tested positive for influenza B increased from 17% in 2012-2013 to 21% in 2013-2014. The highest proportion of specimens tested positive for influenza A ([H1N1]pdm09) (56%), a sharp increase from last year's 6%, making influenza A ([H1N1]pdm09) the predominant subtype for this season. In addition, it is likely that the majority of the specimens positive for influenza A (unknown subtype) were actually positive for influenza A ([H1N1]pdm09) because the laboratory that reported these specimens was not able to identify the influenza A ([H1N1]pdm09) subtype.

For the 2013-2014 influenza season, an average of 16 hospitals reported emergency department visits due to ILI (i.e., fever of 100°F or greater, with cough or sore throat) on a weekly basis to CDPH, with an average of 13,064 patients seen per week. As with other surveillance indicators, emergency

department ILI peaked at a similar time to last season, with the peak level (5.8%) being lower than the levels reached in 2012-2013 (7.7%) and during the second half of the 2009 H1N1 pandemic (13.8%) (Figure 2).

The *Chicago Flu Update* will resume weekly reports in October 2014. Please contact Enrique Ramirez at 312-746-5911 (enrique.ramirez@cityofchicago.org) with questions on this report.

Table 2. Selected underlying medical conditions and complications of influenza-associated intensive care unit hospitalizations reported for Chicago residents for current season (2013-2014), last season (2012-2013) and 2009 H1N1 pandemic, October-May¹.

| Underlying Medical Condition/Complication | Influenza Season | | | | | |
|---|------------------|----|-----------|----|-----------|----|
| | 2009-2010 | | 2012-2013 | | 2013-2014 | |
| | No. | % | No. | % | No. | % |
| Cardiac Disease | 23 | 22 | 68 | 37 | 50 | 25 |
| Lung Disease | 53 | 51 | 73 | 40 | 69 | 35 |
| Diabetes | 17 | 17 | 41 | 22 | 39 | 20 |
| ESRD ² | 9 | 9 | 21 | 11 | 11 | 6 |
| ARDS ³ | 1 | <1 | 12 | 7 | 21 | 11 |
| Intubated | 13 | 12 | 45 | 25 | 66 | 34 |
| Pregnant | 3 | 3 | 2 | 1 | 2 | 2 |
| Died | 17 | 15 | 27 | 15 | 16 | 8 |

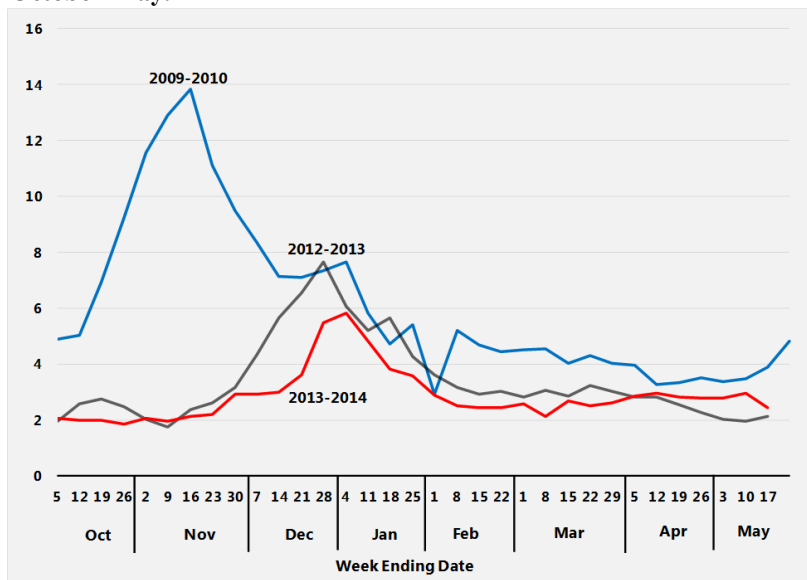
¹ Includes cases with specimen collection dates during October 3, 2009-May 22, 2010 (2009-2010 season), October 6, 2012-May 18, 2013 (2012-2013 season), and October 5, 2013-May 17, 2014 (2013-2014 season). ²End State Renal Disease; ³Acute Respiratory Distress Syndrome.

Table 3. Influenza testing results as reported by local laboratories serving Chicago hospitals, for current season (2013-2014), last season (2012-2013) and 2009 H1N1 pandemic, October-May¹.

| Laboratory Testing | Influenza Season | | | | | |
|-------------------------|------------------|-----|-----------|----|-----------|----|
| | 2009-2010 | | 2012-2013 | | 2013-2014 | |
| | No. | % | No. | % | No. | % |
| # of specimens tested | 26,712 | | 13,495 | | 14,746 | |
| # of specimens positive | 5,201 | 20 | 1,652 | 12 | 1,212 | 8 |
| Influenza Type | | | | | | |
| A (2009 H1N1) | 5,190 | 100 | 98 | 6 | 677 | 56 |
| A (H3N2) | 3 | <1 | 1,071 | 65 | 37 | 3 |
| A (unknown subtype) | 0 | 0 | 202 | 12 | 246 | 20 |
| B | 8 | <1 | 281 | 17 | 252 | 21 |

¹ Includes cases with specimen collection dates during October 3, 2009-May 22, 2010 (2009-2010 season), October 6, 2012-May 18, 2013 (2012-2013 season), and October 5, 2013-May 17, 2014 (2013-2014 season). Percents do not always add up to 100 due to rounding.

Figure 2. Weekly reported percent of emergency department visits attributed to influenza-like illness, Chicago, by week, for current season (2013-2014), last season (2012-2013) and 2009 H1N1 pandemic, October-May.



department ILI peaked at a similar time to last season, with the peak level (5.8%) being lower than the levels reached in 2012-2013 (7.7%) and during the second half of the 2009 H1N1 pandemic (13.8%) (Figure 2).