Illinois Influenza Surveillance Report
Week 01: Week Ending Saturday, January 4, 2014

Division of Infectious Diseases Communicable Disease Section
1/10/2014

Please note that all data are preliminary and may change as more reports are received.
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**Summary**

- For this reporting week, the proportion of outpatient visits for influenza-like illness (ILI)\(^1\) was **4.97%**, which is **above** the regional baseline of **1.60%**.
- Based on CDC criteria, Illinois influenza activity is classified as **Widespread** (see CDC FluView Section) for this reporting week.
- For this reporting week there were **692** influenza specimens tested by WHO/NREVSS collaborating Illinois laboratories (which includes all Illinois Department of Public Health Laboratories). **202** specimens tested positive for Influenza.
- **Seventy-four** influenza-associated Intensive Care Unit (ICU) admissions\(^2\) were reported for this reporting week.
- **No** influenza-associated pediatric deaths were reported for this reporting week.
- For this reporting week, **four** influenza outbreaks were reported.

**Novel Influenza A**

**H5N1**

- Canada has reported a confirmed case of human infection with avian influenza A (H5N1) virus in a patient who died that had recently traveled to Beijing, China.
- This is the first case of H5N1 infection ever imported by a traveler into a country where this virus is not present in poultry and the first detected case of human infection with the H5N1 virus in North or South America.
- For additional information, please visit the CDC News Page: [http://www.cdc.gov/flu/news/first-human-h5n1-americas.htm](http://www.cdc.gov/flu/news/first-human-h5n1-americas.htm)

**H7N9**

- There have been multiple infections with the avian influenza A virus H7N9 since the first of the year.
- All cases of infection have been in China and many had known exposure to live poultry.
- There is still no evidence of sustained human-to-human transmission.
- For information on each case, please visit the WHO Global Alert and Response Page and the Center for Infectious Disease Research and Policy:

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\(^1\) ILI “Influenza like Illness” is defined as fever ≥ 100°F and cough and/or sore throat.

\(^2\) FRI surveillance is ongoing at 8 U.S. military basic training centers, representing all service branches. FRI Rate Status is classified into one of 3 categories:

1. At or below expected value
2. Moderately elevated
3. Substantially elevated

\(^3\) For the purpose of diagnosis, influenza can be diagnosed by using the following test: reverse transcription polymerase chain reaction (RT-PCR), viral culture, Immunofluorescence (Direct Fluorescent Antibody (DFA) or Indirect Fluorescent Antibody (IFA) Staining), Enzyme Immuno Assay (EIA) or any rapid diagnostic test. Sensitivities of rapid diagnostic tests are approximately 50-70% when compared with viral culture or reverse transcription polymerase chain reaction (RT-PCR), and specificities of rapid diagnostic tests for influenza are approximately 90-95%. False-positive (and true-negative) results are more likely to occur when disease prevalence in the community is low, which is generally at the beginning and end of the influenza seasons. False-negative (and true-positive) results are more likely to occur when disease prevalence is high in the community, which is typically at the height of the influenza season.

CDC FluView

No activity: No laboratory confirmed cases of influenza and no reported increase in cases of influenza like illness (ILI).
Sporadic: Small numbers of laboratory confirmed influenza cases or a single laboratory confirmed influenza in a single region of the state.
Local: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in a single region of the state.
Regional: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state.
Widespread: Outbreaks of influenza or increases in ILI cases and recent laboratory confirmed influenza in at least half the regions in the state.

* This map indicates geographic spread & does not measure the severity of influenza activity
ILINet Provider Surveillance

Influenza Like Illness Outpatient Surveillance 2012-2014

- ILI
- HHS REGION V BASELINE

WEEK ENDING

0.0%
0.0%
1.0%
2.0%
3.0%
4.0%
5.0%
6.0%
7.0%
8.0%
9.0%
10.0%
**Influenza Intensive Care Unit (ICU) Admissions and Deaths**

There were 74 influenza related ICU admissions and 4 deaths for this reporting week.

<table>
<thead>
<tr>
<th>Year</th>
<th>Week No</th>
<th>Admissions</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>40</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>41</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>42</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>43</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>44</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>45</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2013</td>
<td>46</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>47</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2013</td>
<td>48</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>2013</td>
<td>49</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>50</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>2013</td>
<td>51</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>52</td>
<td>60</td>
<td>2</td>
</tr>
<tr>
<td>2013/2014</td>
<td>01</td>
<td>74</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total (Provisional) for 2013-14 Season</strong></td>
<td></td>
<td><strong>216</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>
Influenza Related ICU Admissions by Age Group, 2012-2014

WEEK ENDING

NUMBER

0-4 Years
5-24 Years
25-49 Years
50-64 Years
65 Years and Above
Laboratory Surveillance

- For this reporting week there were 692 influenza specimens tested by WHO/NREVSS collaborating Illinois laboratories (which includes all Illinois Department of Public Health Laboratories). 202 specimens tested positive for Influenza.

For more information about circulating viruses visit:

- St Louis Children’s Hospital Weekly Virus/Microbiology Update: http://slchlabtestguide.bjc.org/Default.aspx?url=63e0653d-fe31-466f-9228-d4de90fa7424

<table>
<thead>
<tr>
<th>Year</th>
<th>Week</th>
<th>A (H1)</th>
<th>2009(A) H1N1</th>
<th>A (H3) (Unable to subtype)</th>
<th>A (Sub typing not performed)</th>
<th>B</th>
<th>Total # Tested</th>
<th>Total # Positive</th>
<th>% Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>47</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>132</td>
<td>3</td>
<td>2.0%</td>
</tr>
<tr>
<td>2013</td>
<td>48</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>162</td>
<td>8</td>
<td>5.0%</td>
</tr>
<tr>
<td>2013</td>
<td>49</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>194</td>
<td>12</td>
<td>6.0%</td>
</tr>
<tr>
<td>2013</td>
<td>50</td>
<td>0</td>
<td>19</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>208</td>
<td>29</td>
<td>14.0%</td>
</tr>
<tr>
<td>2013</td>
<td>51</td>
<td>0</td>
<td>21</td>
<td>0</td>
<td>30</td>
<td>0</td>
<td>267</td>
<td>51</td>
<td>19.0%</td>
</tr>
<tr>
<td>2013</td>
<td>52</td>
<td>0</td>
<td>37</td>
<td>1</td>
<td>109</td>
<td>3</td>
<td>506</td>
<td>150</td>
<td>30.0%</td>
</tr>
<tr>
<td>2013</td>
<td>01</td>
<td>0</td>
<td>16</td>
<td>1</td>
<td>176</td>
<td>9</td>
<td>692</td>
<td>202</td>
<td>29.0%</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>0</td>
<td>108</td>
<td>4</td>
<td>0</td>
<td>332</td>
<td>19</td>
<td>2,907</td>
<td>463</td>
</tr>
</tbody>
</table>

Influenza Outbreaks Reported in Long-Term Facilities (LTC) and Correctional Facilities

There were four outbreaks reported in for this reporting week.

<table>
<thead>
<tr>
<th>Region</th>
<th>2013-2014 Influenza Season - Number of outbreaks (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rockford (1)</td>
<td>1  (20%)</td>
</tr>
<tr>
<td>Peoria (2)</td>
<td>2  (40%)</td>
</tr>
<tr>
<td>Edwardsville (4)</td>
<td>1  (20%)</td>
</tr>
<tr>
<td>Marion (5)</td>
<td>0  (0)</td>
</tr>
<tr>
<td>Champaign (6)</td>
<td>0  (0)</td>
</tr>
<tr>
<td>West Chicago (7)</td>
<td>1  (20%)</td>
</tr>
<tr>
<td>Chicago/Cook (8)</td>
<td>0  (0)</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>
**Viral Resistance:**

**Antiviral Resistance:** Testing of 2009 H1N1, influenza A (H3N2), and influenza B virus isolates for resistance to neuraminidase inhibitors (oseltamivir and zanamivir) is performed at CDC using a functional assay. Additional 2009 H1N1 and influenza A (H3N2) clinical samples are tested for mutations of the virus known to confer oseltamivir resistance. The data summarized below combine the results of both testing methods. These samples are routinely obtained for surveillance purposes rather than for diagnostic testing of patients suspected to be infected with antiviral-resistant virus.

High levels of resistance to the adamantanes (amantadine and rimantadine) persist among 2009 influenza A (H1N1) and A (H3N2) viruses (the adamantanes are not effective against influenza B viruses). As a result, data from adamantane resistance testing are not presented below.

### Neuraminidase Inhibitor Resistance Testing Results on Samples Collected Since October 1, 2013

<table>
<thead>
<tr>
<th></th>
<th>Oseltamivir</th>
<th>Zanamivir</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Virus Samples tested (n)</td>
<td>Resistant Viruses, Number (%)</td>
</tr>
<tr>
<td>Influenza A (H3N2)</td>
<td>76</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Influenza B</td>
<td>17</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>2009 H1N1</td>
<td>1,100*</td>
<td>13 (1.2%)</td>
</tr>
</tbody>
</table>

*Includes specimens tested in national surveillance and additional specimens tested at public health laboratories in 13 states (AZ, CO, DE, FL, GA, HI, MD, MI, NY, TX, UT, WA, and WI) who share testing results with CDC.

The majority of currently circulating influenza viruses are susceptible to the neuraminidase inhibitor antiviral medications oseltamivir and zanamivir; however, rare sporadic cases of oseltamivir-resistant 2009 H1N1 and A (H3N2) viruses have been detected worldwide. Antiviral treatment with oseltamivir or zanamivir is recommended as early as possible for patients with confirmed or suspected influenza who have severe, complicated, or progressive illness; who require hospitalization; or who are at greater risk for serious influenza-related complications. Additional information on recommendations for treatment and chemoprophylaxis of influenza virus infection with antiviral agents is available at [http://www.cdc.gov/flu/antivirals/index.htm](http://www.cdc.gov/flu/antivirals/index.htm).
Weekly Viral Subtype
Influenza Isolates from Illinois Reported by WHO/NREVSS Collaborating Laboratories, 2013-2014 Influenza Season

Influenza Isolates from Illinois Reported by WHO/NREVSS Collaborating Laboratories 2013-2014 Influenza Season

IDPH Infectious Diseases Regional Map

*The numbers in red that are located on this map indicate the number of participating Sentinel Sites per county.*
Resources

- Centers for Disease Control and Prevention Influenza Website: http://www.cdc.gov/flu/
- Immunization Action Coalition Website: http://immunize.org/
- IDPH Seasonal Influenza Website: http://www.idph.state.il.us/flu/surveillance.htm
- St Louis Children’s Hospital Weekly Virus/Microbiology Update: http://slchlabtestguide.bjc.org/Default.aspx?url=63e0653d-fe31-466f-9228-d4de90fa7424
- Center for Infectious Disease Research and Policy: http://www.cidrap.umn.edu/news-perspective/2014/01/china-reports-new-h7n9-case-study-details-virus-markets