Missouri Weekly Influenza Surveillance Report
2016-2017 Influenza Season\textsuperscript{1}

Week 40: October 2 – October 8, 2016

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic\textsuperscript{2}.

- A season-to-date total of 29 laboratory-positive\textsuperscript{3} influenza cases (11 influenza A, 15 influenza B, and three untyped) have been reported in Missouri as of Week 40. The influenza type for reported cases season-to-date includes 38% influenza A, 52% influenza B, and 10% untyped. Two laboratory-confirmed cases of influenza B (B/Victoria) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 40.

- Influenza-like illness activity is below baseline for both the Missouri Outpatient ILI Surveillance Network (ILI\textsuperscript{Net}) and the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.20% and 0.72% through ILI\textsuperscript{Net} and ESSENCE respectively.\textsuperscript{4}

- No influenza-associated deaths have been reported in Missouri, to date, this influenza season. During Week 39, 55 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 55 P&I associated deaths in Missouri.\textsuperscript{5}

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri, to date, this influenza season.

- National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

\textsuperscript{1}The 2016-2017 influenza season begins CDC Week 40 (week ending October 8, 2016) and ends CDC Week 39 (week ending September 30, 2017).

\textsuperscript{2}Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

\textsuperscript{3}Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

\textsuperscript{4}Influenza-like illness (ILI) is defined by ILI\textsuperscript{Net} as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. Influenza-like illness (ILI) is defined by ESSENCE as Emergency Department chief complaints that contain keywords such as “flu”, “flulike”, “influenza” or “fever” plus “cough” or “fever” plus “sore throat”.

\textsuperscript{5}The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.
Surveillance Data:

Interactive Maps

The county specific influenza data are provided through interactive maps available at http://arcg.is/2e6kJ5Z. Click on the county to view the influenza data specific to that county.

- Reported Laboratory-positive Influenza Cases by Influenza Type by County, CDC Week 40
- Reported Laboratory-positive Influenza Cases by Influenza Type by County, Season-to-Date
- Reported Rate per 100,000 Population, CDC Week 40

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 40 (October 2 – October 8, 2016)

<table>
<thead>
<tr>
<th>Influenza Type</th>
<th>Week 40</th>
<th>2016-2017* Season-to-Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza A</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Influenza B</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Influenza Unknown Or Untyped</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>29</td>
</tr>
</tbody>
</table>

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

*Influenza season begins week ending October 8, 2016 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 40 (October 2 – October 8, 2016)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Week 40 Cases</th>
<th>Week 40 Rate‡</th>
<th>2016-2017* Season-to-Date</th>
<th>2016-2017* Season-to-Date Rate‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>00-04</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>05-14</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>15-64</td>
<td>14</td>
<td>0</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>65+</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>0</td>
<td>29</td>
<td>0</td>
</tr>
</tbody>
</table>

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

*Influenza season begins week ending October 8, 2016 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)

‡Incidence Rate per 100,000 population
Figure 3. Number of Laboratory-positive† Influenza Cases and Case Rates by Region, Missouri, CDC Week 40 (October 2 – October 8, 2016)

<table>
<thead>
<tr>
<th>District</th>
<th>Week 40 Cases</th>
<th>Week 40 Rate‡</th>
<th>2016-2017* Season-to-Date</th>
<th>2016-2017* Season-to-Date Rate‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>EA</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>NW</td>
<td>7</td>
<td>0</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>SE</td>
<td>17</td>
<td>4</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>SW</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>0</td>
<td>29</td>
<td>0</td>
</tr>
</tbody>
</table>

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

*Influenza season begins week ending October 8, 2016 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)

‡Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive† Influenza Cases by CDC Week, Missouri, 2013-2017*

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2013-2017†

Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network, Centers for Disease Control and Prevention (CDC).

*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season’s total number of specimens that tested positive for influenza.

† 2016-2017 season-to-date through the week ending May 20, 2017 (Week 20). The 2014-2015 season had 53 weeks rather than the usual 52. The percentage of outpatient visits for ILI during Week 53 was 7.63.

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri

**Figure 7. Weekly Percentage of Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, for 2013-2017 Influenza Seasons**

*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2013-15) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations.

Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE.

†The 2014-2015 season had 53 weeks rather than the usual 52. The percentage of visits for ILI in ESSENCE participating hospitals during Week 53 was 4.3.

**Figure 8. Percentage of Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age-group, District and Statewide, CDC Week 40, 2016**

Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE.
Figure 9. Percentage of Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by District and Statewide, for the 2016-2017 Influenza Season

Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE.
Figure 10. Patients Hospitalized with Influenza and/or Pneumonia Syndromes from Participating Missouri Hospitals, by Age Group, CDC Week 40, 2016


Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView)  
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):  
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:  
http://www.who.int/influenza/surveillance_monitoring/en/