Minnesota Influenza Geographic Spread

During the week ending March 9, 2019 (Week 10), surveillance indicators showed widespread geographic spread of influenza (based on CDC's Activity Estimates Definitions).

Since the start of the influenza season, no pediatric influenza-related deaths have been reported.

Minnesota Influenza Surveillance (http://www.health.state.mn.us/divs/idepc/diseases/flu/stats/)
World Health Organization (WHO) Surveillance (http://www.who.int/influenza/surveillance_monitoring/updates/en/)

Neighboring states’ influenza information:
Iowa: Iowa Flu Reports (http://idph.iowa.gov/influenza/reports)
Wisconsin: Influenza (Flu) (http://www.dhs.wisconsin.gov/communicable/influenza/)
North Dakota: Reported Seasonal Influenza Activity in North Dakota (http://www.ndflu.com/default.aspx)
South Dakota: South Dakota Influenza Information (http://doh.sd.gov/diseases/infectious/flu/)
Hospitalized Influenza Surveillance

Hospitalized influenza cases are based on disease reports of laboratory-positive influenza (via DFA, IFA, viral culture, EIA, rapid test, paired serological tests or RT-PCR) and specimens from hospitalized patients with acute respiratory illness submitted to MDH-PHL by hospitals and laboratories. Due to the need to confirm reports and reporting delays, consider current week data preliminary.

Hospitalized Influenza Cases by Type, Minnesota (FluSurv-NET*)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hospitalizations</td>
<td>0</td>
<td>40</td>
<td>42</td>
<td>44</td>
<td>46</td>
<td>48</td>
</tr>
</tbody>
</table>

Hospitalized Influenza Cases by Season, Minnesota (FluSurv-NET*)

<table>
<thead>
<tr>
<th>Season</th>
<th>Total hospitalizations (historic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>1,578</td>
</tr>
<tr>
<td>2014-2015</td>
<td>4,081</td>
</tr>
<tr>
<td>2015-2016</td>
<td>1,538</td>
</tr>
<tr>
<td>2016-2017</td>
<td>3,695</td>
</tr>
<tr>
<td>2017-2018</td>
<td>6,446</td>
</tr>
<tr>
<td>2018-2019</td>
<td>1,478 (to date)</td>
</tr>
</tbody>
</table>

*Influenza Surveillance Network
Hospitalized Influenza Surveillance (continued)

Number of Influenza Hospitalizations and Incidence by Region, Minnesota September 30, 2018 – March 9, 2019

<table>
<thead>
<tr>
<th>Region</th>
<th>Hospitalizations this week</th>
<th>Total (to date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>21 (10%)</td>
<td>170 (12%)</td>
</tr>
<tr>
<td>Metro</td>
<td>123 (60%)</td>
<td>768 (52%)</td>
</tr>
<tr>
<td>Northeast</td>
<td>13 (6%)</td>
<td>112 (8%)</td>
</tr>
<tr>
<td>Northwest</td>
<td>0 (0%)</td>
<td>34 (2%)</td>
</tr>
<tr>
<td>South Central</td>
<td>17 (8%)</td>
<td>99 (7%)</td>
</tr>
<tr>
<td>Southeast</td>
<td>17 (8%)</td>
<td>178 (12%)</td>
</tr>
<tr>
<td>Southwest</td>
<td>1 (0.5%)</td>
<td>54 (4%)</td>
</tr>
<tr>
<td>West Central</td>
<td>12 (6%)</td>
<td>63 (4%)</td>
</tr>
</tbody>
</table>

Median age (years) at time of admission

60.0
Influenza-Associated Death Surveillance

Influenza deaths are collected via reports from Minnesota’s death certificate database, hospitals, and long-term care facilities. Decedents with influenza listed as a cause of or contributor to death, have recent laboratory confirmation of influenza, or are part of an ongoing influenza outbreak at a long-term care facility are reported to influenza surveillance. Due to the need to confirm reports and reporting delays, consider current week data preliminary.

Deaths Associated with Influenza by Season, Minnesota

<table>
<thead>
<tr>
<th>Season</th>
<th>Total deaths (historic)</th>
<th>Total pediatric (&lt;18 years) deaths (historic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>83</td>
<td>2</td>
</tr>
<tr>
<td>2014-2015</td>
<td>368</td>
<td>10</td>
</tr>
<tr>
<td>2015-2016</td>
<td>76</td>
<td>3</td>
</tr>
<tr>
<td>2016-2017</td>
<td>273</td>
<td>2</td>
</tr>
<tr>
<td>2017-2018</td>
<td>435</td>
<td>5</td>
</tr>
<tr>
<td>2018-2019</td>
<td>39 (to date)</td>
<td>0 (to date)</td>
</tr>
</tbody>
</table>

Seasons
- 2013-2014
- 2014-2015
- 2015-2016
- 2016-2017
- 2017-2018
- 2018-2019 (to date)

Deaths Associated with Influenza by Age Group and Season, Minnesota

<table>
<thead>
<tr>
<th>Season</th>
<th>Median age (years) at time of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>63</td>
</tr>
<tr>
<td>2014-2015</td>
<td>85</td>
</tr>
<tr>
<td>2015-2016</td>
<td>68</td>
</tr>
<tr>
<td>2016-2017</td>
<td>86</td>
</tr>
<tr>
<td>2017-2018</td>
<td>85</td>
</tr>
<tr>
<td>2018-2019</td>
<td>72.0 (to date)</td>
</tr>
</tbody>
</table>
School Outbreaks

K-12 schools report an outbreak of influenza-like illness (ILI) when the number of students absent with ILI reaches 5% of total enrollment or three or more students with ILI are absent from the same elementary classroom.

Influenza-like Illness (ILI) in Schools by Season

<table>
<thead>
<tr>
<th>Year</th>
<th>New School Outbreaks this week</th>
<th>New School Outbreaks Last Week</th>
<th>Total This Season (to Date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-14</td>
<td>42</td>
<td>29</td>
<td>263</td>
</tr>
</tbody>
</table>
Long-Term Care (LTC) Outbreaks

LTC facilities report to MDH when they suspect an outbreak of influenza in their facility. Laboratory-confirmed outbreaks are reported here.

Confirmed Influenza Outbreaks in LTC by Season

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

New LTC outbreaks this week: 5
New LTC outbreaks last week: 6
Total this season (to date): 35
MDH collaborates with healthcare providers who report the total number of patients seen and the total number of those patients presenting to outpatient clinics with influenza-like illness.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Indicates current week-data may be delayed by 1 or more weeks
The MN Lab System (MLS) Laboratory Influenza Surveillance Program is made up of more than 310 clinic- and hospital-based laboratories, voluntarily submitting testing data weekly. These laboratories perform rapid testing for influenza and Respiratory Syncytial Virus (RSV). Significantly fewer labs perform PCR testing for influenza and three also perform PCR testing for other respiratory viruses. MDH-PHL provides further characterization of submitted influenza isolates to determine the hemagglutinin serotype to indicate vaccine coverage. Tracking the laboratory results assists healthcare providers with patient diagnosis of influenza-like illness and provides an indicator of the progression of the influenza season as well as prevalence of disease in the community.

Specimens Positive for Influenza by Molecular Testing*, by Week

<table>
<thead>
<tr>
<th>MMWR Week</th>
<th>2014-15 % + by PCR</th>
<th>2015-16 % + by PCR</th>
<th>2016-17 % + by PCR</th>
<th>2017-18 % + by PCR</th>
<th>2018-19 % + by PCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% molecular tests positive this week | % molecular tests positive last week
-------------------------------------|-------------------------------------
26.7%                                 | 25.6%                                

* Beginning in 2016-17, laboratories report results for rapid molecular influenza tests in addition to RT-PCR results.
Minnesota Department of Health Weekly Influenza & Respiratory Activity Report for Week Ending March 9, 2019 | WEEK 10

**Laboratory Surveillance (continued)**

### MLS Laboratories – Influenza Testing

**Specimens Positive by Influenza Rapid Antigen Test, by Week**

- **B+ (2018-19 Season)**
- **A+ (2018-19 Season)**
- **A/B+ (2018-19 Season)**

**Percentage of Rapid Antigen Influenza Tests Positive**

<table>
<thead>
<tr>
<th>Region</th>
<th>% rapid antigen influenza tests + (current week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>35%</td>
</tr>
<tr>
<td>South Central</td>
<td>27%</td>
</tr>
<tr>
<td>Southwest</td>
<td>26%</td>
</tr>
<tr>
<td>Southeast</td>
<td>42%</td>
</tr>
<tr>
<td>Metro</td>
<td>31%</td>
</tr>
<tr>
<td>Central</td>
<td>29%</td>
</tr>
<tr>
<td>West Central</td>
<td>29%</td>
</tr>
<tr>
<td>Northwest</td>
<td>71%</td>
</tr>
<tr>
<td>State (overall)</td>
<td>32%</td>
</tr>
</tbody>
</table>

**Number of Positive Influenza Specimens**

**Number of Positive RSV Tests**

### MLS Laboratories – RSV Testing

**Specimens Positive by RSV Rapid Antigen Test, by Week**

- **Number +
- **2014-15 % +
- **2015-16 % +
- **2016-17 % +
- **2017-18 % +
- **2018-19 % +

**Region % rapid antigen RSV tests + (current week)**

<table>
<thead>
<tr>
<th>Region</th>
<th>% rapid antigen RSV tests + (current week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>20%</td>
</tr>
<tr>
<td>South Central</td>
<td>53%</td>
</tr>
<tr>
<td>Southwest</td>
<td>5%</td>
</tr>
<tr>
<td>Southeast</td>
<td>18%</td>
</tr>
<tr>
<td>Metro</td>
<td>17%</td>
</tr>
<tr>
<td>Central</td>
<td>26%</td>
</tr>
<tr>
<td>West Central</td>
<td>26%</td>
</tr>
<tr>
<td>Northwest</td>
<td>44%</td>
</tr>
<tr>
<td>State (overall)</td>
<td>21%</td>
</tr>
</tbody>
</table>
Hospitalized RSV Surveillance

Surveillance for respiratory syncytial virus (RSV) began in September 2016. Hospitalized inpatients of all ages who reside in the 7-county Twin Cities metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington) with laboratory-confirmed RSV are reportable. Due to the need to confirm reports and reporting delays, consider current week data preliminary.

### Hospitalized RSV Cases by Subtype, Minnesota

![Graph showing RSV cases by subtype]

**MMWR Week**

- **RSV A**
- **RSV B**
- **RSV, Unspecified**

### Number of RSV Hospitalizations and Incidence by Age, Minnesota

![Graph showing hospitalizations and incidence by age]

- **Hospitalized RSV Surveillance**

  Surveillance for respiratory syncytial virus (RSV) began in September 2016. Hospitalized inpatients of all ages who reside in the 7-county Twin Cities metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington) with laboratory-confirmed RSV are reportable. Due to the need to confirm reports and reporting delays, consider current week data preliminary.

<table>
<thead>
<tr>
<th>Hospitalizations this week</th>
<th>Hospitalizations last week</th>
<th>Total hospitalizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>14</td>
<td>807</td>
</tr>
</tbody>
</table>

**Median age at time of admission**

10 months
Influenza activity remains elevated in the United States.

- **Viral Surveillance**: The percentage of respiratory specimens testing positive for influenza viruses in clinical laboratories increased slightly. Nationally, during week 9, influenza A(H3) viruses were reported more frequently than influenza A(H1N1)pdm09 viruses. During the most recent three weeks, influenza A(H3) viruses were reported more frequently than influenza A(H1N1)pdm09 viruses in HHS Regions 2, 4, 6, 7, and 8.

- **Influenza-like Illness Surveillance**: The proportion of outpatient visits for influenza-like illness (ILI) decreased slightly to 4.7%, which is above the national baseline of 2.2%. All 10 regions reported ILI at or above their region-specific baseline level.
  - **ILI State Activity Indicator Map**: 32 states experienced high ILI activity; Puerto Rico and seven states experienced moderate ILI activity; New York City, the District of Columbia, and eight states experienced low ILI activity; three states experienced minimal ILI activity; and the U.S. Virgin Islands had insufficient data.

- **Geographic Spread of Influenza**: The geographic spread of influenza in Puerto Rico and 48 states was reported as widespread; the District of Columbia and two states reported local activity; the U.S. Virgin Islands reported sporadic activity; and Guam did not report.

- **Influenza-associated Hospitalizations**: A cumulative rate of 36.6 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported. The highest hospitalization rate is among adults 65 years and older (107.7 hospitalizations per 100,000 population).

- **Pneumonia and Influenza Mortality**: The proportion of deaths attributed to pneumonia and influenza (P&I) was above the system-specific epidemic threshold in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

- **Influenza-associated Pediatric Deaths**: Nine influenza-associated pediatric deaths were reported to CDC during week 9. Eight deaths occurred during the 2018-2019 season and one death occurred during the 2015-2016 season.