Executive Summary
There were a total of 199 emergency department (ED) visits in Michigan with self-reported cold-related injury complaints January 24-30, 2014, for an average of 28.4 ED visits per day. Females constituted 41.2% of the visits and those aged 40-59y were most affected.

Description of the Data
Cold-related emergency department (ED) visits were identified using the Michigan Syndromic Surveillance System which gathers data from participating hospital emergency departments across the state.

Cold-related injury complaints are defined as daily ED visits with the primary complaints of: “frost”, “freeze”, “exposure”, “elements”, “hypothermia”, or “carbon monoxide” (including word derivatives and misspellings). Terms that were identified in the search, but do not indicate cold-related injuries, such as “needle”, are excluded. With the exception of Figure 1, chief complaints were reviewed after being exported to further clean data.

**Note:** Due to the nature of categorizing ED complaint data, these visits do not represent all potential cases of cold-related injuries. These data may also represent non-cold-related injuries, i.e. “exposure” may not necessarily indicate exposure to cold temperatures. However, the data can be used to describe trends in illness presentations over time.

**Figure 1:** Daily Counts of Statewide Cold-Related ED Visits, October 1, 2013 – January 30, 2014

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**Michigan Cold-Injury, Emergency Department Visits: January 30, 2014**

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**Healthcare Registrations**

- All Facilities
- People in: All Counties
- All Syndromes

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<table>
<thead>
<tr>
<th>Registrations</th>
<th>Moving Average</th>
<th>Gastrointestinal</th>
<th>Constitutional</th>
<th>Respiratory</th>
<th>Rash</th>
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<tbody>
<tr>
<td>Hemorrhagic</td>
<td>Threshold</td>
<td>Overlapping</td>
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</tbody>
</table>
**Figure 2a:** Statewide Cold-Related ED Visits and National Oceanic and Atmospheric Administration (NOAA) Minimum Daily Temperatures for 6 select cities in Michigan, October 1, 2013 – January 30, 2014

**Figure 2b:** Statewide Cold-Related ED Visits and National Oceanic and Atmospheric Administration (NOAA) Minimum Daily Temperatures for the 6-city average, October 1, 2013 – January 30, 2014
Cold-related injury complaints were further categorized based on chief complaint.

- **Carbon Monoxide/Dioxide**: “carbon”, “co”, “co2”
- **Cold exposure**: “cold”, “elements”, “weather”
- **Frost/Freeze**: “frost”, “freez”, “froz”
- **Exposure**: “expo”
- **Hypothermia**: “hypo”
- **Exposure alone**: All of the above except carbon monoxide/dioxide, cold exposure, frost/freeze, hypothermia

**Figure 3a**: Statewide Cold-Related ED Visits by Symptom, October 1, 2013 – January 30, 2014

**Figure 3b**: Statewide Cold-Related ED Visits by Symptom (excluding “Exposure only” and “Carbon Monoxide/Dioxide”), October 1, 2013 – January 30, 2014
Table 1, Figure 4: Cold-Related ED Visits by Region, January 24-30, 2014

<table>
<thead>
<tr>
<th>Total Visits</th>
<th>1</th>
<th>2S</th>
<th>2N</th>
<th>3</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>199</td>
<td>18</td>
<td>75</td>
<td>35</td>
<td>18</td>
<td>11</td>
<td>26</td>
<td>11</td>
<td>5</td>
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Table 2: Cold-Related ED Visits by Selected Symptoms and Region, January 24-30, 2014

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Total Visits</th>
<th>1</th>
<th>2S</th>
<th>2N</th>
<th>3</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothermia</td>
<td>16</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Cold</td>
<td>18</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Frost/Freeze</td>
<td>120</td>
<td>10</td>
<td>53</td>
<td>24</td>
<td>13</td>
<td>6</td>
<td>8</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Figure 5: Age Distribution of Cold-Related ED Visits, January 24-30, 2014
Figure 6: Seasonal (October 1 – February 28) Daily Cold-Related ED Visits, Winter 2006 – Winter 2014 (To Date)

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