Implementation and Evaluation of a Disaster-Related Injury Surveillance System Following an Outbreak of Severe Weather, Kentucky 2012

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Kentucky Department for Public Health
June 6, 2012
Background

Primary Risks:
- Severe weather outbreak likely
- Tornadoes
- Damaging winds & hail

Map showing the regions of greatest chance of severe weather.

Cities highlighted: Detroit, Cincinnati, St. Louis, Nashville, Atlanta, Jackson.

Dark red areas indicate the highest risk.

Timeline of Response Events

MAR 2 Fri
MAR 3 Sat
MAR 4 Sun
MAR 5 Mon
MAR 6 Tues
MAR 7 Wed
MAR 8 Thurs
MAR 9 Fri
Injury Surveillance Operation

- Do not seek treatment
- Minor injuries treated onsite and released home by emergency medical personnel
- Injuries requiring additional medical attention sent to medical facility

Patient seen in emergency room

Hospitals complete and fax injury surveillance form to Kentucky Department for Public Health

Kentucky Department for Public Health (KDPH) disseminates injury surveillance form to stakeholders

Local health department personnel or regional epidemiologists communicate with healthcare facilities to complete surveillance forms

KDPH enters collected information from surveillance forms into electronic system
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<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAR 2</td>
<td>Fri</td>
</tr>
<tr>
<td>MAR 3</td>
<td>Sat</td>
</tr>
<tr>
<td>MAR 4</td>
<td>Sun</td>
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<tr>
<td>MAR 5</td>
<td>Mon</td>
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<tr>
<td>MAR 6</td>
<td>Tues</td>
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<tr>
<td>MAR 7</td>
<td>Wed</td>
</tr>
<tr>
<td>MAR 8</td>
<td>Thurs</td>
</tr>
<tr>
<td>MAR 9</td>
<td>Fri</td>
</tr>
</tbody>
</table>
## Surveillance Findings

<table>
<thead>
<tr>
<th>Type of Facility</th>
<th>3/2</th>
<th>3/3</th>
<th>3/4</th>
<th>3/5</th>
<th>3/6</th>
<th>3/7</th>
<th>3/8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-Term Care Facilities</td>
<td>0</td>
<td>30</td>
<td>1</td>
<td>41</td>
<td>24</td>
<td>2</td>
<td>22</td>
<td>120 (59)</td>
</tr>
<tr>
<td>Hospitals</td>
<td>3</td>
<td>13</td>
<td>3</td>
<td>29</td>
<td>9</td>
<td>12</td>
<td>3</td>
<td>72 (35)</td>
</tr>
<tr>
<td>Shelters/Other Facilities</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>11 (6)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3</td>
<td>43</td>
<td>5</td>
<td><strong>77 (38)</strong></td>
<td>35</td>
<td>15</td>
<td>25</td>
<td>203</td>
</tr>
</tbody>
</table>

Table 1. Submitted injury surveillance forms
## Table 2. Frequencies of storm-related injuries by severity

<table>
<thead>
<tr>
<th>Injury Severity</th>
<th>3/2</th>
<th>3/3</th>
<th>3/4</th>
<th>3/5</th>
<th>3/6</th>
<th>3/7</th>
<th>3/8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sa</td>
<td>Su</td>
<td>M</td>
<td>T</td>
<td>W</td>
<td>Th</td>
<td></td>
</tr>
<tr>
<td>Minor</td>
<td>26</td>
<td>56</td>
<td>12</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>107</td>
</tr>
<tr>
<td>Serious</td>
<td>2</td>
<td>27</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td>Life Threatening</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>92</td>
<td>18</td>
<td>13</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>158</td>
</tr>
</tbody>
</table>
Evaluation Methods

Updated Guidelines for Evaluating Public Health Surveillance Systems

Recommendations from the Guidelines Working Group
Strengths

• Simple
• Flexible
• Stable
• Timely

☑ Excellent
☐ Very good
☐ Good
☐ Average
☐ Poor
Areas for Improvement

• Data Quality
• Acceptability
• Representativeness
Conclusion

• Successful implementation
• Daily reports of observed injuries
  – Maintain situational awareness
  – Improved messages promoting responder and general public safety
• Address identified areas for improvements
Acknowledgements

- Kentucky Department for Public Health
  - Elizabeth Hoo, MPH, CLC
  - Margaret Riggs, PhD, MPH, MS
  - Doug Thoroughman, PhD, MS

- This work was supported in part by an appointment to the Applied Epidemiology Fellowship Program administered by the Council of State and Territorial Epidemiologists (CSTE) and funded by the Centers for Disease Control and Prevention (CDC) Cooperative Agreement Number 5U38HM000414
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