A Primer for Understanding the Principles and Practices of Disaster Surveillance

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Overview

- Background
- Purpose
- Intended audience
- Draft guidance document
- Next steps and feedback
Background

- The United States is facing an increase in frequency and magnitude of disasters

- Large-scale disasters carry substantial risk and require a response that addresses immediate health effects
  - Morbidity
  - Mortality

- Surveillance is a way to identify the health effects in a timely manner
CSTE Survey 2012

- **CSTE 2012 survey of disaster surveillance capabilities**
  - ~85% reported conducting surveillance in disasters
    - ~60% developed ad hoc surveillance system
    - ~40% depended on existing surveillance systems
    - ~30% modified existing surveillance systems
  - ~30% exercised disaster surveillance activities

- **Survey recommendations**
  - Develop surveillance plans/partnerships prior to a disaster
  - Ensure adequate resources because disaster surveillance is time and labor intensive
  - Exercise and evaluate disaster epidemiology plans/activities
Purpose of the Primer

- Document that surveillance in disasters is useful, important, and conducted
- Address the lack of national guidance
- Provide planning framework
- Highlight available resources
Intended Audience

- Local and State public health jurisdictions
Disaster Surveillance Guidance Document

- Section 1: Introduction, Purpose, Understanding Surveillance
- Section 2: Surveillance during a Disaster
- Section 3: Analysis and Reporting and Communication
- Section 4: Challenges and Key Considerations
Section 1: Introduction, Purpose, Understanding Surveillance

- Introduction to disaster surveillance
  - Provide background information
  - Define disaster surveillance

- Purpose and importance of disaster surveillance
  - Provide information to drive the response
  - Identify at risk groups
  - Assist with planning for future disasters

- Understanding surveillance
  - Passive, active, sentinel, syndromic
Section 2: Surveillance During a Disaster

- Developing objectives
- Defining case definitions
- Identifying data types
- Providing data sources and tools
## Section 3: Analysis and Reporting and Communication

- **Data analysis**
  - Calculating frequencies, rates, and monitoring anomalies

- **Reporting and communication**
  - Situational awareness, tailoring reports

### Table: Measures of Frequency

<table>
<thead>
<tr>
<th>Measure of Frequency</th>
<th>Measure</th>
<th>Definition</th>
<th>Formula</th>
<th>Reporting Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counts</td>
<td>Incidence&lt;sup&gt;1&lt;/sup&gt;</td>
<td>The occurrence of new cases of disease or injury in a population over a specified period</td>
<td>Number of new cases of health condition&lt;sup&gt;*&lt;/sup&gt; during a specified time period</td>
<td>Absolute numbers</td>
</tr>
</tbody>
</table>
| Morbidity and Mortality Rates | Incidence proportion (attack rate)<sup>2</sup> | The proportion of an initially disease or injury-free population that develops disease, becomes injured, or dies during a specified (usually limited) period of time | \[
\frac{\text{Number of new cases of a health condition during specified time period}}{\text{Size of population at start of period}} \times 100
\]                                                                 | X %                            |
|                       | Incidence rate (new cases)<sup>3</sup>       | The number of new cases of a disease or injury that occur during a specified period of time in a population at risk of developing the disease or injury                                                   | \[
\frac{\text{Number of new cases due to a specific health condition in time period}}{\text{Population at risk of developing the health condition}} \times \text{1,000 persons} \times \frac{1}{\text{Number of months in time period}}
\]  | New cases due to specific condition/1,000 persons/month |

<sup>*</sup> If the specified time period is longer than one year, multiply by 4 to get a quarterly rate or by 12 to get an annual rate.
Section 4: Challenges and Key Considerations

- **Challenges**
  - Outline disaster-specific challenges

- **Key Considerations**
  - Explain considerations important in disaster surveillance

<table>
<thead>
<tr>
<th>Surveillance challenges in disaster situations include the following:</th>
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<tbody>
<tr>
<td>• Timing constraints</td>
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<tr>
<td>• Competing priorities</td>
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<tr>
<td>• Missing baseline data</td>
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<tr>
<td>• Difficulty obtaining denominator data</td>
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<tr>
<td>• Lack of standardized data collection and reporting</td>
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<tr>
<td>• Lack of representative information and</td>
</tr>
<tr>
<td>• Underreporting</td>
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<tr>
<td>• Resource consideration</td>
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<tr>
<td>• Infrastructure damage</td>
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</tbody>
</table>
Next Steps

- External review for CDC clearance
- Review panel (Summer 2015)
- Feedback from you!
  - What would make this document more useful?
  - How can we distribute the document?
  - Other concerns or comments?