Assessing and responding to mental health needs after a disaster

2006 G.L. Smith Memorial Act grantees meeting
Washington, D.C.
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

*The findings and conclusions in this presentation have not been formally disseminated by the Centers for Disease Control and Prevention/the Agency for Toxic Substances and Disease Registry and should not be construed to represent any agency determination or policy.*

“Sometimes it takes a natural disaster to reveal a social disaster.”

Jim Wallis, Executive Director of Sojourners
Outline

- Definition of and types of disasters
- What is known (or theorized) about psychological impact of disasters
- Briefly discuss some results from field investigations (Sept 11 terrorist attacks & Florida post 2004 hurricanes)
- What CDC has done with data collection forms

What is a Disaster?

- Any event, typically occurring suddenly, that causes damage, ecological disruption, loss of human life, deterioration of health and health services
- AND
- which exceeds the capacity of the affected community on a scale sufficient to require outside assistance.

Source: Landesman, 2001
Disaster Definition:
Key Elements

• Causes large-scale disruption
• Produces ecological destruction
• Impacts vulnerable communities
• Exceeds community’s coping capacity
• Requires outside assistance

Classification of Disasters

• Natural disasters – forces of nature
• Human-generated disasters
  – Non-intentional
    • Industrial/technological
    • Transportation
    • Environmental
    • Material shortages
  – Mass violence (intentional)
    • wars and civil strife
Natural disasters 1994-2004

- 1 million thunderstorms
- 100,000 floods
- Tens of thousands of earthquakes, landslides, tornadoes, and wildfires
- Several hundred thousand hurricanes, tropical cyclones, volcanic eruptions, and tsunamis

Source: CDC and EK Noji. The Public Health Consequences of Disasters

Classification of Disasters

Natural
**Classification of Disasters**

**Human-generated**

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**Possible consequences of disasters**

| Morbidity and Mortality | • Injury  
|                         | • Disease  
|                         | • Death  
| Material Losses         | • Damage  
|                         | • Destruction  
|                         | • Economic loss  
| Social Disruption       | • Disruption of activities  
|                         | • Population displacement  
|                         | • Impact on health services  
| Psychosocial Impact     | • Distress response  
|                         | • Behavior change  

Impact layers in a Disaster

Vulnerable populations and impacted businesses

First responders, their families and social networks

Ordinary people and their communities

Direct victims

Family/social network

Vulnerable populations and impacted businesses

Ordinary people and their communities

Vulnerable populations

- Elderly
- Children
- Medically ill
- Mentally ill
- Isolated
  - culturally
  - geographically
- Impaired or intoxicated
- Disabled
- Injured
- Resource limited
- Incarcerated
Phases of community psychological response to disaster

Common Responses to a Traumatic Event

<table>
<thead>
<tr>
<th>Cognitive</th>
<th>Emotional</th>
<th>Physical</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor concentration</td>
<td>Shock</td>
<td>Nausea</td>
<td>Suspicion</td>
</tr>
<tr>
<td>Disorientation</td>
<td>Numbness</td>
<td>Dizziness</td>
<td>Irritability</td>
</tr>
<tr>
<td>Short attention span</td>
<td>Depression</td>
<td>Headaches</td>
<td>Withdrawal</td>
</tr>
<tr>
<td>Memory loss</td>
<td>Fear of harm to self and/or loved ones</td>
<td>Poor sleep</td>
<td>Increased alcohol or substance use or abuse</td>
</tr>
<tr>
<td>Confusion</td>
<td>Volatile emotions</td>
<td>Hyperarousal</td>
<td>Increased cigarette smoking</td>
</tr>
<tr>
<td>Difficulty making decisions</td>
<td>Feeling abandoned</td>
<td>Rapid heart rate</td>
<td>Increased or decreased eating</td>
</tr>
</tbody>
</table>
Factors that Determine the Stressfulness of a Disaster

- Characteristics of the disaster
  - Suddenness
  - Intensity
  - Avoidability
- Characteristics of the individuals
  - Actual losses (and threat of loss)
  - Previous experience with similar events
  - Effectiveness of one’s coping mechanisms
- Characteristics of the community or society
  - Amount of damage done
  - Community’s experience with such an event
  - Availability of resources to rebuild

Percentage of citizens with severe psychological impairment

Mass Violence > Technological Disasters > Natural Disasters

Source: Norris et al., 2002
Severity of Psychological Reaction

The size of the psychological "footprint" exceeds the size of the medical "footprint" — often by a factor of 10 or more.

Sources: Ursano, 2002; Institute of Medicine, 2003
## Medical effect vs. psychological effect -- World Trade Center, 2001

<table>
<thead>
<tr>
<th></th>
<th>Medical</th>
<th>Psychological Distress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Killed</strong></td>
<td>3,000</td>
<td></td>
</tr>
<tr>
<td><strong>Injured with Medical Care</strong></td>
<td>7,500</td>
<td>7,500</td>
</tr>
<tr>
<td><strong>Environmental exposures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downtown professionals</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Residents close to WTC</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Rescuers</td>
<td>17,500</td>
<td>17,500</td>
</tr>
<tr>
<td>Loss of workplace—WTC</td>
<td></td>
<td>32,000</td>
</tr>
<tr>
<td>Loss of workplace—other</td>
<td></td>
<td>31,000</td>
</tr>
<tr>
<td>Displaced/property damage</td>
<td></td>
<td>100,000</td>
</tr>
</tbody>
</table>

## Medical effect vs. psychological effect -- World Trade Center, 2001

<table>
<thead>
<tr>
<th></th>
<th>Medical</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Family members of:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Killed</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>Injured</td>
<td>30,000</td>
<td></td>
</tr>
<tr>
<td>Rescuers</td>
<td>70,000</td>
<td></td>
</tr>
<tr>
<td>Manhattan residents below 110th St (800,000)</td>
<td></td>
<td>200,000</td>
</tr>
<tr>
<td>NYC residents (7 million)</td>
<td></td>
<td>1,000,000</td>
</tr>
<tr>
<td>US Residents (5-80 years) (206,000,000)</td>
<td></td>
<td>10,300,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>228,000</td>
<td>12,000,000</td>
</tr>
</tbody>
</table>
Behavioral risk factor surveillance system (BRFSS) examples

- Health Related Quality of Life
- Adaptable to meet immediate health needs
- New York City added Kessler 6 – Emotional distress measures

<table>
<thead>
<tr>
<th></th>
<th>Connecticut</th>
<th>New Jersey</th>
<th>New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was a victim or knew a victim</td>
<td>29.8</td>
<td>39.6</td>
<td>34.6</td>
</tr>
<tr>
<td>Attended a funeral or memorial services for person killed in attack</td>
<td>8.2</td>
<td>12.2</td>
<td>13.5</td>
</tr>
<tr>
<td>Anger</td>
<td>49.8</td>
<td>44.9</td>
<td>48.8</td>
</tr>
<tr>
<td>Sleep problems</td>
<td>14.5</td>
<td>10.0</td>
<td>14.9</td>
</tr>
<tr>
<td>Hopelessness</td>
<td>6.9</td>
<td>4.4</td>
<td>8.6</td>
</tr>
<tr>
<td>Received help for problems</td>
<td>7.6</td>
<td>10.7</td>
<td>13.3</td>
</tr>
<tr>
<td>Drank more alcohol since attacks</td>
<td>2.4</td>
<td>3.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Any problem</td>
<td>72.9</td>
<td>73.3</td>
<td>75.6</td>
</tr>
</tbody>
</table>

**2004 Hurricane Season: Florida**

- **Hit by hurricane force winds:**
  - Once
  - Twice
  - Three times

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**Time Needed to Return to Normal Activities after the 2004 Florida Hurricanes**

<table>
<thead>
<tr>
<th>Number of weeks</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>23.5</td>
</tr>
<tr>
<td>^1-2</td>
<td>21.4</td>
</tr>
<tr>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>^8-12</td>
<td>19.2</td>
</tr>
<tr>
<td>36</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Source: Partners to help the Nation in Present & Future Disaster Response (2005)
Bad mental health days 9 months post hurricanes by employees* – Florida, 2005

Source: Partners to help the Nation in Present & Future Disaster Response (2005)
* >4 weeks to return to work

Disaster Mental Health Guiding Principles

- No one who experiences a disaster is untouched by it.
- Most people pull together and function during and after a disaster, but their effectiveness is diminished.
- Mental health concerns exist in most aspects of preparedness, response and recovery.
Disaster Mental Health
Guiding Principles

- Disaster stress and grief reactions are “normal responses to an abnormal situation.”
- Survivors respond to active, genuine interest and concern.
- Disaster mental health assistance is often more practical than psychological in nature (e.g. listening, reassuring, comforting).
- Disaster relief assistance may be confusing to disaster survivors.

Disaster Response Model

- **Traditional disaster response model is:**
  - Short-term
  - Mass-care ≈ “one-size-fits-all”
  - Externally supported
  - Focused on emergency, disaster-caused needs
  - Designed for persons with adequate resources

- **Community based disaster response model is:**
  - Long-term
  - Specialized
  - Internally supported
  - Focused on ongoing needs
  - Designed for various needs of community
Hurricane morbidity Report Form

Shelter morbidity report form
**Report form categories**

- **Patient Demographics**
  - Age, sex, ethnicity
- **Facility Information**
  - Name, date and time of treatment
- **Patient symptoms**
  - Injury, illness, or mental health condition
- **Method of arrival**
- **Disposition**
- **Injury specific**
  - Description of injury event
  - Intent of injury
  - Mechanism of Injury
  - Nature of Injury

**Personal and family emergency plans**

- **Communication with your Family**
- **Do you have a:**
  - Family Disaster Plan
  - Personal Emergency Plan
- **Make provisions for:**
  - Child(ren)
  - Spouse/Partner
  - Parents
  - Pets
  - Others
Conclusion

• Morbidity and mortality from disasters is high in the United States
• Disadvantaged communities are often at increased risk for harm due to lack of resources
• Many response plans do not address vulnerable populations or mental health issues
• Disaster preparedness and response is a joint effort between public and private organizations and can be effective

References

For additional information:
• Academic & Specialty Centers for Pub Health Preparedness
  http://www.phppo.cdc.gov/owpp/cphp.asp
• American Psychiatric Association
  http://www.psych.org/disasterpsych/
• Carter Center Mental Health Program
  http://www.cartercenter.org/healthprograms/program6.htm
• CDC National Center for Injury Prevention and Control
  http://www.cdc.gov/ncipc/default.htm
References

• Defense Threat Reduction Agency (DOD)
  http://www.dtra.mil/
• The National Center for Post-Traumatic Stress Disorder (Dept of Veterans Affairs)
  http://www.ncptsd.org
• The National Child Traumatic Stress Network
  http://www.nctsn.org/nccts/nav.do?pid=hom_main
• Potomac Institute/National Defense University
  http://www.potomacinstitute.org/academic/index.cfm

References

• RAND Corporation (a non-profit institution)
  http://www.rand.org/health/researchareas/military.html
• Uniformed Services University of the Health Sciences
  http://www.usuhs.mil/psy/traumaticstress/newcenter.html
• US Dept of Health and Human Services, Substance Abuse and MH Services Administration