Mental Health and Nuclear and Radiologic Emergencies

What to expect, surveillance, triage and coordinating care

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Disasters and Terrorism

Human Made

- Industrial Accident
- Toxic Exposure
- War
- Terrorism
- Riots

Natural

- Hurricane
- Tsunami
- Epidemic
Mental Health Responses to Trauma, Disasters and Public Health Emergencies

Resilience

Distress Responses
- Sense of vulnerability
- Insomnia
- Irritability, distraction

Psychiatric Illness
- PTSD
- Depression
- Anxiety

Health Risk Behaviors
- Smoking
- Alcohol
- Over dedication
Surveillance for what, when and where

• Yes available screens
• Where and who?
• Who shows up for care?
• Sustaining responders
• Community sustainment
• Risk Communication/Education/Leadership will relate to behavioral casualties and care seeking
• Families, communities, belief in exposure and “caring” will relate to distress and distress behaviors
## Psychiatric Outcomes in Rescue Workers

<table>
<thead>
<tr>
<th>Location</th>
<th>ASD</th>
<th>PTSD</th>
<th>DEP</th>
<th>Alcohol Use Disorder</th>
<th>Any Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sioux City*</td>
<td>26%</td>
<td>17%</td>
<td>22%</td>
<td></td>
<td>40.5%</td>
</tr>
<tr>
<td>Oklahoma City**</td>
<td>13%</td>
<td>12%</td>
<td>25%</td>
<td></td>
<td>38%</td>
</tr>
<tr>
<td>Bushfire***</td>
<td>13%</td>
<td>9%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Fullerton et al., AJP, 2004 (ASD 1 wk; PTSD, Dep. 13 mos.)

** North et al. 2002 (N=176; 34 mos. Dep. Is approximate) 47% had lifetime alcohol abuse/dependence. 54% with PTSD had another disorder.

*** McFarlane & Papay, 1992 (42 mos.)
## Estimated Mental Health Needs in NY State after Sept 11

<table>
<thead>
<tr>
<th>Expos Group (pop)</th>
<th>% PTSD</th>
<th># Cases</th>
<th>% Seek</th>
<th># Trt</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTC (162,715)</td>
<td>25%</td>
<td>41,562</td>
<td>50 %</td>
<td>20,615</td>
</tr>
<tr>
<td>Manhattan (919,000)</td>
<td>10%</td>
<td>91,900</td>
<td>28 %</td>
<td>20,586</td>
</tr>
<tr>
<td>All 5 NYC Bur. (6.92 mil)</td>
<td>5%</td>
<td>346,328</td>
<td>28 %</td>
<td>77,577</td>
</tr>
<tr>
<td>Surr. 10 cnties(4.8mil)</td>
<td>1%</td>
<td>48,000</td>
<td>28 %</td>
<td>10,752</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>4.5 %</td>
<td>527,790</td>
<td>24.5%</td>
<td>129,530</td>
</tr>
</tbody>
</table>

Herman et al JUH 2002
Psychosocial Responses to Trauma and Disaster

- Resilience/altruism
- Horror
- Anger
- NOT Panic
- Fear
- Sleep problems
- Increased Alcohol and Smoking Use
- Grief
- Anger at government
- Blaming
- Scapegoating
- Social isolation
- Demoralization
- Loss of faith in social institutions
- Paranoia
Somatic Symptoms

• Frequently increased following all disasters
• Can be an expression of anxiety or depression and leads to health care seeking
• Ionizing Radiation Events -those expecting illness
• MUPS or MIPS

Ursano, Fullerton et al 1995/ McCarroll, Ursano, Fullerton et al Psychosomatics 2000
Phases of Disaster

PREDISASTER

Threat

Warning

Impact

Inventory

HEROIC

HONEYMOON (COMMUNITY COHESION)

DISILLUSIONMENT

COMING TO TERMS

WORKING THROUGH GRIEF

RECONSTRUCTION

A NEW BEGINNING

Trigger Events and Anniversary Reactions

--1 TO 3 DAYS-- Time -------------- 1 TO 3 YEARS--------------
The Public’s Health
(the health system of care)

Medical Care System
- Public and Private
- Outpatient/Hospital

Health System
- Protection
- Prevention
- Promotion

Emergency Response System
- EMT
- Police/Fire
- Water/Electric/Communication Emerg. Response
Loss of Access to Routine Medical Care and Home Care

• Hurricane Andrew: 1000 Physician Offices, 4 Mental Health Facilities, 11 pharmacies, 7 Convalescent Homes, 2 Dialysis Units, 38 Assisted-living Facilities

• Home Health Care: Nursing, Oxygen, suction, IV antibiotics, medication, ventilation, chemotherapy

• Therefore, chronic medical conditions worsen and care is sought at already overburdened hospitals
So What else helps? Collective Efficacy & Probability of PTSD

Summary Key Concepts

For enhancing community mental health and for establishing conditions for screening, surveillance and recovery:

- Public Participation Models for establishing policies for screening, surveillance and recovery
- Risk Perception rather than stochastic or deterministic risk
- Acceptability to community may be different from “low” or “practically none”
- Adaptive Capacity – creative capabilities when faced with reduced or limited resources