

Health Communication:
Improving Community Preparedness



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Objectives

- Describe an ecological phase model of disaster management with applications to community preparedness.
- Evaluate and analyze efforts to improve community preparedness via media campaigns and education, as well as timely and credible risk communication & training and exercises for various target audiences.
- Highlight the complexities and barriers to health communication and preparedness for public health emergencies including CRBNE disasters and pandemics including the current H1N1 pandemic.

Community Preparedness Communication

Segmented target audiences:

- General public
- Health care providers
- Disaster response personnel
- Vulnerable populations



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Preparedness Health Education & Communication

How does preparedness health education and communication differ from other types of health education and communication?

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Media, Messages, and Messengers

Some ways in which preparedness health communication differs from most (other) health communication initiatives:

- Messages depend on the stage and type of the disaster (may be time sensitive and urgent)
- Segmented audiences for whom the media, messages and messengers differ
- Preparedness communication includes both
 - Pre-event education
 - Real-time event specific information—risk communication

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Preparedness Requirements

Preparedness requires more than information

- Hardware and infrastructure: e.g., disaster kits, decontamination showers, hospital beds for surge
- Planning at every level
- Practice (drills and exercises), practice, practice
- Interagency communication and collaboration

“You can observe a lot by watching”*



*Berra, 1998

NMDS Drill (May 13, 2004)



Media, Messages, and Messengers

- Individual and family preparedness depends on site:
 - Home
 - Work
 - Commute
 - Entertainment venue
- The messages need to reflect these contextual site differences.

Media, Messages, and Messengers

- Individual, family, and community preparedness also includes **responsibility for others** (as well as self)
 - Pets
 - Children
 - Mobility impaired
 - Physically and mentally disabled and other vulnerable populations
- The preparedness messages, media, and messengers need to reflect this

Definition of Disasters

- Disasters generally refer to natural- or human-caused events that cause property damage and large numbers of casualties.



- Community wide disasters generally require outside assistance and/or assets.

Indian Ocean Tsunami Disaster, December 2004 – Rumor Management



Photo by Dr. Mark Oberle, Phuket, Thailand

Types of Disasters: * “Disaster Nursing”

	Natural	Man-made Technological	Biological
Unintentional	Tsunamis, Floods, Hurricanes, Earthquakes, Wildfires, etc.	e.g., Bhopal, Haz-Mat, Three Mile Island	Epidemic and pandemics e.g., 1918–1919 global influenza pandemic
Intentional	“Act of God”	Chemical, Nuclear, Radiological, Explosion, Acts of Terrorism	Bioterrorism

* (From Beaton and Bridges)

Three Mile Island

What went wrong? Very wrong?



Disaster Cycle: A Stage Model

There are a number of distinct conceptual stages in the disaster cycle:

Disaster Cycle

Preparedness and Planning Pre-event Warning Threat Stage
Evaluation Impact/Response
Recovery

Preparedness Stage Communication

- Planning at every level
- Awareness for general public
<http://www.govlink.org/3days3ways/>
- Education for health professionals
<http://www.son.washington.edu/eo/den>
- Education/instruction
- Motivation
- Tabletops to identify gaps in plans and procedures
- Exercises and drills to practice skills and facilitate interagency cooperation and collaboration for disaster personnel and leaders


TOPOFF 4 Exercise

TOPOFF 4 fact sheet—Oregon, 2007
Specifically, the exercise was designed to test:

- Inter-agency preparedness and response plans to terrorist-generated RDD
- Evacuation and shelter in place considerations
- Ability to provide decontamination and mass care of victims
- Search and rescue operations
- Ability to conduct criminal and environmental investigations
- Large-scale recovery and remediation issues for populous areas

TOPOFF 4 Oregon: A Snapshot

- Oregon was one of three domestic venues selected to participate in the TOPOFF 4 exercise the week of October 15–19, 2007. Portland was the site for the exercise in Oregon.
- TOPOFF 4 was one of the largest civilian exercises ever.
- Three local governments directly participated in TOPOFF 4 include the city of Portland, and Multnomah, and Columbia counties.
- The exercise provided an opportunity for Oregon to test the latest emergency management plans, policies and procedures.
- Over 250 agencies and organizations participated in the exercise including state, federal government, voluntary organizations, international partners, and the private sector.



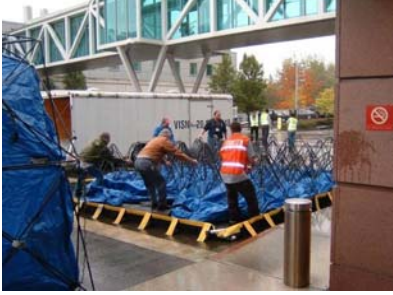
TOPOFF 4 Oregon: A Snapshot



TOPOFF 4 Oregon: A Snapshot



TOPOFF 4 Oregon: A Snapshot



TOPOFF 4 Oregon: A Snapshot



TOPOFF 4 Oregon: A Snapshot



TOPOFF 4 Oregon: A Snapshot



TOPOFF 4 Oregon: A Snapshot



TOPOFF 4 Oregon: A Snapshot



Pre-Event Warning Stage/Risk Communication and Just in Case/Just in Time Education

- Warning, e.g., Category 4 hurricane will make landfall at this time and this location
- Risk communication: To reduce anxiety, must also tell general public what they should do (without jargon). For example, you need to evacuate at least 100 miles inland and leave your residence no later than...
- “Just in time” training for rescue workers, e.g., Psychological First Aid
<http://lecture.son.washington.edu/p44775760>

Impact & Response Risk Communications

- Advise, instruct, and give directions—minimum of jargon; e.g., “Shelter in place.”
- Risk communication update
- Leadership—EOC and community leaders
- Identify resources such as shelters and crisis lines
- E.g., Washington state county crisis lines—DSHS/MHD
<http://www.dshs.wa.gov/mentalhealth/crisis.shtml>

Recovery Stage Communications

- Identify resources to recover and rebuild
- Logistics
- Provide and sustain hope
- Project Liberty
<http://www.projectliberty.state.ny.us/>

Evaluation Stage Communications

- Lessons learned:
http://www.ojp.usdoj.gov/odp/docs/LLIS_FactSheet.pdf
- Review and refine plans including communication
- Importance of After Action Reports

Sarin Gas Attacks

Traumatology, Vol. 11, No. 2 (June 2005)
The Sarin Gas Attacks on the Tokyo Subway – 10 years later/Lessons Learned

Randal Beaton, Andy Stergachis, Mark Oberle, Elizabeth Bridges, Marcus Nemuth, and Tamlyn Thomas

This paper considers "lessons learned" from the March 20, 1995 covert terrorist attack on the Tokyo, Japan subway system employing a neurotoxic agent. The following lessons from the disaster are reviewed in light of prevailing practice and policy in the U.S. in 2005: timely communication of vital information; operational logistics including triage, surge capacity and decontamination; secondary contamination of emergency responders and hospital personnel; assessment and treatment of the "worried well"; secondary traumatization of rescue workers; and behavioral health preparedness measures and treatment for disaster victims. In some respects little progress has been made, for instance, in developing new, evidence-based therapies for disaster victims with posttraumatic stress disorder. On the other hand, some recently developed and implemented initiatives such as the Strategic National Stockpile (SNS), represent enhancements to U.S. preparedness compared to that which existed during the 1995 terrorist attacks on the Tokyo, Japan subway system.

Monday Morning Rush Hour March 20, 1995



Courtesy of Ken Taneda, MD and St. Luke's International Hospital, Tokyo

Sarin Gas Attacks: Lessons Learned

- Sarin is of poor quality
- Dissemination is inefficient
- Nonetheless, approximately 5500 will seek medical care and several (n=11–12) will die from neurotoxin exposure
- Estimated that for every primary victim, four “worried well” patients will seek care (DOD, 1999)

Sarin Gas Attacks: Lessons Learned

Sarin gas is covertly and simultaneously released by cult member terrorists around 0800 hours at several points in Tokyo subway system



Courtesy of Ken Taneda, MD and St. Luke's International Hospital, Tokyo

Most Victims Were “Walk-Ins”

- St. Luke's was a 4–5 minute walk from one of the targeted subway stations.
- Most of the initial surge of sarin victims are complaining of eye pain, lacrimation, and mild dyspnea.
- Some seriously ill patients arrive shortly thereafter, including one in cardiopulmonary arrest.

Sarin Gas Attacks



Courtesy of Ken Taneda, MD and St. Luke's International Hospital, Tokyo

Surge Capacity Issues

- There was no hospital decontamination of victims.
- The decision was made to convert non-medical spaces such as the chapel into patient-holding and treatment areas.
- PPE was suboptimal.
- The nature of the agent was not discerned until approximately 1000 hour.

Sarin Gas Attacks



Courtesy of Ken Taneda, MD and St. Luke's International Hospital, Tokyo

Pre-Hospital Protocols

- Communication with the medical base station was problematic.
- Some potentially life-saving procedures could not be instituted in the field due to an inability to contact base station (Okamura et al., 1998).

Sarin Gas Attacks



Courtesy of Ken Taneda, MD and
St. Luke's International Hospital, Tokyo

641 Patients Were Evaluated

- A total of 641 patients were evaluated at St. Luke's International Hospital on March 20, 1995.
- Of these, 111 were admitted and treated as in-patients and one died.
- Over the next several weeks hundreds more sought care, but only one additional patient was admitted to St. Luke's.
- A few patients even sought care at St. Luke's more than a month after the attack.

Potential Contributing Factors to the Numbers of "Worried Well"

- The attack was covert, human-caused, malevolent, and occurred without warning.
- Lack of preparedness and planning to respond to such a chemical mass casualty event.
- Lack of diagnostic test that could quickly and accurately differentiate exposure victims from worried well.
- Undetectable nature of the agent—colorless, odorless.
- Agent was horrific, dangerous, and potentially lethal.

Potential Contributing Factors (cont.)

- Crowded conditions in the subway trains
- Enclosed, confined, and subterranean nature of Tokyo subway "tubes"
- Initial confusion in positively identifying the agent as sarin
- Media accounts of the event? Rumors?
- Public's lack of familiarity with sarin and, to a lesser extent, health providers' lack of familiarity, training and relevant education

Similarities Between Neurotoxic and Radiologic Agents

- Public is unfamiliar, uneducated as to the health risks associated with these agents.
- Health care workers, in general, have little training or familiarity with these agents.
- Agents are anxiety provoking.
- Exposures to either may not be detectable.
- Symptoms may be delayed, difficult to diagnose, and similar to anxiety symptoms.
- Uncertainty and ambiguity of exposure—"The Unknown"

Planning Suggestions to Care for "Worried Well" Victims

- Health risk communication
- Decontaminate (regardless)
- Screen and evaluate (R/O exposure)
- Triage to holding area, "day spa" room
- Provide reassurance, if possible
- Provide information/Fact sheets*
- Monitor for emergence of symptoms
- Discharge/release as appropriate

(From Beaton et al., 2005)



*Fact Sheet Information for Worried Well

We do not think you were exposed, **but:**

- Signs and symptoms of exposure
- Self-care (e.g., self decontamination protocols)
- Availability of antidote and other treatments
- Contact information
- Web site URL with additional information and resources



Pan Flu Tabletop

Pandemic Policy and Planning Considerations for Universities: Findings from a Tabletop Exercise

Randal Beaton, Andy Stergachis, Jack Thompson, Carl Osaki, Clark Johnson, Steven J. Charvat, and Nicola Marsden-Haug

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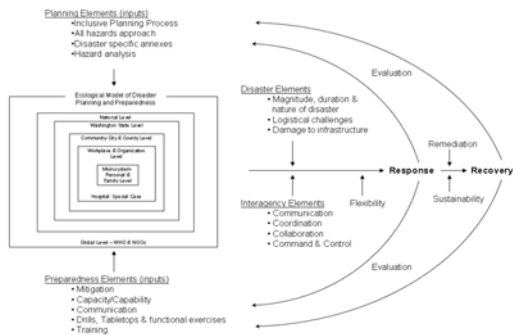
Pan Flu Tabletop

- To identify challenges faced by a major metropolitan university during a flu pandemic a tabletop exercise was developed, offered, and evaluated.
- This tabletop was conducted at the UW on May 31, 2006, with 50 mostly UW leaders and administrators as well as some local and state preparedness partners.

Pan Flu Tabletop

- UW Pandemic Flu Planning gaps related to communication surfaced during tabletop (Beaton et al, 2007).
- EOC communication may need to be conducted remotely—"virtual EOC".
- Emergency messages for students and faculty would differ from these sent to health professionals during an outbreak.
- Availability of disaster mental health services.
<http://www.nwcp.org/dbh>

Ecological Model: Application to Disaster Preparedness



Personal & Family Target Audience Message Microsystem Level

- Family and personal planning message- you and your family should be prepared to be on your own for 3-5 days following a disaster
- Message: Compile an emergency supply kit
- Exemplar: "Preparing your Household for Emergencies" section of the Emergency Resource Guide
http://www.emd.wa.gov/publications/pubed/emergency_resources_guide.pdf
(2007)
- Issue of family pets
<http://www.govlink.org/3days3ways/pets.html>



Barriers to Personal/Family Preparedness

- Denial and distortion – it won't hit our family
- Complacency – lack of awareness of danger
- Time/energy/cost
- Planning differs for each type of disaster – partial solution: All Hazards Planning
- Identify motivators for action
- Identify effective messengers
- Identify effective messages



Workplace & Organization Mesosystems Messages:

Basics:

- All organizations need disaster plans including evacuation plan (OSHA regulation).
- Provide basic first aid and CPR training for employees.
- Get involved: model CERT Training Program at UW.
<http://www.washington.edu/admin/business/oem/cert/training.html>
- Be informed: workplace pandemic flu Web page at the University of Washington.
<http://www.washington.edu/emergency/pandemic/planningDepts.php>



Barriers to Workplace & Organizational Preparedness

- Costs, time, and energy—do not contribute to bottom line “unless”
- Generally **not** part of organizational mission
- Lack of information and training for employees
- Lack of executive leadership

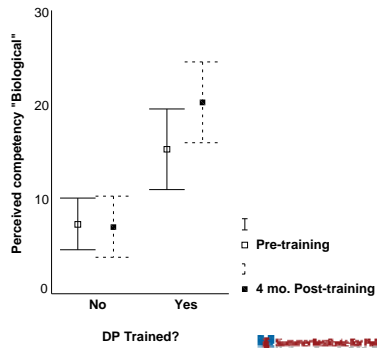
DOD Preparedness Training for First Responders



From Beaton and Johnson (2002)



From Beaton and Johnson (2002)



Training and Drills for First Responders and Disaster Personnel

Options:

- Meet endlessly to discuss
- Wait for a disaster and then react
- Conduct exercises and training and update plan based on outcomes

Centers for Disease Control and Prevention


Supplies:

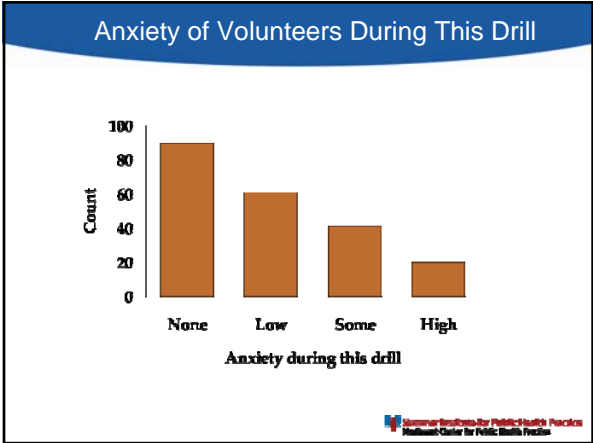
- Strategic National Stockpile
- Local caches
- PPE caches

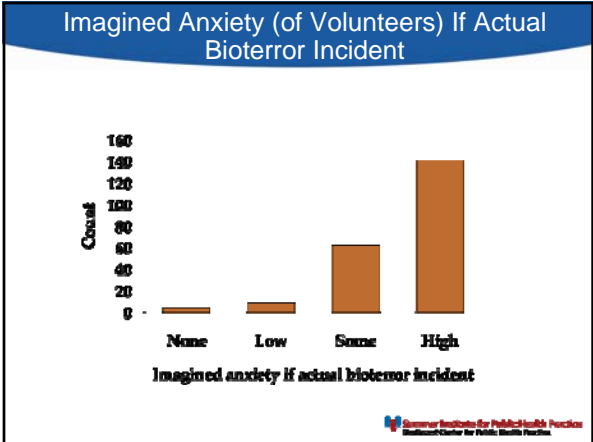
SNS Stockpile Exercise

Evaluation of the Washington State National Pharmaceutical Stockpile Dispensing Exercise:
Part I — Patient Volunteer Findings

Randal D. Beaton, Mark W. Oberle, Julie Wicklund, Andrew Stevermer, Janice Boase, and David Owens









SNS Stockpile Exercise

Evaluation of the Washington State National Pharmaceutical Stockpile Dispensing Exercise:
Part II — Dispensary Site Worker Findings


Randal D. Beaton, Captain Andrew Stevermer,
Julie Wicklund, David Owens, Janice Boase, and
Mark W. Oberle



SNS Exercise* Post Drill Confidence Enhances




Confidence Change	Count
Much Less	4
Much More (Bar 1)	13
Much More (Bar 2)	21
Much More (Bar 3)	5



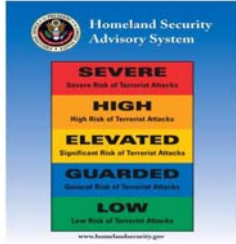
Rational Appraisal of Risks and Communication

- Low probability/high consequence events— individuals and organizations do not judge risks rationally.
- Over-estimate probability of positive low probability/high consequence events (\$ Mega-Millions lottery).
- Under-estimate probability of negative low probability/high consequence event— notable exception: terrorist agents.



Sharing Information With the Public

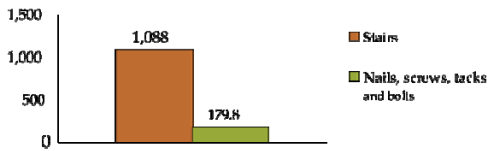
National Threat Level System



Consumer Product Safety Commission
National Center for Public Health Practice

Everyday Hazards

Estimated number of injuries requiring hospital visits in 2001, in thousands, from accidents by selected causes.

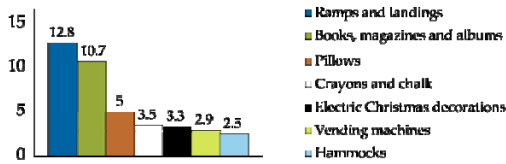


Source: US Consumer Product Safety Commission

Consumer Product Safety Commission
National Center for Public Health Practice

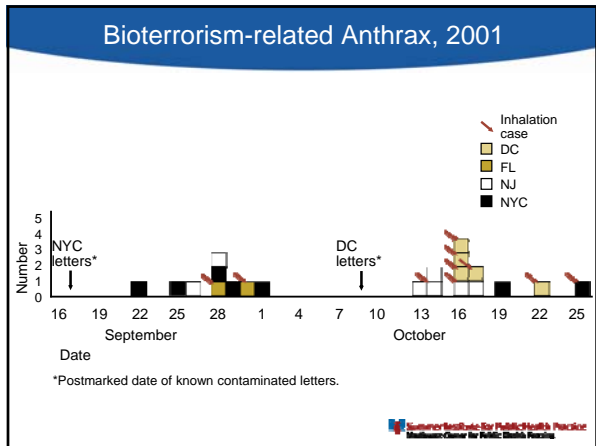
Everyday Hazards

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Source: US Consumer Product Safety Commission

Consumer Product Safety Commission
National Center for Public Health Practice



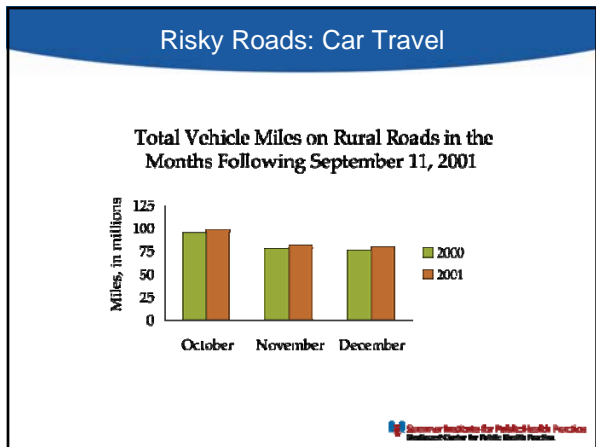
“Dread Risk”

We fail to accurately assess or respond to:

- Low probability
- High consequence events

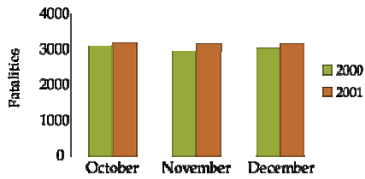
(Gigerenzer, 2004)

Centers for Disease Control and Prevention
National Center for Public Health Practice



Risky Roads: Traffic Fatalities

Traffic Accident Fatalities in the Months Following September 11, 2001



Vulnerable Target Audiences: Children

- FEMA for Kids
<http://www.fema.gov/kids/index.htm>
- Children with Special Needs
<http://cshcn.org/planning-record-keeping/emergency-preparedness-children-special-needs/emergency-preparedness-referen>
- American Academy of Pediatrics—Children and Disasters Web site
<http://www.aap.org/disasters/pdf/PhysiciansSheet.pdf>
- Ready.gov (HSD) Ready.kids
<http://www.ready.gov/kids/>


DOH H1N1 Planning (June 26, 2009)

- Includes a Communication Workgroup – to work with partners to develop & distribute consistent pan flu messages and to provide timely and accurate information to the public



Options in Responding to Hazards Such as Arachnids or a H1 N1 Pandemic


- Fight
- Flight
- Fright
- Blight or..
- Insight




Communication - Exemplar

Mary Selecky following the first reported death from H1N1 in Washington State

“This is not the time to flood doctor’s office at the first ... sniffle^{*}”
NWCN News May 11, 2009



* probable case of sniffles – not yet confirmed by CDC



“To help stop the outbreak (we’re) asking people to continue to wash their hands, cover your cough and stay home if you are sick.”

**M. Selecky
NWCN News
May 11, 2009**



Communication

- Risk Communication- DOH Public Service Announcement Video
- <http://www.wsna.org/Swine-Flu/>



3 Days / 3 Ways Are You Ready

- 3 Days/3 Ways—Are you ready—King County Office of Emergency Management Preparedness— Public Motivation Campaign
<http://www.govlink.org/3days3ways/>
- Consider: What are common barriers or obstacles to community preparedness initiatives?