Natural Disaster or Terrorism How Prepared Can You Be?
Friday 21 April 2017
0800-0900 AM

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ACP AKOMA conference April 20-22, 2017
Sheraton Hotel, Anchorage, AK

Conflict Of Interest Disclosure

• I have no financial interests or other relationships with commercial manufacturers and suppliers of commercial services.

• The opinions presented here are those solely of the speaker, and do not necessarily reflect Pacific NW University of Health Sciences policy or any other Federal Agency referenced.

Objectives

• Approach to preparing your family, yourself and your institution’s response to disasters

• List various physician roles in communities and hospitals preparing and responding to a natural disaster or terrorism

• Identify various national data sources for training your hospital and first responders
Outline

- Disasters overview
- Historical perspective
- Risks with most likely risk areas
- Individual & family preparedness
- Terrorism in all of its forms
- Disaster planning and mitigation
- References & Resources

What Is a Disaster?

Unforeseen natural or man-made event, may occur suddenly, results in great damage, destruction and human suffering

“Disaster” Definition

A disaster is present when needs exceeds resources!

Disaster = Need > Resources

A response need that is greater than the response available at a time in space!
What is Emergency Preparedness?

- Emergency preparedness is planning and actions undertaken in advance of a possible or probable natural or man-made disaster.
- Plans for reconstruction, food storage, sanitation equipment storage, and conducting drills are usually part of an emergency preparedness plan.

“All-Hazards”

**Man-made**
- Fires
- Explosive devices
- Active shooter
- Structural collapse
- Transportation event
  - Air, Rail, Roadway, Water
- Industrial HAZMAT
- Weapon mass destruction
  - NBC events
- Terrorism Events

**Natural**
- Earthquake
  - Alaska 03/28/1964 9.2
- Landslides
- Avalanche
- Volcano
- Tornado
- Hurricanes, floods
- Fires
- Meteors
- Etc...

Disaster Harm Vs Probability

- Natural disasters
- Explosions
- Industrial or terrorist
  - Chemical
- Bio agents
- Nuclear
- Likelihood
- Magnitude of harm
Weather Related Disasters in the United States

Average $$$ Each Year (includes wild and forest fires)
- Cost = $52 billion ($1 billion per week)
- Fatalities = ~480

Shell Pt., FL., 7/18/2005 -- Stuffed animals hung out to dry following Hurricane Dennis. FEMA photo/Andrea Booher

Recent U.S. Disasters

1988 Drought
$40 billion; 10,000 deaths

1993 Midwest Floods
$21 billion; 48 deaths

2005 Hurricanes Katrina & Rita
- Katrina: $108 billion; 1,843 deaths
- 2012 Hurricane Sandy
  - $50 billion;

Anchorage, Alaska 1964

Credit: U.S. Geological Survey

Credit: U.S. Geological Survey/AP
Disasters

- Disasters anytime, anywhere
  - Natural Disasters
    - Weather: Hurricane, Tornado, Winter storms
    - Floods
    - Earthquakes
  - Man made disasters
    - Industrial accidents
    - Terrorism: Explosive, chemical, biological, active shooter

Why Do You Need to Prepare as a Physician or Health Care Provider?

- Disasters are unpredictable
- Disasters can happen in any community
- It may take days for significant help to arrive
- Your family’s and your community’s well-being is important
- Your physician role is crucial to the mitigation of the disaster

Emergencies & Disaster Preparation

Paranoia or Prudence?

- How would you:
  - Assure your family survival for 72 hours?
  - Cope without power or tap water?
  - Contact your family members and receive information?
  - Cope with communications breakdowns?
  - Cope with transportation breakdown?
  - Quickly identify your role as a physician in the disaster?
Common Misconceptions
Why Should I Care?
False Beliefs

- Most emergencies are short-lived
  - Sandy/Katrina history negates the postulate
- Help will arrive quickly; Don’t worry be happy!!
- I won’t ever have to deal with an emergency
  - Joplin, Missouri; Boston, Alaska, Bus accident
- Cell phones are our safety link to each other
- I just can’t prepare no matter what I do
- Preparing takes too much time, I am too busy with patient care!
- I will figure it out when the time comes

Are You Really Prepared?

In order for a community to be prepared for a disaster, everyone needs to take the necessary steps to become disaster-ready.

DHS & American Red Cross statement

Recent Tornadoes In the Media

- 2011 Joplin MO
- 2013 Moore Oklahoma
How Prepared Can You Be???

- ~ 1,200 tornadoes hit the U.S. yearly
- Beyond US, Argentina, Bangladesh.

Tornado Damage Potential

Damaging Earthquakes in the US (1750 - 1996)

https://www.nibs.org/resource/resmgr/BSSC/P-749_Chapter2.pdf
How Prepared Can You Be???

“A Be Prepared” Home Preparation

- You and your family may need to survive on your own after an emergency.
  - Implies home storage of food, water and other supplies to last for at least 72 hours.
- Expect basic services such as electricity, gas, water, sewage treatment, service stations and telephones/cell phones may be cut off for days or weeks.
- Establish a backup plan with your family on how to communicate from the hospital if possible
  - https://www.fcc.gov/general/tips-communicating-emergency

What Can You And Your Family Do? “Be Prepared”!

- Be informed about hazards that can most likely affect you and your family
- A home emergency plan and supplies in place
  - Communications plan https://www.ready.gov/
    - https://www.fema.gov/media-library/assets/documents/34330
- Collect and assemble a home disaster supply kit and car kits
- Learn the warning systems in your community. NOAA radios, cell phone alerts, TV or radio.
- Know the location of your local shelters
Family Preparedness 1

- Step 1. Know the risks
- Step 2. Make a plan, talk it through with the kids
- Step 3. Plan for specific risks in your region
  - Earthquakes, tornadoes, power outages, floods and severe storms
  - Meeting places & back up communications instructions
    - Identify safe places where everyone should meet if you cannot go home or you need to evacuate
  - Plan for pets
    - Pets are not allowed in some public shelters or hotels. Prepare to take your pets with you to the home of a relative or friend

Home Family Preparation 2

Disaster supplies kit minimums:
- 3 day supply of non-perishable food
- 3 day supply of water (gal/day/person)
- Portable, battery-powered radio
- a NOAA weather radio
- Flashlights (LEDs)
- Cash and coins

Home Family Preparation 3

Family Communications Plan

- Your family may not be together when disaster strikes
- Plan how you will contact one another and review what you will do in different situations including cell phone failure with all in the family
  - Determine an out-of-town contact for your family to call if something happens.
  - It may be easier to make long-distance phone calls than to call across town
  - Text messages best method to communicate with separated family members due to low bandwidth requirements compared to voice.

https://www.ready.gov/prepare-for-emergencies
Emergency Car Kit

- Emergency car kit
  - Keep it in the vehicle!
  - Emergency kit Food: Does not spoil, Ex. energy bars
  - Water In plastic bottles or pouches so they won’t break if frozen
  - Extra clothing and shoes in ‘Go Pack; Blanket
  - First aid kit with seatbelt cutter
  - Portable radio

http://ready.wi.gov/winter/HowToMakeAKit.asp

Car Go Pack
Backpack with multiple pouches and removable organizer

- Rain poncho (adult sized); Tennis shoes, socks, gloves, wool hat
- Breathing mask for dust
- 1 Battery powered flashlight or LED flashlight equivalent
- 1 Hand Crank Emergency Radio or commercial equivalent (ex American Red Cross FRX1 Eton)
- 1 Emergency blanket, 4.5′×7′
- Moist towelettes (individually wrapped)
- Food packets, 2,400 calories total, 5 year shelf life (ingredients include wheat flour, vegetable shortening, granulated sugar, salt, water and coconut flavoring)
- Water pouches, total of 16 ounces, 5 year shelf life
- 1 Roll of duct tape, 2” × 30 yds
- 1 Water container, holds 3.5 gallons
- 1 Whistle, water proof matches
- 1 Hygiene comfort kit, including toothbrush, toothpaste, shampoo, lotion, soap, razor, deodorant, washcloth, comb, and mesh shower bag
- 1 -45-piece First aid kit, including compresses, adhesive bandages, first aid tape, antibiotic ointment, antiseptic wipes, hand sanitizer, scissors, gauze, and latex-free gloves

Terrorism 1962

“There is another type of warfare—new in its intensity, ancient in its origin—war by guerrillas, subversives, insurgents, assassins; war by ambush instead of combat, by infiltration instead of aggression, seeking victory by eroding and exhausting the enemy instead of engaging him...It preys on unrest...”

John F. Kennedy, 1962

- Terrorist acts are selected to favorably impress the terrorist group and its supporters and to dismay the targeted victims.
Defining Terrorism

No single, universally accepted, definition of terrorism.

- One definition: “the calculated use of violence or threat of violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological”

- **Code of Federal Regulations**: “the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives”
  
  ➢ Can be domestic or international, depending on the origin, base, and objectives of the terrorist organization.

Terrorist Strategies

- Create chaos and confusion
- Undermine societal infrastructure
  - Transportation networks
  - Communications systems
  - Public health systems
- Undermine confidence in government
- Draw media attention
- Drive public opinion

Examples of Terrorist Attacks

- Oklahoma City 1995 Bombing
- 2001 World Trade Centers
- 1995 Tokyo Sarin Attack
Groups That Threaten

- Lone individual “Lone wolf” - Unabomber
  - Unabomber,” by far the most difficult to detect.
- Identified local or non-aligned terrorist groups
- Internationally sponsored
- Doomsday cults
- Insurgents

Terrorism Raises The Disaster Stakes

Disaster concerns are no longer just weather-related!

September 11, 2001
$40 billion; 2,751 deaths

Boston Marathon 2013

Potential Terrorist Targets

- Enclosed spaces
- Large crowds (high profile events)
- Critical facilities and infrastructure
- Accessible facilities with significant hazard / damage potential (materials in transit)
- Facilities of interest to terrorists’ cause
Tools of Terrorism

- Usually violent, not condoned by society at large
- Conventional munitions and explosives
  - Scale up as required
- Terrorism just part of most effective campaigns
  - Long term
  - Psychological operations
  - Fund-raising
  - Socialization of the cause
  - Create a community of like-minded individuals

Biological Radiological & Chemical

- Radiologicals
- Biologicals
- Chemicals

See CDC & FEMA Web sites listed in references for physician training

Why CBRNE Terrorism?

- CBRNE incident difficult to recognize
- Large amount not needed in enclosed space
- Agents are available & relatively easy to manufacture
- Easily spread over large areas
- *** Psychological impact **
- Incident can overwhelm existing resources

CBRNE = Chemical, biological, radiological, nuclear, explosive
Potential Probability vs. Impact

Anthrax Case Status (CDC 12/05/01)

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CBRNE Agent Sources

- Home production
- Laboratory / commercial production
- Industrial facilities
- Foreign military sources
- Medical / university research facilities
- Nuclear facilities
2001 Anthrax Attack

Mediastinal widening

Proliferation of Anthrax Hoaxes

B'nai B'rith, Washington, D.C.
April 1997
30 persons decontaminated

Post Office, Columbus, GA
Jan 1999
3 persons decontaminated

Indianapolis, IN
Sep - Dec 1998
10 incidents
multiple incident per day

CBRNE News Bureau, Atlanta, GA
Jan 1999, 3 blocks evacuated
12 persons decontaminated

Los Angeles, CA
Sep 98 - Jan 99
16 incidents
Estimated cost: $4 - 5 Million

Washington Post & Old Executive Building
Jan 1999
2 incidents on same day

Limitations of CBRNE Agents

- Effective dissemination difficult
- Delayed effects can detract from impact
- Counterproductive to terrorists’ support
- Potentially hazardous to the terrorist
- Development and use require skill
Very personnel resource intensive

Terrorism Crisis And Consequence Management

Tiered Disaster / Emergency Response
Are Our Hospitals Prepared?

- Is the US healthcare system prepared?
- We appear to be... each Hospital, EMS agency, Law enforcement agency, Fire department, and Community has...
  - a disaster plan
  - properly documented drills
  - annual training documented
  - Joint Commission Hospital Drills
- But... Are physicians prepared?

A Disaster Occurs!

What is my physician role if Incident Command is activated?

Physician Preparation 101

- Step 1
    - Knowing the risks in your region can help you better prepare.
- Step 2
  - Clarify your physician role in a disaster – Critical!
    - Understand your professional role in the hospital plan and HICS.
- Step 3
  - Participate & practice in mass casualty disaster drills
  - You are not prepared until you make a plan & practice!
Emergency Drills

- Helps everyone from first responders to the hospital staff practice and prepare for real emergencies.
- Scenario should be regarded as if is real
- Practice builds mental confidence and skills that kick in when faced with a disaster
- Practice like it is the real thing

Medical Anti-Terrorism Planning

- High proportion affected, non-injured personnel
- Security problems
- Existing and on-going “usual” care requirements
- Media attention
- Pressure on public health infrastructure
- Pets and agricultural animals

M.A.S.S. Triage
Also Known as MASCAL

- M – Move
- A – Assess
- S – Sort
- S – Send

M.A.S.S. Triage
- A disaster triage system that utilizes US military triage categories with a proven means of handling large numbers of casualties in a mass casualty incident (MCI)
Mass Casualty Incident (MCI) “Mascal”

- First question: “I am seeing a trend where a MCI is evolving such as a CBRN?”
- The first step in identifying an MCI is knowing your own capabilities.
- Any incident that exceeds the responder’s or receiving hospital’s capability to treat or transport is basically a Mass Casualty Incident.
  ➢ May be present as a result of a lack of prehospital or in-hospital resources (or both).

“Id-Me” !!!

- “Id-me”!
  A mnemonic for sorting patients during MCI triage.
  Utilized effectively in the M.A.S.S. Triage model.
  I - Immediate
  D - Delayed
  M - Minimal
  E - Expectant
  D - Dead

Disaster Acronym Paradigm

D: Detection
I: Incident Command
S: Safety & Security
A: Assess Hazards
S: Support
T: Triage & Treatment
E: Evacuation
R: Recovery
**Incident Command System (ICS)**

- Born and refined in the Fire Service
  - Managing wildfires in early 1970’s
  - Interagency task force collaborative effort
- Uniform structure
- Clearly delineated roles & responsibilities
- Clear chain of command & communication

**The Basics**

- "Commander"
- Unified Command
  - Planning
  - Logistics
  - Operations
  - Finance
- "Thinkers" "Getters" "Doers" "Payers"
The Joint Commission & NFPA 99 require an “all-hazards” incident command structure

- Can be coordinated with the command system in the community
  - Utilizes the same terminology as the community ICS
- Flexible enough to allow activation and deactivation of components, based on the specific event

TJC and NFPA require a management structure that explicitly addresses

- Patient care
- Staff/family support
- Logistics of critical supplies
- Media
- Security

The Language of Emergency Management
What is HEICS?
Hospital Emergency Incident Command System

- An “all-hazards” command structure
- A universal link with outside resources

HEICS Provides...

- A dependable chain of command
- Improved communication through common language
- Flexibility
- Prioritization of tasks
- Organized documentation system
- Effective mutual aid planning

HICS Now Supersedes the Hospital Emergency Incident Command System (HEICS III)

- Supersedes the Hospital Emergency Incident Command System III, (HEICS III)
- Provides a way to use the Incident Command System (ICS) in the hospital/healthcare setting, consistent with the National Incident Management System (NIMS)
- Designed to help hospitals and communities improve emergency management planning, response, and recovery activities for unplanned incidents and planned events
- Applicable to all kinds of emergency responses
Hospital Incident Command System (HICS)

- System for managing emergent and non-emergent situations
- Provides hospitals with required tools to address the event
- HICS initiated by an internal/external event
  - Flexible in scale
  - Only those positions needed are activated
- Administrative position assumes role as Incident Commander

Physician Responder

Best if a member of a recognized, organized response team who has been invited and participates in regular training.

Communications

- Redundant communication systems
- Emergency Responders
  - 2-way radios
  - Cell phones
  - Ham radios
  - Satellite phones
- Nursing Staff
  - Regular phones
  - Special pagers
  - Red phones – located at the Nursing (Communication) station on patient unit
Planning Resources
- Answers a multitude of questions on disaster preparedness
  - www.EDEN.lsu.edu/resources/np
- Through a national Web site and an email listserv, EDEN delegates in each state share information on:
  - Natural disasters
  - Man-made disasters
  - Terrorism-related disasters

Family Preparedness Site
- Extension Disaster Education Network
  - http://eden.lsu.edu/EDENCourses/FamilyPreparedness/Pages/CourseMaterials.aspx
  - http://eden.lsu.edu/Pages/default.aspx

Resources
- Psychosocial Issues for Children and Families in Disasters
  - A Guide for the Primary Care Physician
Resources

**Toddles and Preschoolers**
- Reaction reflects that of parents
- Regressive behaviors
- Decreased appetite
- Vomiting, constipation, diarrhea
- Sleep disorders (insomnia, nightmares)
- Tic, stuttering, temper tantrums
- Clinging
- Recruitments via play
- Exaggerated startle response
- Irritability
- Posttraumatic stress disorder

**School-Age Children**
- Most marked reaction
- Tear, anxiety
- Increased hostility with siblings
- Somatic complaints
- Sleep disorders
- School problems
- Social withdrawal
- Recruitments via play
- Apathy
- Posttraumatic stress disorder
- Decreased interest in peers, hobbies, school

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**Resources**

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<th>Table 1: Developmental Considerations in the Comprehension of Death in Children and Adolescents</th>
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<td><strong>Result of Death</strong></td>
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<td><strong>View of Death</strong></td>
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**Resources**

**International Health Training in Complex Humanitarian Emergencies**

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**MGC**
Tips For Talking to Children After a Disaster

- Provide opportunities to talk about what they are seeing on television and ask why.
- Don’t be afraid to admit you don’t know all the answers.
- Answer why. At a level the child can understand.
- Establish a family emergency plan (sense of doing something is helpful).
- Monitor children’s TV watching. They don’t need to see events over & over. Watch with children.
- Help kids to understand there are no bad emotions.
- Try to not focus on blame.
- In addition to tragic things seen, help kids focus on good things such as heroic actions, reuniting of families, assistance offered by people throughout the world.

For children closer to disaster

- Disasters often reawaken a child’s fear of loss of own parents when parents are preoccupied with own fears — consider family counseling.
- Families may permit some regressive behavior weaning off by leaving bedroom door open, night lights, extra time with parents.
- Parents may have trouble leaving child after a disaster — may be able to use child’s problem as a way of asking for help themselves.
- Get the children into some sense of routine of school and play even if displaced.
- Teachers can help kids with art, and play activities, encouraging group discussions and presentations about the disaster.

Summary

- Emergency preparedness involves planning.
- Be informed about hazards that can affect you and your family.
- Develop a home emergency plan and supplies.
  - When you know your family is ok, you will be more effective as you deal with the disaster as a physician.
- Avail yourself of medical courses offered to recognize and treat Chemical, Biological agents.
- Participate in hospital and community drills, you will be more effective and confident.
### References 1

- **Communications**
  - https://www.fcc.gov/general/tips-communicating-emergency
- **Tornadoes**
- **Earthquakes**
  - https://earthquake.usgs.gov/earthquakes
- **Personal and family preparedness plans and suggested supplies:**
  - http://www.redcross.org/prepare/location/home-family
- **Federal Emergency Management Agency (FEMA)**
  - http://www.ready.gov/be-informed
  - https://www.fema.gov/

### References 2

- **Education sites:**
- **Incident and Hospital Command System:**
- **Center for Disease control:**
  - Excellent site with links to Bioterrorism, radiation and chemical training and recognition;
  - https://emergency.cdc.gov/coping/index.asp
  - Bioterrorism Readiness Plan: A Template for Healthcare Facilities
- **Hospital Command System**
  - ICS part of the National Incident Management System (NIMS)
  - https://www.remm.nlm.gov/ics_hics.htm

### References 3

- **Bioterrorism reference & training for physicians:**
  - https://emergency.cdc.gov/bioterrorism/
- **Chemical accidents/terrorism diagnosis and treatment training for physicians**
  - http://emergency.cdc.gov/chemical/
- **The following link is to the FEMA training site. Tons of presentation/training information:**
  - https://training.fema.gov/is/crslist.aspx
    - All of the courses (ISP and NIMS) are excellent resources:
      - IS-22, Are you Ready? An In-depth Guide to Citizen Preparedness
      - IS-100.HCB, Introduction to the Incident Command System (ICS 100) for Healthcare/Hospitals
      - IS-200.HCa, Applying ICS to Healthcare Organizations
- **Extension Disaster Education Network**
  - http://eden.lsu.edu/Pages/default.aspx
  - http://eden.lsu.edu/EDENCourses/FamilyPreparedness/Pages/CourseMaterials.aspx