### Definition of a Disaster

A sudden calamitous event bringing great damage, loss, or destruction

### Types of Disasters

<table>
<thead>
<tr>
<th>Natural</th>
<th>Intentional Acts of Violence</th>
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<tbody>
<tr>
<td>Meteorological (eg, hurricane, blizzard, heat/cold wave)</td>
<td>Bombing</td>
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<tr>
<td>Geographical (eg, earthquake, volcanic eruption, flood)</td>
<td>Shooting</td>
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<tr>
<td>Other (eg, fire, explosion, disease outbreak)</td>
<td>Nuclear</td>
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### Issues or Challenges

- **A sizable portion of physicians (48-56%) report a lack of training regarding disasters**
- **Local governments without adequate disaster management plans**

#### Lack of resources

- Energy Generators
- Water storage
- Food storage
- Medications back up
- Sanitizing and cleaning materials
- Construction materials
- Means of communication with other countries
- Refrigeration
- Dialysis
- Oxygen supply
- Air conditioning
Disaster Risk Reduction

Disaster risk reduction is a systematic approach to identifying, assessing and reducing the risks of disaster. It aims to reduce socio-economic vulnerabilities to disaster as well as dealing with the environmental and other hazards that trigger them.

Sendai Framework for Disaster Risk Reduction

This is an international document which was adopted by the United Nations member states between 14th and 18th of March 2015 at the World Conference on Disaster Risk Reduction held in Sendai, Japan in June 2015.

Sendai Framework for Disaster Risk Reduction (2015–2030)

The Sendai Framework is a 15-year, voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders.

Four priorities for action

Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

Priority 1. Understanding disaster risk

Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.
Four priorities for action

Priority 2. Strengthening disaster risk governance to manage disaster risk
Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation. It fosters collaboration and partnership.

Priority 3. Investing in disaster risk reduction for resilience
Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction
The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures.

Seven Global Targets
- REDUCE
  - Mortality
  - Affected people
  - Economic loss
  - Damage to critical infrastructure & disruption of basic services
- INCREASE
  - Countries with national & local DRR strategies
  - International cooperation to developing countries
  - Availability and access to multi-hazard early warning systems & disaster risk information and assessments

Health Equity
"Health equity" = ideally everyone should have a fair opportunity to attain their full health potential and that no one should be disadvantaged from achieving this potential.

A reminder
PC Kim Yu, MD
PC Kim Yu, MD
Disparities in Disasters

- Access to Resources and Health Services
- Exposure to Hazards
- Inequalities
- High Vulnerabilities to Disease
- Poverty
- Environment

Roles in Disaster

- Train to provide on-site intensive care, urgent care, and triage intensive care
- Anticipate where and how you may be needed
- Ensure that the most likely and highest impact to the facility should be based in the facility's hazard vulnerability analysis
- Avoid starting treatment too late
- Training should be based on the geographic area and facility type

Complex Disaster

- Roles of Government
- Roles of Organized Structures
- NGOs
- Crisis Standards of Care
- Quarantelli Paradigm – incident command centers, DMAT etc.

Quarantelli (1995) on Need for Minimum Consensus: “...To be concerned about what is meant by the term ‘disaster’ is not to engage in some useless or pointless academic exercise. It is instead to focus in a fundamental way on what should be considered important and significant...”

Hurricane Maria September 18, 2017
Puerto Rico – Hurricane Maria – the importance of collaboration

What started with one generator & one FB post

Led to more than $103,000 being raised, 66 generators, food, supplies, medications, water

Including a $25k donation from the AMA Foundation
Lives saved - thousands
60 tons of medicines, medical supplies & equipment to Puerto Rico mostly on private planes, airline donations, & purchasing on island. On the receiving end were hospitals, clinics, cancer centers, shelters, senior citizen, and group homes for children in 70 of the 78 municipalities of Puerto Rico, including the offshore islands of Vieques and Culebra.

ABC Channel 7 news
WISC TC Channel 3 news
Multiple radio and newspaper or magazine articles, blogposts, Facebook live events, tweets, even Catholic World health news!

Jeep brigade traveled through closed roads delivering medications, supplies, food and water.

Consequences of Advocacy

Priceless

Options for Water

Filters – personal – lifestraw
household – biosand
community based - waterstep
Other: Silver impregnated water purification bars

Keeping your team safe

• Dan Diamond
• Haiti Earthquake

Planning for the future

• Triage training
• Supply lists and chain
• Build your team
• Find community partners
• Store supplies
• Communication
Prepare prepare prepare

• Emergency Bag
• Food
• Water
• Medications
• Light
• Power
• Psychological First Aid Training

Hurricane Dorian, Bahamas Sept, 2019

Provide what is needed

• Food
• Water
• Clothes
• Underwear
• Housing
• Body Bags
• Trauma Informed Physicians
• Child Life Specialists
• Wheelchairs
• Hope

Tips and pearls:
- Be sensitive to culture
- Listen
- Be humble
- Listen again

Barriers to addressing disparities and vulnerability in disasters:

• Government mistrust.
• Layered disasters. Hazards tend to harm segments of the population that were already disadvantaged before a disaster.
• Cost

• Organizational vulnerabilities
• Misconceptions - segments of the populations are marginalized, causing systematic exclusion from the social environment.
Training with contextual adaptation

- Advantage of training is a physician workforce that has a higher response rate and is more comfortable in their roles in a disaster

Inclusion Collaboration Engagement

Other resources

- Federal
- Local
- State Chapters
- AAFP Foundation
- Facebook groups
- Member Interest Groups
- WONCA
- Use of Social Media
- Others

Health Equity Tools

- Neighborhood Navigator
- Health Landscape
- Advanced Trauma Life Support: [www.facs.org/trauma/atls/index.html](http://www.facs.org/trauma/atls/index.html)
- Federal Emergency Management Agency (NIMS, ICS, and other online training): [www.fema.gov/about/training/index.shtm](http://www.fema.gov/about/training/index.shtm)
- International Critical Incident Stress Foundation (management information and training): [www.icisf.org/](http://www.icisf.org/)
- JumpSTART Pediatric Triage Tool: [www.jumpstarttriage.com/](http://www.jumpstarttriage.com/)
- National Disaster Life Support Foundation: [www.ndls.com/](http://www.ndls.com/)

Recommended Disaster Medicine Curriculum Guidelines for Family Medicine Residents

- **Medical Knowledge**
  - A basic understanding of the primary importance of safety in disaster responses, including personal protective equipment, decontamination, and site security.
- **Patient Care**
  - An understanding of the principles of triage and the ability to effectively perform triage in a disaster setting.
  - The clinical competence to provide effective care in a setting of extremely limited resources.
- **Systems-based Practice**
  - An understanding of psychological first aid and caring for responders.

Online Resources for Training and Practice of Disaster Medicine Training Resources

- Advanced Trauma Life Support: [www.facs.org/trauma/atls/index.html](http://www.facs.org/trauma/atls/index.html)
- Federal Emergency Management Agency (NIMS, ICS, and other online training): [www.fema.gov/about/training/index.shtm](http://www.fema.gov/about/training/index.shtm)
- International Critical Incident Stress Foundation (management information and training): [www.icisf.org/](http://www.icisf.org/)
- JumpSTART Pediatric Triage Tool: [www.jumpstarttriage.com/](http://www.jumpstarttriage.com/)
- National Disaster Life Support Foundation: [www.ndls.com/](http://www.ndls.com/)
General Resources
- American Academy of Family Physicians: www.aafp.org
- American Hospital Association (AHA) Emergency Readiness: www.hospitalconnect.com/aha_key_issues/disaster_readiness/
- American Medical Association: www.ama-assn.org
- Association of State and Territorial Health Officials: www.astho.org
- Centers for Disease Control and Prevention: www.cdc.gov
- Centers for Disease Control and Prevention Emergency Preparedness and Response: www.bt.cdc.gov
- US Army Medical Research Institute of Infectious Diseases: www.usamriid.army.mil/index.htm

Role Play
- Break into teams
- Assign the following roles: Team Leader, Supply coordinator, Transportation, Safety manager, Food/water, Communications. Also assign a time keeper to keep your team on task. You have 7 minutes. Be prepared to report out what your group’s plan will be.
- Create a flow sheet highlighting what you will do for each role in the event of the following disaster
- Disaster description – you are in a community of 10,000. An earthquake 8.3 on Richter scale has devastated your town. Many buildings collapsed. There are only 5 doctors to help. The hospital in town is non operational. You have one small clinic that has one room that is usable. You have intermittent electricity, and little water left. Only one street comes in and out of town. The nearest large town is 6 miles away. They also are devastated.

Conclusion
“do something, do more, do better.”
- Professor Sir Michael Marmot, October 2019

• Family Physicians are key players in a disaster – our place in the community is so much greater than just our office and hospital work.
• Health Equity becomes even more important during times of disaster

References
- Sendai Framework for Disaster Risk Reduction 2015-2030 Supported by UNISDR (United Nations Office for Disaster Risk Reduction)
- Southern Medical Journal, Disaster Management and Physician Preparedness, Ajay Kumar, MD, FAAFP, and Eilene Wibblov, MD, Jan 2013, Volume 106, Number 1.