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MODULE 4

Emergencies: Prevention, Preparedness, Response and Recovery

Tamar Klaiman, PhD, MPH
Assistant Professor of Health Policy and Public Health
University of the Sciences



Public Health
Learning Modules

Using **Healthy People 2020**
to Improve Population Health



ASSOCIATION FOR PREVENTION TEACHING AND RESEARCH



College of Health Professions
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Part 1: Introduction and Prevention



Part 1 Learning Objective

- Describe the history of emergencies and their influence on prevention activities.

HP 2020 Objectives

- Reduce the time necessary to issue official information to the public about a public health emergency
- Reduce the time necessary to activate designated personnel in response to a public health emergency
- Increase the proportion of Laboratory Response Network (LRN) laboratories that meet proficiency standards
- Reduce the time for State public health agencies to establish after action reports and plans following responses to public health emergencies and exercises

Outline

- National Health Security Strategy
- Types and Impacts of Emergencies
- Response Challenges Inform Prevention

Definitions

Emergency Preparedness: “improve the nation’s ability to prevent, prepare for, respond to, and recover from a major health incident” (CDC)

Health Incident: “a wide range of natural and man-made phenomena that may have health consequences that include, but are not limited to, infectious disease outbreaks, hurricanes, earthquakes, storms, tornadoes, tsunamis, hazardous material spills, ... terrorist attacks, and fires” (Dept of HHS)

National Health Security Strategy (NHSS)

“The purpose of the NHSS is to refocus the patchwork of disparate public health and medical preparedness, response, and recovery strategies in order to ensure the nation is prepared for, protected from, and resilient in the face of health threats or incidents with potentially negative health consequences.”

<http://www.phe.gov/Preparedness/planning/authority/nhss/Pages/default.aspx>

NHSS Goals

1. Build community resilience
2. Strengthen and sustain health and emergency response systems



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Natural vs. Man Made Disasters



Natural Disasters

NATURAL

- Caused by an event “out of human control”
- Generally result in significant community resilience
- Neighbor helping neighbor
- Approximately 8-10% of population may develop PTSD or other anxiety disorders



Man-made Disasters

MAN-MADE / Human Intention

- CBNR = chemical, biological, nuclear, radiological
- Neighbor competing with neighbor
- CBNR events (especially terrorism)
 - create more psychological problems than physical ones
 - higher rates of PTSD, depression, anxiety disorders in the affected population - as high as 45%

Emerging Infections and Bioterrorism May Look Alike

- Outbreak of a rare disease
- Outbreak where disease not endemic
- Disease out of natural season
- Unusual age of those ill
- Unusual clinical presentation - especially respiratory symptoms

Naturally Occurring Outbreaks Throughout History

- Legionnaires, 1976
- Hantavirus pulmonary syndrome, 1993
- Plague, India, 1994
- Monkeypox, Zaire, 1996
- West Nile, NYC, 1999

Consequences of Disease Outbreaks/Bioterrorism

- High numbers of “worried well”
- Possible limited medical intervention available
- competition with neighbors
- Fear of being exposed
- Reduced response capability because of illness

September 11, 2001 Terrorist Attacks

- 3 coordinated attacks (NYC, Shanksville, PA, Pentagon)
- Almost 3,000 deaths
- World Trade Center collapse



Impact of Hurricane Katrina (2005)

- Over 1800 deaths in the hurricane and subsequent flooding
- \$81 billion in property damage
- Army Corps of Engineer failure blamed for flooding



2009 Pandemic H1N1

- 17,000 deaths world-wide
- Over 700 American school closures
- Mexican cancellation of Cinco de Mayo
- Largest vaccination campaign in US history - 61 million people vaccinated



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- **Response Challenges Inform Prevention**

Major Challenges to a Response

Care:

- Immediate overwhelming of nearest facility with lower priority patients
- Need to be able to re-route patient transport
- Non-facility based triage
- Expedited discharge of non-critical patients and protection of already hospitalized patients
- Re-allocation and increase of healthcare personnel and resources

More Major Challenges

Cooperation:

- Sharing information
- Sharing resources
- Joint, shared, or delegated decision-making
- Requires mutual aid agreements and follow-through

More Major Challenges

Transport:

- Limited transport surge capacity.
- May require call-up of alternative means of transport
- Transport away from overwhelmed facilities
- Need to allocate patients between facilities



Situational Awareness:

- Facilities and responders need accurate and timely information
- Need to communicate information to one another

Examples of Prevention

- Army Corps of Engineers
- Vaccination
- Critical Infrastructure

Summary

- Previous emergencies have enhanced our understanding of preparedness and response challenges
- The NHSS was developed and offers a framework to help citizens and governments prepare for emergencies in a coordinated way
- There are various examples of prevention activities that can help mitigate the impact of an emergency.