National Emergency Management Summit

The Medical Disaster Planning & Response Process

Developing a Disaster Mindset: Myths & Stereotypes of Disasters

Committed to excellence in trauma care

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Those who cannot remember the past are condemned to repeat it.

George Santayana

Medical Disaster Planning & Response Process

- **1.02: Developing a disaster mindset**
- 2.02: Pre-event disaster planning
- 6.02: Joining forces to tackle disasters

Objectives

- Identify common myths of disasters
- Discuss how to overcome the common myths of disasters

6 P's of disaster response

- Preparation [1]
- Planning [2]
- Pre-hospital [2]
- Processes for hospital care [2]
- Patterns of injury [1]
- Pitfalls [2]

American College of Surgeons Committee on Trauma
Disaster Response and Emergency Preparedness Course

Preparation

- Myth #1: disasters are not preventable
  - Disaster = “evil star”
- Reality: most disasters are “predictable surprises”
  - Events may not be preventable
  - Crises and consequences may be ↓↓

Marine barracks, Beirut, 1983

Oklahoma City 1996

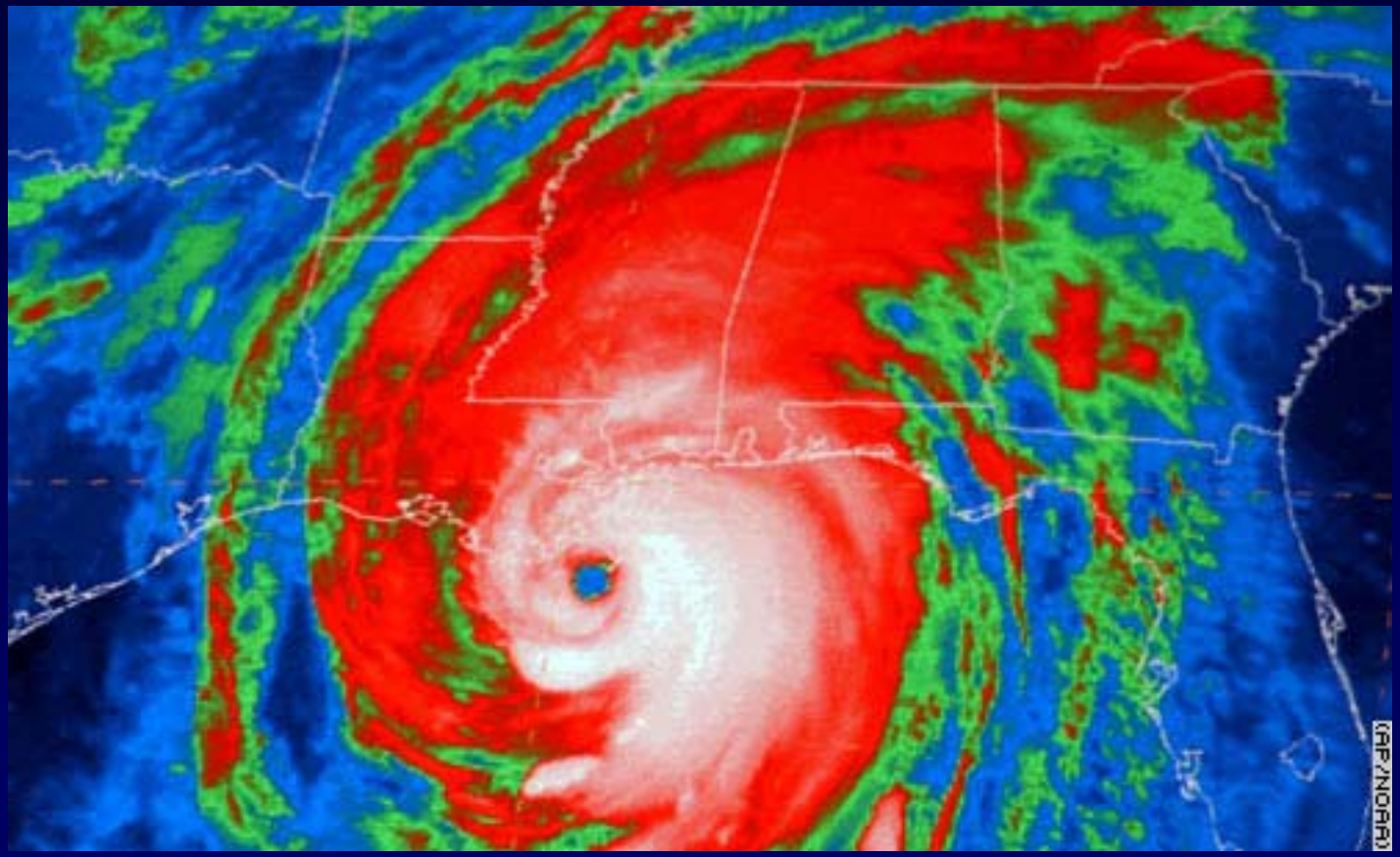
WTC bombing 1993

Photo By Bureau of ATF 1993 Explosives Incident Report

Lower Manhattan 2001

Mississippi flood of 1927

Gulf Coast 2005



Predictable surprises

- Leaders know a problem exists that will not solve itself
- The problem is getting worse over time

Bazerman MH & Watkins, MD, Predictable Surprises, 2004

Predictable surprises

- Fixing the problem
  - Certain (and large) upfront costs
  - Uncertain (and larger) future costs
- Natural human tendency = status quo

Bazerman MH & Watkins, MD, Predictable Surprises, 2004

Predictable surprises

- Small vocal minority benefits from inaction
- Leaders can expect little credit from prevention

Bazerman MH & Watkins, MD, Predictable Surprises, 2004

Planning

- Myth #2: disasters are freak occurrences that don't happen in all communities
- Reality: disasters happen with greater frequency than perceived in all communities

"All-hazards"

Man-made

- Explosion
- Fire
- Weapon violence
- Structural collapse
- Transportation event (air, rail, road, water)
- Industrial HAZMAT event
- NBC event

Natural

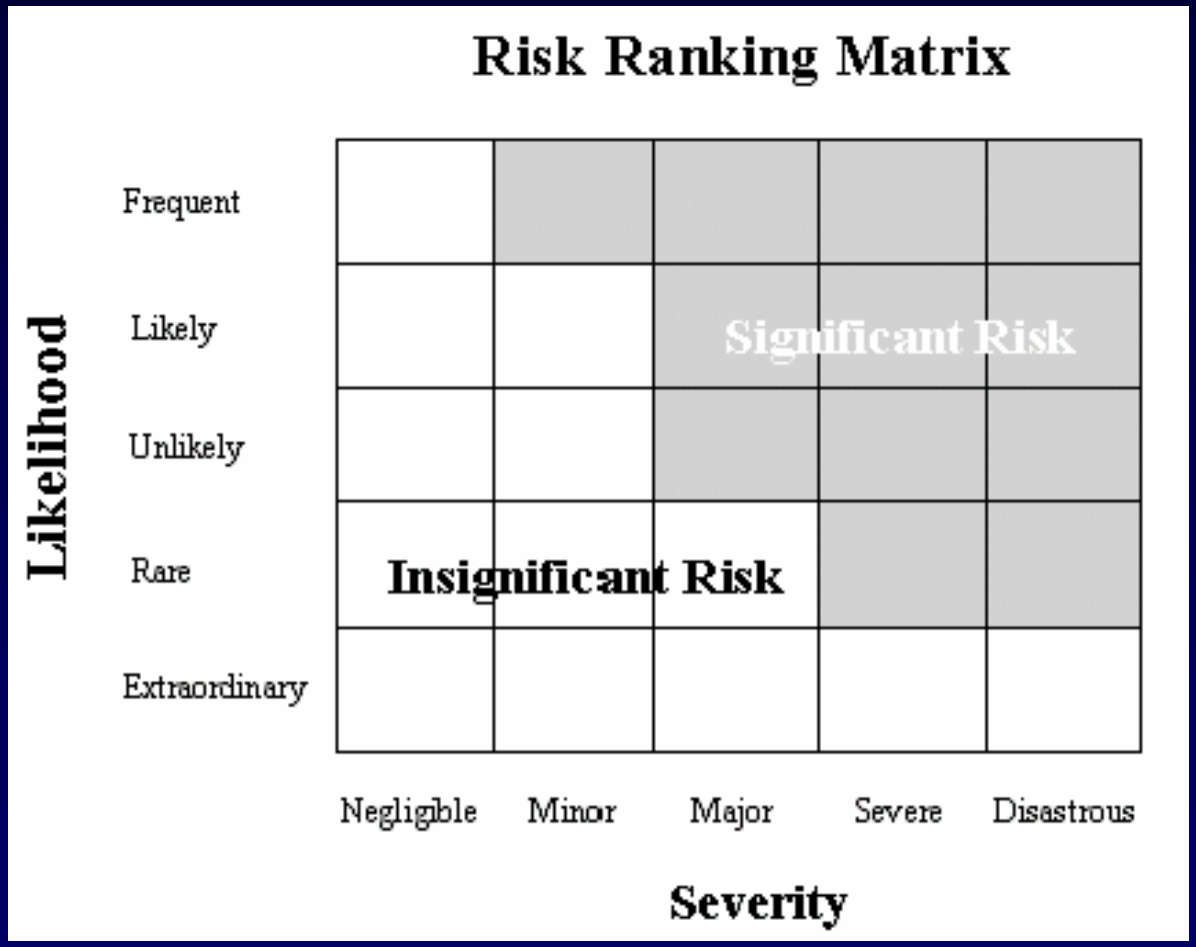
- Hurricane
- Flood
- Earthquake
- Landslide/avalanche
- Tornado
- Wildfire
- Volcano
- Meteor

"All-hazards" = mechanism of disaster

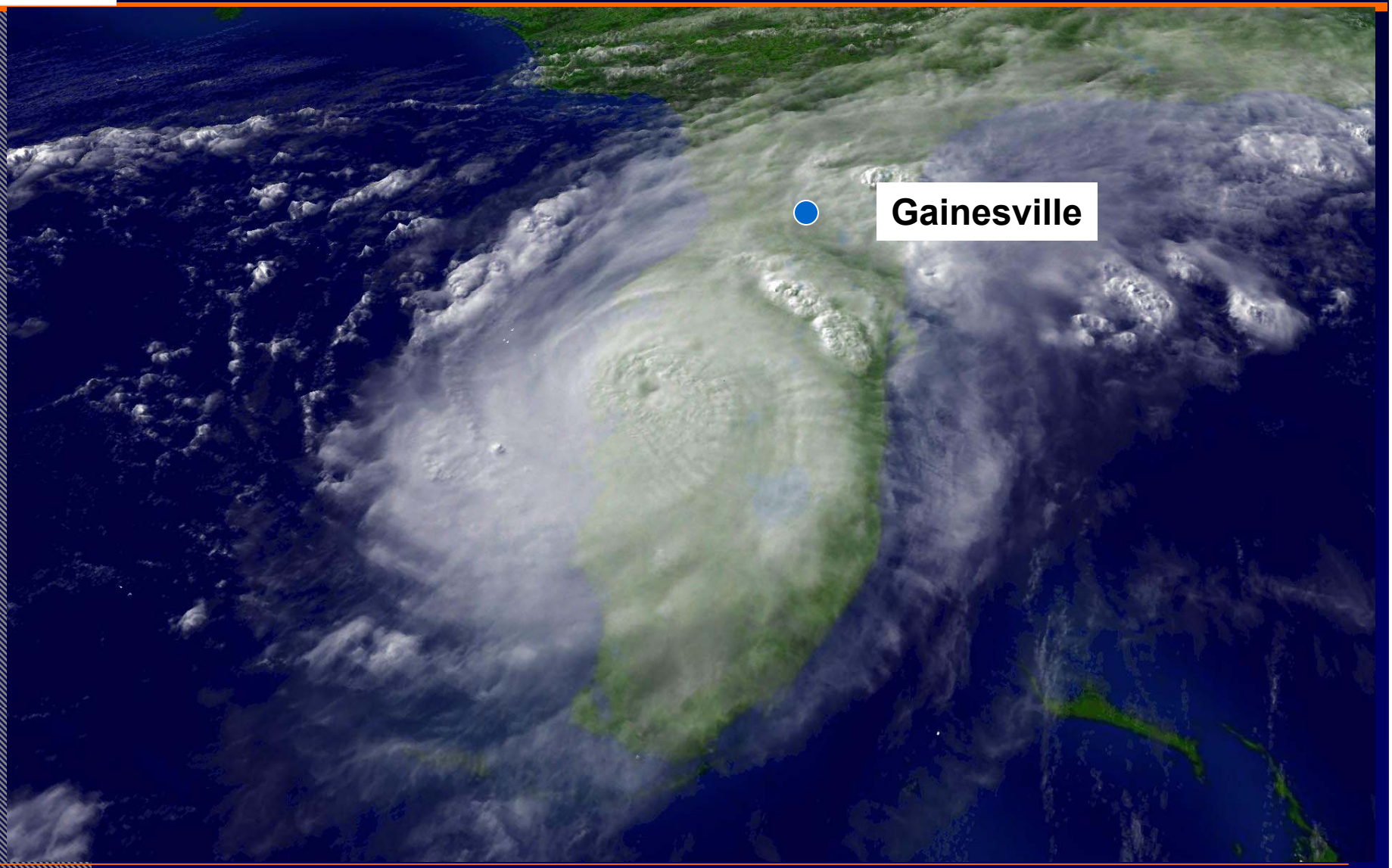
Hazard vulnerability analysis

- Events identified
  - Likelihood
  - Severity
  - Level of preparedness
- "Connects the dots" for emergency planning
- Shared community understanding

Hazard vulnerability analysis



Hurricane Charley 2004



Train derailment 2002

School bus crash 2006

Tornadoes 2007

UF & the Swamp

Crystal River nuclear power plant

Planning: risks

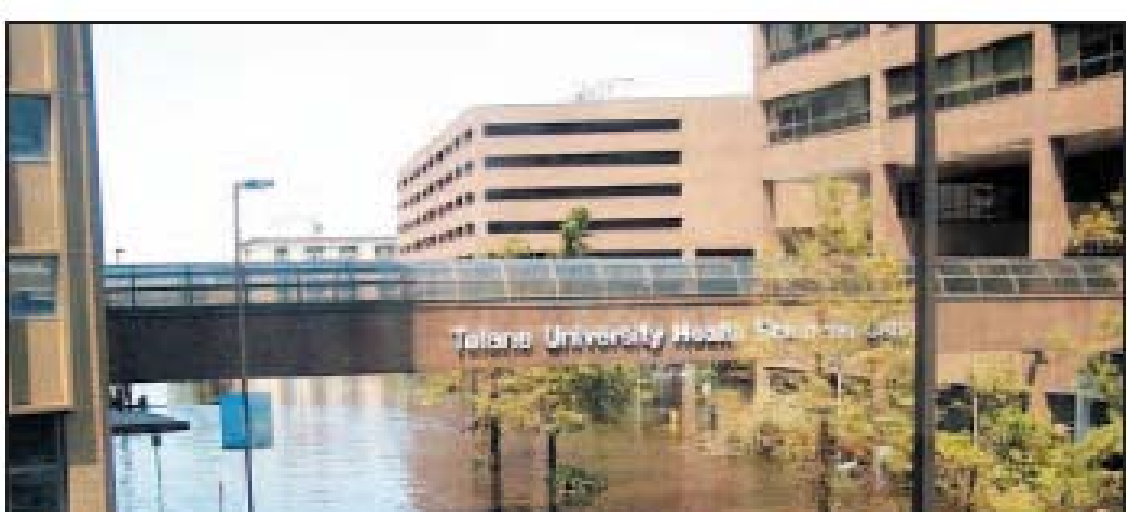
- ↑ population density
- ↑ settlement in high risk areas
- ↑ hazardous materials
- ↑ threat from terrorism

↓ risks with prevention and planning

Planning

- Myth #3: disaster = single event
- Reality: disasters often are dynamic chain events
  - Situational awareness key
  - Scene safety paramount

New Orleans 2005



... after the storm took an eastward turn, sparing flood-prone New Orleans a catastrophe.

USA Today, August 30, 2005

Lower Manhattan 2001

Oklahoma City, 1996

Shared tactical model

D	Detection
I	Incident command
S	Safety & security
A	Assess hazards
S	Support
T	Triage & treatment
E	Evacuation
R	Recovery

First, do no harm

Then, do good

National Disaster Life Support Program, American Medical Association

Planning: safety & security

- Protect responders and caregivers
- Protect the public
- Protect the casualties
- Protect the environment

Prehospital

- Myth #4: ideal human behavior occurs in disasters
- Reality: people are people

Real human behavior

- Most first responders self-dispatch
- Survivors carry out initial search & rescue
- Casualties bypass on-site services
- Casualties move by non-ambulance vehicles

Auf der Heide, Annals of Emergency Medicine, April 06

Real human behavior

- Most casualties go to closest hospital
- Least serious casualties arrive at hospitals first
- Most information about event comes from arriving patients and television

Auf der Heide, Annals of Emergency Medicine, April 06

Pre-hospital reality

- Planning should take into consideration
  - how people & organizations are likely to act
  - rather than expecting them to change their behavior to conform to the plan

Disaster Research Center

University of Delaware

Pre-hospital

- Myth #5: most survivors at the scene are critically injured
- Reality: most survivors at the scene are walking wounded

Disaster triage

- Initial survivors at scene of most disasters
  - 80% non-critical
  - 20% critical
- **Challenge**
  - Identify & prioritize critical 20%
  - Minimize critical mortality rate

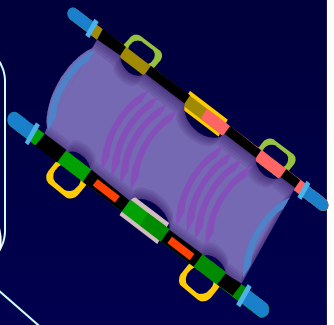
Disaster triage system

Injured

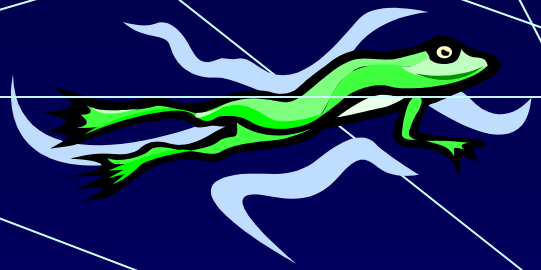
Scene
(1º triage)

Casualty collection area
(2º triage)

Trauma Center
(2+º triage)



Triage coordinating hospital
(1º triage)



Hospital
(2+º triage)

Hospital
(2+º triage)

Error-tolerant system

In the middle of difficulty lies opportunity.

Albert Einstein

(Hospital) processes

- Myth #6: mass casualty care = doing more of the usual care
- Reality: mass casualty care = minimal acceptable care

Mass casualty care

Greatest good for the greatest number based on available resources . . .

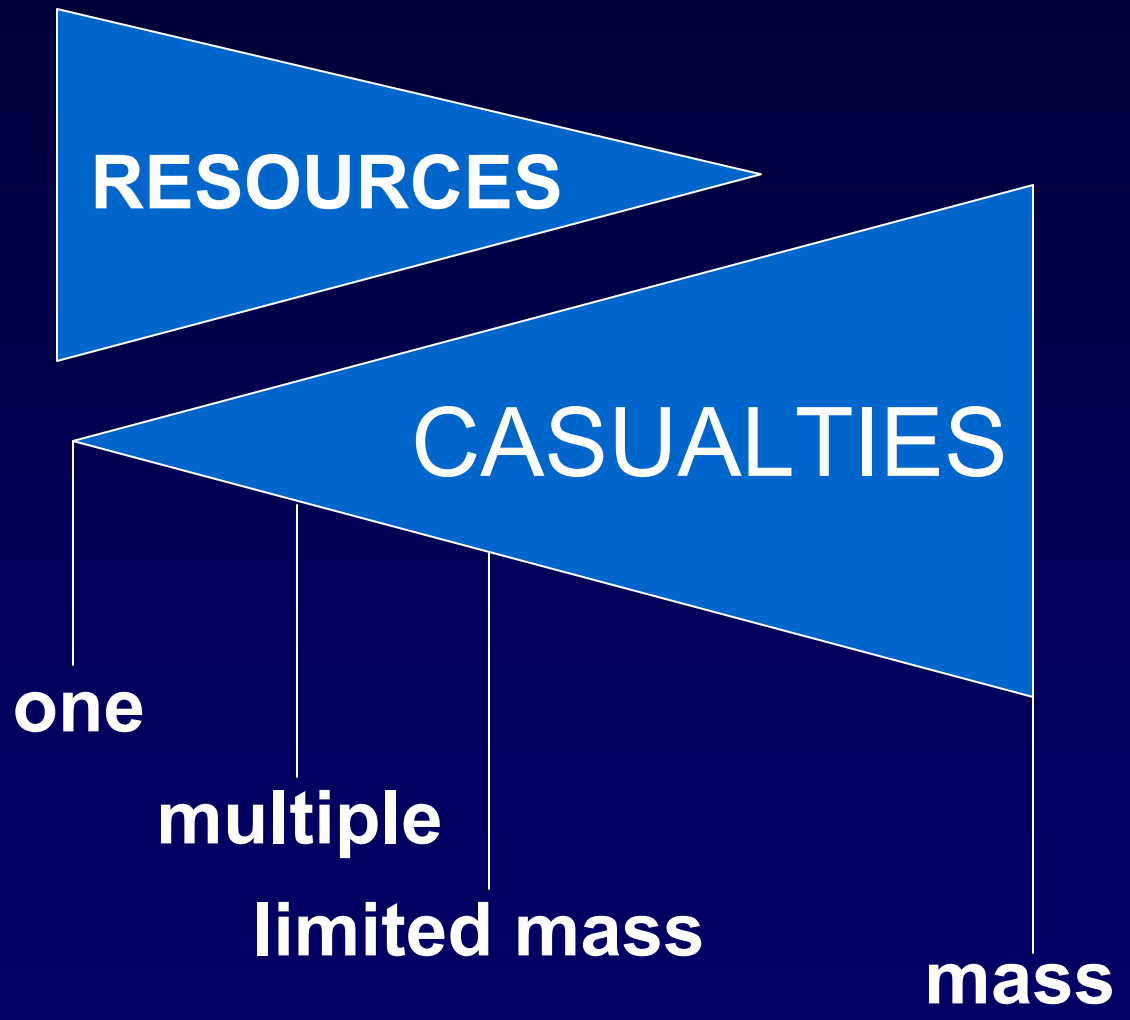
. . . while protecting responders and providers

Not simply doing more of the usual

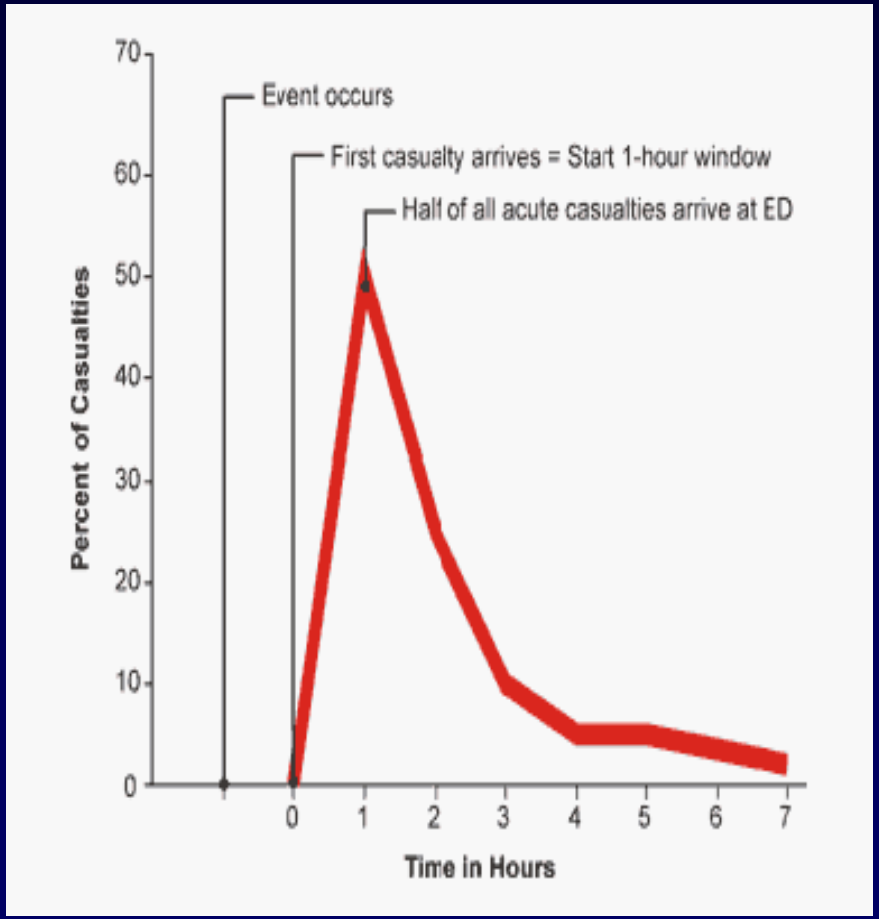
Minimal acceptable care

- Large casualty numbers
- Multidimensional injuries
- Healthcare needs > resources
- Severity, urgency, survival probability
- Occurs from scene to initial hospital +

Casualty population



Hospital casualties



Centers for Disease Control, 2003

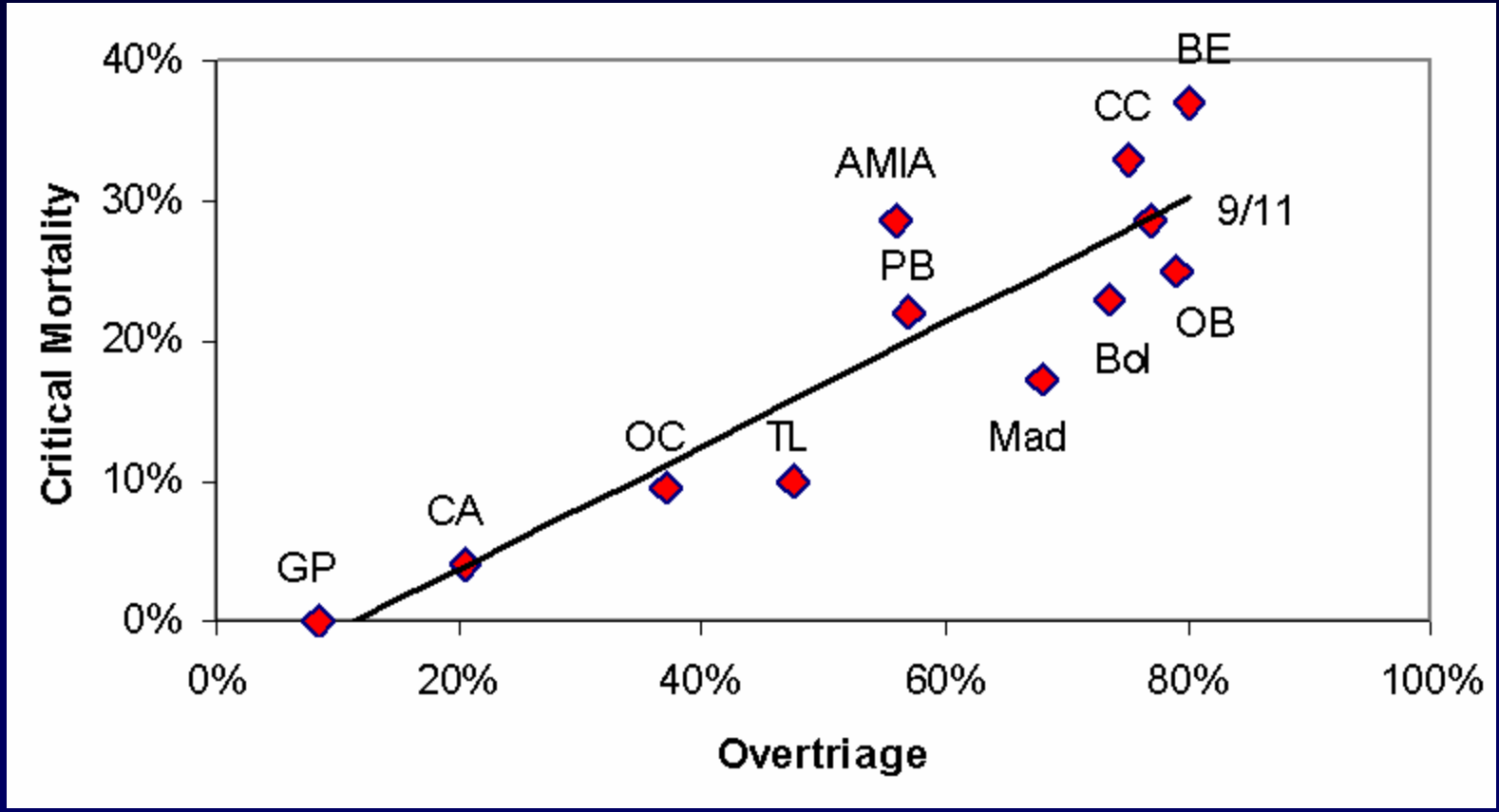
Surges

- Surge capacity: ↑ space + resources
- Surge capability: ↑ ability to manage presenting injuries & medical problems
- Not business as usual

Triage

- Undertriage
  - Critical casualty assigned to delayed care
- Overtriage
  - Noncritical casualties assigned to urgent care
  - Normally only a logistical problem
  - In disasters, distraction from critically injured

Over-triage ↓↓ outcomes



Frykberg, Journal of Trauma, 2002

(Hospital) processes

- Myth #7: disasters trigger massive blood supply shortages
- Reality: blood supply has surge capacity

Calls for blood

- Lower Manhattan 2001
  - 475,000 units donated
  - 258 used
- Madrid 2004
  - 17,000 units donated
  - 104 used

(Hospital) processes

- CNN effect is real
- A story will be reported
- Shape the story for the media
  - Ongoing media relationships key

Patterns

- Myth #8: most disasters generate high volume acute care needs

- Reality: most disasters
  - Expose high volume chronic care needs
  - Generate ongoing psychosocial needs

Chronic > acute care

Acute + chronic stress

Pitfalls

- Myth #9: effective initial disaster response requires a local federal response
- Reality: all disaster response is local for 72 hours

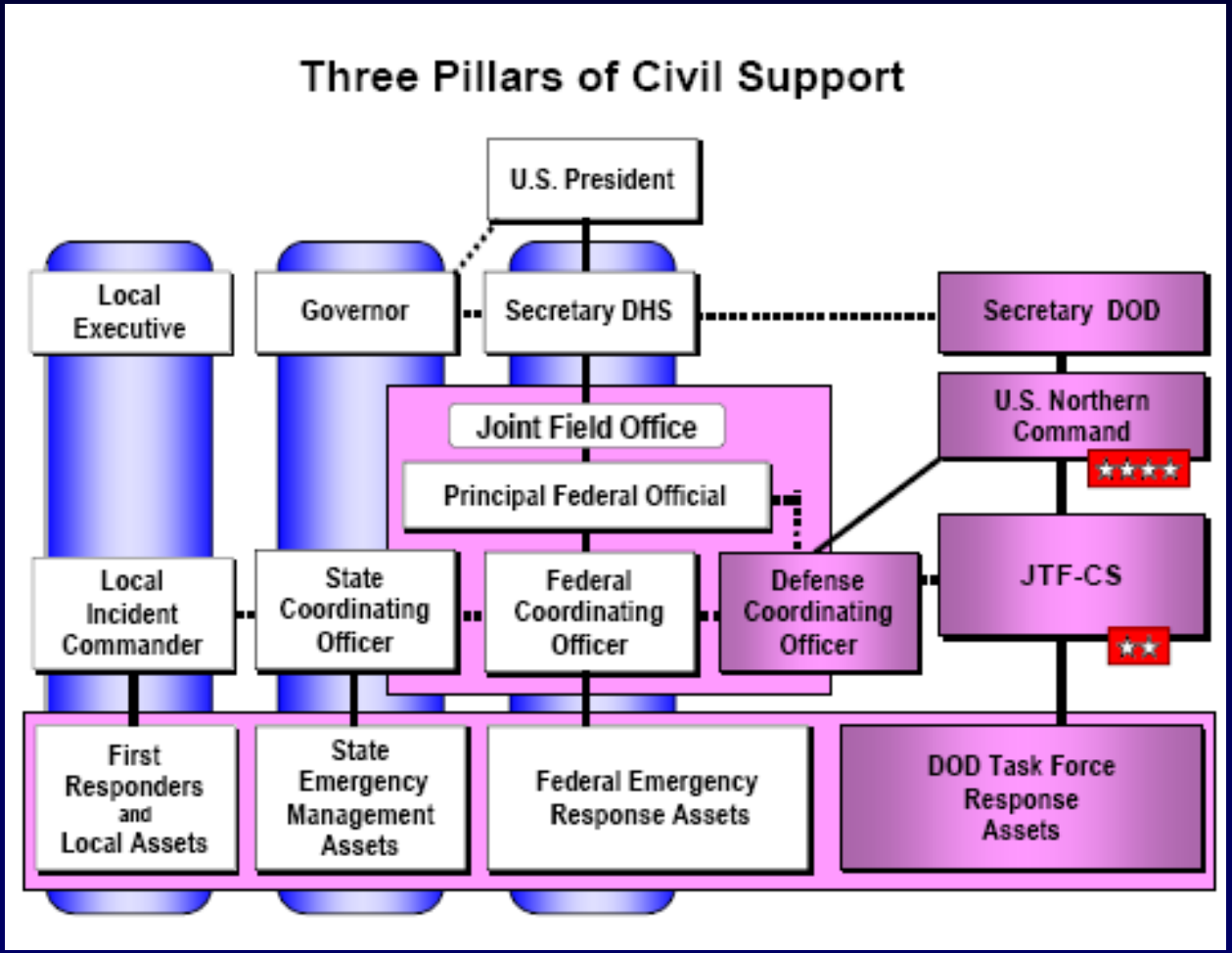
Personal preparedness

- Individual
- Family
- Home
- Work

Resource response

- I: Local resources only
- II: Local + regional resources
- III: Local + regional + national resources

Local before national



(*Source*: JTF Civil Support Command Briefing 2005 and JHM)

Pitfalls

- Myth #10: disaster plan = full preparation

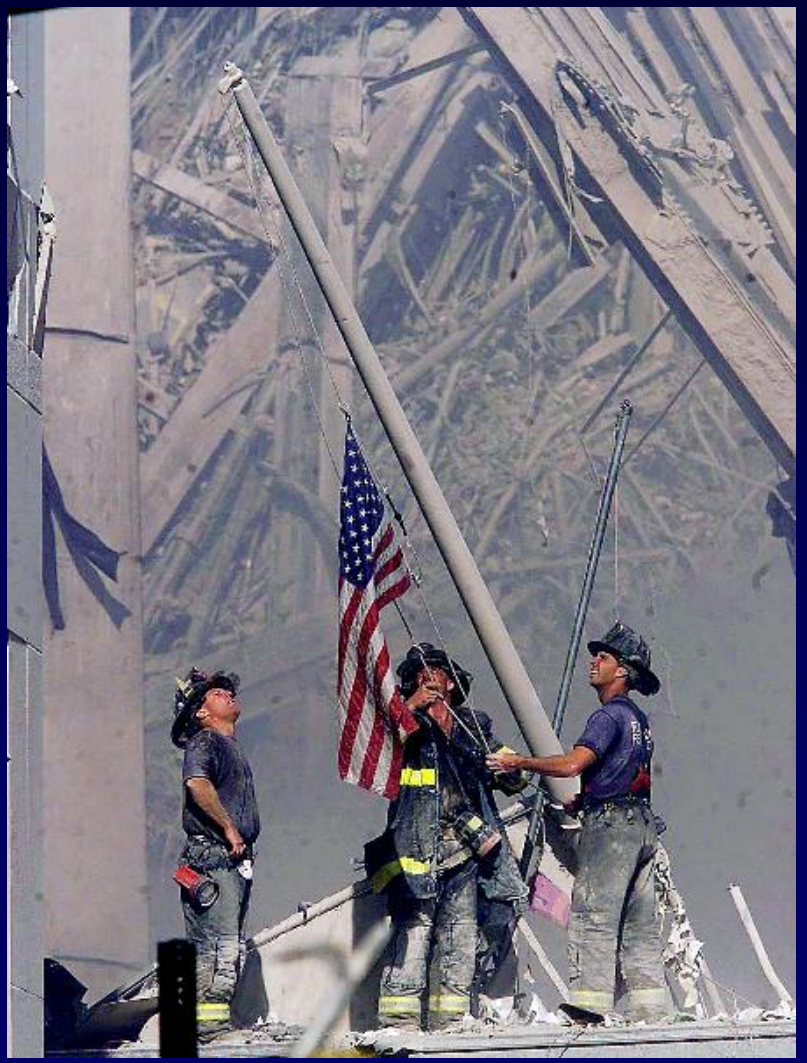
- Reality: disaster plans are relevant when
  - they are created across all stakeholders
  - they promote awareness of roles
  - they are practiced with realism

#1 pitfall: communication

- Starts with planning
- Continues through execution
- Cycles through post-event review and plan revision

"Train as you fight"

Long-term goal: recovery



Best practice evidence exists!

Science is the great antidote to the poison of enthusiasm & superstition.

Adam Smith

Committed to excellence in trauma care

Chance favors the prepared mind.

Louis Pasteur

Questions?

Summary

- Myths and stereotypes = false assumptions
  - Memories fade with time
- Overcome myths with evidence and relevance
  - Translate for the community
  - Make it sticky & ongoing

Thank you!

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