Understanding the Broad Context of Disaster Health Learning

Richard V. King, PhD
University of Texas Southwestern Medical Center

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Discussion

1. Key events and initiatives in disaster health education
2. Capabilities, competencies, and educational science
3. Towards a discipline of disaster health
Disasters…
...and more disasters
Disasters


📍 OKC Bombing 1995
📍 1st WTC Attack 1993
📍 Sarin Tokyo 1995
📍 9/11 Attacks
📍 Anthrax
📍 Hurricane Katrina
📍 Hurricane Rita
📍 SARS
📍 H1N1
📍 Haiti Earthquake
📍 Hurricanes Isaac & Sandy
📍 Boston Marathon
📍 Hurricanes Gustav & Ike
📍 Japan Tsunami & Fukushima Nuclear Plant
Disaster and Emergency Declarations

Major Disaster Declaration
• Invokes long-term federal recovery programs
• Intended to help victims, businesses & public entities

Emergency Declaration
• More limited in scope
• No long-term federal recovery programs
• Federal assistance & funding for a specific emergency need or to help prevent a major disaster from occurring

http://www.fema.gov/disaster-process-disaster-aid-programs
Disaster & Emergency Declarations 1990 to 2013

http://www.fema.gov/disasters/grid/year
Disaster & Emergency Declarations 1990 to 2013

http://www.fema.gov/disasters/grid/year
## Recent Major Disaster Declarations

<table>
<thead>
<tr>
<th>Year</th>
<th>Major Disasters Declared</th>
<th>Types of Disaster</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>48*</td>
<td>Severe storms, hurricanes, straight-line winds, tornadoes, snowstorms, freeze, flooding, mudslides, explosions, wildfires.</td>
</tr>
<tr>
<td>2012</td>
<td>47</td>
<td>Severe storms, hurricanes, straight-line winds, tornadoes flooding, snowstorms, landslides, mudslides, wildfires</td>
</tr>
<tr>
<td>2011</td>
<td>99</td>
<td>Severe storms, hurricanes, straight-line winds, tornadoes flooding, snowstorms, ice-jams, earthquakes, landslides, mudslides, wildfires, tsunami waves and debris</td>
</tr>
<tr>
<td>2010</td>
<td>81</td>
<td>Severe storms, hurricanes, straight-line winds, tornadoes flooding, snowstorms, ice-jams, earthquakes, landslides, mudslides, debris and mudflows, wildfires</td>
</tr>
</tbody>
</table>

*47 and counting, as of 9/11/13

Data obtained from [http://www.fema.gov/disasters/grid/year](http://www.fema.gov/disasters/grid/year)
Some may ask, “When will we be prepared?” but preparedness has no end point.

There will always be new threats and further improvements to be made.

Admiral John Agwunobi
Assistant Secretary for Health
U.S. Department of Health & Human Services (DHHS)

Source: IOM report 11926 (2007)
http://www.nap.edu/catalog.php?record_id=11926
Key Initiatives

Initiatives can take the form of:

• Legislation & Presidential Directives
• Agencies, Departments & Programs
• Systems & Guidance
Post-9/11 Initiatives


† 9/11 Attacks
  † DHS
  † Homeland Security Act

† Hurricane Katrina
Public Law 107–296
107th Congress

An Act

To establish the Department of Homeland Security, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “Homeland Security Act of 2002”.

Nov. 25, 2002
[H.R. 5005]

6 USC 101 note.
Homeland Security Act of 2002

• Help ensure emergency responders are prepared to respond effectively to major disasters and emergencies
• Build National Incident Management System → NIMS
• Create a unified National Response Plan → NRP
Homeland Security Act of 2002

- Transferred responsibility of FEMA to DHS
- Transferred responsibilities from HHS to DHS
  - Office of Emergency Preparedness
  - National Disaster Medical System
  - Metropolitan Medical Response System (MMRS)
  - Strategic National Stockpile
“Despite previous acts of terror on our Nation’s soil – most notably the 1993 attack on the World Trade Center and the 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City – homeland security before September 11 existed as a patchwork of efforts undertaken by disparate departments and agencies across all levels of government.”

National Security Strategy (2007)
Post-9/11 Initiatives


↑ 9/11 Attacks
↑ Hurricane Katrina

↑ NRP
↑ NIMS
↑ HSPD-5

↑ NRF 2008
↑ NRF 2013

Management of Domestic Incidents
NIMS

“a core set of concepts, principles, terminology, and technologies”

- Incident command system
- Training
- Qualifications & certification
c. Training and Exercises

Personnel with roles in emergency management and incident response at all levels of government—including persons with leadership positions, such as elected and appointed officials—should be appropriately trained to improve all-hazards capabilities nationwide.
### d. Personnel Qualifications and Certification

A critical element of NIMS preparedness is the use of national standards that allow for common or compatible structures for the qualification, licensure, and certification of emergency management/response personnel.

<table>
<thead>
<tr>
<th>Major ICS Position</th>
<th>Primary Functions</th>
</tr>
</thead>
</table>
| Incident Commander or Unified Command | • Have clear authority and know agency policy.  
• Ensure incident safety.  
• Establish the ICP.  
• Set priorities, and determine incident objectives and strategies to be followed.  
• Establish ICS organization needed to manage the incident.  
• Approve the IAP.  
• Coordinate Command and General Staff activities.  
• Approve resource requests and use of volunteers and auxiliary personnel.  
• Order demobilization as needed.  
• Ensure after-action reports are completed.  
• Authorize information release to the media. |
National Response Plan (NRP)

• Builds on NIMS and ICS
• “Capability-based” preparedness
• 15 National Planning Scenarios
  – Identify hazards and threats, assess risks
  – Develop functional capabilities
  – Identify required resources
• 15 Emergency Support Functions (ESF)
National Planning Scenarios

Scenario 1: Improvised Nuclear Device
Scenario 2: Biological Attack – Aerosol Anthrax
Scenario 3: Biological Disease Outbreak – Pandemic Influenza
Scenario 4: Biological Attack – Plague
Scenario 5: Chemical Attack – Blister Agent
Scenario 6: Chemical Attack – Toxic Industrial Chemicals
Scenario 7: Chemical Attack – Nerve Agent
Scenario 8: Chemical Attack – Chlorine Tank Explosion
Scenario 9: Natural Disaster – Major Earthquake
Scenario 10: Natural Disaster – Major Hurricane
Scenario 11: Radiological Attack – Radiological Dispersal Devices
Scenario 12: Explosives Attack – Improvised Explosive Device
Scenario 13: Biological Attack – Food Contamination
Scenario 14: Biological Attack – Foreign Animal Disease (Foot and Mouth Disease)
Scenario 15: Cyber Attack

National Preparedness Guidance (2005)
National Planning Scenarios

- Developed by a diverse group of experts
- Plausible terrorist attacks and natural disasters that would stretch the Nation’s prevention & response capabilities
- Used to identify a broad range of core prevention and response requirements and help direct comprehensive preparedness planning efforts.
# Emergency Support Functions

## Mass Care (ESF-6)

**ESF #6—Mass Care, Emergency Assistance, Temporary Housing, and Human Services**

**ESF Coordinator: DHS/FEMA**

Key Response Core Capabilities: Mass Care Services, Public and Private Services and Resources, Public Health and Medical Services, Critical Transportation, Fatality Management Services

Coordinates the delivery of mass care and emergency assistance, including:

- Mass care
- Emergency assistance
- Disaster housing
- Human services.
Emergency Support Functions Public Health & Medical (ESF-8)

ESF #8—Public Health and Medical Services

ESF Coordinator: Department of Health and Human Services

Key Response Core Capabilities: Public Health and Medical Services, Fatality Management Services, Mass Care Services, Critical Transportation, Public Information and Warning, Environmental Response/Health and Safety, Public and Private Services and Resources

Coordinates the mechanisms for assistance in response to an actual or potential public health and medical disaster or incident. Functions include but are not limited to:

- Public health
- Medical surge support including patient movement
- Behavioral health services
- Mass fatality management.
NRP on “Training”

- Rigorous, ongoing training is imperative
- Systematic program to train individuals, teams & organizations required to build essential capabilities
  - Governmental, nongovernmental, private-sector, and voluntary organizations
- Need for common baseline of performance & certification standards
Post-911 Initiatives

- 9/11 Attacks
- Hurricane Katrina
- National Preparedness Guidance
- HSPD-8
- Target Capabilities List
- PPD-8
- National Preparedness Goal & 31 Core Capabilities
National Preparedness: A “Capabilities-Based” Approach

- Vision
- Goal
- Priorities
- Planning Tools
  - 15 Scenarios
  - Target Capabilities List (TCL)
  - Universal Task List (UTL)

Vision

The vision for the National Preparedness Guidelines (2005) is:

• A NATION PREPARED with coordinated capabilities to prevent, protect against, respond to, and recover from all hazards in a way that balances risk with resources and need.
National Preparedness (Interim) Goal (2005)

• To engage Federal, State, local, and tribal entities, their private and non-governmental partners, and the general public to achieve and sustain risk-based target levels of capability to prevent, protect against, respond to, and recover from major events in order to minimize the impact on lives, property, and the economy.
National Priorities

Overarching Priorities

- Implement the National Incident Management System and National Response Plan
- Expanded Regional Collaboration
- Implement the National Infrastructure Protection Plan

Capability-Specific Priorities

- Strengthen Information Sharing and Collaboration Capabilities
- Strengthen Interoperable Communications Capabilities
- **Strengthen CBRNE Detection, Response, and Decontamination Capabilities**
- Strengthen Medical Surge and Mass Prophylaxis Capabilities
Target Capabilities List (TCL)

• Purpose: Identify critical tasks that need to be performed across the 15 scenarios

• 36* essential capabilities identified to be developed at various levels of government (federal, state, local, tribal) and in NGOs, to accomplish key mission areas: prevent, protect, respond, and recover.

* In the original list

National Preparedness Guidance (2005)

National Preparedness

- Replaces HSPD-8 for the most part
- Integrated capabilities-based approach to preparedness
- Calls for the establishment of:
  - National preparedness goal
    - Identifies core capabilities related to greatest risks
  - National preparedness system
    - The means to achieve the goal
  - National preparedness report
    - Status updates towards achieving goal
Homeland Security National Planning Frameworks

Mission Areas Requiring Specific Capabilities

- Prevent
- Protect
- Mitigate
- Respond
- Recover
NPF Mission Area Capabilities

• **Prevention:** Avoid, prevent, or stop a threatened or actual act of terrorism.

• **Protection:** Secure the homeland against acts of terrorism and manmade or natural disasters.

• **Mitigation:** Reduce loss of life and property by lessening the impact of disasters.

• **Response:** Save lives, protect property and the environment, and meet basic human needs after an incident has occurred.

• **Recovery:** Assist communities affected by an incident to recover effectively.

http://www.fema.gov/medialibrary/media_records/11954
PPD-8

National Preparedness Goal

Annual National Preparedness Reports

National Preparedness System

Preparedness Frameworks
- Prevention (NPF)
- Mitigation (NMF)
- Response (NRF)
- Disaster Recovery (NDRF)

Katrina Lessons
NIMS
All-Hazards
National Response Framework 2013
14 Core Capabilities

- Planning
- Public information & warning
- Operational coordination
- Critical transportation
- Operational response/health & safety
- Fatality management services
- Infrastructure systems

- Mass care services
- Mass search & rescue ops
- On-scene security & protection
- Operational communications
- Public and private services and resources
- Public health and medical services
- Situational assessment
CDC Public Health Emergency Preparedness Capabilities

- Community preparedness
- Community recovery
- Emergency operations coordination
- Emergency public information and warning
- Fatality management
- Information sharing
- Mass care
- Medical countermeasure dispensing

- Medical materiel management and distribution
- Medical surge
- Non-pharmaceutical interventions
- Public health laboratory testing
- Public health surveillance and epidemiological investigation
- Responder safety and health
- Volunteer management

Focus on Capabilities Most Applicable to State and Local Public Health

Public Health

HHS 10 Essential Public Health Services

Public Health Emergency Preparedness

State and Local Preparedness Capabilities

Emergency Preparedness

DHS National Preparedness Guidelines and Target Capabilities List

CDC Public Health Preparedness Capabilities: National Standards for State and Local Planning (March 2011); http://www.cdc.gov/phpr/capabilities
Post-Katrina Disaster Health Initiatives

- 9/11 Attacks
- Hurricane Katrina
- National Health Security Strategy
- NCDMPH
- Core Curricula
- ASPR
- HSPD-21
- PAHPR
PAHPA

Pandemic and All-Hazards Preparedness Act
Public Law 109-417, Dec 19, 2006

• …to improve the Nation’s public health and medical preparedness and response capabilities for emergencies, whether deliberate, accidental, or natural.

• Secretary of HHS to lead all PH and Medical response to PH emergencies and incidents covered by NRP (NRF) and ESF-8

• Established ASPR as principal advisor to HHS on PH emergencies

• Interagency agreement for planning and cooperation

• ASPR Office of Emergency Management

• Authorizes funding of Centers for Public Health Preparedness
... the system is ill prepared to handle large-scale emergencies, whether a natural disaster, an influenza pandemic, or an act of terrorism.

This crisis is multifaceted and impacts every aspect of emergency care—from prehospital EMS to hospital-based emergency and trauma care.
PAHPA: All-hazards Public Health and Medical Response Curricula and Training

The Secretary (HHS), in collaboration with the Secretary of Defense, and in consultation with relevant public and private entities, shall

• develop core health and medical response curricula and trainings by
• adapting applicable existing curricula and training programs
## NIMS Training

![FEMA Logo](https://training.fema.gov/IS/NIMS.aspx)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS-100.b</td>
<td>Introduction to Incident Command System, ICS-100</td>
</tr>
<tr>
<td>IS-100.HCb</td>
<td>Introduction to the Incident Command System (ICS 100) for Healthcare/Hospitals</td>
</tr>
<tr>
<td>IS-200.HCa</td>
<td>Applying ICS to Healthcare Organizations</td>
</tr>
<tr>
<td>IS-700.a</td>
<td>National Incident Management System (NIMS) An Introduction</td>
</tr>
<tr>
<td>IS-800.b</td>
<td>National Response Framework, An Introduction</td>
</tr>
</tbody>
</table>

[http://training.fema.gov/IS/NIMS.aspx](http://training.fema.gov/IS/NIMS.aspx)
Curriculum per PAHPA

The public health and medical response training program may include course work related to:

• Medical management of casualties, taking into account the needs of at-risk individuals
• Public health aspects of public health emergencies
• Mental health aspects of public health emergencies
• National incident management, including coordination among Federal, State, local, tribal, international agencies, and other entities
• Protecting health care workers and health care first responders from workplace exposures during a public health emergency.
Ultimately, the Nation must collectively support and facilitate the establishment of a discipline of disaster health.
<table>
<thead>
<tr>
<th>Response core curricula &amp; training</th>
<th>Standardization of knowledge, procedures, and terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Audience</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>→ Federal, state, &amp; local government</td>
</tr>
<tr>
<td></td>
<td>→ Academia</td>
</tr>
<tr>
<td></td>
<td>→ Private sector</td>
</tr>
</tbody>
</table>

| Joint program for Disaster Medicine and Public Health | National Center for Disaster Medicine and Public Health, at Uniformed Services University of the Health Sciences |

A Discipline of Disaster Health

“Ultimately, the Nation must collectively support and facilitate the establishment of a discipline of disaster health.”

“...the unique principles in disaster-related public health and medicine merit the establishment of their own formal discipline.”

“Such a discipline will provide a foundation for doctrine, education, training, and research and will integrate preparedness into the public health and medical communities.”
A Discipline Defined: Disaster Medicine and Public Health Preparedness

- ...the study and collaborative application of sound scientific principles, practices, and standards by multiple health professions for the prevention, mitigation, management, and rehabilitation of injuries, illnesses, and other problems that affect the health, safety, and well-being of individuals and communities in disasters and public health emergencies.
• ...lead Federal efforts to **develop and propagate core curricula, training, and research** related to medicine and public health in disasters.
• ...an academic center of excellence in disaster medicine and public health...
Science for a Disaster Health Discipline

American Journal of Disaster Medicine

...and other peer-reviewed journals
Indicators of an Emerging Discipline

- A consensus that the discipline makes sense and is needed
- Bona-fide education institutions issuing certificates or degrees
- Peer-reviewed scientific literature, published in specialty journals
- Information sharing through professional organizations & conferences
- A generally accepted body of knowledge
  - Terminology, facts, concepts, procedures, processes, principles
- A clear sense of the jobs, roles, duties, tasks, working conditions, capabilities, and performance criteria
- Knowing what makes a person competent and successful in the profession (relevant to required capabilities)
Capabilities vs. Competencies

There’s too much confusion...

-Bob Dylan

All Along the Watchtower
Capabilities

A capability provides:

The means to accomplish one or more tasks under specific conditions and to specific performance standards.

A capability may be delivered with any combination of properly planned, organized, equipped, trained, and exercised personnel that achieves the intended outcome.

CDC Public Health Emergency Preparedness Capabilities

- Community preparedness
- Community recovery
- Emergency operations coordination
- Emergency public information and warning
- Fatality management
- Information sharing
- Mass care
- Medical countermeasure dispensing
- Medical materiel management and distribution
- Medical surge
- Non-pharmaceutical interventions
- Public health laboratory testing
- Public health surveillance and epidemiological investigation
- Responder safety and health
- Volunteer management

Mass Care

The ability to coordinate with partner agencies to address the public health, medical, and mental/behavioral health needs of those impacted by an incident at a congregate location.

This capability includes the coordination of ongoing surveillance and assessment to ensure that health needs continue to be met as the incident evolves.
Medical Surge

The ability to provide adequate medical evaluation and care during events that exceed the limits of the normal medical infrastructure of an affected community.

This capability encompasses the ability of the healthcare system to survive a hazard impact and maintain or rapidly recover operations that were compromised.
Capabilities

Specific Conditions

Critical Tasks

Performance Standards

Missions Areas:
- Prevention
- Protection
- Mitigation
- Response
- Recovery

Mission & Desired Outcomes

Capabilities
Training & Exercises

Leadership
Management
Culture & Teamwork
Planning & Organization
Recruitment
Selection
Personal Characteristics
Competencies
Training & Exercises
Equipment & Systems
Funding
Policies, & Procedures
Resources
Capabilities
Capability-Building Cycle

Organize, Train & Equip → Plan → Exercise → Evaluate & Improve → Capability Building

The Preparedness Cycle Builds Capabilities

What is a competency?

An enduring characteristic of a person that reliably predicts how well a person will perform (in a superior, average, or below-average manner) in a job or situation, using an established performance criterion or standard.
What is Competency-based Education?

Competency-based education focuses on learner performance (learning outcomes) in reaching specific objectives of the curriculum.

- ACGME Outcome Project

http://acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/ab_ACGMEglossary.pdf
General Competencies

- Patient Care
- Medical Knowledge
- Practice-Based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Systems-Based Practice
Uses of Competencies

- Workforce development
  - Defining jobs (or roles), duties, & tasks
  - Hiring & selection of personnel
  - Performance appraisal & management
  - Training and education (initial & continuing)

- Helping to define the disaster health discipline

- Helping to improve preparedness capabilities
Traditional Job-based Approach

Analyze Job, Duties & Tasks

Job Description

Knowledge Skills & Experience

1. ____________
2. ____________
3. ____________
4. ____________
5. ____________
6. ____________
Criterion-Based Approach

Competencies that differentiate superior & average performers

Knowledge, Skills, Self-concept, Traits, Motives

1. ____________
2. ____________
3. ____________
4. ____________
5. ____________
6. ____________
Criterion-Based Approach

Competency Model

Knowledge, Skills, Self-concept, Traits, Motives
1. ____________
2. ____________
3. ____________
4. ____________
5. ____________
6. ____________

Fit?
Competency Types

- Knowledge
- Skills
- Self-Concept
- Motives
- Traits
Miller’s Pyramid

Does

Shows how

Knows how

Knows

Performance

Knowledge

Miller, GE (1990)
Miller GE. The assessment of clinical skills/competence/performance. Academic Medicine (Supplement) 1990; 65: S63-S74

How useful is knowledge?

tional and specialty Board examination systems. But as Alfred North Whitehead pointed out many years ago, there is nothing more useless than a merely well informed man. Tests of knowledge are surely important, but they are also incomplete tools in this appraisal if we really believe there is more to the practice of medicine than knowing.
“Knowing is not enough; we must apply. Willing is not enough; we must do.”

—Goethe
Education & Training Outcomes

- Results
  - Changes in key metrics to achieve stated goals, fulfill needs, close gaps

- Behaviors
  - Observable improvements in the way people do their work

- Learning
  - Measurable gains in knowledge, skills, and attitudes (KSAs)

- Reaction
  - Satisfaction with training
  - Perceived value and benefit

About knowledge & skill type competencies…
Bloom’s Taxonomy

Six cognitive performance levels:

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

Increasingly complex and abstract thinking

Bloom, B. (1956) Taxonomy of Educational Objectives.
Bloom’s Taxonomy

Six cognitive performance levels:

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

More recent version

Create
Evaluate

Increasingly complex and abstract thinking
Clark’s Two Levels: Remember & Use

Remember

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation

Use

(Apply)
Remember and Use: An Example

Use

Perform disaster triage with simulated patients in a disaster training exercise by classifying patients according to the XYZ model’s triage categories.

Remember

Define each of the disaster triage categories in the XYZ triage approach.
Content-Performance Matrix

<table>
<thead>
<tr>
<th></th>
<th>Concepts</th>
<th>Facts</th>
<th>Procedures</th>
<th>Processes</th>
<th>Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Remembe</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Given a field simulation in which 10 moulaged actors play “victims” of a bomb explosion, 10 triage tags, and 1 hour for the exercise, assign at least 8 correct per triage guidelines presented in training (instructor will check) to each patient.
## Fitting the Objective to the Content-Performance Matrix

<table>
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<td>X</td>
<td>X</td>
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<tr>
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<td>r</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>
## Sample Verbs

<table>
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<tbody>
<tr>
<td><strong>Use</strong></td>
<td>Classify</td>
<td>Perform</td>
<td>Predict</td>
<td>Decide</td>
</tr>
<tr>
<td><strong>Remembe</strong></td>
<td>Define</td>
<td>State</td>
<td>List</td>
<td>Describe</td>
</tr>
</tbody>
</table>

*Table showing sample verbs for different categories.*
About self-concept, trait, and motive competencies
Iceberg Model of Competence

Focus of training →

Knowledge & Skill (visible as behavior)

Self-Concept, Traits, & Motives (hidden)

← More difficult to change

The “Hidden” Competencies
“What’s really going on below”

• Self-concept
  – Attitudes & values
  – Self-image, -confidence or -efficacy

• Traits
  – Consistent ways of responding
  – Physical characteristics

• Motives
  – Consistent wants that lead to action
Some of your duties as a Firefighter may include:

- Perform rescue and firefighting operations during structural fires, aircraft crash incidents, vehicle emergencies and natural cover fires
- Perform emergency response duties during hazardous materials incidents
- Operate pumps, hoses and extinguishers
- Force entry into aircraft, vehicles and buildings in order to fight fires and rescue personnel
- Drive firefighting trucks and emergency rescue vehicles
- Give first aid to injured personnel
- Inspect aircraft, buildings and equipment for fire hazards
- Teach fire protection procedures
- Repair firefighting equipment and filling fire extinguishers

HELPFUL SKILLS

Helpful attributes include:

- An ability to remain calm under stress
- A willingness to risk injury to help others
- An ability to think and act decisively
Attributes of Effective Disaster Responders: Focus Group Discussions With Key Emergency Response Leaders

Richard V. King, PhD; Carol S. North, MD; Gregory L. Larkin, MD; Dana L. Downs, MSW; Kelly R. Klein, MD; Raymond L. Fowler, MD; Raymond E. Swienton, MD; Paul E. Pepe, MD, MPH

ABSTRACT

Methods: An effective disaster response requires competent responders and leaders. The purpose of this study was to ask experts to identify attributes that distinguish effective from ineffective responders and leaders in a disaster. In this qualitative study, focus groups were held with jurisdictional medical directors for the 9-1-1 emergency medical services systems of the majority of the nation’s largest cities. These sessions were recorded with audio equipment and later transcribed.

Results: The researchers identified themes within the transcriptions, created categories, and coded passages into these categories. Overall interrater reliability was excellent ($\kappa = .8$). The focus group transcripts yielded 138 codable passages. Ten categories were developed from analysis of the content: Incident Command System/Disaster Training/Experience, General Training/Experience, Teamwork/Interpersonal, Communication, Cognition, Problem Solving/Decision Making, Adaptable/Flexible, Calm/Cool, Character, and Performs Role. The contents of these categories included knowledge, skills, attitudes, behaviors, and personal characteristics.

Conclusions: Experts in focus groups identified a variety of competencies for disaster responders and leaders. These competencies will require validation through further research that involves input from the disaster response community at large.


Key Words: competency-based education, disaster medicine, public health/emergency preparedness, health personnel education/training, consensus
HELPFUL SKILLS

Helpful attributes include:

- An ability to remain calm under stress
- A willingness to risk injury to help others
- An ability to think and act decisively
... the key to our success is the ability to be flexible and agile, and adapt to changing circumstances on the ground – whether that is across the globe, or here at home.

Janet Napolitano
U.S. Secretary of Homeland Security
Frequencies of passages sorted into thematic categories.
“People who...were there to do the job.”

“Knowing is not enough; we must apply. Willing is not enough; we must do.”

—Goethe

Conditions of Performance

- **Training**: Know what to do and how
- **Motivation**: Want to do it
- **Systems & Processes**: Allowed to do it
Climate

Preventing  Discouraging  Neutral  Encouraging  Requiring

Favorable climate for behavior

Increasing likelihood of change

Adapted from Kirkpatrick DL (1994)
Competency Origins

• U.S. State Department Foreign Service Information Officers (FSIO)

• Study to determine how best to select FSIOs

• Foreign Service Officers Exam
  – Measured knowledge of American History, Western Civilization, English usage, Government, etc.

• The test did not predict success on the job

• Furthermore, the test discriminated against minorities

• Something had to be done, a new approach

• And then, a novel idea…
Study superior performers!
(& compare them to average and below average performers)
Competencies in Action

How can we tell if someone is competent?

• Direct observation of the performer on the job (very time- & cost-intensive)
• Create situations that require performance (e.g., simulations)
• Elicit detailed stories of past performance (e.g., behavioral interview)
Superior FSIO Competencies

As it turned out, what predicted superior performance were these competencies:

• Cross-cultural interpersonal sensitivity
• Positive expectations of others
• Speed in learning political networks
Competency Identification Method

• Structured behavioral interviews with
  – Superior performers
  – Average and/or below-average performers

• Double-blind to categories
  – Performers interviewed
  – Interviewers
Methodological Trade-offs

- Identify subject matter experts
  - Leaders
  - Workers

- Gather data
  - Focus groups
  - Surveys
  - Nominal group techniques

- Identify criterion & performers
  - Superior
  - Average
  - Poor

- Gather data
  - Behavioral interviews
  - Outcomes
    - Successful
    - Unsuccessful

- Analyze and synthesize data to create model
  - Knowledge & skills
  - Self-concept
  - Traits and motives
Methodological Cautions

• When using expert panels to identify competencies…
  – Prone to bias
    • May reflect folklore wisdom
    • Maintain a healthy skepticism!
  – Some factors identified might not predict actual performance
  – Important to validate
Criterion-based Approach

Competencies that differentiate superior performers

- Knowledge, Skills, Self-concept, Traits, Motives
- 1. ____________
- 2. ____________
- 3. ____________
- 4. ____________
- 5. ____________
- 6. ____________
Competency Concepts & Principles

A person’s way of thinking and behaving

Causes superior performance

Above and below the surface

Bias-resistant

Criterion-based

Context-specific
A Consensus-based Educational Framework and Competency Set for the Discipline of Disaster Medicine and Public Health Preparedness

Italo Subbarao, DO, MBA, James M. Lyznicki, MS, MPH, Edbert B. Hsu, MD, MPH, Kristine M. Gebbie, DrPH, RN, David Markenson, MD, FAAP, EMT-P, Barbara Barzansky, PhD, John H. Armstrong, MD, FACS, FCCP, Emmanuel G. Cassimatis, MD, Philip L. Coule, MD, Cham E. Dallas, PhD, Richard V. King, PhD, Lewis Rubinson, MD, PhD, Richard Sattin, MD, Raymond E. Swienton, MD, FACEP, Scott Lillibrige, MD, Frederick M. Burkle, MD, MPH, Richard B. Schwartz, MD, and James J. James, MD, DrPH, MHA

ABSTRACT

**Background:** Various organizations and universities have developed competencies for health professionals and other emergency responders. Little effort has been devoted to the integration of these competencies across health specialties and professions. The American Medical Association Center for Public Health Preparedness and Disaster Response convened an expert working group (EWG) to review extant competencies and achieve consensus on an educational framework and competency set from which educators could devise learning objectives and curricula tailored to fit the needs of all health professionals in a disaster.

**Methods:** The EWG conducted a systematic review of peer-reviewed and non–peer reviewed published literature. In addition, after-action reports from Hurricane Katrina and relevant publications recommended by EWG members and other subject matter experts were reviewed for congruencies and gaps. Consensus was ensured through a 3-stage Delphi process.

**Results:** The EWG process developed a new educational framework for disaster medicine and public health preparedness based on consensus identification of 7 core learning domains, 19 core competencies, and 73 specific competencies targeted at 3 broad health personnel categories.

**Conclusions:** The competencies can be applied to a wide range of health professionals who are expected to perform at different levels (informed worker/student, practitioner, leader) according to experience, professional role, level of education, or job function. Although these competencies strongly reflect lessons learned following the health system response to Hurricane Katrina, it must be understood that preparedness is a process, and that these competencies must be reviewed continually and refined over time. *(Disaster Med Public Health Preparedness. 2008;2:57–68)*
<table>
<thead>
<tr>
<th>Competency Domain</th>
<th>Core Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Preparation and Planning</td>
<td>1.1 Demonstrate proficiency in the use of an all-hazards framework for disaster planning and mitigation.</td>
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<td>1.2 Demonstrate proficiency in addressing the health-related needs, values, and perspectives of all ages and populations in regional, community, and institutional disaster plans.</td>
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<tr>
<td>2.0 Detection and Communication</td>
<td>2.1 Demonstrate proficiency in the detection of and immediate response to a disaster or public health emergency.</td>
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<td>2.2 Demonstrate proficiency in the use of information and communication systems in a disaster or public health emergency.</td>
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<tr>
<td></td>
<td>2.3 Demonstrate proficiency in addressing cultural, ethnic, religious, linguistic, socioeconomic, and special health-related needs of all ages and populations in regional, community, and institutional emergency communication systems.</td>
</tr>
<tr>
<td>3.0 Incident Management and Support Systems</td>
<td>3.1 Demonstrate proficiency in the initiation, deployment, and coordination of national, regional, state, local, and institutional incident command and emergency operations systems.</td>
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<td>3.2 Demonstrate proficiency in the mobilization and coordination of disaster support services.</td>
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<td>3.3 Demonstrate proficiency in the provision of health system surge capacity for the management of mass casualties in a disaster or public health emergency.</td>
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<tr>
<td>4.0 Safety and Security</td>
<td>4.1 Demonstrate proficiency in the prevention and mitigation of health, safety, and security risks to yourself and others in a disaster or public health emergency.</td>
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<td>4.2 Demonstrate proficiency in the selection and use of personal protective equipment at a disaster scene or receiving facility.</td>
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<tr>
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<td>4.3 Demonstrate proficiency in victim decontamination at a disaster scene or receiving facility.</td>
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<tr>
<td>5.0 Clinical/Public Health Assessment and Intervention</td>
<td>5.1 Demonstrate proficiency in the use of triage systems in a disaster or public health emergency.</td>
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<td>5.2 Demonstrate proficiency in the clinical assessment and management of injuries, illnesses, and mental health conditions manifested by all ages and populations in a disaster or public health emergency.</td>
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<td>5.3 Demonstrate proficiency in the management of mass fatalities in a disaster or public health emergency.</td>
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<td></td>
<td>5.4 Demonstrate proficiency in public health interventions to protect the health of all ages, populations, and communities affected by a disaster or public health emergency.</td>
</tr>
<tr>
<td>6.0 Contingency, Continuity, and Recovery</td>
<td>6.1 Demonstrate proficiency in the application of contingency interventions for all ages, populations, institutions, and communities affected by a disaster or public health emergency.</td>
</tr>
<tr>
<td></td>
<td>6.2 Demonstrate proficiency in the application of recovery solutions for all ages, populations, institutions, and communities affected by a disaster or public health emergency.</td>
</tr>
<tr>
<td>7.0 Public Health Law and Ethics</td>
<td>7.1 Demonstrate proficiency in the application of moral and ethical principles and policies for ensuring access to and availability of health services for all ages, populations, and communities affected by a disaster or public health emergency.</td>
</tr>
<tr>
<td></td>
<td>7.2 Demonstrate proficiency in the application of laws and regulations to protect the health and safety of all ages, populations, and communities affected by a disaster or public health emergency.</td>
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</tbody>
</table>
Core Competencies for Disaster Medicine and Public Health

Lauren Walsh, MPH; Italo Subbarao, DO, MBA; Kristine Gebbie, DrPH, RN;
Kenneth W. Schor, DO, MPH; Jim Lyznicki, MS, MPH; Kandra Strauss-Riggs, MPH;
Arthur Cooper, MD, MS; Edbert B. Hsu, MD, MPH; Richard V. King, PhD;
John A. Mitas II, MD; John Hick, MD; Rebecca Zukowski, MSN, RN; Brian A. Altman, PhD;
Ruth Anne Steinbrecher, MPH; James J. James, MD, DrPH

ABSTRACT

Effective preparedness, response, and recovery from disasters require a well-planned, integrated effort with experienced professionals who can apply specialized knowledge and skills in critical situations. While some professionals are trained for this, others may lack the critical knowledge and experience needed to effectively perform under stressful disaster conditions. A set of clear, concise, and precise training standards that may be used to ensure workforce competency in such situations has been developed. The competency set has been defined by a broad and diverse set of leaders in the field and like-minded professionals through a series of Web-based surveys and expert working group meetings. The results may provide a useful starting point for delineating expected competency levels of health professionals in disaster medicine and public health.

(Disaster Med Public Health Preparedness. 2012;6:44-52)

Key Words: core competencies, disaster medicine, public health, disaster training, disaster education, preparedness
<table>
<thead>
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<th>Core Competency</th>
<th>Subcompetency</th>
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<tbody>
<tr>
<td>Core Competency</td>
<td>Subcompetency</td>
</tr>
<tr>
<td>1.0 Demonstrate personal and family preparedness for disasters and public health emergencies</td>
<td>1.1 Prepare a personal/family disaster plan</td>
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<td>1.2 Gather disaster supplies/equipment consistent with personal/family plan</td>
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<td>1.3 Practice one’s personal/family disaster plan annually</td>
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<td>1.4 Describe methods for enhancing personal resilience, including physical and mental health and well-being, as part of disaster preparation and planning</td>
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<tr>
<td>2.0 Demonstrate knowledge of one’s expected role(s) in organizational and community response plans activated during a disaster or public health emergency</td>
<td>2.1 Explain one’s role within the incident management hierarchy and chain of command established within one’s organization/agency in a disaster or public health emergency</td>
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<tr>
<td></td>
<td>2.2 Prepare a personal professional disaster plan consistent with one’s overall agency, organizational, and/or jurisdictional plan</td>
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<tr>
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<td>2.3 Explain mechanisms for reporting actual and potential health threats through the chain of command/authority established in a disaster or public health emergency</td>
</tr>
<tr>
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<td>2.4 Practice one’s personal professional disaster plan in regular exercises and drills</td>
</tr>
<tr>
<td>3.0 Demonstrate situational awareness of actual/potential health hazards before, during, and after a disaster or public health emergency</td>
<td>3.1 Identify general indicators and epidemiological clues that may signal the onset or exacerbation of a disaster or public health emergency</td>
</tr>
<tr>
<td></td>
<td>3.2 Describe measures to maintain situational awareness before, during, and after a disaster or public health emergency</td>
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<tr>
<td>4.0 Communicate effectively with others in a disaster or public health emergency</td>
<td>4.1 Identify authoritative sources for information in a disaster or public health emergency</td>
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<td>4.2 Explain principles of crisis and emergency risk communication to meet the needs of all ages and populations in a disaster or public health emergency</td>
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<td>4.3 Identify strategies for appropriate sharing of information in a disaster or public health emergency</td>
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<td>4.4 Identify cultural issues and challenges in the development and dissemination of risk communication in a disaster or public health emergency</td>
</tr>
<tr>
<td>5.0 Demonstrate knowledge of personal safety measures that can be implemented in a disaster or public health emergency</td>
<td>5.1 Explain general health, safety, and security risks associated with disasters and public health emergencies</td>
</tr>
<tr>
<td></td>
<td>5.2 Describe risk reduction measures that can be implemented to mitigate or prevent hazardous exposures in a disaster or public health emergency</td>
</tr>
<tr>
<td>6.0 Demonstrate knowledge of surge capacity assets, consistent with one’s role in organizational, agency, and/or community response plans</td>
<td>6.1 Describe the potential impact of a mass casualty incident on access to and availability of clinical and public health resources in a disaster or public health emergency</td>
</tr>
<tr>
<td></td>
<td>6.2 Identify existing surge capacity assets which could be deployed in a disaster or public health emergency</td>
</tr>
</tbody>
</table>
Highly specialized competencies for regularly deployed responders

Disciplines and professions who need additional disaster-health knowledge and skills

Occupation or role-specific competencies for health care or public health workers

Core competencies for all disaster health learners

Towards a Discipline of Disaster Health
Towards a Discipline of Disaster Health

- Explore Further the Various Contextual Frameworks Discussed
  - HSPD-5, HSPD-8, PPD-8
  - PAHPPA, HSPD-21
  - National Health Security Strategy
  - NIMS, National Response Framework
  - Target Capabilities List (TCL)
  - FNSS Guidance
  - CDC Public Health Emergency Preparedness Capabilities
  - Published competency frameworks:
    - Subbarao et al, 2010
    - Walsh et al, 2012
    - Others referenced in the above
Towards a Discipline of Disaster Health

- **Alignment**
  - Strategic linkages
  - Themes
    - All-hazards
    - Mission areas
      - Prevent, Protect, Mitigate, Respond, Recover
  - Audiences
    - Federal, State, Territorial, Tribal, Local
    - Government, NGOs, Business, Academia, Communities
Towards a Discipline of Disaster Health

• Define “gaps” in disaster health learning & workforce preparedness as needs
  – Needs are the distance to a goal from our current position
  – Set milestones to measure progress
Towards a Discipline of Disaster Health

- Evaluate existing disaster health competencies
  - Do they have utility in developing curricula?
  - How well do they fit with educational processes?
  - What effects and side-effects of using them?
Towards a Discipline of Disaster Health

• Take a fresh look at disaster health competencies
  – Experiment with a criterion-based approach
    • Develop criterion measures of successful performance
  – Study competencies of superior and average performers
    • Are the existing competencies predictive of success?
  – Consider the full range of competency types
Towards a Discipline of Disaster Health

- **Use Educational Science Principles**
  - Instructional design methodology
    - Aim for application-level objectives
    - Emphasize practice in training
    - Evaluate behavior & results
  - Information structuring
    - Chunking, labeling, & relevance
Towards a Discipline of Disaster Health

• **Include everyone**
  - Leave no audience behind
  - Don’t assume they are not interested
  - Find balance between common terminology and ability to communicate with diverse audiences
  - Develop next generation of disaster health workers!
Towards a Discipline of Disaster Health

- A “National” Approach

Federal government

State, territorial, & tribal governments

Local governments
Community-based organizations & the public
Private sector, non-governmental organizations
Academia
Remember to use #LDH13 when Tweeting about today's session!
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