



A Review of Disaster Healthcare Core Competencies HSPD-21 as a Call for Clarity and Unity

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INTRODUCTION:

High Alert, LLC undertook a review of the existing core competency documents for disaster healthcare in light of the October 18, 2007 Homeland Security Presidential Directive (HSPD-21) which in part calls for:

“...the recognition of 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.”

Stakeholders in the development of the discipline described in HSPD-21 have proposed either publicly or privately a body of knowledge and skills core to such a discipline. This essential body of knowledge is codified as Core Competencies. To date the American Association of Physician Specialists (AAPS), the American Medical Association (AMA) and the American Osteopathic Association (AOA) have prepared core competency documents.

In the past, divergent core competency documents within a medical discipline such as emergency medicine or family practice have resulted in decades of division and discord within the profession and specialty. Ultimately, wherever such divergence has existed medical science and evidence based medical practice have resulted in convergence of the core competency documents and near universal agreement on the skills and knowledge that define and are essential to a distinct medical discipline.

Unfortunately, the United States and its citizens cannot afford to wait decades for the medical politicians and special interests to conclude that there is already agreement on the knowledge base and skills core to the discipline and specialty of disaster medicine.



HSPD-21 places further impetus on resolving the issue of core competencies so that the disaster medicine discipline called for in HSPD-21 may advance with all alacrity.

Core Competency Document Review:

The core competency documents from AAPS, AMA and AOA are each developed in differing taxonomy systems. This difference in taxonomy systems combined with differences in batching of skills and knowledge within documents complicated the extraction of commonly agreed upon core points of knowledge and key skills. High Alert, LLC retained Stewart Consulting and Research to perform a theoretical review of the available core competency documents from the three major national multi-specialty medical groups; AAPS, AMA and AOA.

The Stewart review was designed strictly to remove the bias and divergence created by the taxonomy systems themselves and create a “crosswalk reference” between the core competency documents reviewed to facilitate their comparison. The Stewart review found that while each core competency document suffered bias based on the philosophical foundation on which it was written, all the documents agreed on virtually all the core knowledge and skills that define the discipline of disaster healthcare as called for by HSPD-21.

Overview of Stewart Consulting Review:

1. *“I’m not convinced that the current relationship between the “Core Competencies” and the various ‘Group Specific Competencies’ (i.e., the competencies for Informed Workers, Practitioners, Leaders) in the AMA document works quite as well as it might. Specifically, I would have hoped that there would be a continuum such that it’s clear that “informed workers” have competencies that are at the base of Bloom’s Taxonomy levels of Knowledge and Comprehension. While much of what the ‘practitioners’ focus on builds on these ‘informed workers’ Knowledge/Comprehension level elements, but add some competence in terms of Application in the face of new situations. Similarly it should be clear that ‘Leaders’ have all the competencies above plus competence in terms of bigger picture elements and can demonstrate skills at the Analysis, Synthesis, and Evaluation levels. In some cases, this progression seems to work fairly well, but in others the linkage gets a little weak.”*
2. *“Both the AAPS and the AMA documents may be weakened by what seems to be a desire to try to fill in “something” for each cell, regardless of whether it may or may not actually be necessary. For example, it may not be all that realistic to expect that strategic leaders will actually “develop, evaluate, and revise legal principles and ... codes”. It may be worthwhile to think about whether some text in certain cells is appropriate and whether some cells might actually – legitimately*



– be left blank because it’s unrealistic from a training/assessment perspective to think that they can or need to be filled in.”

3. *“Though it may be an inherent problem, given the need to develop a system that encompasses professionals from such a diverse population, there seems to me to be in both the AAPS and the AMA documents a focus in some of the materials that is sometimes far too specific and, on the other hand, sometimes too ‘academic’ and broad. In some cases, the focus is on planning for what is relevant for your community or practice (which may be totally appropriate for a hospital administrator). But in other cases the focus shifts out so broadly that it seems to encompass every type of potential disaster. For example asking that a ‘Leader’ be able to ‘develop, evaluate, and revise policies and procedures for mobilizing and integrating global, federal, regional, state, local, institutional, organizational and private industry disaster support services in a disaster. This includes knowledge of legal statutes and mutual aid agreements for the mobilization and deployment of civilian, military, and other response personnel and assets.’*

From the perspective of a physician who has worked in disaster situations, objectives phrased in this fashion seem to get too far away from what I see as critical (which is basically someone who can take a knowledge of solid principles and merge them with a realistic assessment of the assets on the ground and direct the activities and deployment of personnel and materiel) and moved to a level that is more closely akin to the job responsibilities of high level FEMA personnel.”

4. *“From an assessment perspective, some of the phrasing of the various levels of competencies seems to go astray. For starters, it is generally an article of faith among those who use Bloom’s Taxonomy as an evaluation tool that the higher-order skills such as Application and Analysis build on the lower-level skills such as Knowledge, and that the higher level skills such as Synthesis and Evaluation typically require some sort of –often extensive – performance component.*

I can make a leap of faith that a physician interested in working at disaster sites who correctly describes the appropriate triage category for a hypothetical patient in a hypothetical scenario will be likely to triage appropriately in real life disasters. I’m less comfortable with the fact that many of the ‘Leader’ competencies seem to consist of little more than worrying if someone is able to prepare and critique policy manuals and procedural guidelines.

As currently phrased, some of the language of the competency statements



seems WAY too broad. For example, one competency statement indicates that a practitioner should be able to describe “solutions” for ensuring the recovery of programs and services to meet the medical and mental health needs of – basically – everyone in any disaster scenario. Other competency statements, on the other hand, seem to ask that individuals re-create anew policies and standards that are already fairly well-established. Far better, I’d suspect, if this document is to have real usefulness, is for there to be some effort made to include guidelines and suggestions about the kinds of evaluation measures that might be most relevant for various of the competencies. E.g. clearly calling for an actual demonstration of donning PPE; written multiple-choice testing; the use of professional patients/patient simulators and tabletop simulations.”

5. “Some consideration might be given to re-thinking the way that the category-specific competency descriptors are numbered. If Bloom’s Taxonomy is to be used as a guiding principle, the competencies would best be set up using a system along the following lines:”

<i>Domain</i>	<i>Competency</i>	<i>Informed Worker</i>	<i>Practitioner</i>	<i>Leader</i>
<i>1.0</i>	<i>1.1</i>	<i>1.1.1</i>	<i>1.1.2</i>	<i>1.1.3</i>
<i>1.0</i>	<i>1.2.a</i>	<i>1.2.1.a</i>	<i>1.2.2.a</i>	<i>1.2.3.a</i>
	<i>1.2.b</i>	<i>1.2.1.b</i>	<i>1.2.2.b</i>	<i>1.2.3.b</i>

“In this design, the umbrella concept is the domain. There are 2-4 competencies (e.g. 1.1, 1.2, 1.3, 1.4) that are used to illustrate various facets of the domain. The category-specific competencies, then, both (a) show how the competency applies – and might be demonstrated/tested for persons working at various levels and (b) typically would be expected to show a progression from having a basic knowledge or rules or principles at the ‘Informed Worker’ level to higher level synthesis and evaluation skills at the ‘Leader’ level. The current AAPS and AMA numbering systems seems a little ‘off’ because there is not a one-to-one relationship between the competencies under the AAPS’s ‘Physician Leader’ or the AMA’s ‘Informed Worker’, ‘Practitioner’, ‘Leader’ levels.”

Based on our review and the comments obtained from Stewart Research and Consulting, High Alert, LLC proposes a single summary core competency document presented as a “crosswalk reference” with the associated AAPS, AMA and AOA core competency documents. Given that the AOA currently has no core competencies to contribute, the crosswalk would require update when the AOA document becomes available.



It is the position of High Alert, LLC that this composite summary and associated “crosswalk reference” along with all three core competency documents from AAPS, AMA and AOA be recognized by the United States Department of Homeland Security (DHS); Department of Health and Human Services (HHS); Department of Defense (DOD); Institutes of Medicine; National Institute of Health (NIH); Centers for Disease Control (CDC) and Department of Education (DoE). This will establish the needed basis for the foundation of a distinct discipline in disaster healthcare as called for by HSPD-21 while bypassing the inherent delay in recognizing that all three systems enumerate the same core knowledge and skills.



Appendix A Bloom's Cognitive Taxonomy

Category	Examples and Key Words
<p>Knowledge: Recalls data or information.</p>	<p>Examples: Recites a policy. Quotes prices from memory to a customer. Knows the safety rules.</p> <p>Key Words: defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states.</p>
<p>Comprehension: Understands the meaning, translation, interpolation, and interpretation of instructions and problems. States a problem in one's own words.</p>	<p>Examples: Rewrites the principles of test writing. Explains in one's own words the steps for performing a complex task. Translates an equation into a computer spreadsheet.</p> <p>Key Words: comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates.</p>
<p>Application: Uses a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place.</p>	<p>Examples: Uses a manual to calculate an employee's vacation time. Applies laws of statistics to evaluate the reliability of a written test.</p> <p>Key Words: applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses.</p>
<p>Analysis: Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.</p>	<p>Examples: Troubleshoots a piece of equipment by using logical deduction. Recognizes logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training.</p> <p>Key Words: analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates.</p>
<p>Synthesis: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.</p>	<p>Examples: Writes a company operations or process manual. Designs a machine to perform a specific task. Integrates training from several sources to solve a problem. Revises and process to improve the outcome.</p> <p>Key Words: categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes.</p>
<p>Evaluation: Make judgments about the value of ideas or materials.</p>	<p>Examples: Selects the most effective solution. Hires the most qualified candidate. Explains and justifies a new budget.</p> <p>Key Words: appraises, compares, concludes, contrasts,</p>



	criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports.
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APPENDIX B
AAPS Core Competencies for the Certification of Disaster Medicine Specialists
(Revised 04/27/07)

Overview:

Today, in the United States of America there is a need to effectively organize and coordinate disaster planning, action and the application of knowledge and understanding. This need transcends all considerations and professions and especially health care. We must be prepared, especially physicians in responding to all types of disasters for the public good and that of this nation. It is well known that most physicians lack disaster medical training and there is currently a nationwide shortage of appropriately trained physicians to respond to national disaster. In addition the NDMS/DMAT system is not currently adequate-not enough physicians to sustain three (3) tiers of teams going round-the-clock for another Katrina-like disaster. Joint Commission and the Institute of Medicine have recognized disaster preparedness as a major healthcare need.

Disaster medicine as a specialty and mindset was not only a reaction from September 11, 2001, but to the numerous subsequent events that seemed to all too quickly follow: random anthrax attacks in the weeks afterwards, the SARS outbreak in pockets of the world, the blackout in the summer of 2003 that took the power out in New York City and surrounding cities and states, the December 26, 2004 Indian Ocean tsunami, the Pakistan earthquake of 2005, a tumultuous hurricane season in 2005 culminating with the arrival of Hurricane Katrina, and, of course, terrorist attacks throughout the world including Spain, England, Bangladesh and Bali—all against a backdrop of conflict in Afghanistan and Iraq.

The medical establishment in North America began forming study and discussion groups in disaster medicine, much more frequently in the past. In some cases, the medical schools were already on the front lines of this movement—they just accelerated their growth, such as the University of New Mexico Center for Disaster Medicine, which was established in 1989. Meanwhile, elsewhere in the world, there have been disaster medicine for-credit courses at universities in London, Paris, Brussels and Bordeaux since at least the early 1980's.

In the past several years it has become increasingly apparent that federal, state and local emergency management organizations are in need of a mechanism to determine and define trained and qualified physicians in the face of a global upturn in the rate of natural and man-made disasters. Many physicians who show up to volunteer at disasters have a bare minimum of knowledge in disaster medicine. It was against this



backdrop that the American Academy of Disaster Medicine (AADM) and the American Board of Disaster Medicine (ABODM) were formed for the purpose of scholarly exchange and education in Disaster Medicine as well as the development of an examination demonstrating excellence towards Board Certification in this new specialty.

Rationale and Results:

An area of medical specialization is defined by body of unique knowledge and skills required by practitioners in that field. In February of 2003, prior to formation of the AADM and ABODM, AAPS commissioned an expert panel to undertake a scholarly review of the literature and survey the recognized experts in disaster management, emergency management, medical contingency planning, emergency medicine, public health, disaster behavioral health and military medicine to determine if such a unique body of knowledge and skills existed. By February of 2004 it was determined that the majority of experts, supported by the available literature, agreed that there is a unique body of core knowledge and skills to define the specialty of Disaster Medicine and a broader body of knowledge needed by all healthcare practitioners responding to a disaster event.

Beginning in February of 2004 through October, 2005 further research was completed to compile this body of unique knowledge into a Core Competencies document. By January of 2005, it was evident that the National Disaster Life Support Educational Consortium and the American Medical Association were similarly compiling the body of knowledge needed by all healthcare professionals responding to a disaster. As the purpose of the AAPS Disaster Medicine Core Competencies is to define the core body of knowledge required to demonstrate proficiency in Disaster Medicine towards Board Certification in the specialty, the Core Competency document reflects that bias.

Once the Core Competency document was drafted, the AADM through the ABODM reviewed the document against the existing literature and again solicited expert opinion regarding the Domains of Competence and Areas of Competency contained in the document. The Core Competencies were formatted using a modified Bloom's Taxonomy based on the fact that all the competencies contained there in are aimed at the physician leader who seeks to demonstrate excellence in the field of Disaster Medicine. The Core Competencies committee, the AADM and the ABODM recognize that many, but not all the competencies contained in the Core Competencies document are also needed by all healthcare professionals responding to a disaster. The final draft document was published using a modified Bloom's Taxonomy in February of 2006 and last revised in April of 2007.



Table 1: AAPS Domains of Competency	Domain Number
Incident Command System: Works as a member of the disaster team under the structure of the Incident Command System	1
Preparation and Mitigation: Participates in planning for disaster preparation and mitigation	2
Triage: Performs triage as appropriate in the disaster environment	3
Decontamination/PPE: Follows appropriate decontamination principles and procedures	4
Public Health and Safety: Advises on and coordinates aspects of public health and safety throughout the disaster life cycle	5
Psychosocial Considerations: Provides psychosocial support as appropriate throughout the disaster life cycle	6
Support/Assistance: Works with various groups and organizations (governmental, community, non-governmental, volunteers) to optimize support for disaster planning, response, and recovery.	7
Communication/Documentation: Maintains necessary communication and documentation	8
Regulatory/Legal/Ethical Principles: Complies with regulatory and legal as well as accepted moral and ethical principles	9
Assessment and Treatment: Assesses and treats injuries resulting from natural/non-natural and incidental/intentional causes in a variety of environments (urban, rural, austere)	10
Pathology	11



Table 2: AAPS Core Competencies	Competency Number
Incident Command System: Participates as a member of the disaster team under the structure of the Incident Command System	1
Understands the structure of the Incident Command System (Logistics-Operational-Financing-Planning): knows the organization of the Emergency Operations Center, the ICS table of organization and the role and responsibilities of the public information officer (PIO), the safety officer, incident commander, liaison officer, communications, and related topics such as NIMS and HEICS; understands the chain of command and chain of responsibility	1.1
Understands basic concepts related to command location, gathering sites (Red, Yellow, Green), site control, span of control, site safety, stockpile issues (strategic, primary loads, local/ community, pharmacy), contracting/ resupply	1.2
Understands how to establish the site perimeter and subdivide into hot, warm and cold zones as appropriate	1.3
Preparation and Mitigation: Participates in planning for disaster preparation and mitigation	2
Has the knowledge and skills to serve a major planning role in areas related to PHS, immunization, health/nutrition, sanitation/water, special populations (e.g., pediatrics, geriatric, mobility issues, pregnancy)	2.1
Has the knowledge and skills to participate in the setup and supervision of disaster planning/exercises/training in a variety of settings (hospitals, community/schools, regional/state, federal, personal)	2.2
Understands basic concepts of credentialing/education, funding/granting, interagency agreements (mutual aid, EMTALA Transfer), resupply contracting, EMS/alternate transportation, shelters	2.3
Triage: Performs triage as appropriate in the disaster environment	3
Understand the role and implementation of triage and can differentiate between disaster and non-disaster triage	3.1
Has basic operational knowledge of the major disaster triage systems (i.e. START/PRM, JumpSTART, MASS) and can use one of these methods to perform triage that results in appropriate tags and records	3.2
Decontamination/PPE: Follows appropriate decontamination principles and procedures	4
Knows what comprises levels A, B, C, and D and can determine the level of PPE required for each	4.1
Has the knowledge and skills to perform Level C decontamination	4.2



Public Health and Safety: Advises on and coordinates aspects of public health and safety throughout the disaster life cycle	5
Has knowledge and skills in environmental aspects of public health and safety, including sanitation, water, nutrition, immunization, voluntary and compulsory evacuation, scene control, weather monitoring and modeling, shelters, dispersion modeling and monitoring	5.1
Has knowledge and skills in aspects of public health and safety related to disease , including immunization/prophylaxis, surveillance/epidemiology, emerging disease modeling, vector control, lab/path services, treatment	5.2
Has knowledge and skills related to complex humanitarian disaster , including issues related to pharmacy services, refugee/evacuees, physical recovery, special populations, morgue services	5.3
Psychosocial Considerations: Provides psychosocial support as appropriate throughout the disaster life cycle	6
Can recognize, assess, and develop a treatment plan for incident-related stress for responders and their team members and families as well as community/victims through the disaster life cycle	6.1
Understands the role of groups such as clergy, NGOs, volunteers, and grief counselors in Critical Incident Stress Management (CISM) and (Psychological First Aid (PFA)	6.2
Understands the psychosocial needs of special populations, especially pediatric	6.3
Support/Assistance: Works with various groups and organizations (governmental, community, non-governmental, volunteers) to optimize support for disaster planning, response, and recovery	7
Understands the roles and the integration of groups such as the following: NDMS (DMORTs/ME, IMSURTS, DMAT, VMAT, NMRT), Community (Law Enforcement, Fire/Rescue, EMS, Public Works), NGOs, Military/National Guard/Coast Guard, FEMA, FBI, CERTs, Public Health personnel, CDC, USAMRICD, WMD-CSTs, Poison Control, vendors, and other specialists (e.g., medical, nuclear)	7.1
Understands issues related to the use of volunteers (training, handling, appropriate use, liability, responsibility)	7.2
Communication/Documentation: Maintains necessary communication and documentation	8
Understands the chain of communication and role of the PIO	8.1
Understands basic vocabulary as well as acronyms used in disaster operations	8.2
Knows basic procedures for medical record-keeping (including data capture and banking, role of toe tags)	8.3
Knows basics of evidentiary documentations (crime scene evidence)	8.4
Understands basic types of communications equipment (primary/backup) and the need for and application of basic technical communications security procedures (encryption, varied frequencies)	8.5



Regulatory/Legal/Ethical Principles: Complies with regulatory and legal as well as accepted moral and ethical principles	9
Understands regulatory and legal landscape as well as moral and ethical issues as they impact disaster medicine. Has sufficient knowledge to operate in compliance with regulatory and ethical principles related to the following: HIPAA, EMTALA/COBRA, Stafford Act, JACHO, Federal Response Plan, OSHA, NIOSH, ADA/ Access, Licensing, Sovereign Immunity, Good Samaritan Doctrine, Federal Tort Claims Act, Expectant Patient Issues (dying not yet dead, DNR), NRC, CDC, FDA, EPA, Confidentiality, Consent, Withdrawal of Care, refusal to assume risk, AMA/Refusal of Care, Privacy/Decontamination, profiling, legal rights of responders, professionalism	9.1
Public Health and Legal Considerations I--Immediate and Long Range	9.2
Assessment and Treatment: Assesses and treats injuries resulting from natural/non-natural and incidental/intentional causes in a variety of environments (urban, rural, austere)	10
Has the knowledge and skills to assess and treat injuries related to the following:	10.1
Electrocution -- including High Voltage/ Low Amperage, High Voltage/High Amperage, Low Voltage/High Amperage, Low Voltage/Low Amperage, AC vs. DC	10.1.1
Resuscitation Protocols -- ACLS, BCLS, PALS, APLS, ALSO, NALS, NRP	10.1.2
Infection -- including Bio weapon, epidemic, emerging illness, vaccination needs	10.1.3
Toxin -- including natural vs. synthetic, nerve agents, cholinergic, anticholinergic, biologic, blister agents, enzymatic	10.1.4
Blast trauma --including physics of explosives; primary, blast trauma affecting gut, lung, ear, eyes; bullets, thermal and radiation burns, secondary blast trauma (smash, spear, gas, glow), and tertiary blast trauma (crush, traumatic or emergency amputation)	10.1.5
Ionizing/Non-Ionizing Radiation —including physics, toxicity, exposure rates and times, iodine prophylaxis, pregnancy risks, and treatments/antidotes	10.1.6
Burns – including thermal, Parkland Formula, BSA burned, chemical, radiation, environmental, special population considerations	10.1.7
Penetrating/Ballistic - including physics, mechanisms of injury, yaw, pitch, sprawl, deformation, velocity, and kinetics.	10.1.8
Crush Injuries -- including rhabdomyolysis, compartment syndrome, compartment pressure measurement, fasciotomy, crush injury/release syndrome, hyperkalemia, myoglobinuria, and washout (to prevent ARF), entrapment, and field amputation	10.1.9
Submersion/Drowning - Dry vs. Wet Drowning, Salt vs. Fresh Water Drowning, Submersion Injury, Diving Reflex, Cold Water Considerations, Treatment, Surgical Airway	10.1.10



Inhalational – including smoke, chemical, drowning, biological, radiation	10.1.11
Exposure Effect – including hypothermia, rewarming, hyperthermia, cooling (mist and fan)	10.1.12
Dehydration/Starvation- Mechanisms of Dehydration (Type 1 vs Type 2), Mechanisms of Rehydration (Oral vs iv), Rehydration Solution, Re-Feeding, Culturally Sensitive Diets, Special Needs Diets, Refugee/Evacuee Feeding, Special Populations	10.2
Psychological/ Psychiatric Trauma- Acute Stress Rxn vs Acute Stress Disorder, Acute Stress Disorder vs. Post Traumatic Stress Disorder, Community Psychological Issues, Psychology of Recovery (Community), Critical Incident Stress Management.	10.3
Blunt Trauma- Hollow/Solid Organ Injury; Intracranial Blunt Trauma; and Bony Trauma; Neurologic Trauma	10.1.13
Special Populations – Treatment considerations for special needs populations in all phases of disaster response.	10.4
Pathology	11
Identification of Remains (DNA, Forensic Odontology, Forensic Anthropology)	11.1
Visual Observations of Trauma or Infectious Disease	11.2
Electrocution	11.2.1
Infection	11.2.2
Toxin	11.2.3
Blast trauma	11.2.4
Ionizing/Non-Ionizing Radiation	11.2.5
Burns	11.2.6
Penetrating/Ballistic	11.2.7
Crush Injuries	11.2.8
Submersion/Drowning	11.2.9
Inhalational	11.2.10
Exposure Effect	11.2.11
Dehydration/Starvation	11.2.12
Psychological/ Psychiatric Trauma	11.2.13
Blunt Trauma	11.2.14
Autopsy Findings and Clinical-Pathological Correlations	11.3
Collection, Testing, and Preservation of Biological Materials for Future Medical and Legal Concerns and Inquiries	11.4



APPENDIX C
**AMA Proposed Competencies and Educational Framework for the
Training of Health Professionals in a Disaster**
(Revised 10/11/07)

Background

The evolving discipline of Disaster Medicine and Public Health Preparedness is broad and encompasses many professions and specialties. Current attempts to provide an overarching educational framework utilizing competencies and learning objectives have been limited primarily to individual specialties or target groups such as nursing, public health, and healthcare workers. This has led to a lack of uniformity in lexicon, training, and expertise for personnel in this field. To address this need, the American Medical Association (AMA) conducted a comprehensive literature review and convened an expert panel with the intent of providing consensus-based competencies and an educational framework from which educators could devise learning objectives and curricula tailored to the needs of all potential health system responders in a disaster.

Methodology

A systematic literature review (January 2004-July 2007) was conducted to identify competencies that have been created for potential health system responders (public health, healthcare, prehospital, public safety, nongovernmental organizations, private sector, and governmental authorities) in a disaster. This literature search was designed to augment a recent comprehensive review, funded by the Agency for Healthcare Research and Quality, which provided the basis for the derivation of educational competencies and objectives for all hospital healthcare workers in disaster preparedness and response (Hsu et al, 2006).

To build on this work, the AMA convened a 12-person expert working group to review the existing educational competencies for relevance to all potential health system responders and to address identified learning gaps. The work was funded under a grant from the Health Resources and Services Administration. The resulting draft educational framework and competencies were submitted to selected stakeholder organizations for review, revised as appropriate, and then reviewed further by the National Disaster Life Support Education Consortium™ (NDLSEC™). The NDLSEC is a group of 75 public and private organizations with an interest in disaster preparedness, professional education, and curriculum development.

Results

Based on the literature review, the expert working group identified a set of cross-cutting, evidence-based competencies, applicable to all potential health system responders, for incorporation into the National Disaster Life Support™ (NDLS™) and other health



education and training programs. The working group also identified important potential learning gaps, such as in public health law, ethics, risk communication, cultural competence, mass fatality management, forensics, contingency planning and response, and crisis leadership. In addition, it was determined that competencies needed to be comprehensive to ensure they address individuals and populations who may be more vulnerable to adverse health effects in a disaster (e.g., children, pregnant women, frail elderly, disabled persons). During the review process, two major issues were identified. First, existing published competencies are limited primarily to the workplace, discipline, or practice setting, and are insufficiently broad to adequately address all of the groups required for a coordinated health system response to a disaster. Second, existing competency sets lack sufficient detail relevant to various target audiences differentiated by their professional preparation and prior experience, as well as their roles in a disaster. As such, a new conceptual educational model is proposed, based on adaptation of Bloom’s Cognitive Taxonomy, to allow each health system responder to achieve the highest level of proficiency within each competency. This framework will accommodate the development of courses and curricula to meet the diverse education, training, and job requirements of all target groups.

Development of Competency Domains. As a first step, we sought to identify and define the broad overarching competency domains relevant to all health professionals in a disaster using the literature review of existing competencies as background. After final review, the expert working group identified seven competency domains, which encompass all target audiences of those responsible for a coordinated health system response (see Table 1).

Table 1. AMA Competency Domains

Competency Domains
1.0 Preparation and Planning
2.0 Detection and Communication
3.0 Incident Management and Support Systems
4.0 Safety and Security
5.0 Clinical/Public Health Assessment and Intervention
6.0 Contingency, Continuity, and Recovery
7.0 Public Health Law and Ethics



Delineation of Core Competencies, Health Personnel Categories, and Group-Specific Competencies in Accordance with Bloom's Taxonomy. The next step was to merge the cognitive domains derived from Bloom's taxonomy with an educational model that allows for health professionals to demonstrate competency according to their expected role and level of involvement in a disaster (See the Appendix for a summary of Bloom's Taxonomy). After review of published competency sets and consideration of extant gaps, the expert working group defined 19 core competencies that are relevant to all health professionals (see Table 2).

To facilitate the application of the core competencies across the wide range of target groups involved in a disaster, we identified three broad, yet distinct, personnel categories that encompass all health professionals (i.e., informed workers/students, practitioners, and leaders; see Table 3). For each core competency, persons can perform at different levels of proficiency depending on their experience, professional role, level of education, or job function. This framework allows for all health professions to be represented in each category, and recognizes the diversity of expected job functions and educational requirements for each health profession involved in disaster planning and response.

Once the core competencies and personnel categories were determined, we defined more specific competencies, in accordance with Bloom's taxonomy, to describe the knowledge, skills, and attitudes expected for each personnel category (see Table 4). The overarching goal of this process is to allow all health professionals to achieve the highest level of proficiency within each core competency and within each personnel category.



Table 2. AMA Core Competencies for all Health Professionals in a Disaster

Competency Domain	Core Competencies
1.0 Preparation and Planning	1.1 Demonstrate proficiency in the use of an all-hazards framework for disaster planning and mitigation.
	1.2 Demonstrate proficiency in addressing the health-related needs, values, and perspectives of all ages and populations in community and institutional disaster plans.
2.0 Detection and Communication	2.1 Demonstrate proficiency in the detection of and immediate response to a disaster or public health emergency.
	2.2 Demonstrate proficiency in the use of information and communication systems in a disaster or public health emergency.
	2.3 Demonstrate proficiency in addressing cultural, ethnic, religious, linguistic, socioeconomic, and special health-related needs of all ages and populations in community and institutional emergency communication systems.
3.0 Incident Management and Support Systems	3.1 Demonstrate proficiency in the initiation, deployment, and coordination of national, regional, state, local, and institutional incident command and emergency operations systems.
	3.2 Demonstrate proficiency in the mobilization and coordination of disaster support services.
	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.
4.0 Safety and Security	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.
	4.2 Demonstrate proficiency in the use of personal protective equipment at a disaster scene or receiving facility.



	4.3 Demonstrate proficiency in victim decontamination at a disaster scene or receiving facility.
5.0 Clinical/Public Health Assessment and Intervention	5.1 Demonstrate proficiency in the use of triage systems in a disaster or public health emergency.
	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.
	5.3 Demonstrate proficiency in the management of mass fatalities in a disaster or public health emergency.
	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.
6.0 Contingency, Continuity, and Recovery	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.
	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.
7.0 Public Health Law and Ethics	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.
	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.



Table 3. Designation of Proficiency Levels According to Personnel Category

Health Personnel Categories
<p>Levels of proficiency that can be achieved for each core competency:</p> <p>Informed Worker/Student: Health system professionals and students who require awareness and understanding of particular aspects of disaster planning, mitigation, response, or recovery. These persons should be able to describe core concepts or skills but may have limited ability or need to apply this knowledge.</p> <p>Practitioner: Health system professionals who are required to apply clinical or public health knowledge, skills, and values in disaster planning, mitigation, response, and recovery.</p> <p>Leader: Health system professionals with administrative decision-making responsibilities, leadership functions, and policymaking roles in disaster planning, mitigation, response, or recovery</p>

Proposed Learning Matrix for All Health System Responders. Recognizing that health system professionals vary in their expected roles and level of involvement in a disaster, a learning matrix can be constructed and customized for any target audience to define proficiency requirements within each competency (see Table 5). With this matrix, disaster health education and training programs can be created or modified to incorporate the competencies at the desired proficiency levels. As summarized in Figure 1, this model provides a practical and flexible framework for the education, training, and outcome evaluation of all health professionals according to their expected role and level of involvement in a disaster. This matrix allows for the escalation of knowledge and proficiency in any competency and personnel category, as well as for the progression from informed worker/student to practitioner to leader. The competencies can be applied to a wide range of health professionals who are expected to perform at different levels according to experience, professional role, level of education, or job function. An important next step is the development of learning objectives and outcome measures for each competency to facilitate the design and development of disaster education and training programs to accommodate the needs of all health professions and job functions involved in disaster medicine and public health preparedness.



Figure 1. Competency-Based Educational Framework for Health System Professionals

Competency Domain		
Core Competency		
Health Personnel Category		
Informed Worker/Student	Practitioner	Leader
Category-Specific Competencies	Category-Specific Competencies	Category-Specific Competencies
Learning Objectives	Learning Objectives	Learning Objectives
Evaluation Measures	Evaluation Measures	Evaluation Measures

Table 4. Proposed Core and Group-Specific Competencies for Health System Professionals in a Disaster

Competency Domains	Core Competencies	Category-Specific Competencies		
		Informed Worker/Student	Practitioner	Leader
1.0 Preparation and Planning	1.1 Demonstrate proficiency in the use of an all-hazards framework for disaster planning and mitigation.	1.1.1 Describe the all-hazards framework for disaster planning and mitigation. 1.1.2 Explain key components of your regional, community, institutional, and personal/family disaster plans.	1.1.3 Summarize your regional, community, office practice, and institutional disaster plans. 1.1.4 Perform your expected your role in community and institutional disaster exercises and drills. 1.1.5 Conduct hazard vulnerability assessments for your office practice, community, or institution.	1.1.6 Participate in the design, implementation, and evaluation of disaster exercises and drills to ensure continual assessment of regional, community, and institutional disaster plans.
	1.2 Demonstrate proficiency in addressing the health-related needs, values, and perspectives of all ages and populations in community and institutional disaster plans.	1.2.1 Identify individuals (of all ages) and populations with special needs who may be more vulnerable to adverse health effects in a disaster.	1.2.2 Delineate healthcare and public health issues that need to be addressed in community and institutional disaster plans to accommodate the needs, values, and perspectives of all ages and populations. 1.2.3 Identify psychological reactions that may be exhibited by victims of all ages, their families, and responders in a disaster or public health emergency.	1.2.4 Create, evaluate, and revise policies and procedures for meeting the health-related needs of all ages and populations in community and institutional disaster plans.
2.0 Detection and Communication	2.1 Demonstrate proficiency in the detection of and immediate response to a disaster or public health emergency.	2.1.1 Recognize general indicators and epidemiologic clues of a disaster or public health emergency (including natural, unintentional, and terrorist events). 2.1.2 Describe immediate	2.1.3 Characterize signs and symptoms, as well as disease and injury patterns, likely to be associated with exposure to natural disasters, conventional and nuclear explosives and/or release of biologic, chemical, and radiological agents.	2.1.5 Evaluate and modify policies and procedures for the detection and immediate response to natural disasters, industrial- or transportation-related catastrophes (e.g., hazardous material spill, explosion), epidemics, and acts

	<p>2.2 Demonstrate proficiency in the use of information and communication systems in a disaster or public health emergency.</p> <p>2.3 Demonstrate proficiency in addressing cultural, ethnic, religious, linguistic, socioeconomic, and special health-related needs of all ages and populations in community and institutional emergency communication systems.</p>	<p>actions and precautions to protect yourself and others from harm in a disaster or public health emergency.</p> <p>2.2.1 Describe emergency communication and reporting systems and procedures for contacting family members, relatives, coworkers, and local authorities in a disaster or public health emergency.</p> <p>2.2.2 Describe informational resources that are available for health professionals and the public to prepare for, respond to, and recover from disasters.</p> <p>2.3.1 Describe strategies for and barriers to communicating and disseminating health information to all ages and populations affected by a disaster or public health emergency.</p>	<p>2.1.4 Explain the purpose and role of surveillance systems that can be used to detect and monitor a disaster or public health emergency.</p> <p>2.2.3 Utilize emergency communications systems to report critical health information to appropriate authorities in a disaster or public health emergency.</p> <p>2.2.4 Access timely and credible health and safety information for all ages and populations affected by natural disasters, industrial- or transportation-related catastrophes (e.g., hazardous material spill, explosion), epidemics, and acts of terrorism (e.g., involving conventional and nuclear explosives and/or release of biologic, chemical, and radiological agents).</p> <p>2.3.2 Delineate cultural, ethnic, religious, linguistic, and health-related issues that need to be addressed in community and institutional emergency communication systems for all ages and populations affected by a disaster or public health emergency.</p>	<p>of terrorism (e.g., involving conventional and nuclear explosives and/or release of biologic, chemical, and radiological agents).</p> <p>2.2.5 Evaluate and modify risk communication and emergency reporting systems to ensure that health, safety, and security warnings, and actions taken, are articulated clearly and appropriately in a disaster or public health emergency.</p> <p>2.3.3 Create, evaluate, and revise policies and procedures for meeting the needs of all ages and populations in community and institutional emergency communication systems.</p>
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3.0 Incident Management and Support Systems	<p>3.1 Demonstrate proficiency in the initiation, deployment, and coordination of national, regional, state, local, and institutional incident command and emergency operations systems.</p> <p>3.2 Demonstrate proficiency in the mobilization and coordination of disaster support services.</p>	<p>3.1.1 Describe the purpose and relevance of the National Response Plan, National Incident Management System, and Hospital Incident Command System to community and institutional disaster response.</p> <p>3.2.1 Describe global, federal, regional, state, local, institutional, organizational, and private industry disaster support services, including the rationale for the integration and coordination of these systems.</p>	<p>3.1.2 Demonstrate your function and describe other job functions in institutional and community disaster response systems to ensure unified command and scalable response to a disaster or public health emergency..</p> <p>3.2.2 Demonstrate the ability to collaborate with relevant public and private sector stakeholders to ensure efficient coordination of civilian, military, and other disaster response assets.</p>	<p>3.1.3 Devise, evaluate, and modify institutional and community incident command and emergency operations systems to ensure unified command and scalable response to a disaster or public health emergency.</p> <p>3.2.3 Develop, evaluate, and revise policies and procedures for mobilizing and integrating global, federal, regional, state, local, institutional, organizational, and private industry disaster support services in a disaster. This includes knowledge of legal statutes and mutual aid agreements for the mobilization and deployment of civilian, military, and other response personnel and assets.</p>
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.	<p>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.</p>	<p>3.3.1 Describe the potential impact of mass casualties on access to and availability of clinical and public health resources in a disaster.</p>	<p>3.3.2 Characterize institutional and community surge capacity assets in the public and private health response sectors, and the range of their potential assistance in a disaster or public health emergency.</p>	<p>3.3.3 Develop and evaluate policies, plans, and strategies for predicting and providing surge capacity of institutional and community health systems for the management of mass casualties in a disaster or public health emergency.</p>
4.0 Safety and Security	<p>4.1 Demonstrate proficiency in the prevention and mitigation of health, safety, and security risks to yourself and others in a disaster.</p>	<p>4.1.1 Using an all-hazards framework, explain general health, safety, and security risks associated with disasters.</p> <p>4.1.2 Describe infection control precautions to protect healthcare workers, other responders, and the public</p>	<p>4.1.2 Characterize unique health, safety, and security risks associated with natural disasters, industrial- or transportation-related catastrophes (e.g., hazardous material spill, explosion), epidemics, and acts of terrorism (e.g., involving conventional and nuclear explosives and/or</p>	<p>4.1.3 Develop, evaluate, and revise community and institutional policies and procedures to protect the health, safety, and security of all ages and populations affected by a disaster or public health emergency.</p>

		from exposure to communicable diseases, such as pandemic influenza.	release of biologic, chemical, and radiological agents). 4.1.3 Utilize federal and institutional guidelines and protocols to prevent the transmission of infectious agents in healthcare and community settings.	
	4.2 Demonstrate proficiency in the use of personal protective equipment at a disaster scene or receiving facility.	4.2.1 Describe the rationale and specific function of personal protective equipment that may be used in a disaster or public health emergency.	4.2.2 Demonstrate the ability to locate and use personal protective equipment according to the degree and type of protection required for various types of exposures.	4.2.3 Develop, evaluate, and revise policies, protocols, and procedures for the use of all levels of personal protective equipment that may be used at a disaster scene or receiving facility.
	4.3 Demonstrate proficiency in victim decontamination at a disaster scene or receiving facility.	4.3.1 Explain the purpose of victim decontamination in a disaster.	4.3.2 Decontaminate victims at a disaster scene or receiving facility.	4.3.3 Develop, evaluate, and revise decontamination policies, protocols, and procedures that may be implemented at a disaster scene or receiving facility.
5.0 Clinical/Public Health Assessment and Intervention	5.1 Demonstrate proficiency in the use of triage systems in a disaster or public health emergency.	5.1.1 Explain the role of triage as a basis for prioritizing or rationing healthcare services for victims and communities affected by a disaster or public health emergency.	5.1.2 Explain the strengths and limitations of various triage systems that have been developed for the management of mass casualties at a disaster scene or receiving facility. 5.1.3 Perform mass casualty triage at a disaster scene or receiving facility.	5.1.5 Develop, evaluate, and revise mass casualty and population-based triage policies, protocols, and procedures that may be implemented in a disaster or public health emergency.
	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	5.2.1 Describe possible medical and mental health consequences for all ages and populations affected by a disaster or public health emergency.	5.2.3 Demonstrate the ability to apply and adapt clinical knowledge and skills for the assessment and management of injuries and illnesses in victims of all ages under various exposure scenarios (eg,	5.2.5 Develop, evaluate, and revise policies, protocols, and procedures for the clinical care of all ages and populations under crisis conditions, with limited situational awareness and resources.

<p>disaster or public health emergency.</p>	<p>5.2.2 Explain basic life saving and support principles and procedures that can be utilized at a disaster scene.</p>	<p>natural disasters; industrial- or transportation-related catastrophes; epidemics; and acts of terrorism involving conventional and nuclear explosives and/or release of biological, chemical, and radiological agents), in accordance with professional scope of practice.</p> <p>5.2.4 Identify strategies to manage fear, panic, stress, and other psychological responses that may be elicited by victims, families, and responders in a disaster or public health emergency.</p>	
<p>5.3 Demonstrate proficiency in the management of mass fatalities in a disaster or public health emergency.</p>	<p>5.3.1 Describe psychological, emotional, cultural, religious, and forensic considerations for the management of mass fatalities in a disaster or public health emergency.</p>	<p>5.3.2 Explain the implications and specialized support services required for the management of mass fatalities from natural disasters, epidemics, and acts of terrorism (e.g., involving conventional and nuclear explosives and/or release of biologic, chemical, and radiological agents).</p> <p>5.3.3 Explain the need for (and the need to collect and preserve) forensic evidence from living and deceased humans and animals at a disaster scene or receiving facility.</p>	<p>5.3.4 Develop, evaluate, and revise policies, protocols, and procedures for the management of human and animal remains at a disaster scene or receiving facility.</p>
<p>5.4 Demonstrate proficiency in public health interventions to protect the</p>	<p>5.4.1 Describe short- and long-term public health interventions appropriate for</p>	<p>5.4.2 Apply knowledge and skills for the public health management of all ages,</p>	<p>5.4.3 Develop, evaluate, and revise public health policies, protocols, and procedures for</p>

	<p>health of all ages, populations, and communities affected by a disaster or public health emergency.</p>	<p>all ages, populations, and communities affected by a disaster or public health emergency.</p>	<p>populations, and communities affected by natural disasters, industrial- or transportation-related catastrophes, epidemics, and acts of terrorism, in accordance with professional scope of practice. This includes active/passive surveillance, movement restriction, vector control, mass immunization and prophylaxis, rapid needs assessment, environmental monitoring, safety of food and water, and sanitation.</p>	<p>the management of all ages, populations, and communities affected by natural disasters, industrial- or transportation-related catastrophes, epidemics, and acts of terrorism.</p>
<p>6.0 Contingency, Continuity, and Recovery</p>	<p>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.</p>	<p>6.1.1 Describe solutions for ensuring the continuity of supplies and services to meet the medical and mental health needs of yourself, your family, office practice, institution, and community in a disaster, under various contingency situations (e.g., mass evacuation, mass sheltering, prolonged shelter-in-place).</p>	<p>6.1.2 Demonstrate creative and flexible decision-making in various contingency situations and risk scenarios, under crisis conditions and with limited situational awareness.</p>	<p>6.1.3 Develop, evaluate, and revise contingency and continuity policies and plans for healthcare professionals, institutions, and community health systems to maintain the highest possible standards of care under various risk scenarios.</p>
	<p>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.</p>	<p>6.2.1 Describe short- and long-term medical and mental health considerations for the recovery of all ages, populations, and communities affected by a disaster or public health emergency.</p>	<p>6.2.2 Describe solutions for ensuring the recovery of clinical records, supplies, and services to meet the physical and mental health needs of yourself, your family, institution, and community in a disaster or public health emergency.</p>	<p>6.2.3 Develop, evaluate, and revise policies and plans for the efficient recovery of institutional and community health systems in a disaster or public health emergency.</p>
<p>7.0 Public Health Law and Ethics</p>	<p>7.1 Demonstrate proficiency in the application of moral and ethical principles and</p>	<p>7.1.1 Describe moral and ethical issues relevant to the management of individuals (of all ages), populations, and</p>	<p>7.1.2 Apply moral and ethical principles and policies to address individual and community health needs in a</p>	<p>7.1.3 Develop, evaluate, and revise ethical principles, policies, and codes to address individual and community</p>

	<p>policies for ensuring access to and availability of health services for all ages, populations, and communities affected by a disaster or public health emergency.</p>	<p>communities affected by a disaster or public health emergency.</p>	<p>disaster. This includes understanding of professional obligation to treat, the right to protect personal safety in a disaster, and responsibilities and rights of health professionals in a disaster or public health emergency.</p>	<p>health needs in all disaster phases.</p>
<p>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.</p>	<p>7.2.1 Describe legal and regulatory issues relevant to disasters and public health emergencies, including the basic legal framework for public health.</p>	<p>7.2.2 Apply legal principles, policies, and practices to address individual and community health needs in a disaster. This includes understanding of liability, worker protection and compensation, licensure, privacy, quarantine laws, and other legal issues to enable and encourage health professionals to participate in disaster response and maintain the highest possible standards of care under extreme conditions.</p>	<p>7.2.3 Develop, evaluate, and revise legal principles, policies, practices, and codes to address individual and community health needs in all disaster phases.</p>	



Table 5. Example Learning Matrices for Three Health System Professions

TARGET GROUP: LABORATORY TECHNOLOGIST			
Core Competencies	Expected Level of Proficiency*		
	Informed Worker/Student	Practitioner	Leader
1.1 Demonstrate proficiency in the use of an all-hazards framework for disaster planning and mitigation.	X		
1.2 Demonstrate proficiency in addressing the health-related needs, values, and perspectives of all ages and populations in community and institutional disaster plans.		X	
2.1 Demonstrate proficiency in the detection of and immediate response to a disaster or public health emergency.		X	
2.2 Demonstrate proficiency in the use of information and communication systems in a disaster or public health emergency.		X	
2.3 Demonstrate proficiency in addressing cultural, ethnic, religious, linguistic, socioeconomic, and special health-related needs of all ages and populations in community and institutional emergency communication systems.	X		
3.1 Demonstrate proficiency in the initiation, deployment, and coordination of national, regional, state, local, and institutional incident command and emergency operations systems.	X		
3.2 Demonstrate proficiency in the mobilization and coordination of disaster support services.	X		
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.	X		
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.	X		
4.2 Demonstrate proficiency in the use of personal protective equipment at a disaster scene or receiving facility.		X	
4.3 Demonstrate proficiency in victim decontamination at a disaster scene or receiving facility.	X		
5.1 Demonstrate proficiency in the use of triage systems in a disaster or public health emergency.	X		
5.2 Demonstrate proficiency in the assessment and management of injuries, illnesses, and mental health conditions manifested by all ages and populations in a disaster or public health emergency.	X		
5.3 Demonstrate proficiency in the management of mass fatalities in a disaster or public health emergency.	X		
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.	X		
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.		X	
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.	X		
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.		X	
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.		X	

*For each competency and responder category, learning objectives must be developed to accommodate persons in the target group who perform at different levels and in varying degrees based on their educational level, experience, professional role, and job function in disaster planning, mitigation, response, and recovery.



TARGET GROUP: PHARMACIST			
Core Competencies	Expected Level of Proficiency*		
	Informed Worker/Student	Practitioner	Leader
1.1 Demonstrate proficiency in the use of an all-hazards framework for disaster planning and mitigation.		X	
1.2 Demonstrate proficiency in addressing the health-related needs, values, and perspectives of all ages and populations in community and institutional disaster plans.		X	
2.1 Demonstrate proficiency in the detection of and immediate response to a disaster or public health emergency.		X	
2.2 Demonstrate proficiency in the use of information and communication systems in a disaster or public health emergency.		X	
2.3 Demonstrate proficiency in addressing cultural, ethnic, religious, linguistic, socioeconomic, and special health-related needs of all ages and populations in community and institutional emergency communication systems.		X	
3.1 Demonstrate proficiency in the initiation, deployment, and coordination of national, regional, state, local, and institutional incident command and emergency operations systems.		X	
3.2 Demonstrate proficiency in the mobilization and coordination of disaster support services.		X	
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.		X	
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.		X	
4.2 Demonstrate proficiency in the use of personal protective equipment at a disaster scene or receiving facility.	X		
4.3 Demonstrate proficiency in victim decontamination at a disaster scene or receiving facility.	X		
5.1 Demonstrate proficiency in the use of triage systems in a disaster or public health emergency.	X		
5.2 Demonstrate proficiency in the assessment and management of injuries, illnesses, and mental health conditions manifested by all ages and populations in a disaster or public health emergency.		X	
5.3 Demonstrate proficiency in the management of mass fatalities in a disaster or public health emergency.	X		
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.		X	
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.		X	
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.		X	
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.		X	
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.		X	

*For each competency and responder category, learning objectives must be developed to accommodate persons in the target group who perform at different levels and in varying degrees based on their educational level, experience, professional role, and job function in disaster planning, mitigation, response, and recovery.



TARGET GROUP: HOSPITAL ADMINISTRATOR			
Core Competencies	Expected Level of Proficiency*		
	Informed Worker/Student	Practitioner	Leader
1.1 Demonstrate proficiency in the use of an all-hazards framework for disaster planning and mitigation.			X
1.2 Demonstrate proficiency in addressing the health-related needs, values, and perspectives of all ages and populations in community and institutional disaster plans.			X
2.1 Demonstrate proficiency in the detection of and immediate response to a disaster or public health emergency.			X
2.2 Demonstrate proficiency in the use of information and communication systems in a disaster or public health emergency.			X
2.3 Demonstrate proficiency in addressing cultural, ethnic, religious, linguistic, socioeconomic, and special health-related needs of all ages and populations in community and institutional emergency communication systems.		X	
3.1 Demonstrate proficiency in the initiation, deployment, and coordination of national, regional, state, local, and institutional incident command and emergency operations systems.			X
3.2 Demonstrate proficiency in the mobilization and coordination of disaster support services.			X
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.			X
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.			X
4.2 Demonstrate proficiency in the use of personal protective equipment at a disaster scene or receiving facility.	X		
4.3 Demonstrate proficiency in victim decontamination at a disaster scene or receiving facility.	X		
5.1 Demonstrate proficiency in the use of triage systems in a disaster or public health emergency.	X		
5.2 Demonstrate proficiency in the assessment and management of injuries, illnesses, and mental health conditions manifested by all ages and populations in a disaster or public health emergency.	X		
5.3 Demonstrate proficiency in the management of mass fatalities in a disaster or public health emergency.			X
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.	X		
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.			X
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.			X
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.		X	
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.		X	

*For each competency and responder category, learning objectives must be developed to accommodate persons in the target group who perform at different levels and in varying degrees based on their educational level, experience, professional role, and job function in disaster planning, mitigation, response, and recovery.



**APPENDIX D
Core Competencies Cross Walk**

Table 1: Domain Crosswalk

Reference	Domain of Competence	AAPS Domain of Competence	AMA Domain of Competence	AOA Domain of Competence
1.0	Planning and Preparedness	2.0 Preparation and Mitigation	1.0 Preparation and Planning	None
2.0	Communication	8.0 Communication and Documentation	2.0 Detection and Communication	None
3.0	Incident Command	1.0 Incident Command System	3.0 Incident Management Systems and Support Services	None
4.0	Safety and Decontamination	4.0 Decontamination/PPE	4.0 Safety and Security	None
5.0	Assessment	3.0 Triage	5.0 Clinical/Public Health Assessment and Intervention	None
		10.0 Assessment and Treatment		None
6.0	Intervention	10.0 Assessment and Treatment	5.0 Clinical/Public Health Assessment and Intervention	None
7.0	Public Health	5.0 Public Health and Safety	5.0 Clinical/Public Health Assessment and Intervention	None
8.0	Behavioral Health	6.0 Psychological Considerations	5.0 Clinical/Public Health Assessment and Intervention	None
9.0	Recovery	7.0 Support and Assistance	6.0 Contingency, Continuity, and Recovery	None
		5.0 Public Health and Safety		
10.0	Law and Ethics	9.0 Regulatory/Legal/Ethical Principles	7.0 Public Health Laws and Ethics	None
11.0	Pathology and Forensics	11.0 Pathology		None

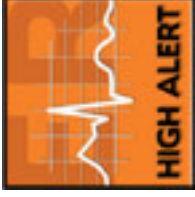
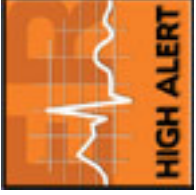
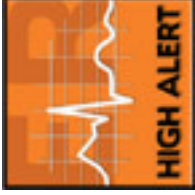


Table 2: Core Competency Crosswalk

Reference	Domain of Competence	Core Competency	AAPS Core Competency	AMA Core Competency	AOA Core Competency
		<i>Description</i>	<i>AAPS Reference Number</i>	<i>AMA Reference Number</i>	<i>AOA Reference Number</i>
1.0	Planning		2.3 - Understands basic concepts of credentialing/education, funding/granting, interagency agreements, mutual aid, EMTALA Transfer), re-supply contracting, EMS/alternate transportation, shelters	1.1 - Demonstrate proficiency in the use of an all hazards framework for disaster planning and mitigation	
		Foundation knowledge required for planning and training	2.2 - Has the knowledge and skills to participate in the setup and supervision of disaster planning/exercises/training in a variety of settings (hospitals, community/schools, regional/state, federal, personal)	1.2 Demonstrate proficiency in addressing the health-related needs, values, and perspectives of all ages and populations in community and institutional disaster plans	None
		Specific skills related to planning and training	2.1 - Has the knowledge and skills to serve a major training role in areas related to PHS, immunization, health/nutrition, sanitation/water, special populations		
2.0	Communications	Detection		2.1 Demonstrate proficiency in the detection of and immediate response to a disaster or public health emergency	None

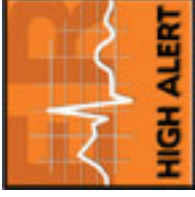


3.0	Incident Command	Foundation Knowledge, Mobilization and Coordination	<p>1.1 - Understands the structure of the Incident Command System: knows the organization of the Emergency Operations Center, the ICS table of organization and the roles and responsibilities of the public information officer, safety officer, incident commander, liaison officer, communication and related topics such as NIMS and HEICS; understands the chain of command and chain of responsibility</p> <p>1.2 - Understands basic concepts related to command location, gathering sites (Red, Green, Yellow), site control, span of control, site safety, stockpile issues, contracting/re-supply</p> <p>1.3 - Understands how to establish the site perimeter and subdivide into hot, warm, and cold zones as appropriate</p> <p>7.1 - Understands the roles and the integration of groups such as the following: NDMS, community law enforcement, fire/rescue/EMS, public works, NGOs, military/National Guard/Coast Guard, FEMA, FBI, CERTS, Public Health personnel, CDC, USAMRIC, WMD-CSTs, Poison Control, vendors and other specialists (e.g., medical, nuclear)</p>	<p>3.1 - Demonstrate proficiency in the initiation, deployment, and coordination of national, regional, state, local and institutional incident command and emergency operations systems</p> <p>3.2 - Demonstrate proficiency in the mobilization and coordination of disaster support services</p>	None
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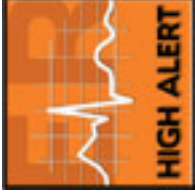


	<p>7.2 Understands issues related to the use of volunteers (training, handling, appropriate use, liability, responsibility)</p>		
	<p>9.1 - Understand regulatory and legal landscape, as well as moral and ethical issues as they impact disaster medicine. Has sufficient knowledge to operate in compliance with regulatory and ethical principles related to the following: HIPPA, EMTALA/COBRA, Stafford Act, JAHCO, Federal Response Plan, OSHA, NIOSH, ADA/access, Licensing, Sovereign Immunity, Good Samaritan Doctrine, Federal Tort Claims Act, Expectant Patient Issues (dying not yet dead, DNR), NRC, CDC, FDA, EPA, Confidentiality, Consent, Withdrawal of Care, refusal to assume risk, AMA/Refusal of Care, Privacy/Decontamination, profiling, legal rights of responders, professionalism</p>	<p>Surge Capacity</p>	
	<p>3.3 - Demonstrate proficiency in the provision of health care surge capacity for the management of mass casualties in a disaster or public health emergency</p>		
	<p>4.1 Demonstrate proficiency in the prevention and mitigation of health, safety, and security risks to yourself and others in a disaster</p>	<p>Safety</p>	<p>4.0 Safety and Decontamination</p>

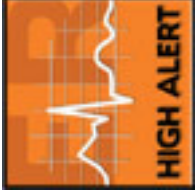
None



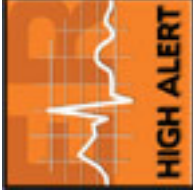
		Personal Protective Equipment	4.1 - Knows what comprises levels A, B, C, and D and can determine the level of PPE required for each.	4.2 - Demonstrate proficiency in the use of personal protective equipment at a disaster scene or receiving facility	
		Decontamination	4.2 - Has the knowledge and skills required to perform Level C decontamination	4.3 - Demonstrate proficiency in victim decontamination at a disaster scene or receiving facility	
5.0	Assessment	Triage	3.1 - Understand the role and implementation of triage and can differentiate between disaster and non-disaster triage	5.1 - Demonstrate proficiency in the use of triage systems in a disaster	None
			3.2 - Has basic operational knowledge of the major disaster triage systems (START/PRM, iSTART, MASS) and can use one of those methods to perform triage that results in appropriate tags and records		
			10.1-15 - Has the knowledge and skills to assess and treat injuries related to: electrocution, resuscitation protocols, infection, toxins, blast trauma, ionizing/non-ionizing radiation, burns, penetrating/ballistic injuries, crush injuries, submersion/drowning, inhalational, exposure effect, dehydration/starvation, psychological/psychiatric trauma, blunt trauma, special populations).	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	
6.0	Intervention	Injuries and Illnesses			



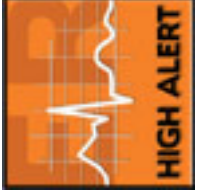
7.0	Public Health	Public Health Interventions	<p>5.1. Has knowledge and skills in environmental aspects of public health and safety, including sanitation, water, nutrition, immunization, voluntary and compulsory evacuation, scene control, weather monitoring and modeling, shelters, dispersion modeling and monitoring.</p> <p>5.2 -Has knowledge and skills in aspects of public safety related to disease including immunization/prophylaxis, surveillance/epidemiology, emerging disease modeling, vector control, lab/pathology services, treatment</p> <p>10.13 - Has the knowledge and skills to assess and treat injuries related to ...psychological/psychiatric trauma (acute stress reaction vs. acute stress disorder, acute stress disorder vs. post-traumatic stress disorder, community psychological issues, psychology of recovery, critical incident stress management, psychological first aid)</p>	<p>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</p>	
8.0	Behavioral Health	Behavioral Health Issues/Conditions		<p>5.2 - Demonstrate proficiency in the assessment and management of injuries, illnesses, and mental health conditions manifested by children and adults in a disaster or public health emergency</p>	None



				6.1 - Can recognize, assess, and develop a treatment plan for incident-related stress for responders and their team members and families as well as community/victims throughout the disaster life cycle	
				6.2 - Understands the role of groups such as clergy, NGOs, volunteers and grief counselors	
				6.3 - Understands the psychological needs of special populations, especially pediatric	
					6.1 - Demonstrate proficiency in the application of contingency interventions for all ages, populations, institutions, and communities affected by a disaster
					6.2 Demonstrate proficiency in the application of recovery solutions for all ages, populations, institutions, and communities affected by a disaster
					None
9.0	Contingency and Recovery	Contingency		5.3 - Has knowledge and skills related to complex humanitarian disaster, including issues related to pharmacy services, refugees/evacuees, physical recovery, special populations, morgue services	
		Recovery			



		<p>9.1 - Understand regulatory and legal landscape, as well as moral and ethical issues as they impact disaster medicine. Has sufficient knowledge to operate in compliance with regulatory and ethical principles related to the following: HIPPA, EMTALA/COBRA, Stafford Act, JAHCO, Federal Response Plan, OSHA, NIOSH, ADA/access, Licensing, Sovereign Immunity, Good Samaritan Doctrine, Federal Tort Claims Act, Expectant Patient Issues (dying not yet dead, DNR), NRC, CDC, FDA, EPA, Confidentiality, Consent, Withdrawal of Care, refusal to assume risk, AMA/Refusal of Care, Privacy/Decontamination, profiling, legal rights of responders, professionalism</p>	<p>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</p>	None
		<p>Note that while legal and ethical issues are separated into two competencies by the AMA document, the AAPS document merges them (see 9.1 in the cell above)</p>	<p>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.</p>	
10.0	Law and Ethics	Law and Ethics		
		<p>9.2 - Public health and legal considerations - immediate and long-range</p>		



11.0	Pathology and Forensics	8.4 - Knows basics of evidentiary documentation (crime scene evidence)	5.3 - Demonstrate proficiency in the management of mass fatalities in a disaster or public health emergency	None
		11.1 - Identification of remains (DNA, forensic odontology, forensic anthropology)		
		11.2 - Visual observation of trauma or infectious disease		
		11.3 - Autopsy findings and clinical-pathological correlations		
		11.4 - Collection, testing, and preservation of biological materials for future medical and legal concerns and inquiries		

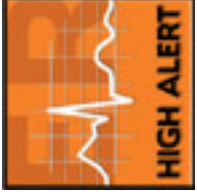
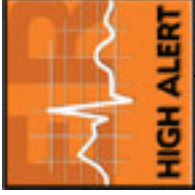


Table 3: Category Specific Crosswalk

Crosswalk Reference	Crosswalk Domain of Competence Description	Crosswalk Core Competency Description	AAPS Core Competency Ref. #	AMA Core Competency Ref. #	AMA Category Specific Competency			AOA Core Competency Ref. #
					Informed Worker Ref. #	Physician Ref. #	Leader Ref. #	
1.0	Planning	Foundation knowledge required for planning and training	2.3	1.1	1.1.1 1.1.2	1.1.3 1.1.4 1.1.5	1.1.6	None
		Specific skills related to planning and training	2.2 2.1	1.2	1.2.1	1.2.2 1.2.3	1.2.4	
2.0	Communication	Detection		2.1	2.1.1 2.1.2	2.1.3 2.1.4	2.1.5	None
		Information and Communication	8.1	2.2	2.2.1 2.2.2	2.2.3 2.2.4	2.2.5	
			8.2					
			8.3					
			8.5					
		Communication Issues Related to Special Populations		2.3	2.3.1	2.3.2	2.3.3	
3.0	Incident Command	Foundation Knowledge, Mobilization and Coordination	1.1 1.2 1.3	3.1	3.1.1	3.1.2	3.1.3	None



		Disaster Support Services	7.1	3.2	3.2.1	3.2.2	3.2.3
			7.2				
		Surge Capacity		3.3	3.3.1	3.3.2	3.3.3
4.0	Safety and Decontamination	Safety	1.2	4.1	4.1.1	4.1.2*	4.1.3*
					4.1.2	4.1.3*	None
		Personal Protective Equipment	4.1	4.2	4.2.1	4.2.2	4.2.3
		Decontamination	4.2	4.3	4.3.1	4.3.2	4.3.3
5.0	Assessment	Triage	3.1	5.1	5.1.1	5.1.2	5.1.5
						5.1.3	
			3.2				
6.0	Intervention	Injuries and Illnesses	10.1-10.4	5.2	5.2.1	5.2.3	5.2.5
					5.2.2		
		Mass Fatalities	11.4	5.3	5.3.1	5.3.2	5.3.4
						5.3.3	
7.0	Public Health	Public Health Interventions	5.1	5.4	5.4.1	5.4.2	5.4.3
			5.2				
8.0	Behavior Health	Behavioral Health Issues/Conditions	10.3	5.2		5.2.4	
			6.1				None
			6.2				
			6.3				
9.0	Contingency and Recovery	Contingency Recovery	5.2	6.1	6.1.1	6.1.2	6.1.3
			5.3	6.2	6.2.1	6.2.2	6.2.3
10.0	Law and Ethics	Law and Ethics	9.1	7.1	7.1.1	7.1.2	7.1.3
11.0	Pathology and Forensics	Pathology and Forensics	9.2	7.2	7.2.1	7.2.2	7.2.3