

Disaster Preparedness and Disaster Management: The Development and Piloting of a Self-Assessment Survey to Judge the Adequacy of Community-Based Physician Knowledge

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Abstract

Disaster preparedness and disaster management have received a high level of attention in the aftermath of the United States' recent experience with both natural and manmade events. Primary care physicians are often forced to respond with little or no formal training. Physicians in training receive little to no education on this subject. The capabilities of these professionals have significant public health relevance in both general public health as well as disaster preparedness and disaster management. There are several organizations and academic institutions that have made inroads into training on this subject. There is no standardized assessment tool to judge these clinicians' competency. Currently available training and some of the major response organizations are reviewed. A format for the development of an assessment tool and a pilot survey completed at two community hospitals are both discussed.

Introduction

Disaster Preparedness and Disaster Management are terms that are rarely mentioned in the organized academic training of community-based physicians. The natural and manmade disasters seen in the United States over the past several years have produced a demand in the public for a higher level of preparedness and competency. The World Health Organization (WHO) defines a disaster as "a sudden ecological phenomenon of sufficient magnitude to require external assistance." The Joint Commission Accreditation of Health Care Organizations (JCAHO) has a somewhat different definition, which states a disaster is "an imbalance in the availability of medical care and a mal-distribution of medical resources versus casualties within a community." Certainly other definitions exist. These two definitions focus on the medical aspects of a disaster, while there are indeed many other aspects of an event which might qualify it as a disaster. It is estimated that 3.4 million lives have been lost and trillions of dollars in related damage have been seen worldwide due to disasters in the past quarter century.¹

The primary goal of this document is to address the concern that primary care physicians in the United States are significantly deficient in their knowledge of Disaster Medicine. An in-depth description and pilot testing of a proposed survey to assess the knowledge of these physicians and their educational needs will follow.

The attacks on the United States in 2001 (Sept 11 and the anthrax attacks) and the huge regional impact of Hurricane Katrina placed an unprecedented strain on our disaster capabilities. Two thousand five hundred and forty-one dead or missing can be attributed to Hurricane Katrina. As well, seven of the sixteen acute care hospitals in the metropolitan New Orleans area have permanently closed due to damage. Every one of the fifty Disaster Medical Assistance Teams (DMAT) in the United States was activated, three mobile military hospitals and several ship-borne hospitals, totaling 789 beds, were also deployed. Innumerable nursing homes were damaged or destroyed. Approximately 1.2 million residents required temporary or permanent relocation.^{2,3} The U.S. House of Representatives Bipartisan Committee to Investigate the Preparation for and the Response to Hurricane Katrina found a "litany of mistakes, misjudgments, lapses, and absurdities" at all levels of government.⁴ Despite this, there continues to be an inadequate emphasis on disaster medicine in undergraduate medical training. In 2008, the American Association of Medical Colleges (AAMC) reported 70 of its 128 member schools have required training in Disaster Management/Response (another 30 have elective training). The average course offered met for one day per academic year. Of the 60 topics listed in the American Association of Medical Colleges database of its members, Disaster Management and Response was 57th in frequency.⁵ As an example, The University of Virginia initiated optional undergraduate medical training in Disaster Medical Training in 2002. This class was poorly attended. It became mandatory in 2006 but only entails one day of training.⁶ Many other medical schools and universities have also developed courses related to specific disasters, most commonly bioterrorism response. The University of New

Mexico School of Medicine developed The Center for Disaster Medicine in 1989. More recently, similar centers have been developed at the University of Rochester and New York Medical College. Several other centers have recently been developed and are primarily associated with Graduate Schools of Public Health. (Public Health has taken a lead in this multidisciplinary arena with much of the formal training found related to schools of public health). In 2000 the Centers for Disease Control and Prevention funded four graduate schools of public health for the development of academic centers for public health preparedness. There are now twenty-seven of these centers fully accredited by the Council on Education in Public Health. The University of Pittsburgh Graduate School of Public Health has developed, through its Center for Public Health Preparedness, unique training programs for school nurses as well as rural disaster preparedness programs.

The country of Israel has, for obvious reasons, stood out as one of the leaders in disaster medicine. Highly concentrated on manmade disasters the country's response is an "all hands" approach with a high degree of military and civilian coordination in both training and response.

The United States military prepares for disasters as well as combat routinely. This training is typically mission-specific, and much of it is combat support in nature. The United States Air Force requires individual readiness specific to the members' Air Force Specialty Code (AFSC). This is monitored through compliance with a predetermined list of requirements found in the Readiness Skills Verification Program. Air Force Medical Groups and Squadrons train as a unit as well and are required to complete a week of Medical Readiness Training every five years. This training, again as a unit, concentrates on group versus individual skills.

Michael Hopmeier, President of Unconventional Concepts, Inc., stated in his address to a North Atlantic Treaty Organization (NATO) workshop in 2005 that the general feeling in the public health community is that they should be "in charge." He argues that, "There is no such thing as a public health disaster." He further argues that those with the real world resources and the appropriate expertise in Disaster Response should be in charge of any disaster regardless of the cause. They should be commanded in a military fashion, with someone trained and experienced in leadership, not a specific clinical or logistic field.

So who are these experts, what is their background, and where do we train them? Do they rise from the public health world, clinical medicine, engineering, or are they managers? At present, it is unlikely any leadership would develop from the world of clinical medicine as a whole. There is little argument that medicine in general and primary care specifically has shown little initiative in the development in Disaster Medicine training or leadership. Currently, little emphasis is found in primary care certification examinations.⁷ In 2003 the American Medical Association (AMA) developed a training program, National Disaster Life Support (NDLS). Shortly after its development the course was broken into several courses more specific to

the students educational background and needs (Core, Basic, Advanced, Decontamination). The courses are similar in design to the American Heart Association courses (BLS, ACLS, PALS). To date since 2003, 30,996 physicians, nurses, paramedics, pharmacists, and other medical professionals have completed the Basic Disaster Life Support course, and 6,748 have completed the Advanced Disaster Life Support.⁸ There is no available breakdown of how many of these participants were physicians. FEMA also has both online and in-residence training at several different levels of expertise. The Nunn-Lugar-Domenici 120-city domestic preparedness training program did not attract many physicians. A United States Army Medical Research Institute for Infectious Diseases (USAMRIID) satellite program reached approximately 50,000 health care providers from 1997-2001, but it is no longer being broadcast.⁹ All of these training platforms heavily emphasize clinical training and response. One organization, the American Association of Physician Specialists, has recently developed a certification in Disaster Medicine through its newly organized Board of Disaster Medicine.¹⁰ The process to achieve this certification is well beyond the time constraints of a typical busy community-based physician. There are currently 40 physicians certified in Disaster Medicine (34 "grandfathered" in order to develop the examination and certification process and six who have passed both sections of the examination in Disaster Medicine by this organization). The American Academy of Family Practice (AAFP)¹¹ recommends training in Disaster Medicine for Family Medicine residents. However, the recommended course outline has essentially no discussion of the organizational and non-clinical aspects of Disaster Management and is essentially a review of the clinical training required.

Many states require annual/biannual continuing medical education (CME) in topics such as risk management, elder abuse, domestic violence, and HIV related illness, but there is no mandatory education in disaster preparedness/medicine. Only one state medical board, the Nevada Board of Medicine (the Allopathic Board), requires four hours of CME (for new applicants) in Weapons of Mass Destruction (WMD) and Bio-terrorism.¹² Despite the lack of a licensure requirement, there has been an increase in the availability of commercial Continuing Medical Education (CME) products devoted to disaster medicine. There is no way to easily assess the numbers of physicians trained through these commercial courses or the extent or quality of the courses. It has been shown that didactic education does little to impact physician future performance. Conversely, training with active participation can improve outcomes.¹³ There is very little discussion in the literature regarding a need-based assessment of the community-based physician's knowledge of disaster medicine. In the chapter on disaster medicine education in the textbook "Disaster Medicine," the authors state that "a need exists for the development of a more detailed education in general disaster medicine aimed at mid- and upper-level health care providers." They further note that "primary health care providers are a key asset to the provision of the huge need for primary care medical support during the recovery period of disasters." Finally, they note that "Education in disaster medi-

cine suffers from a lack of consensus on core material. In the United States, there has been no agreement among the various organizations and individuals within the medical disaster planning and response community as to what constitutes the subject matter that one needs to master.¹⁴ There have been a few attempts at addressing physician competency on this issue. The AMA has produced a five-minute video entitled, “Disaster Preparedness: Are Physicians Ready?”¹⁵ It discusses disaster management from a non-clinical approach. As well, the Center for Public Health and Disasters at UCLA has developed a five-minute slide presentation which covers both clinical and disease-reporting issues specific to bioterrorism.¹⁶ Certainly, no matter the quality of these presentations, the extensive nature of this issue cannot be adequately covered in a five-minute training platform.

What does a community-based physician need to know about Disaster Medicine and Response? Below are several questions that should be addressed:

- What is the current level of knowledge?
- Is there an understanding of the unique systems, authority, and legal issues which lie outside or overlap the clinical issues?
- How do these issues differ by state or location (urban, suburban, and rural)?
- Should any training be mandated or incentivized? If so, by whom? State Medical Boards?

DMAT Medical Officers have specific prerequisites and training requirements in order to deploy to a disaster.¹⁷ These requirements could be used as a “gold standard” by which community-based primary care physicians’ competencies could be judged. These prerequisites and training requirements include:

Prerequisites

- Medical Doctor or Doctor of Osteopathy with licensure in at least one state
- One year of post-graduate training
- Advanced Cardiac Life Support

Training

- Personal and team safety
- Aircraft safety
- Base of Operations setup and maintenance
- Communications
- Hazmat awareness
- Scope of practice
- Incident Command (ICS) (Specific FEMA classes)
 1. An introduction to Incident Command System (ICS)
 2. ICS for Single Resources and Initial Action Incidents

3. National Incident Management System
4. National Response Framework
5. NDMS Federal Coordinating Center Operations Course

Additionally, Medical Reserve Corps (MRC), administered by the Department of Health and Human Services, has core competencies that include:¹⁸

- Personal Preparedness and Safety
- Psychological First Aid
- Dealing with Vulnerable Populations
- NIMS and ICS
- MRC Roles and Responsibilities
- Points of Dispensation

Community-based physicians can and should play a major role in this process. An organized systematic process of education requirements cannot be objectively developed without first completing a comprehensive need-based assessment of the current level of competency. In order to define these needs, a certain level of both professional and community expectations must be determined. Captain James W. Terbush, MPH, USN, the US-NORTHCOM Command Surgeon during Hurricanes Rita and Katrina, is quoted as saying “It would be exceptionally helpful if primary care physicians were experts in disaster medicine.”¹⁹ In an August 2007 letter to the editor of the *Journal of Disaster Medicine and Public Health Preparedness*, Mr. Jack Horner, President of the National Disaster Life Support Foundation, called for “standardized, all hazards interoperable practices.”

Review of the Relevant Literature

As stated above, there is little peer-reviewed literature found on the topic of physicians and preparedness. One study, completed in 2006 by the City of Fort Worth Public Health Department,²⁰ attempted to assess the disaster preparedness/management competency of its local physicians. The authors used a self-assessment tool and found their subjects reported a very low level of competency. They found that 91% of those physicians surveyed considered their knowledge as “fair-poor.” This finding was on both clinical and non-clinical issues. Additionally, regarding community physician interest in participation in preparedness, Cowan et al.²¹ found that a significant number of community-based physicians were willing to participate in a smallpox vaccination program (they were not willing to receive the vaccine themselves). They were not questioned on their basic knowledge. Williams et al. reviewed the literature involving training interventions in disaster preparedness and found no conclusive evidence supporting a relationship between training and increased knowledge.²² This would argue that either training in general had no effect on knowledge or the training currently being used was ineffective. In addition, in their 2006-2007 report, the Association of Schools of Public Health/Center for Disease Control Evidence Based Gaps Collaboration Group recommends a “coordinated interdisciplinary strategy that links

policy goals and training priorities with a focus on the local operational response to emergencies and disasters.”²³ The importance of the local nature of a response is further reinforced by a study by Niska and Burt who found only 67.1% of non-federal community-based physicians would report a possible clinical bioterrorism case to the local public health authorities. As well, only 50.9% would report the case to the Center for Disease Control (CDC).²⁴ Adler et al. completed a statewide needs assessment related to bioterrorism in Utah. Thirty respondents of varying specialties, practicing in both urban and rural locations, recommended that any training offered should be both specialty specific and offered by “experts” in the field. There was significant concern about the time involved with any of this training.²⁵ Chen et al. found that 27% of respondents (family medicine physicians) felt they were prepared for a bioterrorism attack. They also reported that only 18% of the total respondents had any training in bioterrorism response.²⁶ Martin et al. found that 54% of respondents from pediatric, family practice, and emergency medicine residencies felt minimal or no risk of a terrorist attack.²⁷ Hsu et al. found that 72.4 % of respondents (non-urban physicians) in their study had not participated in any Chemical, Biological, Radiological, Nuclear, Explosive (CBRNE) training. Of these individuals, 45.8% reported they were willing to actively participate in a real world response. Although a large majority of these respondents stated they were willing to receive additional training, only 9.2% were willing to participate in formal instructor-led group sessions.²⁸ None of these surveys discussed the sampling process they used or the selection bias and the relatively small sample size. Both the nursing and the public health literature discuss this topic as well. For instance, in 2003 the University of South Florida studied 179 healthcare professionals and found 47% of respondents described themselves as ill prepared to respond to a biological attack and 47% ill prepared for a chemical attack.²⁹ The Long Island School of Nursing³⁰ and the University of Texas at Austin School of Nursing³¹ have developed specific undergraduate training in nursing preparedness. Despite this, a survey by the American Association of Critical Care Nurses found nursing schools provided an average of only four hours of disaster preparedness training and that the faculty was “unprepared in disaster preparedness.”³²

Methodology

A pilot study was developed to assess both general opinions regarding Disaster Medicine and a self-assessment of core competencies. The subjects were surveyed in two separate geographic locations at one hospital in each location. Hospital A is a 144-bed community hospital in western Pennsylvania. The medical staff includes 28 family medicine physicians and general internal medicine physicians on staff. Hospital B is a 169-bed community hospital in the Florida Keys. The medical staff includes nine general internal medicine physicians. The pilot survey was distributed to the medical staff both at a medical staff meeting and on an individual basis. Hospital A (PA) had a response rate of 13 out of 37 and Hospital B (FL) had a response rate of 6 out of 9. The subjects’ ages were studied to assess for any training bias related to newer graduates. Residency training and board

certification was also assessed as confounding issues as the type of residency might emphasize disaster medicine to a greater or lesser degree. Current board certification might also imply a higher level of knowledge.

The target subjects in the study were community-based primary care physicians of varying ages and of both genders. Both general internal medicine physicians and family medicine physicians were queried. Collection of data would be difficult as busy physicians rarely complete spontaneously generated surveys. Data were collected individually and at hospital medical staff meetings. (Another option would be an internet-based research organization such as Survey Monkey.³³) A short 18-question survey (attached), which mirrors the subject categories covered by the Disaster Medicine Certification Examination, was provided.³⁴ A copy of this survey with the results can be found in Appendix C. The survey questioned subjects on their opinions regarding willingness to take on a larger role, what that role should be, and if mandatory education on this topic should be required.

Results

The pilot study revealed that only 25% of the respondents of the two medical staffs had had any disaster medicine training in the past two years. In general, the self-assessment scores revealed a low level of competency as judged by the respondents. The median score on the self-assessment questions was 4.9/10 while the mode was 4.6/10. The range was 3.5 to 8.1. 95% confidence intervals were calculated and were very similar. The study also contrasted the two geographically distinct medical staffs regarding their beliefs about disaster response and a self-assessment of their competency in several components of disaster medicine. The medical staff at Hospital A has a younger, less experienced, more diverse (both type of residency and gender) staff. The respondents from Hospital A also reported less training and experience in disaster medicine than their Florida counterparts at Hospital B. There was also a significant difference in attitudes involving required training. One hundred percent of the physicians in the Florida sample felt that disaster medicine training should be a requirement for licensure, while only thirty-six percent of the Pennsylvania sample felt this should be a licensure requirement. The self-assessment questions revealed varying numerical outcomes. The results from Hospital B (FL) were almost uniformly 1.4-2.5 times higher than Hospital A (PA). The average for question #16 (clinical assessment and treatment) had very similar results at both facilities (8.6/10 vs. 7.8/10).

Discussion

Disasters can be classified into several sub-categories based on the cause: extreme weather, geologic events, CBRNE, epidemic/pandemics, environmental, civil conflict and war, fire, transportation-related events, and even asteroidal events. These can all be the initiating factor in a disaster response and would certainly drive what specific response was needed. Knowledge of the issues and systems involved with a general disaster re-

sponse and those unique to the above events should be considered important.

Disaster response can also be broken down by the source of the response as well as the issues that complicate the response. The legal definitions and ramifications related to issues such as quarantine, Posse Comitatus (an 1878 law which prohibits the use of federal troops in law enforcement), and “martial law” (a term in reference to various local, state, and federal laws designed to respond to disaster and civil unrest with the suspension of civil rights and liberties) certainly complicate any disaster response. What is the role of the government and at what level? What is a CERFP? DMAT? DMORT? CST? Who is the NTSB? FEMA? CDC? State DOH? State EMA? EPA? State EPA? What are their roles, powers and limitations? When should they be contacted? How are they contacted? The board certification examination in disaster medicine offered by the American Association of Physician Specialists includes the following topics:

1. Incident Command System
2. Planning and Preparation
3. Triage
4. Public Health
5. Psychosocial Issues
6. Support and Assistance
7. Communication
8. Regulatory/Legal/Ethical
9. Assessment and Treatment
10. Pathology
11. Decontamination and Personal Protective Equipment

An Expert Working Group (EWG) was convened by the American Medical Association Center for Public Health Preparedness and Disaster Response in 2008. This group used after-action reports from prior disasters, such as Hurricane Katrina, and published literature (both peer reviewed and non-peer reviewed) to reach their conclusions. This EWG studied three broad categories of health care personnel and identified seven core learning domains, 19 core competencies, and 73 specific competencies. They found that any of the current published competencies were lacking coordination between specific healthcare disciplines. They also noted there was no interdisciplinary relevance. Most apparent was the lack of competencies specific to healthcare leadership. Issues such as public health law, ethics, risk communication, cultural competence, mass fatality management, forensics, contingency planning, contingency response, civilian-military relationship, and crisis leadership were all mentioned as specifically lacking. These topics were then merged into seven domains:

- Preparation and Planning
- Detection and Communication
- Incident Management and Support Systems

- Safety and Security
- Clinical/Public Health Assessment and Intervention
- Contingency, Continuity, and Recovery
- Public Health Law and Ethics

The EWG then defined these three personnel categories that encompass all health care professionals:

- Informed Worker/Student
- Practitioner
- Leader

Finally, the EWG broke the domains into competencies and made them specific to the three personnel categories. At this point, no learning objectives have been developed from this group’s findings. They are in the process of incorporating this information into the National Disaster Life Support training discussed above.³⁵ When completed, this process should further delineate the competencies that are to be expected of an adequately trained individual.

The above proposal would provide the knowledge to form a

Table 1: Abbreviations

FEMA	Federal Emergency Management Agency
CBRNE	Chemical, Biological, Radiological, Nuclear, Explosive
CERFP	CBRNE Enhanced Response Force Package
EMAC	Emergency Management Assistance Compact
CST	Civil Support Team
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Team
VDAT	Veterinary Disaster Assistance Team
NTSB	National Transportation Safety Board
EPA	Environmental Protection Agency
CDC	Center for Disease Control
DOH	Department of Health
TAG	The Adjutant General
EOC	Emergency Operations Center
NHC	National Hurricane Center
DHS	Department of Homeland Security
NDMS	National Disaster Medical System
NRC	Nuclear Regulatory Commission
NIMS	National Incident Management System
NOAA	National Oceanographic and Atmospheric Administration
NPRT	National Pharmacy Response Team

foundation from which the development of future educational programs could be based. Do we know what we need to know? Do we know what we don't know? What are (if any) the geographic and socioeconomic biases? What is the level of interest in this group regarding an expanded role? Private entities, academic institutions, and government agencies could all use this information to more objectively design both ongoing education and future assessments of knowledge.

Conclusion

In conclusion, the several hundred thousand community-based physicians in the United States are essentially an untapped resource. In the event of a disaster, either local, regional, or national, these individuals could play a vital and expanded role. In the event of a large scale disaster it is estimated it would take a minimum of 48-72 hours to have functioning facilities such as Disaster Medical Assistance Team (DMAT), CBRNE Enhanced Force Package (CERFP), or Expeditionary Medical System

(EMEDS) in place.³⁵ These local physicians can and should be the bridge for that period. In a time of crisis, a population looks to its leadership for immediate availability, emotional support, and a high level of professional competency. These capabilities vary tremendously in our elected and appointed officials. Who is better suited in this trusted position than the community-based physician? The first step in fully developing this resource should be an adequate knowledge assessment.

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Appendix A: Disaster Medicine Survey and Results

DISASTER MEDICINE SURVEY DEMOGRAPHICS (PLEASE CIRCLE ANSWER)

AGE		YEARS OF PRACTICE		URBAN/RURAL/SUBURBAN	
Florida		Florida		Florida Rural	100%
Average	56.5	Average	26.8	Pennsylvania Suburb	100%
Range	41-74	Range	10-40	Composite	
Pennsylvania		Pennsylvania		Urban	0%
Average	47.9	Average	20.2	Rural	30%
Range	33-77	Range	4-44	Suburban	70%
Composite Average	50.5	Composite Average	22.2	N	20
N	20	N	20		
GENDER		RESIDENCY TRAINING		CURRENT PRACTICE: FAMILY MEDICINE/ INTERNAL MEDICINE	
Florida		Florida		Florida	
Male	83%	Yes	100%	Internal Medicine	100%
Female	17%	No	0%	Pennsylvania	
Pennsylvania		Pennsylvania		Family Medicine	57%
Male	71%	Yes	79%	Internal Medicine	43%
Female	29%	No	21%	Composite	
Composite		Composite		Family Medicine	40%
Male	75%	Yes	85%	Internal Medicine	60%
Female	25%	No	15%		
N	20	N	20		

1. In the past two years have you received any formal training in Disaster Medicine? Y/N

Florida	
Yes	50%
No	50%
Pennsylvania	
Yes	7%
No	93%
Composite	
Yes	25%
No	75%

2. In the event of a disaster, would you be willing to respond? Y/N

Florida	
Yes	100%
No	0%
Pennsylvania	
Yes	100%
No	0%
Composite	
Yes	100%
No	0%

3. Have you ever actively participated in a disaster drill? Y/N

Florida	
Yes	83%
No	17%
Pennsylvania	
Yes	50%
No	50%
Composite	
Yes	60%
No	40%

4. Have you ever actively participated in a real world disaster response? Y/N

Florida	
Yes	50%
No	50%
Pennsylvania	
Yes	21%
No	79%
Composite	
Yes	30%
No	70%

5. Should mandatory education in disaster medicine be required for licensure? Y/N

Florida	
Yes	100%
No	0%
Pennsylvania	
Yes	36%
No	64%
Composite	
Yes	55%
No	45%

SELF-ASSESSMENT

6. On a scale of 1-10 (10 = most important), how important do you feel competency in Disaster Medicine is to your medical practice and community situation?

Florida	
Average	8.0
Range	7-10
Pennsylvania	
Average	5.1
Range	3-10
Composite	6.0
95% Confidence Interval	2.1

7. On a scale of 1-10 (10 = most competent), where do you place your level of competency in disaster medicine in general?

Florida	
Average	6.7
Range	5-8
Pennsylvania	
Average	3.4
Range	1-5
Composite	4.4
95% Confidence Interval	2.2

8. On a scale of 1-10 (10 = most competent), where do you place your level of understanding of incident command systems?

Florida	
Average	4.8
Range	1-8
Pennsylvania	
Average	3.2
Range	1-7
Composite	3.7
95% Confidence Interval	2.1

9. On a scale of 1-10 (10 = most competent), where do you place your level of competency in disaster planning?

Florida	
Average	5.5
Range	4-8
Pennsylvania	
Average	2.2
Range	1-6
Composite	3.7
95% Confidence Interval	2.1

10. On a scale of 1-10 (10 = most competent), where do you place your level of competency in triage?

Florida	
Average	7.5
Range	7-8
Pennsylvania	
Average	5.3
Range	3-10
Composite	6.0
95% Confidence Interval	2.1

11. On a scale of 1-10 (10 = most competent), where do you place your level of competency in public health?

Florida	
Average	7.3
Range	5-9
Pennsylvania	
Average	4.7
Range	2-8
Composite	5.5
95% Confidence Interval	2.2

12. On a scale of 1-10 (10 = most competent), where do you place your level of competency in disaster related psychosocial issues?

Florida	
Average	7.8
Range	2-9
Pennsylvania	
Average	3.9
Range	1-9
Composite	5.1
95% Confidence Interval	2.2

13. On a scale of 1-10 (10 = most competent), where do you place your level of competency in disaster support and assistance?

Florida	
Average-	6.5
Range-	5-8
Pennsylvania	
Average	4.4
Range	2-10
Composite	5.1
95% Confidence Interval	2.2

14. On a scale of 1-10 (10 = most competent), where do you place your level of understanding of disaster communication?

Florida	
Average	7.8
Range	5-9
Pennsylvania	
Average	3.6
Range	1-10
Composite	4.9
95% Confidence Interval	2.2

15. On a scale of 1-10 (10 = most competent), where do you place your level of understanding of regulatory, legal, and ethical aspects of disaster response?

Florida	
Average	5.3
Range	1-9
Pennsylvania	
Average	2.7
Range	1-7
Composite	3.5
95% Confidence Interval	2.1

16. On a scale of 1-10 (10 = most competent), where do you place your level of competency in clinical assessment and treatment?

Florida	
Average	8.6
Range	8-9
Pennsylvania	
Average	7.8
Range	4-10
Composite	8.1
95% Confidence Interval	1.7

17. On a scale of 1-10 (10 = most competent), where do you place your level of competency in disaster-related pathology?

Florida	
Average	7.1
Range	4-9
Pennsylvania	
Average	3.4
Range	1-7
Composite	4.6
95% Confidence Interval	2.2

18. On a scale of 1-10 (10 = most competent), where do you place your level of understanding of decontamination and personal protective equipment?

Florida	
Average	5.5
Range	3-8
Pennsylvania	
Average	3.0
Range	1-7
Composite	3.8
95% Confidence Interval	2.1

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