

How Prepared Are We?

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Abstract

Large scale disasters such as hurricanes, earthquakes and radiologic emergencies pose significant risks to both patients and patient care providers. In an era of declining federal funding for emergency preparedness training (EPT), the importance of state and local initiatives to provide EPT has increased. Unfortunately, few US regions have performed workforce assessments of their patient care providers to measure levels of preparedness, record training preferences and assess EPT needs. This project summarizes the preliminary findings the Center for Health Professional Training and Emergency Response's (CHPTER) workforce assessment of nearly 400 patient care providers in South and North Carolina.

Introduction

Following the terrorist bombings on September 11th, 2001, local initiatives to foster emergency preparedness training (EPT) were recommended by the National Incident Management System (NIMS) and the National Response Framework (NRF).¹ Of the many state and local EPT programs that developed following 9/11, many of them were not renewed or have stopped operations secondary to federal budget cuts.^{2,3} Meanwhile, US medical schools, hospitals, and other health leaders have been slow to offer EPT, and those training programs that are available often lack competency-based curricula.^{4,5} As federal budgets have declined, few municipalities, states or regions have performed workforce assessments of

their patient care providers, making any effort to generate and sustain local EPT programs difficult. This project summarizes the preliminary findings of the Center for Health Professional Training and Emergency Response's (CHPTER) workforce assessment of nearly 400 patient care providers in South and North Carolina. Our goal was to measure levels of preparedness, record training preferences, and assess EPT needs for patient care providers in order to foster and sustain community-based EPT in our region.

Materials and Methods

In 2009, CHPTER was formed at the Medical University of South Carolina (MUSC) as South Carolina's first collaborative EPT center for health professionals (www.musc.edu/chpter). A community-wide advisory committee of emergency preparedness stakeholders—including regional hospitals, NGO's, public health officials, EMS, and law enforcement agencies—met to establish goals for CHPTER to enhance regional health security and foster regional EPT. Beginning in 2010, a CHPTER task force developed and circulated a voluntary, online survey to patient care providers in our region. Survey questions were developed by a panel of disaster preparedness experts utilizing a modified Delphi process and a single point beta test. Question derivation and survey methods were based on a focus survey of South Carolina Emergency Department Directors published in 2011.⁶

We defined 'patient care provider' broadly to include any person who would

likely care for patients during a disaster including clinical providers, EMS, mental health providers, volunteers, and other providers. We utilized databases from private, public, and non-profit provider networks in our region to recruit participants. Because several of our network databases overlapped with North Carolina, providers who worked in North Carolina were contacted. Not all patient care providers who responded to the survey answered all questions. Percentages are calculated out of the total measurable responses and not always out of the total number of survey participants. The project was approved by a university institutional review board (IRB) and partially supported by a grant from South Carolina Clinical and Translational Research Institute (SCTR).

Results

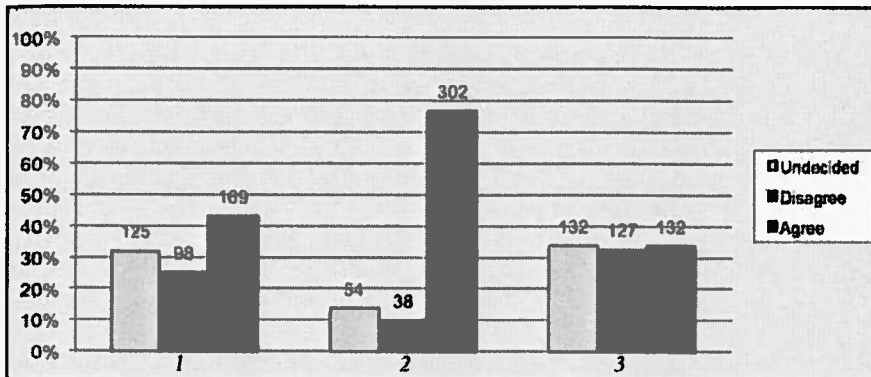
398 patient care providers responded to the survey. Respondents included 201 physicians (51%), 56 nurses (14%), 16 mental health providers (4%), and 15 emergency managers (4%). (Table 1) 32% of respondents worked in North Carolina and 68% worked in South Carolina, representing facilities from 21 of South Carolina's 46 counties. 103 (26%) providers reported greater than 21 years of work experience while 81 (20%) were still in training. 149 (39%) providers reported that their employer or supervisor required no annual disaster training and 192 (52%) participated in 2 hours or less EPT per year. (Table 1) 302 providers (77%) agreed that they were better prepared for a disaster than they were 10 years ago and 169 (43%) agreed that healthcare facilities had implemented lessons

Table 1 Patient Care Provider Demographics and EPT Assessment

VARIABLE		RESPONDENTS (N=398)	
		N	%
Age group (n=397)	25 or under	48	12.1
	26-40	193	48.6
	41-55	105	26.4
	56+	51	12.8
Occupation (n=391)	Physician	201	51.4
	Nurse	56	14.3
	Mental Health	16	4.1
	Emergency Management	15	3.8
	Healthcare Administration	9	2.3
	Public Health	4	1.0
	Volunteer/Community Agency	3	0.8
	Law Enforcement	3	0.8
	Physician Assistant	2	0.5
	Medical Assistant/Technician	2	0.5
	Pharmacist	1	0.3
	Private/Self-Employed	1	0.3
	Engineer	1	0.3
Other	77	19.7	
Workplace Type (n=387)	Public/Government	61	15.8
	Non Profit/NGO	72	18.6
	Private/Corporate	74	19.1
	Home Operated Business	1	0.3
	College/University Hospital	138	35.7
	Other	41	10.6
Work Experience (n=398)	Still in training/student: 0 years	81	20.4
	1-2 years	51	12.8
	3-5 years	53	13.3
	6-10 years	45	11.3
	11-20 years	65	16.3
	>21 years	103	25.9
Disaster Experience (n=396)	None: No Formal Training	100	25.3
	Minimal: Some Formal Training	162	40.9
	Moderate: Some Experience	89	22.5
	Significant: Advanced Training and/or Experience	45	11.4
Annual Training Required (n=379)	0 hours	149	39.3
	1-2	83	21.9
	3-8	60	15.8
	9-16	29	7.7
	17-25	6	1.6
	> 26	23	6.1
	Not Applicable	29	7.7
Annual Training Performed (n=371)	0 hours	92	24.8
	1-2	100	27
	3-8	79	21.3
	9-16	30	8.1
	17-25	17	4.6
	26+	41	11.1
Not applicable	12	3.2	

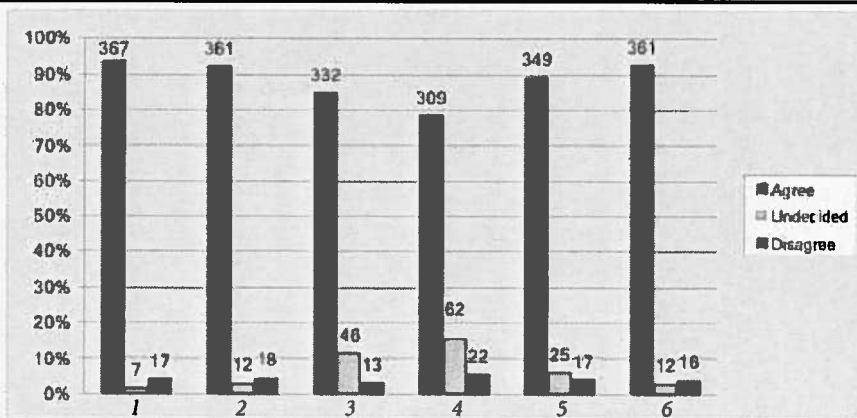
HOW PREPARED ARE WE?

Figure 1. Patient Care Provider Assessment: General Assessment
Tell us your opinion about the following statements:



1. Healthcare facilities in my region have implemented "lessons learned" from Hurricane Katrina.
2. Healthcare facilities in my region are better prepared for a large scale disaster than they were 10 years ago.
3. Federal, state, and local government have provided adequate training resources to prepare patient care providers in my region for a disaster.

Figure 2. Patient Care Provider Assessment: Value of EPT
Increased emergency preparedness training opportunities for patient care providers in our region would:



1. Be valuable to our hospital and health
2. Be valuable to our public health facilities.
3. Be valuable to our volunteer, religious and community groups.
4. Be valuable to our business community.
5. Potentially save patient care provider lives.
6. Potentially save patient lives.

learned from Hurricane Katrina. Only 132 (34%) agreed that federal, state and local government have provided adequate EPT resources to prepare patient care providers in their region. (Figure 1) Most respondents agreed that increased EPT opportunities for patient

care providers would save both patient and providers lives. (Figure 2) The most significant obstacles to EPT training were time constraints and financial barriers experienced by patient care providers. 79 (20%) ranked time constraints as the "the greatest barrier" and 68 (18%)

ranked financial barriers as the "greatest barrier" (score of 10 on a 1-10 Likert scale). 304 (90%) providers encouraged the use of simulated environments during EPT, 291 (76%) suggested that EPT should be one day or less per year and 276 (78%) requested that training assess both knowledge and performance of EPT skills. (Table 2)

Discussion

The lack of preparedness of patient care providers represents a significant yet modifiable risk to the health and safety of patients and providers in our region. South Carolina and other coastal states have unique demographic characteristics (i.e., poverty and housing standards) that amplify the importance of a properly trained healthcare workforce.^{6,7} During a large scale disaster, we expect patients to present to hospitals, airports, schools and other public facilities by the hundreds or thousands. Unfortunately, while these facilities represent a critical 'front line' of emergency preparedness, policies and programs that emphasize EPT for patient care providers have not followed. This is part of the reason South and North Carolina ranked 34th and 32nd in the nation in a 2009 report assessing the state of emergency care in the US.⁸

CHAPTER set out to measure levels of preparedness, record training preferences and assess EPT needs for patient care providers in our region. Our survey represents a wide variety of patient care providers in different workplace settings. While the patient care providers we surveyed felt better prepared than they were 10 years ago, nearly all desired increased EPT opportunities and believed that increased EPT would save both patient and provider lives. As discovered during our 2011 medical director survey, we find it unacceptable that 52% of patient care providers report less than 2 hours EPT per year and 40% of employers require no annual disaster training.⁶ Because it takes only one mistake from one individual to compromise an entire

healthcare disaster operation, we believe 8 hours of mandatory, yearly clinical disaster training for healthcare workers and other patient care providers would represent a policy starting point for our states' health leaders.

The time and financial constraints that prevent patient care providers from attending EPT suggest that additional resources are needed to support patient care providers who want to attend training but cannot take a day off to attend class. Opportunities for increased EPT in our region include developing short (<1 day) courses that combine performance assessments for wide target audiences in a simulated (i.e., scenario-based) environment. The cost-effectiveness of widespread dissemination of EPT in our region has not been established but will have to be weighed against the devastating impact -- on patients, patient care providers and the business continuity of healthcare facilities -- that will follow our next major disaster.

Conclusion

Patient care providers who responded to this survey felt better prepared than they were 10 years ago, but nearly all desire increased EPT opportunities. Time, financial constraints and the fact that employers generally do not require EPT, are the primary obstacles to increased EPT in our region. Opportunities for increased EPT in our region include developing short (<1 day) courses that combine performance assessments with a scenario-based environment. An appropriate follow up to this workforce study would include a feasibility study to see if a one day, performance based EPT curriculum is cost-effective when disseminated to healthcare facilities and other patient care providers in our region.

Table 2. Patient Care Provider EPT Content Preferences

EPT CONTENT CATEGORY		SURVEY RESPONDENTS (N=397)	
		N	%
Course Length (n=384)	1-3 hours	101	26.3
	1 day	190	49.5
	2-3 days	79	20.6
	5-7 days	10	2.6
	> 7 days	4	1.0
Audience (n=385)	Focus on hospital providers	48	12.5
	Focus on all patient providers	83	21.6
	Combination of both	254	66
Delivery (n=375)	Classroom lectures	96	25.6
	Online material	21	5.6
	Combination of both	258	68.8
Methods (n=371)	Activity focused	94	25.3
	Didactic focused (lectures)	16	4.3
	Combination of both	261	70.4
Grading (n=353)	Grade my performance	42	11.9
	Grade my knowledge	36	10.2
	Grade both	276	78
Technology (n=339)	Medical Simulation not helpful	35	10.3
	Medical Simulation helpful	304	89.7
Content (n=285)	Disaster case-specific training	49	17.2
	All hazards training	17	6.0
	Combination of both	219	76.8

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⁸ Epstein SK, Burstein JL, Case RB, et al. The National Report Card on the State of Emergency Medicine: evaluating the emergency care environment state by state 2009 edition. *Ann Emerg Med*. Jan 2009;53(1):4-148.

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