**Online Data Supplement**

**Education and Training Options For First Responders**

 First responders may learn about the emergency needs of individuals with disabilities via

online or classroom-based courses, drills, and guides. Online or print guides, such as *Tips for First Responders*1 and the *Orientation Manual* *for First Responders on the Evacuation of People with Disabilities*,2 appear focused on recommendations to enhance 1:1 interactions and communication with those with disabilities. Classroom-based training may be delivered by local disability providers(Smith C. First responder training, unpublished, date unknown. [PowerPoint Slides]) or disability advocacy organizations3 and may or may not offer Continuing Education Units (CEUs). Often presented in a lecture-type format, and focused on 1:1 interactions and communication, these trainings expand on guides by allowing for participant questions and discussion of local issues. The U.S. Department of Homeland Security/FEMA'S *Emergency Planning for Special Needs Communities* (MGT 333), a two day lecture/discussion course for responders and disability community members offered in MA in 2008*,* emphasized topics impacting the disability community in the aggregate, such as planning, sheltering, and transportation needs and provided brief discussion opportunities. Drills, by contrast, can provide "hands on" practice, simulating a particular response situation in advance of an actual event.4

 The relatively few online responder courses related to disability appear to include mainly pre-recorded, user-paced offerings, often presented in a PowerPoint(R) format. FEMA's *Special Needs Planning Considerations for Emergency Management* (IS-197 EM), four and a half hours long, focused on the functional needs of individuals with disabilities, with particular attention to planning, communication, evacuation and sheltering. Course format included on-screen self-reflection questions (with sample responses) and some video. FEMA's two and a half hour course, *Including People with Disabilities and Others with Access and Functional Needs in Disaster Operations* (IS-368), focuses on local Federal Joint Field Office (JFO) staff as role models for inclusive planning and response. *Ready, Willing and Able* (<https://ks.train.org>/), an approximately two-hour lecture-type course, emphasizes building disability awareness and provides interaction and communication tips. *Developmental Disability Training for EMT Continuing Education* (<http://www.jfkpartners.org>), a one-hour course intended primarily for Emergency Medical Service (EMS) personnel, places the learner in a simulated situation "receiving" informational memos from a "boss." Content focuses on the behavioral characteristics of people with developmental disabilities. Format includes videos featuring people with disabilities interacting with responders, mainly in a law enforcement context, with learner assessment in part through scenario-based questions that measure knowledge and skill acquisition.

 There appear to be a number of simulations and game-like courses for responders.5,6 For example, public health responder trainings have been developed using the Second Life platform,7 but these trainings do not appear to focus on disability-related emergency needs. The POD Game (http://www.thepodgame.com/), teaches the learner to "register," "screen" and "dispense medication" to "patients" at a public health emergency medication dispensing site, but also doesn't appear to concentrate on people with disabilities. And a FEMA pilot course for public safety and public health responders teaches response to terrorism incidents but also doesn't appear to focus on those with disabilities.6

 Published evaluations of first responder trainings related to emergencies/disasters and people with disabilities were not readily found via Google Scholar, using search terms such as "public safety responder," or "public health responder," combined with "disability," "training," "education," "skill acquisition," or "new skills." Researchersfound no published evaluations of responder trainings related to the disaster needs of people who are Deaf or Hard of Hearing prior to their own research.8

**Beta Test Participant Demographics**

 The online recruitment survey contained questions related to gender, race/ethnicity, education level completed, response profession, years of service, and FEMA region. Beta testers fell into 6 groups: law enforcement (n=3), fire fighters (n=1), emergency managers/planners (n=7), public health officers (n= 2), CERT/MRC volunteers (n=10), and emergency medical services personnel (n=5). The total is greater than 18 because many beta testers indicated more than one response role, which seems common in the field. The majority of beta testers (67%) were male; ages varied, with the majority (39%) age 25-34. Thirty-nine percent (39%) had less than 3 years of service, while 33% had served more than 10 years. Results are presented in Table 1.

|  |
| --- |
| **Table 1. Beta Test Participant Demographic Information (N=18)** |
| **Gender** | **Age in Years** | **Race/Ethnicity** | **Highest Level of Education Completed** |
|  Male   | 67% |  18-24  25-34  35-44  45-54  55-64  |  22% 39% 6% 17% 17% | American Indian or Alaska Native Asian Black or African American Native Hawaiian or Pacific Islander White or CaucasianHispanic, Latino, or Spanish originOther  | 0%6%0%0%94%0%0% 0% |  High School  diploma 0% Some college 11% Associate degree 33%Bachelor degree 39%Graduate degree 17%Other 0% |
|  Female  | 33% |
| **Profession/ Occupationa** | **Years in Primary Response Position** | **FEMA Region** |
| EMS 33%MRC/CERT 28%Law Enforcement 22%Public Health 17%Emergency Manager/ Planner 17%Fire Service 11% |  0-3 years 39% 4-10 years 39% >10 years 22% |  Region 1 0% Region 6 27% Region 2 6% Region 7 0% Region 3 6% Region 8 0% Region 4 6% Region 9 27% Region 5 22% Region 10 6% |

aTotal >100% because many participants indicated more than one response role.

 Beta testers also reported on their use of the computer to play games and for learning. Eight of the beta testers (44%) reported playing electronic or video games more than two hours per week, with equal numbers preferring game play on a computer or handheld device/console (33% each); 11% preferred gaming on a tablet, and 22% preferred “Other” (of this group, ¾ preferred gaming via phone). Eighty-three percent (83%) of beta testers reported having taken 4 or more computer based courses in the last 3 years, and the majority of these courses (83%) were web based. Sixty-seven percent (67%) took online courses required by employers, 22% for schooling purposes, 56% for personal knowledge gain, 67% for professional licensure, certification, or continuing education credits, and 22% for convenience. See Table 2 for data for online learning and game play from the usability and satisfaction survey.

|  |
| --- |
| **Table 2. Beta Tester Online Learning and Gaming Experience (N=18)** |
| **Average Number of Hours per Week Spent Playing Electronic/Video Games** | **Number and % Reporting** | **Number of Computer E-Learning Courses Taken in Last 3 Years** | **Number and** **% Reporting** |
| Less than 2 hours/week | 10 (56%) | None | 1 (6%) |
| 2-5 hours/week | 6 (33%) | 1-3 | 2 (11%) |
| More than 5 hours/week | 2 (11%) | 4-10 | 8 (44%) |
|  |  | More than 10 | 7 (39%) |
| **Favorite Game Platform** |  | **Format of E-Learning Courses** |  |
| Desktop or laptop computer | 6 (33%) | DVD or CD-ROM |  4 (22%) |
| Tablet | 2 (11%) | Web based | 15 (83%) |
| Handheld device or console | 6 (33%) | Mobile device |  0 (0%) |
| Other | 4 (22%) | Combination of e-learning and in-person |  7 (39%) |

**Representative Beta Tester Comments**

 Suggestions for improvement included a number of comments regarding navigation and use of the Unity 3d cross-platform system; representative comment examples are shown in Table 3.

**Table 3. Representative Beta Tester Comments**

***Most Applicable or Helpful Features:***

 “It provided specific, relevant information on disabilities and how to interact with people with disabilities during an emergency.”

 “Disaster management/emergency response needs to be taught more; however, current applications and formats for such learning have been bland to say the least. I think Rescue-D has potential as a viable option for training in the future.”

“[The most applicable or helpful feature was] understanding the way to approach those with mobility disabilities. I never realized their adaptive equipment was considered personal space.”

 Five beta testers wrote comments about use of the mapping tool to locate needed resources during an emergency as the most helpful or applicable feature.

***Technical Issues and Suggestions for Improvement***

 Eleven of the eighteen respondents requested that Rescue-D be made “mobile” (i.e., playable on a handheld mobile device such as a smartphone or tablet).

 Most suggestions for improvement centered on the screen navigation system (e.g.,

 advancing through questions, prompt placement), particularly with regard to the

 map interface.

**References**

1.Cahill A. *Tips for First Responders.* 5th ed*.* (2013). [*http://cdd.unm.edu/dhpd/pdfs/FifthEditionTipsSheet.pdf*](http://cdd.unm.edu/dhpd/pdfs/FifthEditionTipsSheet.pdf). Accessed August 21, 2014.

2.U.S. Department of Homeland Security, Federal Emergency Management Agency, U.S. Fire Administration. *Orientation manual for first responders on the evacuation of people with disabilities.* Report No. FA235. U.S. Department of Homeland Security, Federal Emergency Management Agency, U.S. Fire Administration: August, 2002.[*http://www.usfa.fema.gov/downloads/pdf/publications/FA-235-508.pdf*](http://www.usfa.fema.gov/downloads/pdf/publications/FA-235-508.pdf)*.* Accessed October 1, 2014.

3.Autism and Law Enforcement Education Coalition. ALEC (autism and law enforcement education coalition) [Web page]*.* The Arc of South Norfolk Web site.[*http://www.arcsouthnorfolk.org/alec-first-responder-training.html*](http://www.arcsouthnorfolk.org/alec-first-responder-training.html)*.* Accessed August 21, 2014.

4.U.S. Department of Homeland Security/Federal Emergency Management Agency. Conducting exercises and drills [Web page]. The U.S. Department of Homeland Security/Federal Emergency Management Agency Web site.

[*http://training.fema.gov/EMIWeb/emischool/EL361Toolkit/ConductingExercisesDrills.htm.*](http://training.fema.gov/EMIWeb/emischool/EL361Toolkit/ConductingExercisesDrills.ht%09m.) Accessed July 10, 2014.

5. Olson DK, Hoeppner MM, Scaletta K, Peck M, Newkirk R. Games, simulations, and learning in emergency preparedness: A review of the literature. *Am J Disaster Med.* 2012; 7(2): 145-154. doi: 10.5055/ajdm.2012.0090.

6. Collins C. Video game puts the edge in first responder training. *Government Technology.* 2013. *http://www.govtech.com/videos/Video-Game-Edge-First-Responder-Training.html* Accessed October 13, 2014.

7. Ullberg L, Monahan C, Harvey K. The new face of emergency preparedness training: Using Second Life to save first lives. Chicago, IL: Center for the Advancement of Distance Education (CADE), School of Public Health at the University of Illinois at Chicago. *http://www.academia.edu/2569110/The\_New\_Face\_of\_emergency\_preparedness\_training\_using\_Second\_Life\_to\_save\_first\_lives* Accessed October 13, 2014.

8. Engelman A, Ivey S, Tseng W, Dahrouge D, Brune J, Neuhauser L. Responding to the deaf in disasters: Establishing the need for systematic training for state-level emergency management agencies and community organizations. BMC Health Serv Res[published online March 7, 2013].doi: 10.1186/1472-6963-13-84.