Poster Abstract Information
Star * next to poster title denotes poster contest winner. We appreciated the participation of all the poster contestants.

1
The National Foundations of Public Health Preparedness Training Plan: How to Enhance and Sustain Training for the Public Health Workforce
Erin Bougie

TRAIN is a national learning network for professionals who protect and improve the public's health. A collaborative of 29 partnering health organizations, including federal, state, and local agencies, TRAIN provides free access to training for public health and emergency response workers. TRAIN serves over one million learners with content from thousands of trainings, of which approximately 3,000 are related to public health and emergency response. Because of an identified need to improve access to quality, competency-based training, the Public Health Foundation (PHF) and the Centers for Disease Control and Prevention's Office of Public Health Preparedness and Response (CDC OPHPR) launched a national training plan, *Foundations of Public Health Preparedness,* in April 2015. The training plan, available on the TRAIN network, introduces health professionals to high-quality, introductory, online trainings that teach core competency-based concepts of public health preparedness. Enrollment in *Foundations of Public Health Preparedness* is free. Trainings included in the plan were independently developed by public health agencies and academic institutions and reviewed for quality, based on agreed upon criteria, by a workgroup of subject matter experts in training and public health preparedness and response. Learners have begun exploring the 11 original trainings in the training plan, which are organized by the Public Health Preparedness and Response Core Competency domains. *Foundations of Public Health Preparedness* is a living training plan, to be updated periodically to reflect changes in the preparedness landscape. In order to keep the training plan current, it is important to gather feedback and recommendations from professionals working in the field. The poster will introduce participants to TRAIN and showcase the methodology for the course inclusion. PHF and CDC OPHPR invite health agencies to identify gaps in the training plan and explore modifications that could improve its utility for public health professionals.

2
Nurses as Leaders in Disaster Preparedness and Response: A Call to Action
Roberta Lavin, , Mary Pat Couig, Aram Dobalian, Alicia Gable, Anne Griffin, Tener Veenema

Healthcare's response to a public health emergency is largely dependent on surge capacity of the nurse workforce. Prior efforts to prepare and mobilize nurses for disasters have been episodic and difficult to sustain. Current assessments of professional readiness indicate that nurses are inadequately prepared to respond to disasters. In order to improve national preparedness and develop a vision for the future of disaster nursing and develop recommendations for nursing practice, education, policy and research, a series of conference calls were conducted with fourteen national subject matter experts to generate relevant concepts regarding national nursing workforce preparedness. A workshop was held to refine these concepts. Participants included Colleges and Universities, nursing organizations, the American Red Cross, the U.S. Public Health Services and Military, and healthcare organizations. Our panel proposed recommendations to achieve a vision *"To create a national nursing workforce with the knowledge, skills, and abilities to respond to disasters and public health emergencies in a timely and effective manner."*

We seek to ensure that all nurses:
   • Possess a minimum knowledge base, skills and abilities regarding disaster response and public health emergency preparedness;

- respond directly or provide indirect support during a disaster event or public health emergency;
- promote preparedness amongst individuals in their care, families, communities and within the organizations they represent; and

Strategies will be presented from each of the workgroups:

Research – Establish a research agenda based on documented gaps in literature, nursing knowledge, skills, and resources

Policy – Facilitate deployment of nurses and other health care workers to disaster areas.

Practice – support clinical nursing practice during disaster and meet crisis standards of care

Education – establish a national set of disaster nursing competencies and evidence based content for academic and lifelong learning opportunities

3
Combining High-Fidelity Simulators And Table-top Exercises To Teach Hydrofluoric Acid MCI Management
Paul Rega

Human exposure to hydrofluoric acid (HFA) is a rare event. Nevertheless, its unique biochemical properties and their reversal with clearly-defined antidotal therapy mandate that this chemical should be required as part of any HAZMAT educational content. After assigned readings, a case scenario, using a high-fidelity simulator, was created for healthcare students and emergency medicine residents in which a glass-worker was exposed to industrial-strength HFA. After complete field decontamination (a necessary artificiality) was accomplished, the moulaged "patient" presented to the ED team in extreme pain, a prolonged QT-interval on the monitor, and deteriorating vital signs. The outcomes for this exercise were: 1) PPE; 2) Pain management; 3) Appropriate and timely administration of calcium chloride and gluconate (IV, IO, IN, aerosol, intradermal, arterial); 4) Appropriate monitoring of serum calcium and potassium levels; and 5) Appropriate consultations (e.g. dialysis). Then, reinforcing the concepts that targeted violence and global terrorism are growing threats and HFA can be an ideal weapon, a table-top exercise was created in which myriad victims were intentionally contaminated with 75% HFA. The outcomes for this exercise were: 1) Pre-hospital management with empirical IM antidotes in the Hot Zone and beyond; 2) Patient prioritization in the ED environment based on estimated amount of contamination, pain levels and QT prolongation; 3) Empirical antidotal therapy upon initial presentation; and 4) Allocation of scarce resources (namely, antidotes). The utilization of high-fidelity simulation plus table-top exercises is an excellent combination to teach HFA exposure to both pre-hospital and hospital professionals. In addition, it can serve as an efficacious prologue to a functional exercise as well as stimulate improved management guidelines.

4
Pandemic Table-Top Exercises to Teach Inclusion/Exclusion and Withdrawal of Care Concepts to Healthcare Students and Professionals
Paul Rega, Brian Fink

Inclusion/exclusion and withdrawal of care criteria are controversial and rarely-discussed concepts in pandemic preparedness and response education. Disallowing certain patients' entry to an ICU and/or removing ICU patients from ventilators, based upon non-validated scoring systems or arbitrary alternative parameters could legally and ethically cripple any healthcare system and undermine public confidence. These criteria are arbitrary, non-evidence-based, and are hamstrung by medico-legal contamination and a hand's-off posture by state and federal agencies. While these pandemic concepts have been discussed, debated, and published, a basic understanding and awareness of these issues have reached neither the lay public nor the average

healthcare student/provider. Unique table-top exercises are presented to illustrate the conundrums associated with inclusion/exclusion and withdrawal of care criteria. Educational goals include analysis of: 1) the differences in criteria from state to state; 2) the importance of an ethical framework to serve as a foundation for action; 3) the differences among ethical philosophies in relation to pandemics (e.g. egalitarian, utilitarian); 4) the criteria selected to make allocation of scarce resources and withdrawal of care decisions; 5) the expertise of hospital ethics committees. One set of ED patient scenarios was developed with complete medical and demographic information. Based on the students' inclusion/exclusion criteria (assisted by relevant publications in peer-reviewed journals), patients were admitted to ICU or general wards, triaged to alternative care sites or admitted directly to hospice. The withdrawal of care TTX requires 2 sets of case scenarios. One set contained all medical and demographic data. The second set was more austere (i.e. SOFA score, age, admission diagnosis). Learners (as an ethics committee) then had to decide withdrawal of care issues for each patient. They were also required to developed their own criteria and explain their reasoning.

*5

Education Fact Sheets: Tailored and Timely Disaster Mental Health Response
Joshua Morgenstein, Eric Meyer, Jorge Hastings

The behavioral choices people make in the wake of a disaster, such as staying in place, evacuating, seeking or not seeking medical care, and searching for loved ones have very real life and death implications. Effective mental health disaster response requires timely and accurate information for victims, first responders, leaders, family members and other effected stakeholders to better inform their decision making. Because cognition changes during crises, the delivery of educational information designed to influence behavior should consider several important issues. Disaster education should be timely and accurate. It should address predictable issues of concern to those affected, while informing them of actions to take and those to avoid. The Center for the Study of Traumatic Stress (CSTS) has developed a systematic process for the development of disaster response education fact sheets. The process involves rapidly incorporating subject-matter experts that provide educational guidance based on the events surrounding a specific disaster. Using this guidance, along with current best evidence, CSTS develops customized fact sheets that provide succinct, easy-to-read, highly actionable response and recovery information to those impacted by a disaster. These fact sheets are finalized within twenty-four hours of the disaster event. They are subsequently disseminated to a broad range of national and international partners and relevant stakeholder organizations by email and social media as well as hard copy if needs dictate. The CSTS disaster mental health fact sheet development and dissemination process has been refined over more than fifteen years of disaster mental health response and used to assist in directing the response of victim advocacy organizations, healthcare personnel, first responders, and community leaders in the management of over 70 disaster events.

6

Coordinated Disaster Response for Offsite Facilities using a Customized Emergency Action Plan
Joshua Morganstein, Eric Meyer, Jorge Hastings

Comprehensive preparation enhances the effectiveness and coordination of emergency and disaster response for individuals and communities impacted by these events. Workplace planning and preparation requires consideration of unique factors when developing response plans for personnel impacted by a wide range of emergencies, including natural and human-made disasters. A thorough understanding of these factors is critical for the care and welfare of all employees. Organizations with offsite facilities that are geographically separated from their parent organization may encounter unique disaster planning challenges or vulnerabilities. For instance, personnel working in offsite locations may not be covered by the disaster planning guidance of their parent organization. Policies and procedures of both building property management as well as the parent organization may need to be considered when developing emergency response plans for offsite facilities. In response to a series of local and regional workplace emergency events, the Center for the Study of Traumatic Stress developed an "Emergency Action Plan." This document expands on the traditional emergency response

plan format by incorporating lessons learned regarding unique planning and response issues encountered by offsite facilities located in physical space not owned or operated by the parent organization. The "Emergency Action Plan" provides a template for leaders and managers at offsite facilities to develop optimal emergency and disaster plans that can enhance the effectiveness of personnel response.

7
Applying Mindfulness Training to Enhance Staff Readiness for Continuity of Operations
Bernard Cook, Ada Leach, Ron Lewis, Martha Martin

National Continuity Policy (National Security Presidential Directive-51/Homeland Security Presidential Directive-20) requires all Federal agencies provide resources and develop plans to ensure that the organization is capable of conducting its essential missions and functions under all threats and conditions. To perform organizational operations efficiently with minimal disruption, staff must be trained to perform their duties in a continuity environment. Training and exercises to build continuity of operations (COOP) capabilities are federally required. Federal Continuity Directive 1, Annex J, Human Resources, states "Organizations must provide guidance to COOP members on individual preparedness measures they should take to ensure response to a continuity activation."

Currently some governmental agencies only provide general preparedness tips. An event requiring COOP activities is expected to be extremely stressful, requiring staff to function at high capacity during long operational periods. We recommend that staff be taught mindfulness techniques to improve personal preparedness. The negative effects of stress on decision making and other cognitive functions have been widely established by research. In contrast, studies have shown that cultivating practices such as meditation and changing frame of mind actually impacts the brain regions important for attention, emotion regulation, and mental flexibility. Training on mindfulness better prepares COOP staff to control their attention, manage their emotions, and make mindful choices. We conducted such training virtually and in-person for a Federal public health agency that utilized multi-media materials, individual activities, and group discussions to address cognitive, affective, and psychomotor learning domains. We taught breathing techniques, self-care practices, and awareness of stress triggers and solutions. The content was well received and included requests for additional training. We will share our training ideas and methods to encourage the incorporation of mindfulness as part of an organization's overall training plan to increase staff resourcefulness for managing incidents and maintaining the public's health.

*8
Troop Education for Army Morale (TEAM): A Post Deployment Educational Intervention for Mortuary Affairs Soldiers
Quinn M. Biggs, Nicole Dacuyan, Carol S. Fullerton, Xian Liu, James McCaroll, Robert Ursano, Leming Wang, Douglas Zatzick

U.S. Army mortuary affairs soldiers (MA) perform duties involving identification, processing, and evacuation of the dead from the theater of war. Such exposures to death and the dead have been associated with acute and long-term psychological distress and psychiatric disorder. TEAM (Troop Education for Army Morale) is an innovative educational intervention designed to reduce distress and foster adaptive functioning after return from deployment. TEAM is based on evidence informed principles of Psychological First Aid: safety, calming, connectedness, self-efficacy, and hope/optimism. The intervention is delivered through interactive group workshops, handouts, a website, and phone line. Soldiers learn skills for self-care as well as support of others. A total of 126 MA soldiers, randomized to TEAM or a no intervention comparison group, completed questionnaires approximately 1, 2, 3, 4, 7 and 10 months post deployment. We present data on demographics, probable post traumatic stress disorder and depression, and multivariate models of the impact of the TEAM intervention (vs. no intervention). At baseline, 25.0% of the total sample had probable PTSD (PCL-17 M = 35.4, SD = 16.9). At study conclusion, intervention and comparison groups were not different. Intervention group males showed a transient symptom increase at 2 – 3 months. Males attended fewer intervention sessions than females. Lower attendance was associated with more symptoms. Higher attendance was associated with greater intervention

benefits. Findings highlight the need for better understanding post-deployment interventions and facilitating attendance. Further intervention for MA soldiers is indicated.

9
Mobile applications in just-in-time learning for disaster health professionals
Alexander Liu, Kandra Strauss-Riggs

An important characteristic of disasters is their unpredictable nature. Disaster health professionals are often deployed during or shortly after an event has occurred. As such, an increasingly prominent theme in the literature is a concept known as just-in-time (JIT) learning, which allows disaster health providers to apply new knowledge in the field in a timely manner. The advent of increasingly sophisticated mobile devices opens new possibilities in merging JIT learning with a mobile application platform. However, there is remarkably little research in utilizing mobile apps in health learning contexts, especially in the area of disaster health. This is particularly true if the search is restricted to information that has been peer-reviewed. However, there are a wide variety of resources that are potentially available in the gray literature (e.g. government or private sector reports, dissertations, conference abstracts, etc.). Therefore, it is vital to assess the gray literature to gain a comprehensive understanding of the possible obstacles and potential benefits that mobile apps may hold. The objective of this poster is to provide an overview of the current state of mobile app use in JIT learning, within the gray literature. A literature review was conducted using the PRISMA checklist and examined articles that were found through Google Scholar.

10
Training Evaluation and Future Steps for the Veterans Health Administration Disaster Emergency Medical Personnel System (DEMPS)
Susan Schmitz, Karen Chu, Aram Dobalian, Tiffany Radcliff, Robert E. Smith

Introduction: Disasters can disrupt hospitals' staffing ability, threatening patient access to care. The Disaster Emergency Medical Personnel System (DEMPS), a team of Veteran Health Administration (VHA) employee volunteers, provides staffing assistance to enhance continuity of services if local resources are overwhelmed. We evaluated DEMPS' training program to (1) examine satisfaction with training methods and (2) identify ways to improve training based on feedback.

Methods: In 2012, all DEMPS volunteers (8,250) were sent an online survey; 26% (2,120) responded. Measures included *Training Satisfaction* (one item each for online, field exercise, and face-to-face), *Positive Attitudes about Training* (five items), and *Continued Engagement in DEMPS* (two items). Statistical analyses were conducted using Chi-Square and logistic regression models.

Results: *Training participation*: 74% completed online, 24% participated in field exercise, 22% attended face-to-face; 32% participated in two or more types.

Satisfaction: All training methods showed high respondent satisfaction (83% online, 86% field exercise, 80% face-to-face).

Positive Attitudes: Volunteers with all three training modes and those who had been deployed were significantly more likely to report positive attitudes about training ($p < 0.05$).

Continued Engagement: Volunteers with deployment experience and those who participated in more training types were significantly more likely to agree they would continue to volunteer and would recommend volunteering in DEMPS to others.

Discussion: Blended learning produced higher training satisfaction, more positive attitudes, and continued engagement in DEMPS. Satisfaction and attitudes did not differ by sociodemographic characteristics, but prior deployment experience was positively correlated with both. Offering varied training methods and opportunities for practical exercises could improve training experiences, which may encourage continued engagement in DEMPS. In the years following this survey, DEMPS training migrated to a virtual reality (VR) platform to make more interactive synchronous sessions available while maintaining independent online learning. Future work will compare DEMPS VR training to more traditional training modes.

11

The Disaster Essentials for Healthcare Providers (DHEP) Course- A Multidisciplinary Training Approach to Emergency Preparedness and Disaster Response for Utah Medical Trainees.

Katie Wells, Kevin McCulley, Megan Fix, Jennifer Lazzara, Mark Shah

Background: The Utah Geologic Society estimates that Salt Lake County is at high risk for a magnitude 7.0 earthquake, which would affect over 1 million residents, of which 9,000 may be critically injured with an additional 2500 deaths. This could create severe infrastructure damage, including damage to hospitals. A pandemic in Utah would also create a crisis situation with significant health care resource shortages. To help address the preparedness needs of this community, the multi-disciplinary Disaster Essentials for Healthcare Professionals (DEHP) course was developed in 2012.

Methods: The DEHP course was developed by the Intermountain Center for Disaster Preparedness in cooperation with the University of Utah, with grant support from the Utah Department of Health. In 2013, the course became a component of the Inter-Professional Education (IPE) program at multiple University of Utah professional schools to foster cross-disciplinary teamwork. The DEHP is a one-day course focusing on disaster basics, triage, government response, resiliency, and challenges. Didactic time has been minimized allowing for immersive simulations and debriefings. The course focuses on teaching crisis resource management strategies over fact-based knowledge acquisition.

Results: The DEHP course has been taught 4 times per year 2012-2015 (n= 12). 621 students taught: medical (40%), nursing (30%), nurse practitioner (15%), physician assistant (10%), and pharmacy (5%). The course is a requirement for senior University of Utah medical students and bachelor of nursing students. Trainees indicate on post course surveys, that they are more likely to engage in future courses and drills (92%), and that they would respond should a disaster arise (71%).

Conclusion: Disaster preparedness education should be implemented on a systems basis with shared learning objectives and universal competencies to allow multidisciplinary students to learn role responsibilities that fit into a larger disaster response framework.

12
The Ebola Training Program for Korea Disaster Relief Team and Lessons Learned: A Successful Military-Civilian Cooperation
Kyunge-hye Choi, Yoomi Jung

At the peak of Ebola in West Africa, the Republic of Korea president announced the deployment of Korea Disaster Relief Teams to the region in October, 2014. Promoting a military-civilian collaboration for the preparation, Ministry of Foreign Affairs, Ministry of Health and Welfare, Ministry of National Defense, and Korea

International Cooperation Agency jointly entrusted Korea Armed Forces Nursing Academy with the task of training three KDRT teams consisting of 25 civilian and military physicians and nurses to deploy to the region. Due to the time and expertise limitation, KAFNA was the best option for the national project at that time.

With their ten years of experience in various disaster healthcare education programs, the KAFNA faculty members with support from the government developed a tailored three-day Ebola Training Program. Categorized into didactic classes, table-top exercises, skills station, and simulations, the program promoted the trainees' understanding of EVD and taught them essential skills for survival, including donning and doffing protective gears. The specially built Ebola Treatment Unit provided simulation sessions with carefully devised scenarios. While practicing simulated activities in the ETU the KDRhT members learned the best ways of taking precautions to avoid the deadly disease. After each training session, the developers reviewed the feedback from trainees and trainers themselves and improved the program for the next team.

The intensive and focused training has contributed to the safe return of the KDRTs who were dispatched to Sierra Leon from December, 2014 to March, 2015, serving for 3,624 work hours. It was the first-time ever deployment of a medical team from an Asian country to a region where an emerging infectious disease had broken out. Having led the successful training, KAFNA demonstrated an advantage of future collaboration between military and civilian agencies in disaster response education.

13
Oklahoma Medical Reserve Corps Nursing Student Summer Externship
Loren M. Stein

Objectives of the National Health Security Strategy 2015-18 include strengthening the health security workforce education and increasing the number of trained workers. An excellent example of realizing these objectives was developed at The University of Oklahoma College of Nursing where in 2015 faculty initiated an Oklahoma Medical Reserve Corps (OKMRC) Nursing Student Summer Externship Pilot program and in 2016 expanded the externship program to three nursing programs.

The Oklahoma Medical Reserve Corps (OKMRC) is Oklahoma's only medical and public health volunteer organization. MRC units engage volunteers to strengthen public health, improve emergency response capabilities, and build community resiliency. Nurses represent the largest group of healthcare professionals in the state and are in a unique position to assist their communities in medical, mental health or public health responses. By developing an externship with the OKMRC, nursing students gain information and experience in public health emergency preparedness and response, develop an understanding of a nurse's role in the community, and experience interdisciplinary collaboration.

Externship Objectives:

Explore the role of public health in emergency preparedness, response and recovery.

Explore the role of disaster behavioral health in disaster response and recovery.

Discuss the National Health Security Strategy and Implementation Plan and describe the document's relevance for nursing.

Describe the potential impact of volunteering as an OKMRC nursing student on future professional choices and professional development.

This poster presentation will share the strategies and outcomes of developing a nursing program public health emergency preparedness and response externship with the OKMRC. The OKMRC nursing student externship enhances the educational experiences and competencies of nursing students thus impacting workforce education. The externship also forges a relationship between the students and the OKMRC which hopefully lasts beyond graduation.

14
A Community Partnership Model for Increasing Emergency Preparedness of Patients Living at Home
Ann Horton

Establishing health security among vulnerable populations is a unique challenge for public health. Recent disasters have shown that individuals with special medical or physical needs living at home can be isolated and profoundly affected by an emergency. Since these individuals are not living in health care institutions, they do not have readily available medical support in a disaster. In particular, high-risk individuals with medical needs, such as power-dependent equipment or those with insulin-dependent diabetes, need special preparations to survive and remain safely at home during an emergency.

The Maryland Department of Health and Mental Hygiene (DHMH) Office of Preparedness and Response partnered with the Maryland-National Capital Homecare Association to develop special messaging, training and materials for home care providers and their patients. Taking collective lessons learned from disasters such as Hurricane Sandy, the two organizations created a Home Care Emergency Preparedness Network. The network is designed to provide real-time emergency information, as well as outreach, provider training, and educational materials to home care providers and their patients. The partnership has been successful in using home care providers (personal care, home health, durable medical equipment and hospice) as intermediaries in educating seniors and disabled citizens about emergency preparedness and resiliency.

Patient brochures have been translated into Spanish, French, Hatian Creole, Korean, Chinese, Vietnamese, Tagalog, and Russian. The materials won the Gold Award from the 2015 Awards in Excellence in Public Health Communication.

Other states can employ DHMH's partnership development and audience engagement processes to partner with their local home care association or other advocacy group/professional association to provide an additional outlet for outreach to vulnerable populations. This presentation will include information for all participants to connect with their state home care association to begin a dialogue about developing a similar partnership.

15
60 Seconds to Survival: Impact of an Educational Video Game on EMS Disaster Triage
Mark Cicero, Marc Auerbach, Travis Whitfill

Background: Disaster triage training for emergency medical service (EMS) providers, is often unstandardized. Simulation training is costly and time-intense. We hypothesized that a serious video game yields more accurate disaster triage among EMS providers.

Methods: Participants were randomized 2:1 to play the game (intervention) or serve as controls. Participants completed a survey of their demographics, highest level of training (EMT, paramedic student, paramedic), triaged 12 patients in three scenarios of a disaster triage video game (school shooting, house fire, tornado), and

received automated, in-game feedback on their performance. Expected triage level (RED, YELLOW, GREEN or BLACK) was determined via modified Delphi method by a panel of physicians and EMS providers. All participants completed a live simulation at Time1, and a second live simulation at Time2, 13 weeks later. Actors and manikins portrayed the simulation victims. In the interim, players interacted with the game weekly. Controls had no formal disaster training during the study. The main outcome was improvement in the Time2 simulation compared to Time1.

Results: There were 39 participants in the intervention group and 23 controls. There was no difference between the groups regarding gender (p=0.90), level of training (p=0.32), or years of experience (median 4.0 years intervention, 4.5 years control, p=0.72). At Time1, median triage accuracy was 80% [IQR 70-90%], and at Time2 the intervention group had median triage accuracy of 90% [IQR 80-100%, p

Conclusion: The video game 60 Seconds to survival is associated with an increase in triage accuracy, assessed by improvement in live simulation performance. Control group improvement suggests ambient learning or Hawthorne effect. Future directions include assessment of triage accuracy improvement at multiple sites with the video game used as an educational intervention.

*16
Pathway to Resilience: Emotional and Behavioral Health after Disasters
Rachel Kaul, Shulamit Schweitzer

Disasters have different health impacts, but all disasters have behavioral health impacts. This interactive poster offers an innovative approach to increase understanding and identify actions that integrate behavioral health into preparing for, responding to, and recovering from a disaster. Using a board game format, participants will learn about disaster behavioral health and resilience issues, needs, and available resources and tools. As participants progress through the interactive game board, disaster behavioral health information is organized according to the phases for systemic change: Increased Awareness, Improved Understanding, Planning/Training, and Integrated Action. Participants will experience how systematic change ideas can be applied to foster resilience and good behavioral health in the event of disaster in order to bring about sequential and strategic improvements in understanding, training, and practice.

17
Protecting workers and the community from biohazard and infectious disease exposures - A Training and Education process model
Joseph Hughes, Jim Remington

The National Institute of Environmental Health Sciences' (NIEHS) Worker Education and Training Program (WTP) has over 20 years of experience providing workers health and safety training related to potential exposures to biological hazards as they perform their job duties. Our audiences have spanned the worker population from healthcare workers to volunteers. When the CDC allotted a portion of its funds to the NIEHS WTP to develop a worker safety and health training grant program for Ebola, a process was laid out to best inform the Funding Opportunity Announcement, starting with a training needs assessment and gap analysis of current training for Ebola and other emerging infectious diseases.
The methodology for this assessment and analysis included:

A literature search for Ebola training
A Web search for and review of existing Ebola training courses
Meetings and interviews with stakeholders, including the *NIEHS WTP Ebola Biosafety Training Initiative Awardee Meeting* An online survey of stakeholders assessing their experience with Ebola training

Focus group sessions of key stakeholders

Results showed that the Ebola Virus Disease (EVD) outbreak highlighted the need to implement changes in biohazard preparedness that addresses future infectious disease outbreaks. In conducting a gap analysis, several key themes emerged: Better communications across disciplines and organizations is required. Official guidance needs to be better coordinated, more timely, and created with the input of end users. Sustainability depends upon funding, elimination of complacency, and application of training to daily functions. Emphasizing key competencies in training, mental health resiliency and basic preparedness must be integrated throughout training programs. Evolving science and guidance require programs be flexible and capable of updating personnel after initial training. Trainers should be encouraged to publish their experiences in peer-reviewed journals so that their knowledge and best practices can be shared among their peers.

18
Community Health Resilience Initiative Online Guide and Toolkit
Emilee Kottcamp-Allen

The Community Health Resilience Initiative (CHRI) website is a collaborative project involving public and private-sector partners to strengthen and enhance community health resilience across the Nation. The CHRI is guided by a national stakeholder group of key practitioners and representatives from sectors, disciplines, or functional areas with roles or responsibilities in assuring public health and safety, and human care. Members of the Stakeholder Group represent Federal, State, Regional, and Local agencies; private sector organizations, educational institutions, and Non-Governmental Organizations (NGOs). The CHRI is sponsored by the U.S. Department of Homeland Security (DHS) Office of Health Affairs (OHA), and works closely with the Department of Health and Human Services (HHS) to ensure these efforts are fully coordinated.

The CHRI Toolset provides users with a comprehensive overview of the many elements and characteristics of holistic community health resilience. Users can also use the CHRI Toolset:

- As a planning template to develop or enhance public health and organizational preparedness, response, mitigation, and recovery/continuity plans;

- As a means to engage the broad stakeholder base toward community health resilience;

- To provide a high-level checklist of community health resilience capabilities;

- To learn about community health resilience best practices that public/private-sector and non-profit organizations have or are developing;

- To access policy and educational resources (e.g., studies, assessments, and lessons learned from disasters, events, workshops, and exercises on community health resilience);

- For information in specialty areas, including Geriatric and Pediatric/Children's disaster resilience;

- To help identify and point toward actions to improve community health resilience under steady-state conditions and during emergencies; and

- To train and enhance strategic and operational needs and actions necessary for building health-resilient communities and organizations.

19

Addressing gaps in disaster preparedness for children with access and functional needs (CAFN) with power and technology dependence

Brenna Carlson, Bridget M. Berg, Rita Burke, Natalie E. Demeter, Jeffrey S. Upperman

Introduction: Children with access and functional needs (CAFN) have unique needs during disasters because of their medical condition(s) and dependence upon medication, medical devices, and caregivers. Despite this recognized vulnerability, CAFN may be overlooked in disaster planning. The aim of this project was to convene a coalition of subject matter experts to asses and address gaps in regional disaster preparedness for CAFN with power and technology dependencies within Los Angeles County.

Methods: After IRB approval, we identified and engaged a convenience sample of subject matter experts. Stakeholders were selected based on their experience and interest in disaster planning and preparedness for CAFN. The coalition convened twice to identify critical gaps and provide recommendations. Discussion during both meetings was captured with a voice recorder and later transcribed.

Results: Coalition stakeholders were representative of 17 different organizations, including Children's Hospital Los Angeles, L.A. County Department of Public Health, L.A. County Office of Emergency Management, L.A. Department of Water and Power, L.A. Fire Department, and L.A. Unified School District. After two focus group sessions, stakeholders identified three critical gaps by consensus in disaster preparedness for CAFN with power and technology dependence: 1) transportation from schools to home following disasters, 2) communication and education of parents and caregivers, and 3) emergency power sources. Recommendations to address these gaps included; coordinating with Access Services to provide transportation, sending emergency messaging to parents with transportation instructions, developing a program to establish temporary locations for emergency power, and encouraging more direct communication between providers and families.

Conclusion: The coalition meetings reiterated the importance of regional disaster planning for CAFN. The recommendations generated by the coalition can be utilized by local, state, and federal agencies to enhance disaster planning and outreach for the CAFN population.

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21
Team Training in High Risk Environment
Monica C. Staples, Paul Biddinger, Jacquelyn Nally, David Reisman, Erica Shenoy

Developing and sustaining competencies for clinicians who may care for patients suspected of infection with Ebola Virus Disease (EVD) or other highly infectious diseases (HIDs) is difficult and potentially very costly for hospitals. We sought to develop innovative methods leveraging existing hospital assets to build and maintain a program to minimize impact to the rest of the institution. Following over a year of iterative planning efforts, we have created a tiered Biothreats Response Team (BRT).

The tiers include: the "super-users" who train regularly and educate others, a core 24/7 "roster" that practices skills, and the "auxiliary" team, who receives initial and annual training and would receive "just-in-time" training prior to activation.   Participation is voluntary, and staff requires prior managerial approval to join as well as medical clearance. The application process was adapted from the hospital's existing hazardous materials decontamination team model, which has been sustained for more than 13 years.

BRT staff train to safely identify and isolate patients with suspected or confirmed EVD or other HID, to maintain proficiency in the donning/doffing of PPE, and to provide care to patients while wearing the highest levels of biologic PPE. This curriculum is grounded in CDC tenets, incorporated with existing institutional procedures and adheres to local public health guidance. The BRT utilizes low to high fidelity simulation to ensure functionality within a coordinated incident command response system. We believe the tiered BRT uses the minimum number of personnel to initiate and sustain a response of up to 3 weeks, while supporting 24/7/365 readiness overall. We believe this model may be adopted by other hospitals, with adaptations for their local environment. We plan to describe the creation of this model and offer tools to other hospitals that are challenged to develop similar capabilities.

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