

Innovation in Graduate Education for Health Professionals in Humanitarian Emergencies

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Keywords: disasters; global health; graduate education; humanitarian emergencies; public health

Abbreviations:

CDC: US Centers for Disease Control and Prevention
CHEs: complex humanitarian emergencies
ERRB: Emergency Response and Recovery Branch
IEPT: International Emergency Preparedness Team
MoH: Ministry of Health
MPH: Master of Public Health
NGO: non-governmental organization
RSPH: Rollins School of Public Health
UN: United Nations
WASH: Water Sanitation and Hygiene
WHO: World Health Organization

Abstract: The objective of this report was to show how the Center for Humanitarian Emergencies (the Center) at Emory University (Atlanta, Georgia USA) has trained graduate students to respond to complex humanitarian emergencies (CHEs) through innovative educational programs, with the goal of increasing the number of trained humanitarian workers. Natural disasters are on the rise with more than twice as many occurring from 2000-2009 as there were from 1980-1989. In 2012 alone, 144 million people were affected by a natural disaster or displaced by conflict worldwide. This has created an immense need for trained humanitarian workers to respond effectively to such disasters. The Center has developed a model for educational programming that targets learners along an educational continuum ranging from the undergraduate level through continuing professional education. These programs, based in the Rollins School of Public Health (RSPH) of Emory University, include: a competency-based graduate certificate program (the Certificate) in humanitarian emergencies; a fellowship program for mid-career professionals; and funded field practica. The competency-based Certificate program began in 2010 with a cohort of 14 students. Since then, 101 students have received the Certificate with 50 more due for completion in 2016 and 2017 combined. The fellowship program for mid-career professionals has hosted four fellows from conflict-affected or resource-poor countries, who have then gone on to assume leadership positions with humanitarian organizations. From 2009-2015, the field practicum program supported 34 students in international summer practicum experiences related to emergency response or preparedness. Students have participated in summer field experiences on every continent but Australia. Together the Certificate, funded field practicum opportunities, and the fellowship comprise current efforts in providing innovative education and training for graduate and post-graduate students of public health in humanitarian response. These modest efforts are just the beginning in terms of addressing the global shortage of skilled public health professionals that can coordinate humanitarian response. Evaluating existing programs will allow for refinement of current programs. Ultimately, these programs may influence the development of new programs and inform others interested in this area.

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Introduction

A disaster is “a serious disruption of the functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of the affected society to cope using its own resources.”¹ One type of disaster, complex humanitarian emergencies (CHEs), includes multiple contributing factors often following armed conflict, such as wars and other civil strife, and results in mass population displacement. Oftentimes, CHEs combine political instability with natural disaster. Complex humanitarian emergencies are characterized by large numbers of deaths and severe injuries, population displacement, food

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shortages, and outbreaks of infectious disease. In the last decade, there have been: 1,818 floods; 1,026 storms; 298 earthquakes; 169 droughts; and 56 armed conflicts.² Disasters such as these frequently are thought of as rare or unusual events, but there are on average 388 disasters each year, making them a more regular occurrence than one might otherwise assume.² Natural disasters are, in fact, on the rise with three times as many occurring between 2000–2009 as there were from 1980–1989.²

Over the past decade, disasters have accounted for over one million deaths worldwide, an increase of 146% from the previous decade.² In contrast, the global capacity to respond to disasters and CHEs has not increased nearly as rapidly. Most countries experiencing disasters are of low- to lower-middle income with limited capacity to respond using solely their own resources. Limited capacity may include not only economic limitations, but also inadequate health systems and restricted human capital.³

Just as disasters and CHEs are on the rise, so too is the clinical and public health workforce shortage. The World Health Organization (WHO; Geneva, Switzerland) estimates a current global shortage of over 7.2 million doctors, nurses, and other health professionals.^{4,5} By 2035, this number is expected to rise to 12.9 million.⁴ More specific to the field of public health, the Association of Schools and Programs of Public Health (ASPPH; Washington, DC USA) predicts a need for 250,000 more public health workers by 2020 in the US alone.⁶ This workforce shortage is predicted despite the recent growth in public health programs at both the undergraduate and graduate level.

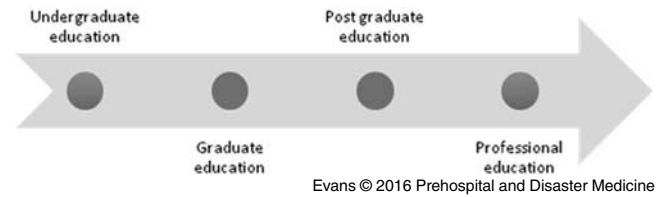
The primary function of public health professionals responding to CHEs is to reduce excess mortality and morbidity. Public health professionals are recruited to emergencies in order to define health risks, suggest feasible means to reduce these risks, monitor the capacity and reconstruction of public health systems, and implement public health programs. Yet, few public health graduate programs offer training in humanitarian response as a part of their curricula.⁷ The increase in disasters and CHEs coupled with a shortage of public health professionals trained in humanitarian response has prompted the development of a number of proposals for graduate education for response to CHEs.⁸ Below is an overview of one such attempt to address this need.

Report

The Center for Humanitarian Emergencies at Emory University

The Center for Humanitarian Emergencies (the Center) at Emory University (Atlanta, Georgia USA) was established in 2013 through a cooperative agreement between the Emergency Response and Recovery Branch (ERRB) of the US Centers for Disease Control and Prevention (CDC; Atlanta, Georgia USA) and the Rollins School of Public Health (RSPH) at Emory University. The mission of the Center is to drive global collaboration, research, and evidence-based training in order to improve the lives and well-being of populations impacted by CHEs.

A priority area for the Center's programming is the education and training of a public health workforce that is prepared to respond to disasters and CHEs. The model for educational programming is the Center's Education Pipeline (Figure 1); learners fall along an educational continuum ranging from the undergraduate level through professional continuing education. This report focused on the Center's efforts to create innovative graduate and post-graduate educational programming. These programs include a competency-based graduate certificate



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Figure 1. The Center for Humanitarian Emergencies Education Pipeline.

program in humanitarian emergencies, funded field practicum opportunities, and a fellowship program for mid-career professionals. Packaged together, these programs address several types of learners across both academic and field-based training.

Graduate Education: Certificate Program

The Graduate Certificate in Humanitarian Emergencies (the Certificate) is a rigorous and competitive program that accepts between 25–30 students each year - primarily those from the discipline of public health. The program has become a flagship certificate program at RSPH because of the ability for students to interact with leaders in the field at the CDC; over the course of the two-year Master of Public Health (MPH) program, students must complete two foundational courses in humanitarian emergencies, at least one advanced methods course, and six credit hours of approved elective courses.⁹ The foundational courses cover a wide range of topics (Table 1).

Approved electives are offered on the topics of: emergency preparedness, logistics, mental health, needs assessment, nutrition, and risk communication. Courses are taught by ERRB staff who hold adjunct appointments within RSPH and invited speakers. Guests representing United Nations (UN) agencies, non-governmental organizations (NGOs), and Ministries of Health (MoH) also often participate in course discussions, which adds a wealth of practical experience that students benefit from (Table 2). Certificate courses are taught in a quasi-traditional, short-course format ranging from two days to one week. Many courses are offered outside of the traditional semester calendar either over weekends or during scheduled breaks. The Certificate courses consistently rate highly in routinely conducted student evaluations. Between 2008–2014, the mean score for all Certificate courses was 4.33 on a 5-point scale where five was the highest possible score.

These courses were developed by ERRB staff and offered at RSPH over the past decade as standalone courses; eventually, they were packaged and formally approved by the RSPH curriculum committee as a certificate program. The first cohort of 14 students received the Certificate in 2010. Since then, 87 additional students have received the Certificate with 50 more due for completion in 2016 and 2017 combined. Certificate students have been enrolled in all five departments within RSPH, though the majority are enrolled in the Hubert Department of Global Health.

In addition to required coursework, students are expected to participate in either five CHE-related events, such as RSPH lectures, or complete 15 hours of volunteer work related to humanitarian emergencies. Additionally, each student is required to complete a research or practicum project. The research component is fulfilled by either a thesis or significant research paper on a CHE topic of the student's choosing; the practicum requirement is met through the completion of a service-learning

Refugees, displaced persons, conflict and complex emergencies: setting the stage
Who are the major actors in complex emergencies?
Camp management and public health intervention- coordination, logistics, distribution systems, water and sanitation
Data Collection in Emergencies
Logistics Fundamentals in a Complex Humanitarian Emergency
Food and Nutrition
Needs Assessment
Water and Sanitation
Malaria
Reproductive health
Measles and other vaccine-preventable diseases
Acute respiratory infection
Communicable Diseases including HIV and TB
Psychosocial issues in complex emergencies and stress management of relief workers
Diarrheal Disease
Non-Communicable Disease
Recovery Phase of CHE

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Table 1. Lecture Topics for One of the Foundations' Courses in Order of Presentation

Abbreviations: CHE, complex humanitarian emergencies; HIV, human immunodeficiency virus; TB, tuberculosis.

American University of Beirut	Mercy Corps
CARE, USA	Public Health England
Concern (Worldwide, Sudan)	Save the Children
Canadian Public Health Service	Terre des Hommes (Switzerland)
Department for International Development, UK	UNICEF (Haiti, New York, Madagascar)
International Medical Corps	US Department of State
International Rescue Committee	WHO (AFRO, Somalia)
Medicine du Monde	World Food Program

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Table 2. Sample of Organizations whose Representatives Have Attended Courses

internship in a low-resource or post-conflict setting using skills relevant to CHEs. In order to facilitate such practical experiences, the Center offers some funded field practicum opportunities directly related to emergency preparedness.

Graduate Education: Field Practica

Getting a “foot in the door” with organizations that specialize in CHEs is challenging for academically prepared public health students who lack field experience; this fact particularly holds true for those in the fields of global health and humanitarian response. Providing meaningful practical experience during graduate public

health study is an accreditation requirement for schools of public health - one which is fulfilled by the field practicum program.

Based on a survey of global health students about their summer field experiences from 2009–2015, the Center’s field practicum program supported 34 students in international summer practicum experiences related to emergency response or preparedness. It is worth noting, however, that those surveyed were limited to only global health students despite the fact that the Certificate is open to students across all departments at RSPH. Certificate-specific data were not collected or disaggregated prior to 2014 because the Certificate was relatively new. Students have participated in summer field experiences on every continent with



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Figure 2. Field Locations for IEPT-sponsored Practica, 2009–2014. Abbreviation: IEPT, International Emergency Preparedness Team.

the exception of Australia. The majority (78%) of field practica were international in nature. In-country host institutions included: academic institutions; local, national, and international NGOs; local and national host country government agencies; UN agencies; and US government agencies.

More specifically, over one-half (52%) of RSPH global health students partnered with the CDC for their summer field experience. Each year, several students are selected to work in collaboration with the CDC's International Emergency Preparedness Team (IEPT), a part of ERRB. During their funded field practica, students support emergency response preparedness activities of the CDC country offices and their in-country public health partners.

In the fall of each academic year, the locations and number of practicum positions for the following summer program are advertised at the RSPH Global Practicum Opportunities Fair where interested students are encouraged to apply. Interviews are then conducted by IEPT staff; interview questions are designed to gauge the student's ability to work in an international setting, previous relevant experience, and ability to work within the team. International experience, such as Peace Corps, and language abilities are considered strong assets. The majority of applicants are enrolled in the Certificate program. Based on interview results, students are selected by the end of November. The selection process is highly competitive. In the four years of the program, of the 75 students who have applied, 24 (or 32%) were selected for participation. The participants are selected soon after the fair to ensure adequate time for students' pre-departure training.

Students selected for IEPT field practica participate in a number of preparation activities before deployment. Beginning the January before summer deployment, students participate in weekly training sessions with IEPT staff and other CDC subject matter experts in emergency management. The two-hour long training sessions are on a variety of topics, including Global Health Security, the International Health Regulations, international all-hazards planning, risk communication, tabletop exercise development, Emergency Operations Center development and

management, standard operating procedures, and project management. Students take the two-day Preparedness and Planning for International Emergencies course offered as part of the Certificate. Students also have the opportunity to connect with their in-country points of contact and discuss their in-country projects before their arrival. Students are required to attend the CDC Foreign Travel Safety Briefing as well as individual safety briefings for their specific country through the CDC Office of Safety, Security, and Asset Management (OSSAM) Public Health Intelligence Office (PHIO). Additionally, the WHO Security Guidelines for Women are provided to female students, and students participate in a safety and security briefing at Emory University.

While in the field, students are supervised by an in-country supervisor and receive at least one visit from IEPT headquarters staff. Practicum activities include: hazard analysis and risk mapping; risk communication training; and the development of tabletop exercises, standard operating procedures, and the design of emergency operations plans and centers. Practicum deliverables have included Emergency Actions Plans for CDC country offices in Thailand, Kenya, Kazakhstan, and China, among other activities.

Between 2009–2015, 34 students completed practica in 11 countries in conjunction with IEPT (Figure 2). Eighteen of these practica took place subsequent to the establishment of the 2013 cooperative agreement between RSPH and ERRB. While the practica themselves are unpaid, the Center provides financial support for travel to and from the field site, visa charges, and living expenses for students while in the field. Providing such support reduces the economic burden on students as they gain needed experience.

Post-Graduate Education: CHE Fellowship

Just as entry-level public health professionals need to gain practical experience in their area of interest, more seasoned emergency responders also need professional development opportunities. The goal of the CHE fellowship is to support the development of mid-career public health leaders that respond to CHEs in conflict, post-conflict, or resource-poor settings. The competitive

fellowship is intended for individuals with a minimum of three years of field experience related to CHEs.

Components of the fellowship include: a one-year accelerated MPH degree; completion of the Certificate; and an applied CHE-related research project that addresses a critical public health need in the fellow's home country. Fellows work closely with ERRB in developing a relevant practicum and/or thesis project that can be implemented upon completion of the fellowship. In this way, the fellowship serves not only as individual training for the selected fellow, but also contributes to national capacity to respond in the event of a CHE. Elements of fellowship projects often include: technical work in epidemiology, rapid health assessment, surveillance, surveys, data analysis, monitoring and evaluation, relationship building, and collaborative operations research projects.

Through the program, the fellow and his/her home institution build internal capacity and increase both general public health and complex humanitarian crisis response competence, both of which have been identified as national needs based on the growing incidence of CHEs and the global public health workforce shortage. The fellowship has been advertised via postings to the listservs of the Health, Nutrition, and Water Sanitation and Hygiene (WASH) clusters of the UN. These clusters include roughly 150 health-related NGOs, government agencies, and UN partners. An announcement was also posted to ReliefWeb, a digital service of the UN Office for the Coordination of Humanitarian Affairs (OCHA; New York, USA and Geneva, Switzerland).

Since 2010, the Center has hosted four mid-career professionals from conflict-affected or resource-poor countries. The fellows, two women and two men, have come to RSPH from Kenya, South Sudan, and Uganda. The CHE fellows have gone on to assume leadership positions within humanitarian organizations engaged in humanitarian response upon completion of the fellowship. Major projects during and subsequent to the fellowship have examined infection control practices, nutritional status and acute respiratory infections in children under five in camp settings, and a research tool for reproductive health in crisis settings. Their current work includes improved surveillance systems for infectious diseases, outbreak investigations and response, and capacity building for maternal health services. The most recent fellow is slated to graduate in August 2015.

Discussion

Together the Certificate, funded field practicum opportunities, and the CHE fellowship comprise the current efforts in providing innovative education and training for graduates and post-graduates for public health in CHEs response. These modest efforts are just the beginning in terms of addressing the global shortage of skilled public health professionals that can coordinate humanitarian response. However, this program may provide some useful lessons for designing future educational programs in other institutions.

With regards to the Certificate, there is a high student interest in the area of humanitarian emergencies at RSPH. The initial cohort size nearly has doubled since the program's inception a few years ago; students from other health disciplines, such as nursing, have also expressed interest in the program. Likewise, outside/local academic institutions have expressed interest in collaborating with the Center by cross-registering their own students engaged in related work. Engaging students from other institutions would extend the Center's network and allow for collaboration into other technical sectors engaged in humanitarian response.

Several factors limit the current cohort capacity, including availability of instructors for in-person instruction and classroom space. As such, inclusion into the program is competitive. So far, students interested in the Certificate have had to apply during the first semester of the MPH program to be included. In some instances, new students were lost to the Emory MPH program because admittance to the Certificate program could not be guaranteed. This limitation has resulted in the loss of several strong-merit award recipients to the MPH program. The Center has therefore adapted the application process to include an early acceptance format for highly motivated students. This will allow for more effective recruitment of highly qualified candidates into the MPH program and the Certificate.

In some cases, student interest has changed subsequent to admission into the Certificate program, which results in a "wasted" spot in the cohort. The competitive nature of the program means that among the enrolled MPH students who apply for inclusion, only the students with the greatest potential to work in, and make an impact on, the field of humanitarian response are selected. In practice, this means that the program does not train the highest number of students possible per cohort. As such, CHE leadership will continue to refine the selection process and consider alternate ways to expand student training opportunities for CHEs.

The Certificate courses are offered in a quasi-traditional, short-course format. While all classes are taught in person, course meeting times range from weekend meetings to a full week depending on the course load. This format was selected based on the hectic travel schedules of the adjunct faculty, who are all staff of ERRB. The ERRB adjunct faculty are invaluable to the success of the program given their technical expertise; moreover, ERRB is strongly committed to capacity building. To date, the internal capacity of full-time faculty at RSPH to teach and conduct collaborative research in the area of humanitarian emergencies has remained relatively untapped.

Representatives from UN agencies and NGOs engaged in response are invited as guests in on the Certificate courses. These partners add valuable real-world experiences to the classroom environment, in addition to those provided by instructors, and also provide essential networking opportunities for students. In the future, the Center aims to better utilize such partners for the purposes of identifying potential student practicum opportunities and for establishing a network for advertising the CHE fellowship.

Practical fieldwork is an invaluable experience for burgeoning professionals. Yet security risks and practical considerations limit the program's ability to provide students with direct humanitarian response-based work. To date, the Center has supported field practica for emergency preparedness-related tasks rather than emergency response situations, thus limiting the scope of practical experience that students may engage in. The Center must balance the learning needs of students with its obligation to protect students' personal safety. Appeals for funding to support student practica generally are well-received among private individual donors. Therefore, the Center is beginning to explore development opportunities in this area.

To date, advertising for the CHE fellowship positions has been limited to the Health, Nutrition, and WASH sectors of the UN, as well as ReliefWeb. In past years, the Center has received fewer completed applications than anticipated. According to current and past fellows, challenges faced by fellows in compiling their application packages include: access to testing sites for, and results

of, the required standardized entrance examinations, such as the Graduate Record Examination, as well as access to transcripts. To account for these challenges, the Center has adjusted the application timeline, and in 2015, there was an increase in information requests and completed fellowship applications. The Center also is pursuing development efforts to support the CHE fellowship in the long term.

The Center's education and training program is modeled on a strong bilateral relationship between academic and governmental partners. This partnership is strengthened by the close physical proximity of the two partners, RSPH and ERRB. This relationship is mutually beneficial in that ERRB provides instruction and technical expertise in an area in which RSPH students, though keenly interested, may not otherwise have the opportunity to study. In return, the Center provides a constant supply of bright public health professionals - some of whom have gone on to work as ERRB staff - that are eager to engage in research and practice with ERRB mentors. The Rollins School of Public Health provides the venue for classroom instruction and hosts the cooperative agreement that makes these programs possible. Input from each partner facilitates the successful contribution to international capacity building for CHE preparation and response.

Others interested in similar education and training programs may choose to begin with a single partner, such as an NGO or host country MoH that shares a common goal in responding to CHEs. Examples may include not only teaching programs, but also collaborative research initiatives or program development. Once a common goal has been agreed upon by both partners, an inventory of what each partner brings to the realization of that goal may be conducted in order to plan appropriately and maximize efficiency.

As with any partnership, the needs and desires of each partner and the relationship between them may change over time. For example, the graduate certificate program has developed slowly over the past decade and was only formalized a few years ago via a bilateral cooperative agreement. Upon entering this new era, the Center chose to undergo a formal process to formalize the organization's name, mission, and vision and develop a strategic plan. This process has resulted in the establishment of formal administrative structures for the Center and the identification of priority themes and related activities. Several mechanisms, such as executive and curriculum committees, have been established with representatives from both partners. These committees facilitate regular interactions and foster joint decision making. The priorities of the Center include a continued commitment to international capacity building and training for emergency response. The Center aims to initiate professional educational activities in keeping with the Center's education pipeline, as well as build upon the Center's existing research portfolio by focusing first on sexual and reproductive health and mental health. The Center also aims to share valuable lessons learned by increasing academic publishing and public scholarship efforts.

Additional early lessons from designing and implementing this education and training program include those related to community building amongst students and faculty. Community building activities will supplement formal business and administrative transactions. The Center now holds bi-annual celebrations to welcome the incoming cohort and congratulate the graduates.

These social events allow the Center to show an appreciation for the ERRB faculty and celebrate the graduate students and fellows. Maintaining contact with alumni through periodic alumni surveys and communications is also needed. These efforts allow not only for a long-term evaluation of where alumni are working, but also connections for possible field practica for current students in the Certificate program.

Conclusion

The Center's education and training program at RSPH educates learners along a continuum ranging from the graduate level through continuing professional education. The Center's initial programmatic efforts focused on graduate education in the form of a certificate program, funded field practica, and a fellowship for mid-career professionals. So far, the Center has trained over 100 Master's-level public health professionals who are well equipped to enter the emergency response field. Evaluation metrics, such as course evaluations, have been overwhelmingly indicative of the success of the program. Other measures, such as practicum and thesis deliverables and job placement for CHE fellows, also demonstrate the immense need and desire for education and training in this area. The Center plans to expand the program's efforts by evaluating existing programs via an alumni survey. This survey will allow for tracking of alumni employment in the field and use of skills acquired subsequent to completion of the programs. Furthermore, documenting the development experience of this program will allow the Center to refine the current program and inform future endeavors in this area. It is the hope of the Center to influence the development of new programs and inform other institutions and organizations interested in emergency response. These programs produce academically and field prepared public health professionals - something the world will be in increasing need of as the commonality of disasters increases.

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Author Contributions

Dabney P. Evans was responsible for the conception and design of the article, data collection and analysis, and drafting and critical revisions to the article. Mark Anderson, Cyrus Shahpar, Carlos del Rio, and James W. Curran were responsible for the conception of the cooperative agreement and critical revisions to the manuscript. All authors have given final approval to the version to be submitted and any revised versions.

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