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## Development of a Course on Complex Humanitarian Emergencies: Preparation for the Impact of Climate Change

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### Abstract

**Purpose**—The effects of climate change are far-reaching and multifactorial, with potential impacts on food security and conflict. Large population movements, whether from the aftermath of natural disasters or resulting from conflict, can precipitate the need for humanitarian response in what can become complex humanitarian emergencies (CHEs). Nurses need to be prepared to respond to affected communities in need, whether the emergency is domestic or global. The purpose of the article is to describe a novel course for nursing students interested in practice within the confines of CHEs and natural disasters.

**Methods and Framework**—The authors used the Sphere Humanitarian Charter and Minimum Standards as a practical framework to inform the course development. They completed a review of the literature on the interaction on climate change, conflict and health, and competencies related to working CHEs. Resettled refugees, as well as experts in the area of humanitarian response, recovery, and mitigation from the Centers for Disease Control and Prevention and nongovernmental organizations further informed the development of the course.

**Clinical Relevance**—This course prepares the nursing workforce to respond appropriately to large population movements that may arise from the aftermath of natural disasters or conflict, both of which can comprise a complex humanitarian disaster. Using The Sphere Project e-learning course, students learn about the Sphere Project, which works to ensure accountability and quality in humanitarian response and offers core minimal standards for technical assistance. These guidelines are seen globally as the gold standard for humanitarian response and address many of the competencies for disaster nursing (<http://www.sphereproject.org/learning/e-learning-course/>).

### Keywords

Community-public health-environmental health; disaster response-emergency medicine; terrorism-bioterrorism; crisis; education-curriculum-learning; environmental health; international health-global health

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Graduates of accredited baccalaureate nursing programs in the United States are expected to show competency in emergency preparedness to “minimize the health consequences of emergencies including mass casualty disasters” (American Association of Colleges of Nursing, 2008, p. 23). Emergencies and disasters can lead to large population movements and, whether from the aftermath of natural disasters or resulting from conflict, can precipitate the need for humanitarian responses. A humanitarian emergency is defined as an event or series of events, usually over a wide area, that threaten the well-being, security, health or safety of communities, which can result from natural disasters or man-made emergencies, such as armed conflict (Humanitarian Coalition, n.d.). Internal or external conflicts can cause a breakdown of authority and overwhelm the abilities of a government, an ongoing United Nations (UN) country program, or any single agency, which then results in a complex humanitarian emergency (CHE; Center for Disaster Philanthropy, n.d.).

While the generalist nurse is expected to be prepared to participate “in emergency preparedness and disaster response with an awareness of environmental factors” (American Association of Colleges of Nursing, 2008, p. 32), in order to appropriately plan for and address the subsequent impacts on current and future population health, nurses need to understand the increasingly complex interplay among climate change, migration, and conflict. Additionally, it is incumbent upon nursing to understand the context in which the effects of environmental factors, such as climate change, and potential conflict could occur and the resultant public health and clinical implications. Nurses need to be prepared to respond to affected communities in need, whether the emergency is domestic or global. This article reviews literature on climate change as it relates to conflict and health and describes a novel course for nursing students that can serve as an exemplar for preparing our future workforce to understand nursing practice within the confines of CHEs and natural disasters.

The effects of climate change are far reaching and multifactorial. Substantial social and economic burdens result from climate change, and these burdens are expected to rise in the future. Some societies adapt well to these burdens, while others adapt less well (Carleton & Hsiang, 2016), and the differential impact from climate change will most burden the countries that are least able to respond (Watts et al., 2017). In a recent publication, The Lancet Countdown (a multidisciplinary, global research collaboration between academic institutions and practitioners), using a comprehensive figure (Figure 1 in Watts et al., 2017, p. 1153), demonstrates the complex interplay of climate change and health, with potential effects on determinants of health such as displacement, socio-economic status, and conflict (Watts et al., 2017).

Climate change can also affect population health through a variety of mechanisms (Cook, 2011; Luber et al., 2014), including impacts to environmental and social determinants of health, such as potable water and adequate food, shelter, and safe air (World Health Organization, 2016). Health effects from climate change can include such things as increased risk from infectious diseases and injuries, mental health disorders, respiratory and cardiovascular diseases, and allergic reactions (Levy, Sidel, & Patz, 2017). For example, heatstroke can result from increased temperatures, while malnutrition can be a concomitant result from economic disruption or resource depletion secondary to severe famine caused by drought (Applebaum et al., 2016; Butler & Harley, 2010). Indirect health consequences and

potential social unrest can arise from resource competition, forced population migrations, loss of livelihoods, and enhanced grievances secondary to perceived scarcity and deprivation—these dynamics can directly impact political and societal stability, enhanced in nations with fragile or poor governance (Levy et al., 2017; Morisetti & Blackstock, 2017; U.S. Agency for International Development, 2015).

One area of impact from climate change that has been widely debated in the literature is that of the association between climate change and conflict (Bernauer, Böhmelt, & Koubi, 2012; Scheffran, Brzoska, Kominek, Link, & Schilling, 2012). While the association between climate change and conflict is not entirely clear, conflict may arise indirectly from factors associated with climate change, such as migration. For example, climate change is cited as a catalyst for the Syrian conflict (de Chatel, 2014). A severe drought from 2006 to 2010 led to “widespread crop failure and a mass migration of farming families to urban centers” (Kelley, Mohtadi, Cane, Seager, & Kushnir, 2015, p. 3241). The mass migration of over 1 million people into cities led to unsustainable urbanization whereby “the rapidly growing urban peripheries of Syria, marked by illegal settlements, overcrowding, poor infrastructure, unemployment, and crime, were neglected by the Assad government and became the heart of the developing unrest” (Kelley et al., 2015, p. 3242). However, the interplay of climate change and conflict varies by geographic location, the scale and type of conflict, vulnerability and resiliency of both the affected and host population when climate changes cause migration, underlying political and economic strengths, and whether or not preparedness and mitigation strategies are in place (Busby, 2010; Levy et al., 2017; Scheffran et al., 2012). The risk for conflict as a result of climate change is greatest in situations where the risk for conflict is already high—in developing nations that have the greatest degree of economic and social vulnerability (Levy et al., 2017). Conversely, the negative impact of armed conflict on things such as health infrastructure, shelter, and food production heightens environmental vulnerability and the ability to withstand climatic stressors (Adger et al., 2014; Buhaug, 2015).

## Background

How climate change affects the environment and subsequent risk for violent conflict has been a matter of debate, but there is no clear consensus as to the nature of this potential linkage (Bernauer et al., 2012; Burrows & Kinney, 2016). Risks from climate change differentially affect marginalized populations, but the vulnerabilities experienced are rarely caused by a single factor. Rather, it is the complex interplay of economic, political, demographic, and social factors with climate variability and change that affects vulnerability and exposure (Burrows & Kinney, 2016; Busby, 2010; Evans, 2010; Hsiang, Burke, & Miguel, 2013; Intergovernmental Panel on Climate Change [IPCC], 2014b; Scheffran et al., 2012). Climate-related hazards can exacerbate stress for those living in poverty through direct mechanisms such as loss of or impact to livelihoods, destruction of homes and businesses, or diminished crop production, or indirectly through food insecurity (IPCC, 2014b).

The World Bank estimates that 2 billion people live in areas of conflict, fragility, or large scale, organized criminal violence, with 46% of those living in poverty expected to live in

fragile and conflict-affected areas by 2030. Currently, developing countries host 95% of refugees and those internally displaced (The World Bank, 2017). Negative impacts (direct and indirect) from climate-related changes will presumably only add additional stress on these highly vulnerable populations, including those suffering through a CHE.

Various scholars have studied the relationship of climate change and potential conflict through an array of approaches. Examining 60 rigorous quantitative studies from a variety of disciplines, Hsiang et al. (2013) concluded that there was strong causal evidence linking climatic events to conflict and that this relationship held across factors such as regions of the world, temporal scales, types of conflict, income levels, spatial scales, and various durations of climate changes. However, Hsiang et al. stressed that climatic influence was just one of many factors contributing to conflict. Bollfrass and Shaver (2015), using a subnational data set, concluded that a relationship between higher ambient temperatures and an increase in substate violence exists partially from a disruption of agricultural production. Their findings indicate that this mechanism holds at both the global and the substate level, and, even in areas without significant agricultural production, higher temperatures have been associated with increased conflict.

Consensus among scientists from the IPCC indicates a high agreement between varying studies and sources of evidence that climate change is projected to increase displacement in the future (IPCC, 2014a). Other scholars have examined possible linkages among climate change, migration, and conflict. Findings from these publications indicate that the linkages among these three factors are far from simplistic (Brzoska & Fröhlich, 2016). While climate change has the potential to cause increased migration and risk for conflict, this potential is highly location dependent (Burrows & Kinney, 2016). However, compared to other factors, the weight of the association between climate change and migration as a driving force for conflict is not known and requires additional research. The IPCC 2014 Synthesis Report notes, however, that violent conflict increases vulnerability to climate change by harming resources (such as infrastructure, social capital, or economic opportunities) that facilitate adaptation to the changing climatic conditions (IPCC, 2014a).

## **Preparing Future Nurses to Deal With the Impact of Climate Change**

It has been argued that the nature of disasters may shift humanitarian response addressing consequences of war to that of more extreme climatic events dominating the need for humanitarian action. Demographically, populations are moving toward greater urbanization and will be vulnerable to new hazards (O'Keefe, O'Brien, & Jayawickrama, 2015). This has also been seen with refugees and internally displaced populations (IDPs) moving from traditional rural settings to more urban settings, as with the Syrian example mentioned earlier. In fact, the United Nation's High Commissioner for Refugees (n.d.) estimates that as much as 60% of the world's refugees and 80% of IDPs now live in urban areas.

Nurses will be engaged in the humanitarian situations that may result from extreme climatic changes. In order to best do so, educational preparation should include content about all phases of humanitarian emergencies and their consequences, from predisaster planning

through mitigation, response, and recovery. It is also necessary to understand the differences between humanitarian relief provided domestically versus globally.

## **International Council of Nurses Framework for Disaster Nursing Competencies**

Numerous public health and specialty organizations have published core competencies for healthcare workers in disasters and emergencies (Gebbie & Qureshi, 2002; Walsh, Altman, King, & Strauss-Riggs, 2014; Wong et al., 2015; World Health Organization & International Council of Nurses, 2009), but few, if any, are specific for the types of CHEs as discussed above. The World Health Organization and the International Council of Nursing (2009) published the ICN Framework for Disaster Nursing Competencies to clarify the role of the generalist nurse in disasters. These competencies are based on the disaster management continuum and organized under the four areas of mitigation and prevention, preparedness, response, and recovery and rehabilitation. Figure 1 lists the 10 domains of the competencies. Drawing on these and other competencies, the authors developed a course specific to the nursing role. In addition to the listed competencies, the course includes content on self-care and security, which have been recommended based on a recent review of the ICN Framework for Disaster Nursing Competencies (Hutton, Veenema, & Gebbie, 2016).

Humanitarian response is a fairly narrow field of work and, as such, has not traditionally been included in nursing curriculum. While existing courses may prepare nurses for all hazard or disaster responses, we did not know of any school offering a course geared specifically to the nursing role within CHEs. Identifying this gap and realizing the strength of collaboration between nurses at the Centers for Disease Control and Prevention (CDC) and the Emory University Nell Hodgson School of Nursing (hereafter referred to as Emory), we, the authors of this article (a nurse anthropologist from the CDC and a family nurse practitioner from the faculty at Emory), developed a novel, 3-day (total 24 hr) intensive, graduate-level course focused on introducing nursing students to complex humanitarian emergencies, including natural disasters. Both of us have decades of experience working in humanitarian settings, both domestically and globally.

### **Course Description**

“Introduction to Complex Humanitarian Emergencies” is intended for students to not only understand clinical care in a humanitarian emergency, but, perhaps more importantly, to understand the context of the entire trajectory of the disaster continuum (from the events leading up to the emergency through to the aftermath), including the environmental, political, and sociocultural aspects of migration and conflict. The objectives of the course are as follows: (a) differentiate between natural disasters and CHEs; (b) describe the causes and context surrounding CHEs and the political complexities of the global arena; (c) discuss the global humanitarian response, including actors and global standards that guide humanitarian practice; (d) differentiate and describe the roles of nongovernmental organizations (NGOs), UN agencies, host governments, and other global partners; (e) identify and discuss the provision of clinical care within the limited resources and political environments of a CHE and the expanded roles that nurses play in a CHE; (f) describe the

public health perspective of CHEs, including essential data collection; (g) describe nursing roles in CHEs in the provision of health care in the areas, including nutrition, community disease, epidemic preparedness and response, and reproductive and mental health; and (h) analyze the nursing leadership challenges in the context of a CHE. The two-credit course is one of many organized courses and experiences at the Emory School of Nursing that leads to “Global Health Recognition” upon graduation.

The course is taught from a participatory perspective and encourages students to reflect upon their own personal experiences that they may have had while involved in CHEs or disasters and share those experiences with their classmates. Many of the students have had experiences with a natural disaster, either as a survivor of the disaster or as a volunteer assisting affected communities, while others have had prior global experience working with NGOs, serving as Peace Corps volunteers, or participating in faith-based mission work. In addition to the authors who facilitate much of the course, guest speakers from the local refugee community, CDC, and NGOs, such as CARE, Doctors Without Borders, and The Carter Center, provide varied perspectives from the field—be it as a field researcher developing evidence-based interventions for humanitarian situations, an implementing partner, or the lived experience of a resettled refugee adapting to the United States.

### Teaching Strategies

The course, now in its fourth year, is held over a 3-day holiday weekend, allowing students to be immersed in the material. Varied teaching methods are used, including traditional lecture, case studies, table-top exercises, online modules, video conferences, a panel presentation, and group work. As is common with a “flipped classroom” (i.e., a teaching model that reverses traditionally held practices of what is taught in the classroom versus out-of-class work), students are expected to prepare prior to class, in this case by completing a series of online modules developed by leading experts. These modules serve as a foundation to the course and are therefore completed prior to the 3-day intensive course. The face-to-face course activities alternate between didactic presentations and interactive exercises. Didactic content presents additional background information and core knowledge in topical areas pertinent to CHEs and disasters, particularly as related to nursing. The active, group learning scenarios allow students to apply this information to real-life scenarios.

### Online Modules

The use of online modules served two purposes. First is the benefit of the actual module content. A secondary benefit is to introduce the students to the humanitarian community. Becoming aware of these resources allows the student to return and facilitates engagement in continuous and purposeful, or life-long, learning.

The first of the online modules, the Sphere e-learning course (The Sphere Project, 2017) is foundational to the course. Through this course, students learn about the Sphere Project, which works to ensure accountability and quality in humanitarian response. This module includes content on the humanitarian charter, protection principles, and the core minimal standards for technical assistance. These guidelines are seen globally as the gold standard for humanitarian response and address many of the competencies for disaster nursing.



Sphere's humanitarian charter sets out the legal and moral ground for the technical minimum standards (The Sphere Project, 2011). The technical standards include the universal minimum standards based on sectoral best practice for emergency response. For example, key indicators for human resources for health (at least one qualified nurse per 10,000 population) and the number of latrines in a refugee camp (one per 20 people). Students examine these principles later in class as they work through case studies to plan a response and discuss ethical dilemmas that can arise.

Additional modules are from DisasterReady.org (n.d.). This organization offers a library of hundreds of professional development modules for relief and development workers. For the purposes of this class, students complete modules on travel safety and personal security, basic principles of disability inclusion in humanitarian response, and understanding the elderly and their needs within a humanitarian context. These modules address various competencies within each of the domains, such as risk reduction, ethical practice, and care of vulnerable populations.

### **Didactic Component**

The didactic portions of the course cover the following: (a) an overview of CHEs and disasters (including all aspects of the humanitarian system), (b) establishing an Ebola or cholera treatment unit, (c) nutrition in a CHE and the role of nursing in therapeutic feeding, (d) mental health issues in CHEs, (e) an introduction to logistics and an emergency operations center (EOC), using the CDC EOC as an example, (f) global polio eradication as an example of managing communicable diseases in a CHE, (g) reproductive health and gender-based sexual violence, and (h) nursing leadership in crisis situations.

### **Participatory Group Exercises**

The participatory group exercises build on these topical areas and they are interspersed throughout the 3 days of class, with the exception of one exercise that is done out of class and presented in class (item 4 described below). Most of these exercises use information that has been modified from real-life situations. In some of the exercises, the students work through an evolving situation in which the ground situation changes over the course of a few days. While most of the group exercises address competencies within the response domain, other domains are also explored as students focus on the following areas:

1. Key actors in the humanitarian setting. Students are divided into three groups (UN agencies, NGOs, or donors). This exercise touches upon the competencies within policy development and planning as students describe the type of agency and its role in CHEs, locate a current CHE or disaster in which they are involved, and describe the job opportunities for nurses within that type of agency.
2. Establishment of command during a CHE or natural disaster. Students differentiate between global and domestic events and select response leadership across a variety of types of disasters (i.e., conflicts, floods, earthquakes, etc.). For each unique disaster, they describe the impact on population health, identify vulnerable groups, and discuss policy, security, and logistical concerns, thus

addressing competencies within the domains of prevention/mitigation and preparedness.

3. Design of infectious disease treatment units for use during epidemics. Students draw a treatment unit and must correctly identify safe and appropriate patient, staff, and family flows through the unit.
4. Healthcare planning during a humanitarian crisis. Students select a current CHE or natural disaster and are given the role of a health planner from an international NGO. They are charged with planning care for an additional 50,000 people in the areas of primary care for adults, primary care for children, and immunization services. They must describe the type of services needed, what information is needed for planning, and how they would incorporate Sphere standards or other indicators.
5. Nursing roles in a refugee camp. Students identify clinical and public health concerns, priorities, needed resources, and information that is lacking in three areas: camp intake, mobile clinic, and hospital. At the end of the exercise they are presented with an ethical dilemma focused on limited resources. Students are given information about three patients and they must select which patient would be prioritized to receive care and provide a justification for their selection.
6. Services for a mobile population in a crisis. Students must address issues such as site planning, principles of water and sanitation, cultural concerns across the displaced and host communities, food distribution, and how to deal with “disaster tourism” when it involves nursing student volunteers. In addition, given very limited cargo air weight, they must use logistical principles to select and justify which supplies are necessary to meet critical needs for the displaced population over a 3-month period.
7. Crisis leadership principles. Students choose one of three scenarios: communication in high-risk settings, education and nursing capacity development, and ethics of conducting research in a CHE/disaster setting (Figure 2). They develop a response to the scenario, incorporating core principles learned from the course, and present it to the class as a final exercise. Emory nursing faculty and graduate students, as well as members of the CDC Nursing Workgroup, are invited for the final presentations and engage in questions and answers with the students.

### **Video Conferencing and Refugee Panel**

Complementing the didactic and group modalities, the students video conference with a nurse in Liberia who directs a mental health program in a postconflict country that also experienced the Ebola epidemic. The students have an opportunity to actively engage the speaker in the video conference by posing questions about the program itself, the role of nurses in the mental health program, and the outcomes. The last type of presentation offered is a panel in which resettled refugees from Atlanta discuss their previous lives in refugee camps, their memories of resettlement, and their first introduction to the healthcare system in the United States. The panel offers a realistic view into the struggles of resettlement and



adaptation to a new culture, including to a different healthcare system. These participatory exercises provide the students with an opportunity to apply the concepts gleaned from the course and the required readings, as well as learn from each other.

## Conclusions

Student evaluation of this course has been consistently positive. On a 5-point scale, with 5 being the highest, the course received overall ratings of 4.8, 5, and 4.9, respectively. Students comment that they develop unique skills and competencies that better prepare them for disaster and emergency work. One student evaluation stated, “I learned a lot and have a lot better sense of the role of nurses, NPs, CNMs in complex humanitarian emergencies ... liked the Sphere modules and the other online modules.” Another wrote, “Its timing over the course over fall break enables students to be fully engaged in the intense nature of the course (meets for 7–8 hours for 3 days).” These sentiments were consistently echoed in other evaluations from year to year. The certificates earned through online modules offer a unique addition to their resumes. As one student wrote, “They represented very manageable assignments, and were well-designed and interesting.” A successful outcome of this course may be the fact that students have been employed by some of the same key agencies they identify in course exercises. For example, students have gone on to work for NGOs during the Ebola response and subsequent recovery work and for the CDC. One student wrote back from Liberia to thank us for preparing her for the work. Furthermore, one student, realizing the complexity and intensity of this work, commented that the work is far more demanding than she ever imagined and she would need to give it far more thought as a career choice.

Climate change, as a catalyst to insecurity, will have an impact on CHEs. Sherri Goodman, a former U.S. Deputy Undersecretary of Defense, sees climate change as “... a threat multiplier because it aggravates others tensions and conflicts that already exist” (Doherty, 2017, para. 2). In his confirmation hearing, James Mattis, the U.S. Secretary for Defense, stated, “Climate change is impacting stability in areas of the world ... “ (Doherty, 2017, para. 25). As the impact of climate change increases the risks for natural disasters and CHEs, healthcare delivery and response will be compromised. Healthcare workers must have fundamental abilities and competencies. As the largest group of healthcare workers, nurses will be among the first to respond to disasters, “often working in difficult situations with limited resources ... serving as first responders, triage officers and care providers, coordinators of care and services, providers of information or education, and counsellors” (World Health Organization & International Council of Nurses, 2009, p. iv). While not addressing the full set of request competencies, the course described in this article introduces students to the role of the nurse in CHEs. Educational courses (like the example described in this article) are of high relevance to future clinical practice. Students completing the course will be expected to integrate the information into their practice and be better prepared in the event of a humanitarian crisis associated with a climate change disaster.

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### Clinical Resources

- DisasterReady on line courses: <https://www.disasterready.org/courses>
- The Sphere Project e-learning course: <http://www.sphereproject.org/learning/e-learning-course/>



\* COE: Center of Excellence; ICN, International Council of Nurses; NEPEC, Nursing Emergency Preparedness Education Coalition.

**Figure 1.**

International Council of Nurses framework of disaster nursing competencies. Reprinted from World Health Organization and International Council of Nurses (2009), p. 49. [http://www.wpro.who.int/hrh/documents/icn\\_framework.pdf?ua=1](http://www.wpro.who.int/hrh/documents/icn_framework.pdf?ua=1)

You are the director of a nongovernmental organization working in a country that has just experienced a large influx of refugees due to a conflict with insurgencies in a neighboring country near to the border where you are situated. As with any new emergency, you are swamped. You get a call from a large university in the United States asking for your support to allow a team of researchers to come in as soon as possible to do two types of research: (a) mortality surveys and (b) use of a rapid diagnostic test for respiratory diseases that could potentially improve diagnostics. You must make the decision as to whether or not this research can proceed.

1. Should research be done in this setting? (pros and cons)
2. When is the ideal time to do research?
3. Are these research topics appropriate for this emergency?
4. What key issues must you address when thinking about conducting research?
5. What must you think about in terms of support (i.e., all the issues to consider) if you agree to work with this university?

**Figure 2.**  
Sample scenario from leadership exercise.