

A Graduate Curriculum in Emergency Public Health

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UCLA = University of California, Los Angeles

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Abstract

The increase in adverse health impacts of disasters has raised awareness of the need for education in the field of emergency public health. In the past, most traditional models of graduate education in schools of public health have not incorporated the theory and practice of disaster public health into their curricula. This paper describes the development of a curriculum in emergency public health within a US masters program in public health, and provides a description of the courses that comprise an area of specialization in the field. The interdisciplinary nature of the faculty, close ties with public health practitioners, and practical applications of the nine courses in this program are highlighted. The curriculum is presented as one model that can be used to meet the educational needs of professionals who will assume the responsibility for planning for and responding to the public health impacts of mass-populations disasters.

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Introduction

Disasters adversely impact the health of populations and their supporting institutions and resources. These catastrophes progress along a continuum of phases of variable duration, which include immediate impact, prehospital rescue and treatment, emergency hospital care, and delayed hospital treatment.¹ But it is the predictable, longer-term consequences resulting from the loss of medical and health infrastructure and population displacement that pose the greatest challenges in the area of disaster public health.

As reported by the World Health Organization, since 1975, the number of disasters and the people affected by them has continued to increase. "From January to October 2005, an estimated 97,490 people were killed in disasters globally and 88,117 of them in natural disasters."² More recently, the Center for Research on the Epidemiology of Disasters reported that in 2007, more than 211 million people "required immediate assistance during a period of emergency; this may include displaced or evacuated people."³ In recent years, there has been an increased emphasis on the education of prehospital and emergency department healthcare workers, in an effort to improve both awareness and operational responses to large numbers of sick or injured disaster victims. For example, the American College of Surgeons and the National Association of Emergency Medical Technicians in the United States have developed a Prehospital Trauma Life Support Course,⁴ and in the field of Emergency Medicine, the American College of Emergency Medicine has established a Disaster Medicine Section.⁵

Within the field of public health, core activities traditionally focus on disease outbreaks, environmental health and safety, and preventive health programs. The concept of emergency public health is a relatively new one, even though disasters historically have resulted in massive disruptions of existing healthcare resources, overwhelmed systems of surveillance and disease control, disrupted water and food supplies and sanitation capacity. The movement of populations from impacted zones, whether spontaneously or organized by

civic authorities, poses special challenges for public health professionals. Thus, disasters not only impact on the health of a population by causing increased morbidity and mortality. By their very nature, disasters have the potential to disrupt existing healthcare resources, and the environmental health infrastructure and, of perhaps greatest consequence, result in forced population displacement.^{6,7} With these considerations in mind, more public health experts have come to realize that there is a “healthy dose of public health” in planning for and responding to disasters (personal communication, Eric K. Noji).

Effective management of these mass-population emergencies is based on a multidisciplinary approach that requires that the public health professional not only has a working knowledge of core public health principles, but also a broad conceptual framework of related (and often unfamiliar) disciplines that provide critical insight into the management of a large-scale health crisis.

The curriculum presented in this paper has evolved over more than a decade to address the unique knowledge and skill sets necessary for a comprehensive understanding and the effective, practical application of relevant principles in emergency public health practice. The curriculum is designed to educate emergency public health specialists within the overarching pursuit of the Masters of Public Health (MPH) degree. Although elements of the courses that comprise this program can reach out to those who already are in public health practice, the primary intent is to construct an educational pathway for those who wish to enhance their graduate public health studies in this field.

Origination of the University of California, Los Angeles (UCLA) Curriculum

The 1994 Northridge Earthquake in the Los Angeles area exposed the public health impacts of a disaster occurring within an urban population. While mortality directly attributable to the earthquake was relatively small (33 fatalities), nearly 225,000 people reported injury, 14,738 sought medical attention, and 138 required hospitalization.⁸ Tens of thousands of people were without shelter, potable water, food, sanitation, and basic health services.⁹ During the year following the earthquake, students enrolled in the graduate programs in the UCLA School of Public Health expressed interest in learning more about the public health impacts of disasters. An emergency medicine faculty member in the School of Medicine, with experience in prehospital medicine and international emergency medical services, designed an experimental course, “Selected Topics in Disaster Relief and Humanitarian Assistance”, and offered it as an elective in the Department of Community Health Sciences in the School of Public Health in the spring of 1995. The course was designed to offer a survey of the public health consequences of several natural and human-caused disasters. After its first offering, a number of students wanted to explore in greater depth many of the concepts put forth in the course.

Discussions with students, other faculty, and colleagues from the local health department led to the conceptualization of three additional courses that would address community health following a disaster, the application of public

health program planning strategies in disaster preparedness, and the complexities of interagency management in a public health emergency. The Los Angeles County Health Department Public Health Program allocated outreach funds to develop and teach these three new courses over a two-year period. Course content was developed with input from Los Angeles County Department of Public Health staff and the UCLA faculty and graduate students.

The three new courses were offered beginning in 1997, and all of these also were opened to non-enrolled students through the UCLA Extension. This arrangement afforded public health practitioners from the community, as well as individuals from other relevant emergency planning and response disciplines to participate in the same classroom experience as graduate students. The fusion of public health students with community professionals from such fields as public health, emergency management, urban planning, non-governmental relief organizations, nursing, medicine, and government resulted in a dynamic synthesis of theory and practice across the emergency public health interagency spectrum.

After the development and offering of these initial four courses, the authors explored the availability of this kind of curriculum at other public health schools. One of the UCLA doctoral students surveyed the catalogues of every accredited school of public health in the US by calling each school and requesting a course catalog. He searched for any course titles that had to do with “disasters” and “emergency management”. He also looked for any international courses that related to disasters, addressing such areas as food security or refugees. Those schools that had Websites at the time of the survey also were surveyed for similar course content. At the time of that survey (1998), a limited number of schools listed a course that was specific to emergency public health. The UCLA School of Public Health was unique in offering multiple courses in this academic domain.

In the ensuing years, additional courses were developed to enhance the program and bring a greater scope not only to the graduate students in the school of public health, but also to those in the schools of public policy, nursing, medicine, and social welfare, as well as to community partners from non-governmental organizations, public health agencies, and others involved with disaster management. In response to the ongoing interest in the field, the Department of Community Health Sciences approved a Specialization in Emergency Public Health as a degree focus in the Masters of Public Health program.

At present, the School offers nine courses in the Emergency Public Health curriculum. Some students take both the required and associated elective courses as part of the Specialization, while others take only a few or even just a single course, in an effort to round-out their public health education.

The Curriculum

Although seven faculty members are involved in teaching these courses, methods of instruction are remarkably similar, combining theory and practical application. All faculty utilize didactic presentations, small group discussions, and case simulations. The written assignments require students to synthesize concepts into applied activities, reflecting the practical utility of course material.

Each course is explored from the individual perspective of a diverse faculty group that includes the fields of community health, medicine, nutrition, international health, urban planning, emergency medical services, environmental health, epidemiology, management, and the social sciences. Occasionally, a faculty member may revisit a key concept from a unique point of view. In this way, students expand their understanding of critical elements of emergency public health as they are applied by different practitioners.

Course Descriptions

Overview of Emergency Public Health

The underlying premise of this course is that mass-population emergencies do not fall neatly into any one discipline. Recognizing that disaster relief necessarily involves professionals from many different fields, the instructor chooses representative, broad-based topics for this seminar, including both natural and human-generated disasters.

Cooperative Interagency Management in Disasters

This course provides students with a broad overview of how different agencies involved in disaster response work together to handle the impact of mass-population emergencies. Students meet with emergency preparedness experts from various agencies within a local municipality, forming a springboard from which to understand the role of local, state, and federal governments, non-profit and private sector organizations, the media, and healthcare facilities in the planning and response to disaster situations. The importance of interagency cooperation is a focus, using the principles of incident command as a foundation and a visit to a municipal Emergency Operations Center as an anchor.

Program Planning in Community Disaster Preparedness

This course prepares students to design and evaluate disaster preparedness programs in community settings. The course combines traditional community health program planning with principles of disaster management, such as hazard assessment, in order to develop effective programs for preparing communities for disasters.

Post-Disaster Community Health

At the conclusion of this course, students are able to assess the needs of affected populations and formulate plans to address critical health parameters such as water, sanitation, food, shelter, and surveillance for communicable diseases. All course assignments build on each other, using an evolving case study of a disaster due to natural hazards in a developing country.

Risk Communications

In this course, students learn the theory of risk communications and how that can be applied in public health. The class explores examples of risk communications practice, research about the effectiveness of risk communications, the social context of risk communications, and how to communicate with the media about risk as these apply to mass-population emergencies. The class culminates with an assignment to write a crisis communications plan and with a mock press conference in response to a public health emergency.

Interdisciplinary Response to Infectious Disease Emergencies: A Public Health Perspective

Students learn to recognize the significance of biological terrorist events and other infectious disease emergencies across the health professions, and to identify interdisciplinary strategies health professionals can use to prevent, detect, and intervene in infectious disease emergencies in order to reduce morbidity and mortality in the population. The course emphasizes the specific role of public health during infectious disease outbreaks, and identifies public health practices and tools used during such events to measure, monitor, and control morbidity and mortality.

Public Health and National Security at the US-Mexico Border

The instructors explore the concepts of borders and the common definitions and legal principles that exist within them. Students learn about the public health challenges that exist when borders separate populations of differing cultures and economic status, and appreciate the differences in healthcare delivery methods and goals that exist across the US-Mexico Border. The national security and potential terrorist risks that exist at the US-Mexico Border are discussed.

Management of Food and Nutrition in Major Emergencies

This course focuses on the data and principles needed to design rational and cost-effective food and nutrition emergency relief approaches and programs. Food and nutrition constitute a basic cornerstone of emergency relief operations in both naturally occurring and complex humanitarian public health emergencies.

Intentional Disasters: Complex Emergencies and Forced Migration

Situations of systematic, widespread violence in less technically developed areas result in extreme adverse conditions for affected civilian populations. The course examines root political and military causes that result in the forced movement of people caused by complex emergencies. It contrasts complex emergencies with disasters due to natural hazards.

Outcomes

The goal of this curriculum is to educate future public health professionals so that they will be equipped to take leadership roles in health departments and other relevant organizations, whether governmental or non-governmental, that have a critical role in public health planning and response for mass-population emergencies. The program strives to equip the students with the research and evaluation tools necessary to frame thoughtful questions for investigation and to try to answer those questions in the challenging research environment of disaster public health.

At present, 52 students have attained specialization in emergency public health, with >700 having taken at least one course in this series. Career positions following graduation that are related directly to this field include posts in emergency management, emergency public health in municipal health departments, hospital emergency and disaster preparedness, public safety, full-time university faculty appointments, work with non-governmental organizations, consulting companies, and the World Health Organization.

Graduates of this program have pursued hands-on emergency public health preparedness and response as well

as research and scholarship focused on disaster planning and response, casualty modeling, public health preparedness strategies, and community assessments related to public health emergencies.

Future Impacts

Program faculty have identified several other curricular elements that will be addressed in future course development, including the mental health consequences of disasters and public health research methods in mass-population disasters.

Emergency public health is deserving of an academic home, and there is relevance of this type of curriculum in graduate schools of public health. This fact was incorporated into the federal legislation as a provision of the Pandemic and All Hazards Preparedness Act (PAHPA), which was enacted into US law in 2006. Included in this legislation is the provision that Schools of Public Health and the Centers for Disease Control and Prevention work together to “establish core curricula based on established competencies leading to a 4-year bachelor’s degree, graduate degree, combined bachelor and master’s degree, or a certificate program.”¹⁰

In order to identify the broad themes that should be included in core emergency public health education, a Preparedness Core Curricula Working Group was convened jointly in 2008 by the Centers for Disease Control and Prevention and the Association of Schools of Public Health. The group included preparedness and education experts from Schools of Public Health from across the United States, and resulted in a White Paper entitled “Practical Implications, Approaches, Opportunities and Challenges of A Preparedness Core Curricula in Accredited Schools of Public Health.”¹¹

Two key findings of the White Paper are reflected in the emergency public health curriculum developed and offered at the UCLA School of Public Health:

The ultimate goal of the academic-based core curricula is to improve the readiness of the public health workforce. Therefore, any academic-based training programs should be done in close collaboration with and be directly applied to ongoing competency-based continuing education and training programs for current public health professionals.

AND

The foundational benchmark for the development of competencies for all of the educational tiers outlined in PAHPA should begin at the master’s level as it represents the largest number of students in accredited schools of public health and is where a majority of the faculty teaching expertise lies.

As public health agencies develop plans and systems of response for large-scale population emergencies, there is a parallel need for academic institutions to provide foundational education and scholarship in the discipline. A formalized curriculum in graduate schools of public health can ensure that both future practitioners and researchers will have a solid foundation in the theory, practice, and research models that are integral to the field of emergency public health. By working closely with community partners to develop relevant curricular elements and disaster-focused internships for students, these programs can foster collaborative relationships between academia, public health practitioners, governmental and regulatory agencies, and non-governmental organizations.

The model described in this paper represents one attempt to meet an academic and practice need, while fostering the development of scholarship in the field.

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