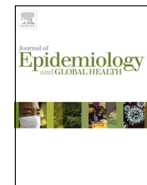




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Establishing a field epidemiology elective for medical students in Kenya: A strategy for increasing public health awareness and workforce capacity

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Abstract Medical students have limited exposure to field epidemiology, even though will assume public health roles after graduation. We established a 10-week elective in field epidemiology during medical school. Students attended one-week didactic sessions on epidemiology, and nine weeks in field placement sites. We administered pre- and post-tests to evaluate the training. We enrolled 34 students in 2011 and 2012. In 2011, we enrolled five of 24 applicants from a class of 280 medical students. In 2012, we enrolled 18 of 81 applicants from a class of 360 students; plus 11 who participated in the didactic sessions only. Among the 34 students who completed the didactic sessions, 74% were male, and their median age was 24 years (range: 22–26). The median pre-test score was 64% (range: 47–88%) and the median post-test score was 82% (range: 72–100%). Successful completion of the field projects was 100%. Six (30%) students were not aware of public health as a career option before this elective, 56% rated the field experience as outstanding, and 100% reported it increased their understanding of epidemiology. Implementing an

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elective in field epidemiology within the medical training is a highly acceptable strategy to increase awareness for public health among medical students.

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1. Introduction

Developing countries face a growing spectrum of public health challenges arising from emerging infectious diseases, HIV/AIDS and sexually transmitted diseases, unintentional injuries, neglected diseases, and non-communicable diseases [1–3]. Addressing these complex and diverse health events require a workforce skilled in epidemiology, surveillance and response. Many countries have implemented field epidemiology training programs to train public health professionals in epidemiology [4–8]. Nonetheless, there are continued challenges to assure adequate epidemiologic capacity at all levels of the public health system. In Central America, a pyramidal training model was established to provide training at the basic, intermediate, and advanced levels for various professionals within the public health system [9]. Despite the value of this model, replication of this concept may not be possible in countries with a limited substrate of public health professionals with higher education.

Despite a longstanding recognition for the importance of the inclusion of public health and field epidemiology within the overall training of medical students, limited progress has been achieved in this area [10,11]. This deficit results from the ongoing competition for time within the medical school curriculum as an increasing number of disciplines contend with each other to justify their time within the medical curriculum. A survey among medical students in sub-Saharan Africa to identify interventions to improve retention in their country of origin found that 2.6% intended to pursue a career in public health. This suggests that career intentions of medical students graduating from universities in Africa are not aligned with the workforce needs of the continent [12]. Moreover, several studies have shown that formal exposure to public health during medical school results in health professionals choosing careers in public health, or devoting more time to non-clinical activities [13–15]. Medical school students are a critical target in developing a robust national strategy to increase epidemiology and public health workforce development in Africa.

The Kenya Field Epidemiology and Laboratory Training Program (FELTP) was established in 2004

and is a division within the Directorate for Preventive and Promotive Health Services of the Ministry of Health. The core mandate of the Kenya FELTP is to increase epidemiologic capacity within the Ministry of Health. The Kenya FELTP focuses on a two-year Masters degree awarding training. In this two-year training applied epidemiological principles are learned mostly through assessing incoming surveillance and similar data, applying epidemiology to respond to disease outbreaks, developing and assessing outcomes of interventions, and implementing prevention programs [16]. This training-through-service approach ensures that the activities of the trainees help strengthen the public health systems. The program enrolls approximately 20 Ministry officers each year. Additional efforts led by the Kenya FELTP to increase epidemiologic capacity within the Ministry of Health include short-course trainings on basic field epidemiology, surveillance and outbreak investigations. This short-course training is offered to district and county surveillance and medical officers. The training consists of one-week didactic module after which participants are mentored for approximately four to six months as they work on field projects relevant to their districts. During the last week of the training, participants present their work to their peers and other relevant senior officials within the Ministry of Health. Recently, through the support from the U.S. President's Emergency Plan for AIDS Relief Plan and the Medical Education Partnership Initiative, Kenya FELTP began to integrate medical school students into the national strategy for developing a public health epidemiologic workforce [17,18].

In Kenya, pre-service medical training is conducted in four universities, with the largest number of medical doctors graduating from the University of Nairobi. In these universities, the medical curriculum offers very limited exposure to field epidemiology and surveillance. Upon graduation from medical school, many graduates work as district medical officers. In this capacity they may expect to conduct surveillance and field epidemiology functions. This manuscript describes the implementation of basic training in field epidemiology and surveillance during the elective term for fourth year medical students at the University of Nairobi.

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