Training Health Care Professionals in Low-Resource Environments: Applying Active Teaching Learning Strategies in Ethiopia

THE ETHIOPIA PUBLIC HEALTH TRAINING INITIATIVE

As we have detailed throughout this book, the foundation of quality health care begins with properly trained health care professionals who are competent, versatile, and accessible. Training such health care workers is a large task, but an achievable one with the right approach, as evidenced in the preceding chapters. In the case of Ethiopia, training in health care has been a long road. As in other low-resource environments, life for the average Ethiopian family is challenging with the realities of health issues and health care grim. Compounding the limited availability of health care workers in rural areas is the stark void left by the migration of native skilled health care workers to other countries, with rural areas being hardest hit by the emigration of health professionals (Serneels et al., 2010).

A lack of health professionals is not specific to Ethiopia, though. The World Health Organization recently documented the critical shortage of global health care workers, particularly nurses (Chen et al., 2006). However, the shortage of health professionals is most severe in the poorest countries, especially sub-Saharan Africa. Without these workers, people suffer daily, without aid for fully preventable maladies such as diarrhea, malnutrition, malaria, and HIV/AIDS (Carlson, 2007). This very urgent need to boost the numbers of health workers globally is an area The Carter Center addresses with its Ethiopia Public Health Training Initiative (EPHTI).

Less than half of Ethiopia’s population has access to modern health services, including health education; immunization; family planning; and appropriate treatment for prevalent illnesses such as pneumonia, malnutrition, and sexually transmitted diseases (Carlson, 2007). Most causes of poor health and death in Ethiopia can be prevented or treated through basic methods that do not require advanced professional education. The EPHTI began about 10 years ago as an experiment in how to build a sub-Saharan country’s capacity to train its
own health workers, because the health challenges in Ethiopia are staggering. Consider the following figures:

- 1/6 of Ethiopian children die before age 5
- 1/2 of Ethiopian children are malnourished
- 1/8 of all Ethiopians face acute hunger
- 3/4 of Ethiopians do not have safe drinking water
- 2/5 of Ethiopians do not receive any health care whatsoever
- When the EPHTI started, life expectancy was as low as 41 years. Now, life expectancy has improved to nearly 56 years.

These realities are a challenge for Ethiopia’s health care system. Tragically, most of the common illnesses and deaths that occur could be easily prevented or treated, and 10 years ago there simply were not enough health personnel to treat the mostly rural residents of this country of more than 79 million. However, while struggling under the crushing weight of poverty and killer diseases, Ethiopia has proven it can build a sustainable health workforce to meet the needs of its population through the work of the EPHTI.

This achievement is due in large part to a network of Ethiopian government officials and university faculty who have painstakingly tailored health science curricula to specifically address the Ethiopian context. These supplementary health learning materials have strengthened the education of thousands of local health workers, which has translated into improved health care delivery for approximately 56 million Ethiopians.

On the basis of a response to the expressed needs of the Ethiopia government to The Carter Center, the EPHTI was developed to address the gaps in health care at the time of Prime Minister Meles Zenawi’s assumption of power in 1991. A review of the social services in Ethiopia at this time concluded that extending basic health services to the half of the Ethiopian population that was without access to basic health care was of the highest priority (Carlson, 2007). It became clear that to accomplish these objectives major changes in training mid-level and rural health workers were essential, and building a standardized preservice educational system for health care workers that could produce better quality and higher quantities of these professionals was a priority. In addition, this training had to be done in a sustainable and capacity-building way, using locally available resources, and be tailored to the Ethiopian environment.

The evolution of governmental will, international donor and nongovernmental organizational support, and grassroots participation from universities and instructors became today’s EPHTI. All stakeholders from these sectors of the Ethiopian health care landscape were invited to participate in the early planning and development of the EPHTI, and a comprehensive and collaborative network was formed. Because The Carter Center planned from the beginning that the EPHTI would be locally owned and administered by Ethiopians after the initial 13-year start-up period, the resulting Ethiopian-owned initiative is one that
has built the capacity of the Ethiopian health education network in a sustainable way. All the training and learning activities by the EPHTI were conducted within Ethiopian borders, and the focus on training of instructors and students was intended for the development of rural services, the premise being that people who came from rural areas will be more likely to return to rural areas to work—a theory later shown to be substantiated by Serneels et al. (2010).

The underlying principle of the EPHTI is a capacity-building strategy built around the notion that Ethiopians should play the primary role in meeting their country’s community health needs. With its Ethiopian partners, The Carter Center helped the Ethiopians implement the EPHTI with three major objectives in mind:

1. Develop health learning materials (lecture notes, teaching modules, and manuals) that address the major health problems of the country and meet the specific learning needs of health center team personnel
2. Improve the knowledge and skills of faculty and instructors in teaching through intensive 2-week teaching learning workshops on pedagogical and technical skills
3. Improve the teaching learning environments of Ethiopia health sciences classrooms by providing scientific journals, relevant textbooks, teaching aides, anatomical models, computers, and basic consumable supplies and infection prevention materials

The EPHTI sought to create environments in which senior international experts would work side by side with Ethiopian teaching staff to train health center teams and develop learning materials based on Ethiopian experiences that are directly relevant to Ethiopia’s health problems. The health center staff, in turn, carried the responsibility of training and supervising all community health workers, including traditional birth attendants and community health agents. Thus, the basic training for health center teams given in the universities of the EPHTI network has a direct and immediate impact on all modern primary health services throughout the country, extending even into villages and homes.

The EPHTI’s interdisciplinary network of education professionals, government agencies, and practitioners takes a grassroots approach to training the next generation of Ethiopian health care workers. A fundamental tenet of the program is that Ethiopians know best how to deal with Ethiopian health issues. Thus, the focus of the program is to integrate all Ethiopian expertise—from university instructors to the female village caretakers—into specific curricula and training approaches for students studying to be health care providers. Such improved health education and training for those who treat the community—particularly women, who are not only traditional village-level health care providers but increasingly are earning more advanced degrees as clinic and hospital practitioners—benefit all levels of society through improved health. EPHTI curricula are used to train health officers (mid-level providers who are the team leaders in health clinics), nurses, female village health workers, and other specialized types of health professionals.
For more than 13 years, the EPHTI addressed the health professional training challenges of Ethiopia and worked with the country’s government and seven universities to develop contextualized health education materials to strengthen the training of the country’s health workforce. By making these materials available at no cost online (http://cartercenter.org/health/ephti/learning_materials/index.html), the program will be able to collaborate with government officials and university faculty of other countries to adapt a similar grassroots approach to strengthen the teaching capacities of their health professional training institutions.

Directly relevant to the country’s health practices and priorities, EPHTI health learning materials are an outstanding example of how a country can tailor preservice training to meet its unique health situation. EPHTI learning materials are written by Ethiopians, for Ethiopians, and cover a wide range of topics, such as malaria, HIV/AIDS, research methodology, psychiatric nursing, and vector and rodent control. Teachers and professors at seven Ethiopian universities participated in the development of these materials and now share them across the country to educate health students, who work in primary health care centers.

The cycle of improved learning comes full circle from the student in the classroom to the women, children, and citizens in rural villages who receive that student’s services on graduation. When better trained health care professionals not only provide better quality training to the community but also train and manage future generations of community health workers, the quality and quantity of Ethiopia’s health workers are increased. Not only has Ethiopia produced better educated health professionals, but also the efficiencies and grassroots approach of the EPHTI’s networks have helped produce more of these better educated health professionals. Thus, with more health workers stationed throughout the country, parents will no longer have to trek 4 or more hours with their sick children to the closest health facility. Disease prevention can be implemented during community checkups by the 30,000 female village health-extension workers the government is now training in most remote villages. Long-term disability can be avoided with community and village surveillance and intervention from new health clinics. In short, Ethiopians’ health has been improved through the work of the EPHTI, which helps Ethiopians train and educate their next generation of health workers.

ACCOMPLISHMENTS OF THE ETHIOPIA PUBLIC HEALTH TRAINING INITIATIVE

At the time this book is being written, Ethiopia has completed 8 instruction manuals, 69 training modules, and 151 sets of classroom lecture notes for use by instructors in health sciences classrooms. These 228 pieces of health learning material, which were written and customized for the Ethiopian environment, are designed to address health challenges in low-resource settings and are available for free download on The Carter Center’s Web site (http://cartercenter.org/health/ephti/learning_materials/index.html). In this way, the EPHTI is a model not just for Ethiopia but across the globe, for any low-resource setting.
So what has the EPHTI accomplished toward its goal of training better health workers and giving better health care to the citizens of Ethiopia? In short, it has improved the teaching of health professors and the learning environments of their students. Approximately 17,000 health center team professionals have been trained by the seven EPHTI-networked universities since its inception. These professionals have dispersed throughout the country to staff rural and urban clinics, hospitals, and health care sites and have gone on to improve the quality of health care delivered to their respective communities.

Specifically, the EPHTI has made great strides toward fulfilling the particulars of providing better health education for its students:

- Ethiopian-specific learning materials have been developed by Ethiopian faculty on almost 200 topics and in various formats, and more than 500,000 copies of these learning materials have been distributed to universities and clinics nationwide.
- More than 2,500 instructors have been trained in various skills to improve their teaching abilities.
- More than 7,000 textbooks and medical journals, and more than $500,000 in computer and laboratory equipment and teaching aids, have been given to Ethiopia’s classrooms to provide better learning environments for its health students.

**TEACHING LEARNING WORKSHOPS**

The strengthening of Ethiopian teaching staff emerged as one of the top priorities of the EPHTI during its initial development, and addressing the needs of seven regional universities that were in turn charged with educating and training thousands of health professionals required a national comprehensive approach.

The method by which the EPHTI brought together Ethiopian health sciences faculty to meet its objective of strengthening their ability to teach was done through national teaching learning workshops. Thirteen of these 2-week workshops were held over the last 10 years of the initiative. These intensive training sessions were instrumental in meeting this primary goal of the program and, ultimately, to improve the skills of health sciences instructors in a cohesive, comprehensive, and standardized method.

Two types of national-level workshops were held: (a) one for the more senior faculty at each of the universities and (b) a general one designed for the junior faculty. The deans or administrators of the seven universities in the EPHTI network would select four senior-level faculty participants and four junior-level faculty participants to attend each annual national teaching learning workshop, for a total of 28 to 30 participants at each. After participating in the national teaching learning workshops, each group would return to their home institutions and conduct their own version of the workshops. These “cascade workshops” helped the skill strengthening techniques reach thousands of Ethiopian faculty throughout the decade of the EPHTI (see “CASCADE WORKSHOPS” section).
Each teaching learning workshop covered the topics outlined in this book, including classroom and clinical setting teaching strategies, theories of learning, understanding the learner, and evaluation. Every workshop included group discussion, field trips, and many learning activities, which are also presented in this book at the end of their corresponding chapter. All national and cascade teaching learning workshops ended with a Teaching Learning Episode (TLE), which we discuss in detail in the next section.

THE TEACHING LEARNING EPISODE

The culminating assignment for each 2-week teaching learning workshop in pedagogical skills was the presentation of a TLE. During the first week, all workshop participants were assigned to a TLE group. The two criteria for the group assignments were (a) representation of participants whose university or health facility teaching responsibilities included one or more of the disciplines in the community health team (professional nurse, health officer, medical laboratory technician, and environmental health technician) and (b) representation from at least three universities. Each group had four or five members. Each presentation was planned to last approximately 75 minutes.

Teaching Learning Episode Goals and Expectations

The teaching learning goals were discussed with the participants during the first week, with ample opportunity provided for questions and comments. The purposes of the TLE included the following:

- Provide an opportunity for faculty from the various universities to get to know each other.
- Encourage faculty to build a teaching learning network of faculty throughout the country.
- Become familiar with the modules and lecture notes, which were developed by faculty from the seven participating universities on the basis of the 30 major health problems identified by the EPHTI council. Examples of the major health problems include malaria, tuberculosis, diarrheal diseases, harmful traditional health practices, family planning, iron-deficiency anemia, and intestinal parasitosis.
- Give participants the opportunity to work together as a teaching team, assisting and learning from each other.
- Divide the assignment among the four or five members in a manner that fit the content and timeframe.
- Use a format that included learner outcomes, content, timeframe, teaching strategies, and visual aids.

These goals and expectations were shared with the participants during the early part of the workshop so that the teaching team and participants could learn from each other about the meanings conveyed by the TLE assignment.
Teaching Learning Episode Process

A class session was devoted to discussion of the steps involved in planning, developing, and evaluating a presentation. Learning Activity 10.1, at the end of this chapter, was used to guide the participants in developing their TLE. The first task was to choose a topic for the presentation. The teaching team prepared a list of about 15 of the 30 health problems identified by the EPHTI council for which there were modules and lecture notes that could be used as resource materials. We also wanted the participants to become familiar with these teaching learning resources so that they would more readily use them when they returned to their universities. Second, each group needed to decide on the educational level of students or participants they would be teaching and the location of the session, such as in a university class, at a community health center, or in a village. Because the presentation was to be given to the workshop attendees, they became the students/participants according to the designation by the TLE group presenting at the time. Third, the TLE group needed to divide the content among the group members, because all members were expected to do a part of the teaching using active teaching learning activities. After the content was divided, each group member needed to determine the learner outcomes, timeframe for each content section, appropriate teaching strategies, and visual aids.

The TLE groups were encouraged to be creative in all aspects of the teaching learning process. Supplies such as transparencies, flipcharts, pens, reading resources, and assistance with PowerPoint were available. The teaching team members also were available to meet for consultation as requested. Throughout the preparation time for the presentations, the participants were encouraged to use some of the active teaching learning strategies that had been introduced in the workshop.

Teaching Learning Episode Evaluation

There were two types of TLE evaluation: (a) peer and teaching team and (b) self-evaluation. Evaluation criteria were distributed at the outset of the assignment, in keeping with the recommendation that students and teachers should work together to understand the goals and expectations for the practice teaching sessions (Table 10.1).

Evaluation forms were distributed to all participants with written instructions about how to use a rating scale of 1 to 5 on which 1 represented minimum achievement and 5 represented maximum achievement. They were also invited to add descriptive evaluation comments for each criterion. When all of the presentations were completed, the teaching team led a general evaluation discussion, giving comments regarding all the groups. Participants were encouraged to think about the evaluation criteria for teaching and learning while listening to the presentations so as to refine and further develop their own evaluation skills.

For the presenters, emphasis was placed on the development of self-evaluation skills. To enhance this part of the evaluation process, the TLEs were videotaped.
Each person was given a videotape of his or her TLE group’s presentation with a guide for using the videotape for self-evaluation. During the preparation session we discussed how to use the videotape for self-evaluation. Participants were provided with access to Davis’s (1993) book *Tools for Teaching*, with special emphasis on chapter 42, “Watching Yourself on Videotape.” We also suggested that they consider asking a trusted fellow faculty member at their university to view the tape together and assist with the self-evaluation process. Davis (2009) emphasized that “faculty members at all levels and in all disciplines can benefit from the opportunity for self-reflection provided by carefully planned observation by peers or a faculty development specialist” (p. 472).

### CASCADE WORKSHOPS

On the basis of the train-the-trainer concept, whereby a small set of people are trained in a subject and then those who have been trained go on to conduct their own training sessions for a larger group of people, the teaching learning workshops of the EPHTI allowed for the formation of intensive 2-week pedagogical training workshops for selected Ethiopian faculty from each university, who would then return to their respective home campuses and conduct similar intensive workshops for their colleagues. This cascade effect of pedagogical training, in 2-week workshops both at the national level and on participants’ respective home campuses, was the method by which the active teaching learning strategies described in this book were utilized and disseminated.
In every cycle of the teaching learning workshops, the participants varied in seniority and pedagogical skill level. The participants of the national workshops varied every year, so that the maximum number of instructors could receive both the primary (national-level) and secondary (cascade workshop at their home institution) training. Returning to their home universities to conduct their own workshops, it was in this way that one 2-week workshop conducted each year could influence the standardized and effective skill strengthening of hundreds of Ethiopian faculty every academic calendar year. We intend that others, using this book as a guide, can replicate these teaching learning strategies and workshops in their respective teaching environments.

OTHER PROGRAMS OF THE ETHIOPIA PUBLIC HEALTH TRAINING INITIATIVE

The Health Extension Worker Program

In 2003, the Ethiopian Federal Ministry of Health launched a new comprehensive health plan called the Health Extension Program (HEP; Tibebe, 2005). The HEP was designed to address the large gap between preventive and curative health needs and health services available in rural Ethiopia. It focuses on the improvement of prevention skills and behaviors within the household and thus involves fewer facility based services. Most of the activities listed in the Ethiopian government’s National Health Sector Program strategies are to be implemented through the HEP.

New groups of health extension workers (HEWs) operating at the village level are the implementers of the HEP. The government of Ethiopia planned to train 30,000 HEWs within 7 years of beginning the program and is currently on track to reach that target. Training of the HEWs took place 1 year ahead of schedule thanks to the adaptation of the EPHTI curriculum for the HEWs. All HEWs were to be women, at least 18 years of age, have a minimum of a 10th-grade education, and selected by the communities in which they will work. HEWs must complete a 1-year course of instruction and field training, provided by the Ministry of Education. On completion of training, HEWs are assigned in pairs to villages where they staff health posts and work directly with individual families. As a preventive health program, the HEP promotes four areas of care: (a) disease prevention and control, (b) family health, (c) hygiene and environmental sanitation, and (d) health education and communication (Tibebe, 2005). HEWs spend 75% of their time visiting families in their homes and performing outreach activities in the community (Wilder, 2008). The remaining 25% of an HEW’s time is spent providing services at health posts. HEWs are also trained to provide first aid; treat malaria, dysentery, intestinal parasites, and other ailments; and to refer cases to the nearest health center when more complicated care is needed (Wilder, 2008).
The Accelerated Health Officer Training Program

In 2005, working closely with Ethiopia’s Ministry of Education, Ministry of Health, regional health bureaus, and seven partner universities, the EPHTI helped launch the Accelerated Health Officer Training Program (AHOTP), to respond to the staffing shortage caused by the growing number of new government-built community health centers in the country (Ethiopian Ministry of Health and Ministry of Education, 2005). To help jump-start the program, the EPHTI supported renovations to expand the teaching capacity of 17 training hospitals, building classrooms and libraries at these health facilities for practical training purposes. The EPHTI’s curriculum, developed for regional health science universities, was also available for use in the AHOTP program. In fact, because of the existence of the EPHTI and its network of universities, the Ministry of Health was able to adapt the public health curriculum from the EPHTI health learning materials for use in the AHOTP program and was thus able to launch the ambitious AHOTP program a full year ahead of schedule.

The AHOTP program’s objective is to train 5,000 health officers within 5 to 6 years (allowing for various challenges faced along the way). These newly trained health officers will be drawn from a combination of nurses and general science students, on similar tracks to upgrade their clinical skills to those of health officers.

Health officers are the leaders of the community-based health center professional staff in Ethiopia and are supported by nurses, medical laboratory techni-
cians, environmental laboratory technicians, and health extension workers at the health center level. There is currently a shortage of health officers in Ethiopia as the government builds more health centers to serve the population’s needs. The EPHTI has utilized its network of universities, the universities’ affiliated training hospitals and regional health bureaus, and its health learning materials to facilitate this program.

REPLICATION OF THE ETHIOPIA PUBLIC HEALTH TRAINING INITIATIVE MODEL

With similar problems and resources, other African countries could benefit from adopting and customizing the EPHTI model for use in their national programs. The EPHTI model has been used to join universities and health professionals to explore ways to improve the education of health workers. Explorations of how to address the shortages led to universities, health centers, and hospitals working together.

In 2007, The Carter Center sponsored a replication conference in Addis Ababa, Ethiopia, and invited ministers of health and ministers of education from nine African countries: (a) Benin, (b) Sudan (both the northern and southern states), (c) Uganda, (d) Kenya, (e) Ghana, (f) Nigeria, (g) Mali, and (h) Tanzania. Other attendees included the donors: U.S. Agency for International Development, The David and Lucile Packard Foundation, The Susan Buffett Thompson Foundation,
the Irish government, and others. The purpose of the replication conference was to encourage other countries to explore the possibility of replicating the EPHTI in their country. Two countries are currently seeking to implement projects similar to the EPHTI that would include the 2-week teaching learning workshops for strengthening the pedagogical skills of university instructors.

The replication conference showcased the challenges, successes, history, and methods of the initiative. As an adaptable model, even in microcosm, both in the teaching learning strategies described throughout this book and in the structure of the university network and communication process of the initiative, a program such as the EPHTI could be beneficial for other low-resource environments that seek to train quality health professionals for their underserved populations.
LEARNING ACTIVITY 10.1
DEVELOPING A TEACHING PLAN FOR A TEACHING LEARNING EPISODE

OVERVIEW

The question to be addressed in this learning activity is the following: How do we structure learning so that we address the learner at the appropriate level, know the intent of the learning, and can plan for effective evaluation?

DIRECTIONS

In this learning activity, you will be divided into groups that are, we hope, representative of the community-based team—health officer, public health nurse, medical laboratory technician, and environmental sanitarian. Each team will choose a topic from a list provided. As a group, you are to follow the directions and structure a teaching learning episode for a selected discipline, community, family, or village. You will have time to work together to plan your episode. Each member of the group is to participate, and each group will be videotaped. Videotapes will be provided to each individual so he or she can review and evaluate his or her own teaching performance. Feedback will be provided by peers and leaders.

Other questions to consider are the following: How do you teach students to move into communities, villages, and families? Where in their learning experiences do they do this? What are the current practices? Do students have the knowledge, skills, and attitudes that are needed to become quality health care workers? For this activity, consider the following variables:

a. Principles of community involvement
b. Community health workers
c. Families
d. Context, including health center, home, community, classroom, and other factors in the setting

Read chapter 42, “Watching Yourself on Videotape,” in Tools for Teaching (Davis, 1993). This will help to inform you about how you can evaluate your teaching and determine areas of strengths and weaknesses.
DEVELOPING YOUR GROUP PRESENTATION

1. Describe the selected population (learners), that is, who, what, when, and where you teach.
   a. What level students do you teach?

2. Briefly describe the topic that your group will be teaching.

3. List three to five learning outcomes or behaviors for this teaching episode.
   a. Describe the level of learning intended for the students.

4. Describe the sources of information that you use. Use the modules, lecture notes, and other materials that you might have available.

5. What teaching materials are needed to support your teaching episode?

6. What teaching strategies are likely to accomplish desired outcome/results?

7. How will you evaluate learner achievement of objectives and/or outcomes?

8. How will you evaluate your effectiveness as a teacher?
REFERENCES


