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Creating a Center for Global Health at the University of Wisconsin–Madison

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Abstract

Globalization, migration, and widespread health disparities call for interdisciplinary approaches to improve health care at home and abroad. Health professions students are pursuing study abroad in increasing numbers, and universities are responding with programs to address these needs. The University of Wisconsin (UW)–Madison schools of medicine and public health, nursing, pharmacy, veterinary medicine, and the division of international studies have created an interdisciplinary center for global health (CGH). The CGH provides health professions and graduate students with courses, field experiences, and a new

Certificate in Global Health. Educational programs have catalyzed a network of enthusiastic UW global health scholars. Partnerships with colleagues in less economically developed countries provide the foundation for education, research, and service programs. Participants have collaborated to improve the education of health professionals and nutrition in Uganda; explore the interplay between culture, community development, and health in Ecuador; improve animal health and address domestic violence in Mexico; and examine successful public health efforts in Thailand. These programs supply

students with opportunities to understand the complex determinants of health and structure of health systems, develop adaptability and cross-cultural communication skills, experience learning and working in interdisciplinary teams, and promote equity and reduce health disparities at home and abroad. Based on the principles of equity, sustainability, and reciprocity, the CGH provides a strong foundation to address global health challenges through networking and collaboration among students, staff, and faculty within the UW and beyond.

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History has always been shaped by the migrations of people, animals, and germs. Yet, exponential growth in human populations, communications, immigration, travel, and trade has accelerated the pace of globalization. We live in a world that is increasingly multilingual, multicultural, complex, and interconnected. In response, new programs are emerging in North American academic centers to prepare health professionals to address some of the great health challenges of our time.

Although health has always been influenced by global factors, biomedical progress has resulted in the potential to improve the health of the public and to prevent millions of premature deaths and disabilities.^{1–6} Yet, great disparities in health outcomes persist within and between nations. The Institute of

Medicine has urged academic health centers to include a strong foundation of public health in the education of health professionals.⁷ Global health is a field of study that addresses biological, social, cultural, economic, and environmental determinants of health that transcend national borders. Global health is a core component of public health education.

Health professionals who study abroad return with increased awareness of the importance of public health and enhanced knowledge, attitudes, and skills to care for increasingly diverse and medically underserved domestic populations.^{8,9} Health professions students in the United States are pursuing study abroad in increasing numbers. Accordingly, the number of U.S. medical students that studied abroad during medical school increased from 6% in 1984 to more than 27% in 2006.¹⁰ Nevertheless, 47% of recent U.S. medical graduates indicated that they received inadequate education about global health during medical school.¹¹

Although many health professions schools do not yet provide a substantive curriculum in global health, many are responding to students' interest.¹² The Foundation for the Advancement of

International Medical Education and Research (FAIMER), the Association of American Medical Colleges, and the Global Health Education Consortium collect information about international opportunities in North American medical schools. In early 2007, FAIMER identified 85 U.S. and Canadian allopathic medical schools that provide international opportunities as follows: 75 offer clinical electives, 55 offer preclinical spring break or summer experiences, 48 offer clinical research opportunities, 28 offer pretravel preparatory courses, and 12 offer global health tracks with a series of options for students.¹³ The University of Wisconsin (UW)–Madison has responded with the development of an exciting new interdisciplinary center for global health (CGH) that unites health professionals and scholars from throughout the university and beyond to address grand challenges in global health. This article describes the creation, programs, and aspirations of the fledgling CGH.

Creation of the UW–Madison Center for Global Health

The UW–Madison is a state land-grant institution that serves more than 41,000 students with 2,100 faculty on a single

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campus. The Madison campus includes schools of medicine and public health, nursing, pharmacy, veterinary medicine, and a division of international studies with area studies programs encompassing every major world region. In 2001, in response to student interest and university-wide efforts to “accelerate internationalization,” the dean of the medical school established an International Health Advisory Committee. The 24-member committee, composed of faculty and staff with international experience from all of the campus’ health science units and the division of international studies, was charged to recommend policies, expand programs, and coordinate efforts among the health sciences schools. The committee established uniform policies related to the conduct of international health programs such as guidelines to promote student safety and risk-management policies.¹⁴

Yet, international health committee members envisioned more—a vision that ultimately led to the creation of the CGH. A retreat afforded time to share experiences and to propose vibrant interdisciplinary programs. Committee members proposed the development of a center to promote robust global health education, research, and partnerships. The structure of the CGH was viewed as a force to facilitate major institutional bridges between the health sciences and the rest of the campus; it would also bring together various elements within the health sciences, fostering internal partnerships and the potential for innovative interdisciplinary opportunities for teaching, research, and outreach. This vision energized students, staff, and faculty.

Support for the CGH came from the deans of health sciences and international studies, who each pledged three years of human, financial, and in-kind resources towards the collective endeavor. Further support would be based on evaluation of the CGH after this start-up phase. Alumni also contributed. For example, Emeritus Professor William Young, a local philanthropist and visionary leader in international development, contributed personal resources and mobilized his network of friends to contribute start-up funds. Support from deans and donors, growing student interest, and commitments from

experienced faculty and staff were critical components of the new CGH.

The CGH was created to promote interdisciplinary education, research, and partnerships that address health issues that transcend national boundaries. Goals include (1) development of education programs, (2) facilitation of partnerships and exchanges, (3) advancement of research, and (4) support for an interdisciplinary network of scholars and practitioners.

Given the vast array of potential activities, the steering committee determined principles to guide future efforts. First, the CGH would focus on *equity* and on efforts to reduce health disparities. Furthermore, recognizing the broad determinants of health, the CGH would promote efforts that are *interdisciplinary*, to engage students and faculty from throughout the university. Additionally, the CGH would develop activities in areas where UW had already demonstrated strength, and in a few strategic locations; the CGH would

focus on activities that are likely to be *sustainable* and result in long-term benefits to populations; and CGH efforts would be *complementary* and would not compete with individual or discipline-specific efforts. Finally, the CGH would promote efforts with *reciprocity* of benefits for all participants, including UW participants, host country partners, and patients and communities where programs would be conducted. Outcome measures were established to track progress (List 1).

The Structure of the CGH

Consistent with our guiding principles, a steering committee includes representatives from participating schools, community health professionals, students, and support staff. Faculty and staff bring considerable international and academic experience; students bring enthusiasm and creativity; alumni and community health professionals enhance the network. Faculty are appointed by their respective administrative units to serve renewable two-year terms. The

List 1

Outcome Measures for the University of Wisconsin (UW)–Madison Center for Global Health

The following categories and criteria will be used to assess the outcomes of the UW–Madison Center for Global Health:

Educational outcomes

- Number and location of global health courses and field experiences
- Number and types of participants
- Graduates with a Certificate in Global Health
- Development of a global health track in the UW Masters of Public Health program
- Course evaluations by students, UW–Madison faculty, and international partners

Research outcomes

- Number and type of global health research projects
- Number and types of participants (on campus and abroad)
- Research funding
- Research findings, outcomes, and health impacts
- Publications and presentations

Partnerships, service projects, exchanges

- Number and locations of international partnerships
- Feedback and evaluation from international partners
- Number and categories of affiliates
- Feedback from affiliates regarding the value of the UW–Madison Center for Global Health
- Number and type of service projects and exchanges
- Funding generated to support global health efforts
- Health outcomes for target populations (before and after interventions)

Administrative outcomes

- Assessment of program and activities by participating units
- Feedback from steering committee members
- Financial self-sufficiency

committee meets monthly to oversee programs and to promote education, partnerships, and development of research initiatives.

The CGH promotes collaboration and networking within the campus and beyond. Programs are open to UW faculty and staff, students, and health professionals from the community. Modest office space provides a home for staff and student resources. Staffing includes a 0.5 full-time equivalent (FTE) director, 0.5 FTE assistant director, and 1.0 FTE support staff. Staff have developed a Web site that includes descriptions of opportunities for study abroad and information about global-health-related events on campus (<http://www.pophealth.wisc.edu/gh>). Seminars provide opportunities for experts in global health to share their work. A listserv of students and faculty interested in global health has rapidly expanded to include more than 500 individuals. A list of UW global health affiliates provides a database for faculty, staff, students, and community members to describe and share their interests and activities. This list helps students identify faculty and community advisors and helps faculty to network more efficiently.

Students are the heart of the CGH's educational programs, and their excitement is contagious. A new campus-wide, student-led Global Health Alliance supports global health interest groups within each school. Students have organized interdisciplinary study groups, village health projects, advocacy efforts, and an annual global health symposium. More than 120 UW health professions students per year studied abroad during the last two academic years. These students returned with exciting stories and galvanized commitments to improve health care at home and abroad. The medical student global health interest group offered more special sessions in the 2005–2006 academic year than any student organization in the history of the school, an impressive beginning for the group.

Global health education

Education of students and health professionals is a core mission. The CGH provides introductory seminars and courses, as well as programs for students or health professionals who are interested

in pursuing global health studies in greater depth.

Seminars and symposia. The CGH offers seminars and symposia that are open to the public. Seminars have addressed a variety of topics, such as HIV/AIDS, malaria, diabetes and chronic diseases, climate change and environmental impacts on health, health and human rights, responses to natural disasters, and other topics. An annual global health symposium provides a venue for presentations and networking among faculty, staff, and students engaged in global health activities. The seminars and symposia attract hundreds of participants and help to spread enthusiasm and interest in global health throughout the community.

Global health courses. The CGH promotes a broad range of global-health-related courses on the UW campus, including courses that existed before the formation of the CGH as well as newly developed interdisciplinary courses. Courses include Epidemiology and Global Health; Health Systems; and courses with a regional focus such as Culture, Language, and Community Health in Ecuador; Health and Disease in Uganda; and People, Animals, Health, and Diseases in Thailand. New courses are in development such as Global Healing Traditions, and Interdisciplinary Approaches to Global Public Health. Courses are designed to prepare students with knowledge, attitudes, and skills to effectively collaborate and contribute to global health activities. CGH courses emphasize the importance of effective cross-cultural communications, research, and interdisciplinary collaboration.

Global health field courses and electives. The CGH places an emphasis on combining classroom learning with practical experience. Thus, the CGH has developed a series of field courses in less economically developed countries representing major regions of the developing world. Faculty lead field courses with small groups of UW students who have completed prerequisites. Additionally, some students pursue independent international electives in countries of their choice. The average cost of participation in a three-week field experience is \$3,000 per student. Nevertheless, the field courses are fully

subscribed with waiting lists, reflecting a high level of student interest.

Certificate in Global Health

The Certificate in Global Health was designed to provide an interdisciplinary program for health professions and graduate students and practicing health professionals to develop core competencies in global health. For example, medical students and students enrolled in the UW Masters in Public Health degree program may concurrently pursue a Certificate in Global Health. Graduates may serve populations abroad, or they may hone their skills to address health disparities among the increasingly diverse population of the United States.

Certificate graduates are expected to be able to (1) critically analyze health issues that transcend national borders, (2) explore solutions to reduce health disparities, (3) develop awareness of human rights and social justice in relation to health and development, and (4) experience health-related study abroad. Certificate courses are taught by faculty from medicine, nursing, pharmacy, veterinary medicine, public health, environmental science, and social science; these courses provide opportunities for students to develop a greater awareness of global health issues and cross-cultural skills. Faculty are working to define and evaluate the competencies of our graduates (List 2).

The nine-credit certificate includes four requirements: (1) Comparative Health Systems, two credits, (2) Epidemiology and Ethics of Global Health Research, two credits, (3) Foundations of Global Health Practice, one credit, and (4) a Global Health Field Experience, one to six credits. The foundations course is a prerequisite for the global health field experience; students identify a country or population and describe the demographic profile, burden of disease, health system, and strategies to address a particular health problem in this population. This preparation ensures that students begin their field experience with a relevant foundation of knowledge. The field experience can be gained through study abroad, with an international agency, or with a minority population in the United States; a range of credits allows students to participate in brief study tours during semester breaks (one week = one credit)

List 2

Global Health Core Competencies, University of Wisconsin–Madison Center for Global Health

A Certificate in Global Health will equip students with the following:

Knowledge

- Describe complex determinants of health
- Recognize human–animal–environment interactions that affect health
- Access evidence-based information on the epidemiology of health and disease
- Identify population-based strategies for health promotion and disease prevention
- Describe the organization and basic features of health care systems
- Describe the roles and functions of nongovernmental organizations in health care
- Discuss diverse belief systems as they relate to health
- Explain the relationship between health and human rights
- Adhere to ethical practice regardless of context

Communication skills

- Use active listening and communicate effectively in diverse settings
- Collaborate and form interdisciplinary partnerships to promote health
- Demonstrate humility and engage in effective conflict resolution

Attitudes

- Promote equity and access to health care for all
- Appreciate diversity and promote health across cultures and health belief systems
- Demonstrate professionalism regardless of context
- Appreciate contributions of various disciplines to health
- Exhibit flexibility and accommodation to a variety of circumstances
- Value sustainable solutions to promote health now and for generations to follow

or to spend an entire semester abroad. The field experience helps students to deepen and apply what they have learned in the classroom courses. Students synthesize their learning in a field report. Finally, three credits are available for electives so that students can pursue a specific area of interest.

Although it is too soon to determine whether the program has achieved all of its intended outcomes, it has already created a vibrant learning community. Our first two classes comprise 45 students representing a variety of disciplines and practicing health professionals. Faculty have assisted students to conduct field studies in Kenya, Tanzania, South Africa, Mexico, and Uganda, and to participate in fellowships at the World Health Organization in Geneva, Switzerland. The first certificate candidates will complete the program in the spring of 2008. Formative evaluation will include review of course and program objectives and interviews with students and faculty.

Global Health Partnerships and Research

Most of our educational field activities are situated in the context of ongoing

education, service, and research partnerships. Faculty often use educational programs as stepping stones toward research and other collaborations.

For example, the UW CGH and college of agriculture and life sciences offer graduate and undergraduate courses on health in Uganda that are prerequisites to field study in Uganda. These courses have provided a forum for collaboration and engagement of faculty and students. The CGH has facilitated exchanges between UW and Ugandan faculty. Since 2001, more than 20 UW faculty and 100 students have studied in Uganda, three UW faculty have received Fulbright fellowships to Uganda, and more than a dozen Ugandan faculty have studied at UW. UW faculty are actively engaged in Uganda to train health professionals to care for people with HIV/AIDS, to train family physicians, to address malnutrition among rural children, and to improve care for people with diabetes. Conversely, Ugandan faculty have contributed a great depth of knowledge and experience to UW global health courses and research projects.

Partnerships are evolving at other sites as well. In Mexico, UW and University

of Guadalajara faculty and staff have developed initiatives in public health, nursing, veterinary medicine, and environmental health. UW and University of Guadalajara faculty have collaborated to offer faculty development workshops on rural health, community-based public health, and environmental sustainability. Guadalajaran nursing and veterinary medicine delegations have visited UW to share experiences in public health nursing, domestic violence, food safety, and other topics related to veterinary medicine. Wisconsin students from medicine and veterinary medicine have studied in Guadalajara. These experiences have resulted in plans for a joint interdisciplinary public health service learning program for graduate students in 2008.

In Ecuador, UW students learn about the health system in partnership with Andean Rural Health and Development, a nongovernmental organization led by a UW faculty member based in Quito. UW students also study about culture and health and participate in community health in rural indigenous villages. UW faculty-led field courses are planned and conducted with local community leaders. These activities have evolved over time in response to expressed community needs. Some students have conducted independent field studies in follow-up to the group experience.

The partnership in Thailand, built on relationships with UW Thai alumni and faculty in health science schools, including pharmacy, nursing, public health, and veterinary medicine, has resulted in the first UW–Thai public health field course. We anticipate that faculty will expand research agendas in each of these sites in the future.

Conclusions

Globalization has brought global health issues to the forefront of our nation's health. Health disparities, travel, trade, ethnic diversity, environmental degradation, infectious diseases, and even terrorism remind us that the well-being of Americans is inevitably linked to the well-being of others. Our academic institutions have the potential to serve as portals to introduce students to the great health disparities and challenges of our times, and to prepare faculty and

students to address urgent health needs at home and abroad.

Global health education provides opportunities to foster altruism and to practice the highest ideals of professionalism. Students who have studied abroad or in medically underserved areas of the United States return with heightened cultural sensitivity and greater appreciation for public health and community-based approaches to health. These pivotal experiences sharpen students' motivation, awareness, and skills to address health disparities locally and globally.^{8,9}

Given the growing interests, great needs, and proven benefits, schools that wish to develop or expand global health programs may wish to consider a variety of issues. Should the program be organized by a single department or school, or among many units? Who will fund the program? Which faculty and staff will contribute, and do they have the skills, experience, and support necessary to guide students? If the program will cross many units or disciplines, what are the mechanisms, challenges, and incentives for interdisciplinary collaboration? As with any educational endeavor, institutional support will be necessary to provide sufficient resources to initiate and sustain high-quality programs.

Whereas global health includes a vast and rapidly evolving body of knowledge, the field will benefit from the same rigorous preparation, scholarship, and evaluation as any other course of study and practice. Fortunately, many scholars and leaders are collaborating to educate the next generation of health professionals to engage in global health efforts.^{15,16} Governments, grant agencies, and private initiatives are providing sorely needed resources.¹⁷⁻¹⁹ The U.S. government is investing substantial resources and is considering support for a new Global Health Corps.²⁰ Yet, U.S. public funding for foreign assistance continues to fall short of needs (0.10% of GDP) and far below the 0.22% GDP contribution of other economically developed countries.²¹ Advocacy and additional commitments will be required to narrow the gap between global health needs and resources.

The UW CGH provides an example of how a major public university has built a strong interdisciplinary foundation to develop and support education, research, and partnerships regarding health issues that transcend national boundaries. Paradoxically, global efforts have enabled us to better understand ourselves, to collaborate across disciplines within our own institution, and to enhance education and health care in local communities. We are just beginning. We hope the CGH will assist many on their journey to improve health for populations in Wisconsin, the United States, and the world.

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Teaching and Learning Moments

A Hot African Night to Remember

Down a hot, dusty road in Kumasi, Ghana, lies the medical emergency unit at Komfo Anokye Teaching Hospital. I had just finished my first year of medical school in the United States and I was on a three-week medical mission to Ghana. Half an hour after arriving at the hospital, I settled in to help the intern with whom I would experience the most memorable night in my medical training. Because of a severe staff shortage, I spent most of the night assisting the intern performing urine catheters and paracentesis. To "my" patients I was a symbol of stability and even hope because of the country from which I came, and I soon felt the magnitude of responsibility and power these patients had given to me.

As I entered a sweltering room that night, a patient awakened, clutching his chest, his eyes watering. He began to cry out "Pressure! Pressure!" Not knowing what to do, I rushed back to the intern and inquired. Distracted, he calmly said there was nothing to be done. I hurried back to my patient and sat down at his bedside. Feeling helpless, I grabbed his hand and squeezed. I tried to tell him in his language that everything would be okay, my voice unsteady as the foreign words fell from my lips. Watching his mouth foam and his eyes glaze over, I became aware of my own mortality. I stood up and watched my patient take shallow breaths. Unable to restrain my tears, I ran out of the room into an abandoned bathroom and began to

cry. Although the room reeked of urine and the walls were spattered with blood, I felt safe, shielded from the harshness of death. After regaining composure I returned to my patient's bedside, trying to appear strong and optimistic. As his cries diminished gradually in tone, my eyes welled up with tears. The patient in the adjacent bed pleaded, "Doctor, do something!" How was I to explain that I wasn't a doctor, even though I wore the revered white coat?

After they took my patient away I noticed a machine next to his bed. The intern later explained that it was a dobutamine pump that could have helped my patient. However, it lay idle, unplugged, and dusty from years of nonuse, because no one in the emergency ward knew how to operate it.

I went to Ghana thinking that I could offer free medical resources. I realize now that many of those resources are available at sites such as the Komfo Anokye Teaching Hospital and others throughout the country—but not the knowledge or follow-up to make best use of them. Perhaps, on these missions, we could train local personnel *how* to adequately utilize and maintain existing resources, like the dobutamine pump, thereby empowering local health care workers to more effectively handle the barrage of chronic illnesses affecting developing countries. We could also establish better follow-up with our

medical counterparts, in turn improving autonomous local patient care. Consider that no one would invest money without periodically checking in on it. Likewise, as we invest time and effort overseas, we should monitor and assist our foreign colleagues and their patients, even if it is from a distance.

Occasionally, I find myself thinking about my patient and what more I could have done. As my thoughts wander back to that small, hot room, I know that my patient's death was not entirely in vain, for it helped me to realize how much I *can* do now. I learned that the greatest gift I can give to developing countries is to be an advocate for other health care workers to meet the needs of those countries' inhabitants. I imagine that if we transform the focus of medical missions from acute to long-term care, with an emphasis on education, we can make more of an impact.

Perhaps, when such changes occur, a patient such as mine would still be alive today.

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