MEDICAL EDUCATION

Medical Education and Global Health Equity

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Abstract

Recent efforts to expand medical training in resource-constrained settings are laudable, but change that transforms health systems will require new educational approaches. Today's physician-leaders need to leverage clinical and global health knowledge with a nuanced understanding of the social forces that impact health, the ability to marshal political will, and the capacity to manage dynamic programs and institutions. In establishing the University of Global Health Equity, we have identified three reform principles. First, equipping medical schools with the tools and technology to deliver is imperative. Second, the mismatch between the skills taught in most medical schools and those needed to improve fragile health systems must be addressed. Finally, medical schools that strive to eliminate health inequities should "walk the walk," adopting progressive practices to institutionalize equity.

Profound [shortages of skilled health personnel](#) are both a cause and a consequence of the fragile health systems that plague much of the world. The recent Ebola outbreak in West Africa, which has claimed over 11,000 lives, illustrates this phenomenon [1]. Years of civil unrest and displacement, coupled with chronic underinvestment in health care services and health education, severely depleted the health care workforce. In this setting, there was little to stop the rapid [spread of Ebola](#). Frontline health care workers, without adequate training or personal protective equipment, were particularly vulnerable. In Liberia, which had only 1 physician per 100,000 people before the epidemic [2], an estimated 8 percent of the country's health care workers died in the epidemic [3]. With the remaining workforce unable to safely deliver basic primary health care services, thousands of additional preventable deaths among mothers, infants, and children under five are projected to occur [3].

Many countries have responded to health care personnel shortages with increased investment in education. The number of medical schools in sub-Saharan Africa has more than doubled since 1990 [4]. But is simply training more physicians and other health care workers an adequate response? We argue that physicians cannot serve impoverished communities effectively without understanding the structural forces that drive inequality and concentrate suffering disproportionately among the poor. Moreover, we believe that

educational institutions have a responsibility to train health professionals to actually improve the health systems in which they will be working.

A New Paradigm: The University of Global Health Equity

Founded in 2015, the University of Global Health Equity (UGHE) is a private, not-for-profit university established by [Partners In Health (PIH)](), a Harvard-affiliated global health and social justice organization, in collaboration with the government of Rwanda and other partners [5]. UGHE is located in Rwanda because of the country's impressive track record of health care delivery innovation, success in health systems strengthening, and commitment to reducing social, economic, and health inequalities [6]. Over the past 15 years, [Rwanda's approach to health care reform]() has driven perhaps the most dramatic improvements in population health and prosperity in the world [6]. Through progressive education programs, experiential learning, and research, UGHE—which will enroll its first cohort of medical students in 2018—aims to become a global hub for advancing and disseminating such innovations in health care delivery science and for cultivating a new generation of global health leaders.

Although other medical schools often struggle to enact incremental reforms, as a new institution UGHE has a rare opportunity: a blank canvas upon which to reimagine medical education. Three principles are relevant to medical schools that endeavor to strengthen health systems in resource-constrained settings. First, [equipping medical schools]() and their clinical training sites with the tools and technology to deliver high-quality health services is not only a necessary prerequisite for quality education but also a justice issue. Second, there is a mismatch between the skills taught in most medical schools and those needed to practice effectively within—and to improve—fragile health systems. Medical educators need to rethink both what they teach and how they teach. Finally, [diversity in health professions training]() may both improve the quality of education and remediate disparities in health care access for underrepresented minority groups [7]. Therefore, medical schools with a social mission that strive to eliminate health inequities should "walk the walk" by adopting progressive admissions standards—which consider the full potential of the student—and other practices to address inequities in access to quality higher education.

Access to Information and Technology

It is virtually impossible to improve fragile health systems without first ensuring that basic infrastructure and resources are in place. Paul Farmer has called these the four S's, referring to "staff, stuff, space and systems" [8], which are discussed briefly below. The technical term for this is *health system readiness*. Like the health systems they support, medical schools in resource-constrained settings cannot be expected to thrive without critical resources and technologies.

What, then, should be the "medical school readiness" package in resource-constrained settings? Surely it should include sufficient numbers of qualified faculty (staff), adequate educational and clinical infrastructure (space), research opportunities and robust accreditation systems with global minimum standards (systems), and access to information and technology (stuff). The latter is worth emphasizing. Access to digital information does not require sophisticated technology. A stable Internet source and access to a connected device is adequate if coupled with open access to the medical literature and online clinical resources, such as UpToDate®, that many of us take for granted.

But consider the reality for medical students in many parts of the world. In Haiti, for example, only 6 of 10 teaching hospitals in the country have reliable Internet access and only half have medical libraries (ME Morse, unpublished data, 2015). Imagine trying to learn and practice twenty-first century medicine in a setting where the dominant education technology is the chalkboard and modern medical knowledge is out of reach in expensive, elite medical journals. In our experience, lack of access to technology, so critical in the rapidly changing field of medicine, exacerbates inequities in medical education.

UGHE benefits from a visionary development policy of the Rwandan government, which has laid fiber optic broadband cable throughout the country. This allows UGHE faculty to blend curated online classes from Harvard and elsewhere with vigorous classroom discussions, creating more diverse active learning experiences. Students, who can be scattered at their workplaces and clinical sites during the week, have formed a tightly knit virtual learning community that extends beyond the classroom—one that in coming years will connect students around the world and, perhaps, motivate better understandings of health inequalities and how to respond to them.

Transformative Leadership Begins with Transformative Learning
American medical education has seen pockets of innovation and a groundswell of calls for reform in recent decades [9]. Nevertheless, for a discipline evolving as feverishly as medicine, it is remarkable that the dominant paradigm for physician education is over a century old. Many of the defining features of the twentieth century medical school as identified by the 1910 Flexner report [10]—a heavy emphasis on the basic sciences, a largely didactic "preclinical" phase, and clinical training that is concentrated in hospitals—stubbornly persist. Moreover, the professionalization of medicine catalyzed by the Flexner report resulted in the closure of many medical schools that accepted minorities and women [11, 12], an exclusionary trend that still demands solutions.

In our opinion, this model is inadequate for training physician-leaders whom we need to respond to health injustices. Today's physician-leaders need to leverage clinical and global health knowledge with a nuanced understanding of the social forces that impact

health, the ability to marshal political will, and the capacity to manage dynamic programs and institutions. These competencies are not typically developed in today's medical school curricula [13].

UGHE's approach to training physician-leaders begins with a paradigm shift from a purely biological to a biosocial understanding of health and disease. Social medicine examines the social, economic, and political determinants of health and highlights the moral and epidemiologic dimensions of health disparities. Think of it as an expanded "diagnostic" toolkit. The biosocial orientation to medicine can be coupled with pragmatic skills and praxis to create more equitable and effective health care delivery systems. This "therapeutic" toolkit, or social medicine prescription pad, draws from principles of leadership, management, ethics, public policy, social science, activism, and design thinking.

These principles form the basis for UGHE's Master of Science in Global Health Delivery (MGHD), currently a part-time degree program for working health professionals from diverse disciplines. The MGHD will be woven into the medical school curriculum to produce a unique joint degree program. UGHE's approach is consistent with what Julio Frenk and colleagues describe as a "third-generation" approach to health professional education, one that uses global knowledge to inform the transformation of health systems by change agents whose competencies mirror health system needs and priorities [14].

At a time when graduates of health professional schools struggle to understand structural violence—systemic forces that prevent people from achieving their full potential [15]—the root causes of poor health, and how to remediate these problems, only a radical departure from educational norms will suffice. Frenk and colleagues [14] have called for educational reform to generate transformative learning, an evolutionary concept that builds upon informative learning (acquisition of skills and knowledge) and formative learning (socialization and professionalization). Transformative learning aims to develop leadership competencies through shifts "from fact memorisation to searching, analysis, and synthesis of information for decision making; from seeking professional credentials to achieving core competencies for effective teamwork in health systems; and from noncritical adoption of educational models to creative adaptation of global resources to address local priorities" [16].

Our experience in Rwanda, Haiti, and the United States suggests that experiential learning is a powerful tool to shift from formative to transformative learning. Through home visits, mobile clinics, and direct engagement with community health workers and communities, medical trainees begin to experience the lives of the people they serve. This brings trainees closer to understanding the root cause of illness in ways that will allow them, in partnership with their patients, to find solutions to this world's most

pressing challenge, [achieving health equity](#).

As educators who believe in fostering critical thinking that empowers students to be more than passive receptacles of knowledge, we believe that the best classroom is the lived experience of our patients. According to education theorist and activist Paulo Freire, "teachers and students (leadership and people), co-intent on reality, are both Subjects, not only in the task of unveiling that reality, and thereby coming to know it critically, but in the task of re-creating that knowledge" [17].

Institutionalizing Equity

In the United States, well-documented racial, ethnic, and economic disparities in health care access and outcomes coexist with [underrepresentation](#) of these same groups among medical school faculty and students [7]. Moreover, institutional bias in academic medicine and the culture of medicine itself—in both the training of health professionals and the organization of health care delivery systems—can reinforce health care disparities [18]. Without a commitment to a social mission, health professions education institutions can themselves become perpetrators of structural violence. Progressive admissions standards, which consider the full potential of the student rather than promote a simplistic focus on test scores and grades, have the potential to systematically elevate those whose voices have been silenced and are a vital step towards correcting the mistakes of the last generation's institutions. Mullan and colleagues have proposed a social mission composite score that ranks medical schools according to the percentage of graduates working in primary care, practicing in underserved communities, or who are underrepresented minorities [19].

New universities like UGHE have an important opportunity to provide models for institutional reform by implanting an equity agenda into their institutional DNA. This will require significant investment and imagination. Progressive admissions practices alone will not truly create opportunity for young women and men from extremely impoverished backgrounds. Because many children lack access to quality primary and secondary education, an educational bridge program may be required to prepare students for a rigorous university education. Creative tuition financing models are needed to eliminate financial barriers for the majority of potential students. And community engagement strategies are needed to ensure that the university catalyzes local development and creates an ethos of leading through service.

Already, such aspirations to deliver world-class health professions education in settings of resource scarcity are raising questions of cost and sustainability, echoing many of the debates in global health over the past two decades. Not long ago, antiretroviral therapy (ART) for HIV/AIDS was deemed too complex, too expensive, and not cost-effective for millions suffering from the disease in poor countries. Today, over 15 million people worldwide are on ART [20], the positive economic impact is well documented, and there

is even discussion of the potential to achieve a "grand convergence" of health outcomes in rich and poor countries [21]. Viewed through the lens of value for health systems and economies, we believe that high-quality, progressive health professions education represents an equally sound investment.

Paulo Freire called education "the practice of freedom" [22]. It can also be a tool for justice. At its best, medical education can do more than improve health—it can create a better world.

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