A Novel Training Model to Address Health Problems in Poor and Underserved Populations

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Abstract: Health disparities are increasingly common and many U.S. practitioners have informal experience working in resource-poor settings. There are, however, few graduate medical education programs that focus on health equity. A graduate medical education program in health equity was developed at Brigham and Women's Hospital based on a review of existing literature and on a survey of junior faculty who have had informal health disparities experience. The Howard Hiatt Residency in Global Health Equity and Internal Medicine was developed as a four-year program to provide intensive training in internal medicine and health disparities. Participating residents are matched with a mentor who has clinical and research experience in the field of global health. In addition to a series of didactic teaching sessions and longitudinal seminars that focus on issues of global health equity, residents take graduate level courses in epidemiology, health policy, ethics, and medical anthropology. Residents also carry out an independent research project in a geographic area that suffers from health disparities. Two residents are selected for training per year. Participating faculty are multidisciplinary and come from diverse Harvard-affiliated institutions. Graduate medical education in the United States with a focus on health equity is lacking. It is hoped that the novel training program in health equity for internal medical residents developed at Brigham and Women's Hospital can serve as a model for other teaching hospitals based in the United States.

Key words: Internal medicine, graduate medical education, underserved populations, global health.

Although the present generation has seen steady and dramatic medical advances, a majority of the world's population continues to suffer and die from preventable

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and treatable diseases.[1] Economic disparities within and between countries, which are increasing, translate into vast differences in health outcomes that are widely accepted by physicians and policy makers as unavoidable.[2] Physicians wishing to correct these inequities often undertake direct medical service provision in resource-poor settings or health services research as a means to this goal. Most physicians interested in health disparities completing their graduate medical education, however, lack specific training that would empower them to affect health inequities, including skills in public health, health advocacy, program development, economics, ethics, and service-based research.[3] This paper describes a new residency program, the Howard Hiatt Residency in Global Health Equity and Internal Medicine, designed to meet the training needs of physicians whose goals are to redress health disparities and to serve the world's most destitute sick.

Background. Physicians and medical students in the world's wealthy nations have a great interest in providing services to poor regions of the world.[4] In fact, a recent survey of medical graduates in the United States found that more than one-third had acted on such an interest by participating in some medical experience in a resource-poor setting during their medical training.[5] Graduate medical education in the world's wealthy nations provides some training in international health and health disparities.[6–7] A majority of this training, however, consists of short courses or programs aimed at medical students or residents who will be spending time, usually several weeks or months, in an international field site.[8–9] These programs can be effective in providing a backbone of knowledge in international health, language training, and exposure to medical conditions rare in developed countries.[10–11]

Some innovative programs also provide opportunities for medical professionals to work with traditional healers and community health workers.[12] However, while residency programs may offer lectures and laboratory experience in, for example, parasitology, there is almost no training in understanding what systems are necessary to make community-based programs function or how medical information systems can best be used and maintained at resource-poor field sites.[13] Additionally, much of medical education in the United States is technology-centered; providers working in resource-poor settings have limited access to such technology and, while they may serve as catalysts for change in this arena, they are currently left to rely on their physical examination skills and basic laboratory services. Sustained interest in health disparities work is often addressed through infectious diseases fellowships or advanced degrees in schools of public health. There has been little comprehensive training offered, however, to the many young physicians interested in both international medical practice and addressing health disparities in the United States.[14]

While some might argue that these topics are outside the realm of traditional internal medicine training, there is both great interest, and need on the part of medical trainees in both the United States and Europe, in performing health disparities work.[15] In order to meet the challenge of preparing trainees for careers that would have an impact on large populations of people, the Brigham and Women's Hospital (BWH) has developed a track that simultaneously addresses these needs and fulfills requirements for board certification in internal medicine. The program, named in honor of Howard Hiatt, MD,* is a unique, four-year curriculum

that combines clinical training in ambulatory and inpatient medicine, didactic coursework in applied public health, and field experiences in resource-poor settings designed to provide those skills necessary for practitioners and leaders in the field of global health equity.

Program description. *Setting.* In 2001, the Department of Medicine at BWH established the Division of Social Medicine and Health Inequalities (DSMHI), whose goal is to remediate disparities in access to health care. The DSMHI houses faculty members with diverse interests in global health equity, including primary care physicians, infectious disease specialists, cardiologists, nurses, medical anthropologists, and epidemiologists. As a response to the widespread and strong interest among its faculty and students, the Department has created a residency training program that will provide future faculty with specific skills directed at the Division's goals.

Initial planning survey. In 2003, a survey was distributed to the ten DSMHI faculty members whose careers were focused on topics of health disparities in order to determine what they felt should be the key components of a formal training program. Nine of the ten faculty members with a mean of 2.5 years on the faculty participated in the survey. All were practitioners of internal medicine. Two of the nine had received additional training in cardiology while three of the nine had received additional training in infectious diseases. Four were female. All nine had international health care experience outside of the United States, with an average of 7 years spent working in international settings.

In reflecting on their own career development, the most important program element identified by the survey participants was a strong mentoring relationship with an experienced provider in the field of health disparities. Respondents also identified as key desired features longitudinal seminars throughout the duration of training, and the development and implementation of community-based research projects. Although didactic coursework focused on remediating health disparities was identified as a high priority (77.8%), obtaining a secondary formal degree was felt not to be an essential part of the residency (44.4%).

Core competencies. Based on this survey and on review of existing curricula, a four-year training program for medical residents in health equity was developed (see Figure 1). Specific new core competencies were defined as guideposts of successful training that would supplement the competencies currently defined by the Accreditation Council for Graduate Medical Education (ACGME). Upon completion of the program, it is expected that residents will be well-poised to become leaders in the field of health equity and to participate in meaningful field work and research. By the end of the training program, residents will be expected to demonstrate competency in the areas listed in Box 1.

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* Dr. Hiatt, the Co-Chief of the Division of Social Medicine and Health Inequalities at Brigham and Women's Hospital, is former Chairman of the Department of Medicine at Beth Israel Hospital, former Dean of the Harvard School of Public Health, and a distinguished expert in public health, international health and medicine. He is now Professor of Medicine at Harvard Medical School and a member of the Board of Directors of Partners In Health.

PGY1:	Standard internal medicine internship	
PGY2:	Inpatient rotations:	7 months
	Global health didactics and practica:	3 months
	Ambulatory rotations:	1 month
	Continuity clinic:	11 months
	Vacation:	1 month
PGY3:	Inpatient rotations:	2 months
	Ambulatory rotations:	2 months
	Clinical Effectiveness Program/ Other graduate training:	3 months
	Global health didactics and practica:	4 months
	Continuity clinic:	11 months
	Vacation:	1 month
PGY4:	Inpatient rotations:	2 months
	Clinical Effectiveness Program/ Other graduate training:	3 months
	Global health didactics and practica:	6 months
	Vacation:	1 month

Figure 1: Four-Year Training Program Structure in Global Health Equity
PGY=Post-graduate year

- Evaluate and address the social determinants of health and disease.
- Acquire clinical skills necessary to take care of patients with a wide range of health problems in resource-poor settings.
- Conduct research relating to health disparities and global health.
- Attain skills in advocacy, leadership, and operational management of global health programs.
- Obtain in-depth knowledge about the specific public health and medical problems affecting one geographic region of the world.
- Develop a strong base in the ethics of international medical practice and research.
- Master language fluency to practice medicine, conduct public advocacy and carry out research in the geographic area of interest.

Box 1. Core Competencies of the Howard Hiatt Residency in Global Health Equity and Internal Medicine

Program design. Early in training, residents are matched with a primary clinical and research mentor in the field of health disparities. Each mentor is carefully selected based on career interests and time to devote to the resident trainee. The first year of the program is a standard internal medicine internship, with ambulatory electives focused on resource poor communities. In years two through four, alternating clinical inpatient, ambulatory (domestic and international) and didactic experiences are designed to allow residents to maintain two meaningful continuity clinics, one at BWH and one at a selected resource-poor site. In the second year of the training program, residents alternate between clinical rotations and blocks focused on health disparities topics suggested by survey participants, consultation with national and

international global health specialists, existing coursework at Harvard University undergraduate and graduate schools and a review of medical training curricula reported in the literature.[16–18] The topics covered are listed in Box 2. The second year also includes one month visiting health equity project sites domestically and in low-income and middle-income countries to gain a better understanding of on-the-ground operations at each site. Residents spend time at the World Health Organization in Geneva to gain a better understanding of how health policy is made and put into practice. At the beginning of their third year, residents receive formal instruction in quantitative and qualitative research methodology and select a primary field site for further clinical training and research. The residents then spend an additional three months during their third year and six months during their fourth year at the selected project site carrying out the planned work. Residents also maintain their ambulatory continuity clinic in the United States over the four yeas of training, and have a second longitudinal continuity care clinic in a resource-poor setting in years three and four.

Joint DSMHI didactics inclusive of trainees in years two, three, and four will include monthly grand rounds, research, and clinical seminars, and a yearly Division two-day seminar with invited international participants. These longitudinal components focus on high-priority disease topics (e.g., tuberculosis and HIV) and broader topics in health systems. Faculty are drawn from the Division, the Department, the Harvard School of Public Health and other graduate schools at Harvard.

Organizational structure. The residency director also serves as chief of the DSMHI and is assisted by a co-director (who also serves as medicine residency director) and an associate director. All three are board certified in internal medicine and infectious diseases. Core faculty come from diverse Harvard-affiliated institutions, including BWH, Massachusetts General Hospital, the Harvard School of Public Health, and the Harvard Medical School.

Opportunities for degrees from Harvard University-affiliated institutions. Residents have the option of applying their course work in graduate field at Harvard University towards masters degree programs. Residents can receive additional training at the Harvard School of Public Health in the Program in Clinical Effectiveness (master of public health (MPH) or master of science (MSc)), the Kennedy School of Government (master of public policy (MPP), the Graduate School of Education (master of education (MEd)) or other programs, pending availability. The focus of these advanced degrees may include health policy, epidemiology, medical anthropology, or other related fields.

Resident selection. Two residents are selected from among interested members of the BWH Internal Medicine post-graduate year (PGY)-1 class thorough a formal selection process beginning in the winter and concluding by early spring. If interest exceeds available positions, the additional residents are welcome to attend didactic session when no scheduling conflict exists.

Measuring success. Both process and 360-degree competency-based outcome evaluations are used to assess programmatic success. Successful completion of a health-disparities research project by the residents is also be required. In the long term, continued work on the part of residents in the field of health disparities will be

Global health statistics: the health of the poor
A biosocial framework for examining disease
Community health models
Global health policy: setting trends
Ethics and global health equity: medical care
HIV
Tuberculosis
Sexually Transmitted Diseases
Women's health I
Women's health II
Diarrheal disease and dehydration
Malnutrition
Dermatologic Conditions
Malaria
Chronic disease among the poor
Health in rural Haiti
Health in urban Peru
The health of prisoners
Health in urban Boston
Comprehensive models for tackling complex health problems in resource-poor settings
Community-based models of care: reflections from field sites
Community and lay health workers
Nurses and work in health disparities
Pharmaceuticals and international health
Medical record keeping systems and international health
The role of research in global health equity
Quantitative research and global health equity
Qualitative research and global health equity
Operational research and global health equity
Ethics and research in international health
Funding for international health projects
Global health equity and advocacy
Fundamentals of project management I
Fundamentals of project management II
International patient-centered communication
Future directions in health care for the poor
Future directions in health research for the poor
Cultural competency and global health equity
Tutorial in tropical diseases management I
Tutorial in tropical diseases management II
End-of –life care for patients in resource-poor settings
International health: practical advice

Box 2. Topics for Didactic Sessions in Global Health Equity

tracked to index the program's success. Specific attributes of continued participation to be evaluated include career focus on the health of poor people, independent research, leadership in program development and membership on the faculty of an academic medical center. Our ability to successfully raise funds through charitable donations and granting organizations will also be monitored as a key indicator of success.

Yearly evaluation is conducted by the core faculty and reported to our Advisory Board, comprising a small group of international experts in aspects of health disparities care and research.

Potential weaknesses. There are several potential weaknesses of the program. First, it is in its initial stages and thus some of the curriculum design and implementation remain to be tested. Meeting all American Board of Internal Medicine (ABIM) and ACGME requirements, including 36 months of continuity clinic, while engaging in meaningful health disparities experiences presents a difficult challenge. The amount of time given to the residents to complete their research in health disparities is limited due to other required elements, and must therefore be carefully mentored with advance planning. If the research goals cannot be met in the current time frame, an additional year of training may be required.

Conclusion

The Howard Hiatt Residency in Global Health Equity and Internal Medicine offers a unique training track for medical residents interested in addressing the most pressing health problems facing the world today. The program is broad in scope and aims to provide a solid foundation for trainees to build upon as they enter careers in health equity. It is one of the first graduate medical education programs in internal medicine to focus on the diverse needs of medical trainees who are interested in being of service to the poor and underserved. We hope it can stand as a model for other training programs in the campaign to better meet the needs of the sick and underserved.

Notes

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