

Developing Health Workforce Capacity in Africa

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As we mark World AIDS Day, it is important to assess the relationship between the challenges of AIDS prevention and control and the huge gaps in the health workforce needed to address these and other critical shortages. Although Africa bears 24% of the global disease burden, it has only 3% of the world's health workforce and less than 1% of the world's financial resources for health (1, 2). Sub-Saharan Africa as a whole has 18 physicians per 100,000 population, ranging from 60 in South Africa to 2 in Mozambique. Meanwhile, Africa struggles to retain its precious health workers. Approximately 65,000 African-born physicians, or about one-fifth of those trained, have migrated to high-income countries within 5 years of completing their training (3). Moreover, one-third of medical school faculty posts are vacant, and 30% of faculty must supplement their income to continue teaching (4). It is vital to increase the quality and quantity of local health care workers, particularly in remote rural areas. Scientific expertise must be enhanced to determine the best prevention and treatment strategies for the local context, as well as improve target countries' (5) ability to monitor and evaluate outcomes.

The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) has recently partnered with the National Institutes of Health (NIH) and the Health Resources and Services Administration (HRSA) in an initiative to transform medical education at select medical schools in Africa (6). The Medical Education Partnership Initiative (MEPI) includes collaboration with the U.S. Agency for International Development, the Centers for Disease Control and Prevention, and the Department of Defense and is intended to provide a focus for U.S. agencies to support local health ministries and academic centers to improve the quantity, quality, and retention of their graduates and improve their research capabilities.

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The MEPI awards were announced in October 2010 and will invest about \$130 million over 5 years to directly support African institutions in 12 countries, creating a network of 30 regional partners and more than 20 U.S. collaborating institutions (7) (see the table). For example, in South Africa, the two proposals are directed at two of the hardest hit areas: Stellenbosch University is working on the training of physicians to work in rural areas with the least resources by recruiting students from these underserved areas. The University of KwaZulu-Natal is located in a region with the highest rates of HIV and tuberculosis in South Africa and has been a training ground and research center for the region. Researchers there are conducting large-scale interventions (e.g., circumcision) and have had a history of supporting research training for physicians from surrounding countries and former homelands, where non-whites were segregated during apartheid.

The MEPI program was developed after consultation with African leaders and international donors, and the sites were selected based on competitive peer review by NIH. The Office of the Global AIDS Coordinator (OGAC) will provide about \$105 million for AIDS-related training; the Office of AIDS Research at NIH will provide an additional \$10 million; and the NIH Director's Common Fund will provide \$15 million to extend training into other critical areas such as maternal, neonatal, and child health and noncommunicable diseases. By engaging national ministries of health and education, participating institutions will leverage MEPI to strengthen national plans to improve medical education, expand the quality and scope of instruction, and scale up the existing cadre of health care workers. In addition to increasing the quality and quantity of health care workers, MEPI will develop the in-country scientific expertise needed to conduct research on implementing programs and identify novel solutions to the most pressing problems to bridge gaps in the delivery of care. Of the current grants, 80% plan to incorporate community-based education and/or rural training, 73% target nurses and nursing students for enhanced training (schools of pharmacy and dentistry are included in some of the pro-

In Africa, programs to improve health will require major investments in institutions that can train and retain health professionals.

posals), 64% plan to have offerings in public health (to include biostatistics, epidemiology, and the like), 45% propose strategies to increase the number of women clinicians and researchers, and 36% of programmatic awards are intended to include maternal-child health training and research in the context of HIV/AIDS (including training of midwives).

This venture is aligned with the principles of President Obama's Global Health Initiative (8). MEPI is among several programs to support the congressional mandate that PEPFAR help partner countries train and support the retention of at least 140,000 new health care workers at all levels to strengthen the capacity in developing countries, particularly in sub-Saharan Africa (9). Finally, this will allow an explicit intervention priority HIV/AIDS to drive overall improvements in the local health systems and provide care for a broader range of conditions, as recommended by the Institute of Medicine (10).

PEPFAR's initial emergency approach while necessary early on has had both positive and negative impacts on country-level health systems and budgets. In moving forward to quickly establish a service capacity, implementation did not always take into account existing national health care structures or plans. Nor did the focus on HIV/AIDS carefully translate to broader service and delivery needs such as training and providing health workers to peripheral areas or family planning and child health. This partnership, with its emphasis on long-term response represents a new direction for PEPFAR (11).

Many participants will devote funds to strengthen mentoring, peer-to-peer training, and hands-on clinical research experience. Through MEPI, medical schools in sub-Saharan Africa will be able to develop and expand novel models of education, recruit and retain qualified faculty, and increase the capacity for locally driven, multidisciplinary research. They will also be able to broaden their curricula to develop and expand training focused on maternal and child health, emergency medicine, cardiovascular disease, mental health, and HIV-related cancers. Because Africans with HIV/AIDS are now living longer, thanks to antiretroviral drugs, they are developing chronic diseases in growing numbers, yet

MEPI PARTNERS

Country and Institutions	U.S. Universities and Other Partners
Botswana University of Botswana*	Harvard University University of Pennsylvania
Ethiopia Addis Ababa University* Hawassa and Haremaya Universities Defense Forces Medical Colleges	Emory University Johns Hopkins University University of Wisconsin University of California, San Diego (UCSD)
Kenya University of Nairobi*	University of Maryland, Baltimore University of Washington, Seattle
Mozambique University of Eduardo Mondlane* Universities of Lurio and Zambeze	UCSD and World Health Organization Canadian Network for International Surgery American College of Surgeons
Nigeria University of Ibadan* Universities of Jos, Nigeria, Maiduguri, Ahmadu Bello, and Lagos AIDS Prevention Initiative Nigeria, Ltd.	Northwestern University Harvard University
South Africa University of KwaZulu Natal*	Columbia University
South Africa Stellenbosch University* University of Cape Town Makerere University (Uganda)	Johns Hopkins University
Tanzania Kilimanjaro Christian Medical Centre*	Duke University
Uganda Makerere University* Mbarara, Kampala International, Busitema, and Gulu Universities Medical Research Council	Johns Hopkins University Case Western Reserve University Yale University
Zambia University of Zambia*	Vanderbilt University University of Alabama, Birmingham
Zimbabwe University of Zimbabwe* University of Cape Town (South Africa)	University of Colorado, Denver Stanford University University College and King's College, London
Ghana Kwame Nkrumah University of Science and Technology* Ghana Ministry of Health and Komfo Anokye Teaching Hospital Ghana College of Physicians and Surgeons and Ghana Ambulance Service	University of Michigan
Malawi University of Malawi College of Medicine* University of Cape Town (South Africa)	University of North Carolina Johns Hopkins University
Coordinating Center The African Center for Global Health and Social Transformation (Uganda)	George Washington University*

*Principal grantee.

there are very few African health care workers trained in these specialties. Deaths from chronic diseases are rising quickly in Africa. The World Health Organization is forecasting a 27% increase over the next decade (12).

MEPI will also support establishment of a network (via a Web-based platform) to link African sites and U.S. collaborators, leverage resources, and provide technical expertise. Initially, the network will be coordinated by the George Washington University School of Public Health, in partnership with HRSA, NIH, and OGAC, and will monitor progress and identify best practices. In 5 years, many of these functions will be transferred to the Center for Global Health and Social Transformation in Kampala, Uganda. Our goal is to empower the sites to pursue their own priorities and network within the program and their own countries.

This initiative will enable participating institutions to strengthen their information technology infrastructure to enhance educational and research activities, including increasing bandwidth and computer access, introducing intranets and other shared resources, and encouraging mobile technology platforms for information delivery and data collection for clinical research. MEPI will also support distance education and data sharing that will encourage much-needed clinical registries to inform health care decisions and research needs on national levels.

This initiative is not without challenges. Given current faculty shortages and infrastructural deficits at many schools, assuring quantity and quality scale-up and retention strategies will require disciplined efforts on the part of all involved. Success will necessitate coordination with ministries of health

and education on a country by country basis.

The ultimate goal is to create long-term capacity at Africa's educational institutions to produce the quantity and quality of health care workers and scientists required and broaden the training provided to cover not only HIV-related disease but also issues of maternal and child health, noncommunicable diseases, and other national priorities. Measurable outcomes should be a substantial increase in the numbers and quality of physicians and health professionals trained and retained in country (many working in underserved areas), more robust residency training programs, and removal of silos between AIDS and non-AIDS care. The only means to bring our efforts to effective scale is through creative partnerships with other governments, philanthropies, international organizations, and industry. With the launch of MEPI, we welcome cooperation to build synergies and accelerate our shared objectives and we will be reaching out to prospective partners. A generation of skilled African professionals trained to apply evidence-based solutions for improved health would be a lasting legacy.

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