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The Importance of Research in the MEPI Program: Perspectives from the National Institutes of Health

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Abstract

The Medical Education Partnership Initiative (MEPI), which aims to strengthen and transform education in medicine and the health sciences in Africa, has placed special emphasis on including research in the new curriculum. The great progress achieved against HIV/AIDS globally is due in part on major research conducted by African investigators working in African institutions at African field sites. This experience demonstrates the key role of academic institutions in generating knowledge while training the next generation of health professionals. Research is a key driver of innovation in the health sciences and can spur global collaborations, build substantial financial support, empower scientific leadership, and promote economic development. Through MEPI, young investigators are becoming engaged in research training early in their careers with projects that develop research skills to help them better understand how to evaluate and integrate new evidence into policy and practice, advance the science of health within their countries, and strengthen the academic institutions in which they work. Research training is an essential component of MEPI and should endure long after the program ends. The MEPI research component might help to build a critical mass of researchers as well as a cadre of health professionals, teachers, and leaders who will be better equipped to embrace the continually changing panorama of advances in the health sciences.

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The Medical Education Partnership Initiative (MEPI) program was envisioned by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) to address the terribly inadequate supply of health and medical personnel required to support health programs in Sub-Saharan Africa, particularly around HIV/AIDS but extending to other medical needs as well. By investing in education in medicine and the allied health sciences, MEPI intended to increase the quality and quantity of professionals being trained, which could enable new, innovative, and life-saving programs to move forward with adequate professional staff. Given MEPI's focus on education and training, why would the National Institutes of Health (NIH), the world's largest funder of research, invest in this effort that is not directly related to research?

The answer is that in the 21st century, education and research in leading academic institutions in Africa as in the United States must go hand in hand. In the past few decades, the epidemic of HIV/AIDS in Sub-Saharan Africa has overwhelmed the capacity of the medical community and called out for innovations in the treatment and prevention of HIV/AIDS. NIH has invested heavily in training African researchers to address this epidemic, which has dramatically shortened life expectancy, increased mortality in all age groups, and culled a generation of the most productive people in society, leaving millions of orphans in its wake. Through research, a diagnosis of AIDS has been transformed from a death sentence to a manageable chronic illness.

Much of this research has been conducted by African investigators working in African academic institutions at African field sites with African populations, often but not always in collaboration with academic colleagues in the United States. This research has been truly game changing and could not have been conducted as quickly, carefully, or effectively without outstanding local scientific leadership and implementation of solutions. The results have included the development of rapid diagnostics for detection and monitoring HIV infections, new drugs for treatment, and new strategies for prevention, such as maternal screening (PMTCT) and treatment, circumcision of males, and treatment as prevention. Indeed, a physician, nurse, or community health worker trained a decade ago who did not keep abreast of these major changes in practice based upon local research would be ill-prepared to identify, counsel, and treat these HIV-infected patients today.

Key Missions

Research, the creation of knowledge, and training are the key missions of academic health centers today. Students need to be able to access new advances in medicine, evaluate published literature, ask critical questions, and consider ways to better implement interventions that we think will work but remain to be tested. Academic leadership often involves engaging in research to remain competitive, funded, and knowledgeable about the advances of science. Research grants have become a major source of funding to support an institution's growth. At a time when many African economies are growing rapidly, innovations in the health care sector and increases in the demand for health services can be important drivers of this economic boom.

When then-PEPFAR ambassador, Dr. Eric Goosby, envisioned MEPI, NIH Director Dr. Francis Collins joined him to promote research in this innovative program¹. Both the

Director's Office and five NIH Institutes provided funds to advance research at each site. The Fogarty International Center was tasked with coordinating this NIH response because of its long history of training researchers and building research infrastructure at institutions in low-and middle-income countries. This strategy previously demonstrated its value in the AIDS International Training and Research Program (AITRP), a 25-year initiative at Fogarty linking U.S. and foreign institutions to train a generation of researchers in those countries most affected by the epidemic. Graduates of this program have become well-established researchers, educators, and leaders in their universities, countries, and often, internationally, in their fields. They are deeply involved in research activities at their home institutions, have received substantial international research funding, and have remained at their universities. They also have been involved in training the next generation of researchers and clinicians, who, through exposure to research, understand how to evaluate and integrate new evidence into policy and practice. Many have gone on to provide scientific and political leadership for their respective countries.

Role of Research

Research support in MEPI sites has just begun to influence medical education². In each country, many young investigators and physicians/trainees have been offered research opportunities, gained confidence in questioning what they have been taught, and been encouraged to seek new solutions. At Kilimanjaro Christian Medical Center in Kenya, nearly half of the students engage in research projects during their medical training, focusing on projects of their own choosing. For example, working in the emergency room, some students have examined the causes of trauma and time required to receive emergency care, which has led to lower waiting times for acute emergencies and better triaging. Others have assessed the etiology of fever in this malaria-endemic setting, and finding that fewer than 5% of these patients had malaria, they revised the standing recommendation to blindly treat all fever patients with anti-malarials. MEPI has supported many students and young faculty with research opportunities, skills-building activities (such as research design, data analysis, and grant writing), and exposure to researchers from other countries.

MEPI has been built on the idea that outstanding academic institutions in the health sciences must be excellent in education, service, and research. Research can play a key role in the education of effective and sustainable leadership in health, the development of knowledge and practice for the delivery of care, and for building academic centers in Sub-Saharan Africa. MEPI will contribute to building stronger health systems by expanding the community of research scientists who can address the most challenging problems in their setting, both in basic research and in the new area of implementation science. The research perspective provided to students, the ability to raise and answer questions, and the idea that medical knowledge and practice are continually changing are being supported by MEPI sites and will hopefully endure long after the program ends. Medical education and establishing a research tradition do not occur overnight. It takes decades a generation and although this program has been built on African centers that were already engaged in some research, the full impact of this transformative program will take years to evaluate in full. For now, as articles in this Supplement indicate, it is off to a most promising start.

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