

# Higher Education Partnerships to Strengthen Health Systems in Liberia

## A Case Study on the Integral Role Higher Education Institutions Can and Should Play Within Development

### INTRODUCTION

Globally, the COVID-19 pandemic is one of the most severe health crises in the past century. However, in the context of Liberia and the West Africa region, it is one of multiple infectious disease outbreaks that have posed challenges in the last decade. While there are many ongoing health stresses caused by malaria, tuberculosis, HIV/AIDS, and various diarrheal diseases, the region has also had to contend with the crisis of an Ebola epidemic in 2013-2016; these acute and chronic stresses have created significant shocks for governments and healthcare systems in the region. In Liberia alone, nearly 5,000 people died from Ebola infections and Guinea, Liberia, and Sierra Leone had a combined caseload of over 28,000 Ebola infections.<sup>1</sup> While the Ebola epidemic exerted extreme stress on Liberia's health systems, it also uncovered several areas that could be strengthened to provide future resiliency. In particular, Liberia's higher education institutions (HEIs) were identified as being key components of the country's overall future strength, particularly in terms of medical education and specialized care for infectious disease patients. The U.S. Agency for International Development (USAID) [Partnerships for Enhanced Engagement in Research Liberia \(PEER/Liberia\)](#) program strengthened Liberia's sole medical school to build resilience against unexpected shocks. For example, despite the challenges faced during the COVID-19 pandemic, support from PEER/Liberia allowed medical training to continue, with seventeen faculty completing a faculty development program, seven teaching apprentices starting graduate-level studies, and four medical residents passing their residency exams.

As of 2016, Liberia had one of the lowest densities of physicians in Africa, with less than 250 practicing physicians in the country and less than 15 physicians with any specialized training past the standard medical school curriculum.<sup>2</sup> At that same time, it was becoming clear that the healthcare system had significant demands, both for routine care and continuing care after Ebola. For example, many Ebola survivors were developing unexpected eye diseases that required specialized care, but there was only one trained

### KEY FEATURES

**Location:** Liberia

**Project/Program Name:** Partnerships for Enhanced Engagement in Research (PEER) Liberia

**Funder(s):** USAID

**Implementing Partners:** National Academy of Sciences, Engineering, and Medicine

**Case Themes:** Research & Innovation, Higher Education Partnerships, COVID-19, resilience

<sup>1</sup> <https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/index.html>

<sup>2</sup> [https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga\\_180259.pdf](https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_180259.pdf)

ophthalmologist in the entire country.<sup>3</sup> In Liberia, the inadequate number of health practitioners is further strained by the fact that the A.M. Dogliotti College of Medicine (AMD) is the only medical school in the country and struggles with high student attrition rates due to inconsistent funding, limited numbers of faculty, minimal access to supervised clinical training, and inadequate educational and residential infrastructure.<sup>4,5</sup> Further, medical school training in Liberia is a seven year process, combining five years of coursework with two years of internship. This combination of extremely limited baseline capacity and long lead times to train new physicians means that Liberia has a critical need for every doctor in training, and even relatively short educational disruptions can set the healthcare system back by years.

The PEER/Liberia program, established in 2016, is a five year, \$6 million USAID-funded Ebola recovery program created to strengthen medical training and clinical research capacity at AMD, conducted in partnership with the University of Massachusetts Medical School, Vanderbilt University Medical Center, and Yale University.<sup>6</sup> Specifically, it aims to improve medical school curricula, develop a pipeline of faculty with infectious disease specialties, and enhance the residency training programs. The PEER/Liberia program has prioritized providing continuous medical education for new doctors and training existing physicians to respond to crises from the program's inception. The program was also designed around the important concept that local HEIs are valuable partners in international development, particularly because they have unique functions, roles, and relationships relative to other implementing partners and stakeholders.

The [USAID Higher Education Program Framework](#) identifies some of these important functions including: providing quality and relevant education and training, advancing knowledge and research, and engaging and strengthening networks and communities.<sup>7</sup> As shocks from the current COVID-19 pandemic have rippled across the globe, the PEER/Liberia program's work highlights how building capacity at AMD prior to COVID-19 helped it respond to the initial impact of the pandemic and recover quickly to continue its work strengthening the medical training pipeline in Liberia (**Figure 1**). Further, this case study demonstrates how HEI investments after the Ebola crisis helped the community build resilience and established the local capacity to successfully respond and adapt to the challenges posed by the COVID-19 pandemic.

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<sup>3</sup> <https://discover.vumc.org/2019/02/after-ebola-bringing-ophthalmology-training-to-liberia/>

<sup>4</sup> [https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga\\_180259.pdf](https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_180259.pdf)

<sup>5</sup>

[https://liberia.resiliencesystem.org/sites/default/files/Health%20Workforce%20Program%20Implementation%20Plan\\_20150502%20%281%29.pdf](https://liberia.resiliencesystem.org/sites/default/files/Health%20Workforce%20Program%20Implementation%20Plan_20150502%20%281%29.pdf)

<sup>6</sup> <https://sites.nationalacademies.org/PGA/PEERLiberia/index.htm>

<sup>7</sup> [https://www.edu-links.org/sites/default/files/media/file/Higher%20Education%20Framework\\_Oct%202020.pdf](https://www.edu-links.org/sites/default/files/media/file/Higher%20Education%20Framework_Oct%202020.pdf)



**Figure 1. USAID investments in higher education institutions helped enable an effective response to the COVID-19 pandemic.** The PEER/Liberia program built partnerships between higher education institutions in the United States and Liberia to strengthen the Liberian medical training pipeline in response to the 2013-2016 Ebola epidemic. During the COVID-19 pandemic, those partnerships were leveraged to rapidly provide technical assistance and financial support to AMD and provide resilience to shocks.

## APPROACH

For the past year, the PEER/Liberia program has been operating in a COVID-19 pandemic environment that is distinct from the United States and most countries around the globe. As of April 2021, there have slightly more than 2,000 confirmed COVID-19 cases and fewer than 100 deaths in Liberia, which is one of the lowest COVID-19 case rates in both Africa and the world.<sup>8</sup> The Liberian public health community’s coordinated response to the COVID-19 pandemic demonstrates many of the lessons learned from the 2013-2016 Ebola epidemic. After recognizing that the private health sector in Liberia would benefit from more centralized coordination, a consolidated healthcare federation was established in February 2020 to help private healthcare stakeholders collaborate more effectively with the Ministry of Health. This fortuitous timing allowed public-private partnerships to rapidly form in response to COVID-19, which began spreading globally in early 2020.<sup>9</sup> Also in response to Ebola, the Liberia Ministry of Health created the National Community Health Assistant Program, which placed community health workers in rural communities around the country.<sup>10</sup> Early in the pandemic, this program helped train frontline healthcare workers to communicate risks, care for patients, and reduce the spread of the virus. The Liberian government rapidly enacted mandatory, government-managed quarantines for people traveling from countries with known COVID-19 transmission and implemented now-standard public health measures such as social distancing, hand washing, and mask wearing. These interventions have significantly reduced the impacts of the pandemic in Liberia by decreasing the viral transmission rate, lowering COVID-19 case numbers, and decreasing the amount of resources required to address the pandemic.

<sup>8</sup> <https://coronavirus.jhu.edu/map.html>

<sup>9</sup> <http://www.healthpolicyplus.com/liberiaHFL.cfm>

<sup>10</sup> <https://preventepidemics.org/stories/training-the-trainers-securing-the-foundation-of-an-effective-covid-19-response-in-liberia/>

From the beginning of the COVID-19 pandemic until now, the PEER/Liberia program has responded dynamically as needs have shifted. Early on, when knowledge about SARS-CoV-2 virus and COVID-19 disease was still extremely limited, the program focused on the initial crisis response and knowledge transfer from U.S.-based partners and physicians in Liberia. Once the COVID-19 response capacity had been built and the virus was a more known threat in Liberia, the PEER/Liberia program was able to refocus their work on training physicians, a vital step for building resilience for current and future crises.

## **RAPID KNOWLEDGE DISSEMINATION THROUGH HEI NETWORKS**

The PEER/Liberia program facilitated rapid knowledge transfer between medical practitioners in the United States and Liberia. In early to mid 2020, it was not clear how COVID-19 would impact Liberia. As a result, the PEER/Liberia team held several virtual workshops so faculty at the Vanderbilt University Medical Center could share up-to-date information on care and treatments with AMD faculty and students. Over the course of four weeks, as the pandemic spread quickly around the world, four unique workshops focused on different aspects of COVID-19 patient care including clinical management, ventilator care, allocation of limited resources, and pediatric care. To date, the pandemic in Liberia has been less severe than anticipated, so while those intensive and frequent workshops have not continued, the infrastructure and connections are well-established and can be leveraged again if the pandemic worsens or other threats emerge.

## **REFOCUSING EFFORTS ON MEDICAL EDUCATION**

After PEER/Liberia began preparing AMD faculty to pivot towards critical COVID-19 treatment and care, Liberia to date has had far fewer COVID-19 cases than experts anticipated. This has meant that AMD and the PEER/Liberia program were not asked to join an immediate COVID-19 response, and this allowed the PEER/Liberia program to refocus on their long-term goals of faculty development, curriculum improvement, and residency training. Previously, disruptions in education continuity were identified as a significant factor in medical students dropping out of the program. As a result, the PEER/Liberia team knew that continuing students' training and providing additional support when students could not be physically present in the classroom was critical to prevent substantial, multi-year impacts on medical training in Liberia.

In order to facilitate remote learning, the program loaned laptops and internet hotspots to medical students. Faculty at the University of Massachusetts Medical Center continued their lectures from the United States, as they were not permitted to travel to Liberia as planned. While remote learning is not an optimal format for all students, one unexpected benefit of the transition was that lectures are being recorded and saved. These lectures are available to the Liberian students through the University of Massachusetts Medical website if they want to review the material or for future instruction.<sup>11</sup>

The PEER/Liberia program is also actively redesigning the general medical school curriculum at AMD. Originally, the PEER/Liberia team planned to develop the curriculum during multiple in-person workshops, with stakeholders from both the United States and Liberia present. As travel decreased, and then stopped entirely around the globe, the curriculum development continued virtually using videoconferencing platforms. Faculty at Vanderbilt University Medical School, Yale University, and AMD have been holding weekly meetings to discuss the curriculum and have prepared a full draft for pilot testing. Working virtually has created unexpected opportunities to bring in additional stakeholders to the curriculum development

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<sup>11</sup> <https://libraryguides.umassmed.edu/amdogliotticollegeofmedicine/family-med>

process. Members of the World Health Organization, Liberia Ministry of Health, and Liberia College of Physicians and Surgeons<sup>12</sup> have participated in the process and may not have been able to join if the meetings had been held in person. In addition to virtual meetings, some of the work has been supplemented with limited in-person working group meetings in Liberia as restrictions have eased in-country. Participant evaluations submitted to the PEER/Liberia team have been positive, and the curriculum is still on track to be ready by September 2021. Partnerships between U.S. and Liberian HEIs through the PEER/Liberia program have thus allowed medical school curriculum development to continue with minimal interruptions, which will help advance medical knowledge in the future.

## **LEVERAGING LOCAL PARTNERSHIPS**

The PEER/Liberia program for medical school faculty mentorship has evolved significantly in response to COVID-19 restrictions. When the PEER/Liberia program started, they initially planned for their U.S.-based faculty to train the first cohort of AMD faculty in person. Through ongoing engagements with in-country stakeholders, the PEER/Liberia team learned that USAID recently supported a similar program at Mother Patern College of Health Sciences (MP), a nursing school in Liberia, to train health sciences faculty. After learning about this existing, in-country capacity, the PEER/Liberia program adapted their original plan to instead have MP faculty train AMD faculty. The revised plan, prior to the COVID-19 pandemic, was that MP faculty would lead trainings in Fall 2019, MP and AMD faculty would split responsibilities in Fall 2020, and AMD faculty would operate independently in Fall 2021. U.S.-based PEER/Liberia partners would still attend, contributing additional technical assistance during all three training sessions. However, the COVID-19 pandemic forced plans to evolve once more, as travel restrictions prevented the U.S.-based partners from traveling to Liberia.

The PEER/Liberia program continued their faculty mentorship training during Fall 2020, thanks to the strong partnership between MP and AMD. The two HEIs are both located in Monrovia so when COVID-19 precautions were relaxed in Liberia, classes could restart in-person with physical distancing measures enacted and with U.S. partners participating remotely. However, this smooth return to teaching during the pandemic was only possible because of the partnership between AMD and MP. If the PEER/Liberia program had only relied on instructors traveling from the United States, as was planned at the beginning of the program, then they would have been forced to switch to remote teaching like many other programs. As a result, the fact that the faculty mentorship program did not have to change, in spite of a global pandemic, points to the value of local HEI partnerships in international development work. By intentionally building networks between local HEIs, the PEER/Liberia program built resilience against unexpected shocks and crises, which has allowed them to more effectively continue towards their overarching goal of strengthening medical education in Liberia.

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<sup>12</sup> The Liberia College of Physicians and Surgeons is essentially a regulatory body for graduate-level medical education, including residency and fellowship training, so they are a particularly important stakeholder group for the curriculum development activities.

## CHALLENGES

Despite the PEER/Liberia program's successes, there have still been challenges and areas for improvement. One large challenge has been the social and economic impacts of COVID-19 on the student population. At the beginning of the pandemic, many of the medical and pharmacy students returned to their homes and have experienced a wide variety of economic, social, and emotional stresses. While addressing all of these factors is largely outside the budget and scope of the PEER/Liberia program, they are important considerations for this and other programs now and in the future. In fact, a medical student enrolled in the program has been trying to capture how the pandemic has impacted students with a periodic survey that covers topics ranging from basic knowledge of COVID-19 and how social distancing measures have impacted them economically, to students' mental health status. Moving forward, these data may help the PEER/Liberia program prioritize areas of greatest need to help prevent student attrition which will further strengthen the program going forward.

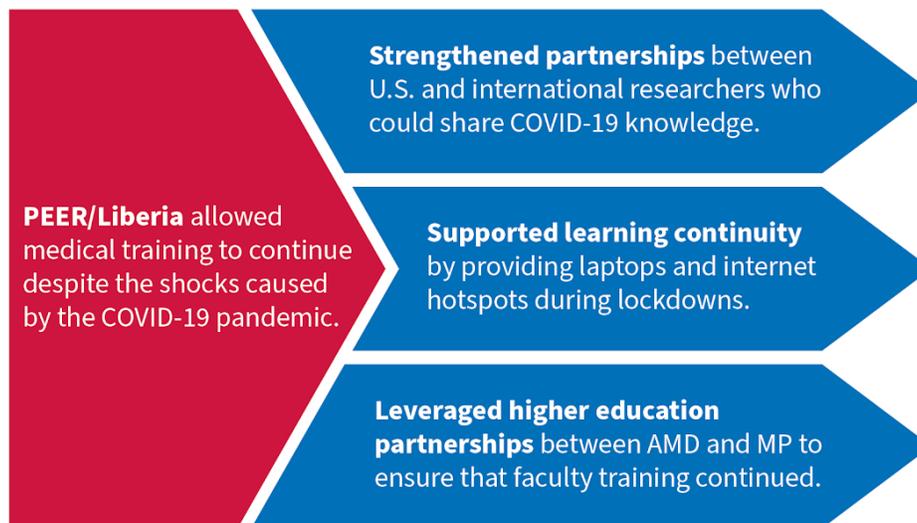
While many of the interventions discussed above have created some continuity in education over the course of the pandemic, medical student and faculty training are long-term projects that will be sensitive to the aftershocks of the pandemic and the expected extensive recovery period. As a result, it will be important for the PEER/Liberia program to continue to mitigate COVID-19-related impacts and be sensitive to how economic and social stresses influence students' educational experiences.

## LESSONS LEARNED

HEIs have been involved with many different types of COVID-19 responses around the globe,<sup>13</sup> but the PEER/Liberia program demonstrates how HEIs are particularly well-equipped to address certain types of challenges compared to other development partners. By nature of their institutional and objective structures, HEIs operate on longer timelines than many government institutions and non-governmental organizations. In some cases, this allows HEIs to operate with a broader perspective during a crisis and helps them identify potential future challenges. In the case of the PEER/Liberia program and AMD, they temporarily began preparing for potential widespread COVID-19 transmission in the community and the education of medical students and practicing healthcare workers that might be needed. Once it became clear that the government-managed COVID-19 response was sufficient, they recognized that by resuming medical training they could help address the existing and future need for additional medical professionals. The relationships between HEIs in the United States and Liberia that were fostered through the PEER/Liberia program helped AMD rapidly adapt to the changing circumstances posed by COVID-19 (Figure 2).

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<sup>13</sup> Dockser, J., Pineda, J., Gebru, M., Ku, A., Olshan, N., Stavros, A., Testa, A. 2020. "Higher Education Response to COVID-19: A Landscape Map of USAID Partner Countries." United States Agency for International Development, 2020.



**Figure 2. Why should USAID invest in higher education?** Higher education partnerships created by the PEER/Liberia program strengthened medical education through a variety of mechanisms, and helped increase its resilience to unexpected shocks like the COVID-19 pandemic.

The PEER/Liberia program was created to help Liberia address critical gaps in the medical system that were exposed and exacerbated during the 2014-2016 Ebola epidemic. It is still too early to determine the PEER/Liberia program’s impact on improving the medical training pipeline in Liberia, but their effective responses to COVID-19 have, to date, helped prevent a multi-year setback in physician training. Although COVID-19 continues to be a threat globally and case numbers could still grow significantly in Liberia, the PEER/Liberia program’s ability to support existing doctors and continue training new doctors will ideally help the community navigate any new challenges. Even though PEER/Liberia was not intentionally created as a crisis-response program, it’s ongoing work has likely helped mitigate a multi-year setback for Liberia’s medical system and ensured continued training of new physicians. As demonstrated by this case study, HEIs can pull on networks of people and knowledge that are distinct from traditional government and development partners, which helps them implement unique solutions to challenges as they arise. As the world continues to rebuild from the COVID-19 pandemic, it is vital that HEIs be included in a comprehensive strategy for international development and recognized as valuable contributors for increasing resilience to shocks.

*This case study was developed by Eric D Lee, a 2020-2021 AAAS Science & Technology Policy Fellow with the Research Division of the Innovation, Technology, and Research Hub. Recommended citation:*

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*USAID is actively assisting countries that are affected by or at risk of the novel coronavirus disease, COVID-19. USAID is working directly with host country governments and through organizations responding on the ground to contain and combat the COVID-19 pandemic. For additional resources, please visit: <https://www.edu-links.org/COVID-19>.*