

FAIMER Global Faculty Development: A Sustainable Partnership Model to Advance Health Professions Education

Rashmi Vyas, MD, MHPE, Page S. Morahan, PhD, Shiyao Yuan, MS, MEd, Eliana Amaral, MD, PhD, Vanessa Burch, MD, PhD, Henry H. Campos, MD, PhD, Snigdha Mukherjee, PhD, Jessica Salt, MD, MBE, Avinash Supe, MBBS, MS, MHPE, Marta van Zanten, PhD, and Jeanette Mladenovic, MD, MBA

Abstract

The Foundation for Advancement of International Medical Education and Research (FAIMER), a member of Intealth, offers longitudinal faculty development programs (LFDPs) in health professions education (HPE) and leadership through its International FAIMER Institute (IFI) in the United States and FAIMER Regional Institutes (FRIs) globally. FAIMER fosters mutual collaboration and delineates shared responsibilities for FRI development in partnership with local institutions, using an adapted hub-and-spoke organizational design. This paper describes FAIMER's model, its sustainability, and its impacts at individual, institutional, and national levels. IFI was launched in 2001 in Philadelphia, Pennsylvania, as a 2-year

part-time hybrid LFDP; with the COVID-19 pandemic onset, IFI transitioned to a fully online program. Since FAIMER's launch, 11 FRIs developed in Brazil, Chile, China, Egypt, India, Indonesia, and South Africa, each modeled on the IFI curriculum and adapted to local context. The more than 1,600 IFI and FRI graduates (fellows) from over 55 countries now form a global community of health professions educators who have shared exposure to HPE methods and assessment, leadership and management, educational scholarship and research, and project management and evaluation. Across all global locations and program formats, fellows self-reported a similar increase in knowledge and skills in HPE. All programs center on the fellows'

institutional projects as experiential learning; these projects have focused primarily on educational methods and curriculum revisions. An increased quality of education was reported as the top impact resulting from fellows' projects. As a result of these programs, fellows have influenced education policy in their countries and established academic societies for HPE, thus contributing to recognition of the HPE academic specialty. FAIMER has successfully developed a sustainable model for advancing HPE globally, creating a vibrant network of health professions educators who have influenced country-specific educational policy and practice. FAIMER's model offers one approach to building global capacity in HPE.

In 2010, the *Lancet* commission on education for health professionals of the 21st century recommended strengthening faculty development for transformational reform in education to help improve the health of communities.¹

Please see the end of this article for information about the authors.

Correspondence should be addressed to Rashmi Vyas, Foundation for Advancement of International Medical Education and Research (FAIMER), 3624 Market St., Philadelphia, PA 19104; email: rvyas@faimer.org.

Copyright © 2023 The Author(s). Published by Wolters Kluwer Health, Inc. on behalf of the Association of American Medical Colleges. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Acad Med. 2023;98:1131–1138.

First published online May 5, 2023
doi: 10.1097/ACM.00000000000005264

Supplemental digital content for this article is available at <http://links.lww.com/ACADMED/B419>. A video abstract for this article is available at <https://vimeo.com/academicmedicine>.

Faculty development programs have increased exponentially since then, both domestically and globally.^{2–4} Global faculty development programs include a variety of approaches such as faculty exchanges,⁵ transnational collaboration,⁶ and replication of one country's program in another.⁷ Program evaluations have shown an increase in participants' knowledge, skills, and the creation of transnational communities.^{8–10} However, most programs transfer Western educational programs to non-Western countries; Lewis and Steinert⁸ recommend instead a partnership model that adapts to regional context and promotes bidirectional learning.

Since 2001, the Foundation for Advancement of International Medical Education and Research (FAIMER), a member of Intealth, has offered global longitudinal faculty development programs (LFDPs) using a partnership model for health professions education (HPE) and leadership.¹¹ The LFDPs are interventions lasting from 5 weeks to 4 years (median,

18 months) that have the potential to foster changes beyond improved teaching performances, including transformations in organizational practices.³

Through its International FAIMER Institute (IFI) in the United States and FAIMER Regional Institutes (FRIs) in Brazil, Chile, China, Egypt, India, Indonesia, and South Africa, FAIMER has provided unique LFDPs, targeting resource-limited countries to build a global network of educators¹¹ through mutual and inclusive partnerships.⁸ The purpose of this paper is to describe this sustainable model of FAIMER global LFDPs and their individual, institutional, and national impacts.

Evolution and Development of FAIMER Institutes

International FAIMER Institute

The initial FAIMER Institute was launched in 2001 as a global 2-year hybrid, project-based educational program for health professions educators

with demonstrated potential to advance HPE.¹²⁻¹⁴ The participants were a mix of health professionals; Supplemental Digital Appendix 1 (at <http://links.lww.com/ACADMED/B419>) provides the participants' distribution across the health professions. For 20 years, the program integrated an on-site immersion component (4 weeks over 2 years) in Philadelphia with 2 online 11-month components. Norcini et al¹⁵ described the curriculum, recruiting, and selection of participants and the early outcomes of the FAIMER Institute. In 2020, with the COVID-19 pandemic, the program became wholly online and was renamed the IFI.¹⁶ An overview of IFI program can be found on our website.¹¹

Designed to prepare program participants (fellows) to act as educational change agents and leaders,¹⁷ the IFI program uses interactive transformative learning experiences.¹⁸ The FAIMER learning model (Figure 1) shows the 4 curriculum themes of IFI: education methods, leadership and management, educational scholarship and research, and project management and evaluation. The curriculum promotes engagement with a global network of health professions educators across all themes and between year 1 and year 2 fellows. Teaching/learning strategies that focus on cultural humility and global engagement

include learning circles, project groups, interactions with global faculty, and required interviews between year 1 and year 2 fellows.^{17,19,20} The cultural humility curriculum includes a number of teaching and learning strategies that foster a safe learning environment and 2 explicit courses on cultural sensitivity in both years. Fellows and faculty have reported that cultural differences were not a barrier and indeed that they enhanced learning.²¹ The curriculum also centers on fellows' projects to provide experiential learning and to serve as vehicles of change.^{22,23} The curriculum has been delivered using a mix of teaching and learning methods^{15,17,19} and synchronous and asynchronous courses.¹⁶

FAIMER regional institutes

Graduates of the Philadelphia programs wished to use the FAIMER approach to address needs in their local environments. Thus, FAIMER partnered with local academic institutions to establish FRIs, modeled on the IFI curriculum and adapted to the local context. Over the years, 4 FRIs were developed in India, 2 in China, and 1 each in South Africa (for sub-Saharan Africa), Brazil, Chile (for Latin America), Egypt (for the Middle East and North Africa), and Indonesia; note that the FRI in Brazil closed in 2017 and the FRI in

South Africa closed in 2021. All programs are offered in English, except the FRI in Chile is offered in Spanish and the FRI in Brazil in Portuguese. Supplemental Digital Appendix 2 (at <http://links.lww.com/ACADMED/B419>) details the location, program language, and years of operation for the IFI and FRIs. Figure 2 shows the current global network of 1,633 FAIMER fellows from 55 countries, each of whom has completed at least 1 of the 12 programs.

Organizational design depends on effective partnerships

The FAIMER Institutes adopted a bidirectional hub-and-spoke model of organizational design, emphasizing mutual partnership and collaboration. The traditional model consists of an anchor establishment (hub) complemented by secondary establishments (spokes)²⁴ and has been used in a variety of health care and education settings.²⁴⁻²⁶ The FAIMER adaptation (Table 1) features FRIs as spokes relating to the IFI hub as well as to each other; IFI and FRIs provide mutual exchanges of ideas, materials, teaching practices, and faculty that support the entire community. The shared responsibilities of the IFI and FRIs have evolved through this partnership and collaboration. To summarize the partnership and collaboration: (1) IFI develops and shares the core curriculum while FRIs contextualize this core to the local needs; (2) IFI and FRIs work together to develop shared standards for operations, mutual exchange of expertise, and collaborative activities such as curriculum review groups; and (3) IFI provides common technology infrastructure such as websites, listservs, application portals, fellows selection processes, evaluation instruments, and data collection, while the academic institution provides general support (e.g., a venue for the FRI). Some FRIs receive external funding or funding from their institution. Eight of 11 FRIs have been in existence for at least 5 years and 6 have been in existence for 10 or more years, demonstrating sustainability of the model. All FAIMER institutes share the same process and outcome evaluation methods to ensure comparability across programs. Supplemental Digital Appendix 3 (at <http://links.lww.com/ACADMED/B419>) describes the organizational and financial model of the FAIMER institutes.

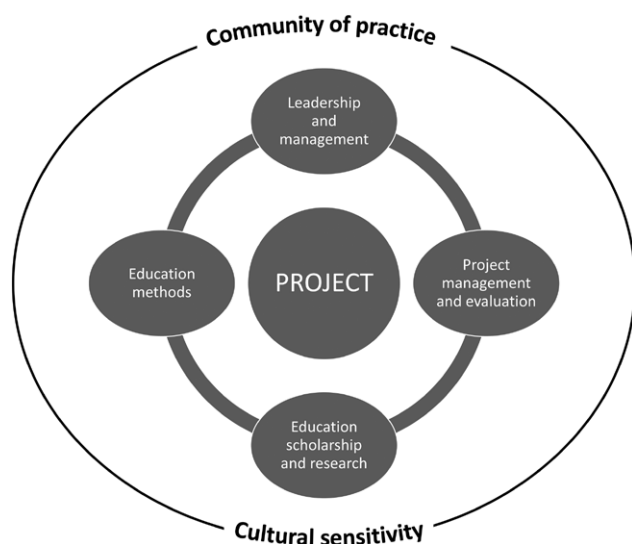


Figure 1 FAIMER learning model showing the 4 curriculum themes of the International FAIMER Institute (IFI): education methods, leadership and management, educational scholarship and research, and project management and evaluation. Two additional themes are integrated across these curriculum themes: building a global network of health professions educators and enhancing cultural sensitivity. The program centers on fellows' projects to provide experiential learning and be vehicles of change. Abbreviation: FAIMER, Foundation for Advancement of International Medical Education and Research.



Figure 2 World map with the location of the International FAIMER Institute (IFI), FAIMER regional institutes (FRI), and FAIMER fellows' countries. As of the end of 2021, there were 1,633 fellows from 55 countries. Five of these fellows were enrolled in more than 1 fellowship program (i.e., at the IFI and at an FRI). All institutes shown are active except the institute in Brazil which closed in 2017 and the institute in South Africa which closed in 2021. Abbreviation: FAIMER, Foundation for Advancement of International Medical Education and Research.

Outcomes of FAIMER Programs

Individual and program levels

Since 2002, fellows have completed a retrospective pre- and postsurvey of their perceived knowledge, skills, and competence at the end of each of the 2 on-site sessions (referred to as session 1 and session 3) or at the end of each year (referred to as year 1 and year 2) for the online-only program. Data from the first decade (2001–2010) showed statistically significant increases in the rating of their postprogram knowledge, skills, and competence in all 4 curricula themes compared to their preprogram ratings.¹⁴ Similar patterns were observed in survey responses from fellows who were enrolled in the second decade (2011–2021) across all FAIMER fellowship programs (Table 2). Comparison of the aggregated ratings for each program showed that participants in all programs reported a significantly higher postprogram rating compared to preprogram rating. Supplemental Digital Appendix 4 (at <http://links.lww.com/ACADMED/B419>) shows participants' retrospective preprogram and postprogram rating of knowledge, skills, and competence for each program. Supplemental Digital Appendix 5 (at <http://links.lww.com/ACADMED/B419>) shows the survey that participants complete.

With the onset of the COVID-19 pandemic, several FAIMER programs were offered entirely online. Similar to perceptions of on-site participants, the aggregated preprogram and postprogram ratings of online participants ($n = 155$) showed a significant increase in perceived knowledge, skills, and competence. Supplemental Digital Appendix 6 (at <http://links.lww.com/ACADMED/B419>) reports the face-to-face and online participants' retrospective preprogram and postprogram ratings of their knowledge, skills, and competence by fellows who participated face-to-face and online.

Institutional level

Project focus. Over the past 20 years, fellows' institutional projects encompassed a broad scope of topics across HPE. Fellows apply with their own education innovation project; during the Institute, they are mentored by a project advisor and receive feedback from peers. As previously reported,²² projects from 2001 to 2010 ($n = 451$) predominantly focused on education and assessment methods and models (224 [50%]); curriculum revision, integration, or changes (105 [23%]); and program evaluation (88 [20%]) (Table 3). In the next decade (2011–2021, $n = 1,289$), the projects continued

to focus predominately on education and assessment methods and models (648 [50%]); curriculum revision, integration, or changes (330 [26%]); and program evaluation (278 [22%]). Since 2011, some new project types have emerged, such as accreditation and interprofessional education and practice (83 [6%]).

A comparison of the project types across all FAIMER sites (see Supplemental Digital Appendix 7 at <http://links.lww.com/ACADMED/B419>) indicates contextualization to local needs. Projects focusing on alignment with the health care context or population health needs were prominent in the FRIs in Manipal, India ($n = 42$ of 78 [54%]) and in Brazil ($n = 81$ of 275 [29%]). Interprofessional education and practice projects were also common in Manipal ($n = 31$ of 78 [40%]), reflecting this FRI's focus. In the sub-Saharan Africa FRI (SAFRI), the projects frequently focused on program evaluation ($n = 83$ of 187 [44%]).

Project status and institutional changes driven by projects. Fellows complete a questionnaire on their project impact;²² it is first administered when they start year 2 of the fellowship and then annually once they complete

Table 1

Shared Responsibilities of the International FAIMER Institute as the Hub and FAIMER Regional Institutes as the Spokes in the FAIMER Global Faculty Development Programs

Responsibility	International FAIMER Institute (IFI)	FAIMER Regional Institutes (FRIs)
Development	<ul style="list-style-type: none"> Support development and sustainability of FRI by partnering with organizations that host the FRI. 	<ul style="list-style-type: none"> Initiate and develop FRIs, led by alumni from IFI. Advance HPE training in regional locations and internationally.
Shared core curriculum and associated services	<ul style="list-style-type: none"> Develop syllabus, materials, faculty guides. Provide websites, central application portal, learning management system, evaluation instruments and institutional review board approval for evaluation, and various electronic platforms for learning and connecting. 	<ul style="list-style-type: none"> Contextualize curriculum by tailoring and adapting learning materials and focusing projects to meet local needs (e.g., FRIs in India emphasized teaching-learning projects; Brazil-FRI stressed community-based projects).
Shared standards	<ul style="list-style-type: none"> Develop and implement shared standards and expectations. Provide oversight, partial funding, and other resources; use of brand/intellectual property, teachers, and evaluation of outcomes. Provide leadership direction and guidelines to FRIs when using resources from IFI. 	<ul style="list-style-type: none"> Work in partnership and collaboration with IFI with shared principles and standards (e.g., development of FAIMER Data Use, Sharing, Authorship, and Ethics Guidelines).
Mutual learning, support, and continual quality improvement	<ul style="list-style-type: none"> Promote mutual exchange of expertise and knowledge (e.g., IFI faculty are global faculty in FRIs, and FRI faculty are global faculty in IFI and other FRIs to provide expertise and broadened perspective). Form ad hoc joint review groups of IFI and FRI fellows for continuous improvement (e.g., to update curriculum, guidelines for use of data, coauthorship). Convene a central information group, Directors, and Faculty of FAIMER Regional Institutes (DAFFRI), to provide a forum for collaboration, partnership support and engagement among FRIs, facilitate the exchange of individual FRI innovations and plans, and promote expertise building. 	<ul style="list-style-type: none"> Support IFI and each other through exchange of expertise, experience, and good practices. Become FRI and IFI global faculty. Provide support (e.g., expertise, data collection, writing) for research collaborations with IFI and among FRIs.
Partnership engagement	<ul style="list-style-type: none"> Convene FAIMER Global Forum, an annual meeting to engage FAIMER alumni and other partners. Convene leadership from institutions that host FRIs and FRI directors via FAIMER Institute Leadership Meet (FILM). 	<ul style="list-style-type: none"> Collaborate with IFI for FAIMER Global Forum and FAIMER Institute Leadership Meet (e.g., plan agenda and format, host a future FAIMER Global Forum meeting).

Abbreviations: FAIMER, Foundation for Advancement of International Medical Education and Research; HPE, health professions education.

their fellowship (n = 1,223 fellows from 2001 to 2020, response rate 64%). This questionnaire, administered to all participants since 2015,²⁷ inquires about the status of their FAIMER projects and project-driven changes within their school, community, or region. The top 3 changes associated with projects include increased quality of education (999 [82%]), changes in institutional or departmental policies (569 [47%]), and increased relevance of education (546 [45%]). Fellows reported that 49% (n = 598) of their projects had been institutionalized (e.g., incorporated into the curriculum as institutional policy or procedure), 36% (n = 442) had been replicated (e.g., in another course, applied in another setting in their country or another country), and 33% (n = 407) had been expanded to address additional objectives.

National and regional levels

Fellows became leaders in HPE. In 2017, as part of a 15-year impact study

of FAIMER's LFDP, an independent evaluator conducted interviews with 15 leaders of fellows' institutions in South America, Africa, and Asia.²⁸ These interviews revealed that fellows had achieved national recognition, reaching positions of leadership on national boards and committees. For example, FAIMER graduates became members of: an independent accrediting agency for medical and health care education in Asia, a committee of medical deans in Africa, and a national program in faculty development in South America.²⁸ These leaders believed that having an FRI in their country was prestigious, enhanced HPE research, and fostered connections to a larger region.²⁸ The impact study also found a clear regional impact of the FAIMER programs. For example, fellows from the Brazil FRI became key faculty in the Spanish-instruction-language FRILA, and 9 FRIs enrolled fellows from neighboring countries, thus expanding the network of fellows to surrounding areas.

Evidence for creating/advancing the field of HPE. FAIMER fellows have contributed to the global development of HPE as a discipline.²⁹ These fellows have helped define HPE as an academic discipline through significant contributions to research in the field,^{30,31} the development of new HPE journals in India and Africa,^{32,33} and the founding of academic societies devoted to HPE.³⁴

For example, before 2007, there was no HPE national association in India. FAIMER fellows helped host the first national meeting and created—and consistently held leadership positions in—the Academy of Health Professions Educators.³⁴ In Brazil and South Africa, FAIMER fellows influenced or changed existing national and international HPE organizations. Numerous Brazil-FRI fellows have held leadership positions in the Brazilian Medical Education Association; similarly, 12 IFI or SAFRI fellows have risen to leadership positions in the Southern Africa Association for

Table 2

Retrospective Pre- and Post-Rating on Knowledge, Skills, and Competence at the End of the Residential Sessions 1 and 3 of the International FAIMER Institute (IFI) and FAIMER Regional Institutes (FRI) Fellowship Programs, 2011 to 2021

Domain	End of session 1 ^{a,b}					End of session 3 ^{b,c}				
	No.	Pre-session mean (SD)	Post-session mean (SD)	T statistic ^d	Cohen d ^e	No.	Pre-session mean (SD)	Post-session mean (SD)	T statistic ^d	Cohen d ^e
Health professions education and assessment	1,190	3.4 (0.9)	4.7 (0.8)	65.7	1.9	1,021	3.2 (1.0)	4.9 (0.8)	70.9	2.2
Professional and leadership development	1,174	3.3 (1.0)	4.8 (0.9)	67.3	2.0	1,014	3.1 (1.0)	5.0 (0.8)	70.8	2.2
Research and scholarship	1,169	3.5 (1.0)	4.6 (0.9)	52.3	1.5	1,010	3.4 (1.1)	4.9 (0.8)	57.4	1.8
Project management and evaluation	1,165	3.0 (1.1)	4.4 (1.0)	55.2	1.6	1,008	2.9	4.5 (1.2)	55.4	1.7

Abbreviations: FAIMER, Foundation for Advancement of International Medical Education and Research; SD, standard deviation.

^aThe retrospective presurvey and postsurvey for session 1 was sent at the end of the first residential session in the program. Data from 116 individuals were collected for IFI and 1,074 for FRIs.

^bRating scale from 1 = none or no skill to 7 = expert, teach others. Internal consistency reliability of both presurvey and postsurvey responses within each domain and overall range from 0.9 to 0.98 (reported by Cronbach's alpha), indicating good scale reliability.

^cThe retrospective presurvey and postsurvey for session 3 was sent at the end of the second residential session in the program. Data from 104 individuals were collected for IFI and 917 for FRIs.

^dAll differences are statistically significant at .05.

^eCohen's *d* was used to measure effect size of the difference between preprogram and postprogram mean ratings.

Health Educationalist, the Consortium of new Southern African Medical Schools, the African Forum for Research and Education in Health, and the African Interprofessional Education Network.³⁵

To advance HPE expertise, fellows in Brazil developed a diploma course in HPE; and fellows in Africa developed an online postgraduate diploma in HPE and leadership. In Brazil, fellows influenced the Ministry of Education and Ministry of Health to launch a national project to support graduate programs, awarding funding to university-based projects led by FAIMER fellows and local faculty.³⁶

Impact in India. India provides an example of the major national impact of FAIMER LFDPs. India's 4 FRIs, 3 of which have been in existence for at least 15 years, have generated 685 (42% of fellows [n = 1,633]). FRIs in India have been central in implementing the national faculty development initiative in medical education mandated by the accrediting body, the National Medical Commission (NMC).³⁷ In total, 18 FAIMER fellows in India are conveners or co-conveners at all 22 medical schools that are NMC-recognized regional and nodal centers that offer the required basic (3-day) or advanced (1-year) faculty development

courses in medical education.³⁸ Beginning in 2019, fellows have held designated leadership roles in the implementation of a new national competency-based medical education curriculum mandated by NMC. A FAIMER fellow chaired the NMC competency-based medical education implementation task force and half of the task force members were FAIMER fellows. During the COVID-19 pandemic, fellows were instrumental in leading their institution's pivot to online teaching, learning, and assessment. Fellows led over 50 webinars and trainings throughout India to help faculty teach and assess online.^{34,38}

While there has not been a similar analysis of impact of the Brazil and Africa FAIMER institutes, in Brazil, fellows have been instrumental in nationwide initiatives, such as the foreign medical diploma recognition process,³⁹ and the creation of 38 federal medical schools in rural and remote areas.^{40,41} In South Africa, fellows played key roles in digitizing specialist and subspecialist certification examinations to respond to the COVID-19 pandemic.⁴²

In summary, to meet its goals, FAIMER has developed a global community of health professions educators with

enhanced skills, whose indicators of success include changes in their institutions and regions.

Lessons Learned

Since 2001, the FAIMER LFDPs have built a global community of more than 1,600 health professions educators from 55 countries through its IFI and 11 regional institutes in Brazil, Chile, China, Egypt, India, Indonesia, and South Africa. Like other LFDPs,³ FAIMER programs offer prolonged exposure to the curricular components, with opportunities to apply learning and reflections,^{3,43} as well as build respect- and trust-based relationships.^{17,20} There have been increasing reports of the effectiveness of LFDPs in health professions, most measuring benefits to the participants.^{9,44,45} FAIMER provides one of the few examples of LFDPs that have been in existence for over 2 decades and have undergone longitudinal program evaluation.

As summarized in this report, fellows across all FAIMER programs, whether participating in a blended on-site/distance program or wholly virtually, reported gains in all 4 core curriculum areas. These comparable results suggest the effectiveness of this program even when

Table 3

Listing of Project Focus Areas Over 20 Years, Including a Description of Each Project Focus Area and a Comparison of the Number of Projects Conducted in Each Focus Area Between the First 10 Years (2001–2010) and the Second 10 Years (2011–2021) Across All FAIMER Fellowship Programs^a

Project focus	Description	2001 to 2010, no. (%) (n = 451) ^b	2011 to 2021 no. (%) (n = 1,289)	Total no. (%) (n = 1,740)
Education methods and student assessment	Implementation of education methods; application of teaching methods to focal learning areas; new or improved methods to assess students. Specific examples: projects focused on problem-based learning, use of simulations, teaching critical thinking, clinical skills education, evidence-based medicine, formative and summative assessment.	224 (50)	648 (50)	872 (50)
Curriculum revision/integration/change	Changes to all or part of an institution's curriculum.	105 (23)	330 (26)	435 (25)
Program evaluation	Evaluation to increase understanding of the need for or impact of an intervention.	88 (20)	278 (22)	366 (21)
Alignment with health system, context, and needs	Alignment of content of education with health care context or population health needs; community-based education; health system change.	76 (17)	194 (15)	270 (16)
Faculty/teacher/trainer development	Professional development programs for faculty or others engaged in teaching or training.	39 (9)	135 (10)	174 (10)
Distance and computer-based learning	Design/implementation of distance learning programs/modules; use of information technology-based education.	40 (9)	90 (7)	130 (7)
Professionalism/humanism/ethics	Interventions intended to improve the teaching and learning of professionalism, humanism, and ethics.	19 (4)	63 (5)	82 (5)
Interprofessional education and practice	Interprofessional education and practice.	0 (0)	73 (6)	73 (4)
Student affairs	Interventions intended to improve student well-being and the learning environment.	28 (6)	47 (4)	75 (4)
Organizational development	Changes to organizational structure, such as creation of a center for research in health professions education or establishment of a new degree program.	10 (2)	21 (2)	31 (2)
Building capacity to do research	Building capacity to do research.	7 (2)	28 (2)	35 (2)
Accreditation	Development or implementation of accreditation.	2 (0)	10 (1)	12 (1)

Abbreviation: FAIMER, Foundation for Advancement of International Medical Education and Research.

^aIncludes only projects of fellows who consented to participate in the program evaluation. Researchers assigned up to 2 topic focus areas for a project.

^bBurdick et al²² reported the focus areas of 451 projects; due to incomplete data availability at the time of data collection, this number of projects is smaller than the actual number of projects for this time frame.

delivered virtually. Projects embedded within LFDPs, like those in FAIMER programs, are reported to be a major element for experiential learning, a “laboratory” for participants to apply what they learned and receive feedback over time.^{22,23,46} Projects also have provided a mechanism for bidirectional benefits to both fellows and their institutions and countries⁴⁷ and often led to institutional change, including increased educational quality and changes in policies.

Projects on education methods and curriculum revisions have consistently remained the most prevalent across most institutes over 20 years. We interpret these results as denoting continuing needs in health professions schools to update educational methods (e.g., pivoting from in-person to virtual teaching or from teacher as “sage on the stage” to “guide by

the side” with much student interaction). These shifts inevitably involve revising the curriculum, which requires the fellows to use both the education and leadership skills and the management skills that they learned in the FAIMER LFDPs.¹⁷ The current results also point to future needs that are affecting health professions schools across the globe, such as aligning the curriculum with the country's health systems, continuous program evaluation, and advancing interprofessional competencies—themes FAIMER fellows have already practiced using for their projects.

National impacts are most evident in India, which has the largest number of FAIMER fellows. We speculate that this evidence of impact in India may be related to the theory of critical mass, which asserts that organizational change occurs when members and/or leaders reach

a tipping point.⁴⁸ In a study of another LFDP, medical school deans surveyed about their perceptions of organizational impact reported greater benefits when there were 3 or more fellows.⁴⁹ These findings have led to a strategy where FAIMER's IFI now actively recruits and enrolls qualified fellows from around the world to increase the numbers of fellows where a few are already present, where they wish to begin an FRI, or where there is otherwise no access to regional FRIs.

We believe the sustainability and growth of the institutes over 20 years are related to the bidirectional hub-and-spoke organizational design, which focuses on partnership, collaboration, and shared responsibilities among IFI and FRIs (Table 2). In this model, faculty from FRIs meet annually to share their passion about HPE and learn from each other. They

develop connections for teaching and collaborations for scholarship that advance their individual careers as well as the HPE field. Together, fellows engage in ongoing curriculum reviews and other projects, and this ongoing engagement continues their growth and fosters community support. Future studies could use network analysis to probe the outcomes of this community of practice.⁵⁰ We are committed to activities that mitigate the pervasive neocolonialism inherent in global partnerships; however, we remain cognizant of the continuing need for honest dialogue among global participants to maintain mutually respectful relationships.

Despite the usefulness of the model and support from IFI, not all FRIs have been sustained for longer than 10 to 14 years. The Brazil FRI closed in 2017 when there was a government change and subsequent loss of funding. The SAFRI partnership ended in 2021. Nonetheless, positive effects outlast these FRIs. For the Brazil FRI, an ongoing initiative to provide HPE training for undergraduate medical students⁵¹ would not have been possible without the Brazil-FRI training and leadership. For SAFRI, fellows offer a virtual postgraduate diploma in HPE as a foundation for ongoing faculty development in the region.⁵² Also, FAIMER is launching a new FRI in Uganda in 2023 to support the Eastern Africa region, and SAFRI fellows are playing pivotal roles in this new FRI.

Strengths and Limitations

The FAIMER LFDP has provided a consistent curriculum for a long period of time, enabling study of its impact. This report demonstrates that this curriculum, although unchanged over 20 years, is still needed despite major changes in education around the world. The findings also suggest that the FAIMER LFDP has significant impacts beyond even the individual and institutional levels, especially in India. More systematic, comprehensive studies are required to determine the long-term outcomes of LFDPs. We also need to better understand the importance and impact of a community of practice and are initiating a new online platform to collect this information systematically and comprehensively.

Plans for the Future

FAIMER is committed to expanding access to HPE in Africa, through starting new

FRIs to serve different regions. Partnerships with FRIs will be leveraged to launch new curricula to enhance quality improvement and workforce development.¹⁶ National and institutional impact studies are underway in India where we have the highest number of FRIs and fellows.

Conclusions

For more than 20 years, FAIMER has provided LFDPs in HPE, leadership development, and global community building in partnership with medical schools and universities throughout the world. This model has resulted in a vibrant network of health professions educators. This sustained, global program positively affects individuals' careers, institutions of higher learning, and in some cases, the HPE policies and practices of an entire country. The adapted bidirectional hub-and-spokes organizational model, with emphasis on partnership and collaboration, has been effective and helped to create sustainability, growth, and impact. Our lessons learned will be useful as we and others continue to build global capacity in HPE in our increasingly interconnected world.

Acknowledgments: The authors thank their partner medical school/universities, all founding, past, and current directors of FAIMER Institutes, fellows, faculty, and evaluation team members.

Funding/Support: None reported.

Other disclosures: None reported.

Ethical approval: Ethical approval was provided by the University of Pennsylvania's Institutional Review Board (protocol # 812939); the study received an expedited review.

Previous presentations: Part of these data were presented at The Network: Toward Unity For Health 2018 Annual Conference, August 2018, Limerick, Ireland; the Association for Medical Education in Europe (AMEE) 2022 Annual Conference, August 2022, Lyon, France; and the African Forum for Research and Education in Health (AFREhealth) 2022 Symposium, August 2022, Harare, Zimbabwe.

R. Vyas is senior associate, FAIMER global lead, Foundation for Advancement of International Medical Education and Research (FAIMER), a member of Intealth, Philadelphia, Pennsylvania; ORCID: <https://orcid.org/0000-0003-2770-8124>.

P.S. Morahan is founding codirector, FAIMER Institute, and professor emerita, Drexel University College of Medicine, Philadelphia, Pennsylvania.

S. Yuan is senior technical associate and research and data scientist, FAIMER, a member of Intealth, Philadelphia, Pennsylvania; ORCID: <https://orcid.org/0000-0003-3951-2137>.

E. Amaral is founding codirector, Brazil FAIMER Regional Institute, coordinator, Nucleous on Assessment and Evaluation of Education for Health Professions, and professor, Obstetrics and Gynecology Department, School of Medical Sciences, University of Campinas, São Paulo, Brazil; ORCID: <https://orcid.org/0000-0001-9151-3108>.

V. Burch is founding codirector, sub-Saharan Africa FAIMER Regional Institute (SAFRI), executive director, Education and Assessment, Colleges of Medicine of South Africa, and honorary professor, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa.

H.H. Campos is founding codirector, FAIMER Brazil Regional Institute, and professor of internal medicine, Faculty of Medicine, Federal University of Ceará, Fortaleza, Brazil; ORCID: <https://orcid.org/0000-0001-8882-364X>.

S. Mukherjee is senior associate and researcher, FAIMER, a member of Intealth, Philadelphia, Pennsylvania.

J. Salt is senior associate and international graduate support lead, FAIMER, a member of Intealth, Philadelphia, Pennsylvania.

A. Supe is founding director, GSMC FAIMER Regional Institute, and professor emeritus, Seth Gordhandas Sunderdas Medical College, Mumbai, India.

M. van Zanten is senior associate and researcher, FAIMER, a member of Intealth, Philadelphia, Pennsylvania; ORCID: <https://orcid.org/0000-0002-7433-6418>.

J. Mladenovic is past-president, FAIMER, a member of Intealth, and president and CEO, Centre for Women in Academic Medicine and Science, Seattle, Washington; ORCID: <https://orcid.org/0000-0003-3369-5155>.

References

- 1 Frenk J, Chen L, Bhutta ZA, et al. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *Lancet*. 2010;376:1923–1958.
- 2 Steinert Y. Faculty development: From rubies to oak. *Med Teach*. 2020;42:429–435.
- 3 Steinert Y, Mann K, Anderson B, et al. A systematic review of faculty development initiatives designed to enhance teaching effectiveness: A 10-year update: BEME guide no. 40. *Med Teach*. 2016;38:769–786.
- 4 Skochelak SE, Lomis KD, Andrews JS, Hammoud MM, Mejicano GC, Byerley J. Realizing the vision of the Lancet Commission on Education of Health Professionals for the 21st Century: Transforming medical education through the Accelerating Change in Medical Education Consortium. *Med Teach*. 2021;43(Suppl 2):S1–S6.
- 5 ten Cate O, Mann K, McCrorie P, Ponzer S, Snell L, Steinert Y. Faculty development through international exchange: The IMEX initiative. *Med Teach*. 2014;36:591–595.
- 6 Yoon HB, Shin JS, Lee SH, et al. Transnational collaboration for faculty development in health professions education in Mongolia. *Korean J Med Educ*. 2016;28:381–390.

- 7 Johansson J, Skeff K, Stratos G. Clinical teaching improvement: The transportability of the Stanford Faculty Development Program. *Med Teach*. 2009;31:e377–e382.
- 8 Lewis LD, Steinert Y. How culture is understood in faculty development in the health professions: A scoping review. *Acad Med*. 2020;95:310–319.
- 9 Chung HS, Issenberg SB, Phrampus P, et al. International collaborative faculty development program on simulation-based healthcare education: A report on its successes and challenges. *Korean J Med Educ*. 2012;24:319–327.
- 10 Frantz JM, Bezuidenhout J, Burch VC, et al. The impact of a faculty development programme for health professions educators in sub-Saharan Africa: An archival study. *BMC Med Educ*. 2015;15:28–28.
- 11 Foundation for Advancement of International Medical Education and Research (FAIMER). FAIMER global programs overview. <https://www.faimer.org/global>. Accessed April 3, 2023.
- 12 Burdick WP. Global faculty development: Lessons learned from the Foundation for Advancement of International Medical Education and Research (FAIMER) initiatives. *Acad Med*. 2014;89:1097–1099.
- 13 Burdick W, Amaral E, Campos H, Norcini J. A model for linkage between health professions education and health: FAIMER international faculty development initiatives. *Med Teach*. 2011;33:632–637.
- 14 Burdick WP, Diserens D, Friedman SR, et al. Measuring the effects of an international health professions faculty development fellowship: The FAIMER Institute. *Med Teach*. 2010;32:414–421.
- 15 Norcini J, Burdick W, Morahan P. The FAIMER Institute: Creating international networks of medical educators. *Med Teach*. 2005;27:214–218.
- 16 Vyas R, Morahan PS, Yuan S, Cilliers F, Talaat W, Mladenovic J. Innovations in health professions education (HPE) for the new normal: Experiences from FAIMER. Africa Health <https://africa-health.com/wp-content/uploads/2022/12/INNOVATIONS-IN-HPE.1.pdf>. Accessed April 3, 2023.
- 17 Ladhani Z, Shah H, Wells R, et al. Global leadership model for health professions education: A case study of the FAIMER program. *J Leadersh Educ*. 2015;14:67–91.
- 18 Low S, Nash R, Butler-Henderson K, Lloyd S. Transversal competency development in healthcare professionals: A scoping literature review to identify effective educational paradigms, principles and strategies. *J Univ Teach Learn Pract*. 2021;18:05. doi:10.5376/1.18.8.5.
- 19 Shah H, Ladhani Z, Morahan P, Wells R. Global leadership model for health professions education part 2: Teaching/learning methods. *J Leadersh Educ*. 2019;18:1–11. doi:10.12806/V18/I2/A2.
- 20 Ahmed S, Morahan P, Wells R, Magrane D, Carvalho P, Shah H. Creating a community of practice using learning circles: A unique design. *MedEdPORTAL*. 2014;10. doi:10.15766/mep_2374-8265.9896.
- 21 Hejri SM, Vyas R, Burdick WP, Steinert Y. Understanding and embracing culture in international faculty development. *Perspect Med Educ*. 2023;12:1–11.
- 22 Burdick WP, Friedman SR, Diserens D. Faculty development projects for international health professions educators: Vehicles for institutional change? *Med Teach*. 2012;34:38–44.
- 23 Mennin S, Kalishman S, Eklund MA, Friedman S, Morahan PS, Burdick W. Project-based faculty development by international health professions educators: Practical strategies. *Med Teach*. 2013;35:e971–e977.
- 24 Elrod JK, Fortenberry JL. The hub-and-spoke organization design: An avenue for serving patients well. *BMC Health Serv Res*. 2017;17:25–33.
- 25 McCallum J, Lamont D, Kerr EL. First-year undergraduate nursing students and nursing mentors: An evaluation of their experience of specialist areas as their hub practice learning environment. *Nurse Educ Pract*. 2016;16:182–187.
- 26 Devarakonda S. Hub and spoke model: Making rural healthcare in India affordable, available and accessible. *Rural Remote Health*. 2016;16:3476.
- 27 Yuan S, Mukherjee S, Vyas R, Burdick W. Using a theory of change for evaluation: Has the FAIMER international faculty development program improved the field of health professions education? *MedEdPublish*. 2019;8:50.
- 28 Hasnain M, Wendell L, Yuan S. 15-year impact study report and recommendations. Foundation for Advancement of International Medical Education and Research (FAIMER). <https://www.faimer.org/15-year-study-report-2-1-2017.pdf>. Published January 31, 2017. Accessed April 3, 2023.
- 29 Kim J. 6 attributes of an academic discipline. *Inside Higher Ed*. <https://www.insidehighered.com/blogs/technology-and-learning/6-attributes-academic-discipline>. Accessed April 3, 2023.
- 30 Dongre AR, Deshmukh PR. Status of medical educational research in India and way forward. *J Res Med Educ Ethics*. 2019;9:73.
- 31 Bollela V, Campos HH, Amaral E. Community-Based Education for the Health Professions: Learning From the Brazilian Experience. Ribeirao Preto, Spain: FUNPEC; 2014. <http://www.nescon.medicina.ufmg.br/biblioteca/imagem/4823.pdf>. Accessed April 3, 2023.
- 32 Journal of Education Technology in Health Sciences (JETHS). About us. <http://www.jeths.org/about-us>. Accessed April 3, 2023.
- 33 African Journal Online. African Journal of Health Professions Education. <http://www.ajol.info/index.php/ajhpe/index>. Accessed April 3, 2023.
- 34 Academy of Health Professions Educators (AHPE). The official website of AHPE (India). <http://ahpe.in>. Accessed April 3, 2023.
- 35 Vyas R, senior associate and director, Global Programs, Foundation for Advancement of International Medical Education and Research (FAIMER). Personal communication with V. Burch, May 20, 2022.
- 36 Haddad AE, Cyrino EG, Batista NA. Pró-Ensino na Saúde: Research on teacher education and teaching and working processes in the Brazilian National Health System (SUS), with emphasis on the reorientation of professional education in the area of Health. *Interface Comun Saúde Educ*. 2018;22(Suppl 1):S1305–S1307.
- 37 National Medical Council (NMC). <https://www.nmc.org.in>. Accessed April 3, 2023.
- 38 MEUINDIA. <http://meuindia.in>. Accessed April 3, 2023.
- 39 Brazil Ministry of Education, Secretary of Higher Education, Ministry of Health, Secretary of Labor Management and Health Education. Curricular correspondence matrix for the purpose of revalidation of medical degrees obtained abroad. Brasília, Brazil: MEC, MS; 2009.
- 40 Secretariat of Higher Education, Ministry of Education and Culture. Normative Ordinance No. 306, of March 26, 2015. Official Gazette, Section 1, No 159. March 27, 2015. ISSN 1677-7042, Brasília, Brazil.
- 41 Secretariat of Higher Education, Ministry of Education and Culture. Ordinance No 2, of April 23, 2015. Official Gazette, Section 2, No 17, April 24, 2015, ISSN 1677-7050, Brasília, Brazil.
- 42 Burch V. Re-engineering certification examinations in a pandemic: Stop-gap measure or long term option? Talk presented at: American Board of Medical Specialties Conference 2021; September 29, 2021; virtual.
- 43 Newman LR, Pelletier SR, Lown BA. Measuring the impact of longitudinal faculty development: A study of academic achievement. *Acad Med*. 2016;91:1676–1683.
- 44 Chandran L, Gusic ME, Lane JL, Baldwin CD. Designing a national longitudinal faculty development curriculum focused on educational scholarship: Process, outcomes, and lessons learned. *Teach Learn Med*. 2017;29:337–350.
- 45 Baldwin CD, Gusic ME, Chandran L. The impact of a national faculty development program embedded within an academic professional organization. *Acad Med*. 2017;92:1105–1113.
- 46 Gusic ME, Milner RJ, Tisdell EJ, Taylor EW, Quillen DA, Thorndyke LE. The essential value of projects in faculty development. *Acad Med*. 2010;85:1484–1491.
- 47 Lewis V, Baldwin CD, Morahan PS, Thorndyke LE, Gusic ME. Leadership development projects: Bidirectional impact on faculty and institutions. *J Contin Educ Health Prof*. 2021;41:75–81.
- 48 Helitzer DL, Newbill SL, Cardinali G, Morahan PS, Chang S, Magrane D. Changing the culture of academic medicine: Critical mass or critical actors? *J Womens Health*. 2017;26:540–548.
- 49 Dannels S, McLaughlin J, Gleason KA, McDade SA, Richman R, Morahan PS. Medical school deans' perceptions of organizational climate: Useful indicators for advancement of women faculty and evaluation of a leadership program's impact. *Acad Med*. 2009;84:67–79.
- 50 Santen SA, Smith J, Shockley J, et al. Social network analysis of publication collaboration of accelerating change in MedEd consortium. *Med Teach*. 2022;44:276–286.
- 51 Caramori U, Amaral E, Caramori JT, et al. "Student-as-educator" development programs to promote a sustainable educational workforce for the future. *Med Teach*. 2021;43:904–905.
- 52 Sub-Sahara Africa FAIMER Institute (SAFRI). SAFRI community of practice. <https://safri.cop.healthcare>. Accessed April 3, 2023.