Increasing Nursing Student Interest in Rural Healthcare: Lessons From a Rural Rotation Program in Democratic Republic of the Congo

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Case study

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Abstract

Background

Many challenges exist in providing equitable access to healthcare in the Democratic Republic of the Congo (DRC) including resource disparities between rural and urban areas coupled with a majority rural population. One of the most promising ways to close the gap between rural and urban healthcare access and quality is through the support of human resources for health (HRH), especially nurses, in rural health settings. Current barriers including lack of nursing students from rural communities, insufficient infrastructure, and absence of programs for rural practice exposure, have allowed disparities between rural and urban healthcare to persist.

Methods

To implement a rural rotation (RR) program for nursing students in DRC, whereby students are immersed in a rural clinical and community placement for an extended period of time, ICAP at Columbia University (ICAP), with funding and support from the United States Health Resources Service Administration (HRSA), consulted with stakeholders in DRC including students, the Ministry of Health (MoH), the Ministry of Education (MoE), and nursing schools and associations to improve health workforce education including understanding the disparities and realities of rural health care. Following this, schools of nursing in the Lubumbashi area agreed to add nursing students into rural workforce settings, including time in clinical as well as community health on a rotational basis. ICAP then worked with the MoH and MoE to select rural sites that could adequately support rotating nursing students and develop expectations for the RR program. Assessments of the selected rural sites were conducted, and the availability of nursing mentors, teaching materials, security, and accessibility, as well as patient volumes, were identified. Building on prior work to strengthen preceptors, a training of trainers approach was used. Out of a cohort of 85 trained preceptors from across 55 target schools and 30 rural health facilities, 30 were selected to be “master trainers” based on their experience in training others, their performance in initial preceptor training, and willingness to contribute more to overall success of the RR program. These master trainers educated the remaining 55 preceptors in rural practice. Concurrent with the training, ICAP, along with the MoH and MoE, worked with communities around the rural health facilities to secure accommodations for nursing students and to engage them with community leaders for purposes of future health promotion and clinic collaboration.

Results

All five target schools from the Lubumbashi area that were selected for the project chose to participate. Kinshasa was not targeted for the project but did have two schools in rural areas outside the urban center interested and willing to accept students on rotations. Over the life of the project, 583 students successfully participated in the program and completed rural rotations as planned. Sixteen rural sites and 298 students participated in the rotational program during the 2018-2019 school year. For the 2019-2020 school year (through March), 285 students participated.

Post-rotation feedback RECEIVED FROM 274 students, as well as from over 25 preceptors, and nursing school leaders, has been very positive and has resulted in more nursing students seeking rural assignments upon completion of their studies. Ninety-three percent of students surveyed, for example, indicated that they agreed or strongly agreed that they would recommend participation in RR programs to their classmates. Ninety-seven percent agreed or strongly agreed that their RR program had strengthened their education experience and increased their willingness to serve in rural areas in the future. The most significant challenges, however, were financial support (35%) and housing (30%).

Conclusions

With nearly 600 successful participants, this project showed that a RR program is both feasible and acceptable for nursing students, faculty, and rural clinic staff in resource-limited settings. Student exposure to rural practice is critical to increasing interest (and therefore downstream HRH staffing) in rural area healthcare. ICAP, HRSA, and DRC ministry leadership believe these early successes are indicative of both the opportunity available and value-added of such a RR program. Going forward, HRSA, ICAP and key stakeholders will continue to collaborate to sustain this project and advocate for employment and placement of student nurses who expressed interest, into rural employment following graduation. In addition, expanding such programs to other majority rural areas of sub-Saharan Africa seems both feasible and affordable with the right up-front collaborations and program design with key stakeholders.

Introduction

This paper presents a case study of implementing a rural rotation (RR) program for nurses in Democratic Republic of the Congo (DRC). Health systems routinely grapple with how to ensure adequate skills for clinical staff in rural areas. In DRC, where most people reside in such rural areas, supporting human resources for health (HRH) in rural areas is particularly important to health system strengthening and to providing healthcare for all [1]. This case study describes the rationale for steps taken and methods used to implement a novel RR program for nursing students. The results of two academic years as well as the challenges faced and lessons learned during and since implementation are provided.

Background

DRC Context and Challenges

DRC gained independence in 1997 and has received United States President's Emergency Plan for AIDS Relief (PEPFAR) funding since PEPFAR's inception in 2003 [2, 3]. DRC is a country of over 2 million square kilometers that borders seven sub-Saharan African countries. Decades of violent conflict and instability have taken a devastating toll on the country's economy, human resources, and infrastructure, and, coupled with a largely rural population, present several challenges to providing healthcare [1].

DRC has a generalized HIV epidemic with an estimated prevalence of 1.2 percent among adults aged 15 to 49. HIV infection is more prevalent in urban settings (1.6 percent) compared to rural areas (0.9 percent). An estimated 404,894 people are living with HIV, and around 10,535 people die from AIDS-related conditions each year [4]. The HIV epidemic has drastically impacted two of DRC's most populous provinces, with general population prevalence estimates of 1.6 percent in Kinshasa and 2.6 percent in Haut Katanga [5].

ICAP at Columbia University (ICAP) initiated a comprehensive program of support for HIV care and treatment (C&T) services in DRC in 2010. Since then, ICAP has worked hand-in-hand with the Programme National de Lutte contre le SIDA (PNLS) to expand the availability, quality, and uptake of adult and pediatric HIV care and treatment in DRC with an emphasis on expanding prevention of mother-to-child transmission (PMTCT) activities, development of a laboratory network for disease monitoring, integration of HIV and tuberculosis (TB) services, improvement of infrastructure, prevention among key populations (KP) in Kinshasa and Haut Katanga provinces, and epidemic control. In partnership with DRC Ministry of Health (MoH) and donors, ICAP has rapidly expanded its support for PNLS activities from just 10 sites in 2010 to 240 public and private hospitals, health centers, and TB clinics as of September 2014. ICAP currently supports 199 sites.

ICAP and HRSA Engagement in Nursing in DRC

With PEPFAR funding through the United States Health Resources and Services Agency (HRSA), in 2017, ICAP was awarded the Resilient and Responsive Health Systems (RRHS) project to continue strengthening HRH in DRC. Using the World Health Organization (WHO) conceptual framework for HRH development, the first two years of the RRHS project built on extensive HRH capacity building and infrastructure improvements for student nurses and midwives through HRSA funding the Nursing Education Partnership Initiative (NEPI) as a follow-on to the previously funded Global Nursing Capacity Building Program (GNCBP) [6, 7]. Since nurses are the largest HRH component in DRC, this NEPI-focused work centered on nurses' readiness for clinical practice through curricula reform and development of innovative pedagogy including use of skills labs and simulation-based training. Over the past two years, HRSA and ICAP have leveraged these pre-service strengthening efforts to shift focus to in-service capacity building and addressing wider HRH limitations affecting epidemic control.

Given the volume of people living in rural areas and HIV service needs therein, a collaborative effort between the MoH, Ministry of Education (MoE), ICAP and HRSA has yielded a RR program to increase nursing student and community health worker (CHW) exposure to rural health needs, rural health care, as well as rural clinical practice and community engagement prior to graduation, entry to practice, and employment.

The Challenge: Getting Nursing Students to Understand the Importance of—and to Participate in—Rural Healthcare

An increase in the use of telemedicine globally has expanded access to quality healthcare services regardless of a patient's proximity to physical medical care/clinic services [8, 9], diminishing healthcare disparities in rural settings. However, many countries, including those in sub-Saharan Africa, still struggle with gaps in healthcare access for rural populations. Common themes seen among the extant literature include lack of funds to enhance rural healthcare, lack of medical professionals among rural populations, and lack of technology available for use in rural areas [10]. Current scholarship identifies various issues faced in attempting to close these gaps between rural and urban health settings and describes various interventions that have been used on a global scale, in sub-Saharan Africa, and more specifically in DRC. In particular, the evolving role of nurses in supporting—and advancing—rural healthcare in such contexts is explored in-depth as is the need to actively recruit nurses to areas by demonstrating the advantages that such experiences and expertise will bring to their careers. This, exposure, in turn, will be valued more by student nurses and will, as a result, increase their willingness/interest in rural placement [11].

An interesting healthcare paradox exists in rural settings, compared to urban ones, no matter where one looks in the world: rural communities in which some of the most numerous, complex, and diverse healthcare needs exist are precisely those served least by HRH. Despite the prevalence of unmet healthcare needs in rural areas, healthcare providers tend to remain in the wealthier, better resourced, urban areas [12]. A recent retrospective review of 174 nations and the rural "deficits" in health coverage showed that four basic inequities exist when comparing rural versus urban healthcare: lack of rights to healthcare (i.e., fewer entitlement programs in rural areas), shortages of rural HRH, unequal funding for rural health protection (and for preventative healthcare), and high out-of-pocket costs for rural populations forced to pay for their own health services [13]. These deficits were seen in very poor rural areas throughout regions of Africa including countries such as Zambia, Nigeria, South Africa and Kenya.

These inequities, alone, however, are not the only reasons for higher incidence and prevalence of some infectious diseases (e.g., malaria), malnutrition, and less preventative care in rural areas. Social determinants of health also come into play including access to education, food and social support [14]. Given social and economic inequities, few rural areas send students to medical and nursing schools; thus, fewer return to serve these areas [10]. Yet where a medical professional student comes from is highly correlated with where that student will practice upon graduation [15]. Attempts to improve recruitment from rural areas—via incentives and increased access to education—have resulted in mixed, or at best only short-term results and improvements [16]. In addition, poor road networks and physical distances from patients to care centers—as well as the social factors and pressures in some rural communities—also prevent patients from seeking health care early or often. Social exclusion from urban areas, not to mention the social pressures to seek guidance from local/rural "healers," are strong forces that may keep patients from seeking life-saving care [17].

These rural determinants of health can result in relatively lower health indicators and indices; for example: greater numbers of stillbirths and higher infant mortality in Central Africa [18], greater child malnutrition and inequitable distribution of food among families across most low-income countries [19], and larger family sizes [20]. If rural determinants of health are not addressed proactively, poor rural health

outcomes can pose serious health risks to urban areas—and their healthcare systems and populations, especially after conflict and/or national disasters when (rural) healthcare services are often depleted and rural urban migration ensues [21]. For example, when an Ebola patient traveled from a small Liberian town to an urban center to seek better care during civil unrest and to escape pressures to utilize local healers, this patient's travels resulted in a number of downstream infections closer to an urban center [22].

Other obvious negative effects from failing to adequately address rural healthcare staffing and care provision include underreporting of diseases, such as Buruli Ulcer in DRC [23], lack of appropriate and basic diagnostic services such as radiology in across Sub-Saharan Africa [24], and inadequate communication networks and sharing of best practices from urban to rural settings—from healthcare providers and thought-leaders in DRC [11]. While several interventions have been proposed—including e-health information sharing and application deployment through smartphones in Ghana [25], e-health solutions for rural clinics in South Africa [26], Ghana, Tanzania, and Burkina Faso [27], and improved clinic leadership training for rural healthcare clinic leaders in South Africa [28], none appear to have been more effective than recruiting both rural and urban practitioners, nurses, and CHWs to serve these rural health centers even if only on a rotational basis [7].

In 2019 with support from HRSA, ICAP launched a telementoring program in DRC to help address some of the disparities and lack of knowledge transfer from urban to rural settings [29]. While successfully launched and currently being scaled up to assist and build capacity of rural clinicians, telementoring does not address insufficient supply of health care workers in rural areas. Therefore, a combination approach to strengthening rural service delivery is necessary.

Engaging students in rural contexts while increasing their familiarity and understanding of rural health needs also allows students to experience the breadth of health services provided in rural areas and opportunities to expand knowledge and skills. Under the mentorship and supervision of experienced rural clinicians, students can be exposed to a broader array of healthcare challenges than may be seen in urban settings where care is divided between many units and specialized services. This level of exposure to health issues, symptomatology, and engagement in all aspects of care from health history, point of care laboratory investigations, diagnosis and follow up can rapidly build clinical understanding. Students also live in and absorb more varied cultural environs, and, in many cases, establish early career leadership and managerial success on a scale more demonstrable than in urban settings where they might become "lost in the crowd" of the larger healthcare workforce. Exposing nursing students to the opportunities in (secure) rural settings, on a rotational basis, can create more HRH who are willing to work in rural settings after graduating [30].

Methods

Three broad activities were implemented to launch the RR program: stakeholder alignment, rotation preparation (with nursing schools), and clinic preparation (to receiving nursing students).

1. Alignment of Stakeholders Around Key Competencies

During the alignment phase of the project, ICAP/RRHS conducted meetings with the DRC MoH, MoE, Nursing Council, Midwife Association, target schools, students, and students' parents to raise awareness of the subject by explaining to them the requirements of Education Reform using a competency-based approach:

- Train students to be future health workers on a global scale
- Prepare them to work in all conditions, even in the remote environments both in hospitals and in rural communities

Once consensus was reached with key stakeholders on key competency goals, the joint ICAP/RRHS team partnered with nursing schools to support the RR launch.

2. Preparation with Nursing Schools to Support RR Launch

Once key stakeholders understood the value of building core competencies in nursing students, getting the nursing schools, themselves, on board was a critical next step. Explaining how the program would work, how progress would be measured, which sites nursing students would be housed at to learn/practice, and what safety and security guarantees would be put in place were crucial to program success. Once these discussions took place and nursing schools were on-board with the RR plan, the team then had to identify clinics that were willing to receive nursing students on short-term, rural rotations followed by post-rotation debriefings and continued coursework.

3. Preparing Clinics to Receive Nursing Students

Preparing to receive students at different clinic sites involved both physical and program preparation. Sites had to be assessed for readiness in terms of places to house rotating nurses, availability of space in which they could learn and practice, availability of preceptors who would monitor and evaluate their learning, and broader community acceptance of healthcare provisioning by students/learners.

a. Mapping of Rural Sites

To start, DRC MoH and MoE, working in conjunction with ICAP, identified specific rural sites that would most likely be able to handle a cadre of nurses on a rotating basis. The ministries, with ICAP's assistance, informed selected sites and helped set expectations for the rotational program.

b. Assessment of Rural Sites

Next, a joint MoH/ICAP team conducted site visits to assess conditions and readiness of the target clinics to receive nursing students. A senior nurse and clinician in charge of health zone technical support from MoH, as well as a policy and training manager, and a monitoring and evaluation specialist from

ICAP, visited each site and conducted surveys of living and teaching conditions for rotating nursing students. The focus of these site-level assessments were on:

i. Availability of necessary clinical and teaching materials and equipment (including frequent pathologies)
ii. Geographic accessibility and security
iii. Accommodation conditions and local utilization of/attendance at the health center
iv. Quality and number of health workers including availability of preceptors for nursing students

A comprehensive, detailed site assessment tool was developed by the ICAP team, in partnership with key stakeholders, to facilitate site-level site visits and assessments (see Exhibit 1).

c. Training of Preceptors

After site-level assessments were completed, preceptors from various target schools and rural health facilities were selected to be trained by the MoH and MoE experts with ICAP/RRHS technical assistance focused on how to mentor and to train nurses according to required competencies as noted earlier. To efficiently complete this training of preceptors, a training of trainers approach was used whereby the experts and technical assistants selected a subset of preceptors to complete detailed training. These "master trainers" then trained the remaining preceptors at the various sites. Key topics and competencies covered during these preceptor training sessions can be found in Exhibit 2, and an example detailed agenda for the multi-day train-the-trainer program can be found in Exhibit 3.

Concomitant with this training, MoH, MoE and ICAP continued to align with target clinics to obtain buy-in to the RR program (and how the program would help them fill HRH gaps). In addition, the team negotiated with the local communities around the target clinics/sites (with community leaders, religious leaders, local authorities and elders, etc.) to find accommodations for nursing students and to mitigate any issues around these nursing students rotating in and out of their communities over time.

Results

Following assessment of the rural sites, 85 preceptors from 55 target schools and 30 rural health facilities were chosen to be trained in mentoring and training nurses according to the aforementioned competency requirements of Education Reform. Of the total 85 preceptors, 30 individuals completed detailed training with the experts from the MoH and MoE. The 30 individuals were then considered "master trainers" who then trained the remaining 55 preceptors at various sites. As of May 2020, the 30 master trainers have on-boarded an additional 263 preceptors to improve nurse mentorship and instruction during students' rotations.

All five targeted schools in Lubumbashi area have participated in the RR program. The DRC urban capital, Kinshasa, was not targeted for RR programs, but two schools supported under NEPI were interested in

this activity and were also willing to accept rotating nursing students (at Kongo central and rural areas in Kinshasa at the Minkawa Catholic Church health area).

Sixteen sites in total took part in the RR program, and nursing student participation in the 2018-2019 academic year rotational program comprised a one-month time period for secondary level nurses and three-month time period for advanced nurses. Site-level student volumes and participation by nursing school were broken out as follows:

- ISTM Lubumbashi: 141 nursing students
- IEM Kamalondo: 54
- ITM Immaculée Conception: 65
- ITM Zaidi: 38

In the most recent academic year, 2019-2020, participation has thus far comprised the following (noting that most rotations were put on hold due to the novel Coronavirus 2019 (COVID-19) concerns/quarantines in mid-March 2020):

- ISTM Lubumbashi (February-July 2020): 87 nursing students
- IEM Kamalondo (February-March 2020): 72
- ITM Immaculée Conception (March 2020): 81
- ITM Zaidi (February-March 2020): 45

Nursing student experiences at the various sites comprised a broad spectrum of rural healthcare functions, patient interactions, community liaising, and local health policymaking. Nurses not only practiced medicine with patients during clinic hours but also established themselves as valuable community members in terms of health policy outreach (e.g., HIV testing), preventative health advocacy (e.g., importance of improved diets and exercise with local healers and community leaders), and role models for future nursing students and CHWs.

After completing their RRs, students provided voluntary feedback to inform and to improve clinical rotations at sites. 274 students, as well as over 25 preceptors and nursing school leaders, provided feedback on their RR placement (see Exhibit 4A for distribution of respondents by site). Eighty percent of students providing feedback were placed during the most recent (2019-2020) academic year, and most students were placed for one month (63 percent) compared to three- (26 percent) or four-month (11 percent) placements.

Respondents were asked whether they strongly agreed, agreed, disagreed, or strongly disagreed with the following statements:

- I would recommend that my classmates participate in a RR
- I feel that the RR has strengthened my educational experience

- I feel better-equipped to provide HIV/AIDS prevention, care, and treatment services because I took part in the RR

Ninety-three percent of students agreed or strongly agreed that they would recommend RR participation to classmates (see Exhibit 4B). Ninety-seven percent agreed or strongly agreed that their RR had strengthened their educational experience (see Exhibit 4C). Ninety-five percent of students agreed or strongly agreed that they felt better-equipped to provide HIV/AIDS prevention, care, and treatment services thanks to RR participation (see Exhibit 4D).

When asked about their biggest challenges during their RRs, students most commonly reported financial support (35 percent), housing (30 percent), and rural living conditions (3 percent). Levels of responsibility and preceptor support were also reported by a few respondents (see Figure 4E). The ICAP team continues to try to correlate RR participation directly with improvements in Monitoring, Evaluation, and Reporting (MER) statistics as reported via PEPFAR “95-95-95” measures.

Challenges and Lessons Learned

This two-year case study demonstrates that a RR program is feasible even in low resource settings. Systematic preparation, broad engagement, careful assessment of sites and training of preceptors were seen as critical steps and keys to the program’s early success.

Key challenges to initial launch and ongoing operation of the RR program revolved mostly around accommodation availability and student financial assistance. Not all sites provided accommodations for student nurses, and at those where accommodations were available, spaces were poorly maintained and in need of renovation. Some nursing students also faced financial difficulties including support for transport to rural clinic sites. While the ICAP team was successful in securing some MoH/MoE funding/resources to support students’ needs, these challenges must continue to be addressed to ensure long-term sustainability of such a program.

Through donor support, ICAP has supported minor renovations at all 16 sites to improve accommodation conditions and assistance for student and preceptor transportation. In the first year of RR implementation, students were placed at all 16 sites. However, in the second year of placements, only 15 of the 16 sites were staffed due to security issues at one of the sites. The renovations completed on the living quarters for nursing students ensured students would have a proper place to stay while on their rotations. As sustainability is a key goal of this program, ICAP has worked with HRSA, MoH, and MoE to develop a transition and sustainability plan.

Discussion

To improve access to care and the health of all citizens of the DRC, it is essential to focus on strengthening rural health care. This is critical both for individual health and population health security. However, getting health workers to work in rural areas has historically been a challenge. The literature

reveals that exposing students to rural practice is one method to improve interest in and appreciation for rural care [28]. In low-resource settings, infrastructure and transport challenges can be barriers to such a program which need to be overcome.

Specifically, the programs School Sustainability Plan includes ensuring ongoing maintenance of living accommodations for nurses, continued transportation support, and longitudinal tracking of key educational outcomes to demonstrate program success (including downstream increases in rural nurse placements). By seeing this value from the RR program, continued funding and support can be assured. In fact, with the onset of COVID-19 healthcare priorities, rotating nursing students have been uniquely positioned to provide immediate front-line support thanks to this RR program. As such DRC MoH and MoE have realized even more value from this program than originally envisioned and have committed to continued funding of RR activities like these in the future.

Limitations

This case study has focused on building a nursing RR program. Early positive results have been presented using qualitative data and quantitative results to the outcome level. Further study of the impact of such a program is needed both on retention of health workers in rural areas following a rural rotation program as well as the impact of access to health care and health care outcomes. Identifying and studying key endpoints such as improvements in rural access to care, health outcomes, patient satisfaction, and the professional benefits of rural practice will help strengthen and build on the work presented here.

Conclusions

This case study shows that a RR program is both acceptable and feasible in remote areas of DRC. Broad stakeholder engagement and capacity-building are seen as keys to its success and eventual transition to local ownership and sustainability. Similarly, careful collaboration between nursing schools, the MoH, MoE, community leaders, and local service providers oriented and trained for rural mentorship as well as a solid rotational schedule, plan, and accommodations for participating nurses and preceptors are keys to success for such a rotational program. Initial student feedback indicates increased opportunities to engage with patients and to take part in community-based programs such as home visits, behavior change education, community awareness and health promotion, and these activities enhance student exposure and experience in the breadth and depth of primary and acute clinical care Nursing school leaders and clinic managers reported student engagement to be an asset rather than a burden given the paucity of health workers available in rural settings. Further study of the essential components as well as short- and longer-term benefits and sustainability of a rural rotation program is encouraged.

Abbreviations

C&T: Care and Treatment

CHW: Community Healthcare Worker

COVID-19: Coronavirus Disease 2019

DRC: Democratic Republic of the Congo

GNCBP: Global Nursing Capacity Building Program

HIV/AIDS: Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome

HRH: Human Resources for Health

HRSA: (United States) Health Resources and Services Administration

ICAP: ICAP at Columbia University

IEM: Institut d'Enseignement Medical (nursing, midwife, technician, and pharmacy school))

IRB: Institutional Review Board

ISTM: Institut Superieur des Techniques Medicales (nursing and medical school)

ITM: Institut des Techniques Medicales (nursing and midwife school)

KP: Key Populations

MER: Monitoring, Evaluation, and Reporting statistics (from PEPFAR's 95-95-95 goals)

MoE: Ministry of Education

MoH: Ministry of Health

NEPI: Nursing Education Partnership Initiative

PEPFAR: (United States) President's Emergency Plan for AIDS Relief

PMTCT: Prevention of Mother-To-Child Transmission

PNLS: Programme National de Lutte Contre le VIH/SIDA, DRC's national AIDS program

RR: Rural Rotation (program for nursing students)

RRHS: Resilient and Responsive Health Systems

TB: Tuberculosis

WHO: World Health Organization

Declarations

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Authors' Contributions

SM-S developed the overall case study methodology including rural rotation program frameworks and implementation guidelines. PT assisted with site-level HRH staffing analyses and reporting. NMK and DK contributed to the in-country nurse training and rotation implementation. JN supported both training and rotation planning with HRSA best practices and funding. BL and SM provided in-country technical guidance and RRHS leadership (including site-level collaborations). LP provided strategic site- and country-level information support and data analysis for nursing and other C&T programs. RH contributed to the literature review, bibliographic organization, and overall paper organization and editing. FM provided in-country leadership including ICAP-MoH collaborations and approvals. All authors read and approved the manuscript.

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Availability of Data and Materials

Data collected and used for this study are available from the corresponding author upon reasonable request.

Ethics Approval to Consent and to Participate

The Columbia University Irving Medical Center's IRB reviewed this proposed research study and gave it a "non-research" determination (IRB-AAAT1559) on August 7, 2020. This determination was shared with DRC MoH, and the MoH also deemed this study to be of a "non-research" nature. Only general, site-level rotation information has been collected and analyzed, and no specific individuals' names or identifying data were captured as part of any interview or discussion for this case study.

Consent for Publication

The views expressed in this article are those of the authors and should not be construed to represent the positions of HRSA or of the organizations with which the authors are affiliated.

Competing Interests

The authors declare that they have no competing interests.

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