




# Case studies in adaptation: centring equity in global health education during the COVID-19 pandemic and beyond

Anna Pancheshnikov <sup>1,2</sup> C Nicholas Cuneo <sup>3,4</sup> Wilfredo R Matias <sup>5,6</sup>  
Rebeca Cázares-Adame,<sup>7</sup> Abner Gamaliel Santos López,<sup>8,9</sup> Ryan M Paxton,<sup>10</sup>  
Chi Chiung Grace Chen<sup>1,11</sup>

**To cite:** Pancheshnikov A, Cuneo CN, Matias WR, *et al.* Case studies in adaptation: centring equity in global health education during the COVID-19 pandemic and beyond. *BMJ Global Health* 2023;**8**:e011682. doi:10.1136/bmjgh-2023-011682

**Handling editor** Seye Abimbola

Received 2 January 2023

Accepted 9 March 2023

## ABSTRACT

The COVID-19 pandemic disrupted all aspects of life globally and laid bare the pervasive inequities in access to education, employment, healthcare and economic security in both high-resource and low-resource settings. The global health field's brittle attempts of addressing global health inequities, through efforts that in some cases have evoked the colonialist forces implicated in shaping these disparities, have been further challenged by the pandemic. COVID-19 has forced global health leaders to reimagine their field through innovation such as shifting the application of global health to a local focus, collaborating with community organisations and exploring virtual education technologies. We present four case studies illustrating this promising movement towards a more sustainable, ethical and equitable model of global health education practice.

Case 1: trainees from the Massachusetts General Hospital Center for Global Health partnered with the Board of Health of Holyoke, a majority Latinx city with high poverty levels, to respond to the COVID-19 pandemic through research and intervention. Case 2: Prevensa, a community health organisation in Tijuana, Mexico, providing healthcare to local underserved communities, shifted its focus from hosting international trainees to developing a multidisciplinary training programme for Mexican healthcare professionals. Case 3: the Johns Hopkins Global Health Leadership Program adapted its curriculum into a hybrid online and in-person migrant health and human rights elective, collaborating with local organisations. Case 4: a US-based and a Latin American-based organisation collaborated to create a longitudinal, virtual urogynaecology training programme with hybrid simulation practice to increase accessibility of procedural-based training.

## INTRODUCTION

The COVID-19 pandemic disrupted most aspects of life worldwide, including healthcare delivery, education, employment and travel.<sup>1 2</sup> Marginalised communities, in both high-income countries (HICs) and low/

## SUMMARY BOX

- ⇒ The COVID-19 pandemic with its unique challenges also represents a case study in health system preparedness, laying bare longstanding inequities in access to care, social determinants of health such as employment opportunities and housing, and the essential role of advocacy in public health and well-being.
- ⇒ The pandemic has also highlighted many problems in the current model of global health in all aspects including global health education such as lack of reciprocity between high-income countries and low/middle-income countries, overburdening of already strained low-resource health systems with visiting trainees and disproportionate representation of trainees from privileged backgrounds.
- ⇒ While the pandemic represents a unique opportunity to allow global health trainees to continue developing their global health skills and participate in experiential learning, it is also a timely reminder for the global health community to engage local communities and build lasting relationships with local partners in order to broaden access to high-quality healthcare, which will in turn expand global health training and increase pool of qualified providers.
- ⇒ Lessons learnt from local engagement, utilisation of web-based technologies and other educational innovation and rebuilding global health education curricula during the COVID-19 pandemic can serve to improve the sustainability, inclusivity and equity of international global health partnerships.
- ⇒ By bringing a reformed lens—one that emphasises solidarity in action with local partners, focusing on local leadership, both in local and international initiatives, utilisation of current technological capabilities and a truly expansive definition of global health—into focus for a new cohort of global health trainees, we hope that we can finally make significant strides towards decolonising the field.

middle-income countries (LMICs), have been disproportionately impacted as they have simultaneously endured worsening



© Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

For numbered affiliations see end of article.

## Correspondence to

Dr Anna Pancheshnikov;  
apanche2@jh.edu

inequities in accessing already fragile healthcare systems, as well as water, food and economic security.<sup>3 4</sup> Global health, defined as ‘a field of study, research and practice that places a priority on achieving equity in health for all people’, aims to achieve better health outcomes for vulnerable communities and populations.<sup>5 6</sup> Global health education is an interdisciplinary and multidisciplinary discipline which emphasises collaborative and experiential instruction and training.<sup>6</sup> As the world must reimagine and reform healthcare, employment and education in the setting of the COVID-19 reality, global health education must also reimagine itself in response to these challenges.<sup>2 7</sup> In particular, it is imperative that academic global health practitioners and leaders rise to meet the educational inequities exposed by the pandemic and that the momentum for positive change is sustained.

Global health practitioners were among the most visible leaders in confronting pandemic-related challenges, playing critical roles in diverse activities such as establishing field hospitals, organising contact tracing efforts, and coordinating mass vaccination campaigns in the USA and beyond.<sup>8–11</sup> The applicability and value of skills such as resourcefulness, flexibility, cultural humility and understanding of costs and the social determinants of health further emphasised the continued value of global health education in pandemic response.<sup>1</sup> Unfortunately, the field of global health, including global health education, is also fraught with inequalities, including lack of reciprocity between partners in LMICs and HICs, an overburdening of already strained low-resource health systems with more trainees, and a colonialist pattern of behaviour in which leaders from HIC institutions often dictate global health priorities and activities in LMICs.<sup>12–14</sup> These concerns have led to recent calls to ‘de-colonise’ global health and address the field’s white supremacist and colonialist underpinnings.<sup>7 12 13 15–17</sup>

Ethical guidelines in global health education have been developed as strategies to ensure more balanced and equitable global health experiences, with a focus on educating global health trainees in best practices; however, the very composition of global health trainees is often problematic.<sup>5 13 18 19</sup> Although trainees from low-income families in HICs may express more interest in global health careers and opportunities, factors such as financial constraints associated with global health pursuits are perceived as major barriers to participation.<sup>20 21</sup> Additionally, despite ethical guidelines emphasising reciprocity and partnerships, global health trainees are disproportionately represented by privileged trainees from HICs travelling to LMICs, meanwhile many HIC institutions limit international trainees’ global health opportunities to shadowing.<sup>22</sup> Furthermore, during the COVID-19 pandemic, international travel itself became risky and ethically fraught and the need for social distancing to minimise exposure further limited opportunities for teaching and learning in clinical settings.<sup>4 7 15</sup> Border closures, quarantine requirements and sporadic emergency evacuations also significantly affected, and

at times hindered, movement of trainees around the globe.<sup>2 4</sup> The COVID-19 pandemic thus unveils already stark health inequities and challenges in the USA and worldwide, while also threatening already fragile attempts to address these inequities in global health education.

Adapting the application of global health skills and concepts from an international stage to a local focus represents an opportunity to address global health educational inequities during the pandemic and beyond. Operating through this ‘glocal’ lens is not a new concept and has been championed for decades by global health and public health leaders to move beyond the concept of global health serving only LMICs or low-income communities.<sup>5</sup> Similarly, as previously defined in public health literature, the term glocal does not imply favouring the local over the global, but rather an adaptation of global ideas or techniques to local realities.<sup>23–25</sup> Despite the growing body of literature promoting a move towards a glocal focus, global health programmes in HICs remain centred on inequities between HICs and LMICs, and the broad application and acceptance of glocal health within the field continue to be lacking.<sup>25 26</sup>

The COVID-19 pandemic has further compelled global health leaders and educators to re-examine their interpretation of global health education and look within by focusing trainee education on tackling inequities closer to home, developing global health skills while also collaborating with local communities and organisations. Immigrants and refugees; ethnic and racial minorities; incarcerated individuals; and lesbian, gay, bisexual, transgender, queer and/or questioning (LGBTQ+) people are a few of the many communities facing systematic barriers to health equity. Organisations that focus on supporting the health and well-being of these communities represent potential partners in global health education.<sup>7 25</sup> Indeed, many of the ubiquitous global health competencies discussed in the literature are directly applicable to such partnerships and include understanding the social, cultural and economic contexts as they affect patients’ perceptions and access to care; exploring the relationship of access to and quality of water, sanitation, food, and safety and healthcare access and outcomes; collaborating with partner organisations to strengthen community health while developing interprofessional and communication skills; and fine-tuning skills in adaptability and flexibility imperative to this line of work.<sup>27 28</sup> Focusing on local marginalised communities and collaborating with local organisations are not opportunities limited to HIC trainees. LMIC trainees can also benefit from opportunities to engage with their local organisations to better understand and combat health inequities. This glocal focus, both for HIC and LMIC trainees, could have lasting benefits as we discover its ethical and sustainability potential, allow for a wider array of trainee participation and support local partners.<sup>25</sup> Glocal health does not exclude or preclude international partnerships, but can potentially strengthen them, by broadening trainees’ understanding of global health inequities and expanding

access to global health education and practice, thereby increasing the pool of future global health providers and leaders.<sup>25</sup> In the following case vignettes and further detailed in [table 1](#), we present examples of how forced innovation and partnerships developed during the COVID-19 pandemic can further refine lasting advances in global health education.

### **CASE 1: LEVERAGING GLOBAL HEALTH EDUCATION IN A HIGH-INCOME COUNTRY—SUPPORTING THE PUBLIC HEALTH RESPONSE TO THE COVID-19 PANDEMIC IN HOLYOKE, MASSACHUSETTS, UNITED STATES**

In May 2020, as cases of COVID-19 increased throughout the USA, it became clear that existing public health systems were ill-prepared to respond to pandemics, especially at the local level.<sup>29</sup> It also became evident that there were stark racial, ethnic and economic disparities in COVID-19 case incidence and fatality rates nationally.<sup>30</sup> Local Boards of Health throughout Massachusetts, despite having a workforce with deep community ties, had limited resources at their disposition to effectively deploy pandemic response measures. In Massachusetts, several community-academic partnerships arose to pair community response efforts with academic expertise. In this vein, the Massachusetts General Hospital Center for Global Health partnered with the Board of Health of Holyoke to respond to the COVID-19 pandemic. Holyoke, a city in Western Massachusetts with a population of approximately 40 000 people, is a post-industrial, majority Latinx city with high levels of socioeconomic disadvantage. Dr Wilfredo Matias (author), then a global health equity medical resident, and other trainees from Boston-based global health programmes, were deployed to support Holyoke's COVID-19 response.<sup>31</sup> These trainees originated from programmes that provided training in the delivery of healthcare in underserved settings, including responding to disasters and epidemic diseases such as cholera and Zika, expertise that was lacking among public health entities in the USA at the time.<sup>31</sup> Global health trainees learnt from front-line public health providers about community challenges to health equity while leveraging their previous experiences and skills developed in global contexts to support local efforts. Through this partnership, they conducted a seroprevalence study documenting a more accurate prevalence of COVID-19 in the city.<sup>32</sup> The study highlighted important ethnic disparities, showing that the seroprevalence of COVID-19 antibodies was nearly twice as high among the Latinx population compared with the white population.<sup>32</sup> The team also created a bilingual COVID-19 data dashboard to collate local data, inform the public and tailor response efforts to current epidemiological trends.<sup>33</sup> The efforts of this team supported community-based COVID-19 response efforts initiated by the Board of Health, including expanding testing capacity, contact tracing, implementing COVID-19 mandates and supporting the city's emphasis on equity-informed

public health interventions.<sup>32–35</sup> This experience highlights two key themes: first, training in health equity and experience in global health result in a unique skill set that is as applicable for responding to epidemic disease and addressing inequities domestically as it is abroad. Second, while local resource-limited communities have historically been overlooked by global health infrastructure in HICs, expanding global health initiatives locally holds great potential to increase the educational richness and community impact of these programmes.

### **CASE 2: REPURPOSING EXISTING GLOBAL HEALTH INFRASTRUCTURE DOMESTICALLY IN A MIDDLE-INCOME COUNTRY—INTEGRATION OF SOCIAL SERVICE DOCTORS AND DEVELOPMENT OF A SOCIAL MEDICINE CURRICULUM AT A HARM REDUCTION CLINIC IN TIJUANA, MEXICO**

PrevenCasa is a community-based organisation in Tijuana, Mexico, which provides free care to underserved populations in the city's red-light district. As the clinic's medical coordinator, Dr Rebeca Cázares (author) supervises an array of clinical services including HIV care, harm reduction for people who inject drugs and/or engage in sex work, gender and sexual healthcare for LGBTQ+ individuals, and primary care for houseless individuals, migrants, and asylum seekers. Prior to the COVID-19 pandemic, PrevenCasa hosted rotating local and international medical students, residents and other volunteer healthcare professionals, many of whom were from the USA. Time commitment, frequency of 'visitation' and nature of trainee involvement varied greatly, from a group of local medical students spending a day a week as part of their preventive medicine class, to an OB/GYN resident from the USA travelling for 2 weeks of informal clinical experiences, to the establishment of partnerships with US residencies who sent residents for 1 week–3 month rotations (although on an inconsistent basis). Based on the success of the global health infrastructure and supervision model developed to accommodate local students and rotating international trainees, PrevenCasa applied to receive Mexican health professionals in training from different areas (medicine, nursing and nutrition) during their social service year, which is a licensing requirement in Mexico. The first generation of social service doctors (four) arrived in August 2020, nutritionists (two) in January 2021 and nurses (two) in August 2021, spending 6–12 months at PrevenCasa, and thus allowing more stability for trainees, local staff and patients. While the number of international trainees decreased dramatically with the advent of COVID-19, Mexican trainees continued their long-term social service commitments at PrevenCasa. These trainees have benefited from an enriched social medicine curriculum supported by the Kroc Institute Border Fellows programme grant and exposure to health advocacy alliances and global partnerships in addition to their supervised clinical activities.<sup>36</sup> By harnessing the strengths of an established global health education site and applying them to a domestic pool of trainees,

**Table 1** COVID-19 forced innovation case studies summary

Case	Project type	Partnership	Pre-COVID-19 structure	COVID-19 innovations	Future plans
1	<b>High-income country:</b> public health response to the COVID-19 pandemic	<b>Massachusetts General Hospital (MGH) Center for Global Health:</b> <ul style="list-style-type: none"> <li>► A centre which partners with diverse international communities and institutions for care delivery, training and research and offers global health education/ training to local and international health trainees.</li> </ul> <b>City of Holyoke Board of Health:</b> <ul style="list-style-type: none"> <li>► Local Board of Health for City of Holyoke, responsible for tracking infectious disease.</li> </ul>	<b>MGH Center for Global Health:</b> <ul style="list-style-type: none"> <li>► Focused on global partnerships including clinical rotations, surgical training, research capacity building, disaster response training and global health fellowships (for local and international nurses, residents and scientists).</li> </ul> <b>Holyoke Board of Health:</b> <ul style="list-style-type: none"> <li>► Implemented inspectional services/code enforcement for environmental health-related issues including housing, food safety, waste disposal, wastewater and drinking water (accomplished by Sanitarians).</li> <li>► Provided local infectious disease case management including follow-up, tracking and investigation (accomplished by public health nurses).</li> </ul>	<b>MGH Center for Global Health:</b> <ul style="list-style-type: none"> <li>► Embedded MGH global health trainees in local board of health operations, implemented a COVID-19 seroprevalence study and developed a bilingual COVID-19 data dashboard.</li> </ul> <b>Holyoke Board of Health:</b> <ul style="list-style-type: none"> <li>► Expanded Sanitarian role from primarily health code enforcement to include disease surveillance activities.</li> <li>► Collaborated with MGH Center for Global Health in COVID-19-related innovation including conducting research study and creating data dashboard.</li> </ul>	<b>MGH Center for Global Health:</b> <ul style="list-style-type: none"> <li>► Continue international projects.</li> <li>► Provide ongoing support for local board of health research goals and strengthening of community-based research efforts.</li> </ul> <b>Holyoke Board of Health:</b> <ul style="list-style-type: none"> <li>► Increase Holyoke's local community health capacity via shared service agreements with neighbouring boards of health.</li> <li>► Modernise code enforcement by incorporating data-driven approaches used during COVID-19 research.</li> <li>► Increase the organisation's focus on health equity by expanding direct funding of positions and programmes that advance health equity.</li> </ul>

Continued



**Table 1** Continued

Case	Project type	Partnership	Pre-COVID-19 structure	COVID-19 innovations	Future plans
2	Middle-income country: domestic health equity training	<p><b>Prevenca:</b></p> <ul style="list-style-type: none"> <li>► A community health organisation in Tijuana, Mexico, which provides HIV care and harm reduction services to local underserved communities.</li> </ul> <p><b>Mexican Medical Social Service Program (Pasantia):</b></p> <ul style="list-style-type: none"> <li>► A mandatory year of social service following health professional school designed to provide a safety net for the underserved (a licensing requirement in Mexico).</li> </ul>	<p><b>Prevenca:</b></p> <ul style="list-style-type: none"> <li>► Hosted rotating local and international medical students, residents and other volunteer healthcare professionals, many from the USA.</li> <li>► Visiting global health trainees had variable duration of rotation time and varying degrees of Spanish fluency.</li> </ul>	<p><b>Prevenca:</b></p> <ul style="list-style-type: none"> <li>► Applied to receive Mexican health professionals in training from different areas (medicine, nursing and nutrition) during their 'pasantia' year.</li> <li>► Graduates are fluent in Spanish and spend 6–12 months at a time at Prevenca, allowing more stability for trainees, local staff and patients.</li> <li>► Prevenca's medical coordinator received a grant from a US-based academic partner through a Justice Border Fellow programme to allow for growth and formalisation of a Social Medicine Curriculum for social service trainees.<sup>36</sup></li> </ul>	<p><b>Prevenca:</b></p> <ul style="list-style-type: none"> <li>► Continue to expand the social medicine curriculum for social service trainees, incorporating exposure to health advocacy alliances and global partnerships through medical education grant.</li> <li>► Encourage international rotators to work closely in partnership with the social service doctors, fostering exchange of knowledge and skills.</li> <li>► Upcoming book chapter with detailed content on lessons learnt in 'Voices from the Front Lines: The Pandemic and the Humanities'.<sup>42</sup></li> </ul>

Continued

Table 1 Continued

Case	Project type	Partnership	Pre-COVID-19 structure	COVID-19 innovations	Future plans
3	High-income country: migrant health elective	<p><b>Johns Hopkins Global Health Leadership Program (GHLP):</b></p> <ul style="list-style-type: none"> <li>▶ Interprofessional advanced clinical elective focused on training future leaders in global health through an exchange of cultural, clinical, and educational knowledge and skills.</li> </ul> <p><b>Center for Salud/Health and Opportunities for Latinos:</b></p> <ul style="list-style-type: none"> <li>▶ Outreach organisation at Johns Hopkins dedicated to promoting equity in health and opportunity for Latinx community in the Baltimore metropolitan area.</li> </ul>	<p><b>GHLP:</b></p> <ul style="list-style-type: none"> <li>▶ Established international electives with longstanding relationships with organisations in India, Nepal and Peru available to third-year and fourth-year Johns Hopkins students with a comprehensive pre-departure curriculum/orientation and funding.</li> </ul>	<p><b>GHLP:</b></p> <ul style="list-style-type: none"> <li>▶ Piloted a hybrid online/in-person advanced elective in migrant health and human rights in February 2021.</li> <li>▶ Elective students were exposed to medical-legal partnerships through training and participation in virtual forensic evaluations of asylum seekers both locally and transnationally, in partnership with local and international legal organisations coupled with direct service supporting COVID-19-related outreach to the local undocumented Latinx population in Baltimore.</li> <li>▶ Developed a longitudinal patient-centred refugee health elective based on a previously established model and with migrant health and human rights elective feedback.<sup>43</sup></li> </ul>	<p><b>GHLP:</b></p> <ul style="list-style-type: none"> <li>▶ Incorporate new community partners (for example, local organisation supporting forced migrants) and create new longitudinal client-centred experiences for students, who can sign up to partner with clients to serve as health navigators, providing education/advocacy over the course of a year.</li> <li>▶ Develop new leadership opportunities in the asylum clinic for students who have completed the elective, such as creating a peer coaching model where students can help others to ensure their success when initially volunteering with the clinic.</li> <li>▶ Continue to offer international rotations through longstanding collaborations.</li> </ul>

Continued

**Table 1** Continued

Case	Project type	Partnership	Pre-COVID-19 structure	COVID-19 innovations	Future plans
4	<b>High and low middle-income countries:</b> curriculum revision for medical/surgical subspecialty training	<b>Urogynecology Global Health Initiative (UGH):</b> ► US-based organisation focused on expanding urogynaecology education, training and service in the Dominican Republic (DR).  <b>Latin American Pelvic Floor Association (ALAPP):</b> ► International organisation supporting pelvic floor medicine education in Latin America and the Caribbean through courses, workshops, conferences and online access to scientific journals.	<b>UGH:</b> ► Conducted in-person urogynaecology intensive training for OB/GYN and urology residents and attendings in the DR with workshops and yearly patient evaluations/surgical trips, under supervision of US-based urogynaecologists.  <b>ALAPP:</b> ► Offered online recorded and live courses, access to international journals and an international week-long in-person urogynaecology conference with workshops and hands-on training for Latin American and Caribbean members.	<b>UGH and ALAPP:</b> ► Collaborated to create a longitudinal, year-long, free, virtual urogynaecology course available to healthcare providers in Latin America and the Caribbean, with presentations from international and multidisciplinary experts.  <b>UGH:</b> ► Supplemented virtual longitudinal course with hybrid model of surgical simulation and virtual journal club discussions and surgical 'video cafés' while elective surgeries were suspended.	<b>UGH and ALAPP:</b> ► Continue to offer longitudinal urogynaecology course with yearly improvements (eg, in the 2022 course, each topic was presented by a multidisciplinary panel instead of a single expert).  ► Offer regional urogynaecology intensive hands-on training with local and international experts and local trainees for a discounted price. <sup>44</sup>  <b>UGH:</b> ► Formalise and expand surgical simulation and journal club curriculum to other countries in Latin America and the Caribbean.  ► Include innovative technology, such as Tobii glasses (Tobii Pro, Reston, Virginia, USA), which enables the wearer to live stream and record video images to augment distance teaching in real-time settings for immersive learning and enable virtual consultation. <sup>45 46</sup>  ► Resume international clinical-surgical activities while maintaining new curriculum.  ► In process of writing detailed account of COVID-19-related innovations as potential model for other global surgery training programmes.

Prevensa is training healthcare providers in patient-centred and community-oriented healthcare focusing on social determinants of health and advocacy for their patients. The success of this organisation suggests global health programmes in LMICs can and should adapt their curricula to attract and prioritise local trainees, thus emphasising LMIC priorities and local capacity building.

### **CASE 3: ADAPTING GLOBAL HEALTH EDUCATION AND TECHNOLOGY TO REACH NEW POPULATIONS IN A HIGH-INCOME COUNTRY—DEVELOPMENT OF A MIGRANT HEALTH AND HUMAN RIGHTS ELECTIVE IN BALTIMORE, MARYLAND, UNITED STATES**

In response to the major disruption in international travel, which effectively suspended existing international electives in India, Nepal and Peru, the Johns Hopkins Global Health Leadership Program piloted a new hybrid online/in-person advanced elective in migrant health and human rights in February 2021 taught by Dr C Nicholas Cuneo and Dr Grace Chen (authors).<sup>37</sup> The elective was designed to provide students with a foundation in the multidisciplinary field of migrant health, along with an enriched understanding of international human rights and reproductive justice. Elective students were exposed to medical-legal partnerships through training and participation in virtual forensic evaluations of asylum seekers both locally and transnationally, in partnership with local and international legal organisations. This clinical experience was coupled with direct service supporting COVID-19-related outreach to the local undocumented Latinx population in Baltimore, which had been disproportionately affected by the pandemic, through partnership with the Johns Hopkins Center for Salud/Health and Opportunity for Latinos. These experiences were further complemented by faculty-facilitated discussions, interprofessional guest lectures, readings, films/documentaries and online modules, followed by an optional extended policy experience. Each student participated in a total of two to three virtual forensic evaluations and was responsible for preparing at least one draft affidavit. A total of four students applied, of whom three were selected for the advanced elective, in line with numbers for previous international rotations. Two students elected to extend their participation for an additional 3 weeks, over which they were embedded with a national non-governmental organisation that serves immigrant survivors fleeing gender-based violence, where they participated in additional supervised advocacy efforts and gained experience in persuasive writing, publishing an opinion editorial for a regional paper in support of a statewide bill to ban child marriage.<sup>37</sup> Course feedback from the students was universally positive based on subsequent anonymous student evaluations. Based on the success of the initial pilot, including positive feedback from our community partners, the programme has since expanded locally to include other longitudinal partnerships, allowing student collaboration as health advocates

for immigrant asylum seekers and survivors of trafficking with special health needs. Over 30 medical students applied for this opportunity in its first year, of whom 15 were able to be accommodated, and the programme was expanded to include 25 students in its second year. This course reflects successful adaptation of existing global health educational infrastructure to the COVID-19 landscape through a focus on migrant health, in addition to the use of technology and virtual learning to maintain a global reach despite travel restrictions.

### **CASE 4: DISRUPTING TRADITIONAL EDUCATIONAL CONVENTIONS TO EXPAND ACCESS TO CRITICAL TRAINING THROUGH HIGH-INCOME AND LOW-INCOME COUNTRIES—RECONCEPTUALISING AN IN-PERSON WORKSHOP EDUCATION MODEL TO A LONGITUDINAL CURRICULUM TO INCREASE SUBSPECIALTY CONTENT AND PROCEDURAL LEARNING**

Dr Abner Santos (author) and his team at the Latin American Association of Pelvic Floor (ALAPP) in collaboration with Urogynecology Global Health Initiative (UGHI), led by Dr Anna Pancheshnikov (author), a US-based urogynaecology trainee, transformed a formerly in-person, postgraduate workshop held annually into a longitudinal, year-long, virtual urogynaecology training programme for gynaecologists and urologists across Latin America. In 2020, the first year of the course, 18 international urogynaecology, colorectal, urology and pelvic floor physical therapy experts volunteered their expertise to facilitate biweekly sessions for more than 350 Latin American healthcare professionals. In addition to co-creating and co-leading the longitudinal course available throughout Latin America and the Caribbean, UGHI piloted additional curriculum innovations in the Dominican Republic (DR), including bimonthly virtual journal clubs for review of landmark urogynaecology literature, bimonthly virtual 'video cafés' for discussion of surgical techniques and perioperative complication management, and a hybrid model of in-person/virtual surgical skills simulation activities. Using a network of local experts and course alumni, the small-group, in-person simulation sessions consisted of instructional videos and facilitated practice of vaginal surgical skills including vaginal hysterectomy and incontinence sling placement using home-made, low-cost models. Skill development was monitored with periodical synchronous Zoom sessions where facilitators in the DR and the USA were able to oversee trainee skill development. The longitudinal urogynaecology course embraces the momentum for change prompted by COVID-19 restrictions to create innovation in procedural-based subspecialty education in LMICs in Latin America and the Caribbean. By using online education platforms, incorporating technology, and developing local, regional, and international relationships, this model increases leader, educator and trainee inclusivity and access while retaining focus on supervised procedural learning.



## CONCLUSION

As the world continues to reopen its borders and countries relax their travel and gathering restrictions, there is no more opportune time to reinvent global health education than now.<sup>38 39</sup> A recent opinion from a global health trainee collaborative highlighted the many ways in which the global health community has failed to, or too slowly responded to the needs of trainees.<sup>40</sup> The need to change is critical and is voiced by global health trainees, educators, leaders and partners alike.<sup>41</sup> To this end, the global health education community should consider the important learning points highlighted by the four case studies presented.

- ▶ By partnering with local organisations, as demonstrated by the Holyoke COVID-19 response collaboration and by Prevensca's local healthcare professionals' training initiative, global health programmes in both high-income and low-income settings can prioritise local patient, provider and community needs, while focusing trainee education on health disparities and social determinants of health in their own context.
- ▶ By using web-based technologies, as exhibited by the creation of the Johns Hopkins Migrant Health and Human Rights Elective and the UGHI-ALAPP Urogynecology Longitudinal Course, global health leaders can incorporate educational innovation not only to circumvent travel restrictions and logistical barriers, but also to increase inclusion of trainees and partnering institutions from LMICs.
- ▶ By reimagining training curricula, with the incorporation of global partnerships as described by the Johns Hopkins elective, and transformation of short-term, in-person activities to virtual or hybrid longitudinal courses as showcased by the UGHI-ALAPP collaboration, global health educators can reinvent global health learning opportunities as truly accessible, engaging and inviting to trainees from diverse backgrounds.

## Author affiliations

<sup>1</sup>Division of Female Pelvic Medicine and Reconstructive Surgery, Department of Gynecology and Obstetrics, Johns Hopkins Medicine, Baltimore, Maryland, USA

<sup>2</sup>UGHI: Urogynecology Global Health Initiative, Santo Domingo, Dominican Republic

<sup>3</sup>Department of Pediatrics and Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

<sup>4</sup>Migrant Health and Human Rights Program, Center for Public Health and Human Rights, Johns Hopkins University Bloomberg School of Public Health, Baltimore, Maryland, USA

<sup>5</sup>Division of Infectious Diseases and Center for Global Health, Massachusetts General Hospital, Boston, Massachusetts, USA

<sup>6</sup>Division of Infectious Diseases, Brigham and Women's Hospital, Boston, Massachusetts, USA

<sup>7</sup>Primary Care Physician and Medical Coordinator, Prevensca, AC, Tijuana, Mexico

<sup>8</sup>Division of Urogynecology, Department of Gynecology and Obstetrics, Hospital Centro Médico de Guatemala, Guatemala City, Guatemala

<sup>9</sup>Scientific Committee, ALAPP (Latin American Association of Pelvic Floor), Guatemala City, Guatemala

<sup>10</sup>Health Inspector, Holyoke Board of Health, Holyoke, Massachusetts, USA

<sup>11</sup>Global Health Leadership Program, Johns Hopkins Medicine, Baltimore, Maryland, USA

**Twitter** Wilfredo R Matias @DrWilfredoM

**Acknowledgements** We thank leaders and participants of the global health and global health education initiatives described for their input and support.

**Contributors** AP and CCGC first collaborated to start this paper. CNC and WRM started a similar paper independently and then joined forces to create a first draft. RC-A, AGSL and RMP joined to write their case studies and further develop the paper. All authors contributed to the development of this paper, commenting, editing and approving the final version. AP is the first author and corresponding author.

**Funding** WRM was supported by the National Institute of Allergy and Infectious Diseases (grant number T32 AI007433). The University of San Diego's Kroc Institute for Peace and Justice provided RC-A a grant through their Border Fellows Program to allow for the growth and formalisation of the Social Medicine Curriculum at Prevensca.

**Disclaimer** Funding sources played no role in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the paper for publication.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Ethics approval** Not applicable.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** Data sharing not applicable as no datasets generated and/or analysed for this study.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

## ORCID iDs

Anna Pancheshnikov <http://orcid.org/0000-0003-3512-4313>

C Nicholas Cuneo <http://orcid.org/0000-0002-5824-2243>

Wilfredo R Matias <http://orcid.org/0000-0002-5371-1354>

## REFERENCES

- 1 Coria AL, Rabin TL, Rule ARL, *et al*. Global health crisis, global health response: how global health experiences prepared north american physicians for the COVID-19 pandemic. *J Gen Intern Med* 2022;37:217–21.
- 2 Galvin S, Neubauer LC, Leonard WR, *et al*. Reassessing global health education in the age of COVID-19. *Acad Med* 2021;96:e20.
- 3 Ivers LC, Walton DA. COVID-19: global health equity in pandemic response. *Am J Trop Med Hyg* 2020;102:1149–50.
- 4 Cooper MG, Karu AW, Bowden CD. COVID-19 and global health: influences and implications for education and training support in low- and middle-income countries. *Anaesth Intensive Care* 2020;48:262–5.
- 5 Koplan JP, Bond TC, Merson MH, *et al*. Towards a common definition of global health. *The Lancet* 2009;373:1993–5.
- 6 What is global health? n.d. Available: <https://globalhealth.duke.edu/what-global-health>
- 7 Rabin TL, Mayanja-Kizza H, Barry M. Global health education in the time of COVID-19: an opportunity to restructure relationships and address supremacy. *Acad Med* 2021;96:795–7.
- 8 Peretz PJ, Islam N, Matiz LA. Community health workers and covid-19 - addressing social determinants of health in times of crisis and beyond. *N Engl J Med* 2020;383:e108.
- 9 An army of coronavirus tracers takes shape in massachusetts. 2022. Available: <https://www.nytimes.com/2020/04/16/us/coronavirus-massachusetts-contact-tracing.html>
- 10 Shretta R, Hupert N, Osewe P, *et al*. Vaccinating the world against COVID-19: getting the delivery right is the greatest challenge. *BMJ Glob Health* 2021;6:e005273.
- 11 Vervoort D, Ma X, Luc JGY. COVID-19 pandemic: a time for collaboration and a unified global health front. *International Journal for Quality in Health Care* 2021;33.
- 12 Crump JA, Sugarman J. Ethical considerations for short-term experiences by trainees in global health. *JAMA* 2008;300:1456–8.
- 13 Adams LV, Wagner CM, Nutt CT, *et al*. The future of global health education: training for equity in global health. *BMC Med Educ* 2016;16:296.

- 14 Crane J. Scrambling for Africa? universities and global health. *The Lancet* 2011;377:1388–90.
- 15 Shamasunder S, Holmes SM, Goronga T, *et al.* COVID-19 reveals weak health systems by design: why we must re-make global health in this historic moment. *Global Public Health* 2020;15:1083–9.
- 16 Schneider H, Maleka N. Patterns of authorship on community health workers in low-and-middle-income countries: an analysis of publications (2012–2016). *BMJ Glob Health* 2018;3:e000797.
- 17 Abimbola S, Pai M. Will global health survive its decolonisation? *The Lancet* 2020;396:1627–8.
- 18 Withers M, Li M, Manalo G, *et al.* Best practices in global health practicums: recommendations from the association of Pacific rim universities. *J Community Health* 2018;43:467–76.
- 19 Crump JA, Sugarman J. Working group on ethics guidelines for global health training (WEIGHT). ethics and best practice guidelines for training experiences in global health. *Am J Trop Med Hyg* 2010;1178–82.
- 20 Cox JT, Kironji AG, Edwardson J, *et al.* Global health career interest among medical and nursing students: survey and analysis. *Ann Glob Health* 2017;83:588–95.
- 21 Jeffrey J, Dumont RA, Kim GY, *et al.* Effects of international health electives on medical student learning and career choice: results of a systematic literature review. *Fam Med* 2011;43:21–8.
- 22 Rohrbaugh R, Kellett A, Peluso MJ. Bidirectional exchanges of medical students between institutional partners in global health clinical education programs: putting ethical principles into practice. *Ann Glob Health* 2016;82:659–64.
- 23 Roudometof V. The glocal and global studies. *Globalizations* 2015;12:774–87.
- 24 Kickbusch I. Global + local = glocal public health. *J Epidemiol Community Health* 1999;53:451–2.
- 25 Rowthorn V. Global/local: what does it mean for global health educators and how do we do it? *Ann Glob Health* 2015;81:593.
- 26 Atkins S, Banerjee AT, Bachynski K, *et al.* Using the COVID-19 pandemic to reimagine global health teaching in high-income countries. *BMJ Glob Health* 2021;6:e005649.
- 27 Battat R, Seidman G, Chadi N, *et al.* Global health competencies and approaches in medical education: a literature review. *BMC Med Educ* 2010;10:94.
- 28 Jogerst K, Callender B, Adams V, *et al.* Identifying interprofessional global health competencies for 21st-century health professionals. *Ann Glob Health* 2015;81:239–47.
- 29 Wallace M, Sharfstein JM. The patchwork U.S. *Public Health System N Engl J Med* 2022;1–4.
- 30 Mackey K, Ayers CK, Kondo KK, *et al.* Racial and ethnic disparities in COVID-19-related infections, hospitalizations, and deaths. *Ann Intern Med* 2021;174:362–73.
- 31 Palazuelos D, Dhillon R, Nelson AK, *et al.* Training toward a movement: career development insights from the first 7 years of a global health equity residency. *J Grad Med Educ* 2018;10:509–16.
- 32 Matias WR, Fulcher IR, Sauer SM, *et al.* Disparities in SARS-cov-2 infection by race, ethnicity, language, and social vulnerability: evidence from a citywide seroprevalence study in massachusetts, USA. *J Racial Ethn Health Disparities* 2023;1–11.
- 33 Holyoke COVID-19 dashboard. City of Holyoke; 2022. Available: <https://www.holyoke.org/holyoke-covid-19-dashboard/>
- 34 Elnaïem AD. Intersectionality in the time of COVID-19: dispatches from a contact tracer. *Am J Public Health* 2021;111:93–4.
- 35 Suliman S, Matias WR, Fulcher IR, *et al.* Evaluation of the access bio carestart rapid SARS-cov-2 antigen test in asymptomatic individuals tested at a community mass-testing program in Western Massachusetts. *Sci Rep* 2022;12.
- 36 Rebeca 2021-2022 kroc IPJ border fellow. 2022. Available: [https://www.youtube.com/watch?v=\\_BT\\_89qF0vo](https://www.youtube.com/watch?v=_BT_89qF0vo)
- 37 Cuneo CN, Chen CCG. Development of a novel hybrid global health elective in migrant health and human rights. *Pediatrics* 2022.
- 38 Paul E, Brown GW, Ridde V. COVID-19: time for paradigm shift in the nexus between local, national and global health. *BMJ Glob Health* 2020;5:e002622.
- 39 Khan M, Abimbola S, Aloudat T, *et al.* Decolonising global health in 2021: a roadmap to move from rhetoric to reform. *BMJ Glob Health* 2021;6:e005604.
- 40 Krugman DW, Manoj M, Nassereddine G, *et al.* Transforming global health education during the COVID-19 era: perspectives from a transnational collective of global health students and recent graduates. *BMJ Glob Health* 2022;7:e010698.
- 41 Büyüm AM, Kenney C, Koris A, *et al.* Decolonising global health: if not now, when? *BMJ Glob Health* 2020;5:e003394.
- 42 Cuneo CN, Cazares R. Across a border, a pandemic unfolds. In: Peeler K, Ratzan R, eds. *Voices from the Front Lines: The Pandemic and the Humanities*. San Francisco, CA: University of California Medical Humanities Press. 2023.
- 43 Bernhardt LJ, Lin S, Swegman C, *et al.* The refugee health partnership: A longitudinal experiential medical student curriculum in refugee/asylee health. *Acad Med* 2019;94:544–9.
- 44 Simposio – alapp. n.d. Available: <https://alapp.org/simposio/>
- 45 Bolton WS, Aruparayil N, Quyn A, *et al.* Disseminating technology in global surgery. *Br J Surg* 2019;106:e34–43.
- 46 Sánchez-Ferrer ML, Grima-Murcia MD, Sánchez-Ferrer F, *et al.* Use of eye tracking as an innovative instructional method in surgical human anatomy. *J Surg Educ* 2017;74:668–73.