

## Should international medical electives to resource-poor countries continue during COVID-19?

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The coronavirus disease 2019 (COVID-19) pandemic has put pressure on health systems around the world and caused widespread disruption to medical education and medical electives. COVID-19 has stretched across 213 countries and territories, indiscriminately infecting high and low-income areas.<sup>1</sup> High-income countries, such as the United Kingdom (UK), are qualifying final year medical students early, giving provisional registration to allow students to volunteer as doctors. Other cohorts of medical students have been removed from clinical environments and given an indefinite period to self-isolate. Electives typically last 4-12 weeks and offer students exposure to different health systems and training opportunities, and often constitute a significant physical and financial resource gain for host institutions.<sup>2</sup>

COVID-19 has affected large parts of the world, as of April 24<sup>th</sup> 2020 there are 2.7 million cases, and the virus has now reached west Africa.<sup>1</sup> Countries in west Africa are some of the poorest in the world, with eight in the bottom 10% of the United Nations 2019 human development index ranking. The latest World Health Organisation (WHO) readiness assessments for African countries report only four west African countries have responded as adequately prepared for COVID-19.<sup>3</sup> A rapid expansion of cases in this region is likely to overwhelm health systems, which are already limited by lack of personal protective equipment (PPE), intensive care capacity and healthcare professionals. In Benin for example, there are 0.2 doctors per 1000 people, compared to 2.8 per 1000 in the UK.<sup>4</sup> Our concerns are that as COVID-19 spreads through low-income countries there will be a dearth of healthcare professionals, particularly if similar measures are taken to remove local medical students from clinical settings.

Recently, Renaud-Roy et al.<sup>5</sup> offered the perspective of host institutions in Benin on the impact of international medical electives. The article provides statements from Beninese

health professionals, highlighting that these institutions often have staffing difficulties and count on students to complement the lack of healthcare workers. Similarly, Kumwenda et al.<sup>6</sup> and Fotheringham et al.<sup>7</sup> have conducted semi-structured interviews with elective hosts in sub-Saharan African countries, concluding that students on elective are a huge asset. By triaging patients, taking histories, examining, recording observations, ordering investigations, collecting medicines, re-stocking supplies and record keeping they support local staff. Students can closely follow-up patients, alerting local professionals to arising needs and ensuring they do not suffer neglect. They also often contribute to existing research projects, development of site-specific treatment protocols, and bring a financial incentive for host institutions that may be used towards hospital activities.<sup>7</sup>

Students on elective offer a medical workforce that may become essential when local healthcare services in resource-poor countries become overwhelmed. In the UK alone there are approximately 4000 medical students a year that undertake an elective in a developing country.<sup>6</sup> Evidence shows that host institutions already rely on international students,<sup>5-7</sup> and there is evidence of their added value during sudden onset disasters including infectious diseases epidemics; during the measles outbreak across the Pacific islands in 2019 international students on elective were crucial to maintenance of service delivery and eventual recovery. COVID-19 has spread rapidly through Asia, Europe and America. If it spread as quickly through resource-poor countries, such as those in sub-Saharan Africa, there will be widespread loss of life. Many high-income countries are preparing an international response to aid vulnerable low-income countries, and we strongly believe this response will be augmented by students on elective.

We call on international regulatory authorities to allow medical students the opportunity to volunteer abroad in low-resource settings, just as many are now able to contribute to their own healthcare systems. In the UK, some students will choose to volunteer within the National Health Service (NHS), but allowing students who are willing to work overseas will not deplete the UK's needs as they are not currently being recruited to an NHS role. There are understandable concerns including: increased risk of infection due to lack of PPE, current travel restrictions, availability of medical indemnity and the physical and mental toll of working in extreme conditions.

All international travel carries health risks. Students on elective are no exception, with clinical experiences in resource-poor settings increasing exposure to physical injury (e.g. motor vehicle collisions), infectious illness (e.g. malaria, HIV, schistosomiasis, tuberculosis) and mental health issues.<sup>8</sup> Some of these injuries are exacerbated by increased risk taking behaviour, including consumption of recreational drugs and alcohol, which are often a feature of student travel.<sup>8</sup> Medical students may mitigate many of these risks by preparing for high risk situations, and in the case of COVID-19, appropriate use of PPE. To safely travel abroad students will also require elective insurance and medical indemnity policies. These are uncharted waters, however leading providers such as Wesleyan, the Medical Defence Union (MDU) and the Medical Protection Society (MPS) should work with medical schools to provide specialist cover for these unique scenarios.

Many high-income countries are experiencing an unprecedented boom in cross-industry cooperation to re-engineer and re-purpose production lines to produce ventilators, intensive care equipment and PPE. The UK government has released a policy paper outlining the many industries involved in manufacturing PPE, the national distribution network involving

specialist couriers, the NHS and the Armed Forces, and future supply preparations.<sup>9</sup> A response on this level is not possible in low-income countries, and we call on these manufacturers to extend their production to help equip students with adequate PPE in efforts not to drain local resources. Despite adequate use of PPE, there is still risk of infection, and with current travel restrictions there are understandable concerns that there will be issues with medical repatriation. This is an evolving situation and there should be ongoing discussion with the Foreign and Commonwealth Office (FCO), however there is precedent for medical repatriation during COVID-19. The UK Foreign Secretary and Secretary of State for Transport have recently worked with airlines to charter flights led by the FCO to help stranded British travellers, flying to countries including Tunisia and Ghana.

Despite the WHO's advice that countries should not apply travel or trade restrictions to areas experiencing COVID-19 outbreaks, there has been widespread shutdown of international borders and airline services.<sup>10</sup> Travel restrictions are a disease control strategy attractive to policy makers as a way to calm public anxiety toward foreign contagions, however they are often an ineffective infection control measure that may do more harm than good as movement of essential medical personnel and supplies are inevitably restricted.<sup>10,11</sup> The WHO has highlighted these restrictions in Africa as potentially devastating, and as a result the World Food Programme (WFP) and WHO are planning a network of 'air bridges' that will bring medical supplies and personnel to struggling countries.<sup>10</sup>

Students should be prepared for the possibility of distrust from the local population who may view their arrival as increasing their risk of contracting COVID-19. Evidence shows that students working in teams on elective increases clinical ability and encourages peer support.<sup>6</sup> By opening the opportunity on a volunteer basis there will be a self-selective component for

the most dedicated, and by encouraging teams of students to group together, there will be both additional support and logistical advantages. These students will require pre-departure training, including briefs on local health systems, correct use of PPE, management of COVID-19 patients, risk assessment and basic local language skills. Many countries are likely to require international students to isolate for up to 14 days upon arrival. This is a prime opportunity for training and to contribute to remote audit and research, an essential part of the WHO epidemiological understanding of the pandemic. COVID-19 is catalysing innovation in medical education, with many institutions producing rapidly updating freely available COVID-19 clinical information in multiple languages. Clinicians are already benefiting from these initiatives, and they can be easily repurposed for pre-departure training.

A similarly radical approach to medical student involvement in the COVID-19 response has been proposed in the USA; suspending the first year of medical school for one year and giving the incoming 20,000 medical students the opportunity to join a national service programme for public health.<sup>12</sup> The proposed plan recommends incoming medical students undergo training in infectious diseases epidemiology, management and outbreak response, before deploying to local public health departments. Preparing policy recommendations now for integrating medical students into national and international responses will not only bolster the current workforce but improve preparedness for future pandemics. These recommendations may serve as a framework to allow other students from allied health professions, including nursing, radiography and medical engineering the opportunity to join the international response and contribute to the workforce, also offering novel opportunities for interprofessional learning.

It has been argued that much of international medical volunteering is done for the wrong reasons.<sup>13</sup> There is no doubt that collaborations between western and local health professionals can successfully improve local healthcare in a mutually beneficial way. However, ensuring good ethical practice and avoiding medical tourism is an ongoing concern. Disaster aid is different from mainstream medical volunteering, and during this pandemic there are opportunities to strengthen relationships between host institutions and medical schools, implementing plans for future partnerships. This response will require collaboration between medical schools and overseas aid, for example, in the UK through the Department for International Development (DFID) in the same way Emergency Medical Teams are coordinated for disaster relief. Innovation in medical education is being utilised during this pandemic, with online resources becoming the new norm. We encourage medical schools to integrate these resources into curriculums, allowing students the flexibility to join international efforts and plan for a delayed return to formal teaching. Supplementing learning with online tools will help mitigate the negative sequelae of missed teaching during COVID-19.

Electives are an essential part of both medical education and global health, and during this uncertainty we strongly believe that medical students should be given the opportunity to volunteer to augment international aid efforts in low-income countries. Students who participate in developing countries develop a greater appreciation of the importance of public health and increase their likelihood of working with underserved populations in the future. Resource-poor countries, such as those in west Africa, cannot afford the physical and financial loss of cancelling electives. We must respond to this pandemic and put in place measures to prepare for future outbreaks. Electives are crucial to the training of future

clinicians and during these unprecedented times the temporary workforce they provide may help support struggling health systems.

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