# Cardiology in the Young

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## **Letter to the Editor**

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#### Author for correspondence:

Dominique Vervoort, Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe Street, Baltimore, MD 21205, USA. Tel: +1 857 415 9747. E-mail: vervoortdominique@hotmail.com

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# Leveraging e-learning for medical education in low- and middle-income countries

Xiya Ma<sup>1</sup> and Dominique Vervoort<sup>2</sup> ©

<sup>1</sup>Faculty of Medicine, Université de Montréal, Montréal, Québec, Canada and <sup>2</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Tretter et al. are to be applauded for their commitment to developing Heart University and providing a detailed overview thereof.<sup>1</sup> As they proclaim, "Heart University aims to be 'the go-to online resource' for e-learning in CHD and paediatric-acquired heart disease", reaching full speed amidst the COVID-19 pandemic – a time in which medical education is forced to shift to online learning. Heart University has included a notable focus on "Cardiology in Low- and Middle-Income Countries", and it is exactly there where its impact may be highest – far beyond the era of COVID-19.

Disparities in access to comprehensive cardiovascular care for children exist at all levels and is particularly visible in skilled workforce availability.<sup>2,3</sup> In low- and middle-income countries, limited training programmes exist to train cardiologists and cardiac surgeons, and especially so with a paediatric focus. This is further complicated by the limited training of anaesthesiologists, nurses, and other healthcare professionals in paediatric cardiac management. Continued medical education is either absent or commonly has to be obtained abroad, traditionally with substantial direct and opportunity costs. As nearly half of the population in Sub-Saharan Africa owns a smartphone and internet connectivity increasingly reaches communities in the last mile, opportunities arise to leverage digital health technologies and online medical education platforms.<sup>4</sup>

Positive attitudes towards the use of e-learning modalities in low- and middle-income countries have been illustrated prior and may be leveraged in the fields of paediatric cardiology and cardiac surgery.<sup>5</sup> Critical components to enable and scale e-learning platforms in low- and middle-income countries include:

*Open-access information*: removing paywalls and user and subscription fees associated with the software;

*User-friendly operability*: easy and gentle learning curve to promote more rapid and wide-spread adoption;

*Smartphone compatibility*: given the diffuse spread of smartphones, comparably lower device costs, and functionality as a pocket resource, smartphones are preferred over desktop-only platforms;

Low-bandwidth needs: although internet connectivity is growing, high-speed internet and large-data mobile plans are associated with higher user fees;

*Self-paced learning*: asynchronous (i.e., not only live or time-restrictive) training modules, able to accessed by healthcare professionals when time is available amidst busy clinical schedules;

Discussion- and case-based learning: the lack of in-person supervision may be substituted by discussion groups and the utilisation and crowdsourcing of clinical cases to better inform local contexts, navigate resource constraints, and manage atypical pathologies or disease processes;

Multiple languages: global health, academia, and international medical education are, traditionally, anglophone-skewed; maximising the impact of e-learning platforms in low- and middle-income countries includes the translation in multiple languages other than English, including, where possible, local languages.

Conventional medical education, while having important advantages including real-time discussions, hands-on teaching, and expert oversight, has constraints in terms of rapidly scaling (non-procedural) medical education in large numbers. Developments such as Heart University ought to be leveraged and scaled in order to provide equal opportunities for continued medical education for healthcare professionals across the globe, and, in turn, optimising the quality and scope of care delivery.

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Conflicts of Interest. None.

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