

## Going rural – protracted immersion or toe-wetting: Does it matter?

Universal access to healthcare mandates that all people worldwide have access to comprehensive healthcare services, without suffering financial hardship.<sup>[1]</sup> However, unless the severe shortages and inequitable distribution of healthcare workers, especially in many low- and middle-income countries, are addressed,<sup>[2,3]</sup> universal access will, similar to 'Health for all by the year 2000', go down in history as a desirable but unattainable goal. The dearth of healthcare workers follows an 'inverse care law',<sup>[4]</sup> with the direst shortages in areas of greatest need, mostly rural areas.<sup>[2,3]</sup> In a bid to address the challenge in sub-Saharan Africa, many new medical schools with larger class sizes have sprung up in the past 20 - 30 years.<sup>[5,6]</sup>

There is strong evidence, mostly emanating from the USA, Australia, the Philippines, Thailand and Canada, linking rural-based training of healthcare workers with increased retention.<sup>[7-10]</sup> Consequently, there has been an increase in curricular innovations to incorporate or strengthen rural- and community-based training in sub-Saharan Africa. Recent investments by the US President's Emergency Plan For AIDS Relief (PEPFAR) to support medical and nursing institutions in sub-Saharan Africa, through the Medical Education Partnership Initiative (MEPI) and the Nursing Education Partnership Initiative (NEPI), respectively, have added further impetus to curricular innovations aimed at promoting retention of graduates in rural areas and primary care.<sup>[11-13]</sup> The funding has supported infrastructure development in the form of teaching spaces, hostel accommodation and internet access at rural training sites of a significant number of schools.<sup>[14,15]</sup>

Although most of these community-based training programmes have the same primary goal, i.e. increasing the number of healthcare workers in underserved areas, the programmes vary greatly in duration and frequency of exposure. Rural contact ranges from single blocks of 6 - 8 weeks, through multiple exposures of 4 - 8 weeks, to a 1-year attachment at the Ukwanda Rural Clinical School.<sup>[11,13]</sup> In this issue of *AJHPE*, Muzigaba *et al.*<sup>[16]</sup> describe a pilot community-based programme lasting 10 days. This variability begs the question: is there a threshold length of exposure that will give the desired outcome, i.e. an increased number of healthcare workers in rural areas? Is the wetting of toes just as effective as protracted immersion? This is a critical question, considering the substantial cost of setting up and running these programmes and the urgent need to increase the number of healthcare workers in rural areas. MEPI and NEPI grants have fostered strong north-south and south-south partnerships, creating opportunities for joint learning and relevant research to optimise the programmes.

Muzigaba *et al.*<sup>[16]</sup> introduce a very important concern, i.e. that students of rural origin were more likely to choose primary care exposure in urban centres. This raises two key questions: (i) What proportion of students should participate in rural-based training to achieve a meaningful effect on rural retention? (ii) As rural origin and training in rural areas are independent predictors of rural retention, is the University of KwaZulu-Natal's programme limiting its potential effect by allowing students to elect not to have rural exposure? This elective v. required rural contact characterises a number of programmes.<sup>[11-13]</sup> Stellenbosch University (SU) stands out as a trailblazer on the African continent with regard to longitudinal clinical clerkship. Nevertheless, only a small, self-selected proportion of medical students rotate through the Ukwanda Rural Clinical School.<sup>[13]</sup> Therefore, institutions that may want to emulate SU, need to answer the question: What proportion of students need to participate to realise the desired effect? This is fundamental with regard to cost-effectiveness of

interventions in the face of pressing needs and resource constraints. The parallel rural community curriculum of Flinders University, Adelaide, Australia, requires 40% of students to complete 1 year of training in six regions, spanning 3 500 km.<sup>[17]</sup> However, the Northern Ontario School of Medicine in Canada obliges all its medical students to complete a 1-year comprehensive community clerkship in 12 large communities across the vast region.<sup>[17]</sup> Although evaluation has demonstrated comparable health systems and educational value of the Australian and Canadian programmes, comparative analysis of their cost-effectiveness will be very instructional.

Rural-based training of healthcare workers, especially doctors, is receiving increasing attention in sub-Saharan Africa. This has been largely influenced by evidence from resource-rich countries and south-east Asia, with the belief that it will similarly increase the number of healthcare workers in rural areas. Experience of the Walter Sisulu University, Mthatha has also significantly heightened this expectation of value accrual.<sup>[18]</sup> Nevertheless, the association between rural exposure and rural retention is unlikely to be simple, as context and other known confounders, such as rural recruitment of learners, are likely to affect the correlation.<sup>[8]</sup> It is therefore imperative that high-quality, methodologically rigorous longitudinal studies be conducted to inform the innovations in rural-based training in sub-Saharan Africa.



### Oathokwa Nkomazana

Guest editor

Faculty of Medicine, University of Botswana,  
Gaborone, Botswana

[nkomazanao@mopipi.ub.bw](mailto:nkomazanao@mopipi.ub.bw)

1. World Health Organization. Health Systems Financing: The Path to Universal Coverage. Geneva: WHO, 2010.
2. Nkomazana O, Peersman W, Willcox M, Mash R, Phaladze N. Human resources for health in Botswana: The results of in-country database and reports analysis. *Afr J Prim Health Care Fam Med* 2014;6(1):e1-e8. [<http://dx.doi.org/10.4102/phcfm.v6i1.716>]
3. World Health Organization. Working Together for Health. Geneva: WHO, 2006.
4. Hart JT. The inverse care law. *Lancet* 1971;1(7696):405-412.
5. Derbew M, Animut N, Talib ZM, Mehtsun S, Hamburger EK. Ethiopian medical schools' rapid scale-up to support the government's goal of universal coverage. *Acad Med* 2014;89(8 Suppl):S40-S44. [<http://dx.doi.org/10.1097/ACM.0000000000000326>]
6. Monekoso GL. A brief history of medical education in sub-Saharan Africa. *Acad Med* 2014;89(8 Suppl):S11-S15. [<http://dx.doi.org/10.1097/ACM.0000000000000355>]
7. Wibulpolprasert S, Pengpaibon P. Integrated strategies to tackle the inequitable distribution of doctors in Thailand: Four decades of experience. *Hum Resource Health* 2003;1(1):12.
8. Rannuthgala GI, Humphreys J, Salarsh B, et al. Where is the evidence that rural exposure increases uptake of rural medical practice? *Aust J Rural Health* 2007;15(5):285-288.
9. Dolea C, Stormont L, Braichet J-M. Evaluated strategies to increase attraction and retention of health workers in remote and rural areas. *Bull World Health Organ* 2010;88(5):379-385. [<http://dx.doi.org/10.2471/BLT.09.070607>]
10. Rabinowitz HK, Diamond JJ, Markham FW, et al. Medical school programs to increase the rural physician supply: A systematic review and projected impact of widespread replication. *Acad Med* 2008;83(3):234-243. [<http://dx.doi.org/10.1097/ACM.0b013e318163789b>]
11. Mariam DH, Sagay AS, Arubaku W, et al. Community-based education programs in Africa: Faculty experience within the Medical Education Partnership Initiative (MEPI) Network. *Acad Med* 2014;89(8 Suppl):S50-S54. [<http://dx.doi.org/10.1097/ACM.0000000000000330>]
12. Child MJ, Kiarie JN, Allen SM, et al. Expanding clinical medical training opportunities at the University of Nairobi: Adapting a regional medical education model from the WWAMI program at the University of Washington. *Acad Med* 2014;89:S35-S39. [<http://dx.doi.org/10.1097/ACM.0000000000000350>]
13. Van Schalkwyk SC, Bezuidenhout J, Conradie HH, et al. 'Going rural': Driving change through a rural medical education innovation. *Rural Remote Health* 2014;14:2493.
14. Ndhlovu CE, Nathoo K, Borok M, et al. Innovations to enhance the quality of health professions education at the University of Zimbabwe College of Health Sciences – NECTAR Program. *Acad Med* 2014;89(8 Suppl):S88-S92. [<http://dx.doi.org/10.1097/ACM.0000000000000336>]
15. Vovides Y, Chale SB, Gadhula R, et al. A systems approach to implementation of eLearning in medical education: Five MEPI schools' journeys. *Acad Med* 2014;89(8 Suppl):S102-S106. [<http://dx.doi.org/10.1097/ACM.0000000000000347>]
16. Muzigaba M, Naidoo K, Ross A, Nadesan-Reddy N, Pillay S. Predictors of site choice and eventual learning experiences in a decentralised training programme designed to prepare medical students for careers in underserved areas in South Africa. *Afr J Health Professions Educ* 2016;8(1 Suppl 1):xx-xx. [<http://dx.doi.org/10.7196/AJHPE.v8i1.741>]
17. Couper I, Worley PS, Strasser R. Rural longitudinal integrated clerkships: Lessons from two programs on different continents. *Rural Remote Health* 2011;11(2):1665.
18. Iputo JE. Training doctors from and for rural South African communities. *MEDICC Review* 2008;10(4):25-29.

*Afr J Health Professions Educ* 2016;8(1 Suppl 1):86. DOI:10.7196/AJHPE.2016.v8i1.797