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Addressing disparities in neurology by building the workforce in LMICs

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Nature Reviews Neurology is interviewing individuals who are driving efforts to address disparities in neurology through a broad spectrum of diversity, equity and inclusion initiatives. We spoke with stroke neurologist _Nirali Vora_ from the USA about her work to build neurology capacity in low and middle-income countries.

What is your current position and what diversity, equity and inclusion (DEI) activities are you involved in?

I am director of the Stanford Neurology Residency and Global Health Neurology programmes, as well as a stroke neurologist.

In collaboration with the Stanford Center for Innovation in Global Health (CIGH), I have partnered with brain health champions in low and middle-income countries (LMICs) to build neurology capacity. This initiative involves teaching bedside neurology to trainees in regions that might not have a neurologist, and teaching a design-thinking approach to address stroke management gaps in LMICs. In addition, we educate our own residents about global neurology disparities and opportunities to support capacity building, and advocate with our national academy to make accessible scholarship opportunities and neurology education for physicians in LMICs.

As residency director, I support DEI through many other activities related to recruitment, retention and creating a sense of belonging among trainees. Recently, I have worked with our residents and faculty members to lead a novel Advocacy Curriculum in which we learn about how to advocate for equitable neurological care by understanding the effect of issues such as reproductive rights legislation, incarceration, climate change and racism, in addition to global health disparities.

How does your work address disparities in neurology?

Not enough neurologists exist in the world, and disparities are most apparent in low-income countries, where the World Health Organisation reports only three neurologists for every 10 million people. Physicians without extra training in neurology cannot be expected to teach the bedside examination, train others in the field or even recognize neurology as a possible career path. The aim of my work is to address this gap by improving neurology capacity in LMICs to ultimately improve global brain health.

I first began my journey in global neurology at an academic hospital in Harare, Zimbabwe. I was lucky to partner with an amazing internist who had apprenticed with a neurologist years before and was essentially the only neurologist in the country. He wanted to improve inpatient stroke mortality, which was 35% (compared with 2% in the USA).

Using a design-thinking approach mixed with literature review, we created an evidenced-based stroke management protocol that can guide physicians even if a CT scan is not available to distinguish ischaemic from haemorrhagic stroke. We moved patients around to create a physical stroke unit, which is known to reduce stroke mortality in countries regardless of income level. The stroke unit enabled a more consistent application of protocols (for example, not feeding individuals at risk of aspiration).

One unintended consequence — but possibly the most powerful — was that the stroke unit became a concentrated hub for neurology education and clinical care. Physical therapists were able to give more consistent care to patients with stroke and began to send their students to the unit to learn neuro-rehabilitation. Internal medicine trainees also rotated through the stroke unit and found themselves on a neurology rotation and could visualize the specialty as a possible career. With an emphasis on clinical neurology education, the stroke unit enables sustainable neurology capacity building that will continue to improve neurological health in this region.

> “the stroke unit became a concentrated hub for neurology education and clinical care”

What support do these DEI initiatives need?

Global health neurology needs time, partnerships and money, even if your work is not yet supported by grants. You must have at least one key senior collaborator at the institution of the country where you work to implement sustainable programmes and research together. Partnerships with larger global health groups at your institution are helpful, so that you are not always reinventing the wheel; for me, this is CIGH and programme directors in other departments that support global medicine.

Chair support is also essential; for example, I needed start-up funding for travel and the approval to trade-off clinical productivity in the USA to work on global neurology. I am a primarily inpatient clinician and could shuffle my clinical load, but in the future I do hope to have administrative support that is dedicated to global programmes, as sustaining this priority alongside all our competing demands is difficult.

How could your work be applied or relevant to global neurological health?

Stroke unit development and neurology capacity building is applicable on a much broader scale. I have been lucky to meet partners in different LMICs such as Ghana and Rwanda to build upon the stroke unit framework. For example, CIGH at Stanford connected me to an amazing stroke champion at the academic hospital in Kumasi, the second-largest city in Ghana. Although they had already created

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a physical stroke unit, we were able to share our protocols from the work in Zimbabwe that addressed similar issues of CT scan access, but adapted the medications in the protocol to local prescribing practices. Along with several global health colleagues, we published parts of this approach in Stroke. Being open-minded and adapting tools for each region is crucial.

In what ways can other people in the neurology field support efforts to address neurological health disparities?

Such a big question! For the editors, I suggest supporting publications by authors from LMICs in the context of the challenge of doing research where less infrastructure exists, electronic medical records are not available, and even mistrust related to colonialism might be present. If looking through this lens, the criteria for publication, article types and fees could be adjusted.

For neurologists in global health, always include education of patients, trainees or staff as a part of your work to build lasting neurology capacity. The Advocacy Curriculum and considerations for planetary health have prompted us to look inward and address neurology disparities in rural areas or low-resource regions within our own country. Encourage your organization to create space for learning about local neurology disparities and take collective action to address factors that we, as brain health leaders, can affect.

Interviewed by Lisa Kiani.

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