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Neurological letter from Malawi

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INTRODUCTION

Malawi is a country in Southern Africa (figures 1 and 2) and gained its independence from the British Colony in 1964. Currently 17.5 million people live in Malawi, and about 85% reside in rural areas and depend on farming for survival.¹ Although one of the poorest countries in the world (with a gross domestic product of \$338.48 per capita), it is blessed with a dramatic landscape, offering a variety of unique experiences and boasting some of Africa's best safaris and bird watching. Tourist hot spots include Mount Mulanje and Lake Malawi (figure 3). Malawians are characteristically known for their warm smiles, and deservedly the country is nicknamed 'the warm heart of Africa'.

Malawi has an acute shortage of health workers, with approximately 0.12 available for every 1000 people. This contrasts with ratios in neighbouring countries such as Kenya (1.1 per 1000) and South Africa (2.1 per 1000).^{2,3} The life expectancy at birth in Malawi is 63 years, and the population is slowly ageing. Despite the WHO recommending one neurologist for every 50 000 people, Malawi has only one permanent paediatric neurologist (last author) and relies on visiting adult neurologists, usually on a voluntary basis and rarely continuous.

THE TYPICAL EXPERIENCE OF A PAEDIATRIC NEUROLOGIST

Patients are referred to the Queen Elizabeth Central Hospital paediatric neurology services from across the country as well as from neighbouring Mozambique. The paediatric neurologist is often asked to review unstable inpatients at this hospital and also at some local private hospitals. On discharge, these children are followed up as outpatients. Outpatient neurology clinics run once a week, and as expected the waiting list is very long. The paediatric neurologist also advises on adult neurology patients in the absence of a visiting adult neurologist. He can only do

one clinic a week due to other administrative and academic duties at the University of Malawi and the Ministry of Health. One or two general paediatric trainees support the paediatric neurology service, rotating every 2–3 months. To ease work pressure and to improve delivery of care, there are plans to welcome child neurology residents from the USA to spend time in the department. Furthermore, a Malawian paediatric neurologist is currently training in South Africa. Their return to Malawi will undoubtedly alleviate the workload and improve patient care. Until then, looking after children with neurological disorders remains a challenge.

EXPERIENCE OF VISITING ADULT NEUROLOGISTS

Adult neurologists come to Malawi for various reasons but are driven mainly by their passion to improve neurology care through education, research or both, and often have a personal desire to travel.⁴ In the past 10 years, Malawi has hosted approximately eight adult neurologists. From May to October 2017, the second author saw about 110 patients in a weekly clinic. The common presenting complaints and diagnoses (table 1) were similar to those from other low-income to middle-income countries.^{5,6} These numbers highlight a high demand for neurology care in Malawi with very diverse pathologies, coupled with a high incidence of neuroinfective diseases and neurological complications of HIV infection. The paucity of data in these regions means that the burden of neurological disorders is underestimated, as illustrated by the Global Burden of Disease collaboration.⁷ The infrastructural needs are also very high. For instance, there is no dedicated neurology ward or stroke unit, making it difficult to organise patient management and follow-up. The consequences are high mortality and disability rates, notably for patients with stroke who rarely make it to outpatient clinics



Figure 1 The map of Africa showing the location of Malawi and its neighbours. DRC, Democratic Republic of the Congo. Source: B Chiepa, 2018.



Figure 3 Some of Malawi's tourist destinations: Mulanje Mountain, Cape Maclear and Liwonde National Park. Source: B Chiepa, 2018.

for poststroke follow-up.^{8 79} Epilepsy also presents a high burden; it is stigmatised and managed by psychiatric nurses. The supply chain of government-commissioned antiepileptic drugs is rarely sustained. These scenarios are far from desirable but highlight the daily barriers faced in managing neurological conditions in this setting.



Figure 2 Flag of Malawi (<http://flagpedia.net/malawi>; accessed on 20 February 2018).

NEUROLOGY AND NEUROSURGERY OVERLAP

Both specialties have insufficient human resources and are thus often misinterpreted as one specialty. Consequently, many adult neurology patients are referred to the neurosurgeons. An ongoing collaborative working relationship with the neurosurgeon and the visiting

Table 1 Common presenting complaints and diagnoses at a short-lived adult neurology clinic at Queen Elizabeth Central Hospital, Malawi

Top 5 presenting complaints	Frequency (%)
Headache	27.5
Seizures	20.6
Weakness	14.7
Tremor	6.8
Dizziness/Ataxia	3.9
Top 5 diagnoses	Frequency (%)
Headache disorders (migraine and tension-type headache representing up to 70%)	24.5
Epileptic disorders	20.0
Polyneuropathy	7.0
Stroke	4.0
Traumatic and degenerative disorders of the spine	4.0



Figure 4 Aerial photograph of the College of Medicine main campus (top) and entrance to the accident and emergency department of the Queen Elizabeth Central Hospital (QECH) (bottom). Source: B Chiepa, 2018.

neurologists has hugely benefited patient care.¹⁰ The continued need for this collaboration in Malawi has inspired the Blantyre Institute of Neurological Sciences (led by the fourth author) and the Malawi Stroke Unit (led by the third author). The long-term ambition of these initiatives in Malawi, as well as improving health outcomes, is to promote integrated neuroscience training in the country. There are ongoing plans to undertake epilepsy surgery, and the success of this will require neurologists and neurosurgeons to collaborate. A long-term goal is to construct a dedicated building to accommodate the Neurosurgery Unit, the Centre for Mental Health and Neurology Services. In the meantime, Malawi's first stroke unit should open in 2019, and will start to consolidate this important interdisciplinary partnership.

TRAINING OPPORTUNITIES

Malawi, through the College of Medicine (figure 4), began undergraduate medical training in 1991, but there is no neurologist/neuroscientist in the Faculty of Medicine. Currently, there is no formal neurology postgraduate training. Therefore, Malawians aspiring to become a neurologist must receive training elsewhere,

which is financially prohibitive. Currently, there is one Malawian neurology trainee in South Africa.

The Wellcome Trust recently awarded £27 million to the Malawi-Liverpool Wellcome Trust Clinical Research Unit, a leading research institution in Africa, to expand its translational clinical research portfolio in Africa. Stroke research is highlighted as one of its five strategic areas for development, which is a great opportunity for developing and supporting clinical scientist in neurology-related disciplines in Malawi. An evolving partnership with experts from the Stroke Research Centre at University College London, UK, will strengthen this initiative. An important first step in the stroke agenda is to set up a resource and culturally appropriate unit delivering evidenced-based stroke care.

THE FUTURE

Neurology care, just like neurology training in Malawi, is evolving. Important foundations have been set, and with the Malawi-Liverpool Wellcome Trust's new stroke research agenda, the upcoming stroke unit and the exciting aspirations for the Blantyre Institute of Neurological Sciences, the future is bright for neurology care and training in Malawi.

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