



# The need for a community-based model for stroke care in South Africa

Sub-Saharan Africa is faced with the huge burden of the HIV/AIDS pandemic. In South Africa, the scale of the HIV epidemic has determined health agendas and budgets. Consequently, other diseases (particularly those relating to lifestyle) have neither received the same attention nor been considered a priority in terms of health expenditure in most provinces. In African countries, health is linked to overall development and socio-economic change. Like other developing countries, South Africa is undergoing a period of rapid urbanisation associated with a change in risk environment. Infectious, perinatal and nutritional diseases dominate the causes of death in Africa, compared with non-communicable diseases in developed countries. However, the burden of stroke and other vascular diseases is likely to increase substantially in Africa, with the expected health transition as social, economic and demographic structures change. Because of wide socio-economic disparities within the region, diseases of poverty and emerging non-communicable diseases related to lifestyle are likely to overlap and persist for a long time. This will pose an additional burden on health care systems in the region as we are faced with a quadruple burden of disease: HIV and other infections; violent death; perinatal maternal nutrition-related diseases; and lifestyle diseases such as stroke and ischaemic heart disease.

The South African National Burden of Disease Study found that stroke for the year 2000 was the third most common cause of death in South Africa (6.5% of all deaths) after HIV/AIDS and ischaemic heart disease. Black women had the highest mortality rate owing to stroke (160/100 000), while mortality was lowest in white men (72/100 000).<sup>1,2</sup> Deaths in the coloured and black population groups were double those in the white population. Since the risk of stroke increases with age, it is not surprising that there are more stroke deaths in South Africa in older age groups than younger age groups. Most patients survive their first stroke, and half are disabled, adding to the financial burden on the health care system and the families who care for them.<sup>3</sup>

## Stroke prevention

Stroke is largely preventable by reducing vascular risk factors (primary prevention) and preventing stroke recurrence in those who have suffered a stroke through both lifestyle change and medical means (secondary prevention). However, without a concerted effort from central and local governments (which have the ability to reduce risk through policy changes), the health profession and individuals at risk of stroke, the burden of stroke in South Africa will increase and add to the nation's burden of disease. In this setting, the development of effective

policies and legislation to strengthen primary health care systems is essential for stroke prevention.

## Management guidelines

The new South African guidelines for the management of stroke have been drafted and reviewed by the relevant parties, including the national Department of Health, and should be ready for publication before year-end. The guidelines emphasise the importance of treatment as quickly as possible. All stroke guidelines highlight the importance of maintaining physiological homeostasis to prevent early complications in the acute phase. Interventional strategies aim to restore cerebral perfusion to the ischaemic area of the brain. Thrombolytic therapy with recombinant tissue plasminogen activator is now an accepted therapy for acute ischaemic stroke within certain time limits but is not yet widely available in the public sector for logistical and other reasons (e.g. lack of scanning equipment, protocols, laboratory facilities and neurosurgical cover). In the post-acute phase of stroke, management efforts are directed at early rehabilitation and secondary prevention.

The risk of recurrent stroke is highest soon after the first-ever stroke, requiring early intervention and appropriate and effective secondary preventive measures. One-year survivors of first-ever stroke continue to die over the next 4 years at a rate of approximately 10% per year – twice the expected rate among the general population of the same age and sex; the most common cause of death is cardiovascular disease. Long-term survival after stroke may be improved by early active sustained implementation of effective strategies for preventing subsequent cardiovascular events.<sup>4</sup>

## Rehabilitation

Stroke rehabilitation is a goal-orientated process that attempts to obtain maximum function in patients who have had strokes and who suffer from a combination of physical, cognitive and language disabilities. The rehabilitation process is best performed using an interdisciplinary approach by experts who have experience and understanding of the particular issues facing stroke patients. In patients with significant disabilities, consideration must be given to reducing the burden of care for the family and helping the patient to become as independent as possible. Rehabilitation can be provided on an in- or outpatient basis. In South Africa, outpatient therapy very rarely achieves the intensity of inpatient rehabilitation units. Therefore, where necessary and when available, inpatient therapy may be preferable. Unfortunately, inpatient rehabilitation facilities in the public sector are few and usually located in urban areas, and bed demand usually exceeds supply.



In this issue of the *SAMJ*, Wasserman *et al.*<sup>5</sup> have studied a group of patients in a remote rural setting in South Africa where an inpatient rehabilitation facility is not available and where patients are discharged home into the care of relatives, despite significant levels of disability. This scenario occurs in many areas of South Africa and other developing countries. In such settings, the numbers of rehabilitation professionals (physiotherapists, speech therapists, occupational therapists, etc.) to cope with the burden of stroke patients and their needs are inadequate, and such patients (because of their disabilities and lack of financial resources, and the long distances involved) frequently are unable to attend regular clinic- or hospital-based outpatient rehabilitation sessions. Not surprisingly, the authors report a high mortality at 3 months' follow-up in their small cohort. Nevertheless, the majority of the survivors in the study had significant functional improvement at 3 months compared with their state at discharge.

There is an urgent need to develop a model of community-based stroke care with appropriate rehabilitation facilities and trained professionals in South Africa, particularly in under-resourced areas. In such settings, rehabilitation depends heavily on family and community commitment. Many stroke patients in this remote community were visited by home-based carers from a local NGO, yet these carers had largely been trained in management of patients with HIV. Training of existing carers in such a setting in stroke management would be an important aspect of any model of community-based stroke care. The authors of this study identified a number of

issues that should be addressed in such a model of care. They argued that in the absence of adequate numbers of health workers available for rehabilitation in such communities, the caregivers (both home-based carers and family members) are suitable candidates to adopt this surrogate role. They could be trained in principles of secondary prevention and to be more active in the rehabilitation process to improve outcomes. This strategy is in line with current policy on skills development and capacity building within our health care sector to achieve a better level of care for a common condition associated with an enormous burden for stroke survivors, their families and communities.

#### Alan Bryer

*Division of Neurology  
Department of Medicine  
Groote Schuur Hospital and  
University of Cape Town*

*Corresponding author: A Bryer (Alan.Bryer@uct.ac.za)*

1. Bradshaw D, Groenewald P, Laubscher R, *et al.* Initial burden of disease estimates for South Africa, 2000. *S Afr Med J* 2003; 93: 682-688.
2. Norman R, Bradshaw D, Schneider M, Pieterse D, Groenewald P. *Revised Burden of Disease Estimates for the Comparative Risk Factor Assessment, South Africa 2000*. Cape Town: Medical Research Council, 2006.
3. Wilkinson PR, Wolfe CD, Warburton FB, Rudd AG, Ross Russell RW, Beech RR. A long-term follow-up of stroke patients. *Stroke* 1997; 28: 507-512.
4. Hankey GJ, Jamrozik K, Broadhurst RJ, *et al.* Five-year survival after first-ever stroke and related prognostic factors in the Perth Community Stroke Study *Stroke* 2000; 31: 2080-2086.
5. Wasserman S, de Villiers L, Bryer A. Community-based care of stroke patients in a rural African setting. *S Afr Med J* 2009; 99: 579-583.