

Integrated approach to stroke burden: are we doing enough?



Lancet Neurology 2021

Published Online
September 3, 2021
[https://doi.org/10.1016/S1474-4422\(21\)00287-8](https://doi.org/10.1016/S1474-4422(21)00287-8)

See Online/Articles
[https://doi.org/10.1016/S1474-4422\(21\)00252-0](https://doi.org/10.1016/S1474-4422(21)00252-0)

In *The Lancet Neurology*, the GBD 2019 Stroke Collaborators present data from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2019 that show that annual numbers of stroke have increased globally since 1990, with most of the stroke burden being borne by low-income and middle-income countries.¹ The age-standardised rate of deaths and disability-adjusted life-years (DALYs) due to stroke in the World Bank low-income group of countries was almost four-times higher than that in the high-income group of countries. Despite an overall decrease in age-standardised rates between 1990 and 2019, a concerning trend is the substantial increase in age-specific stroke incidence and prevalence rates in individuals younger than 70 years.

Compared with previous GBD analyses, this study is unique in having presented the global and regional burden of stroke by its subtypes, including intracerebral haemorrhage and subarachnoid haemorrhage. Substantial intercountry disparities were observed, with the proportion of strokes that were intracerebral haemorrhage being almost twice as high in low-income and middle-income countries as in high-income countries. The study also highlighted the substantial shift of stroke risk burden towards metabolic factors over the period 1990–2019. High systolic blood pressure and high body-mass index, followed by high fasting plasma glucose, constituted the largest increases in age-standardised stroke population-attributable fraction over the study period, with greater increases in low-income and middle-income countries than in high-income countries.¹

Globally, stroke was the second leading cause of death and the third leading cause of death and disability, highlighting the conspicuous inefficiency of the prevention strategies that have been practised worldwide to date.¹ Focusing these strategies only on individuals at high risk of developing stroke while overlooking those with low or intermediate risk is unsatisfactory from a population perspective. Effective implementation of primary prevention strategies is possible only when the emphasis is shifted from addressing solely high-risk groups to a more comprehensive approach, addressing all population groups irrespective of individual stroke risks.² These strategies should include both pharmacological measures and behavioural and lifestyle measures to have a global effect.³ A polypill strategy containing

low doses of statins and antihypertensives is a cost-effective approach towards primary prevention.⁴ Mobile health technologies like smartphone apps (eg, Stroke Riskometer)⁵ are feasible approaches to address large groups of people even in low-income and middle-income countries. Motivational population-wide interventions aimed at behavioural modification and government-based measures via taxation on high-risk behaviour (eg, tobacco consumption) can be useful for managing lifestyle factors.³ Community health workers provide an effective link between the community and the health-care system: their role as peer support can help bridge the gaps in health-care access, facilitate behavioural modification, and improve adherence to medications.⁶

However, although the need for extensive implementation of primary prevention is indisputable, there is a compelling urgency to consider a holistic and integrated approach to implementation of organised stroke services, to reduce the burden of stroke effectively. Poor awareness, insufficiency of organised stroke care facilities, shortage of trained professionals, and wide disparities in the accessibility and affordability of existent services are some of the challenges widening the gaps across the continuum of stroke care in different countries. Stroke units—one of the most effective and cost-effective measures to offset mortality and morbidity—are scarce in low-income and middle-income countries. High quality stroke care, ranging from prevention, through in-hospital care, to community re-integration, is attainable only through efficient organisation and establishment of stroke systems. In low-income and middle-income countries, strategies like infrastructural remodelling, capacity building, and adapted models of stroke care can help improve stroke services.⁷ Alternative models (eg, the physician-based model, the hub-and-spoke model, and the task-sharing model) have been successfully implemented in low-resource settings.⁷ Towards the purpose of improving stroke care services, the WHO South-East Asian Regional Office, along with Christian Medical College and Hospital in Ludhiana, India, have been instrumental in providing technical support and building capacity among health-care professionals in various southeast Asian countries.⁸ The World Stroke Organization global stroke action plan⁹ acknowledges the need to consider the diversity of stroke care systems

across the world, and recommends setting up context appropriate and realistic priorities and goals.

Many evidence-based guidelines exist, but they have mostly been based on data gathered in high-resource settings and their implementation into clinical practice in low-resource settings carries many challenges. Region-specific adaptations of guidelines and their incorporation into clinical practice to guide national stroke care is essential to bridge the gaps in stroke care between high-income countries and low-income and middle-income countries. The Angels Initiative has been influential in implementing global quality campaigns for improvement of stroke services across many countries.¹⁰ Stroke is a preventable, treatable, and manageable disease. The challenge is to discern which fundamental elements across the continuum of stroke care can be improved cost-effectively to maximise benefit. Implementing an integrated approach towards evidence-driven policy making, with active collaboration with the health-care policy makers, stakeholders, and government agencies, is the path to diminishing the inequalities in stroke prevention and care across the world.

We declare no competing interests.

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