

Setting priorities for stroke care and research

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Recent publications describing the sobering global increase in stroke mortality and global life years lost due to stroke despite improvements in developed countries have drawn focus on the severe impact of stroke in the developing world. At the same time, three recent interventional trials that failed to demonstrate an important role for catheter-based therapies in acute stroke have called into question this expensive use of technology. Coupling all of this new data leads to the natural conclusion that a focus on stroke prevention for the developing world, and for the poor in developed countries, should be where we set our priorities for the foreseeable future.

Key words: access, global, intervention, poverty, prevention, stroke

Decisions about where to allocate medical resources are difficult and merit careful consideration. However, in the field of stroke these days, the path seems clear. We should be spending our money on prevention efforts in the developing world and in reducing domestic stroke disparities in developed countries. A recent report suggested that although communicable causes of death were decreasing sharply, noncommunicable causes of death were making up the difference (1). Stroke, the world's second leading cause of death, increased by 26% in the two decades between 1990 and 2010, and produced a staggering 177% increase in global years of life lost. Researchers have coined the term, the 'epidemiologic transition', to define this remarkable change from mainly infectious and traumatic causes of death to chronic diseases such as stroke that are now increasingly devastating the developing world (2). To underscore how important stroke is as a growing cause of death in Africa, Asia, and other developing places in the world, one has to consider that for decades, stroke incidence and mortality have shown substantial declines throughout the developed world (3). This means that stroke is increasing so fast in developing countries that it more than makes up for the reduced mortality seen in the West to continue to rank as the number two cause of death worldwide.

In the developed world, affluent majority populations show declines in the stroke burden, whereas the poor and race/ethnic minorities struggle with continued high stroke rates (4). Efforts to target the poor and underserved have been few among the most developed countries. Stroke research has increasingly focused on high tech means for clot extraction and advanced neuroimaging,

requiring substantial expense, and is only available at relatively few centers. Just recently, three clinical trials of catheter intervention concluded that these therapies did not produce greater efficacy than Intravenous tissue Plasminogen Activator (IV t-PA) or nonintervention controls, much less expensive alternatives (5–7). Such research will continue but most likely at industry's expense. While that is ongoing, developed countries' governmental resources should be allocated to prevention. We advocate strongly for prevention efforts for those most in need.

A renewed focus now on stroke prevention is the preferred approach for three main reasons: (1) we have cost-effective therapies for the main stroke risk factor, hypertension. While a month supply of a thiazide diuretic costs \$4, interventional acute stroke procedures cost over \$10 000 (8) and has not been shown to be efficacious in randomized controlled trials. (2) There is literally an epidemic of stroke occurring in the world now. As the global population ages, this will quickly overwhelm already constrained health budgets. Acute treatment strategies are not the answer to this global crisis; prevention is the best and less costly method. Now is the time to act. (3) We know the risk factors for stroke and how to conduct effective global interventions. While industry can tempt clinicians and researchers with money to do device trials, there is usually little that those most susceptible to stroke, the poor, can do to encourage researchers and governments to take up their case. Setting priorities suggests that there is a pot of money, and that a group of people get to decide how it is spent. That is obviously not the case here. We need to stand up as physicians and advocate for scarce governmental resources to better support stroke prevention for those most at need. Perhaps we are overly optimistic, but we hope that the collective voice of physicians who care for stroke patients around the world can make a difference.

We urge readers to make this a priority and act. Specifically, we hope that readers in developed countries will advocate to their local and national governments to play stronger roles in stroke prevention research and treatment, that they will also argue for similar work towards the elimination of stroke disparities in their own countries. We hope that those in the developing world will recognize the growing importance of stroke and work to reduce this imminently preventable disease. Finally, we hope that everyone will see their responsibility in their own community, to reach out to the poor and underserved for cost-effective strategies to prevent stroke.

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