

The data to put neurology on top of the public-health agenda



Every January issue of *The Lancet Neurology* includes a special Round Up section. Its pages are a celebration of research achievements over the previous year. Our 2018 Round Up reveals a booming specialty, in which the pace of discovery is accelerating, and for which advocates are needed to raise awareness of this progress and bring in the investment to maintain the pace. But advocacy for brain health research requires good evidence and accurate numbers on its social relevance, and only a few subspecialties within neurology have effectively gathered epidemiological data to support calls for resources and funding. Luckily, this situation is changing.

Initiated in the 1990s by a small group of researchers commissioned by the World Bank, the Global Burden of Diseases, Injuries, and Risk Factors (GBD) Study now provides an independent, systematic, comparative quantification of health loss from hundreds of diseases and injuries in 195 countries. The GBD researchers have come up with metrics, such as disability-adjusted life years (DALYs), to estimate the effects of premature deaths and disability. Their analyses show that the burden of neurological diseases has been underestimated for years, while poor neurological health has become the largest cause of DALYs worldwide.

The GBD 2016 Collaborators showed that life expectancy at birth increased by 13.5 years for men and about 15 years for women from 1970 to 2016. These worldwide gains occurred because mortality rates decreased across all age groups, especially in children under 5 years of age. Life expectancy at age 65 years also increased over the same period in most countries. But, as deaths from communicable diseases decreased, about three quarters of all deaths in 2016 were caused by non-communicable diseases. New GBD analyses that forecast scenarios for life-expectancy over the next two decades predict slower but further increases (by more than four years) for both men and women, with more than 60 countries, including China—the most populous country in the world—having a forecast life expectancy of over 80 years in 2040. Because of population growth and ageing, non-communicable diseases will then account for almost 70% of years of life lost. Stroke and ischaemic heart disease were the leading causes of premature mortality in 2016, and will likely still be at the top of the rankings in 2040; notably, Alzheimer's disease is

predicted to rise to the fifth place of that list. In essence: people have longer lives but, regrettably, the time living in poor health is also longer.

Brain health is the key to enjoying a long and healthy life expectancy. Data from the GBD Study 2015 demonstrated that the burden of neurological disorders had increased hugely since 1990. In the authors' own words: "the most striking change has been the more than doubling of people in the world who die or are disabled from Alzheimer's disease and other dementias over the past 25 years". To bridge the gap between life expectancy and healthy life expectancy, health-care systems and research funders should focus on reducing the burden of neurological diseases, whose extent is being assessed regularly by the GBD Study. The GBD 2016 Collaborators have now produced estimates of the global, regional, and national burden for all major neurological conditions. Unlike in the GDB Study 2015, this time they also include estimates for traumatic brain injury and spinal cord injury, and evaluate several neurological disorders individually.

These GBD 2016 findings were presented at the Global Burden of Disease Brain Summit in Auckland (New Zealand) on November 27, 2018, and are being reported in *The Lancet Neurology*. They confirm neurological diseases as the leading cause of disability worldwide, and prove unequivocally that their overall burden keeps growing. Unsurprisingly, Alzheimer's disease and other dementias are the most burdensome of neurodegenerative diseases worldwide. However, the number of people with Parkinson's disease has more than doubled since 1990 and it is now the fastest growing of any neurological disease, especially in China. Even the burden of disorders that are not so prevalent, such as motor neuron diseases, has increased substantially and that of neurological conditions not associated with ageing is also enormous. For instance, headache disorders were ranked second leading cause of years lived with disability in 2016, only after low back pain.

These data are the ammunition that advocates for the neurological community need to influence research funders and policy makers. The GBD findings should place neuroscience as the top priority for research funding agencies, neurology services as a priority for health-care systems, and prevention of neurological disease as the main priority of public-health authorities. ■ *The Lancet Neurology*



See **Articles** page 56 and 88

For more on the GBD Study see **Viewpoint** *Lancet* 2017; **390**: 1460–64

For the GBD 2016 findings see **Articles** *Lancet* 2017; **390**: 1151–1210

For the **estimations on life-expectancy** see **Articles** *Lancet* 2018; **392**: 2052–90

For the GBD 2015 findings see **Articles** *Lancet Neurology* 2017; **16**: 877–97

For the **Summit** see <https://www.aut.ac.nz/events/global-burden-of-disease-brain-summit>

For the **global burden of Parkinson's disease** see **Articles** *Lancet Neurology* 2018; **17**: 939–53

For the **global burden of motor neuron diseases** see **Articles** *Lancet Neurology* 2018; **17**: 1083–97

For the **global burden of headache** see **Articles** *Lancet Neurology* 2018; **17**: 954–76