

## Looking at the burden of neurological disorders in Europe

Socioeconomic changes and improvements in health systems have extended worldwide life expectancy. These changes have also come with an increase in the burden of non-communicable diseases (NCDs) and growing care needs. In Europe, the median age of the population is projected to increase by 5 years over the next three decades,<sup>1</sup> leading to new challenges and threats for health-care systems. In this context, assessing the dynamics of the burden of NCDs, and neurological disorders in particular, is important. Indeed, the Global Burden of Disease (GBD) 2015 Neurological Disorders Collaborator Group<sup>2</sup> showed that neurological disorders were the leading cause of disability-adjusted life years (DALYs) globally and the second cause of deaths after cardiovascular diseases. The four largest contributors were stroke, migraine, Alzheimer's disease and other dementias, and meningitis, accounting for more than 70% of DALYs. In *The Lancet Public Health*, Günther Deuschl and colleagues<sup>3</sup> add new insights by comparing the burden of neurological disorders in the 27 EU countries plus the UK (the EU28), the WHO European region, and worldwide from 1990 to 2017. The study adopted the GBD methodology, quantifying health loss and disability in terms of prevalence, deaths and DALYs. Findings showed that in the EU28 and in the WHO European region neurological disorders increased in prevalence and ranked third for DALYs and deaths, behind cardiovascular diseases and cancer. Stroke, dementia, and headache were the leading sources of neurological DALYs. The burden of stroke was greater in central and eastern Europe compared with western Europe (where disability associated with Alzheimer's disease and neurodegenerative disorders was higher). The different trends across

European subregions are likely to be due to improvements in health care (as indicated by the decreased burden of stroke) or in individual health conditions, despite the overall burden associated with population ageing.

These data are of great interest for understanding the challenges of NCDs and neurological disorders, and for planning concerted actions for better disease management in countries with ageing populations and increasing wealth. Age is generally considered to be a driver of health-care spending, taking into account hospital and community health services and pharmaceutical costs. These factors have been projected to increase public spending in Europe by approximately an additional 1.5 percentage points of gross domestic product by 2035.<sup>4</sup> As shown by Deuschl and colleagues' report,<sup>3</sup> within EU28 countries, differences exist in overall burden and in attributable proportions of neurological disorders, which are most probably associated with health disparities.<sup>1</sup> Although health inequalities are associated with a complex interplay of factors, for most neurological disorders, improving health outcomes and reducing disease burden would most effectively be achieved through prevention, by modifying risk factors (eg, smoking, alcohol consumption, and obesity) and investing in integrated disease management over the life-course.

The complexity of health in ageing populations is a further threat and requires a change from the traditional focus on single diseases and specific time windows towards multidimensional and longitudinal health trajectories. Medical education at all levels must evolve in line with the changing health-care context.

Access to good quality care and early diagnosis are a prerequisite for successful interventions and implementation of modifying disease strategies, but despite progress in the understanding of neurological disorders and drug development for

treating diseases such as multiple sclerosis, migraine, and stroke, and promising findings on Alzheimer's disease, we are facing a shortage of neurology specialists and services.<sup>5</sup> In the face of the increasing burden of neurological disorders, a qualified workforce is a necessary requisite to adequately manage patients and carers. Neurological and brain health should be addressed through integrated, co-ordinated, and co-operative efforts, both at the European and national level, and become a distinctive priority in all EU28 countries. It is time to realise an efficacious strategy to reduce the prevalence and burden of neurological disorders, taking lessons from other successful ambitious initiatives such as Europe's beating cancer plan. It is time to bring the brain back to the centre of the world of health.

APa has served on the scientific advisory board of GE Healthcare, Eli Lilly, and Actelion Pharmaceuticals; and has received speaker honoraria from Nutricia, IAM Pharmaceuticals, Langstone Technology, GE Healthcare, Eli Lilly, UCB Pharma, and Chiesi Pharmaceuticals, outside of the submitted work. API has served on the scientific advisory board of Z-cube (technology division of Zambon Pharma) and has received speaker honoraria from Biomarin and Zambon Pharmaceuticals, outside of the submitted work.

Copyright © 2020 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND 4.0 license.

\*Alessandro Padovani, Andrea Pilotto  
alessandro.padovani@unibs.it

Neurology Unit, Department of Clinical and Experimental Sciences, University of Brescia, Brescia 25123, Italy (APa, API); and Parkinson's Disease Rehabilitation Centre, FERB ONLUS, S Isidoro Hospital, Trescore Balneario, Bergamo, Italy (API)

- 1 Mackenbach JP, Karanikolos M, McKee M. The unequal health of Europeans: successes and failures of policies. *Lancet* 2013; **381**: 1125–34.
- 2 GBD 2015 Neurological Disorders Collaborator Group. Global, regional, and national burden of neurological disorders during 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet Neurol* 2017; **16**: 877–97.
- 3 Deuschl G, Beghi E, Fazekas F, et al. The burden of neurological diseases in Europe: an analysis for the Global Burden of Disease Study 2017. *Lancet Public Health* 2020; **5**: e551–71.
- 4 OECD, European Union. Health at a glance: Europe 2018: state of health in the EU cycle. Paris: OECD Publishing, European Union, 2018.
- 5 Burton A. How do we fix the shortage of neurologists? *Lancet Neurol* 2018; **17**: 502–03.



See [Articles](#) page e551