Neurological burden and European investment: a disconnect

The European Commission reached a political agreement on the funding dedicated to Horizon Europe, its transnational research programme, on Dec 11, 2020. A few days later the budget was approved by the European Parliament, which released the news with enthusiasm. But for a wealthy continent immersed in an appalling health crisis, dedicating just around €95·5 billion over the next 7 years to its major research-funding instrument does not seem a reason for exultation. This funding is an irresponsible betrayal of trust in the biomedical community, whose ability to provide life-saving solutions is being clearly demonstrated during the COVID-19 pandemic; while the health crisis is not yet over, political leaders have decided to push crucial biomedical investment down their priority list and widen the gap of research funding between the USA and Europe—a gap that is negligently stretched for neurological research.

In the USA, new legislation—the Endless Frontiers Act—has unveiled additional funding of US $100 billion (approx €82 billions) over 4 years for the National Science Foundation (NSF), which already had an $8 billion budget. The NSF supports bioscience projects but is not a top biomedical research funder in the USA, a role that is led by the National Institutes of Health (NIH). The NIH has a budget of more than $35 billion per year, which is expected to increase over the next 4 years. In fact, for Horizon Europe to match the investment given to NIH in, for instance, Alzheimer's disease research (now close to $3 billion per year), it would have to dedicate up to 20% of its total budget. By contrast, not even a 2% share of Horizon Europe funding is expected for this area.

Before the pandemic, neurological disorders were the third most common cause of disability and mortality in the European Union (EU), after cardiovascular diseases and cancer. Worldwide, in 2019, stroke and ischaemic heart disease were the leading cause of death and disability in people aged 50 years and older. Horizon Europe has five "mission areas": climate change; oceans, seas, coastal, and inland waters; smart cities; soil health and food; and cancer. Cardiovascular or brain health, the key causes of functional health loss in Europe and elsewhere, are excluded.

The neglect of the neurosciences will undermine advances not only in neurology, but also in psychiatry and other medical specialties, such as ophthalmology and geriatrics. Vision loss, substance misuse, and mental disorders are also major causes of many years lived with disability for millions of citizens. For the well-being of the ageing European population, adding the burden of these conditions to that caused by neurological diseases should place study of the nervous system at the top of the evidence-based public health agenda. However, as rightly expressed by neuroscientists in a letter: "Sadly, there is an intolerable disconnect between the ever-growing socioeconomic need for effective therapies for brain disorders and the lack of ambition and long-term vision of EU leaders". Millions of elderly European citizens now have to confront the sequelae of COVID-19 while at a life stage when the risk for developing a neurological disease is highest. Given the numerous neurological associations of COVID-19 and its impact on mental health, it will not be surprising if the virus takes a further toll on brain health over the next few years. Investing in neurosciences now is the only way to develop solutions to prevent a collapse of national health and social services, which will be strained by the prevalence of non-communicable diseases of the nervous system in the future.

The tremendous innovation pipeline of neuroscience research, that extends from optogenetics to brain-computer interfaces, will stagnate without public investment. Programmes with an established success record, both in terms of scientific advances and inclusive participation (by bringing together researchers from disparate economic regions), will be disrupted or stopped in their tracks. Alas, proficient research consortia, of the type supported by the ERA-NET NEURON, could be potential casualties of the EU leaders' lack of ambition. ERA-NET NEURON has provided translational research funding for highly competitive multinational neuroscience projects since 2008. As an umbrella platform that coordinates funding agencies, it avoids duplicate efforts and research waste, and amplifies the social impact of research by engaging patients' organisations and promoting networks with synergistic aims.

The prevention and treatment of disorders of the nervous system, and the understanding of their progression and underlying mechanisms, are the strategic pillars of ERA-NET NEURON. By removing brain health from the focus of their funding, European policymakers demonstrate a troublesome disconnect with the reality and needs of their citizens. ■ *The Lancet Neurology*

For more on **Horizon Europe and its new budget** see https://ec.europa.eu/commission/presscorner/detail/en/IP_20_2345

For more on the **new EU budget** see https://www.europarl.europa.eu/news/en/press-room/20201211IPR93621/parliament-approves-seven-year-eu-budget-2021-2027

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For more on the **budget of the National Science Foundation** see https://www.sciencemag.org/news/2020/05/us-lawmakers-unveil-bold-100-billion-plan-remake-nsf

For more on **Alzheimer's disease research investment in the USA** see https://alzimpact.org/issues/research

For the **burden of neurological diseases in Europe** see **Articles** *Lancet Public Health* 2020; **5:** e551–67

For the **global burden of disease in people aged 50 years and older** see **Global Health Metrics** *Lancet* 2020; **396:** 1204–22

For the **neuroscientists' letter** see **Correspondence** page 90

For more on the **neurological associations of COVID-19** see **Rapid Review** *Lancet Neurol* 2020; **19:** 767–83

For more on **COVID-19 and psychiatric disease** see **Articles** *Lancet Psych* 2020; published online November 9. https://doi.org/10.1016/S2215-0366(20)30462-4

For more on the **future burden of chronic non-communicable diseases** see **Viewpoint** *Lancet* 2020; **396:** 1135–59

For more on **ERA-NET NEURON** see https://www.neuron-eranet.eu/en/118.php

For more on the **funding by ERA-NET NEURON** see **Editorial** *Lancet Neurol* 2016; **15:** 231