Research funding after COVID-19

To the Editor — In response to COVID-19, the European Commission (EC) has committed €137.5 million in funding for research and development projects working on diagnostics, therapies and vaccines to tackle the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic[1]. But SARS-CoV-2 is not the only infectious disease afflicting millions of humans around the world. Clearly additional funding for research on COVID-19 is warranted, but are short-term spikes in funding likely to deliver swift and effective countermeasures, and are the funds available for infectious disease research proportional to the burdens of these diseases?

Infectious diseases result in morbidity, mortality and economic and social problems worldwide. In 2018, human immunodeficiency virus (HIV) and AIDS, tuberculosis (TB) and malaria together accounted for approximately 2.7 million deaths[2–4]. It has been estimated that these three diseases combined are responsible for about 5% of all-cause deaths worldwide[5,6]. Notably, fatalities due to HIV/AIDS, TB and malaria are unequally distributed, with 8.6% of deaths occurring in low- and lower-middle income (LLMI) regions compared to 1.3% of deaths in upper-middle- and high-income (UMHI) regions[6]. Additionally, there is a loss of 129.2 cause-specific disability-adjusted life years (DALYs) owing to HIV/AIDS, TB and malaria in LLMI regions, compared with a loss of 19.8 DALYs in UHMI regions. A bidirectional causality relationship between malaria and poverty has been reported[7–9], as poverty reduces both personal and government spending on malaria prevention methods[7], leading to an increased burden of disease. This in turn results in increased spending on treatments, higher rates of absence in school and work, and decreased productivity[8] — all of which contribute to further impoverishment. Combating this cycle of poverty requires sustained global commitment, including continued funding for the research community to enable the discovery and validation of efficacious and affordable strategies to tackle both the big three killers and a host of other infectious diseases.

The SARS-CoV-2 pandemic has raised worldwide awareness of the crucial role of scientific research and, more specifically, infectious disease research for global health security. In the past few months, governments and funding agencies have allocated substantial resources to fund COVID-19-related research proposals and have implemented unusually swift funding rounds.

However, the impact of reactive, short-term funding is debatable. For example, in 2004, approximately US$100 million in SARS-specific grant funding was awarded by the United States National Institute of Allergy and Infectious Diseases in quickly established contracts that provided funding for four years[10]. In response to the 2014–2016 Ebola outbreak, the EC mobilized more than €174 million and the Innovative Medicines Initiative contributed €230 million to research efforts to combat the virus[11]. Yet to this day, no drugs or licensed vaccines are available to treat or prevent SARS or Ebola.

What is the likely return on the €137.5 million investment by the EC and the €48.7 million fast-tracked by the European Union's Horizon 2020 programme into COVID-19-specific research projects[12]? To put these vast sums of money into perspective, in 2018 the EC's total expenditure on global research and development into the diagnosis, prevention, control or cure of 'neglected diseases' such as HIV/AIDS, TB and malaria was €123 million[13], and Horizon 2020's average yearly funding for research into infectious diseases in 2014–2019 was €21.5 million[14]. The combined annual death toll from HIV/AIDS, TB and malaria is approximately more than five times higher than that attributed to COVID-19 to date[15].

We argue that the allocation of research funds should be equitable and sustained, and thoroughly debated by researchers, politicians and funders. Lessons must be learnt from past experiences of reactive, short-term funding to deal with pressing emergencies, in order to prevent or control future infectious disease outbreaks[16].

The ongoing toll of infectious diseases on the lives of millions of the most vulnerable people must be addressed. It seems that COVID-19 has awakened some sleepy consciousnesses to the importance of research and the acquisition of scientific knowledge. It is imperative that this wake-up call reminds policymakers and funding agencies that properly funded basic and applied science is essential for health, well-being and prosperity.

In the post-COVID-19 era, politicians and funders alike must remain committed to adequate, fair and sustained research and development funding. Only then will we be able to ensure healthy lives for all. ❐

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Competing interests

The authors declare no competing interests.