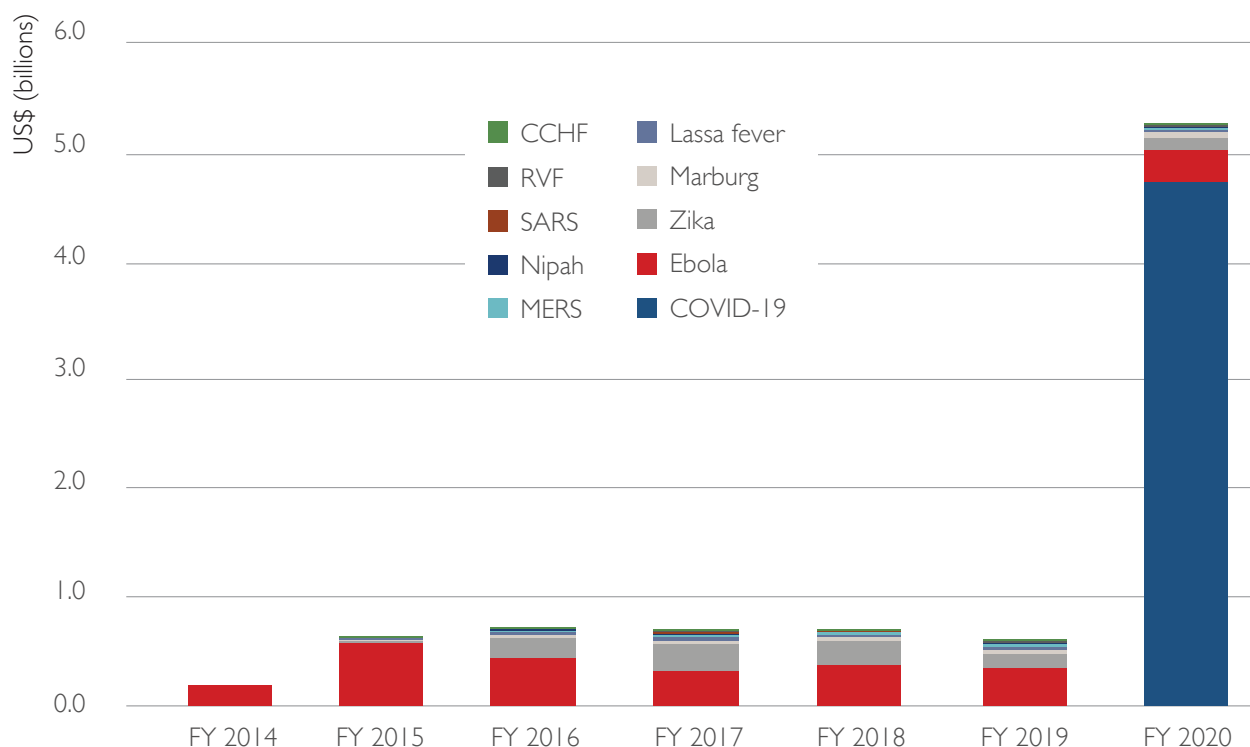


# CHARTING THE R&D RESPONSE TO COVID-19

Global R&D funding in the first year of the COVID-19 pandemic has dwarfed every previous pandemic response. As part of Policy Cures Research's annual [G-FINDER survey](#) of global health R&D investment, we have gathered data on COVID-19 R&D funding through to the end of 2020. Please see the relevant sections at the end of this Snapshot for details on [how we gathered this data](#) and [how it compares to other funding estimates](#).

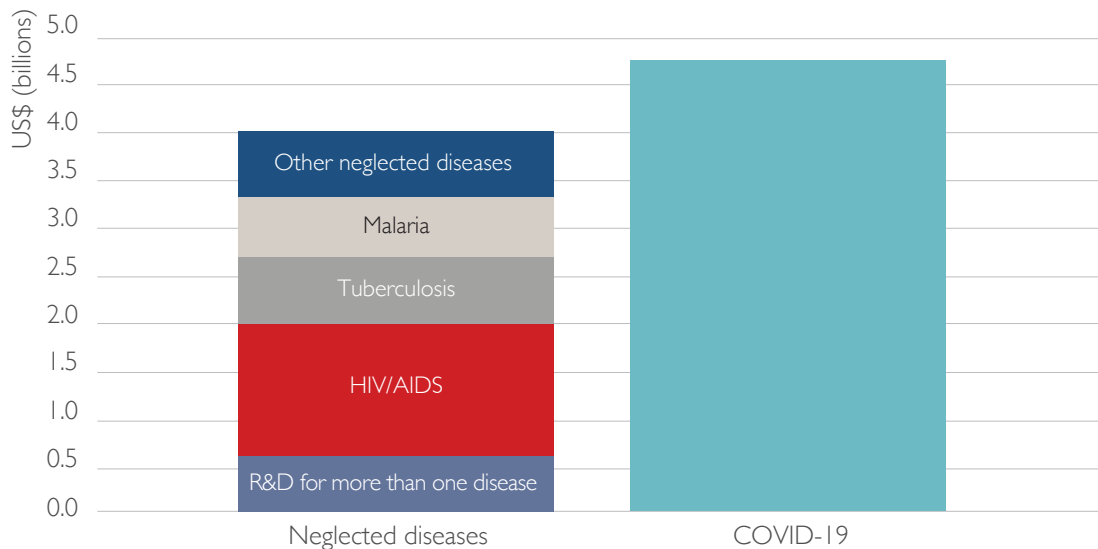
We are excited to show – for the first time – the scale of the funding, who led the global R&D response to COVID-19, and where the money was sent. All our R&D funding data is now available via our [data portal](#), which can be used to create tailored visualisations and further explore any areas of interest.

**FIGURE I | Reported funding for individual WHO Blueprint priority pathogens, 2014-2020**



Reported global funding for COVID-19 R&D in 2020 was \$4.68bn.<sup>1</sup> To put this figure in perspective, it was more than eight times as much as the average annual total received by all the other individual WHO Blueprint Priority Pathogens put together between 2014 and 2020 (\$561m)<sup>2</sup>, nearly double the \$2.48bn total for Ebola R&D between 2014 and 2020, and more than the total R&D funding across all 37 neglected diseases included in the G-FINDER survey in 2020 (\$3.94bn).

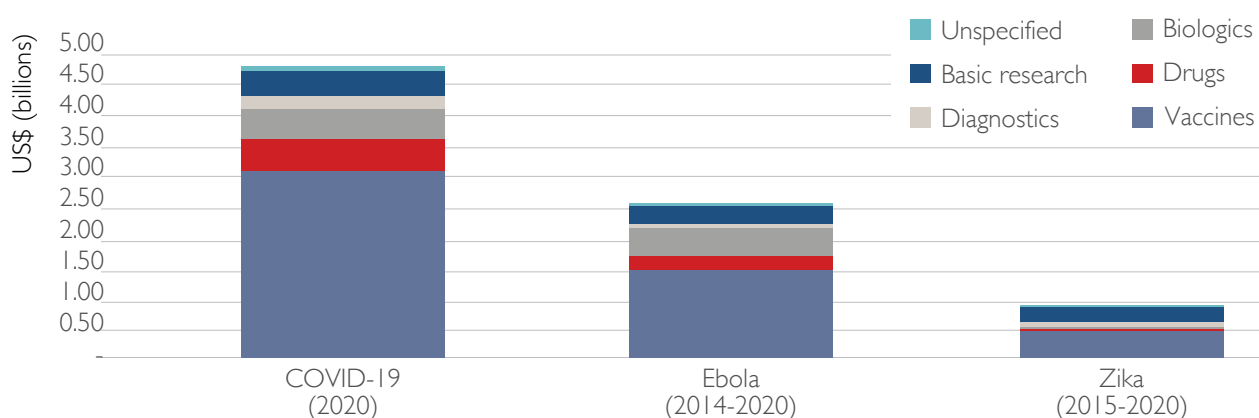
FIGURE 2 **COVID-19 vs neglected disease R&D funding, 2020**



## Which types of products received the most funding?

Nearly two-thirds of reported COVID-19 R&D funding went to vaccine R&D, more than triple the 21% share for therapeutics, which was split relatively evenly between drug and biologics R&D. This breakdown, with a large majority of funding going to vaccine R&D, smaller amounts to therapeutics and comparatively little funding to diagnostics and basic research, looks similar to the other active epidemics in our data set, and may partly reflect the large trial populations required to demonstrate vaccine efficacy.

FIGURE 3 **COVID-19 (2020), Ebola (2014-2020) & Zika (2015-2020) R&D funding, by product**



<sup>1</sup> All figures are quoted in inflation-adjusted 2020 US dollars. See “How we gathered the data”, below, for a brief summary of the funding we believe is missing from our headline estimate.

<sup>2</sup> This total is for individual pathogens only and excludes funding targeting multiple or as-yet-unknown emerging infectious diseases (EIDs), and, in 2014 and 2015, funding for EIDs not then incorporated into our survey scope. For more detail on funding for non-COVID-19 EIDs, see our [website](#) and [portal](#).

Relative to the ongoing global R&D response to the West African and DRC Ebola epidemics, COVID-19 R&D funding focused even more on vaccines (64% vs 58% of total funding) and diagnostics (4.8% vs 2.2%) but saw a notably lower proportion go to biologics and basic research in this first year of the pandemic. Both Ebola and Zika saw the amount and share of funding going to biologics peak later in their respective outbreaks, potentially predicting an increase in COVID-19 biologic funding in 2021 and beyond.

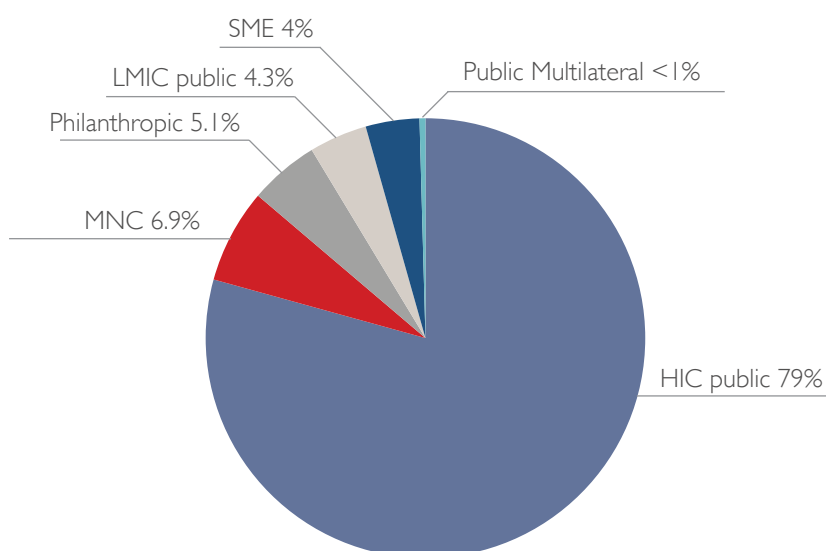


## Who did the funding come from?

In the seven years of funding for the R&D response to Ebola (nearly \$2.5bn in total), public funders from high-income countries (HICs) and multinational pharmaceutical companies (MNCs) together accounted for nearly 98% of global funding. Relatively little came from philanthropic funders (2.1% of the total) and less than \$1m, total, was given by LMIC governments and multilateral funders.

The response to COVID-19 was starkly different: while public funding from high-income countries (79% of the total) and MNCs (6.9%) again jointly accounted for the vast majority of COVID-19 R&D funding, a meaningful role was also played by philanthropic, small pharmaceutical and biotechnology companies (SMEs), low- and middle-income country (LMICs) public, and multilateral funders. As noted below however, the G-FINDER data is likely under-reporting funding from industry (both MNCs and SMEs).

FIGURE 4 COVID-19 R&D funding by sector, 2020



The five biggest funders of COVID-19 R&D were the US Biomedical Advanced Research and Development Authority (BARDA) (\$827m,<sup>3</sup> 18% of the global total), the German BMBF (\$793m, 17%), the US National Institutes of Health (NIH) (\$567m, 12%), the UK Department of Health and Social Care (DHSC) (\$330m, 7.1%) and the Norwegian Ministry of Foreign Affairs (\$225m, 4.8%, all of which went to CEPI).

BARDA is also the largest funder of Ebola R&D, accounting for 28% of the cumulative global total, and the second largest funder of non-COVID-19 emerging infectious disease (EID) R&D generally, behind only the US NIH, which provided 23% of global non-COVID-19 EID R&D funding between 2014 and 2020.

<sup>3</sup> BARDA's funding is estimated based on prorated shares of projected project length and budget falling in 2020; actual 2020 disbursements are not made public and may differ from our projections.

The other top COVID-19 funders – the BMBF, the DHSC and the Norwegian Ministry of Foreign Affairs – had all made substantial commitments to EID R&D between 2014 and 2019, each ranking among the top 12 EID contributors pre-2020, but nothing approaching their COVID-19 funding, in either absolute or relative terms.

National funding totals broadly reflect the origins of the leading funders: the US heads the list with \$1.96bn (42% of the global total), followed by Germany (\$819m, 18%), the UK (\$411m, 8.8%) and Norway (\$226m, 4.8%). France provided the fifth-most funding, followed by India and Japan.

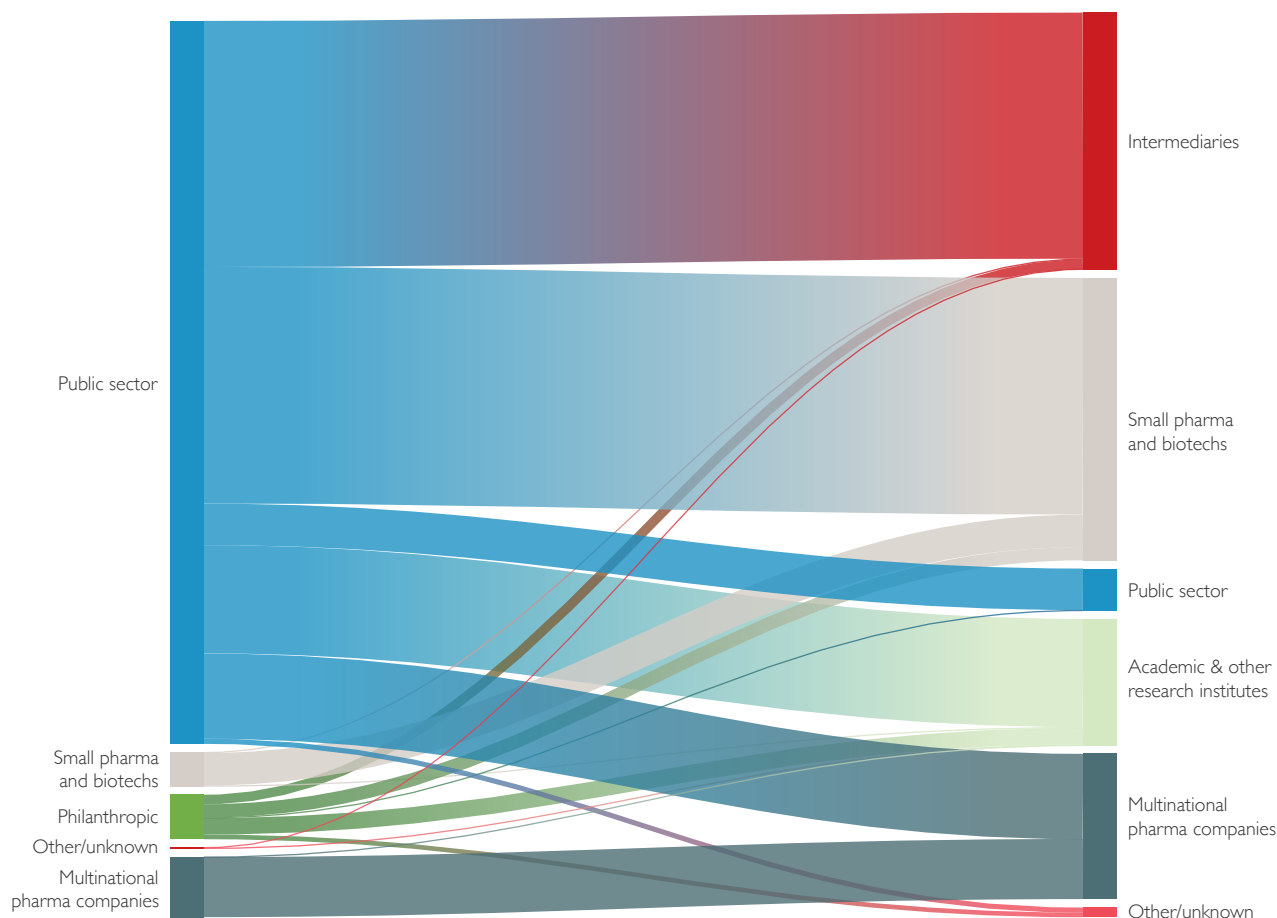


## And where did the funding go?

The single largest recipient of reported COVID-19 R&D funding was the Coalition for Epidemic Preparedness Innovations (CEPI), which was launched in 2017 in preparation for precisely this kind of situation. CEPI received \$1.28bn, or 27% of the global reported total, and more than three times as much as the next largest recipient – Germany's BioNTech. Rather than carrying out its own R&D, CEPI distributes the funding it receives to a range of academic institutions, multinational pharmaceutical companies and biotechs.

Much of the remaining funding was spread across a large number of private sector product developers, coming either from third party funders (78% of reported funding to private sector recipients came from public sector funders) or in the form of self-funded research (22%). In contrast to non-COVID EID R&D, where funding received was divided relatively evenly between multinational and smaller pharmaceutical companies, nearly two-thirds of COVID-19 R&D funding to the private sector went to small pharmaceutical and biotechnology companies, partly due to a rise in the level of self-funded R&D from small pharmaceutical companies, relative to previous epidemics.

FIGURE 5 COVID R&D funding flows, 2020





## How we gathered the data, and how to interpret it

These figures represent the funding reported as having been disbursed in the 2020 financial year by respondents to our annual G-FINDER survey of global health R&D investment, conducted in the second half of 2021. Direct reporting from public, philanthropic and private sector funders has been supplemented by data-mining of publicly available funding data, most notably from the European Commission, BARDA and US NIH. We have also incorporated funding from non-participating organisations reported by the Global Research Collaboration for Infectious Disease Preparedness (GLOPID-R). Where we lacked access to disbursement schedules, we have prorated the total value of funding across the portion of the projected grant period which fell in 2020.

Despite our best efforts, there are gaps in our survey's coverage, particularly of the private sector and of low- and middle-income countries, meaning that we are aware of substantial additional investments in COVID R&D not captured in our headline total: we lack, for example, data on any self-funded vaccine R&D carried-out by Pfizer and biologics R&D from Eli Lilly. These absences from our data set mean that \$4.68bn can be viewed as a lower bound estimate of the true global funding total.

A small amount of COVID R&D funding (around \$3m) was reported in the G-FINDER 2019 survey by organisations whose 2019 fiscal year spanned the early part of 2020. In order to avoid confusion, we have incorporated this funding into the 2020 total.



## Comparison with our other COVID funding estimates

The \$4.68bn figure we arrive at via reported disbursements and datamining should not be compared with the \$9.12bn total we arrived at in our real-time COVID-19 funding announcement tracker. Our tracker featured *pledges* rather than *disbursements*, and therefore included the full value of multi-year funding streams. In time we would expect these two figures to converge, but one year of G-FINDER data cannot be compared to the total commitments that have been announced. The disbursement data provided by G-FINDER survey participants is also more reliable than the data collected from public announcements, as we are better able to identify and adjust for double-counting of announcements made by multiple agencies of the same government, and avoid counting funds which were promised but ultimately not delivered.

The figures presented here will also differ somewhat from the numbers reported in our forthcoming *Landscape of EID R&D funding: From pandemic response to pandemic resilience* report. The above analysis includes total COVID-19 funding to CEPI and other intermediary organisations as well as product developers. In our upcoming report, we will also look at the funding *from* intermediary organisations for disease-specific investments, giving a clearer sense of the amounts actually disbursed to product developers in 2020. All our EID R&D funding data is now available via our [data portal](https://gfinderdata.policycuresresearch.org/), which can be used to create custom visualisations and further explore areas of interest.