EXECUTIVE SUMMARY

IMPACT OF NATIONAL ECONOMIC TRENDS ON PUBLICLY FUNDED NEGLECTED DISEASE R&D

1% higher government spending predicts a **1.4%** increase in that year's neglected disease R&D funding

A **$10m** year-on-year increase in overall government spending predicts a **$1.6k** increase in national neglected disease R&D funding

A **1%** increase in ODA predicts a **1.5%** increase in that year's neglected disease R&D funding

Higher government spending is accompanied by higher spending on neglected disease R&D

Based on 13 years of G-FINDER data across 24 different countries, our analysis shows a statistically significant relationship between the level of overall government spending and national public funding for neglected disease basic research and product development.[i] We found that neglected disease R&D funding tends, on average, to rise more quickly than government spending – with a 1% increase in government spending in a given year predicting a 1.4% increase in that year's neglected disease R&D funding. This relationship arises not just because larger nations tend to devote a larger share of their public funding to neglected diseases, but also because increases in government funding over time help to boost neglected disease R&D funding.

Changes in individual governments' spending are linked to their neglected disease R&D funding

By looking at year-on-year *changes* in individual governments' spending, instead of the differences *between* governments, we found that a $10m increase[ii] in overall government spending predicts, on average, a $1.6k increase in national neglected disease R&D funding. Looking separately at increases and decreases in spending, the relationship appears asymmetrical: in the short term, neglected disease R&D funding tends to benefit from growth in government spending more than it suffers from reduced spending.

i A detailed analysis of our findings and methodology is available in the accompanying full-length report.

ii All figures are in inflation- and exchange rate-adjusted 2019 USD.

Changes in official development assistance tend to mirror changes in funding for neglected disease R&D

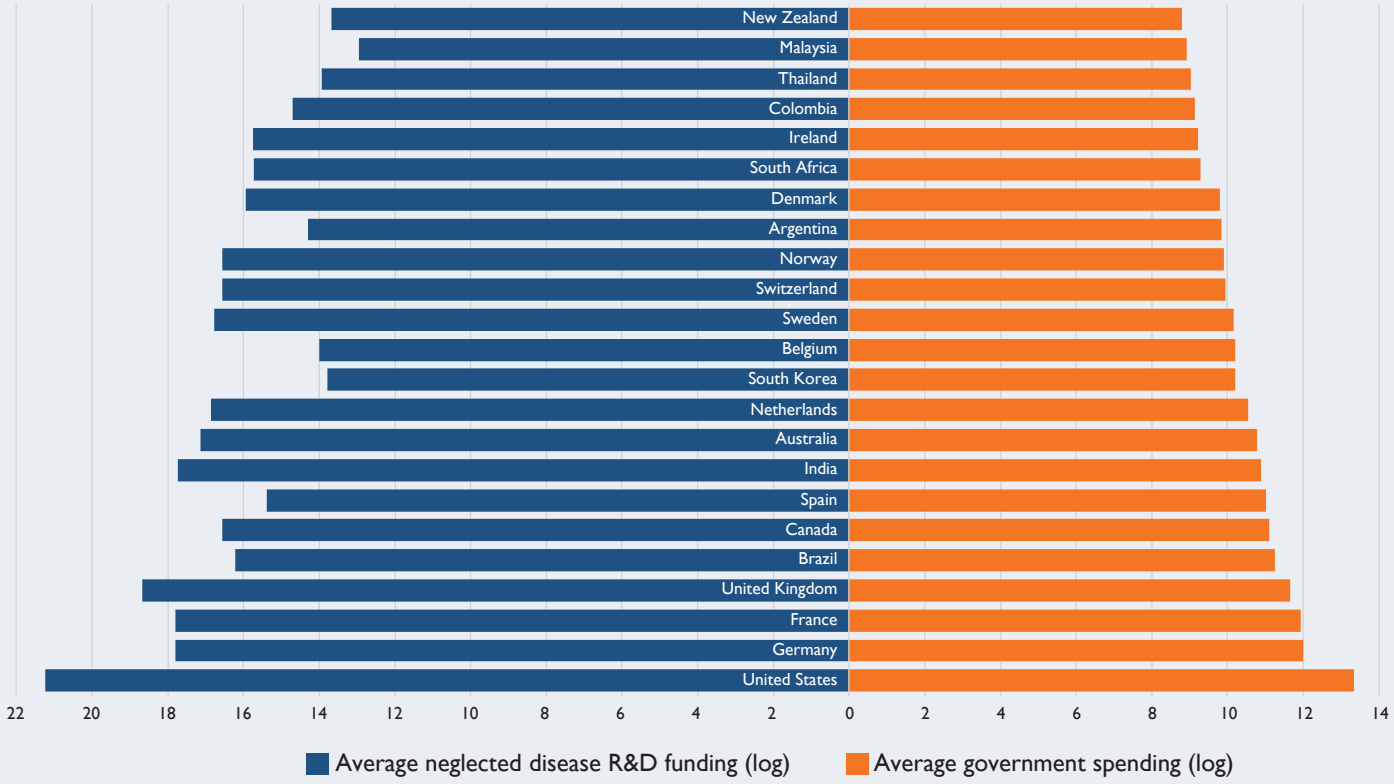
Broadening our analysis to include nations' spending on official development assistance (ODA), we found that changes in ODA are an even better way to predict changes in neglected disease R&D funding. A 1% increase in ODA predicts a 1.5% increase in that year's neglected disease R&D funding, and this relationship persists even when holding government spending constant. So ODA and neglected disease R&D funding are related not just because both tend to benefit from periods of increased government spending, but also because other factors that boost ODA – those not related to overall spending – also appear to boost funding for neglected disease R&D. Meaning that what is good for ODA is usually also good for neglected disease R&D funding.

What do these relationships mean for global health stakeholders?

We have found several robust historical relationships between government spending, ODA and neglected disease R&D funding; but our results don't demonstrate any kind of mechanical, causal relationship – tendency is not destiny. That said, thanks to the ongoing efforts of global health stakeholders and activists in making the case, a rising tide of government spending does seem to lift all boats, including both ODA and neglected disease R&D funding.

The figure below shows the relationship between overall government spending and neglected disease R&D funding for each of the countries included in our analysis. Ranked in order of total government spending (log scale, in orange), it shows that funding for neglected disease R&D (log scale, in blue) generally increases with government spending, but also shows the nations, like India, that spend more on neglected disease R&D than their overall government spending would predict, and those, like South Korea, which spend less.

Average annual government spending and neglected disease R&D funding (log scale)



As well as the relatively robust relationships between government spending, ODA and neglected disease R&D funding, a few other points of interest emerged from our analysis:

- We found no significant relationship between either absolute or percentage change in neglected disease R&D funding and economic growth in either the current or previous year. This may be due to the ambiguous effect economic growth has on government spending: periods of high growth will increase governments' capacity for spending, but periods of slow growth also tend to encourage increased spending in the form of fiscal stimulus.
- Our data includes twice as many instances of government funding increases as it does years of decreased funding, meaning that the relationship between cuts in government funding on neglected disease R&D spending remains less clear. The data suggest that the effect on neglected disease R&D funding is not as strong in this direction, perhaps because stakeholders often manage to insulate the neglected disease budget from overall cuts.
- The clear relationship between ODA and neglected disease R&D funding, partly independent of overall changes in government spending, suggests that potential changes to ODA tell us something useful about governmental attitudes to neglected disease – that ODA can serve as an early warning mechanism for threats to the neglected disease R&D funding environment, and that supporters of, and stakeholders in, ODA might serve as valuable allies in the struggle for increased global health funding.

What does this mean for the future of neglected disease R&D funding?

With the big increases in high-income country spending in response to COVID-19 likely to wind down over the next few years, many stakeholders are likely to be interested in knowing whether future overall funding cuts are likely to fall on neglected disease R&D budgets.

One way to think about the link we discovered between ODA and neglected disease R&D is in terms of the potential impact of high-income countries adopting the UN target of directing 0.7% of GDP to ODA. Based on our modelling, for example, the UK's decision to lower its ODA target from 0.7% to 0.5% in 2021 predicts its funding for neglected disease will be $78m lower than if the 0.7% target had been retained.

But globally, if high-income nations were to increase their collective ODA funding from its all time peak of 0.4% of GDP to the UN target of 0.7%, we would expect to see annual neglected disease R&D funding rise by nearly $2 billion annually.

Looking directly at how government spending reacted to the aftermath of the 2008 global financial crisis provides another way to predict how post-COVID government spending might influence neglected disease R&D funding: growth in government spending by nations in our sample fell sharply after 2008, turning negative in 2012, before bottoming-out in 2015 – a full seven years after the crisis began. That year's 6.5% fall in overall government spending – by far the largest throughout the post-crisis period – was accompanied by a $93m fall in neglected disease R&D funding. This represented a substantial (4.7%) but not catastrophic fall in neglected disease R&D funding, though one significantly lower than the $177m drop predicted by our model should a similarly-sized drop occur in future.

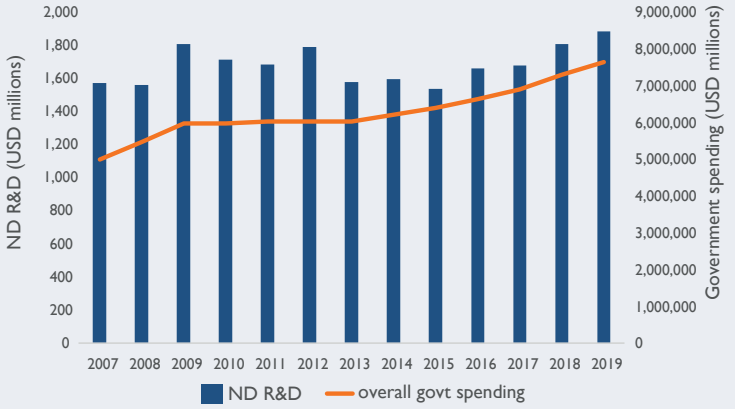
Do these trends persist when we zoom in on specific nations?

While we found links between neglected disease R&D funding and various measures of government spending at the international level, and for two-thirds of individual countries, changes in government and neglected disease funding over time did not always show the expected statistical relationship – as shown in the charts below.

Government spending and neglected disease R&D funding, US vs. UK

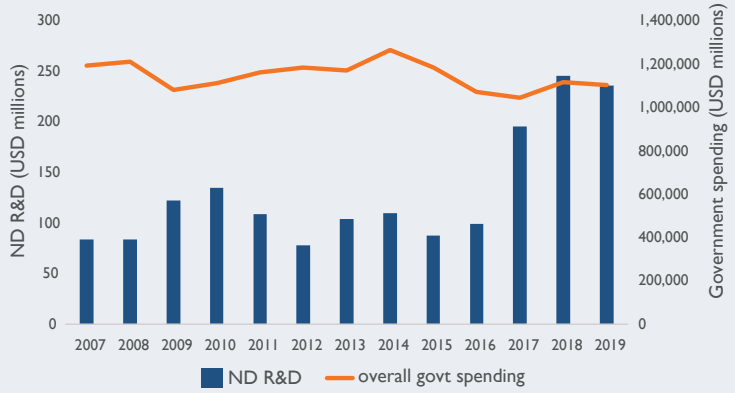
Rising United States government spending

The clearest link between government spending and neglected disease funding was for the United States, for which we found individual statistically significant relationships between government spending and neglected disease funding over time, and for *changes* in neglected disease funding and government funding, with, for example big increases in both categories of spending in 2009 – overall spending rose by more than half a trillion dollars and neglected disease funding by nearly $250m – followed by smaller cuts to both in 2010.



The United Kingdom bucks the overall trend

In the UK's case, though, there is a statistical relationship – but in the opposite direction to what we would expect. The UK's funding for neglected disease R&D fell between 2010 and 2012, even as overall spending was rising in the aftermath of the global financial crisis. Then, starting in 2016, the UK's neglected disease R&D funding – along with its ODA spending – began to rise sharply, despite falls in overall spending. This negative relationship between neglected disease R&D (and ODA) and overall funding seems to reflect a deliberate political decision to increase the share of spending going to ODA and to prioritise high-impact investments in global health, at a time when other portfolios saw their funding steeply reduced. This experience underlines the extent to which political persuasion has the potential to overcome the usual links between neglected disease R&D funding and overall spending.



While neglected disease R&D funding often appears to benefit from the existence of new funding, the example of the UK shows that it need not necessarily suffer as part of a general belt-tightening. Stakeholders' existing efforts to ensure that neglected disease R&D continues to be prioritised even in times of (relative) hardship appear to be working, and the argument that a harsh budgetary environment caused by a global pandemic probably ought not to fall on the study of infectious disease is likely to carry some weight.

You can find a detailed analysis of our findings and methodology in the accompanying full-length report