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Cutting the NIH—The $8 Trillion Health Care Catastrophe

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Scientists researching new cancer cures are neither culture warriors nor campus protesters. But so far, the biggest financial blows against academia have been borne by biomedical research. The Trump administration has selectively canceled grants, fired intramural researchers, and plans to cut billions that are paid by the National Institutes of Health (NIH) for indirect costs. The administration has proposed to Congress a 43% cut to next year's NIH budget, equivalent to $20 billion per year. The government has threatened to stop funding virtually all biomedical research if certain universities do not accept demands for changes in curriculum, admissions, hiring, and other policies—none of which are related to lifesaving science. As a result, hiring freezes are common at medical centers, and clinical trials are or might be put on hold.

Health Impacts

What could be the impact of these cuts? Although the extent of the proposed cuts is unprecedented, several recent studies allow us to forecast their likely impact. We focus our calculations here on one aspect of the potential consequences—the implications of the proposed cuts for drug discovery.

Federal funding for biomedical research is central to health care innovation.[1] More than 99% of all new drugs approved from 2010 through 2019 had some antecedent research funded by the NIH.[2] Data from Azouley et al[3] that examines the impact of NIH research funding on drug patents, using changes in grant allocations that come from idiosyncrasies in grant funding rules, is particularly useful here. Assuming that some efficiencies are possible, and thus that a 40% cut in NIH spending will translate into a smaller change in effective distributions, we can use the data from Azouley et al[3] to estimate the consequences of a 33% effective cut in biomedical research funding.

Azouley et al[3] estimate that a 33% reduction in NIH funding would be associated with a 15.3% reduction in patents associated with new drugs. We assume, like them, that this will lead to 15.3% fewer new therapies.[3] Although we do not quantify this here, cuts already made and proposed future staffing cuts at the US Food and Drug Administration may further slow the pace of drug approvals.

New therapies lengthen lives.[4,5] Buxbaum et al[6] estimate that new medical therapies generated 48% of the 3.3-year increase in life expectancy in the US between 1990 and 2015. If biomedical research remains as important in the future as in the past, a 15.3% reduction in new therapies would lead to a reduction in life expectancy of 0.24 years per person over the next 25 years. In a population of more than 340 million, this reflects 82 million fewer years of life. Economists use various methods to estimate the value of life and typically find that years of life are valued at roughly between $100 000 and $200 000 per year.[6] Even using the lower value in calculations, the lost health from the NIH cuts translates into more than $8.2 trillion ($100 000 × 82 million years).

These losses would be weighed against the gains that emerge from reduced public spending. Over 25 years, the proposed annual savings of $20 billion amounts to $500 billion in budgetary reductions. This pales in comparison to the $8.2 trillion in lost health, which is 16 times greater than the proposed cost savings. Put another way, punishing campuses by cutting health research funding would destroy the equivalent of one-quarter of annual gross domestic product in the US.

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Biomedical Research as a Growth Area

There are several other ways in which the proposed reductions in biomedical funding can harm health, including centrally their impact on the economy. Estimates suggest that every dollar of NIH spending leads to $2.56 of economic activity,[7] which is in line with a well-cited study that finds that adding an extra job generates 1.6 extra local jobs, and an extra skilled job generates even more employment.[8] Therefore, a $20 billion reduction in biomedical research will reduce economic output throughout the US by $51 billion. Biomedical research is spread widely geographically, and so too would the pain. For example, reducing NIH spending by 40% across the board would result in annual economic losses of $2.45 billion for the economy of Texas, $2.12 billion for the economy of Pennsylvania, and $851 million for the economy of Missouri.

The effects of these losses could compound over time because government research translates into productivity increases in private companies.[9] One estimate suggests that the 33% reduction in NIH spending could lead to a $48 billion reduction in the stock market value of pharmaceutical companies, which would have its own ripple effects on the economy.[3] We do not cover here the implications of proposed budgetary reductions on health through disinvestment in the public health infrastructure, or social safety nets, all of which will affect health, particularly of those who are already vulnerable.

Prospects for Policy Changes

In his first term, President Trump wisely showed little inclination to target biomedical research. Operation Warp Speed was a scientific triumph, delivering the vaccines that quelled the COVID-19 pandemic. In Trump's second term, by contrast, biomedical research has become a cudgel for reforms that are unrelated to the health of the US. Our calculations suggest that the proposed budgetary cuts to the NIH will create a social cost that is 16 times greater than the savings that the administration is attempting to achieve. For the sake of health and the economy, we can only hope that the Trump administration will recognize that funding science is good economic as well as health policy.

ARTICLE INFORMATION

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REFERENCES

1. Sampat BN. Appendix D: the impact of publicly funded biomedical and health research: a review. Accessed April 29, 2025. https://nap.nationalacademies.org/read/13208/chapter/15

2. Galkina Cleary E, Jackson MJ, Zhou EW, Ledley FD. Comparison of research spending on new drug approvals by the National Institutes of Health vs the pharmaceutical industry, 2010-2019. *JAMA Health Forum*. 2023;4(4):e230511. doi:10.1001/jamahealthforum.2023.0511

3. Azoulay P, Li D, Zivin JSG, Sampat BN. Public R&D investments and private-sector patenting: evidence from NIH funding rules. *Rev Econ Stud*. 2019;86(1):117-152. doi:10.1093/restud/rdy034

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4. Lichtenberg FR. The impact of public and private research on premature cancer mortality and hospitalization in the United States, 1999-2013. *Am Econ*. 2018;63(2):147-165. doi:10.1177/0569434518760537

5. Cutler DM, Ghosh K, Messer KL, Raghunathan T, Rosen AB, Stewart ST. A satellite account for health in the United States. *Am Econ Rev*. 2022;112(2):494-533. doi:10.1257/aer.20201480

6. Buxbaum JD, Chernew ME, Fendrick AM, Cutler DM. Contributions of public health, pharmaceuticals, and other medical care to US life expectancy changes, 1990-2015. *Health Aff (Millwood)*. 2020;39(9):1546-1556. doi:10.1377/hlthaff.2020.00284

7. Murphy KM, Topel RH. The value of health and longevity. *J Polit Econ*. 2006;114(5):871-904. doi:10.1086/508033

8. United for Medical Research. NIH's role in sustaining the US economy. Published March 2025. Accessed April 30, 2025. https://www.unitedformedicalresearch.org/wp-content/uploads/2025/03/UMR_NIH-Role-in-Sustaining-US-Economy-FY2024-2025-Update.pdf

9. Moretti E. Local multipliers. *Am Econ Rev*. 2010;100(2):373-377. doi:10.1257/aer.100.2.373

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