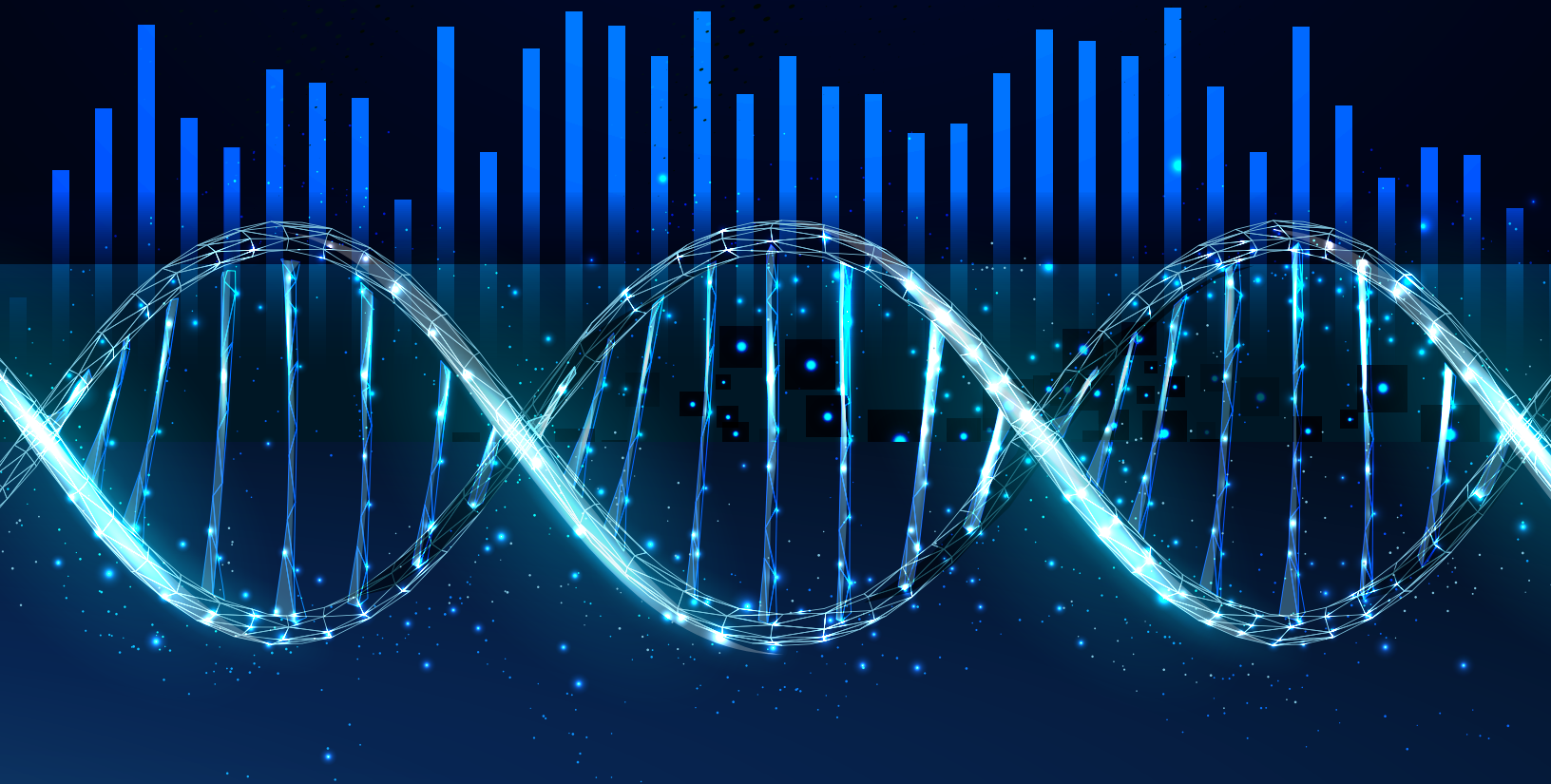


U.S. Investments in Medical and Health Research and Development

2021-2025



SEPTEMBER 2026



Introduction

This report tracks annual investment across the diverse ecosystem that helps drive U.S. medical and public health progress.

This report is designed to fill a gap in information about U.S. funding for medical and health research and development (R&D) by providing as comprehensive a picture as possible of funding across sectors. Unusual developments are not stripped from the data. Instead, they are accounted for in interpreting what the numbers do, and do not, tell us.

The report is not intended to predict the future, nor does a five-year period necessarily establish a longer-term trend. Rather, it provides a snapshot of the sources and magnitude of U.S. medical and health R&D funding during an unusually dynamic period. It also provides a benchmark for placing that funding in a larger context. Funding levels reflect a range of factors, including federal priorities and the statutory, regulatory, and policy environment in which each sector operates. Viewed alongside other national priorities and the funding commitments of global competitors, the estimates in this report can help assess whether the United States is positioned for continued leadership in driving medical progress.

Industry, federal agencies, academia, independent research institutes, state and local governments, patient advocacy organizations, philanthropy, and patients themselves each play distinct but interconnected roles in advancing medical and health R&D. Together, as sources of research funding, performers of research, and champions for research, they fuel the discoveries, technologies, treatments, and improvements in health care that extend and improve lives.

When this ecosystem is strong and functioning well, the results can be transformative, turning once devastating diseases into preventable, manageable, or treatable conditions. When the ecosystem is weakened, future progress and the patients who depend on it are placed at risk. Americans recognize the importance of sustaining that ecosystem: overwhelming majorities support a federal role both in funding research and in creating incentives for private sector R&D. This report provides a measure of the resources the nation is bringing to that task and looks at those resources in the context of how the ecosystem works, the incredible advances it produces, and what current investment levels say about the priority our nation is assigning to medical progress. Are we forging ahead or lagging behind in the context of scientific opportunity, human need, and our legacy of global R&D leadership? We will look at this and other key questions in this report.

Overview of U.S. Investments in Medical and Health R&D

U.S. Medical and Health R&D Investment in 2025

In 2025, total U.S. medical and health R&D investment reached **\$297.5 billion**. While that represents a 2.0% increase from 2021, investment declined 4.5% from 2024 and remained below the recent five-year peak of \$312.5 billion in 2022.

That \$297.5 billion reflects contributions from across the medical and health R&D ecosystem. In 2025:

- **Industry** invested \$196.7 billion, accounting for 66.1% of the total.
- **Federal departments and agencies** invested \$63.0 billion, or 21.2%.
- **Academic and research institutions** invested \$29.9 billion of their own funds, or 10.0%.
- **Foundations, voluntary health associations, and professional societies** provided \$3.7 billion, or 1.3%.
- **State governments** invested \$4.1 billion, or 1.4%.

Looking Beneath the Numbers: Changes, Not Necessarily Trends

The relatively small net change in total U.S. medical and health R&D investment between 2021 and 2025 masks substantial changes across and within funding sources. Over these five years, industry investment rose and then declined; a new federal research agency was established; billions of dollars in pandemic-related funding for BARDA ended; ten years of mandatory NIH funding provided through the 21st Century Cures Act wound down; and some federal agencies ceased funding U.S.-based medical and health R&D. At the same time, several other smaller scale, but important sources of funding grew substantially.

These changes make the five-year period particularly ill-suited to identifying longer-term trends. Year-to-year comparisons remain important, particularly when they signal changes that warrant watching, but additional years of data will be needed to determine whether those changes represent enduring trends. Rather, this report provides a snapshot of the sources and magnitude of U.S. medical and health R&D investment and how that funding changed during an unusually dynamic period. It also provides an important benchmark for evaluating the priority our nation is assigning to U.S. medical and health R&D.

Industry investment increased by 13.2% over the five-year period, while academic and research institutions increased their own investment by 31.4%. Funding from foundations, voluntary health associations, and professional societies increased by 28.5%, and state government investment increased by 44.9%. Academic and research institutions and state governments were the only two funding sources to increase their investment in each year of the five-year period.

Federal government investment declined substantially – by \$26.5 billion or 29.6% – from 2021 to 2025, but that change should be interpreted in the context of significant temporary and structural changes in federal funding. Most notably, the decline primarily reflects the expiration of substantial pandemic-related R&D funding received by BARDA in 2021 and 2022, with carryforward into 2023 and 2024. **When BARDA spending estimates are excluded, medical and health R&D grew about 15% from 2021 to 2025, roughly keeping pace with inflation.** Other changes influencing the federal topline numbers include the establishment of ARPA-H in 2022, the winding down of mandatory NIH funding provided through the 21st Century Cures Act, and the discontinuation of U.S.-based medical and health R&D funding by the Department of Homeland Security and USAID after 2020 and 2022, respectively. Taken together, these changes make the federal five-year comparison particularly unsuitable as evidence of a sustained trend in federal support for medical and health R&D.

The most recent year, however, merits attention. From 2024 to 2025, industry investment declined by 6.4%, its first annual decline in more than a decade of tracking. Federal investment also declined, falling by 2.1%. As with the five-year comparison, changes in the composition of federal funding, including the winding down of BARDA funding and mandatory 21st Century Cures Act funding, bear on the 2024-2025 result. Looking beyond the period covered by this report, NIH funding grew nominally in FY2026, while flat funding remains a possibility for FY2027. What does the future hold for U.S.-driven medical progress? Future reports will help answer that question. And what do current funding levels, federal and otherwise, say about whether the United States is investing at a level commensurate with continued global leadership? We explore that question later in this report.

Table 1. Estimated U.S. Medical and Health R&D Investment (\$ in millions), 2021-2025*

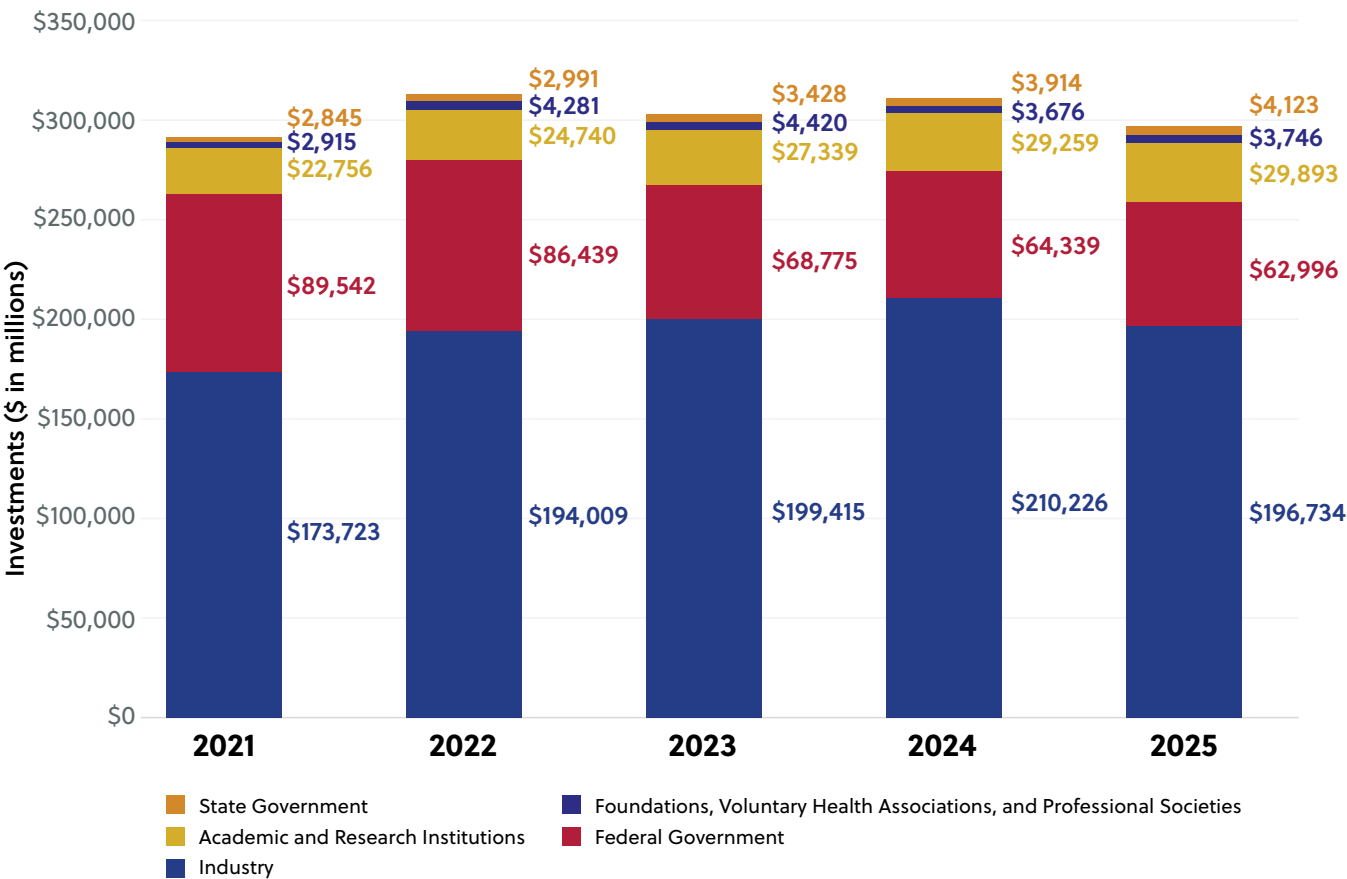
Source	2021	2022	2023	2024	Estimated 2025
Industry	173,723	194,009	199,415	210,226	196,734
Federal Government	89,542	86,439	68,775	64,339	62,996
Academic and Research Institutions	22,756	24,740	27,339	29,259	29,893
Foundations, Voluntary Health Associations, and Professional Societies	2,915	4,281	4,420	3,676	3,746
State Government	2,845	2,991	3,428	3,914	4,123
Total U.S. Medical and Health R&D Spending	291,782	312,460	303,377	311,415	297,492

*Unless otherwise noted, dollar amounts in this report are presented in current dollars and are not adjusted for inflation.

Table 2. Estimated U.S. Medical and Health R&D Investment Percentage Change, 2021-2025

Source	'21-'22 Change	'22-'23 Change	'23-'24 Change	'24-'25 Change	'21-'25 Change
Industry	11.68%	2.79%	5.42%	-6.42%	13.25%
Federal Government	-3.46%	-20.44%	-6.45%	-2.09%	-29.65%
Academic and Research Institutions	8.72%	10.51%	7.02%	2.17%	31.36%
Foundations, Voluntary Health Associations, and Professional Societies	46.85%	3.25%	-16.83%	1.90%	28.51%
State Government	5.11%	14.61%	14.17%	5.34%	44.89%
Total U.S. Medical and Health R&D Spending	7.09%	-2.91%	2.65%	-4.47%	1.96%

Figure 1. Estimated U.S. Medical and Health R&D Investments, by Source (\$ in millions), 2021-2025



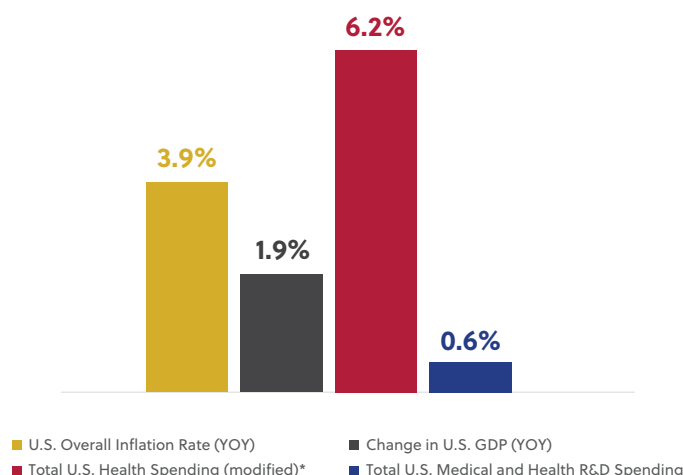
R&D Investment Is Not Keeping Pace with Health Spending

The slow growth in medical and health R&D is particularly striking when compared with the growth in what the United States spends on health overall.

Between 2021 and 2025, total U.S. health spending increased **27.4%**, reaching more than **\$5.6 trillion**. Medical and health R&D investment increased **2.0%** over the same period.

The difference is also clear in annual growth rates. From 2021 through 2025, overall U.S. health spending increased at an average annual rate of more than **6.2%**, while overall inflation averaged **3.9%**. Medical and health R&D investment grew at an average annual rate of just **0.6%**, failing to keep pace with either.

Figure 2. Comparative Average Annual Growth Rates, 2021-2025



As a result, R&D represents a shrinking share of what the nation spends on health. In 2021, medical and health R&D accounted for **6.58%** of total U.S. health spending. By 2025, that share had fallen to **5.27%**. Put another way, **just over five cents of every dollar the United States spends on health is devoted to R&D** that can produce new ways to prevent, diagnose, treat, and ultimately reduce the burden of disease.

**Total U.S. Health Spending = Adjusted U.S. Non-R&D Health Care Spending (Adjusted NHE) + U.S. Medical and Health R&D Spending (Research!America and TEconomy; see methodology for detailed discussion.)*

Table 3. Total Health Spending versus Medical and Health R&D Investment (\$ in millions), 2021-2025

Source	2021	2022	2023	2024	Estimated 2025
Total U.S. Medical and Health R&D Investment*	291,782	312,460	303,377	311,415	297,492
Total U.S. Health Spending*	4,433,154	4,639,678	4,957,798	5,309,347	5,645,879
R&D Share of Total U.S. Health Spending	6.58%	6.73%	6.12%	5.87%	5.27%

**Total U.S. Health Spending = Adjusted U.S. Non-R&D Health Care Spending (Adjusted NHE) + U.S. Medical and Health R&D Spending (Research!America and TEconomy; see methodology for detailed discussion.)*

Note: These calculations are based on total medical and health R&D spending, including federal pandemic-related R&D investment.

An Interconnected R&D Ecosystem

Medical progress depends on a connected ecosystem in which different types of research, institutions, and sources of funding build on one another.

Basic research generates new knowledge about health and disease. Applied research builds on those discoveries to identify potential approaches to prevention, diagnosis, and treatment. Clinical research determines whether promising advances are safe and effective for patients. Industry and other partners help develop, manufacture, and bring successful products to scale, while the FDA provides regulatory review. Healthcare research helps determine how new and existing approaches can be put to work effectively in real-world care.

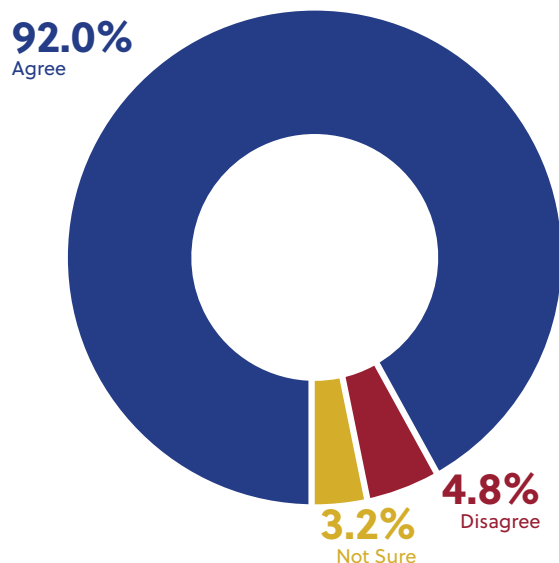
No single sector performs all of these roles, and progress rarely follows a simple or linear path. But each stage depends on the knowledge, capabilities, and resources generated elsewhere in the ecosystem. **The strength of U.S. medical and health R&D therefore depends on the ability of the entire ecosystem to function together.**

The research and development ecosystem through which basic scientific discoveries become treatments and cures is complex, dynamic, and rarely linear. The pipeline shown on the next two pages offers a simplified representation of that ecosystem, highlighting key stages in the path from discovery to improved health. At every stage, scientific pursuit must be matched with the funding and other resources needed to move promising ideas forward.

Public Support for the Federal Government's Role in Research

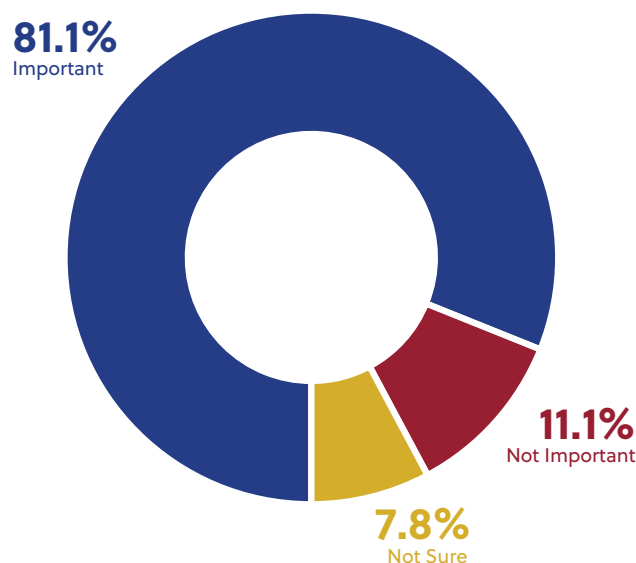
Providing support for basic research and incentives for private sector research are considered important roles for the federal government by an overwhelming share of Americans.

Basic Research Should be Supported by Federal Government



Source: A 2026 Research!America survey of U.S. adults conducted in partnership with Zogby Analytics.

Federal Incentives for Private Sector R&D



Source: A 2024 Research!America survey of U.S. adults conducted in partnership with Zogby Analytics.

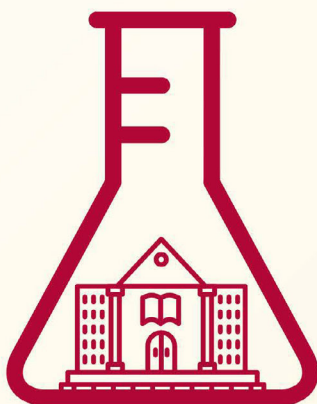


RESEARCH & DEVELOPMENT PIPELINE



The research and development (R&D) pipeline is the multi-step process through which basic scientific discoveries become treatments and cures. Patients, governments, and industries spanning pharmaceuticals, medical technology, and health care all play a role in combating threats to our health.

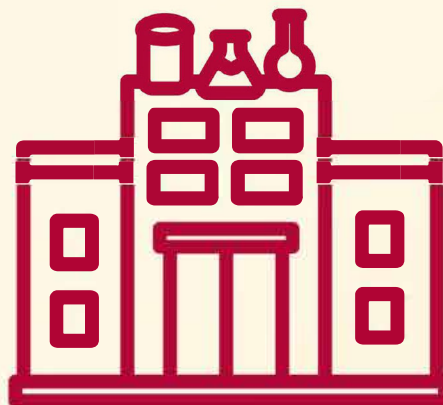
BASIC RESEARCH



- Basic research answers fundamental questions about how living organisms work, generating knowledge that often leads to advances in health.
- Most basic research is funded by the federal government and conducted at U.S. academic institutions and independent research institutes.

APPLIED RESEARCH

- Applied research builds on basic research's clues to assess potential paths toward safeguarding, improving, or restoring health.
- The private sector plays a crucial role in conducting and supporting applied and clinical research.



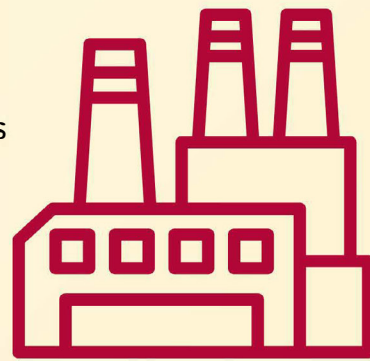


CLINICAL RESEARCH

- Clinical research further refines and assesses potential medical advances.
- It typically involves both patients and healthy volunteers.
- After going through Phases I to III, only about 7% of drugs ultimately receive FDA approval.

REGULATORY REVIEW & SCALE-UP

- The FDA reviews the safety and efficacy of new drugs and devices, evaluating whether to approve them for sale in the U.S.
- Once approved, the FDA works with drug companies to develop prescription information for providers and patients.
- Companies then begin large-scale manufacturing and marketing.



IMPLEMENTATION IN HEALTH CARE

- As medical products enter the market, health care providers must determine how to incorporate them into practice.
- AHRQ and the NIH fund health services and implementation research, which helps inform providers to make evidence-based health care decisions.



Source by Detailed Segment

The remainder of this report examines the sources of U.S. medical and health R&D investment in greater detail. The data represent estimates of dollars invested in medical and health R&D performed in the United States and are categorized by the source of the funding, rather than by the institution or sector that ultimately performs the research. For example, research conducted at a U.S. medical school with an NIH grant is counted as federal investment because NIH is the **source of the funding**, rather than as investment by the academic institution performing the research.

The following sections examine investment by **industry, the federal government, academic and research institutions, foundations and voluntary health organizations, and state governments.**

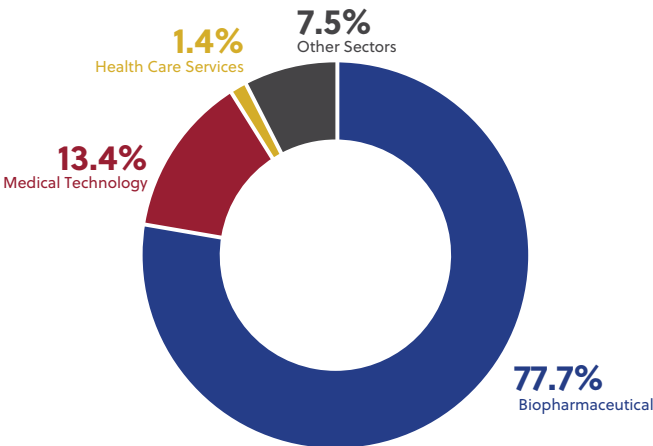
Industry

Industry remained the largest source of U.S. medical and health R&D investment in 2025, accounting for \$196.7 billion or **66.1% of the total.**

Industry investment reached \$196.7 billion, an increase of \$23.0 billion, or 13.2%, from 2021. The most recent year, however, marked a significant change. Industry investment declined by \$13.5 billion, or 6.4%, from its five-year peak in 2024. This was the first annual decline in industry investment in more than a decade of tracking.

The biopharmaceutical sector accounted for more than three-quarters of industry medical and health R&D investment in 2025. Its investment declined by nearly \$15.5 billion from 2024, accounting for the industry sector's overall decline. Investment increased in the other three industry categories: medical technology, health care services, and other sectors.

Figure 3. 2025 Distribution of Industry Investment in Medical and Health R&D



Did you know... Industry invests in and performs medical and health R&D in every state, the District of Columbia, and Puerto Rico.

Table 4. Medical and Health R&D Investments (\$ in millions), 2021-2025 – Industry

Industry (U.S. Operations)	2021	2022	2023	2024	Estimated 2025	'24-'25 Change	'21-'25 Change
Biopharmaceutical	137,118	151,560	158,661	168,383	152,912	-9.19%	11.52%
Medical Technology	22,694	25,418	25,804	25,320	26,436	4.41%	16.49%
Health Care Services*	2,223	3,010	2,586	2,567	2,711	5.62%	21.96%
Other Sectors**	11,688	14,021	12,364	13,956	14,675	5.15%	25.56%
Industry (U.S. Operations) Total	173,723	194,009	199,415	210,226	196,734	-6.42%	13.25%

**Health Care Services represents research conducted by companies that perform research services ancillary to the direct provision of clinical care (e.g., R&D expenditures by diagnostic testing companies and physician practice groups).*

***Other Sectors includes medical and health-related R&D investments and expenditures by firms not typically included in the medical and health industry (e.g., health-related R&D performed by plastic products, electronic components, or software and computer firms).*

Federal Government

Federal government investment in medical and health R&D remained the second largest source of funding in 2025, accounting for \$63 billion or 21.2% of the total.

Over the full five-year period, federal investment declined by \$26.5 billion, or 29.6%. However, a significant portion of the five-year decline reflects the expiration of temporary pandemic-related funding. Appropriations bills **supported more than \$66 billion in additional, pandemic-focused medical and health R&D** through the Biomedical Advanced Research and Development Authority (BARDA) in 2021 through 2024. As those temporary resources concluded, BARDA funding fell from \$33.9 billion in 2021 to slightly over \$1 billion in 2025.

Looking Beneath the Five-Year Topline

THE BARDA EFFECT

+2.0%
Reported medical and
health R&D growth
2021–2025

+15.0%
Medical and health R&D
growth excluding BARDA
2021–2025

+27.4%
Growth in total
U.S. health spending
2021–2025

Even after illustrating the effect of unusually high BARDA funding in 2021, medical and health R&D growth lagged substantially behind the growth in what the nation spends on health.

WHAT THE COMPARISON SHOWS

The five-year comparison is significantly affected by unusually high BARDA funding in 2021, much of it supported by temporary pandemic-era supplemental resources. To illustrate the magnitude of that effect, removing BARDA funding from both 2021 and 2025 changes the five-year increase in total medical and health R&D from 2.0% to approximately 15.0%.

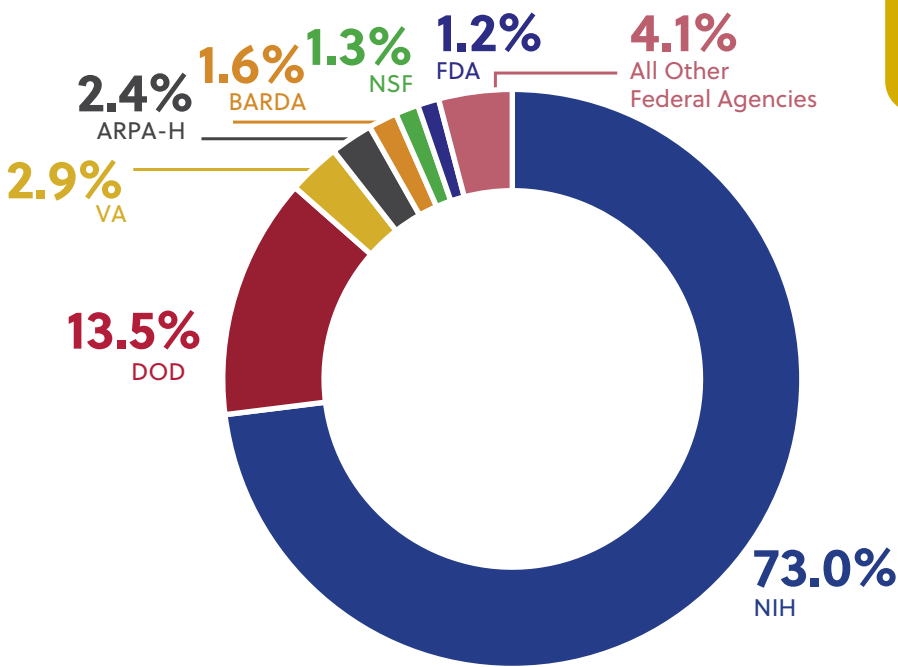
This is not a pandemic-adjusted estimate. Pandemic-related R&D funded through industry and other sectors is not separately identifiable in these data and therefore has not been removed. The calculation is an illustration of how strongly the change in one unusually large source of temporary federal funding affects the five-year topline.

The broader picture remains important: excluding BARDA, medical and health R&D grew about 15% from 2021 to 2025, roughly keeping pace with inflation while remaining well below the 27.4% growth in overall U.S. health spending.

Other funding variables are important to note. NIH remained by far the largest federal source of medical and health R&D investment, accounting for 73% of the federal total in 2025 including 21st Century Cures Act funding in all five years. NIH investment was \$46.0 billion, down 0.8% from 2024 but 7.4% above its 2021 level. The second largest source, DoD, declined by 6.5% from 2024 to 2025. For both of these agencies the one-year decline is concerning, it also does not yet constitute a trend.

The establishment of the Advanced Research Projects Agency for Health (ARPA-H) in 2022 accounted for medical and health R&D investment of \$1.0 billion in 2022 and \$1.5 billion in 2023, 2024, and 2025.

Figure 4. 2025 Distribution of Federal Government Investment in Medical and Health R&D



Did you know...
NIH invests in medical and health R&D in every state, the District of Columbia, and Puerto Rico.

Table 5. Medical and Health R&D Investments (\$ in millions), 2021-2025 – Federal Government

Federal Government	2021	2022	2023	2024	Estimated 2025	'24-'25 Change	'21-'25 Change
National Institutes of Health (NIH)	42,812	45,178	47,678	46,358	46,001	-0.77%	7.45%
Department of Defense (DoD)	6,608	5,736	7,618	9,073	8,483	-6.50%	28.39%
Department of Veterans Affairs (VA)	1,698	1,696	1,916	1,869	1,843	-1.38%	8.52%
Adv. Research Projects Agency for Health (ARPA-H)		1,000	1,500	1,500	1,500	0.00%	N/A
Biomedical Adv. R&D Authority (BARDA)*	33,881	28,413	5,913	1,489	1,015	-31.82%	-97.00%
National Science Foundation (NSF)	850	886	886	823	815	-0.93%	-4.06%
Food and Drug Administration (FDA)	589	561	710	733	749	2.22%	27.13%
Patient Centered Outcomes Research Institute (PCORI)**	356	377	391	446	518	16.01%	45.35%
Agency for Healthcare Research and Quality (AHRQ)	434	456	485	487	496	1.85%	14.35%
Department of Energy (DoE)	403	405	464	457	482	5.32%	19.67%
Centers for Disease Control and Prevention (CDC)	696	565	454	384	384	0.00%	-44.83%
Other Health and Human Services (Other HHS)	140	159	172	161	163	0.92%	16.54%
Environmental Protection Agency (EPA)	147	148	162	151	147	-2.60%	0.21%
Department of Agriculture (USDA)	109	119	128	137	132	-3.90%	20.80%
Health Resources and Services Administration (HRSA)	41	40	81	81	81	0.00%	97.81%
Department of Commerce (DoC)	166	71	80	81	78	-3.90%	-53.10%
National Aeronautics and Space Administration (NASA)	101	100	90	72	72	0.24%	-28.16%
Centers for Medicare and Medicaid Services (CMS)	421	419	35	20	20	0.05%	-95.25%
Department of Transportation (DoT)	21	27	12	16	16	-0.31%	-24.03%
U.S. Agency for International Development (USAID)	70	82					-100.00%
Federal Government Total*	89,542	86,439	68,775	64,339	62,996	-2.09%	-29.65%

*Note that the federal funding pattern is significantly affected by BARDA funding associated with the COVID pandemic.

** PCORI is not technically a federal agency, but rather a congressionally authorized, non-governmental, independent organization. However, for this report's purposes, it was categorized as a federal agency due to its funding source.

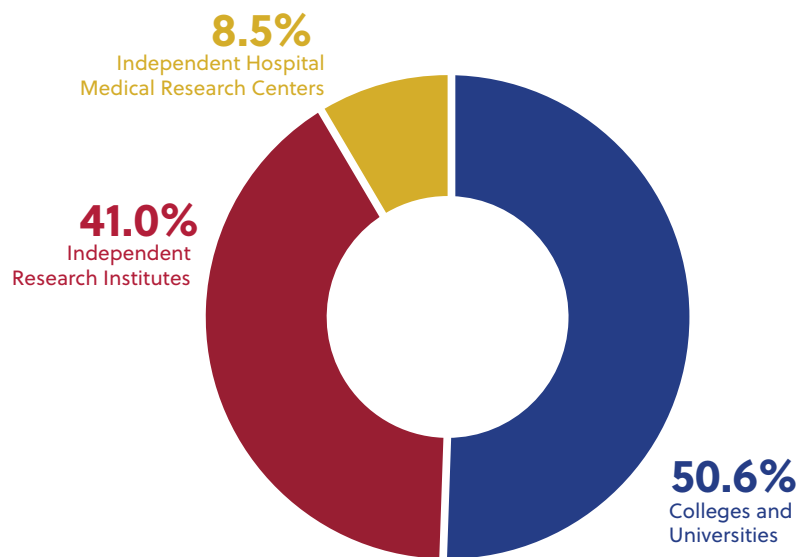
Academic and Research Institutions

U.S. colleges and universities, independent research institutes, and independent hospital medical research centers invested **\$29.9 billion of their own funds** in medical and health R&D in 2025, accounting for 10% of the total.

Colleges and universities remained the largest source of this institutionally funded research, providing \$15.1 billion in 2025. Independent research institutes invested \$12.2 billion, while independent hospital medical research centers invested \$2.5 billion.

These figures capture only the institutions’ own resources devoted to R&D. Academic and research institutions also perform substantial amounts of research supported by the federal government, philanthropy, and industry. Because this report categorizes investment according to its originating source, those dollars are counted under the organization providing the funding rather than under the institution conducting the research.

Figure 5. 2025 Distribution of Academic and Research Institution Investment in Medical and Health R&D



Did you know...

Universities and medical research institutions invest in and perform medical and health R&D in every state, the District of Columbia, and Puerto Rico.

Table 6. Medical and Health R&D Investments (\$ in millions), 2021-2025 – Academic and Research Institutions

Academic & Research Institutions (Institutional Funds)	2021	2022	2023	2024	Estimated 2025	'24-'25 Change	'21-'25 Change
Colleges and Universities	11,733	12,551	14,218	15,279	15,124	-1.01%	28.91%
Independent Research Institutes	8,831	9,960	10,796	11,454	12,242	6.88%	38.62%
Independent Hospital Medical Research Centers*	2,192	2,228	2,325	2,526	2,527	0.04%	15.29%
Academic & Research Institutions (Institutional Funds) Total	22,756	24,740	27,339	29,259	29,893	2.17%	31.36%

* *Independent Hospital Medical Research Centers* represents research conducted by independent stand-alone hospitals (e.g., not as a research center or research institute that is part of a university hospital or medical center).

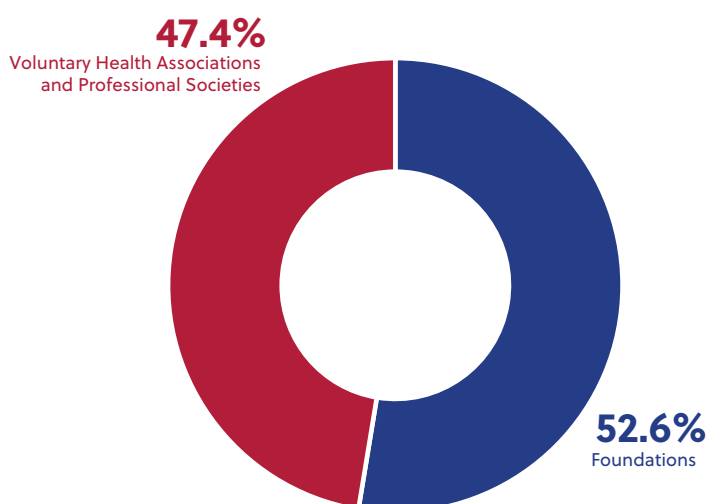
Foundations, Voluntary Health Associations, and Professional Societies

Foundations, voluntary health associations, and professional societies invested **\$3.7 billion** in medical and health R&D in 2025, accounting for 1.3% of the total.

The two components of this sector followed somewhat different paths. Foundation investment peaked in 2023 before declining in 2024 and increasing slightly in 2025. Investment by voluntary health associations and professional societies increased more steadily over the five-year period, reaching \$1.8 billion in 2025.

Although this sector represents a relatively small share of total U.S. medical and health R&D investment, these organizations provide crucial funding across diseases, research areas, and stages of discovery and development.

Figure 6. 2025 Distribution of Foundation, Voluntary Health Association, and Professional Society Investments in Medical and Health R&D



Did you know...

Foundations, VHAs, and professional societies invest in and support medical and health R&D efforts in every state, the District of Columbia, and Puerto Rico.

Table 7. Medical and Health R&D Investments (\$ in millions), 2021-2025 – Foundations, Voluntary Health Associations, and Professional Societies

Foundations, Voluntary Health Associations, and Professional Societies	2021	2022	2023	2024	Estimated 2025	'24-'25 Change	'21-'25 Change
Foundations	1,558	2,754	2,777	1,952	1,971	0.98%	26.49%
Voluntary Health Associations and Professional Societies	1,357	1,527	1,643	1,725	1,776	2.94%	30.83%
Foundations, Voluntary Health Associations, and Professional Societies Total	2,915	4,281	4,420	3,676	3,746	1.90%	28.51%

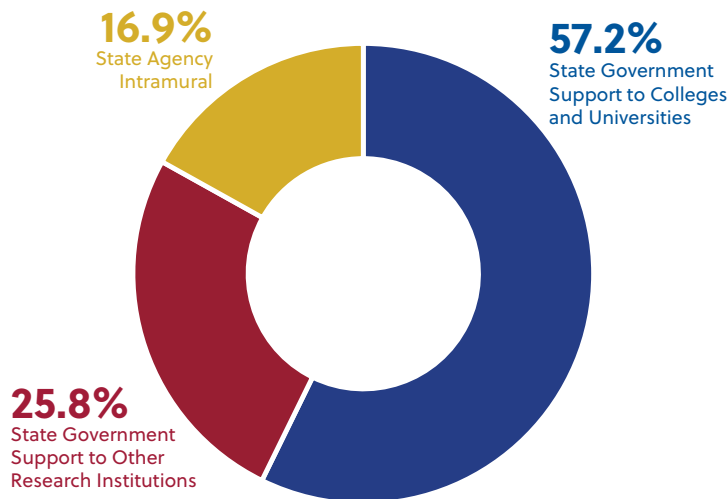
State Government

State government investment in medical and health R&D reached **\$4.1 billion** in 2025, accounting for 1.4% of the total.

Most state R&D funding supports research conducted outside state government. In 2025, approximately 57% supported colleges and universities and another 26% supported other research institutions. The remaining 17% supported research conducted within state agencies.

Two major state-funded research initiatives, the California Institute for Regenerative Medicine (CIRM) and the Cancer Prevention and Research Institute of Texas (CPRIT), together accounted for more than \$525 million of state government R&D investment in 2025.

Figure 7. 2025 Distribution of State Government Investment in Medical and Health R&D



Did you know...

State governments, through support for academic and other research institutions and through their own research activities, invest in and support medical and health R&D in every state, the District of Columbia, and Puerto Rico.

Table 8. Medical and Health R&D Investments (\$ in millions), 2021-2025 – State Governments

State Government	2021	2022	2023	2024	Estimated 2025	'24-'25 Change	'21-'25 Change
State Government Support to Colleges and Universities	1,729	1,839	2,013	2,235	2,360	5.58%	36.50%
State Government Support to Other Research Institutions	610	643	796	1,008	1,065	5.70%	74.55%
State Government Intramural Health Research	506	508	619	670	697	4.00%	37.76%
State Government Total	2,845	2,991	3,428	3,914	4,123	5.34%	44.89%

Putting the Pieces Together

Table 9. Estimated Medical and Health R&D Investments (\$ in millions), 2021-2025 – All Sources and Segments

Research Source and Segment	2021	2022	2023	2024	Estimated 2025
Industry (U.S. Operations)					
Biopharmaceutical	137,118	151,560	158,661	168,383	152,912
Medical Technology	22,694	25,418	25,804	25,320	26,436
Health Care Services	2,223	3,010	2,586	2,567	2,711
Other Sectors Biomedical R&D	11,688	14,021	12,364	13,956	14,675
Industry (U.S. Operations) Total	173,723	194,009	199,415	210,226	196,734
Federal Government					
National Institutes of Health (NIH)	42,812	45,178	47,678	46,358	46,001
Department of Defense (DoD)	6,608	5,736	7,618	9,073	8,483
Department of Veterans Affairs (VA)	1,698	1,696	1,916	1,869	1,843
Advanced Research Projects Agency for Health (ARPA-H)		1,000	1,500	1,500	1,500
Biomedical Advanced Research and Development Authority (BARDA)*	33,881	28,413	5,913	1,489	1,015
National Science Foundation (NSF)	850	886	886	823	815
Food and Drug Administration (FDA)	589	561	710	733	749
Patient Centered Outcomes Research Institute (PCORI)	356	377	391	446	518
Agency for Healthcare Research and Quality (AHRQ)	434	456	485	487	496
Department of Energy (DoE)	403	405	464	457	482
Centers for Disease Control and Prevention (CDC)	696	565	454	384	384
Other Health and Human Services (Other HHS)	140	159	172	161	163
Environmental Protection Agency (EPA)	147	148	162	151	147
Department of Agriculture (USDA)	109	119	128	137	132
Health Resources and Services Administration (HRSA)	41	40	81	81	81
Department of Commerce (DoC)	166	71	80	81	78
National Aeronautics and Space Administration (NASA)	101	100	90	72	72
Centers for Medicare and Medicaid Services (CMS)	421	419	35	20	20
Department of Transportation (DoT)	21	27	12	16	16
U.S. Agency for International Development (USAID)	70	82			
Federal Government Total*	89,542	86,439	68,775	64,339	62,996
Academic & Research Institutions					
Colleges and Universities	11,733	12,551	14,218	15,279	15,124
Independent Research Institutes	8,831	9,960	10,796	11,454	12,242
Independent Hospital Medical Research Centers	2,192	2,228	2,325	2,526	2,527
Academic & Research Institutions Total	22,756	24,740	27,339	29,259	29,893
Foundations, Voluntary Health Associations, and Professional Societies					
Foundations	1,558	2,754	2,777	1,952	1,971
Voluntary Health Associations and Professional Societies	1,357	1,527	1,643	1,725	1,776
Foundations, Voluntary Health Associations, and Professional Societies Total	2,915	4,281	4,420	3,676	3,746
State Governments					
State Government Support to Universities	1,729	1,839	2,013	2,235	2,360
State Government Support to Other Research Institutions	610	643	796	1,008	1,065
State Agency Intramural	506	508	619	670	697
State Governments Total	2,845	2,991	3,428	3,914	4,123
Total U.S. Medical and Health R&D Spending	291,782	312,460	303,377	311,415	297,492
Total U.S. Health Spending (health care spending + medical and health R&D spending)	4,433,154	4,639,678	4,957,798	5,309,347	5,645,879
R&D Share of Total U.S. Health Spending	6.58%	6.73%	6.12%	5.87%	5.27%

*Note that the federal funding pattern is significantly affected by BARDA funding associated with the COVID pandemic.

The R&D Ecosystem at Work: HER2-Positive Breast Cancer

The progress made against HER2-positive breast cancer shows what the medical and health R&D ecosystem can accomplish when discoveries and resources from across sectors build on one another.

Over the past several decades, better treatment and earlier detection have helped reduce breast cancer death rates by **44%**, **saving more than 500,000 lives**. Progress against HER2-positive breast cancer, once among the more aggressive and deadly forms of the disease, is one example of how that transformation happened.

Federal funding and academic research helped identify the target. With support from the National Cancer Institute, researchers at UCLA discovered in 1987 that the HER2 gene was overactive in about one-quarter of breast cancers. Working with researchers at the University of Texas Health Science Center at San Antonio, they demonstrated that these cancers were more aggressive and deadly, giving researchers a clear target for treatment.

Philanthropy and patient advocates helped move the research forward. Organizations including the Breast Cancer Research Foundation and the Revlon/UCLA Women's Cancer Research Program provided research funding, while advocates raised awareness and encouraged women to participate in the clinical trials needed to determine whether a new targeted treatment worked.

Industry turned the discovery into a treatment. Working with the UCLA team, Genentech developed Herceptin (trastuzumab), the first treatment designed specifically for HER2-positive breast cancer, as well as a companion test to identify patients most likely to benefit. FDA approved Herceptin in 1998, making it the first therapy to target a genetic driver of breast cancer.

The impact has been profound. **Today, 99% of patients with stage II to III HER2-positive breast cancer are cancer-free after five years.**

The HER2 story illustrates why the strength of the entire medical and health R&D ecosystem matters. **No single sector produced this advance alone. Federal funding, academic science, philanthropy, patient advocacy, industry development, clinical research, and regulatory review each helped move a scientific discovery toward a treatment that changed the outlook for patients.**

The R&D Ecosystem at Work: Spinal Muscular Atrophy

The transformation of spinal muscular atrophy (SMA) from the leading genetic cause of death in infants and toddlers into a treatable condition is among the most striking demonstrations of the U.S. medical and health R&D ecosystem at work. Children who once were not expected to survive past age two can now sit, stand, and, in many cases, walk.

Federal funding and academic research helped identify the cause and a path toward treatment. Researchers in the mid-1990s established the main genetic cause of SMA: mutations in the survival motor neuron 1 (SMN1) gene, which prevent production of SMN, a protein essential for motor neuron health. They also identified a nearly identical backup gene, SMN2, whose copy number influences disease severity, an insight that revealed a clear therapeutic target.

Philanthropy helped bridge the gap between scientific discovery and drug development. The SMA Foundation contributed significant resources to research and therapeutic development, supporting high-risk basic science, building a clinical trials network, and developing the laboratory models, patient data, and connections among investigators that made it easier for pharmaceutical companies to enter the SMA field. Through its venture philanthropy model, the Foundation helped move promising science toward potential treatments.

Industry built on these discoveries to develop breakthrough therapies. Biogen partnered with Ionis Pharmaceuticals to develop Spinraza (nusinersen), which in December 2016 became the first approved disease-modifying treatment for SMA. Novartis followed with Zolgensma, a one-time gene therapy, and Roche/Genentech with Evrysdi (risdiplam), a long-term oral therapy. Rather than simply treating symptoms, these therapies address the underlying biology of the disease.

Regulatory pathways helped bring new treatments to patients. FDA review, including the use of orphan drug pathways, helped support the development and review of therapies for this rare and devastating disease.

The impact has been transformative. **A disease that once meant many children would not live beyond early childhood can now be treated in ways that alter its course and give children opportunities to reach milestones once thought impossible.**

The SMA story illustrates why the strength of the entire medical and health R&D ecosystem matters. The transformation of SMA shows what becomes possible when different sectors bring their unique strengths to a difficult scientific challenge. Discovery opened the door, philanthropy helped create a pathway for drug development, and industry, patients, researchers, and regulators helped turn that opportunity into multiple treatments. Together, they changed what an SMA diagnosis can mean for a child and family.

Looking Ahead

The United States remains a global leader in medical and health research and development. But leadership is not self-sustaining. It depends on choices made year after year about the resources devoted to – and policy environment surrounding – discovery, development, and the translation of scientific opportunity into better health.

The five-year federal funding picture requires context. The decline in federal medical and health R&D funding since 2021 largely reflects the expiration of extraordinary pandemic-era BARDA resources that were never expected to continue indefinitely. **Excluding that funding, federal medical and health R&D funding grew modestly over the five-year period. But that growth occurred during a period of substantial inflation, and there are warning signs in the more recent data.** In 2025, federal and industry funding, the two sources that together account for nearly nine out of every ten dollars invested in U.S. medical and health R&D, declined. **While NIH funding grew in FY2026, the increase was nominal.** Over the five-year period, total medical and health R&D funding also grew far more slowly than both inflation and overall U.S. health spending.

From 2021 to 2025, academic and research institutions, foundations and voluntary health organizations, and state governments all substantially increased their own support for R&D. Their growing commitment matters. But these sectors operate at a fundamentally different scale and cannot substitute for the roles of federal and industry funding.

The global context makes the choices ahead even more consequential. While there is currently no source for an “apples to apples” comparison of US medical and health R&D spending to that of China, we know that [China’s share of early drug development rose from 8% to over 32% between 2015 and 2024, while the US share dropped from 47% to 37%.](#) We also know that China surpassed the United States in total clinical trials in 2021 and continues to widen its lead. Looking at total R&D investment, China has rapidly expanded its commitment to research and development and,

THE GLOBAL R&D LANDSCAPE IS SHIFTING – A look at Total R&D Investment

- \$1.028 TRILLION — CHINA
- \$1.009 TRILLION — UNITED STATES

2024 total R&D expenditures, adjusted for international comparability

In 2024, China was estimated to surpass the United States for the first time in total R&D expenditures, accounting for 30% of global R&D compared with 29% for the United States.

China’s R&D spending grew 8.9% in 2024, including a 10.7% increase in basic research.

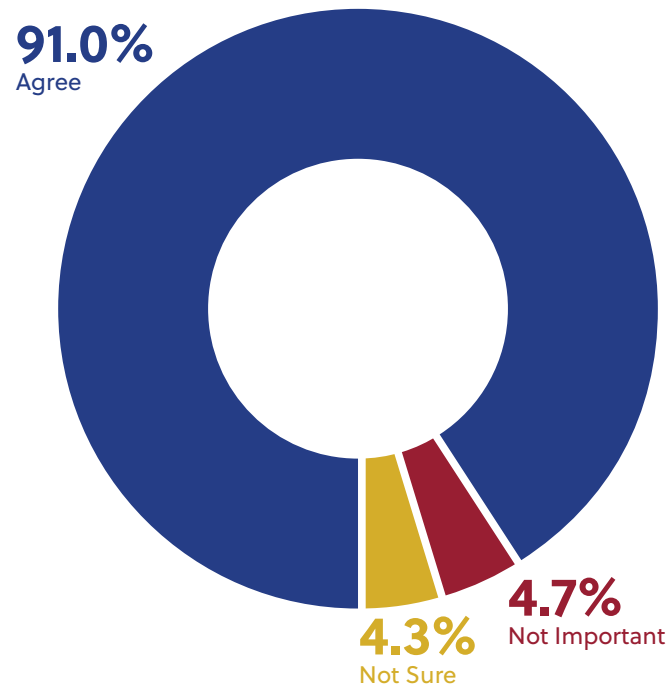
Source: National Science Board, Science & Engineering Indicators 2026; National Bureau of Statistics of China.

on an internationally comparable purchasing-power basis, is now estimated to rival or exceed the United States in total R&D performance. China increased its R&D spending by 8.9% in 2024 alone, including a 10.7% increase in basic research. According to the American Association of Universities, China’s R&D investment has grown by [more than 14% annually](#), more than double that of the United States over the same period. Again, these data capture total R&D, not medical and health R&D specifically, but there are plenty of [indicators that China and other competitors are laser-focused on growing their medical and health R&D footprint.](#)

As we look ahead, the question for the United States is not whether pandemic-era funding levels should have continued. It is whether we are committing the resources and creating the policy environment today that match scientific opportunity, human need, and global competitiveness. U.S. leadership in medical progress has been built over decades. Today, U.S. medical and health R&D investment represents just a few pennies of every healthcare dollar spent, there are signs that U.S. investment levels are weakening, and China and other competitors are methodically intensifying their efforts to out-compete the U.S. Is our nation truly positioned for success?

Remaining in the lead will require acting like a country determined to stay there.

How important do you think it is that the U.S. is a global leader in research to improve health?



Source: A 2026 Research!America survey of U.S. adults conducted in partnership with Zogby Analytics.

Methodology

The total U.S. medical and health R&D data developed and discussed in this report represent an estimate of the full amount of medical and health R&D investment performed in the U.S. over a five-year period (2021-2025). The data are categorized by the originating source of the investment – whether industry, the federal government, or other contributors to the pool of resources. These sources of funding data are distinct from data capturing the performance of R&D, which align the resources with where they are spent (e.g., NIH research grants would be captured within universities or other research institutes that receive the NIH awards).

Within the context of this report, the terms funding, investments, and contributions have all been used interchangeably, all in reference to U.S.-based investments leading to U.S.-based medical and health R&D. To the extent that the data and estimates in this report rely on publicly available data sources, the most current data available are used for all data years presented.

Industry Estimates

Industry medical and health R&D investment estimates were developed using the NSF's National Center for Science and Engineering Statistics (NSF-NCSES) Business Enterprise Research and Development Survey (BERD) and its predecessor surveys' data as the baseline. Industry sectors captured include pharmaceuticals, electromedical devices, medical equipment and supplies, scientific R&D (apportioned to the biopharmaceutical and medical technology sectors using data from NSF-NCSES), health care services, and firms in other industry sectors funding and performing medical and health related research. Included in these data are funding from foreign-parents of U.S.-located facilities. Extensions and approximations needed to develop the 2025 estimates relied on forward-looking data from the BERD survey and additional data on internal R&D investment provided within 10-K (annual) reporting to the U.S. Securities and Exchange Commission (SEC) of key firms in the industry.

Federal Government Estimates

Given its overall role in research and research funding, NIH investment data were obtained from FY+2 NIH Office of Budget's Congressional Justification report (e.g., final data for FY 2025 is captured in the FY 2027 Budget Justification report). ARPA-H data is captured using the same approach. Beyond NIH and ARPA-H, many departments' specific medical and health R&D investments were determined using the NSF-NCSES Survey of Federal Funds for Research and Development (SFFRD). This includes BARDA, for which the estimates incorporate the portion of pandemic funding identified by NSF-NCSES as devoted to R&D, rather than the full amount of funding provided to the agency. Research funding within the health sciences and biological and biomedical sciences, were the primary fields used in this analysis. Based upon individual agency missions and efforts, other disciplines were also included such as other life sciences, bio-engineering and biomedical engineering, and psychology, as appropriate. This data development process was supplemented or replaced for NSF, CDC, DoE, PCORI, and CMS, where specific profiles, operations, and budget documents were used.

Academic and Research Institutions

College and University Estimates

The NSF-NCSES Higher Education Research and Development (HERD) Survey was used to estimate institutional internal funding (including direct institutional funding from budgets and endowments and waived indirect expenses on research grants). Combined data for all U.S. higher education institutions in the medical sciences, biological sciences, other (non-agricultural) life sciences, bioengineering, and psychology fields were used for the years 2021–2024. Data for 2025 was then estimated using overall budgetary documents.

Independent Research Institute Estimates

To estimate the internally-funded health and medical research investments from Independent Research Institutes (IRI) a sample set was drawn from the NIH RePORT database and crosschecked against/supplemented by membership information from the Association of Independent Research Institutes (AIRI). For each of these institutes a calculation was made using their total expenses (including research and any other expenses), reduced by contributions/grants and program service revenue received and, where applicable, increased by an amount equal to additional annual internal funds (income/revenue from internal investments, endowments, or related organizations) as the basis for an annual internal medical and health “investment” estimate for each of the sample institutes. Having developed these sample-based values for 2021–2024, a statistical approach based upon the relationship of these sample institutions to the total list of NIH-funded research institutes was used to derive a 2025 investment estimate.

Independent Hospital Medical Research Center Estimates

These Independent Hospital Medical Research Centers (IHMRC) are part of independent stand-alone hospitals (e.g., not a research center or research arm of a university; includes many children’s hospitals throughout the U.S.). Example institutions captured within this category include Mayo Clinic, Children’s Hospital of Philadelphia, St. Jude’s Children’s Research Hospital, Roswell Park Cancer Institute, and Nationwide Children’s Hospital. Data for these IHMRC institutions were developed similarly to the IRI category using the NIH RePORT database to identify non-academic hospitals and medical centers receiving at least \$5 million in NIH research funding in 2024 and 2025 (reflecting a significant research presence). To estimate the additional, internally funded research resources of these Research Centers (often through numerous, small individual donations) we focused, conservatively, on the Net Community Benefit Research as captured in IRS Form 990s Schedule H for Hospitals. Having developed these sample-based values for 2021–2024, a statistical approach was used to estimate the 2025 values based upon the relationship of these sample institutions (including some having already submitted 2025 IRS 990 forms) to the total list of independent hospitals receiving NIH research funding.

Foundations, Voluntary Health Associations, and Professional Societies

Foundation Estimates

Organizations included in this source group are philanthropic grant-awarding bodies filed as foundations with the U.S. government on official tax documents. Baseline medical and health R&D funding was determined using data grantee and award information obtained from Candid for grants related primarily to medical and health R&D principally for the years 2021-2023. Using these data and more recent financial reporting (both annual IRS Form 990s and annual financial reports), estimates were developed with emphasis on the funding efforts of major foundations (e.g., “individual” foundations such as the Gates Foundation, the Eli & Edythe Broad Foundation, and the Leona M. and Harry B. Helmsley Charitable Trust, The Rockefeller Foundation, and “community foundations” such as the Silicon Valley Community Foundation and the Grand Rapids Community Foundation) that historically have accounted for a significant majority of medical and health-related R&D funding support from foundations. These data also include funding from institution-specific foundations (e.g., funding for the Gates Medical Research Institute is captured in this investment category, not the Independent Research Institutes category). Overall estimate for 2025 was developed, in part, using information and trends from Giving USA on funding from Foundations in 2025.

Voluntary Health Association and Professional Society Estimates

Funding estimates for U.S. Voluntary Health Associations and Professional Societies were developed from an up-dated master list of such associations developed by Research!America and TEconomy and based, in part, on data provided by the Health Research Alliance and information from the State Science and Technology Institute. Data were calculated using specified research grant funding expenditures (distinct from education, patient advocacy, or other types of expenditures) as identified within the association’s IRS Form 990s and/or annual reports. Data consistency and funding magnitude were also checked against both grants received and granting activities (via IRS Form 990s from both Candid and ProPublica’s Non-Profit Explorer).

State Government Estimates

The NSF-NCSES HERD Survey data were used to estimate R&D funding from state governments to colleges and universities. The NSF-NCSES Survey of State Government Research and Development (SGRD) was used to capture state funding for other (non-university) research institutions and for state governmental agency intramural research. Funding for other research institutions is a combination of both health mission-specific (e.g., a state department of health funding required research with an external consultant) and supportive investments (e.g., a state department of economic development's industry research grant program or signature research efforts such as the California Institute for Regenerative Medicine and the Cancer Prevention and Research Institute of Texas). To the extent possible, state resources that flow to these signature research "institutes" that are, in turn, granted to state universities are captured and reflected within the State Government Support to Colleges and Universities investment line. The NSF SGRD data also allow for an estimation of the amount of medical and health-related R&D performed by state agency employees (intramural), typically by state departments of health. Though the three sources of state funding described above are significant, additional state support for R&D through state R&D tax incentives is not captured in these values. However, to the extent that medical and health firms use these tax incentives to increase the amount of research performed, the increased value would be captured within increased industry funding metrics.

Total U.S. Health Spending Comparison

Historical and projected estimates for total U.S. health spending for 2021 through 2025 were obtained from CMS' National Health Expenditures (NHE) latest data series (NHE24; released June 2026).

The NHE values are modified to reflect the Investment Report's different methodology for estimating medical and health R&D. The value for "research" contained within the NHE data series solely reflects non-commercial research as the NHE series considers commercial and industrial R&D to be captured in overall retail cost data through health-related purchases. For improved comparability, we subtracted both the NHE value for non-commercial research and our industry R&D estimate from the CMS NHE values to establish an adjusted NHE non-R&D estimate. We then added our entire medical and health R&D value (\$297.5 billion in this report) to this estimate for a revised overall U.S. health spending value (\$5,645.9 billion in this report).

The data for U.S. medical and health R&D were developed and estimated by TEconomy Partners, LLC (www.teconomypartners.com) under contract to Research!America, which maintained complete editorial control over its contents. PhRMA provided funding to help make this report possible.



Research!America increases public and policymaker awareness of the health and economic benefits of medical research and builds a strong base of citizen support for more research and innovation.



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