

Rebuilding Our Economy: Investing in Research Critical to Our Nation's Health

It is tempting in an economic crisis to spend money only on the symptoms rather than investing to solve the fundamental underlying problems. Long recognized as the foundation for innovation, research has for a number of years unwisely been shortchanged. Half of the growth in the U.S. economy is commonly attributed to the knowledge and innovation driven by research. So it is difficult to understand why the U.S. has stopped investing in its own success. This is particularly true when it comes to health.

Once again in 2007, the overall trend in funding for research to improve health reveals stagnation. Across all sectors, inflation is eating up the small spending increases. We are investing only 5.5 cents of the total health dollar in the research that can help us solve current and emerging health issues.

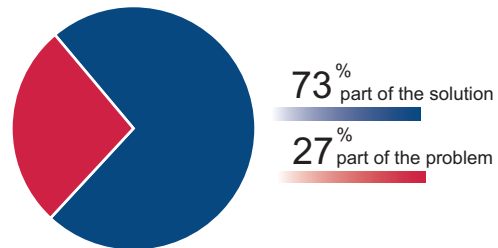
Currently, sixty-nine percent of Americans do not believe the U.S. has the best health care system in the world. And when it comes to rising health care costs, 73% say research to improve health is part of the solution. For a relatively small investment in research, we have gained more years of life and greater productivity. For a more significant and reliable investment, we can overcome chronic health problems that accompany longevity to achieve a better quality of life. In other words, we can live long and live well if we invest in research more consistently and wisely.

Our nation is facing a number of complex problems that science can help us solve. If health reform is to succeed, the research that teaches us how to prevent and cure disease, provide better treatments and deliver the smartest health care must be part of the plan.

Reestablishing research as a priority will also allow the U.S. to maintain its position as a global leader in science. Competing effectively in the global economy demands that the U.S. create new industries with higher paying jobs. This time of economic crisis provides a chance to re-examine how the U.S. became the strongest and wealthiest nation in the first place. Our commitment to research made us the world leader in innovation. We cannot afford to ignore our own strategies for success even as other nations are investing aggressively in science and research.

Research is a Solution to Rising Health Care Costs

When it comes to rising health care costs, would you say research to improve health is part of the problem or part of the solution?



SOURCE: National Poll, 2008
Charlton Research Company for Research!America

We estimate the amount of money spent on research to improve health at \$122 billion. This amount is only 5.5% of the \$2.25 trillion¹ spent on health in the United States in 2007.

\$ in millions

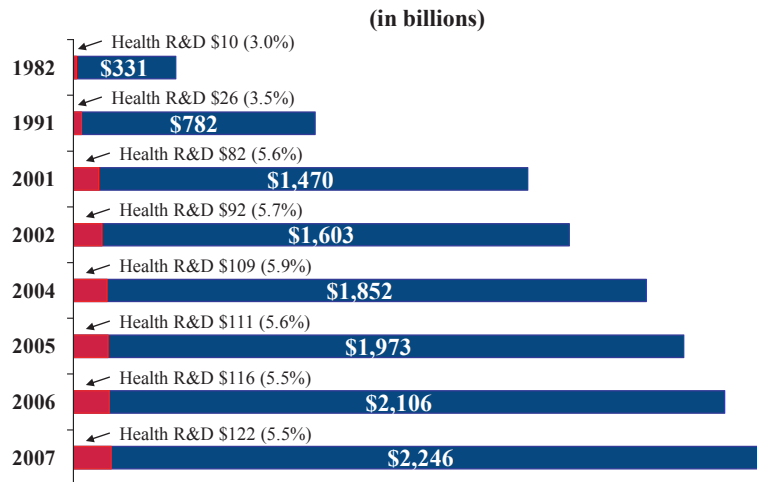
Total: Estimated U.S. Health Research Expenditures		122,420
Pharmaceutical (Research and Development) ^{2,3}		35,800
Biotechnology (Research and Development) ³		23,000
Medical Technology (Research and Development, 2004) ⁴		9,460
Subtotal: Industry		68,260
National Institutes of Health ⁵		29,128
National Science Foundation (Biological Sciences, Bioengineering, Chemistry, Math, Physics, Behavioral and Cognitive Sciences, Computer and Information Science and Engineering, and Polar Environment, Health and Safety) ⁵		2,000
Department of Defense (Medical, Chemical and Biological Defense) ⁵		1,663
Department of Agriculture ^{5,6}		1,058
Department of Veterans Affairs (Medical and Prosthetic Research) ⁵		819
Department of Energy (Biological and Environmental Research, Advanced Scientific Computing Research) ⁵		756
Centers for Disease Control and Prevention ⁵		559
Environmental Protection Agency (Clean Air, Clean Water, Health and Human Ecosystems, Pesticides and Toxics) ⁵		454
Agency for Healthcare Research and Quality ⁵		319
Department of Homeland Security (Chemical and Biological) ⁵		314
Department of Commerce (National Institute of Standards and Technology) ⁵		307
Department of the Interior (Biological Research) ⁵		181
U.S. Agency for International Development ⁷		162
NASA (Human Research Program) ⁵		149
Food and Drug Administration ⁵		138
Centers for Medicare and Medicaid Services ⁵		48
Health Resources and Services Administration ⁵		11
Subtotal: Federal Government		38,066
Universities (Institutional Funds) ⁸		9,655
State and Local Government Contributions ⁸		3,145
Philanthropic Foundations (2006) ⁹		1,160
Voluntary Health Associations ¹⁰		1,088
Independent Research Institutes (Institutional Funds) ¹¹		1,046
Subtotal: Other		16,094

Compiled by: Amit Mistry, PhD, Emily Connelly and Stacie Propst, PhD, Research!America (11/2008)

TRENDS in U.S. Investment in Health Research

Chart 1

Health R&D as a Percentage of Total Health Costs

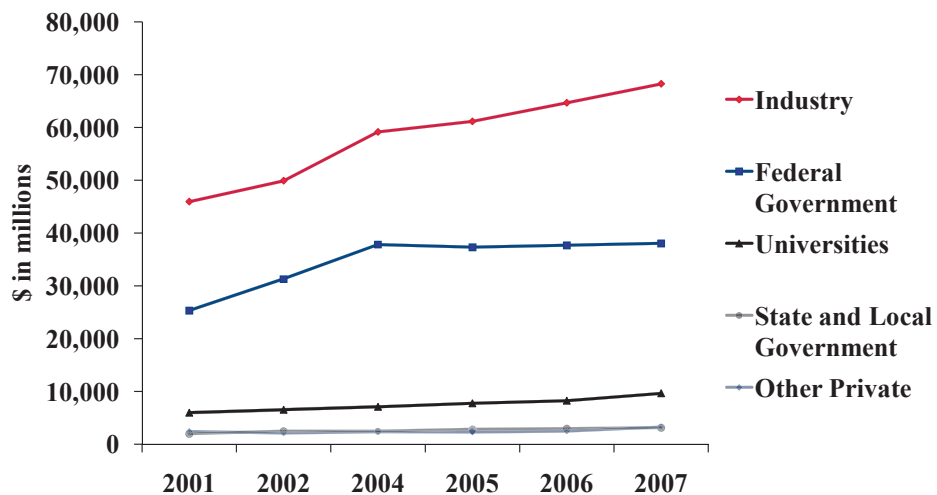


Sources: NIH Data Book
 Research!America, Investment in U.S. Health Research 2001-2002, 2004-2007
 Centers for Medicare and Medicaid, National Health Expenditure Amounts 2001-2017

Chart 2

U.S. Investment in Health R&D

Tracking Spending by Sector



Source: Research!America, Investment in U.S. Health Research 2001-2002, 2004-2007

Method and Rationale

The estimate of the U.S. investment in health research is determined by compiling the annual expenditures for all health-related research. This estimate is intended to be an upper limit, inclusive of all disciplines that contribute directly or indirectly to better human health. The percentage of the health dollar spent on research is determined by dividing the investment in research by the U.S. national health expenditures for 2007 estimated by the Centers for Medicare & Medicaid Services. All data is 2007 unless otherwise noted.

The Pharmaceutical Research and Manufacturers of America (PhRMA) reports a biopharmaceutical (including biotechnology and pharmaceutical) industry-wide research and development (R&D) figure of \$58.8 billion in 2007. PhRMA member companies invested \$44.5 billion, of which approximately 25% (\$11 billion) was invested in biologics and biotechnology R&D. The analysis was performed by Burrill & Company, which separately reported that U.S. investment in biotechnology R&D totaled \$23 billion in 2007. In this estimate, the R&D investment in pharmaceuticals represents the portion of biopharmaceutical R&D not spent on biotechnology. Differences between this and previous years' reports of industry investment in research are due to revised methods and the increasing overlap between biotechnology and pharmaceutical R&D.

The medical technology industry investment in R&D is the latest estimation available from AdvaMed, the largest association representing manufacturers of medical devices, diagnostic products and medical information systems. The estimate is based on industry data from the U.S. Department of Commerce and Standard & Poor's Compustat.

The Department of Agriculture estimate is based on consultation with the agency's Office of Budget and Program Analysis. The estimate includes R&D for Federal Grain Inspection, Animal and Plant Inspection Service and portions of the Agricultural Research Service and the Cooperative State Research, Education and Extension Service.

The National Institute of Standards and Technology estimate includes spending on Chemical Science and Technology, Physics, Materials Science and Engineering, Computer Science and Applied Math, Standards and Technology Services, Computer Support and the Advanced Technology Program.

University funds include all institutional funds spent on R&D in science and engineering and represent an upper limit estimate. These are discretionary, general purpose funds that the university has chosen to designate as R&D. When reporting institutional funds spent on R&D to the National Science Foundation, universities can include unrestricted funds from all outside resources, tuition and fees, endowment income, gifts, other institutional funds, as well as indirect costs for externally funded R&D projects.

The state and local government investment represents an estimate of all funds allocated to colleges and universities for R&D.

Data reported by the Foundation Center are based on grants of \$10,000 or more awarded by a national sample of 1,263 larger U.S. foundations. Only grants in the medical research category are reported in this estimate. The grants reported by the Foundation Center represent about half of the total grant dollars awarded by all U.S. independent, corporate, community and grantmaking operating foundations.

The voluntary health associations estimate was calculated based on the 2006 or 2007 financial statements of VHAs that share financial information on their Web sites and have large expenditures (>\$5 million) for research.

The estimate of spending by independent research institutes is based on a survey of Association of Independent Research Institutes (AIRI) members. Only funds from the institutes' endowments and "other" sources were included in this estimate to avoid double-counting funds from government or industry sources. To see a list of the current AIRI members, visit www.airi.org/about/member-list.aspx.

¹Centers for Medicare and Medicaid Services, National Health Expenditure Data (www.cms.hhs.gov/NationalHealthExpendData/Downloads/proj2007.pdf)

²Pharmaceutical Research and Manufacturers of America, *Pharmaceutical Industry Profile 2008* (www.phrma.org/files/2008%20Profile.pdf) and personal correspondence

³Burrill & Company, *Biotech 2008 – Life Sciences: A 20/20 Vision to 2020*, 2008

⁴AdvaMed (www.advamed.org)

⁵American Association for the Advancement of Science, *Research & Development FY 2009*, 2008 (www.aaas.org/spp/rd/rd09main.htm) and personal correspondence

⁶United States Department of Agriculture, personal correspondence (www.usda.gov)

⁷United States Agency for International Development, personal correspondence (www.usaid.gov)

⁸National Science Foundation, *Universities Report Continued Decline in Real Federal S&E R&D Funding in FY 2007*, August 2008 (www.nsf.gov/statistics/infbrief/nsf08320/)

⁹The Foundation Center, *Distribution of Foundation Grants by Subject Categories*, circa 2006 (www.foundationcenter.org/findfunders/statistics/pdf/04_fund_sub/2006/10_06.pdf)

¹⁰Annual reports of selected voluntary health associations, 2006 and 2007

¹¹Association of Independent Research Institutes, Survey of Members 2007 (www.airi.org)