2005 Investment in U.S. Health Research

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Summary

Research!America has tracked and analyzed the U.S. investment in health research for a decade. The primary trend we note for 2005 is that the U.S. investment in health research is not keeping pace with the costly toll of disease and disability.

Research!America's estimate shows that while spending on health overall in 2005 grew by 7.4% to just over $2 trillion, the investment in health-related research grew by only 2.2% to $111 billion. As a result, the portion of the total health dollar allocated to research has decreased from 5.8 cents in 2004 to 5.5 cents in 2005 (see Chart 1).

The growth in spending on health-related research by both the public and private sectors from 1999-2003, when the National Institutes of Health (NIH) budget doubled, began to level off in 2005 (see Chart 2). Funding for NIH is a key element of U.S. investment in health research, both in real dollars and as a stimulus for private-sector investment and philanthropic research funding. In 2004 and 2005, NIH funding was flat and did not keep pace with biomedical inflation. The standard biomedical inflation measure, the Biomedical Research and Development Price Index (BRDPI), was 5.5% in 2005.

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Commentary

The slim 2.2% increase in 2005 in health-related research funding, considered against the biomedical inflation rate, also has the effect of intensifying competition for research dollars—the NIH can now afford to only fund one in every five funding proposals. As if in concert, other sources of funding, including industry R&D, are slowing as well (see Chart 2). Regrettably, these decreases in research funding are occurring as opportunities for discovery are accelerating.

The U.S. can ill afford to neglect research that improves health. Such research is essential to our nation's preparedness for addressing the needs of an aging population, new health challenges linked to globalization and an obesity epidemic that is boosting disability rates among younger Americans. U.S. spending on health, primarily for health care, is projected to double to $4.0 trillion in the next 10 years. In the face of this looming crisis, aggressive investment in health and medical research, which economists have shown produces a high return on investment, will be essential to develop new and cost-effective preventions, cures and treatments, ultimately saving lives and money.

Americans agree. According to 2006 Research!America public opinion polling, 58% of the public say increasing U.S. funding for medical and health research now is essential to our future health and economic prosperity. The same proportion thinks we should spend at least 7 cents of each health dollar on research. Compare this to the 5.5 cents actually spent in 2005.

All long-term investments require foresight and sustained commitment. Cutting back on research funding is short-sighted and undermines decades of steady investment. In order to benefit from and capitalize on years of proactive investment, we must expand the research enterprise, not reduce funding.

We estimate the amount of money spent on research to improve health at $111 billion. This amount is less than 6% of the $2.0 trillion[1] spent on health in the United States in 2005.

	$ in millions
Total: Estimated U.S. Health Research Expenditures	111,373

Pharmaceutical Industry (Research and Development)[2,3,4]	34,900
Biotechnology Industry (Research and Development)[2,3,4]	16,400
Medical Technology Industry (Research and Development, 2004)[5]	9,840
Subtotal: Industry	**61,140**

National Institutes of Health[6]	28,644
National Science Foundation (Biological Sciences, Bioengineering, Chemistry, Math, Physics, Behavioral Sciences, Computer and Information Science and Engineering)[6]	1,862
Department of Defense (Medical Research, Chemical and Biological Defense)[6]	1,238
Department of Agriculture[6]	1,020
Department of Energy (Biological and Environmental Research, Advanced Scientific Computing Research)[6]	793
Department of Veterans Affairs (Medical and Prosthetic Research)[6]	742
Centers for Disease Control and Prevention[6]	511
Environmental Protection Agency[6]	460
Department of Homeland Security (Biological, Chemical Countermeasures)[6]	416
Department of Commerce (National Institute of Standards and Technology)[6]	344
Agency for Healthcare Research and Quality[6]	342
NASA (Human Health and Performance)[6]	337
Department of the Interior (Biological Research)[6]	172
U.S. Agency for International Development (2004)[7]	155
Food and Drug Administration[6]	143
Centers for Medicare and Medicaid Services[6]	80
Health Resources and Services Administration[6]	57
Subtotal: Federal Government	**37,316**

Universities (Institutional Funds, 2004)[8]	7,771
State and Local Government Contributions (2004)[8]	2,847
Independent Research Institutes (Institutional Funds)[9]	1,101
Voluntary Health Associations[10]	676
Philanthropic Foundations (2004)[11]	522
Subtotal: Other	**12,917**

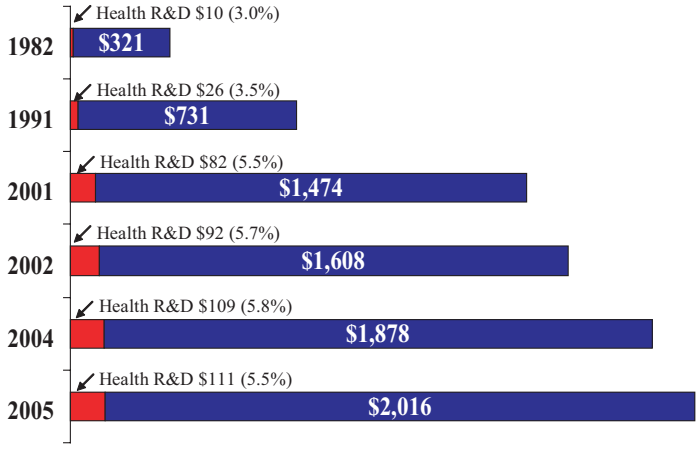
Compiled by: Emily Connelly and Stacie Propst, PhD, Research!America (7/2006)

TRENDS in U.S. Investment in Health Research

Chart 1

Health R&D as a Percentage of Total Health Costs

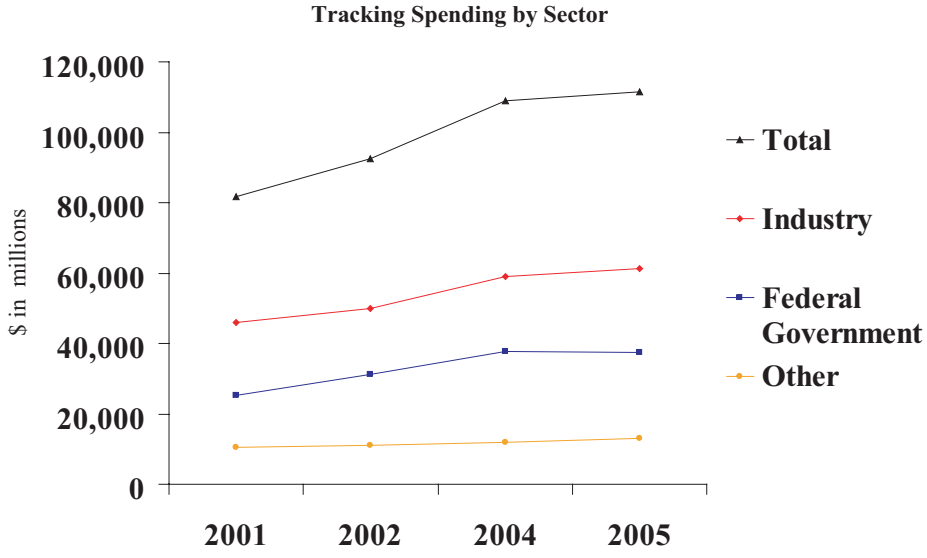
(in billions)



Sources: NIH Data Book
Research!America, Investment in U.S. Health Research 2001, 2002, 2004 and 2005

Chart 2

U.S. Investment in Health R&D



Source: Research!America, Investment in U.S. Health Research 2001, 2002, 2004 and 2005

Method and Rationale

The percentage of the health dollar that is spent on research was determined by compiling estimated annual expenditures for health research and dividing the sum by the U.S. national health expenditures for 2005 estimated by the Centers for Medicare & Medicaid Services. This is an upper limit estimate of the investment in research to improve health—a result of the desire to include all disciplines that contribute directly or indirectly to better human health. All research expenditures are for 2005 unless otherwise noted.

The Pharmaceutical Research and Manufacturers of America (PhRMA) reports a biopharmaceutical industry-wide research and development (R&D) figure of $51.3 billion in 2005. The analysis was performed by Burrill & Company. PhRMA member companies invested $39.4 billion, of which $8.0 billion was spent abroad. Non-PhRMA member biotechnology firms invested $11.9 billion. To accurately represent the R&D investment by each industry, the $4.5 billion invested by PhRMA member biotechnology firms is included in the biotechnology estimate.

The medical technology industry investment in R&D was estimated in consultation with 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 a 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, Technology Assistance, Research Support/Equipment, 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 to 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.

Members of the Association of Independent Research Institutions (AIRI), which include the Howard Hughes Medical Institute, reported their sources of funding in 2005 to AIRI. Only funds from the institutions' endowments and "other" sources were included in this estimate. To see a list of the current AIRI members, visit http://www.airi.org/general/members-list.htm.

The Voluntary Health Associations' research funds were calculated from the 2005 financial statements of the VHAs that have the largest expenditures for research.

Data reported by the Foundation Center account for grants of $10,000 or more awarded by the nation's leading foundations, including the ten largest funders in each state. 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.

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[1]Centers for Medicare and Medicaid Services (www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2005.pdf)
[2]Pharmaceutical Research and Manufacturers of America, Pharmaceutical Industry Profile 2006 (www.phrma.org/files/2006%20Industry%20Profile.pdf)
[3]Burrill & Company, Biotech 2006
[4]2005 annual reports of PhRMA member biotechnology companies
[5]AdvaMed (www.advamed.org)
[6]American Association for the Advancement of Science, Research & Development FY 2007, 2006 (www.aaas.org)
[7]United States Agency for International Development, Health-Related Research and Development Activities at USAID, 2005
[8]National Science Foundation, Industrial Funding of Academic R&D Continues to Decline in FY 2004, April 2006
[9]Association of Independent Research Institutes, Survey of Members 2005 (www.airi.org)
[10]2005 annual reports of selected Voluntary Health Associations
[11]The Foundation Center, Distribution of Foundation Grants by Subject Categories, circa 2004 (fdncenter.org)

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