

June 2005



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Investing in Medical Research: Why We Must Embrace the “Audacity of Hope”

Introduction

In the summer of 2004, then-U.S. Senate candidate from Illinois Barack Obama galvanized the nation with a message centered on the hope, promise, and power of the American dream. He said Americans possess the “audacity of hope,”¹ which, as much as any phrase of recent origin, describes the impetus behind both the conduct and support of medical research. This is not mere rhetoric. More than the citizens of any other nation, Americans support medical research.²⁻³ Over the course of 13 years, Research!America polling has consistently found that two-thirds of Americans support significant increases in federal investment in research (Figure 1).

Americans have always expected scientific progress, and to an astonishing degree these high expectations have been met. The Americans whom Tom Brokaw termed the “Greatest Generation”⁴ have seen extraordinary advances in science, particularly in medical science. Thanks to research, we have added years—and quality—to life. We have witnessed the discovery of penicillin, antibiotics, insulin, and the polio vaccine; the identification of the AIDS virus; the sequencing of the human genome; the establishment of the link between tobacco and cancer; the development of effective interventions to control high blood pressure and high cholesterol; and much more. A century ago, the average U.S. citizen lived to be 48 years old. Now we live to an average age of 77 because of advances in public health and medical health care, all made possible through research.⁵

Thanks to investment in medical and health research, at least 241,000 stroke deaths, 815,000 coronary heart disease deaths, and 62,000 deaths from HIV/AIDS are prevented annually in the United States.⁶ Today, there are approximately 35 million Americans ages 65 and older who, because of improvements in health care and nutrition, are more likely than ever to be healthy, vigorous, and productive.

Investing in Medical Research:

Why We Must Embrace the “Audacity of Hope”

By Mary Woolley

The Challenges Ahead

On March 17, 2004, in testimony before the House Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies, the director of the National Institute on Aging, Richard J. Hodes, M.D., noted that disability among America’s seniors has declined steadily over the past decade. He stated that “more older Americans are able to participate in the instrumental activities of daily living, such as performing household chores and managing their own medications, while fewer are experiencing limitations in basic physical tasks such as walking or climbing stairs.”⁷

However, Dr. Hodes also reported that the diseases of aging still affect many Americans and seriously compromise the quality of their lives. “More than half of all Americans over age 65 show evidence of osteoarthritis in at least one joint,” he said. “More than half of Americans over age 50 have osteoporosis or low bone mass ... and as many as 4.5 million Americans suffer from Alzheimer’s disease.”⁷ Moreover, 4,200 Americans still die *every day* of five major diseases: heart disease, cancer, stroke, diabetes, and Alzheimer’s.⁸ This translates to more than 1.55 million deaths every year—more than all the American combat deaths from the American Revolution to the Iraq war combined.

Audacity of hope allows Americans to imagine that many more deaths could be prevented through curing diabetes and Parkinson’s, eliminating Alzheimer’s, halting macular degeneration, and identifying more effective treatments for depression and other mental illnesses. We can also imagine eliminating the pain and suffering of cancer—a goal that National Cancer Institute Director Andrew C. von Eschenbach, M.D., believes will be achieved by 2015.⁹ Achieving these and similarly audacious goals is indeed possible, but only if the commitment made by the Greatest Generation to invest in medical research continues.

Economic Benefits of Medical Research

There are compelling economic as well as health reasons to continue our investment in research. For example, medical costs for overweight and obesity total more than \$90 billion per year in the United States, and about 9 percent of aggregate medical spending goes to treating obesity-related diseases. Each taxpayer is responsible for \$180 per year on obesity-related medical costs for public sector health plans.¹⁰ Audacity of hope allows Americans to imagine halting the obesity epidemic in its tracks and ensuring our dollars are used instead to achieve improved and more affordable health care.

Carolyn Clancy, M.D., director of the Federal Agency for Healthcare Research and Quality, has said that “we pay for and receive excellent care one-third of the time, unnecessary care one-third of the time, and one-third of the time our care is characterized by mistakes, errors, or underuse of clinically appropriate treatments.”¹¹ In response, AHRQ is working to improve health care through health services research, which examines how people get access to health care, how much care costs, and what happens to patients as a result of this care.

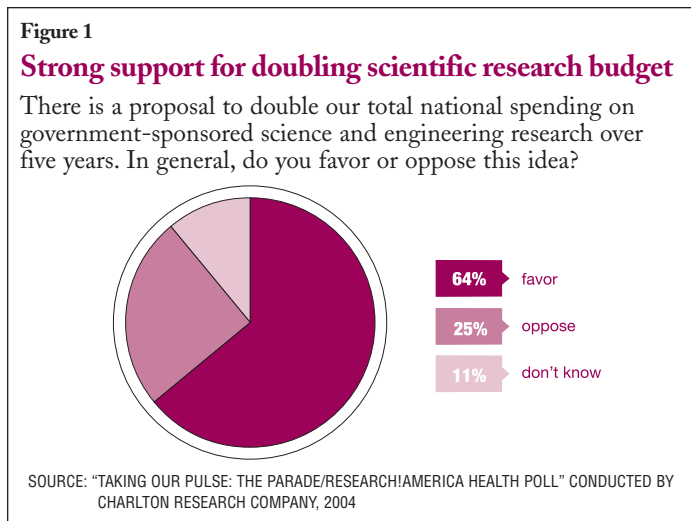
Increased investment in health services research is needed to address national policy challenges, such as how to translate research into evidence-based practice, how to reinvent a system of patient care based on valuing quality, and how to moderate the crushing financial and health implications of an aging society.

The rising cost of health care in the United States, already nearing unsustainable levels, will escalate further as baby boomers reach retirement age and enter the Medicare system. According to the Task Force on Aging Research Funding, in 25 years the number of Americans ages 65 and older will double to more than 70 million. The number of people ages 85 and

older will increase fourfold. As a result, the U.S. health care system will experience a costly burden. Currently, health care spending increases by almost 10 percent a year. If research has not reduced further the incidence of age-related diseases by that time, the cost will be devastating.¹²

Stagnation in Federal Support for Medical Research

For decades, Americans and their elected and appointed officials looked at equations about the cost benefit of research and said, in effect, “What are we waiting for?” The words of celebrated advocate for medical research Mary Lasker (1901–1994) carried the day: “If you think research is expensive, try disease!” Just a few years ago, U.S. Congress and both the Bill Clinton and George W. Bush administrations acted to double the National Institutes of Health (NIH) budget over a five-year period. During those years, other federal agencies’ budgets—including those of the CDC and the National Science Foundation—were similarly expanded, and private-sector research was encouraged through regulation and tax incentives to step up their research investment as well. *Public support was behind these expansions every step of the way.*



Today, many of the same officials who formerly listened to their constituencies, as well as to their own common sense, are balking at the cost of keeping pace with scientific opportunity through adequate investment in research. Not only is research spending stagnating, it is also being impeded by ideologically driven concerns. Legislators are being pushed by interest groups to intervene in the peer-review process and deny funding to reproductive and sexual

health research, as well as to research utilizing embryonic stem cells, which could one day lead to cures for Parkinson’s, Alzheimer’s, and diabetes.

Elected officials cite lack of available dollars as a reason to stall investment in research. Funding the war on terror and the war in Iraq as well as sustaining tax cuts have contributed to exploding the national deficit, leaving few dollars for so-called discretionary spending, including medical and health research. But unless we find new dollars, new discoveries will have to wait. Research!America public opinion polling shows that Americans have high expectations for new cures, treatments, and preventions—so much so that 67 percent are willing to pay a dollar more per week in taxes.¹³

Medical Research as Fuel for Economic Growth

Meanwhile, as research investment stalls, U.S. global leadership in research is being threatened. In the August 2, 2004, issue of *The New Yorker*, business journalist John Cassidy argued that “the keys to economic success are a well-educated workforce, technical know-how, high levels of capital investment, and entrepreneurial zeal—all of which countries can acquire with the help of supportive governments.”¹⁴ Many countries, including Japan, China, and Britain, have made decisions that they expect will allow them to match or surpass U.S. leadership in medical research while simultaneously fueling their own economic growth. Cassidy stated that for the United States to be successful in our global economy, it will have to ensure that “its scientists are the most creative, its business leaders the most innovative, and its workers the most highly skilled—not easy when other nations are seeking the same goals.”

What can we do to meet these challenges? We must act as a nation to continue supporting what NIH Director Elias Zerhouni, M.D., terms “quantum leaps.”¹⁵ “We have witnessed nothing short of a revolution in science over the past five years,” Dr. Zerhouni said. “Some may see this [NIH budget doubling] as the grand finale. I think of it more as the overture. As the twenty-first century begins to unfold, we are poised to make quantum leaps in our knowledge about how to improve people’s health.” Such advances will require increased investment, but they will be much less costly in the long run than paying for disease and disability in an aging population. Without strong investment in research, exciting opportunities will be lost or long delayed, and brilliant young researchers will be attracted to other countries that are increasingly

TEN GREAT PUBLIC HEALTH ACHIEVEMENTS IN THE UNITED STATES, 1900–1999

Vaccination has resulted in the eradication of smallpox, elimination of poliomyelitis in the Americas, and control of other infectious diseases.

Motor-vehicle safety has improved dramatically with advances in engineering and increased public awareness to make road travel safer and to save lives.

Safer workplaces have resulted in a reduction of approximately 40 percent in the rate of fatal occupational injuries.

Control of infectious diseases has resulted from assurance of clean water and improved sanitation.

Decline in deaths from coronary heart disease and stroke has resulted from smoking cessation and blood-pressure control, coupled with improved access to early detection and better treatment.

Safer and healthier foods have resulted from decreases in microbial contamination and increases in nutritional content.

Healthier mothers and babies have resulted from better hygiene and nutrition, availability of antibiotics, greater access to health care and technological advances in maternal and neonatal medicine. Since 1900, infant mortality has decreased 90 percent and maternal mortality has decreased 99 percent.

Family planning has increased opportunities for pre-conception counseling and screening; fewer infant, child, and maternal deaths; and the use of barrier contraceptives to prevent pregnancy, HIV, and other STDs.

Fluoridation of drinking water safely and inexpensively prevents tooth decay, regardless of socioeconomic status or access to care.

Recognition of tobacco use as a health hazard and subsequent public health anti-smoking campaigns have resulted in changes in social norms to prevent tobacco use, promote cessation of use, and reduce exposure to environmental tobacco smoke.

From the “Ten Great Public Health Achievements—United States, 1900–1999,” 1999, Morbidity and Mortality Weekly Report 48(12):241–3, U.S. Centers for Disease Control and Prevention.

more competitive with U.S. science and are striving to match our world leadership status. Most importantly, more lives will be needlessly lost.

When the quantum leaps in medical research that permit prevention of cancer through personalized genomic fingerprinting take place first in China or Japan, or when Britain is the first to understand—and interrupt—the epidemic of obesity, Americans of all generations will ask, “Why did we put off investing more in medical and health research when the opportunity was within our grasp?” They will ask questions both personal and societal, questions with unsettling consequences. For example: “Why do I have to take my husband to another country for the noninvasive surgery that will cure his Parkinson’s or Alzheimer’s?” “Why has the United States replicated its loss of dominance in the automobile industry by losing its dominance in pharmaceuticals and biotechnology?” “Where did all the good jobs in those industries go?”

Conclusion

The Greatest Generation’s leadership can and must be reprised in this new century by a new generation’s audacity of hope. The twenty-first century must be a time when what was once only imagined can be realized. If we make it clear to our nation’s leaders that we must invest our dollars as well as our hopes in medical and health research, all of us—our children and grandchildren—will realize a healthier, more productive future.

Mary Woolley has served since 1990 as president and CEO of Research!America, the nation’s largest not-for-profit alliance for medical and health research advocacy, with 500 organizational members representing well over 100 million Americans. The author is grateful to Research!America colleagues Sharon Berry and Turna Ray for their significant contributions to this paper.

Afterword

By Robert N. Butler, M.D.

One of the remarkable events of the twentieth century was the deferral of disease, disability, and death to the later years of life and the dramatic reduction of morbidity and mortality of women, infants, and children. In this issue brief, Mary Woolley makes clear the great contribution of biomedical research to the remarkable triumph of survivorship and its tremendous cost-effectiveness. There is no question that biomedical research contains health costs and expands productive capabilities of older persons, as well as reduces disability rates and improves quality of

life. This becomes all the more important with the deferral of full eligibility for Social Security from 65 to 67 by the year 2027.

I have observed an unfortunate tendency to blame older people for health costs, without consideration that it is the very deferral of disease, disability, and death resulting from medical advances that enables people to reach old age. After all, none of us would wish to return to the “good old days” when women regularly died in childbirth, when life-threatening diseases like smallpox, polio, and scarlet fever claimed thousands of American lives annually, and antibiotics were unknown.

When calculating health costs one must consider inflation, the high cost of new diagnostic and treatment technologies, the great costs associated with treating a variety of conditions that exist earlier in life, such as in neonatology units, accidents and trauma in emergency rooms, as well as tragically early onsets of the major killers—heart disease, cancer, and stroke.

This issue brief comes at an especially important time. It is the summer season for advocacy on behalf of the National Institutes of Health (NIH), the major biomedical research institution of the world. Its budget is stagnant, compromising the likelihood of further progress in the conquest of disease.

The total NIH budget is barely \$30 billion, which, in the larger scheme of our economy—some \$11 trillion—is a modest investment indeed. And biomedical research is an investment. All of us are affected one way or another by disease. All of us should join the army of advocates on behalf of Research!America, so ably led by Mary Woolley.

Robert N. Butler, M.D., president and CEO of the International Longevity Center-USA, is co-chair of the Alliance for Health & the Future and professor of geriatrics at Mount Sinai School of Medicine.

Notes

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The International Longevity Center–USA (ILC–USA) is a not-for-profit, nonpartisan research, education, and policy organization whose mission is to help individuals and societies address longevity and population aging in positive and productive ways, and highlight older people’s productivity and contributions to their families and society as a whole.

The organization is part of a multinational research and education consortium, which includes centers in the United States, Japan, Great Britain, France, the Dominican Republic, and India. These centers work both autonomously and collaboratively to study how greater life expectancy and increased proportions of older people impact nations around the world.

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