

**Written Testimony  
from the  
American Association for Cancer Research (AACR)**

**Submitted to the House Appropriations Committee,  
Subcommittee on Labor, Health and Human Services, Education and  
Related Agencies**

**March 30, 2007**

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**Executive Summary**

The American Association for Cancer Research (AACR) would like to thank Members for their support of National Institutes of Health (NIH) and National Cancer Institute (NCI) research on the biology, treatment and prevention of the more than 200 diseases called cancer. The AACR, with more than 25,000 members worldwide, represents and supports scientists by publishing respected, peer-reviewed scientific journals, hosting international scientific conferences, and awarding millions of dollars in research grants. Together, we have made great strides in the war on cancer, but much remains to be done. One in four deaths in America this year will be caused by cancer. Cancer-related deaths will increase dramatically as the baby boom generation ages, and we must be prepared to prevent, treat, and manage the impending wave of new cancers.

Cancer is no longer a death sentence thanks to decades of research and development made possible by strong commitments from Congress and the American people, but now that commitment is wavering. After expanding capacity during the NIH budget doubling, researchers at hospitals and universities across the country now face shrinking budgets. Promising young researchers, unable to secure grants, turn to other careers. This disruption of the research pipeline will slow the development of new treatments and set back America's biomedical leadership for decades to come.

We are at the vanguard of a revolution in healthcare, where personalized treatment will improve health, reduce harmful side effects, and lower costs. We have the opportunity to build upon our previous investments and accelerate the research process. Now is the time to face the nation's growing healthcare needs, reaffirm our role as world leaders in science, and renew our commitment to the research and development that brings hope to millions of suffering Americans. The AACR urges the U.S. House of Representatives to support the following appropriations funding levels for cancer research in FY 2008:

- \$30.8 billion for the National Institutes of Health, a 6.7% increase over FY 2007.
- \$5.8 billion for the National Cancer Institute (the NCI Professional Judgment budget level), or, at a minimum, \$5.1 billion, a 6.7% increase over FY 2007.

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The American Association for Cancer Research (AACR) recognizes and expresses its thanks to the United States Congress for its longstanding support and commitment to funding cancer research. The completion of the five-year doubling of the budget of the National Institutes of Health (NIH) in 2003 was a stunning accomplishment that is already showing impressive returns and benefits to patients with cancer. Recently, however, budgets for cancer research have declined and this commitment appears to be wavering. Budget doubling enabled a significant expansion of infrastructure and scientific opportunities. Budget cuts prevent us from capitalizing on them.

Unquestionably, the nation's investment in cancer research is having a remarkable impact. Cancer deaths in the United States have declined for the second year in a row. Last year's decline was the first such decrease in the total number of annual cancer deaths since 1930 when record-keeping began. This progress occurred in spite of an aging population and the fact that more than three-quarters of all cancers are diagnosed in individuals aged 55 and older. Yet this good news will not continue without sustained and substantial federal funding for critical cancer research priorities. The American Association for Cancer Research joins the broader biomedical research community in urging the United States House of Representatives to support the following appropriations funding levels for cancer research in FY 2008:

- \$30.8 billion for the National Institutes of Health, a 6.7% increase over FY 2007.
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**AACR: Fostering a Century of Research Progress**

The American Association for Cancer Research has been moving cancer research forward since its founding 100 years ago in 1907. Celebrating its Centennial Year, the AACR and its more than 25,000 members worldwide strive tirelessly to carry out its important mission to prevent and cure cancer through research, education, and communication. It does so by:

- fostering research in cancer and related biomedical science;
- accelerating the dissemination of new research findings among scientists and others dedicated to the conquest of cancer;
- promoting science education and training; and
- advancing the understanding of cancer etiology, prevention, diagnosis, and treatment throughout the world.

## **Facing An Impending Cancer “Tsunami”**

Over the past 100 years, enormous progress has been made toward the conquest of the nation’s second most lethal disease (after heart disease). Thanks to discoveries and developments in prevention, early detection, and more effective treatments, many of the more than 200 diseases called cancer have been cured or converted into manageable chronic conditions while preserving quality of life. The 5-year survival rate for all cancers has improved over the past 30 years to more than 65%. The completion of the doubling of the NIH budget in 2003 is bearing fruit as many new and promising discoveries are unearthed and their potential realized. However, there is much left to be done, especially for the most lethal and rarer forms of the disease.

We recognize that the underlying causes of the disease and its incidence have not been significantly altered. The fact remains that men have a 1 in 2 lifetime risk of developing cancer, while women have a 1 in 3 lifetime risk. The leading cancer sites in men are the prostate, lung and bronchus, and colon and rectum. For women, the leading cancer sites are breast, lung and bronchus, and colon and rectum. And cancer still accounts for 1 in 4 deaths, with more than 564,830 people expected to die from their cancer in 2006. Age is a major risk factor – this nation faces a virtual “cancer tsunami” as the baby boomer generation reaches age 65 in 2011. A renewed commitment to progress in cancer research through leadership and resources will be essential to dodge this cancer crisis.

## **Blueprint for Progress: NCI’s Strategic Objectives**

Basic, translational, and clinical cancer research in this country is conducted primarily through three venues – government, academia and the nonprofit sector, and the pharmaceutical/biotechnology industry. The Congress provides the appropriations for the National Institutes of Health and the National Cancer Institute (NCI) through which most of the government’s research on cancer is conducted. The NCI has developed documents and processes that describe and guide its priorities – established with extensive community input – for the use of these finite resources. “The NCI Strategic Plan for Leading the Nation,” and “The Nation’s Investment in Cancer Research: A Plan and Budget Proposal for Fiscal Year 2008” are the recognized professional blueprints for what needs to be done to accelerate progress against cancer.

The American Association for Cancer Research and many in the cancer research community concur that if the NCI is fully funded at the requested \$5.8 billion level for FY 2008, the Director’s proposed budget will enable the NCI to accelerate research progress across these eight priority research areas:

- Understanding the causes and mechanisms of cancer
- Accelerating progress in cancer prevention
- Improving early detection and diagnosis
- Developing effective and efficient treatments
- Understanding the factors that influence cancer outcomes
- Improving the quality of cancer care
- Improving the quality of life for cancer patients, survivors, and their families
- Overcoming cancer health disparities.

### **Federal Investment for Local Benefit**

Nearly half of the NCI budget is allocated to research project grants that are awarded to outside scientists who work at local hospitals and universities throughout the country. More than 5,400 research grants are funded at more than 150 cancer centers and specialized research facilities located in 49 states. Over half the states receive more than \$15 million in grants and contracts to institutions located within their borders. Many AACR member scientists are engaged in this rewarding work. But too many of them have had their long-term research jeopardized by grant reductions caused by the flat and declining overall funding for the NCI since 2003. The AACR recommends, at a minimum, a 6.7% increase in funding for the National Cancer Institute to enable it to continue and expand its work on focused research questions in each of these eight fields. The AACR supports this goal and urges particular attention to several areas that it believes are of utmost importance in assuring progress.

### **Understanding the Causes and Mechanisms of Cancer**

Basic research into the causes and mechanisms of cancer is at the heart of what the NCI and many of AACR's member scientists do. The focus of this research includes: investigating the underlying basis of the full spectrum of genetic susceptibility to cancer; identifying the influence of the macroenvironment (tumor level) and microenvironment (tissue level) on cancer initiation and progression; understanding the behavioral, environmental, genetic, and epigenetic causes of cancer and their interactions; developing and applying emerging technologies to expand our knowledge of risk factors and biologic mechanisms of cancer; and elucidating the relationship between cancer and other human diseases.

Basic research is the engine that drives scientific progress. The outcomes from this fundamental basic research – including laboratory and animal research in addition to population studies and the deployment of state-of-the-art technologies – will inform and drive the cancer research enterprise in ways and directions that will lead to unparalleled progress in the search for cures.

### **Accelerating Progress in Cancer Prevention**

Preventing cancer is far more cost-effective and desirable than treating it. NCI's strategic plan supports research in: understanding and modifying behaviors that increase risk; reducing the influence of genetic and environmental risk factors; and interrupting the initiation of cancer through early medical intervention. A critical component of this multifaceted approach is the importance of widely disseminating and making accessible those evidence-based advances that have been shown to inform and motivate people toward healthy behaviors.

The NCI uses multidisciplinary teams and a systems biology approach to identify early events and how to modify them. More than half of all cancers are related to modifiable behavioral factors, including tobacco use, diet, physical inactivity, sun exposure, and failure to get cancer screenings. The NCI supports research to understand how people perceive risk, make health-related decisions, and maintain healthy behavior. Prevention is the keystone to success in the battle against cancer.

Early research results in this area have shown great promise, including:

- the outcome from the STAR trial (Study of Tamoxifen and Raloxifene) that showed the preventive effect of these drugs for reducing breast cancer risk in postmenopausal women;
- the HPV (human papilloma virus) vaccine that targets two strains of HPV and successfully protects young women from 70% of cervical cancers; and
- diet and nutrition recommendations for cancer avoidance.

### **Developing Effective and Efficient Treatments**

The future of cancer care is all about developing individualized therapies tailored to the specific characteristics of a patient's cancer. The NCI research in this area concentrates on: identifying the determinants of metastatic behavior; validating cancer biomarkers for prognosis, metastasis, treatment response, and progression; accelerating the identification and validation of potential cancer molecular targets; minimizing the toxicities of cancer therapy; and integrating the clinical trial infrastructure for speed and efficiency. The completion of the Human Genome Project has opened the door to the promise of personalized medicine.

Noteworthy recent advances in this area have included:

- the development of oral versions of medicines that were formerly only available by injection, thus improving patients' quality of life; and
- the discovery of intraperitoneal (IP) chemotherapy – delivering drugs directly to the abdominal cavity – that can add more than a year to survival for some women with ovarian cancer.

### **Overcoming Cancer Health Disparities**

Some minority and underserved population groups suffer disproportionately from cancer. Solving this issue will contribute significantly to reducing the cancer burden. The NCI's investments in this area include: studying the factors that cause cancer health disparities; working with underserved communities to develop targeted interventions; developing the knowledge base for integrating cancer services to the underserved; collaborating to implement culturally appropriate information dissemination approaches to underserved populations; and examining the role of health policy in eliminating cancer health disparities. One size does not fit all in cancer research – special populations require special treatment to achieve success.

Successful achievements in this important area include:

- the development and dissemination of the patient navigator program that assists patients and caregivers to access and chart a course through the healthcare system;
- the NCI Cancer Information Services Partnership Program that provides information and education about cancer in lay language to the medically underserved through community organizations.

### **AACR's Initiatives Augment Support for the NCI**

The NCI is not working alone or in isolation in any of these key areas. NCI research scientists reach out to other organizations to further their work. The AACR is engaged in scores of initiatives that strengthen, support, and facilitate the work of the NCI. Just a few of AACR's contributions include:

- sponsoring the largest meeting of cancer researchers in the world, with more than 17,000 scientists, where 6,000 scientific abstracts featuring the latest basic, translational, and clinical scientific advances are presented;
- publishing more than 3,400 original research articles each year in five prestigious peer-reviewed scientific journals, including *Cancer Research*, the most frequently cited cancer journal;
- sponsoring the annual International Conference on Frontiers of Cancer Prevention Research, the largest such prevention meeting of its kind in the world;
- designing a special Drug Development Track at its 2007 Annual Meeting;
- supporting the work of its Chemistry in Cancer Research Working Group;
- convening an AACR-FDA-NCI Think Tank on Clinical Biomarkers;
- hosting, with NCI, the Molecular Targets and Cancer Therapeutics Conference;
- sponsoring and supporting a Minorities in Cancer Research Council and a Women in Cancer Research Council;
- raising and distributing more than \$5 million in awards and research grants.

### **Training and career development for the next generation of researchers**

Of critical importance to the viability of the long-term cancer research enterprise is supporting, fostering, and mentoring the next generation of investigators. The NCI devotes approximately four percent of its budget to multiple strategies to training and career development, including sponsored traineeships, a Medical Scientist Training Program, special set-aside grant programs and bridge grants for early career cancer investigators. Increased funding for these foundational opportunities is essential to retain the scientific workforce that is needed to continue the fight against cancer.

### **Increase Research Funding Now**

Remarkable progress is being made in cancer research, but much more remains to be done. Cancer costs the nation more than \$209 billion in direct medical costs and lost productivity due to illness and premature death. Respected University of Chicago economists Kevin Murphy and Robert Topel have estimated that even a modest one percent reduction in mortality from cancer would be worth nearly \$500 billion in social value. Investments in cancer research have huge potential returns. Thanks to successful past investments, promising research opportunities abound and must not be lost. To maintain our research momentum, the American Association for Cancer Research (AACR) urges the United States House of Representatives to support the following appropriations funding levels for cancer research in FY 2008:

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