

*Section VIII.*  
***OTHER PROGRAMS  
MANAGED BY THE  
CONGRESSIONALLY  
DIRECTED MEDICAL  
RESEARCH PROGRAMS***



**CONTENTS**

**Background**

**Alcoholism Research**

**Cancer Center of Excellence**

**Cancer Research**

**Center for Prostate Disease Research**

**Cooperative Department of  
Defense/Veterans Affairs  
Medical Research**

**Defense Women's Health  
Research**

**Diagnostic and Surgical  
Breast Imaging**

**Gallo Cancer Center**

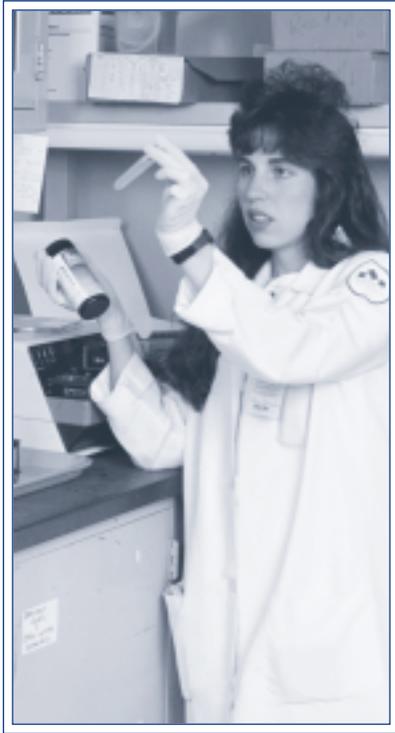
**Lung Cancer**

**Osteoporosis Research**

**Post-Polio Syndrome Research**

**CDMRP**





## Background

Over the past decade, increased public interest in health care issues has influenced the funding of scientific research. From fiscal years 1995–2001 (FY95–01), Congress has directed the Department of Defense (DOD) to manage numerous targeted research initiatives. As the Executive Agent for these initiatives, the U.S. Army Medical Research and Materiel Command's (USAMRMC) Office of the Congressionally Directed Medical Research Programs (CDMRP) has managed 14 other research programs, summarized in Table VIII–1.

The goal of the CDMRP in managing these programs is to fund scientifically meritorious research that addresses the topic areas specified by Congress. For FY00–01, the CDMRP has been responsible for executing or managing 11 research programs not described in Sections III–VII. FY00–01 awards were made following proposal submission in response to the *USAMRMC 99-1 Broad Agency Announcement* and an external peer review for scientific merit.

This section contains information on the programs that the CDMRP has been responsible for managing or executing in FY00–01. Appendix B, Table B–6, summarizes the directions from Congress and the investment strategy for these FY00–01 initiatives. Additional details of programs listed in Table VIII–1 may be found in the *DOD CDMRP Annual Reports* of September 1999 and of September 2000.

**Table VIII–1. Other Research Programs Managed by the CDMRP**

<b>Program</b>	<b>FY<sup>1</sup></b>
Advanced Cancer Detection <sup>2</sup>	97–99
Alcoholism Research	00–01
Cancer Center of Excellence	01
Cancer Research	01
Center for Prostate Disease Research	97–01
Coastal Cancer Control <sup>2</sup>	95
Computer-Aided Diagnosis <sup>2</sup>	97
Cooperative DOD/Veterans Affairs (VA) Medical Research	99–00
Defense Women's Health Research	95
Diagnostic and Surgical Breast Imaging	99
Gallo Cancer Center	00–01
Lung Cancer	00–01
Osteoporosis Research	95
Post-Polio Syndrome Research	99–00

<sup>1</sup> Fiscal years that the CDMRP was responsible for managing the listed programs.

<sup>2</sup> Award period of performance has been completed or responsibility for managing this program is no longer handled by the CDMRP.

## Alcoholism Research

In FY00 and FY01, Congress appropriated \$7 million (M) and \$8.5M, respectively, for alcoholism research. These funds have been used to support 11 scientifically meritorious research projects at the Ernest Gallo Clinic and Research Center in San Francisco, California. These research projects are related to the center's theme of studying neuroscience in models of addiction, particularly alcoholism. The major research disciplines encompassed by these projects include cell and molecular biology, behavioral pharmacology, neurophysiology, invertebrate genetics, and human genetics.

## Cancer Center of Excellence

In FY01, Congress appropriated \$1M for a Cancer Center of Excellence. One proposal has been received that is currently undergoing scientific merit review. It is anticipated that these funds will support studies that will identify new cancer-causing genes and novel drugs for therapy and diagnosis.

## Cancer Research

In FY01, Congress appropriated \$5.5M for cancer research in the integrated areas of signal transduction, growth control and differentiation, molecular carcinogenesis and DNA repair, cancer genetics and gene therapy, and cancer invasion and angiogenesis. One award was made to the State University of New York at Stony Brook to support the Cancer Institute of Long Island. The Cancer Institute is organized according to the aforementioned integrated themes and focuses on several cancers, including breast, prostate, lung, brain, colorectal, gynecological, and skin cancer.

## Center for Prostate Disease Research

The Center for Prostate Disease Research (CPDR) received congressional appropriations totaling \$24M during FY97–00 and \$7.5M during FY01.<sup>1</sup> The CPDR was initially established in response to a growing concern over the incidence of prostate cancer and the controversy over treatment choices at the various stages of the disease. The program is administered under the auspices of the Uniformed Services University of the Health Sciences. The CPDR has been devoted to the study of prostate disease and cancer, focusing on both basic and clinical research programs that strive to fight diseases of the prostate as well as fostering training in basic sciences and clinical research.



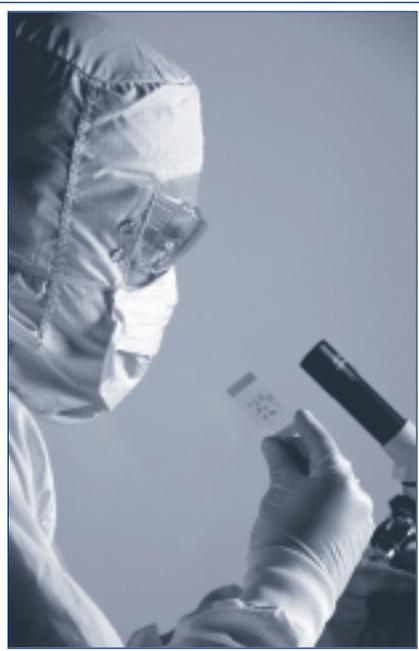
<sup>1</sup> Congress appropriated funding (\$2M) in FY92 to establish the CPDR. The USAMRMC, but not the CDMRP, managed the \$10.25M in FY92–95 appropriations for the CPDR.

Over the past year, the CPDR has made important prostate cancer research contributions. A tri-service comprehensive Multicenter Prostate Cancer Longitudinal Clinical Database initiated in FY94 was recently expanded and includes nine tri-service military medical centers across the country. The database contains clinical information on more than 13,000 prostate cancer patients treated in military health care facilities. The CPDR Basic Science Laboratory program focuses on prostate cancer molecular genetics and molecular biology. The laboratory has developed a library of more than 1,000 prostate cancer specimens that serve as an invaluable source of tissue to support the research efforts. Through this program, a number of novel genes have been discovered, including *PCGEM1*, a gene which is involved in prostate cancer. Collaborating with the National Institutes of Health, the CPDR Program has used a novel “spectral karyotyping” technique that has increased understanding of the chromosomal alterations in prostate cancer and will lead to new markers and treatments of the disease. In addition, a prostate-specific “gene chip” has been recently developed. Over the past year, the CPDR has published more than 20 peer reviewed manuscripts, 20 abstracts, 5 book chapters, and several publications for patient education.

## Cooperative Department of Defense/ Veterans Affairs Medical Research

The Cooperative DOD/Veterans Affairs (VA) Medical Research Programs were managed by the CDMRP using a two-tier review process. The \$6.8M received by the USAMRMC for execution of the FY99/00 programs was awarded to nine institutions to support research complementing the existing DOD and VA research efforts on the health of active-duty military personnel and veterans. The program’s emphasis on collaborative research efforts is reflected in the fact that seven of the nine projects were affiliated with DOD or VA institutions.

The first year of funding has elapsed for FY99/00 grants and initial observations are promising. For example, a study being conducted by the Naval Health Research Center to provide the necessary data for making policy decisions on the use of pneumococcal vaccine among military trainees has enrolled 190,000 recruits. Researchers at the Veterans Affairs Medical Center in New Orleans who are studying pain in association with transport across the blood-brain barrier have demonstrated that there is a saturable brain-to-blood transport system for endorphins. Virginia Commonwealth University researchers are developing methods to artificially grow muscle tissue to be used as surgical replacement for damaged tissue. In this project, tissue samples grown with their electrospinning device have been implanted in test animals that have shown a robust vasculogenic response around implants with no evidence of inflammation, encapsulation, or necrosis. Initial observations in a study at Virginia Polytechnic Institute and State University have shown that tibial bone mineral density is positively related to body composition, calcium intake, and energy needs in women. This research will provide new information on the effects of isokinetic training on bone mineral density, bone stiffness, and bone turnover in women.



## Defense Women's Health Research

The Defense Women's Health Research Program (DWHRP) was established by public law to address the critical health and performance issues specific to women in the military. The CDMRP managed the FY95 appropriation of \$40M while another office within USAMRMC managed the FY94 program. Using the guiding framework of the Institute of Medicine's recommendations published in *Recommendations for Research on the Health of Military Women*,<sup>2</sup> the CDMRP developed a research program on military women's health and performance issues. The goals of the DWHRP were to equip the U.S. Armed Forces with the technology and information required to sustain forces during conflict and peacetime, to protect and sustain service women and men from battle and nonbattle health threats; to sustain optimal military performance and survival; and to provide the world's best combat casualty care.

To date, 41 articles have been published, and 52 abstracts have been presented at international and national meetings. The DWHRP also sponsored the Forum on the Health of Women in the Military, which was held in June 1996 at the Uniformed Services University of the Health Sciences. Research results have been forthcoming in the areas of operational effectiveness of military women; psychological and health issues resulting from the integration of women into a hierarchical male environment; health promotion and disease prevention; and access to delivery of health care for military women. For example, research supported by the FY95 DWHRP has shown that: metabolic expenditure to cold is similar in men and women; women, although smaller and having less absolute strength than men, can greatly increase their strength and endurance through resistance and aerobic training and can perform military tasks traditionally allocated to men; jet fuel and propellants are not teratogenic; and self-administered swabs to detect sexually transmitted diseases (STDs) are equal in results to clinic-administered tests. In addition, a self-test kit for urinary tract infections was developed and evaluated. Another related study examined mechanisms of adherence of different uropathic bacteria to vaginal and bladder epithelium for the development of contraceptive jellies for protection against STDs.



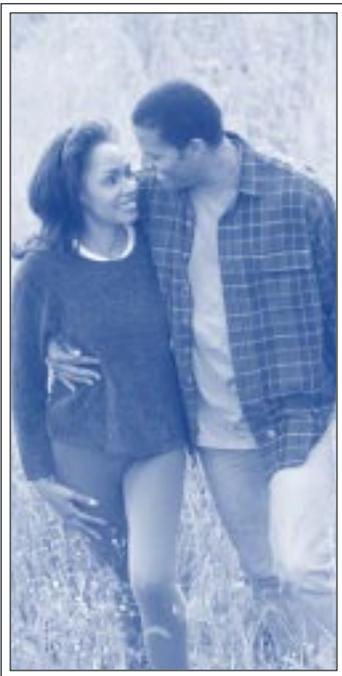
<sup>2</sup> Institute of Medicine, *Recommendations for Research on the Health of Military Women*, 1995.

## Diagnostic and Surgical Breast Imaging

In FY99, Congress appropriated \$2M for Diagnostic and Surgical Breast Imaging (DSBI). The goal of DSBI is to fund scientifically meritorious research. Four proposals that aim to improve the detection of breast cancer were funded. Two of these studies involve the development of techniques to enhance sensitivity to detect ductal carcinoma in situ, which is believed to be an early stage of breast cancer. A third study plans to improve the resolution of ultrasound to enable visualization of breast cancer in dense glandular breasts. The final project aims to develop a tool that measures tissue stiffness and to combine this palpation imaging with ultrasound for enhanced detection.

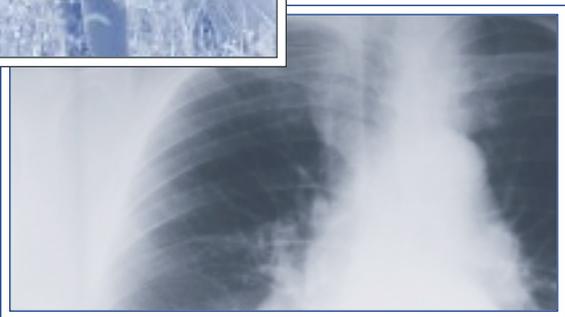
## Gallo Cancer Center

In FY00 and FY01, Congress appropriated \$3M and \$4M, respectively, to provide for the initiation of a cancer center dedicated to prostate cancer research. Funds were awarded to the University of Medicine and Dentistry of New Jersey to support the Dean and Betty Gallo Prostate Cancer Center at the Cancer Institute of New Jersey. The Gallo Prostate Cancer Center contains three programs: the Clinical Science, Population Science, and Basic Science Programs. The Clinical Science Program's goals are to increase translational research, support clinical trials, and encourage a statewide alliance of hospitals. The Population Science Program has a cancer control focus and is currently involved in a study to identify and develop effective means of prostate cancer intervention among different ethnic groups. The Basic Science Program is performing basic research on prostate cancer by examining all steps in the cancer pathway from initiation to progression and advanced disease.



## Lung Cancer

In FY00 and FY01, Congress appropriated \$7M and \$4.5M, respectively, for the Lung Cancer Program. FY00 funds were awarded to the University of Texas M.D. Anderson Cancer Center to explore multiple avenues of research, prevention, diagnosis, and therapy that would yield new treatment options for lung cancer. Research is focusing on basic and preclinical studies to examine molecular changes in lung cancer cells, develop new strategies for lung cancer chemoprevention, and explore new molecular therapeutic approaches for lung cancer.



# Osteoporosis Research

Congress appropriated \$5M in FY95 for peer reviewed osteoporosis research. The DOD Osteoporosis Research Program (ORP) was managed by the CDMRP in FY95.<sup>3</sup> The overall goal of the ORP is to support innovative basic and clinical research directed toward reducing the incidence and enhancing the quality of life for individuals affected by osteoporosis.

Five research studies that address prevention, early detection, and/or treatment were funded with the FY95 appropriation. Researchers at Northwestern University are determining methods to prevent osteoporosis by studying the relationship between excessive thyroid hormone levels and osteoporosis. In this study, it was determined that an insulin-like growth factor mediates some of the thyroid hormone's effects and may therefore play a role in the development of osteoporosis. Researchers at the State University of New York at Buffalo are determining risk factors for osteoporosis by examining the relationship between osteoporosis and oral bone loss, periodontal bone loss, and tooth loss; bone loss in the hip or spine has been correlated with bone loss in the jaw. Researchers at the New England Research Institute are conducting a longitudinal study of bone density and bone turnover in women of different ethnicities as they experience menopause. To date, they have found that ethnicity is a statistically significant predictor of bone mineral density, with baseline bone mineral density highest in African American women. In an attempt to detect the origin of osteoporosis at the level of the gene, researchers at the Jackson Laboratory are identifying locations on genes that affect bone mineral density in mice. Finally, researchers at the American Red Cross are modifying fibroblast growth factor-1 (FGF-1), a growth factor for bone cells, to enable it to be used for the treatment of osteoporosis and bone fracture. For more information on the ORP, see the *DOD CDMRP Annual Report*, September 1999.

ORP-funded investigators have published their findings in prestigious scientific journals (including *Bone*, *Journal of Bone and Mineral Research*, *Mammalian Genome*, and *Journal of Periodontology*) and have presented their data at national and international scientific conferences (including annual meetings of the American Society of Bone and Mineral Research, the 1999 International Mouse Genetics Meeting, and the Tissue Engineering/Regenerative Healing/Stem Cell Biology Conference).



<sup>3</sup>The USAMRMC, but not the CDMRP, managed FY94, 96, and 97 osteoporosis appropriations.

## Post-Polio Syndrome Research

In FY99 and FY00, Congress appropriated \$1M and \$1.3M, respectively, for post-polio syndrome research.<sup>4</sup> FY99 and FY00 funds were awarded to Albert Einstein Healthcare Network in Philadelphia to support research on the effects of post-polio syndrome and possible treatments for polio survivors. The focus of the research effort is to develop diagnostic tools for determining the risk of post-polio survivors for reduced ability to perform daily tasks. In addition, an exercise regimen and other therapies to improve patient strength and enhance quality of life are a major aim of this work.



❖ *For more information about the CDMRP,  
visit <http://cdmrp.army.mil>* ❖

<sup>4</sup> Congress appropriated \$1M in FY94 for post-polio syndrome research. The USAMRMC, but not the CDMRP, awarded and managed the research.