NATIONAL CANCER INSTITUTE

NCI Cancer Bulletin

Eliminating the Suffering and Death Due to Cancer

May 25, 2004
Volume 1 | Number 21

In this issue:

A Publication of the
National Cancer Institute
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

http://cancer.gov

Lower Breast Cancer Risk With Aspirin Linked to Hormone-Receptor Status

A study released this week lends further support to previous findings of an association between regular aspirin use and reduced risk of breast cancer. The findings, however, come with a few new twists: Aspirin's effect seems to be significantly affected by hormone-receptor status and frequency of use, with the most benefit seen in women with either estrogen- or progesterone-positive tumors and who took aspirin at least seven times a week for at least 6 months.

In the case-controlled study, published in the May 25 *Journal of the American Medical Association*, the research team, led by Dr. Mary Beth Terry, an epidemiologist at Columbia University, analyzed data from women participating in the Long Island Breast Cancer Study Project, which is funded by the National Cancer Institute and National Institute of Environmental Health Sciences. They collected data on 1,442 women diagnosed with *in situ* or invasive breast cancer between August 1, 1996 and July 31, 1997, and compared them with 1,420 controls. Overall, 301 case patients and 345 controls reported regular use of aspirin for at least 6 months.

Regular aspirin use was associated with a 20 percent reduced risk compared with nonuse. An even greater risk reduction (28 percent) was seen among women who took at least

(continued on page 2)

Director's Update

Oncology Nurses: Something Special

Those of us in the cancer community consistently hear a special story from patients and their families. It is about that "one terrific nurse" and how he or she helped the patient and family get over the shock of diagnosis, learn about what would come next, handle the rough patches of treatment a little better than they otherwise might have—and all with a delicate human touch.

We see headlines in the news every day about advances in diagnosis or treatment and we learn about the finer details of the investigations. But there's usually a back story we don't hear, the one about the nurses who helped make that finding possible, ensured that patients understood their treatment

(continued on page 2)

(Lower Risk continued from page 1)
seven aspirin per week. When results were separated out by hormone-receptor status, only estrogen-receptor negative/progesterone-receptor negative status failed to show a benefit. Aspirin showed the strongest effect, while ibuprofen use had a weaker preventive impact. Acetaminophen showed no protective effects.

The study from Dr. Terry and colleagues builds on preclinical models showing that drugs such as aspirin inhibit cyclooxygenase, or COX, a key player in the synthesis of prostaglandins, which in turn stimulate the production of estrogen. Because of the role estrogen is thought to play in breast cancer development, increasing attention has been paid to ways to interfere with its activity or inhibit its production.

"This is an important finding because it reinforces that estrogen is a key biological contributor to breast cancer risk," says Dr. Deborah Winn, chief of the Clinical and Genetic Epidemiology Research Branch in the NCI Division of Cancer Control and Population Sciences. Dr. Winn also is the NCI program coordinator for the Long Island Breast Cancer Study Project.

Although frequency of aspirin use appeared to outmatch duration in this study, it is unclear how concrete that finding is, says Dr. Ernie Hawk, chief of the Gastrointestinal and Other Cancers Research Group in the NCI Division of Cancer Prevention. Frequency of use is clearly important, he explains, but other studies that found aspirin use reduced the risk of colorectal cancer suggested that duration also is a significant factor.

In addition, no data on aspirin dosage were collected beyond number of tablets per week, something that both Drs. Winn and Hawk agreed further limits interpretation of the study's implications for aspirin use in the prevention of breast cancer.

Several ongoing studies may provide further insights. One study that should provide some "definitive evidence," adds Dr. Hawk, is the Women's Health Study, which has randomized almost 40,000 women to assess the impact of low-dose aspirin, vitamin E, a combination of both agents, or neither on women's risk of cardiovascular disease and cancer. ◆

(Director's Update continued from page 1)
regimens, educated staff about the experimental protocol, and aided patients with such issues as depression, questions about fertility, and what to do once they returned home.

May is Oncology Nursing Month and it has been a time to celebrate and honor the dedicated oncology nurses who play a role in nearly every aspect of oncology, from the lab to the bedside. Ask somebody who works with an oncology nurse and you will undoubtedly hear terms such as "intelligent," "highly skilled," "dedicated," and "compassionate." And when you consider the breadth of work in which these health care professionals are involved, from genetic testing to end-of-life care, it's easy to understand why.

"Oncology nurses have to have a combination of knowledge about all aspects of patient care and the human touch to understand what patients with cancer are going through," says Dr. Clare Hastings, the chief of Nursing and Patient Care Services at the National Institutes of Health Warren Grant Magnuson Clinical Center. Many oncology nurses often have advanced certifications from the Oncology Nursing Society—a true leader in advancing cancer research and care—and unmatched clinical experience. "They bring a body of knowledge to the job that others just don't have," Dr. Hastings adds.

In the NIH Clinical Center, at NCI Divisions and the NCI Center for Cancer Research (CCR), and in Cancer Centers and community oncology clinics and physician's offices across the country, oncology nurses also are integral to the research and care process. They are study project managers, regulatory specialists, and educators. And, especially these days, oncology nurses have to be experts on new technologies, meaning that, as one colleague put it, they have to be "high tech and high touch."

One significant trend that affects every one of us is the current nursing shortage. Over the next 15 years, it's estimated that more than 1.1 million nursing positions will go unfilled, something that will clearly place a tremendous amount of strain on the ability to provide the highest quality of care to cancer patients.

NCI plays an important role in promoting oncology nursing through an innovative fellowship program cosponsored by CCR and the NIH Clinical Center. Nurse-fellows participate in an intense didactic and clinical program—working directly with patients, but also getting important exposure to many aspects of clinical research. They also work with nurse practitioners and genetic counselors, to cite just a few examples. The ONS also has some exciting programs to attract student nurses to oncology, including a job shadowing program operated primarily through the organization's 218 chapters.

Simply put, oncology nurses improve patient care and quality of life. And when we talk about the importance of treating the *whole* patient, one need look no further for leaders than oncology nurses. They are something special, and we could all learn a thing or two from them. ◆

Dr. Andrew C. von Eschenbach
Director, National Cancer Institute

Insurance Coverage for Breast Cancer Screening and Related Services

All 50 states and the District of Columbia (collectively, states) have enacted laws addressing private health insurance coverage for breast cancer screening and/or breast cancer-related services. The bar chart below illustrates the number of states with laws addressing private health insurance coverage for: (1) screening mammography; (2) postmastectomy services (i.e., reconstructive surgery, prosthetic devices, and therapy for lymphedema); and (3) inpatient care following a mastectomy, lymph node dissection, or lumpectomy.

Screening Mammography

- All states except Utah have enacted legislation addressing mammography coverage.
- Forty-six states require insurers to provide coverage for screening mammography; Arkansas, Michigan, and Mississippi require insurers to offer such coverage.
- Ohio's law is unique: It requires certain insurers to provide coverage and others to offer coverage.

Postmastectomy Services

- Thirty-six states have enacted legislation addressing coverage for postmastectomy services.
- Thirty-four states require insurers to provide coverage for reconstructive surgery after mastectomy, including surgery to establish breast symmetry. Kentucky law mandates that insurers offer such coverage and Michigan law mandates that insurers offer or include such coverage.
- Twenty-seven states require insurers to provide coverage for prosthetic devices after surgery; in Kentucky, insurers must offer such coverage and in Michigan, insurers must offer or include such coverage.
- Twenty-seven states require insurers to provide coverage for both reconstruction and prostheses; Kentucky requires insurers to offer coverage for both reconstruction and prostheses; Michigan requires insurers to offer or include such coverage.
- Insurers in 18 states must provide coverage for lymphedema therapy. Insurers in Kentucky must offer such coverage.
- Eighteen states require insurers to provide coverage for reconstructive surgery, prostheses, and lymphedema therapy. Kentucky requires insurers to offer such coverage.

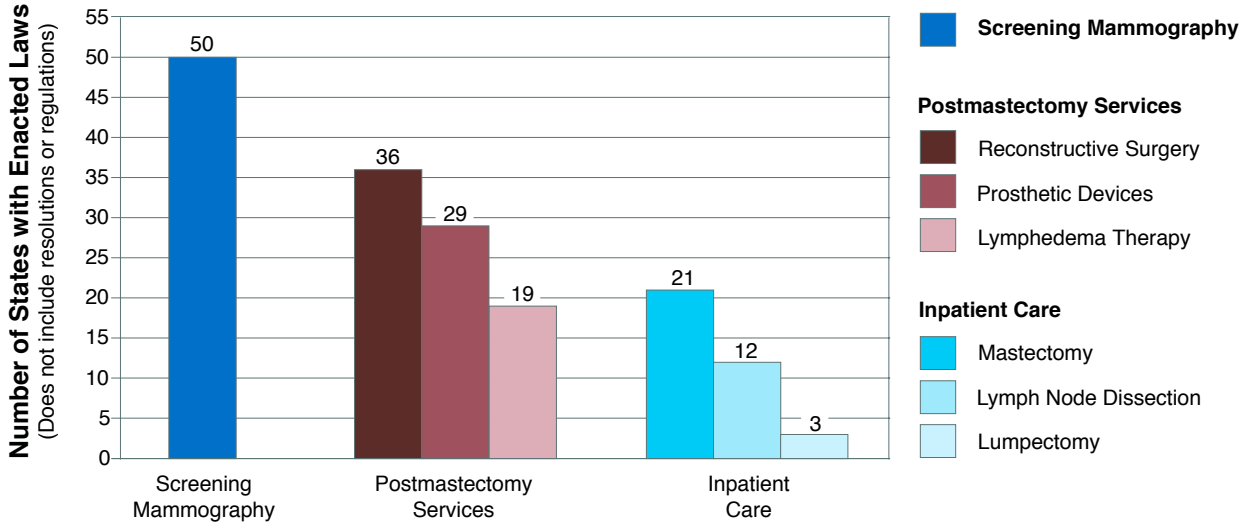
Inpatient Care

- Twenty-one states have enacted legislation requiring insurers to provide inpatient care following a mastectomy.
- Twelve states require insurers to provide coverage for inpatient care following lymph node dissection.
- Twelve states require insurers to provide coverage for inpatient care following both mastectomy and lymph node dissection.
- Three states—Maine, Montana, and New York—require insurers to provide coverage for inpatient care following mastectomy, lymph node dissection, and lumpectomy. ◆

Source: NCI State Cancer Legislative Database Program, April, 2004.
http://www.scld-nci.net

Coverage By Private Health Insurers

Number of States with Enacted Laws by Type of Service (through December 31, 2003)



Cancer Research Highlights

Direct Mailing Colorectal Fecal Kits Increases Screening Rates, Study Finds

Proactively mailing fecal occult blood test (FOBT) kits directly to older consumers, with follow-up letters and phone calls, nearly doubled the number of people who reported adherence to national screening guidelines for colorectal cancer, according to study results published in the May 19 *Journal of the National Cancer Institute* (*JNCI*).

The study, by University of Minnesota researcher Dr. Timothy Church, compared screening compliance rates among 1,451 people, aged 50 and older, in Wright County, Minn. They were divided into three equal test groups. The control group received a questionnaire asking if they had used any of the screening procedures recommended in national guidelines, such as an annual FOBT or flexible sigmoidoscopy every 5 years. The second group received the questionnaire and also was mailed FOBT kits. The third group received the questionnaire, FOBT kits, and was later contacted by letter and phone.

One year later, researchers sent a nearly identical questionnaire to all study subjects. The control group indicated a 7.8 percent increase in their rates of adherence to national screening guidelines, compared with their response to the first questionnaire. The second group reported a 13.2 percent increase; the third group, a 14.1 percent increase—almost double (6.4 percent difference) the increase in the control group.

"Although an increase of 6.4 percent may seem modest at first glance, the population to which it applies is large," the researchers noted. They estimated an equivalent increase nationwide would translate "into nearly 2 million additional people adherent to screening recommendations."

Recovery from Stem Cell Transplantation Can Take Years Longer than Expected

Myeloablative hematopoietic cell transplantation (HCT) recipients generally take 3 to 5 years for full physical and emotional recovery from surgery, according to findings of a study in the May 19 *Journal of the American Medical Association*, by Dr. Karen L. Syrjala and colleagues at the Fred Hutchinson Cancer Research Center. The authors had previously hypothesized that full recovery from HCT would occur within 1 year. HCT, which generally entails transplantation of stem cells from either bone marrow or peripheral blood, is a common treatment for hematopoietic malignancies such as leukemia and lymphoma.

Before beginning HCT and for 5 years after completion, the researchers evaluated patients' physical and work limitations, depression, and distress related to treatment or disease. Researchers found that physical recovery occurred faster than psychological or occupational recovery. After 1 year, only 19 percent of patients recovered on all outcomes, with the number increasing to 49 percent after 3 years and 63 percent after 5 years. Most survivors (84 percent) eventually returned to full-time work.

"Higher levels of depression, lower levels of physical function, and less satisfaction with social support before HCT increased the risk of impaired physical and emotional recovery after the transplantation," write the authors. "Recovery might be accelerated by more effective interventions to increase work-related capabilities, improve social support, and manage depression."

Danish Study Links Hodgkin's and MS

A study published in the May 19 *JNCI* appears to validate a decades-old theory that multiple sclerosis (MS) and Hodgkin's lymphoma (HL) in young adults (between 15 and 44 years old) tend to cluster together in families. The study was conducted by Dr. Henrik Hjalgrim of the Danish Epidemiology Science Centre at Statens Serum Insitut, in Copenhagen.

Using data collected between 1968 and 1997 from the Danish Registration System, the Danish Multiple Sclerosis Registry, and the Danish Cancer Registry, the research team assembled a study cohort of 11,790 patients with MS and 19,599 of their first-degree relatives and 4,381 patients with HL and 7,388 of their first-degree relatives. Statistical analyses indicated that family members of MS patients had an increased risk of developing young-adult-onset HL and family members of HL patients had an increased risk of developing MS. In addition to a heightened HL risk among first-degree relatives of MS patients, the report found that the cohort also had a greater risk of developing non-Hodgkin's lymphoma. Data analysis yielded no correlation between HL and MS.

"The accumulation of young-adult-onset Hodgkin's lymphoma and multiple sclerosis within families may reflect the effects of shared environmental or

(continued on page 5)

(Research Highlights continued from page 4)
constitutional risk factors for the two diseases or, more likely, a combination of such factors," the researchers wrote.

FDA Approves Drugs for Prostate Cancer and Myelodysplastic Syndrome

Taxotere (docetaxel) injection—a treatment for breast cancer and non-small-cell lung cancer—has now been approved by the FDA for treatment of advanced metastatic prostate cancer when used in conjunction with the steroid prednisone. This approval offers new hope for patients whose disease has not responded to other treatments, said Dr. Lester M. Crawford, acting FDA commissioner. The safety and effectiveness of Taxotere were tested in more than 1,000 patients worldwide by comparing Taxotere and prednisone to mitoxantrone (a standard chemotherapy agent) and prednisone. Results showed that the Taxotere-prednisone therapy, administered every 3 weeks, increased patient survival by approximately 2 and a half months compared with the control group. Taxotere inhibits tubulin, a protein involved in cellular transport and division.

Another recent FDA approval is for Vidaza (azacitidine) injection, the first effective treatment for patients with the bone marrow disease myelodysplastic syndrome (MDS). In MDS, bone marrow cannot produce enough blood cells; those that are produced are usually defective and eliminated by the immune system. About 30 percent of MDS cases progress to acute leukemia. Vidaza was developed and tested under the Orphan Drug Act, which encourages scientific research and testing of therapies for rare diseases that typically affect less than 200,000 people worldwide. "The [FDA] continues to make approvals of these types of remarkable drugs one of its highest priorities," said Commissioner Crawford. ◆

Legislative Update

House Hearings Explore Conflict-of-Interest Issues

The House Energy and Commerce Subcommittee on Oversight and Investigations examined two ethics issues: participation of NIH employees in outside activities and receipt of lecture awards, in a hearing on May 18. The hearing focused on examples of lecture awards and outside activities as potential conflicts of interest—and changes in ethics policies now being implemented by NIH.

The first of two panels discussed several issues, including NIH employees' acceptance of monetary lecture awards and use of the Title 42 mechanism to recruit and retain scientists. NIH Deputy Director Dr. Raynard Kington testified on activities of the NIH Ethics Advisory Committee and specific steps currently underway to address ethical issues raised by Congress. This panel also responded to questions concerning a lecture award from the University of Pittsburgh to former NCI Director Dr. Richard Klausner.

The second panel included Dr. Lance A. Liotta, of the Section of Tumor Invasion and Metastases in NCI's Center for Cancer Research (CCR); Dr. J. Carl Barrett, Director, CCR; and Dr. Anna Barker, NCI Deputy Director, Advanced Technologies & Strategic Partnerships. Dr. Emanuel Petricoin, of FDA's Center for Biologics Evaluation and Research, also testified.

Legislators voiced concern about consulting agreements with Biospect, Inc., that were held until recently by Drs. Liotta and Petricoin. Drs. Liotta and Petricoin, through the FDA/NCI Clinical Proteomics Program, were the principal investigators on a cooperative research and development agreement (CRADA) with Correlogic Systems, Inc. This CRADA focused on the research and early development of proteomics patterns recognition as a potential approach for early detection of cancer. Both Drs. Liotta and Petricoin's agreements were approved by their respective ethics officers. Biospect was portrayed in the hearing as a direct competitor of Correlogic Systems.

Dr. Liotta testified on his 28-year NCI career, including his role as a pioneer in the FDA/NCI Clinical Proteomics Program. Committee members asked Dr. Barrett about overlap between Dr. Liotta's duties and his relationship with Biospect. He responded that there was language in Dr. Liotta's consulting agreement that clearly excluded any activity related to protein pattern recognition for diagnostic purposes, and specifically cited the scope of the CRADA. Dr. Liotta ended his consultancy once he learned that Biospect had stated their interest in this overlapping area. Dr. Barrett reiterated NCI's commitment to pattern-based diagnostics research, placing NCI's study findings into the public domain and proceeding with clinical testing of the technology.

Dr. Barker stated that the CRADA between NCI and Correlogic Systems was very successful, producing promising technology with potential application in cancer diagnostics. The parties have spent several months in discussion on strategies and approaches for a possible clinical CRADA focusing on the further development of the technology for ovarian cancer.

For more information, see *NCI Cancer Bulletin*, Jan. 13. To hear the testimony, go to *http://energycommerce.house.gov/*. ◆

Funding Opportunities

Cancer Intervention and Surveillance Modeling Network (CISNET)

RFA-CA-05-018
Letter of Intent Receipt Date: Sept. 14, 2004
Application Receipt Date: Oct. 14, 2004

This RFA is a reissue of RFA-CA-99-013 and RFA-CA-02-010. NCI invites applications to support collaborative research using simulation and other modeling techniques to describe the impact of interventions (i.e., primary prevention, screening, and treatment) in population-based settings in order to ascertain determinants of cancer trends. The primary goals of this research are: (1) To determine the impact of cancer control interventions on observed trends in incidence and/or mortality and (2) To determine whether recommended interventions are having their expected population impact by examining discrepancies between controlled cancer intervention study results and the population experience.

The RFA will use the NIH (U01) award mechanism.

For more information see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=2080

Inquiries: Dr. Eric Feuer, rf41u@nih.gov ◆

For more information on cancer, call 1-800-4-CANCER or visit http://cancer.gov.

NCI Cancer Bulletin staff can be reached at ncicancerbulletin@mail.nih.gov.

NIH Publication No. 04-5498

Featured Clinical Trial

Skin Cancer Prevention Study

Name of the Trial

Phase II/III Randomized Chemoprevention Study of Celecoxib in Patients with Actinic Keratoses. See the protocol summary at http://www.cancer.gov/clinicaltrials/UAB-9833.

Principal Investigator

Dr. Craig Elmets, University of Alabama at Birmingham Comprehensive Cancer Center

Why Is This Trial Important?

Skin cancer is the most common cancer, accounting for at least half of all cancer diagnoses. More than a million people are diagnosed with skin cancer every year in the United States (most are diagnosed with nonmelanoma skin cancers, tumors that develop in the uppermost layer of the skin). Roughly one out of six have squamous cell cancer, a type of nonmelanoma skin cancer. Although nonmelanoma skin cancers rarely metastasize and are curable if detected and treated early, squamous cell cancer can grow quickly and can be locally destructive.

Actinic keratoses (AKs) are precancerous skin growths that are usually caused by sun exposure, typically in fair-skinned people. They begin as rough, scaly patches or bumps on the skin and later develop into hard, wart-like growths. Untreated, about one in 10 AKs is likely to develop into squamous cell cancer.

Findings from animal studies suggest that the drug celecoxib (Celebrex) may prevent the development of squamous cell cancer, said Dr. Elmets. Celecoxib blocks an enzyme called cyclooxygenase-2 (COX-2). Levels of COX-2 are elevated in AKs and squamous cell cancer but not in normal skin. "Moreover, animals deficient in COX-2 have a reduced incidence of skin cancer, and mice given celecoxib also have a lower incidence of skin cancer," added Dr. Elmets.

Dr. Craig Elmets
Principal Investigator

The study seeks to determine if celecoxib prevents new AKs from developing, causes existing AKs to go away, and prevents AKs from progressing to squamous cell cancer.

Who Can Join This Trial?

Researchers want to enroll 240 patients aged 18 and older with at least 10 AKs on the arms, head, or neck. See the full list of eligibility criteria for this trial at http://www.cancer.gov/clinicaltrials/UAB-9833.

Where Is This Trial Taking Place?

Multiple study sites in the United States are enrolling patients in this trial. See the list of study sites at http://www.cancer.gov/clinicaltrials/UAB-9833.

Who to Contact

See the list of study contacts at http://www.cancer.gov/clinicaltrials/UAB-9833, or call the NCI's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237). The call is toll-free and completely confidential. ◆

An archive of "Featured Clinical Trial" columns is available at http://cancer.gov/clinicaltrials/ft-all-featured-trials.

Notes

Phase II of Cancer Quality of Care Measures Project Launched

A major public-private effort has been launched to identify evidence-based measures of cancer care quality for monitoring and improving care across the cancer continuum. A partnership of four federal agencies, spearheaded by NCI, completed contract discussions with the non-profit National Quality Forum (NQF) on May 17 for Phase II of the Cancer Quality of Care Measures Project.

NCI's federal partners providing design and financial support for the project are the Agency for Healthcare Research and Quality, the Centers for Medicare & Medicaid Services, and the Centers for Disease Control and Prevention.

Phase II will be guided by a 19-member steering committee of experts from cancer professional and advocacy organizations, federal and state agencies, and quality standards-setting bodies. During Phase I, the steering committee identified several high-priority topic areas, both cancer disease-site specific and cross-cutting, as candidates for Phase II analysis. When the committee reconvenes this summer, it will select a final set of topics. For more information, go to http://outcomes.cancer.gov/translation/canqual/.

NCI's Division of Cancer Prevention will present a 5-week course:

"Principles and Practice of Cancer Prevention and Control"

July 6-30, 2004

See http://www3.cancer.gov/prevention/pob/courses/principles.html for more information and to register.

Workshop to Address Preclinical Cancer Detection Methods

NCI's Division of Cancer Prevention is sponsoring the third scientific workshop of the Early Detection Research Network, "Bringing Biomarkers Discovery from the Bench to the Bedside," June 14-16 in Bethesda, Md.

This workshop will address the biology and methods of preclinical cancer detection, including topics such as novel enabling technologies for detection of early cancer, molecular approaches to screening, analysis of high throughput biologic data for prediction and marker discovery, biology of hereditary cancers, impact on sporadic cancer detection, validation of biomarkers, and organ-specific translational research.

Individual sessions will be followed by panel and poster discussions. Opportunities for collaboration and mechanisms for sharing data and specimens will be presented. Further details and an online application can be found at: https://www.compass.fhcrc.org/edrnPub/screg.asp. For additional information, contact program staff at 301-435-1594.

United States Signs Tobacco Control Treaty

On behalf of the United States, Secretary of the Department of Health and Human Services Tommy G. Thompson signed the Framework Convention on Tobacco Control (FCTC) on Monday, May 10 at the United Nations in New York City. FCTC, the first global public health treaty negotiated under the auspices of the World Health Organization, encourages nations to establish standards similar to the ones set for tobacco prevention and control in the United States.

The United States was the 108th nation to sign this treaty; it is open for signature until June 29. The treaty will take effect after 40 nations have ratified it; thus far, 12 nations have done so. The next step for the treaty in the United States is submission to the Senate for ratification, following further interagency review.

Rhoades Joins NCI

Dr. Margaret (Peggy) Rhoades has

joined NCI as Special Assistant to the Director with a focus on media activities. Dr. Rhoades, who most recently served as executive director of the National Coalition on Health Care, will provide NCI with the depth of experience in public affairs she has gained through public affairs positions at the Brookings Institution, the Social Security Administration, the U.S. Office of Education, and as an associate producer of documentaries for NBC News. A graduate of Wellesley College, Dr. Rhoades received her Ph.D. and M.A. in government from Georgetown University.

CCR Grand Rounds

June 1: Dr. V. Craig Jordan of the Robert H. Lurie Comprehensive Cancer Center, Feinberg School of Medicine, Northwestern University will present "Estrogen-Induced Apoptosis to Kill the Cancer but not the Patient."

June 15: Dr. Stuart A. Aaronson of the Derald H. Ruttenberg Cancer Center, Mount Sinai School of Medicine will present "Cancer Targeting in the 21st Century."

CCR Grand Rounds are held 8:30 to 9:30 a.m. at the NIH campus in Bethesda, Md. in the Clinical Center's Lipsett Amphitheater. ◆

Guest Commentary by Dr. Patricia A. Grady

Cancer-Related Research at the National Institute of Nursing Research

Although medical science continues to make great strides in the fight against cancer, it remains the second leading cause of death in the United States. According to the American Cancer Society (ACS), in 2004 more than half a million people will die from cancer, and more than 1.3 million new cases will be diagnosed.

Given this enormous impact, investigation into cancer and its effects on patients and families continues on many fronts. The National Institute of Nursing Research (NINR) recently identified five research themes for the future: changing lifestyle behaviors for better health, managing the effects of chronic illness to improve health and quality of life, identifying effective strategies to reduce health disparities, harnessing advanced technologies to serve human needs, and enhancing the end-of-life experience for patients and their families.

Each of these themes addresses the needs of cancer patients in some way. Changing behavior to promote early screening, improve diet and exercise, and reduce unhealthy behaviors is one key to health promotion and cancer prevention. As cancer becomes a chronic disease with long-term treatment, patients and families need new strategies to cope. Increasing NINR's already strong programs in health disparities should help reduce the disproportionate burden of cancer in African American and other minority populations. Advanced technologies will aid nurses in counseling their patients about genetic testing, symptom management, decision making, and in developing telehealth and informatics interventions for both patients and caregivers. When cancer progresses beyond the possibility of cure, better palliative care practices are needed to improve the quality of life at the end of life.

NINR's cancer research portfolio focuses heavily on symptom management. Studies are currently funded to address the symptoms of both the disease and its treatment, including pain, fatigue, nausea, and dyspnea. In one example, a nurse investigator worked extensively with children suffering from acute lymphoblastic leukemia. She found that intensive radiation or chemotherapy treatments to attack lymphoblasts in the central nervous system have long-term adverse effects on the developing brain, leading to future cognitive, behavioral, and academic deficits. This result influenced a change in usual care to include intrathecal methotrexate alone.

Other NINR-funded research studies have published results on chemotherapy-induced nausea, transitional care of elderly cancer patients after surgery, exploring symptom clusters, oral hygiene during chemotherapy, managing cancer-induced pain and fatigue, and the end-of-life trajectory of cancer patients.

NINR also has participated in several national cancer research-related activities. NINR cosponsored the 2002 NIH State of the Science Conference on Symptom Management in Cancer. We routinely collaborate on the development of cancer research capacity with ACS, the Oncology Nursing Society (ONS), the Susan Komen Foundation, and the Association of Pediatric Oncology Nurses (APON). In August 2003, NINR cosponsored a working group with APON titled "Moving the Research Agenda Forward for Children with Cancer." The executive summary is available at http://ninr.nih.gov/ninr/research/pedscancer.pdf and the May/June 2004 issue of the *Journal of Pediatric Oncology Nursing* is devoted to the working group proceedings. In March 2004, ONS and NINDR cosponsored the National Nursing Research Roundtable, an annual meeting of the representatives of 25 nursing organizations, with the theme of building "An Inventory of Interdisciplinary Initiatives." As the lead NIH institute on end-of-life research, NINR is cosponsoring the NIH End-of-Life State of the Science Conference in December 2004.

NINR is strongly committed to promoting research to reduce the pain and suffering associated with cancer, especially from the perspectives of prevention, health promotion, and symptom management. We are proud of the relationships we have developed with many cancer-related organizations to help further research progress and the implementation of research findings. Most important, we are happy to salute the contributions through research that oncology nurses and ONS have made toward improving the quality of life for those with cancer. ◆

Dr. Patricia A. Grady, Director, National Institute of Nursing Research

This *NCI Cancer Bulletin* is produced by the National Cancer Institute (NCI). NCI, which was established in 1937, leads a national effort to eliminate the suffering and death due to cancer. Through basic and clinical biomedical research and training, NCI conducts and supports research that will lead to a future in which we can prevent cancer before it starts, identify cancers that do develop at the earliest stage, eliminate cancers through innovative treatment interventions, and biologically control those cancers that we cannot eliminate so they become manageable, chronic diseases.