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Studies Suggest Exercise Improves Colorectal Cancer Outcomes

The results of two new prospective, observational studies offer compelling evidence to suggest that regular physical activity in the months following treatment may decrease the risk of cancer recurrence and death from colorectal cancer.

In the studies, patients with early- to later-stage colorectal cancer (but not distant metastases) who engaged in regular activity after diagnosis decreased the likelihood of cancer recurrence and mortality by 40 to 50 percent or more compared with patients who engaged in little to no activity.

Released early online July 5 in the *Journal of Clinical Oncology*, the studies' results held true regardless of physical activity levels before cancer diagnosis or other factors that predict recurrence risk, such as the number of nearby lymph nodes harboring cancer cells.

The results, said the studies' lead author, Dr. Jeffrey A. Meyerhardt of the Dana-Farber Cancer Institute, may offer some important insight into why some colorectal cancer patients who receive standard-of-care treatments, including surgery and

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Director's Update

Guest Update by Dr. Robert Croyle

Dr. Robert T. Croyle, Director, NCI Division of Cancer Control and Population Sciences

CISNET Offers Powerful New Tools for Cancer Control

Major decisions about population-level cancer control are sometimes difficult, as is evaluating the success of those choices. Six years after its creation, the Cancer Intervention and Surveillance Modeling Network (CISNET) is emerging as a powerful new tool to guide clinical and policy decisions on cancer control.

CISNET is a consortium of NCI-sponsored teams who use biostatistical modeling to improve our understanding of cancer control interventions in prevention, screening, and treatment. The teams use data from randomized controlled trials, meta-analyses, observational studies, national surveys, and studies of practice patterns to evaluate the past and potential future impact of these interventions. This is critical because population-level activities happen outside, and sometimes in advance of, controlled trials. CISNET helps science keep up with these activities by synthesizing information about the natural history of disease and the efficacy and utilization of interventions.

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(Exercise continued from page 1)
adjuvant chemotherapy, have recurrences, and some don't.

"One assumption has always been that it must be something about the molecular makeup of their tumor," he said. "This study implies that there are some lifestyle factors that may also have a significant effect on [treatment] outcomes."

The first study involved 832 patients with stage III colorectal cancer who participated in a clinical trial led by the Cancer and Leukemia Group B cooperative group that compared two adjuvant chemotherapy regimens.

On two occasions—4 months after having their tumors surgically removed and then again 10 months later, well after adjuvant therapy was completed—participants provided detailed information about their diet and physical activity via a self-administered questionnaire. Only data from the second questionnaire were considered in the analysis.

Researchers converted the reports of physical activity (ranging from jogging to flights of stairs climbed) to metabolic equivalent task (MET) hours. For example, walking at a moderate pace for an hour is equivalent to 3 MET hours.

Compared with patients who reported less than 3 total MET hours per week, those reporting 18 to 26.9 and 27 or more had their risk of death from colorectal cancer reduced by 49 and 45 percent, respectively. In other words, 6 or more hours a week of walking at a moderate pace showed clear benefits.

The second study followed a cohort of 573 participants in the long-running Nurses' Health Study who, during the course of the study, were diagnosed with colorectal cancer. Compared with participants who reported less than 3 MET hours of activity per week, those reporting 18 or more had their risk of death from colorectal cancer cut by 61 percent and their risk of death from any cause reduced by 57 percent.

In an accompanying editorial, Dr. Wendy Demark-Wahnefried of Duke University Medical Center noted that the risk reductions seen in these studies—as well as strikingly similar results reported last fall from a study of women with early-stage breast cancer—parallel "that of trastuzumab (Herceptin) for HER 2-positive breast cancer patients."

Dr. Julia Rowland, head of the NCI Office of Cancer Survivorship, Division of Cancer Control and Population Sciences (DCCPS), called the new studies "an important finding that adds to the evidence base on physical activity and cancer outcomes.

"They suggest that the time may be ripe to launch a randomized clinical trial of physical activity after cancer treatment," she continued. "To me, it opens up the door to an incredible wealth of science that, among other things, could help explain things like the interplay between behavior and underlying tumor processes."

NCI officials have already held preliminary discussions about the best settings for such a trial, she added, and how it might be designed. ◆

By Carmen Phillips

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Currently CISNET has four groups of teams who focus on breast, prostate, colorectal, and lung cancers. Because of their high incidence and mortality, informed decisions regarding effective clinical and public health interventions for these cancers would have enormous impact.

The network uses comparative modeling, a methodology with strengths demonstrated in a major study from CISNET's breast cancer group published last fall. The goal of the study was to determine the relative contribution of adjuvant treatments and mammograms to the actual American experience with breast cancer.

CISNET's results added important new evidence. With seven different teams independently developing models (but agreeing on common parameters and variables to be controlled), a consensus emerged: Screening mammography and adjuvant chemotherapy each contributed about half of the 24 percent decrease in breast cancer mortality between 1990 and 2000. The results confirm that both interventions have been, and will continue to be, worth the investment.

Clearly, dissemination of results is an important part of the CISNET initiative. To that end, DCCPS Deputy Director Dr. Jon Kerner is overseeing testing for a new Web site that will give planners and policymakers interested in colorectal cancer a powerful decision-making tool. The site will include different projections of risk factor levels, as well as projections of the use of screening methods and treatments. CISNET's simulation models can be used to project the impact of differing choices on long-term colorectal cancer mortality.

I'd also like to highlight the efforts of Dr. Eric J. Feuer, program director for CISNET, and the scientific coordinators for each cancer site for helping to make CISNET a success: Dr. Kathleen Cronin (breast cancer), Dr. Angela Mariotto (prostate cancer), Drs. Kevin Dodd and Barnali Das (lung cancer), and Drs. Martin Brown and Paul Pinsky (colorectal cancer).

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Spotlight

Worldwide, Products Other Than Cigarettes Are Children's First Step to Tobacco Use

In most of the world, children are more likely to be introduced to tobacco through products such as gutkha, kreteks, or bidis rather than the familiar American 20-to-a-pack cigarettes.

Gutkha—a chewable sweetened mix of tobacco, betel (areca nut extract), spices, and fruit flavors—is so widely used by young people in South Asia that 30 percent of children in India's government-run schools are addicted to it, according to Devika Chadha of the Salaam Bombay Foundation.

Ms. Chadha's report was one of many focusing on tobacco products other than cigarettes during the 13th World Conference on Tobacco OR Health (WCTOH) held in Washington, D.C., July 12–15. Together, the presentations filled in details of a picture sketched by the Global Youth Tobacco Survey, which released figures in May showing that more than 1 in 10 (11.2 percent) of schoolchildren aged 13 through 15 worldwide currently use a tobacco product other than cigarettes, compared with 8.9 percent who are current cigarette smokers.

Chewable tobacco accounts for nearly 3 times as much tobacco use (41.2 percent compared with 14.7 percent) as does cigarette smoking among urban Nepalese students in grades 8, 9, and 10, Deepak Paudel of CARE Nepal told a WCTOH audience. "Advertisements say nothing about nicotine or the health dangers of chewable tobacco. It is regarded more as a popular chewing gum, not tobacco," he said. One manufacturer, India's M. R. Tobacco Private Limited, makes no secret of its target audience: "Gutkha is basically a sweetened mixture of tobacco, betel, and catechu chewed together. Packed in attractive satches to target the lower income group, it has slowly become a hot favorite amongst the youth across all income groups."

Even in regions of the world where smoked tobacco is more popular than oral products like gutkha, conventional cigarettes are likely to be less popular among smokers than are bidis or kreteks. In Indonesia, for example, clove-flavored kreteks are the most commonly smoked cigarette. In addition to clove, kreteks contain a variety of other flavorings, as well as eugenol, a mild anesthetic that allows deeper inhalation of the kretek's high nicotine and tar content tobacco.

Masking the product's inherent harshness has made it possible to market kreteks to inexperienced young users, Dr. Tjandra Aditama of the Department of Pulmonary and Respiratory Medicine at the University of Indonesia said in a WCTOH panel discussion on worldwide diversity of tobacco products. "But using eugenol may actually make the kreteks more dangerous. Eugenol…is considered carcinogenic," he added. However, for PT Djarum the world's largest kretek maker, additives are part of the appeal. The company's Web site boasts (in five languages) that "our LA Lights Menthol kretek has been a roaring success in Malaysia, where the brand is associated with a youthful and trendy lifestyle."

Bidis, hand-rolled and very inexpensive, are the most widely smoked tobacco product in India, where annual consumption is nearly 800 billion pieces, Dr. Prakash Gupta, of the Sekhsaria Institute of Public Health in India, told a WCTOH audience. "The increasing popularity of bidis among young users has heightened attention to the serious consequences associated with bidi use. These consequences include increased risk of coronary disease and cancers of the oral cavity, pharynx, esophagus, stomach, and liver. Bidis produce higher levels of tar, nicotine, and carbon monoxide than conventional cigarettes." Use of bidis among young American smokers has increased, in large part because of fruit flavoring added to the rolled tobacco leaf to mask the product's otherwise harsh flavor, he said.

The tobacco industry has long recognized the value of adding flavorings to make the taste and smell of tobacco more palatable, particularly in products aimed at first-time tobacco users. Industry documents reveal sophisticated flavor-based strategies dating back decades, Carrie Carpenter of the Harvard School of Public Health said in a WCTOH panel presentation. "The concept of flavored cigarettes has always been associated with new and young smokers," she said, citing a Brown & Williamson Tobacco Corporation

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Cancer Research Highlights

Removal of Ovaries Reduces Cancer Risk in Women with *BRCA* Mutations

Prophylactic surgery to remove the fallopian tubes and ovaries of women who have mutations in the *BRCA1* and *BRCA2* genes reduces the risk of ovarian, fallopian tube, and peritoneal cancers by 80 percent, researchers report in the July 12 *Journal of the American Medical Association (JAMA)*.

Women who carry mutations in the *BRCA1* and *BRCA2* genes have a high lifetime risk of ovarian cancer (ranging from 15 to 54 percent). These women are often advised to have their ovaries and fallopian tubes removed as a preventive measure in a procedure called a bilateral salpingo-oophorectomy.

To assess the potential benefits of the procedure, the researchers studied 1,828 women from different countries and followed them on average for 3.5 years. This is the largest prospective study to date of women with *BRCA* gene mutations that examines the risks of these cancers in women with and without ovaries.

"The study supports the recommendation for prophylactic oophorectomy as a highly effective means of reducing the risk of ovarian and fallopian tube cancer in *BRCA1* and *BRCA2* carriers," write Dr. Steven Narod of the Centre for Research in Women's Health in Toronto and his colleagues in the Hereditary Ovarian Cancer Clinical Study Group.

Based on the incidence rates they calculated, the researchers estimate that the risk of ovarian cancer is 62 percent for *BRCA1* mutation carriers and 18 percent for *BRCA2* mutation carriers in women up to age 75 with both ovaries intact. The highest incidence rate was observed for *BRCA1* mutation carriers between the ages of 60 and 70 years.

Raloxifene Does Not Protect Women from Coronary Heart Disease

Results from the international Raloxifene Use for The Heart (RUTH) trial published in the July 13 *New England Journal of Medicine* indicate that raloxifene, a drug that binds to the estrogen receptor and can reduce the risk of invasive breast cancer, does not protect women from coronary heart disease (CHD) as had been predicted.

Investigators from 177 institutions in 26 countries randomly assigned 10,101 postmenopausal women with CHD or at risk for CHD to receive a daily dose of either raloxifene or a placebo. Women took the drugs for a median of approximately 5 years, and were followed for a median of 5.5 years with electrocardiography, serum lipid level analysis, mammograms, and clinical breast examinations.

No significant differences were seen between groups in the incidence of coronary events, including nonfatal myocardial infarction and death from coronary causes. The treatment effect did not differ between subgroups divided by factors such as age and presence of risk factors for CHD. Raloxifene did reduce the incidence of invasive breast cancer in all subgroups of women receiving the drug, but also increased the incidence of fatal stroke and venous thromboembolism.

Because raloxifene reduced the risk of breast cancer, the authors stress the need for risk/benefit analysis for individual patients, concluding that "when considering the use of raloxifene in a postmenopausal woman, the clinician should take into account the individual woman's risk of disease and her personal preferences, and weigh potential benefits against risks and against the availability of alternative interventions."

An accompanying editorial by Dr. Marcia Stefanick of the Stanford University School of Medicine reinforces this point: "These results underscore that both absolute benefits and absolute risks will vary depending on the risk profiles of women receiving treatment (i.e., those at high risk for breast cancer as compared with those at high risk for a coronary event)."

Weight Gain Increases Risk of Breast Cancer After Menopause

Gaining weight after age 18, specifically after menopause, increases a woman's risk of breast cancer after menopause, whereas losing weight after menopause can reduce the risk, researchers at Harvard Medical School have found. They say that many cases of breast cancer could be avoided by women losing weight after menopause.

The researchers suggest that women should be advised to avoid weight gain during adulthood to decrease

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their postmenopausal breast cancer risk. Hormones are directly related to breast cancer risk, and associations found in the study may be explained in part by the effect of gaining weight on hormones, the researchers report in the July 12 *JAMA*.

Dr. A. Heather Eliassen and her colleagues tracked participants in the Nurses' Health Study. To assess weight change since age 18, they followed 87,000 women for up to 26 years. They followed 49,500 women for up to 24 years to assess weight change since menopause.

Among the women, 4,400 had invasive breast cancer. After adjusting for multiple breast cancer risk factors, the researchers found that women who gained 55 lbs. or more after age 18 had almost 1½ times the risk of cancer compared with those who maintained their weight. A gain of 22 lbs. after menopause was associated with an increased risk of 18 percent. Losing 22 lbs. after menopause decreased the risk by 57 percent.

"Although these data suggest that it is never too late to lose weight to decrease risk, given the difficulty in losing weight, the emphasis must also remain on weight maintenance throughout adult life," they conclude.

Skin Cancer Campaign Motivates Screening in Men over 50

Community education programs increased the skin cancer screening rates in men over the age of 50, according to study results published online July 10 in *Cancer*. Men over 50 represent nearly half of all deaths from melanoma in developed countries, but are the least likely group to be screened.

Researchers at the Viertel Centre for Research in Cancer Control in Brisbane, Australia, conducted a randomized, controlled trial to evaluate the effectiveness of a community-based melanoma education and screening program. The researchers studied 18 communities in Queensland, Australia, with adult populations of more than 2,000 people. Nine communities were randomly selected to participate in a 3-year public education campaign that included community and physician education on early screening and dedicated skin-screening clinics. The other nine communities received no intervention. The researchers evaluated the screening behavior and outcomes of men over 50 through telephone surveys at the beginning and end of the trial and 2 years after the intervention.

The study found that men over 50 who participated in the intervention program increased their rate of whole-body clinical skin examinations by fourfold and their rate of skin self-examinations by twofold. Two years after the intervention, men were still twice as likely to report conducting whole-body clinical skin examinations. The authors note that "to sustain screening rates in men 50 years and older, an understanding of their susceptibility to melanoma and their doctor's encouragement of early detection and screening behavior will be important." ◆

(Director's Update continued from page 2)

As technology progresses and new interventions arise, I'm confident CISNET will help ensure that the best strategies to prevent, diagnose, and treat cancer are utilized. ◆

NEJM Issues Correction to Rofecoxib Polyp Study

The editors of the *New England Journal of Medicine (NEJM)* issued a correction to the statistical analysis of a study, published in March 2005, on cardiovascular events associated with the use of rofecoxib (Vioxx) in the prevention of colon polyp recurrence. The correction, published in the July 13 *NEJM*, involved a test for proportionality of hazards in which the authors had erroneously used linear time rather than the logarithm of time that was specified in the study's "Methods" section.

Initial results from the trial (Adenomatous Polyp Prevention on Vioxx or APPROVe trial) showed that "use of rofecoxib was associated with an increased cardiovascular risk," which prompted Merck's voluntary recall and market removal of the drug in 2004. The incorrect analysis indicated that the increased risk of thrombotic events in the Vioxx group, compared with the placebo group, did not occur until 18 months after treatment began. The corrected analysis casts doubt on the initial conclusion that the relative risk of cardiovascular events changes over time.

In an interview with Medscape, *NEJM* Executive Editor Dr. Gregory Curfman contended that "our editing procedures are rigorous, tight, and vigilant" but that the initial statistical errors in the study were "not something that could have been picked up by a review panel." ◆

Funding Opportunities

Nanoscience and Nanotechnology in Biology and Medicine

Announcement Number: PAR-06-475
Application Receipt Date: Aug. 18, 2006

This is a renewal of PAR-03-045. This funding opportunity will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3504. Inquiries: Dr. Eleni Kousvelari—kousvelari@de45.nidr.nih.gov; Dr. Jeff Schloss—schlossj@exchange.nih.gov

The Role of Nuclear Receptors in Tissue and Organismal Aging

Announcement Number: PAS-06-466
Application Receipt Dates: Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1, June 1, and Oct. 1, 2008; Feb. 1 and June 1, 2009

This funding opportunity will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3505. Inquiries: Dr. Neeraja Sathyamoorthy—ns61r@nih.gov

Mechanisms of Immune Modulation

Announcement Number: RFA-AT-06-004
Application Receipt Date: Dec. 12, 2006

This funding opportunity will use the R01 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3506. Inquiries: Dr. Young S. Kim—yk47s@nih.gov ◆

Featured Clinical Trial

Studying Chronic Graft-versus-Host Disease

Name of the Trial
Natural History Study of Clinical and Biological Factors in Patients with Chronic Graft-versus-Host Disease After Prior Allogeneic Hematopoietic Stem Cell Transplantation (NCI-04-C-0281). See the protocol summary at http://cancer.gov/clinicaltrials/NCI-04-C-0281.

Principal Investigator
Dr. Steven Pavletic, NCI Center for Cancer Research

Dr. Steven Pavletic

Why This Trial Is Important
About 7,000 people undergo a procedure called allogeneic hematopoietic stem cell transplantation (HSCT) each year in the United States, usually as a treatment for blood cancers. In allogeneic HSCT, the patient receives healthy blood-forming stem cells from a genetically similar, but not identical, donor, such as a sibling or parent.

Because the immune system works to reject cells it sees as foreign, allogeneic transplants carry the risk of graft-versus-host disease (GVHD). GVHD occurs when donor lymphocytes (disease-fighting white blood cells) attack the patient's organs after HSCT or bone marrow transplantation. GVHD that occurs more than 100 days after a transplant is called chronic GVHD. Approximately 30 to 50 percent of allogeneic HSCT patients experience this late complication of therapy, which may seriously affect their quality of life and can be life threatening.

In this study, researchers are interested in determining the natural history of chronic GVHD and assessing biological factors that may predict outcomes associated with it.

"Patients with chronic GVHD who are enrolled in this study will come to the NIH Clinical Center to be evaluated by a multidisciplinary research team for 3½ days," said Dr. Pavletic. "Their participation will help us to better understand the biological and clinical components of chronic GVHD, and hopefully allow us to develop new therapies and assessment tools for patients with chronic GVHD.

"Additionally, participating patients may be screened for eligibility for future therapeutic trials to treat this condition," he noted.

Who Can Join This Trial
Researchers will enroll 170 patients (120 adults and 50 children) diagnosed with chronic GVHD following allogeneic HSCT. See the list of eligibility criteria at http://www.cancer.gov/clinicaltrials/NCI-04-C-0281.

Study Site and Contact Information
The trial is taking place at the NIH Clinical Center in Bethesda, Md. For more information, call the NCI Clinical Studies Support Center toll free at 1-888-NCI-1937. The call is confidential. ◆

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

Notes

NCI Staff Recipients of NIH Director's Awards

Several NCI staff were presented with awards at the 2006 NIH Director's Awards ceremony on July 12 in the Natcher Auditorium on the NIH campus. The awards recognized the expert skills and efforts of NIH employees in scientific discovery and management of NIH.

NCI recipients of individual NIH Director's Award included: Kathleen Cronin, Shiv Grewal, Louis Staudt, Joan Warren, and Brigitte Widemann. NCI recipients of group NIH Director's Award included: Michael Arluk, Mary Anne Bright, Nelvis Castro, Mark Clanton, C. Norman Coleman, Candace Deaton, Lakshmi Grama, Lee Helman, Jon Kerner, Madeline La Porta, Steven Libutti, Anne Lubenow, Thomas Misteli, Andre Nussenzweig, Rochelle Rollins, Patricia Schettino, Kathleen Schlom, Debra Steverson, Cynthia Vinson, Linda Weiss, and Robert Zablocki. The NCI recipient of the Mentoring Award was Howard Young, and the recipient of the Public Health Service NIH Commissioned Corps Award was Nathaniel Rothman.

The ceremony can be viewed at http://videocast.nih.gov.

Dr. Robert B. Dickson Dies at 54

Former NCI investigator Dr. Robert B. Dickson died on June 24, in Kensington, Md., at the age of 54. He was considered one of the world's leading researchers in breast cancer.

Dr. Dickson began his career in 1980 in the Laboratory of Molecular Biology of NCI's Center for Cancer Research (CCR), where he was the first scientist to discover the link between estrogen and breast cancer tumors. He joined the faculty of Georgetown University in 1988. Dr. Dickson was named the vice chairman of Georgetown's Department of Oncology in 1999. In 2001, he was appointed co-director of the Breast Cancer Program at the university's Lombardi Comprehensive Cancer Center.

Dr. Ira Pastan, chief of the Laboratory of Molecular Biology, CCR, said, "We all know about Bob Dickson's outstanding contributions to breast cancer research. These are in textbooks and will have a lasting impact on the field. What his friends remember is his friendship, his good humor, his good character, and his positive attitude to life."

Dr. Dickson is survived by his parents, wife, and daughter.

NIH Research Festival Call for Posters Deadline Nears

The 2006 NIH Research Festival will be held Oct. 17–20 on the NIH campus in Bethesda, Md. The festival's organizing committee is now accepting online submissions of poster abstracts by all NIH investigators and Bethesda FDA/CBER investigators through August 1. Posters in any area of research conducted within the NIH intramural program will be considered for presentation, but the committee is requesting a limit of one poster submission per first author.

For more information about poster registration, please contact Paula Cohen, research festival logistics coordinator, at 301-496-1776 or cohenp@mail.nih.gov. For a preliminary schedule of events and online poster registration, please visit http://researchfestival.nih.gov.

Cancer Prevention Lecture Is Slated

The 2006 Annual Advances in Cancer Prevention Lecture, "The Promises and Perils of Clinical Chemoprevention: 1980-2030," will be held on July 27 from 3:00 to 4:00 p.m. at Lister Hill Auditorium on the NIH campus. A reception will follow.

The lecture, sponsored by NCI's Office of Preventive Oncology, Division of Cancer Prevention, will be given by Dr. Frank L. Meyskens, Jr., director of the Chao Family Comprehensive Cancer Center, professor of medicine and biological chemistry, and senior associate dean of Health Sciences at the College of Health Sciences, University of California, Irvine. ◆

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internal memo from 1972 that noted, "Apples connote goodness and freshness, and we see many possibilities for our youth-oriented cigarette with this flavor."

Tobacco makers are still exploring flavors and new ways to expose nonsmokers to tobacco in cigarettes and nonsmoked products. Philip Morris is testing a menthol-flavored "spitless" chewing tobacco called Taboca Green, and R.J. Reynolds Tobacco Company has test marketed at least a dozen flavored cigarettes in the past decade ranging from Winter Mochamint to Twista Lime. ◆

By Patrick Zickler

Featured Meetings and Events

A calendar of scientific meetings and events sponsored by the National Institutes of Health is available at http://calendar.nih.gov ◆

CCOP Profile

Delaware/Christiana Care Community Clinical Oncology Program

Principal Investigator: Dr. Stephen S. Grubbs; Director: Kandie Price, RN, MS, OCN, CCRP • Christiana Care Health System, Inc., Cancer Research Office, 4755 Ogletown-Stanton Road, Newark, DE 19718 • Phone: 302-733-6227 • Website: http://www.christianacare.org

Background

The Delaware/Christiana Care Community Clinical Oncology Program (CCOP) was originally funded by NCI in 1987. The program's community hospital affiliations include Alfred I. DuPont Hospital for Children in Wilmington, Del.; Beebe Medical Center in Lewes, Del.; Union Hospital of Cecil County in Elkton, Md.; and Cooper University Hospital/Cancer Center in Voorhees, N.J. Through this consortium, the CCOP includes medical, radiation, gynecologic, and pediatric oncologists; surgeons; urologists; and primary care physicians.

Delaware/Christiana Care CCOP participates with CALGB, Eastern Cooperative Oncology Group, National Surgical Adjuvant Breast and Bowel Project, Gynecologic Oncology Group, Radiation Therapy Oncology Group (RTOG), Fox Chase Cancer Center CCOP Research Base, University of Michigan Comprehensive Cancer Center, and Comprehensive Cancer Center of Wake Forest University Baptist Medical Center. In addition, studies are opened through the Cancer Trials Support Unit if unavailable through the traditional cooperative group mechanism.

Community Characteristics

Christiana Care is the major cancer care provider for the state of Delaware, with an extensive catchment area that also includes portions of southern New Jersey, northeastern Maryland, and southeastern Pennsylvania. The CCOP represents a total population base of more than 2.5 million people through its affiliation with hospitals throughout the region, allowing patients access to the latest cancer research protocols in or near their communities.

The Helen F. Graham Cancer Center

Enrollment and Outreach

An average of 125 active clinical trials are available at any given time through the Delaware/Christiana Care CCOP, giving patients access to protocols for all disease sites. Over the past 19 years, the CCOP has enrolled over 4,200 participants to NCI-approved cooperative group clinical trials: 2,859 to treatment trials and 1,363 to cancer control trials. During 2005, Christiana Care diagnosed a total of 2,668 analytic cancer cases; of those, 19.4 percent went on to participate in a clinical trial, ranking Christiana Care as one of the highest accruing institutions in the nation.

Other Key Facts

The CCOP publishes *Delaware Cancer Research News*, a newsletter that is circulated to over 250 physicians and support staff. The program also publishes an investigator-friendly protocol list that is distributed in hard copy, and is available via the Internet and downloadable to PDAs. In 2004, the American Society of Clinical Oncology recognized the Delaware/Christiana Care CCOP with the Clinical Trials Participation Award for accrual to RTOG trials.

Delaware Governor Ruth Ann Minner's proposal to spend $10 million in fiscal year 2005 to treat uninsured patients and promote cancer screening awareness was approved by the legislature and enacted to improve the state's quality of cancer care. As a result, all uninsured Delaware residents—who were diagnosed with cancer on or after July 1, 2004; lack comprehensive health insurance coverage including Medicaid; and earn less than 650 percent of the federal poverty level—are now eligible to receive 2 years of cancer health care. The state of Delaware program promotes NCI clinical trial accrual and provides mammography, colonoscopy, and Pap smear coverage for all uninsured and underinsured Delawareans. ◆

The *NCI Cancer Bulletin* is produced by the National Cancer Institute (NCI). NCI, which was established in 1937, leads the national effort to eliminate the suffering and death due to cancer. Through basic, clinical, and population-based biomedical research and training, NCI conducts and supports research that will lead to a future in which we can identify the environmental and genetic causes of cancer, 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.

For more information on cancer, call 1-800-4-CANCER or visit http://www.cancer.gov. Contact the *NCI Cancer Bulletin* staff at ncicancerbulletin@mail.nih.gov.