NATIONAL CANCER INSTITUTE

NCI Cancer Bulletin

Celebrating Excellence in Cancer Research

May 1, 2007
Volume 4 | Number 16

In this issue:

A Publication of the
National Cancer Institute
U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
National Institutes of Health
NIH Publication No. 05-5498

http://www.cancer.gov

Breast Cancer Decline Mirrors Drop in Hormone Use

After rising for more than two decades, the incidence of breast cancer in the United States decreased sharply in 2003 and remained low for another year, researchers are reporting.

The researchers attribute the drop to a decrease in the use of hormone replacement therapy (HRT) that occurred at about the same time. Starting in mid-2002, millions of women stopped using HRT after an NIH study linked certain hormones to health risks, including breast cancer.

In a new analysis of the 2003 decrease, Dr. Donald Berry of the University of Texas M.D. Anderson Cancer Center and his colleagues say that the 2004 incidence figures reinforce their theory that a change in HRT use drove the decline in breast cancers.

Their findings appear in the April 19 *New England Journal of Medicine*.

Last December, the researchers reported a possible association between HRT use and breast cancer after the incidence rate declined nearly 7 percent between 2002 and 2003. But the 2004 rate was not yet available, leaving open the possibility that the 1-year decline was a statistical fluke.

"We now know that the decline persisted into 2004, and this suggests

(continued on page 2)

Director's Update

Dr. Guiseppe Giaccone
Chief, Medical Oncology, CCR

Guest Director's Update by Dr. Guiseppe Giaccone

An Honor to Help Foster Progress at NCI

It was nearly 20 years ago when I first came to NCI, spending 2 years conducting basic research on lung cancer at the U.S. National Naval Medical Center in Bethesda, MD. I eventually took a post abroad in the Netherlands, but I am elated to return to NCI as the new chief of the Medical Oncology Branch in the Center for Cancer Research (CCR).

I greatly enjoyed my 16-year tenure at the Free University Hospital in Amsterdam. But it is a welcome opportunity to once again be part of NCI and its efforts to spearhead continued advances in cancer research and to train the next generation of cancer researchers.

Working with CCR Director Dr. Robert Wiltrout and CCR Scientific Director for Clinical Research Dr. Lee Helman, I will focus on forging closer ties among CCR's medical oncology community and play a leader-

(continued on page 2)

(Breast Cancer Decline continued from page 1)
that it was a real decline and not a single-year anomaly," says co-author Dr. Kathy Cronin of NCI's Division of Cancer Control and Population Sciences (DCCPS).

The 2004 data also suggest that the incidence trend is following the HRT trend, she adds. The declines occur very close together in time and they take the same form, each starting with a steep drop before leveling off.

The decrease in breast cancers was seen only among women age 50 or older, which is the group most likely to use HRT. And the decrease was more evident in estrogen receptor-positive cancers, which may depend more on hormones for growth than estrogen receptor-negative cancers.

The researchers believe that withdrawing hormones may have had the effect of slowing the growth of some small cancers and preventing their detection on mammograms. But these cancers might eventually grow and be found later, leading to higher incidence rates in the future.

"We need to be clear to women that this is a decrease in breast cancer incidence, and we have no evidence that it will lead to a decrease in mortality," notes Dr. Berry. He points out that the tumors most affected by hormones are "exquisitely sensitive" to today's drugs.

Though other factors may have contributed to the decline, the authors found little evidence that changes in screening habits or prevention could explain large amounts of the 2003 decline.

For example, none of the drugs used to prevent breast cancer, such as tamoxifen, was taken by a substantial portion of postmenopausal women or showed a substantial change in use from 2000 to 2004.

Women who are still taking hormones should consider stopping them, says co-author Dr. Christine Berg of NCI's Division of Cancer Prevention. If hormones are needed to treat severe hot flashes and other symptoms, they should be used at the lowest dose for a limited amount of time, she adds.

With the 2004 data, Dr. Berry is more confident that HRT use may account for much of the unexplained rise in U.S. breast cancers that has occurred over the last 30 years or so. The increase is above and beyond what could be explained by mammography, and a number of factors are thought to play a role, including HRT use.

"If the 2004 incidence rate had gone back up to 2002 levels, that would have said something fluky is going on here," Dr. Berry says. "But it didn't, and this helps solidify the connection between HRT and breast cancer." ◆

—Edward R. Winstead

(Director's Update continued from page 1)
ship role in facilitating translational research as it relates to the development of novel agents and approaches. By more closely aligning the activities and communications across CCR we can increase efficiency and effectiveness, establish new collaborations with extramural partners, and strengthen training opportunities, while also ensuring the most judicious use of our resources.

The Medical Oncology Branch will embrace the unique opportunities for translational research afforded by access to the NIH Clinical Center. With closer coordination and collaboration among CCR's medical branches, I'm confident we can improve accrual to clinical studies, particularly those involving rare cancers.

I'm also looking forward to continuing my own research related to developing new treatments for lung cancer. I have been particularly interested in how cancer cells manage to avoid programmed cell death, or apoptosis, and continue their uncontrolled proliferation. There are several apoptosis modulators under study at the moment. My own recent work, for instance, has shown that the proteasome inhibitor bortezomib modulates an important molecular mechanism of apoptosis in lung cancer and may have promise in treating non-small-cell lung cancer in combination with other molecules, such as rTRAIL, that engage apoptosis through a different pathway.

I also will lead NCI's Lung Cancer Program, an NCI effort announced last year by Dr. Niederhuber to improve the early detection and treatment of lung cancer. This program is an excellent example of the type of collaborative effort in which not only CCR's medical branches can participate, but also can be expanded to include other NIH institutes, as well as extramural investigators and industry. There are many advantages to be gained by creating stronger connections between CCR scientists and the extramural community.

While I will be involved in lung cancer-specific efforts, my primary focus and goal will be on managing the Medical Oncology Branch and working with the other CCR laboratories and branches to facilitate translational research activities and catalyze novel agent development and testing in the clinical setting. Although I've been on the job for less than a month, I'm hopeful about the prospects for rapid progress. Finally, I'm honored to have been chosen for this position and believe I can be part of a new era of significant advances in cancer research. ◆

Cancer Research Highlights

Variation in *CASP8* Gene Linked to Multiple Cancers

Researchers at the Chinese Academy of Medical Sciences are reporting that a common variation in the gene *CASP8* may protect against multiple cancers. The variation was associated with a reduced risk of lung, esophageal, gastric, colorectal, cervical, and breast cancers in a population of Chinese individuals, according to findings published online in *Nature Genetics* on April 22.

The variation is a deletion—6 units of DNA are missing from the gene's promoter region—and this may reduce the activity of the gene in some individuals. It is not clear how the reduced activity of *CASP8* may influence cancer risk. But the gene helps regulate the body's immune response, and changes to this function have been linked to variation in the risk of cancer and other diseases.

The team, led by Dr. Dongxin Lin, analyzed several genes involved in regulating the body's immune response. After discovering a link between the *CASP8* deletion (called -652 6N) and a reduced risk of lung cancer, the researchers tested the deletion in nearly 5,000 individuals with cancer and a similar number of controls.

The findings support the hypothesis that genetic variation may influence the risk of cancer by modifying the activity of genes that regulate the body's response to tumors, the researchers conclude.

"This study provides additional evidence indicating that common variation in this gene is important for cancer," comments Dr. Montserrat Garcia-Closas of NCI's Division of Cancer Epidemiology and Genetics, who studies *CASP8* in breast cancer. "It will now be important to independently confirm the observed associations in different populations." The deletion is thought to be fairly common in all ethnic groups.

In February, Dr. Garcia-Closas and her colleagues in the Breast Cancer Association Consortium reported that another variant in *CASP8*, called D302H, may confer modest protection against breast cancer. This was the first common variant to be definitively linked to breast cancer.

Dasatinib Effective in Blast-Crisis Chronic Myeloid Leukemia

Patients who enter the blast-crisis phase of chronic myeloid leukemia (BC-CML), in which 30 percent of the cells in the blood or bone marrow are immature blood cells, typically survive only 3 to 6 months. Results from 8 months of follow-up of a pair of phase II clinical trials published in the April 15 *Blood* show that dasatinib, a new small-molecule inhibitor that has many targets within leukemia cells, can induce lasting hematologic and cytogenetic responses in patients with BC-CML.

Investigators enrolled 42 patients with lymphoid blast crisis (LBC) and 74 patients with myeloid blast crisis (MBC) into 2 separate but identical trials. All patients were either resistant to or intolerant of imatinib, a small-molecule inhibitor used in first-line therapy of CML. Patients received a starting dose of 70 mg of dasatinib twice daily, which could be escalated after 4 weeks. Dose reductions or interruptions were allowed in response to side effects.

Patients received dasatinib until disease progression despite dose escalation, intolerable toxicity, or withdrawal from the study. Among patients with MBC, 32 percent had a major hematologic response at 6 months of follow-up; this number rose to 34 percent after 8 months. Among patients with LBC, 31 percent had a major hematologic response at both 6 and 8 months of follow-up. Twenty-seven percent of MBC patients and 43 percent of LBC patients had a complete cytogenetic response. Only 11 percent of patients with MBC and 2 percent of patients with LBC had to discontinue therapy because of side effects.

"Our results indicated that dasatinib represents a potentially important new therapeutic option for patients with imatinib-resistant or imatinib-intolerant MBC-CML or LBC-CML and will undoubtedly affect the treatment paradigm for CML," concluded the authors.

U.K. Study Links Ovarian Cancer to Hormone Use

Women who use hormone replacement therapy (HRT) have an increased risk of developing ovarian cancer and dying from the disease, a large British study reports. The risk increases the longer HRT is used, but risk returns to the level seen in women who have never used hor-

(continued on page 4)

(Highlights continued from page 3)
mones, once HRT is stopped. The participants were from the Million Women Study, and about 500,000 of the women had taken HRT.

Women who were currently using HRT were on average 20 percent more likely to die from ovarian cancer than those who had never received HRT. Since 1991, the researchers estimate, HRT use has led to an additional 1,000 deaths from ovarian cancer, as well as an additional 1,300 new diagnoses of ovarian cancer in the United Kingdom.

The findings should be considered along with studies linking HRT use to endometrial and breast cancers, the researchers say. The incidence of these three cancers in the study population was 63 percent higher in current users of HRT than in never users, according to findings published online in *The Lancet* on April 19.

"When ovarian, endometrial, and breast cancer are taken together, use of HRT results in a material increase in the incidence of these common cancers," writes Dr. Valerie Beral of the Epidemiology Unit at Cancer Research UK in Oxford and her colleagues.

Although use of HRT has declined greatly in recent years, enormous numbers of women have been exposed. "With these new data on ovarian cancer, we expect the use of HRT to fall further," says Dr. Steven Narod of Women's College Research Institute, Toronto, in an accompanying editorial.

Nursing Lecture Describes Dietary Interventions and Physical Activity for Cancer Patients

Dietary interventions and physical activity can help patients manage cancer-related weight changes and nutritional deficiencies during and after treatment, according to Dr. Jean K. Brown, interim dean and professor at the University at Buffalo School of Nursing. Dr. Brown presented the April 17 CCR Grand Rounds lecture, a special oncology nursing lecture.

Dr. Brown cited two recent studies linking dietary counseling to improved nutritional outcomes. She also noted that "nutraceuticals"—food or food components that provide medical or health benefits—have been shown to lessen cancer-related nutritional problems and increase survival. A diet that includes nutraceuticals such as fatty acids, plant-derived polyphenols, and antioxidants should be considered for cancer patients, Dr. Brown commented.

"To intervene around nutritional issues, one needs to use a multimodal approach," Dr. Brown said. "You can't just try to improve food intake." She highlighted a clinical trial which found that nutritional counseling plus indomethacin and erythropoietin increased food intake, body fat, maximum exercise capacity, and, ultimately, survival.

Dr. Brown noted that physical activity can also improve cancer outcomes. During and after treatment, exercise has been associated with improved cardiorespiratory fitness, quality of life, and a decrease in treatment-related symptoms, such as reduced functional capacity, fatigue, and depression, she said.

"I believe nurses are on the front lines for nutritional care," Dr. Brown concluded. "We are the people who need to ascertain what the current nutritional status of a patient is, what the future nutritional status of a patient is, what the future nutritional assaults might be, and what we can expect down the road." ◆

FDA Update

Genentech and FDA Issue Warning on Bevacizumab

On April 21, the FDA and Genentech notified health care professionals of new safety information about the formation of tracheoesophageal (TE) fistulas in a clinical study of patients with small-cell lung cancer (SCLC). The trial combined chemotherapy and radiation plus bevacizumab (Avastin). One fatal and one serious adverse event of TE fistula have been confirmed among the first 29 patients enrolled in the study. A third, fatal event of suspected TE fistula was also reported but has not been confirmed. Six other cases of TE fistula have also been reported in other lung and esophageal cancer studies using bevacizumab.

Bevacizumab is not approved for the treatment of SCLC. Genentech intends to revise the bevacizumab package insert to include more detailed information regarding the incidence of all cases of fistula in patients treated with bevacizumab.

Complete information is available at: http://www.fda.gov/medwatch/safety/2007/safety07.htm#Avastin ◆

Spotlight

Survey of Pancreatic Tumors Reveals microRNA Signatures

Taking a new approach to a devastating disease, researchers have developed molecular signatures for pancreatic tumors that might one day help physicians diagnose and treat the fatal cancer.

They did so by profiling the activity of microRNAs, short RNA molecules that regulate the activity of genes. These snippets of genetic material appear to control important biological processes, including some related to cancer. microRNA signatures have been developed for many types of cancer and used experimentally to classify tumors.

The researchers, led by Dr. Carlo Croce of Ohio State University (OSU), conducted a series of experiments to see whether profiling microRNAs in pancreatic tumors could provide useful information for physicians and patients. The results were positive but preliminary.

They identified distinct patterns of microRNA activity that could distinguish pancreatic cancer from corresponding normal tissue in 90 percent of cases. And a subset of microRNAs was more often found in tumors from patients who survived longer than 24 months compared with those who did not.

Pancreatic cancer is often diagnosed after it has spread to other tissues, and many patients die within a year of diagnosis.

The researchers caution that the findings, published today in the *Journal of the American Medical Association* (*JAMA*), need to be validated in prospective studies. But the results add to the growing evidence that microRNAs may play a role in many, if not all, cancers and could be used in diagnosis and treatment.

"This is the first step of many in trying to understand the role of microRNAs in pancreatic cancer," says first author Dr. Mark Bloomston of OSU. "But this study tells us that microRNAs are important in this disease, too."

microRNAs are in the news. Three studies in this week's *Science* describe mice that were engineered to lack certain microRNAs, with dramatic effects on their health. Some animals died of heart failure and others were unable to fight off infection because of weakened immune systems.

"It's clear that microRNAs are very important in normal development and differentiation," says Dr. Croce, whose laboratory has profiled a number of cancers. "And it's also clear that the deregulation of microRNAs can lead to cancer."

Some microRNAs are deregulated in multiple types of tumors. One example is mir155, which is the focus of two studies in *Science* and is altered in some pancreatic cancers.

The diverse biological functions of microRNAs are only just beginning to be understood, but defects involving microRNAs and cancer are well documented. Certain microRNAs control genes that normally suppress tumors or that drive cancer (oncogenes).

The hope for microRNAs in pancreatic cancer, says Dr. Bloomston, is that physicians might one day use molecular profiling to identify the patients most likely to benefit from surgery or from aggressive treatments.

Another use would be early detection. Physicians might profile microRNAs to monitor new lesions in the pancreas and premalignant conditions (such as chronic pancreatitis) in patients at high risk of the disease, such as those with a strong family history of pancreatic cancer.

An accompanying editorial in *JAMA* says that the study provides a glimpse of the future of clinical oncology.

"This is a remarkable discovery with wonderful promise for diagnostics and therapeutics in what is a devastating disease," says co-author Dr. Scott Waldman of Thomas Jefferson University, who studies biological markers and cancer.

But like the OSU researchers, he emphasizes that the discovery of microRNA fingerprints in pancreatic tumors is really the first step in a long process of translation and validation.

"It is important for people to understand that there is no shortcut," says Dr. Waldman, noting that many promising biomarkers for cancer have failed along the way.

At least one previous study provides support for the new findings. In January, another group at OSU described molecular signatures for pancreatic tumors in the *International Journal of Cancer*.

(continued on page 7)

Legislative Update

Breast and Cervical Cancer Detection Program Reauthorized

On April 20, President Bush signed the National Breast and Cervical Cancer Early Detection Program Reauthorization Act (HR 1132) into law. Introduced by Senator Barbara Mikulski in the Senate on February 15, 2007 and by Congresswoman Tammy Baldwin in the House on February 16, 2007, the bill was a popular bipartisan bill. NCI Director Dr. John E. Niederhuber joined President Bush and the bill sponsors at the signing ceremony at the White House.

The bill authorizes the National Breast and Cervical Cancer Early Detection Program to provide breast and cervical cancer screenings to uninsured and underinsured women living at or below 250 percent of the federal poverty level. Since its inception in 1991, the program has served more than 2.9 million women and provided more than 6.9 million screening examinations. The program is funded at approximately $200 million annually, and is administered by the Centers for Disease Control and Prevention in all 50 states and U.S. territories.

In 2007, an estimated 180,000 women will be diagnosed with breast cancer and 11,000 will be diagnosed with cervical cancer. The program is expected to provide more than 700,000 screenings for low-income and underinsured women. Reauthorizing this program recognizes screening and early detection as an important part of the nation's fight against breast and cervical cancer. ◆

Featured Clinical Trial

Romidepsin for T-Cell Lymphoma

Name of the Trial

Phase II Study of FR901228 (Depsipeptide) in Patients with Cutaneous T-Cell Lymphoma, Relapsed Peripheral T-Cell Lymphoma, or Other Mature T-Cell Lymphoma (NCI-01-C-0049). See the protocol summary at http://cancer.gov/clinicaltrials/NCI-01-C-0049.

Principal Investigators

Dr. Susan E. Bates and Dr. Richard Piekarz, NCI Center for Cancer Research

Dr. Susan E. Bates, Dr. Richard Piekarz

Why This Trial Is Important

Principal investigators for this phase II trial, which was first featured in the January 13, 2004, issue of the *NCI Cancer Bulletin*, are seeking additional patients with cutaneous T-cell lymphoma to form a new study population, or cohort.

"Because of the promising responses we've seen in the first cohort of this study, we've opened a new cohort specifically for patients with cutaneous T-cell lymphoma who have had two or fewer prior chemotherapy regimens," said Dr. Piekarz.

With this trial, researchers are seeking to determine whether romidepsin (FR901228, depsipeptide), a histone deacetylase inhibitor, can help bring about remission in patients with T-cell lymphoma.

"This trial is very exciting because it involves a new class of anticancer drugs that can change the way cells grow," said Dr. Bates. "Whereas many chemotherapy drugs work by causing damage to cells, histone deacetylase inhibitors like romidepsin turn on genes in cancer cells that inhibit cell growth and eventually cause the cancer cells to die."

"We are continuing to see a complete or partial response rate between 30 and 40 percent for patients with cutaneous T-cell lymphoma," Dr. Piekarz said. "And the response rate for patients with peripheral T-cell lymphoma has remained steady at 25 percent."

Who Can Join This Trial

Researchers seek to enroll a total of 197 patients aged 18 and over who have cutaneous T-cell lymphoma, peripheral T-cell lymphoma, or other mature T-cell lymphomas. See the full list of eligibility criteria for this trial at http://cancer.gov/clinicaltrials/NCI-01-C-0049.

Study Sites and Contact Information

Multiple study sites are enrolling patients in this trial. See the list of study contacts at http://cancer.gov/clinicaltrials/NCI-01-C-0049 or call NCI's Clinical Trials Referral Office at 1-888-NCI-1937 (1-888-624-1937). 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

AACR, FDA, and NCI Announce Cancer Biomarkers Collaborative

On April 17, the American Association for Cancer Research (AACR), the FDA, and NCI announced the formation of the AACR-FDA-NCI Cancer Biomarkers Collaborative to facilitate the use of validated biomarkers in clinical trials, evidence-based oncology, and cancer medicine.

The collaborative brings together leaders from academia, government, industry, and patient advocacy groups to develop a set of guidelines for integrating predictive biomarkers into clinical trials.

The guidelines will inform policies that are a part of the Critical Path Initiative, the FDA's effort to modernize the scientific process through which potential drugs, biological agents, or medical devices are transformed from discoveries into medical products.

Trujillo Receives Huddleson Award

The American Dietetic Association Foundation awarded Elaine Trujillo, a nutritionist in NCI's Division of Cancer Prevention, the 2006 Huddleson Award for the article, "Nutrigenomics, Proteomics, Metabolomics, and the Practice of Dietetics," published in the March 2006 issue of the *Journal of the American Dietetic Association.* The award honors a registered dietitian who was the lead author of a peer-reviewed article that made an important contribution to the dietetics profession.

In the article, Ms. Trujillo and her colleagues reviewed concepts key to understanding the interrelationships among genes, gene products, and dietary habits to identify those who will benefit most from or be placed at risk by nutritional intervention strategies.

11th Annual Spring Research Festival Slated for May

NCI-Frederick, in partnership with the U.S. Army Medical Research and Materiel Command at Ft. Detrick, will hold its 11th Annual Spring Research Festival on May 16 and 17 in a tent near Veterans Gate at Ft. Detrick in Frederick, MD. Scientific staff, including students, technical support staff, postdoctoral fellows, and principal investigators will present posters describing their research to the joint scientific communities. More information is available at http://www.ncifcrf.gov/events/springfest/.

OLA's Teleconference Series Continues

The fourth in the spring series of "Understanding NCI" teleconferences is scheduled for Thursday, May 17, from 2:00–3:00 p.m., EDT. Dr. Lee Helman, scientific director for clinical research in NCI's CCR, will discuss "NCI's Intramural Clinical Trial Program: A National Resource for Patients." Within the U.S., the teleconference can be accessed toll free at 1-800-857-6584; the pass code is CCR. Toll-free playback will be available through June 17 at 1-866-442-1776. The teleconference series is sponsored by NCI's Office of Liaison Activities (OLA). For additional information, contact OLA at 301-594-3194 or liaison@od.nci.nih.gov. ◆

(Spotlight continued from page 5)

Working independently, the OSU groups used different technologies and patient samples, but reached similar conclusions.

"Many of the microRNAs we identified as important were on their list," says lead investigator Dr. Tom Schmittgen, who collaborated with researchers from the University of Oklahoma Health Sciences Center.

"It's always reassuring to know that your results have been reproduced," he adds. His laboratory is now working with Dr. Croce's on diagnostic tools and ways to inhibit microRNAs in cancer cells. ◆

—Edward R. Winstead

70 YEARS OF EXCELLENCE IN CANCER RESEARCH

If Memory Serves…

Before NCI was founded, the government had published a few reports on the mortality of cancer, including a report using Census records leading up to the year 1914 and a second volume on cancer mortality from 1900–1920. Dr. Joseph Schereschewsky, who published the 1925 report on cancer mortality from 1900–1920, was an early pioneer in such statistical studies on cancer and his work established cancer research as a priority for the Service. (Read more)

For more information about the birth of NCI, go to http://www.cancer.gov/aboutnci/ncia.

Guest Commentary by Georgia Decker

Collaboration Is Key to Cancer Care

The Oncology Nursing Society (ONS) just concluded our 32nd Annual Congress. It was energizing to participate in a forum of over 6,000 oncology professionals discussing the role for nursing and ONS in the future of cancer care. The call for collaboration to solve the work force shortages and meet the challenge of coordinating care for the growing number of cancer survivors was heard throughout our congress. Oncology nurses represent a vital component of quality cancer treatment across the spectrum of care. The shrinking nurse work force ultimately will result in fewer nurses who choose oncology nursing as a specialty. The conceivable result is a negative impact on access to quality cancer care beginning with prevention and early detection and extending through treatment to survivorship.

The physician and nurse work force shortage has been documented and acknowledged. Simultaneously, the population is aging, and cancer incidence and prevalence will follow these age trends since cancer disproportionately occurs during and after the sixth decade. It is not just the patients who are aging. The aging of physicians and nurses, as well as the work force shortages, promise to create barriers in access to care that extend beyond those we already face. In her 2005 Guest Commentary, Karen Stanley, ONS immediate past president, described a "perfect storm" of an aging population, the correlation of aging and increased cancer risk, and increased demand for health care. Clearly, the work force shortage adds to the perfect storm and requires a multifaceted, transdisciplinary approach because no one intervention or profession can remedy these circumstances.

A recent survey by the American Society of Clinical Oncology (ASCO) acknowledges and describes how traditional approaches to the physician shortage do not offer viable solutions. NCI was able to generate specific projections of cancer prevalence, and the demand for oncology services through 2020 using data from SEER and the SEER Medicare Linked Databases. The ASCO study suggests that, from their perspective, several potential solutions to this crisis exist. One scenario discusses the increased use of nurse practitioners (NPs), thus offering an opportunity to improve practice efficiency and efficacy. In this study, it was reported that approximately 50 percent of oncologists currently work with NPs (or physician assistants) and report higher productivity, improved patient care, and professional satisfaction.

Increasing and improving collaborative practice among oncologists and advanced practice oncology nurses offers a unique opportunity to meet the increase in professional demands while intercepting the potential for increased barriers to quality cancer care.

ONS and ASCO's Clinical Practice Committee have met, and we will continue our dialog to identify interventions that address the work force shortage and to explore and develop collaborative models of care based on a team approach.

Those diagnosed with cancer seek and are entitled to the most current information from a variety of sources during their care and after completion of treatment. Access to care and accurate information are critical to their journey. They expect a team of professionals to work collaboratively to provide optimal care. Quality cancer care provided by a transdisciplinary team of oncology experts should be a human right. ◆

Georgia Decker
President, Oncology Nursing Society

Community Update

CURE: Ten Years and Going Strong

NCI's Continuing Umbrella of Research Experiences (CURE) program will mark 10 years of achievements in providing training and funding opportunities for underrepresented minority investigators in cancer research at their May 7–8 professional development workshop.

"The greatest test to what we do is seeing individuals come through the CURE pipeline and find that it works," said Dr. Sanya Springfield, director of NCI's Center to Reduce Cancer Health Disparities (CRCHD) and creator of CURE. "The NCI program stands out as one that other programs are trying to copy."

CURE, sponsored by NCI's Comprehensive Minority Biomedical Branch (CMBB), allocated $28.8 million in fiscal year 2006 to fund 183 research supplements, 84 F31 individual predoctoral fellowships, and 77 career development awards. Additionally, 14 P30S cancer grant supplements provide opportunities for socioeconomically disadvantaged, minority high school and undergraduate students to work with senior researchers at cancer centers.

The program has grown significantly since it began. Applications for F31 fellowships, for example, have increased from 3 to 4 in 1997 to between 90 and 100 applications in 2007. Additionally, Dr. Springfield noted, "Ten years ago, we knew of few minority investigators with R01 grants. Over the past 10 years, almost 50 minority investigators—from our career development portfolio alone—have been awarded R01 or R01-equivalent grants."

Dr. Elva Arredondo, a scientist at San Diego State University and a 2001 recipient of CURE's F31 fellowship, can attest to the program's contribution to her career. "During graduate school, the F31 fellowship was instrumental because it helped guide my graduate training and map out a career plan," she said. "The fellowship opened up many professional opportunities as it was some evidence to people that I had sought and attained funding." Dr. Arredondo's current research on cancer prevention is funded by an R21 grant. She recently applied for a minority supplement grant to use the skills she obtained from the CURE program to mentor other junior minority investigators.

For many participants, CURE's benefits go beyond funding. "I probably could have received other funding, but the CURE workshops enabled me to understand how to start my own lab and kick-start my career," said Dr. Sarki Abba Abdulkadir, associate professor of pathology and cancer biology at Vanderbilt University Medical Center. The workshops provided Dr. Abdulkadir with insight into what reviewers look for in a grant proposal, helping him earn his first R01 grant for prostate cancer research.

Many minority investigators thrive, even in the face of the challenges not encountered by nonminority investigators. These challenges "may be linked to the limited number of role models, cultural differences, lack of opportunities due to low socioeconomic status, and the misperception that minority students and investigators may be underprepared to carry on complex research," said Dr. H. Nelson Aguila, acting branch chief and program director of CMBB.

CURE addresses these issues in their workshops and senior minority investigators present their stories and struggles. According to Dr. Maria Elena Martinez, professor and co-director of the Cancer Prevention and Control Program at the University of Arizona and a 1998 K grant recipient, "The specific topics on publishing, writing proposals and grants, and mentoring were extremely beneficial because they took the perspective of a minority investigator."

As more minority investigators go through the program, CURE will continue to expand its reach. This will include a move into CRCHD, as well as new training programs on emerging technologies and on cancer health disparities research. ◆

Funding Opportunities

For a complete listing of current NCI funding opportunities, please go to the HTML version of today's *NCI Cancer Bulletin* at http://www.cancer.gov/ncicancerbulletin/NCI_Cancer_Bulletin_050107/page12. ◆