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Chemotherapy after Surgery Benefits Some Lung Cancer Patients

A new study adds to growing evidence that patients with non-small-cell lung cancer (NSCLC) may benefit from a course of chemotherapy after their tumors have been removed surgically.

Patients who received chemotherapy as early as possible following surgery lived significantly longer than similar patients who had surgery alone, according to findings in the June 23 *New England Journal of Medicine (NEJM)*.

After 5 years, 69 percent of the patients who had surgery and chemotherapy were alive, as compared to 54 percent of the surgery-alone group. Overall, the median survival for the chemotherapy and surgery group was 94 months as compared to 73 months for patients in the surgery-alone group.

"These results are extremely good news for lung cancer patients," says Dr. Timothy Winton of the University of Alberta, who led the study. "We thought that intervening with an effective chemotherapy regimen after surgery might have long-term benefits for relatively healthy patients, but the findings far exceeded our expectations."

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See page 5 for a Special Report on the Board of Scientific Advisors' action on NCI's Proteomics Initiative. ◆

Director's Update

Guest Update by Dr. Dinah Singer

Protein Structures: A Key to Unknown Treasures

It took Dr. Max Perutz 22 years to determine the structure of hemoglobin, for which he was awarded the Nobel Prize in 1962. Today, thanks to extraordinary technological advances, including advances in x-ray crystallography techniques initially developed by Dr. Perutz, some protein structures can now be determined in a matter of hours. And, as we are learning, this research is becoming an essential component of developing new cancer treatments.

Dr. Dinah Singer, Director, NCI Division of Cancer Biology

Yesterday, at the U.S. Department of Energy's (DOE) Argonne National Laboratory outside of Chicago, a ceremony was held to dedicate the first of three new macromolecular crystallography beamlines at Argonne's Advanced Photon Source (APS) synchrotron. This synchrotron produces the most powerful radia-

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The randomized trial included 482 patients with early stage NSCLC in Canada and the United States. The chemotherapy, which began about 6 weeks after surgery, consisted of two drugs, vinorelbine and cisplatin, given intravenously over 4 to 6 months. Chemotherapy after surgery is common in treating breast and colon cancers, but early lung cancer trials failed to show that chemotherapy helped patients, and its use has been controversial until now.

Unlike those trials, this one included only patients with minimal symptoms who were likely to tolerate the chemotherapy. The trial also used a more active chemotherapy regimen than some of the older studies, and postoperative radiation was not given.

"We believe the strategy of focusing on a select patient group shortly after surgery was critical to achieving the results," says Dr. Winton, who first presented findings from the study at the 2004 American Society of Clinical Oncology (ASCO) annual meeting.

Dr. Katherine M.W. Pisters of the University of Texas M.D. Anderson Cancer Center attended the ASCO presentation, and she initially had trouble believing the results. The study's 31 percent reduction in the risk of death for the chemotherapy group "is unheard of in lung cancer," she explains.

Dr. Pisters wrote a commentary in *NEJM* entitled "Adjuvant Chemotherapy for Non-Small-Cell Lung Cancer—The Smoke Clears," a reference to the controversy that she argues is now over based on the results of this and at least two other trials.

"There is no longer any question that postoperative chemotherapy improves survival for these patients," says Dr. Pisters. "This really does work, and it's not controversial anymore."

Both Dr. Pisters and Dr. Winton say that more patients with early-stage NSCLC are receiving chemotherapy because of these clinical trials, though no statistics are available.

With the results published in a high-profile journal read by many physicians, the trend is likely to continue. It will help that two professional organizations, the American College of Chest Physicians and ASCO, are revising their treatment guidelines for physicians to make this the new standard of care for patients with early-stage NSCLC.

"The preponderance of evidence from the relevant clinical trials supports the consideration of chemotherapy following surgery" for these patients, notes Dr. Janet Dancey of NCI's Cancer Therapy Evaluation Program. ◆

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tion in the Western Hemisphere. The National Cancer Institute (NCI) teamed with the National Institute of General Medical Sciences (NIGMS) and DOE to fund the beamlines' construction and took a lead role in facilitating the construction process. As part of our partnership with NIGMS, NCI receives dedicated time on the beamlines for its researchers.

The synchrotron, one of only a handful in the United States, is a powerful tool for deciphering the structure of proteins involved in cancer and other diseases that affect hundreds of millions of people around the world. The new experimental facility includes several novel design features, including the ability to split a single beamline into two without sacrificing intensity—effectively doubling its work capacity.

Although we have become increasingly adept at identifying cancer-related genes and the proteins they produce, there is still much to be learned about cellular mechanisms, the effects of mutant proteins on these mechanisms, and how to design agents that can effectively disrupt these proteins' aberrant behavior. That is why NCI, with funds from the Division of Cancer Biology, has partnered with NIGMS to develop the new beamlines. By advancing efforts to elucidate protein structures, we believe we can bridge that knowledge gap.

Structural biology research has already helped generate important advances in our understanding of transcription, translation, DNA repair, cell death (apoptosis), and protein degradation mechanisms. It also is beginning to play an important role in drug development, as was the case with the development of two agents that have demonstrated the ability to overcome resistance to the targeted agent imatinib (Gleevec). Only after researchers solved the structure of imatinib bound to BCR-ABL could agents be developed that bind to the mutated forms of BCR-ABL to which imatinib can no longer bind.

Progress in this area has been exponential. NIGMS' Protein Structure Initiative has given rise to important technological advancements and generated the structures of 1,000 (primarily bacterial) proteins. And last month, an Anglo-Canadian effort, the Structural Genomics Consortium, reported that, in less than 1 year, it had determined the structures of 50 complex proteins relevant to human diseases, including cancer.

We're glad to be part of such an exciting effort that will help untangle mysteries scientists have pondered for many years. We believe that this research will generate many important advances that move us closer to the 2015 goal. ◆

Spotlight

Sunlight and Cancer:
Testing the Vitamin D Hypothesis

The beaches will be packed this Fourth of July weekend, and dermatologists can only hope that people will wear sunscreen and avoid the sunburns that increase the risk of skin cancer later in life.

While the ultraviolet radiation in sunlight can harm skin, it also stimulates the production of vitamin D, and some researchers are now investigating whether vitamin D may have a role in preventing or treating cancer.

The hypothesis that vitamin D may reduce cancer risk is based in part on studies showing that vitamin D deficiency is associated with an increased prevalence of cancer, and on evidence that vitamin D, when converted into a hormone, promotes the normal growth of cells and has anticancer properties.

"Many pharmaceutical companies are interested in developing the vitamin D hormone or analogues for use in cancer treatment," says Dr. Anthony Norman of the University of California, Riverside, who is a leader of the Vitamin D Workshop, a group of researchers that meets every 3 years.

The group cosponsored a 3-day meeting on vitamin D and cancer at NCI last November, where participants stressed the need for a new analysis of all of the studies, both positive and negative, on vitamin D and cancer risk.

A summary paper on the NCI meeting to be published this fall in the *Journal of Steroid Biochemistry and Molecular Biology* reports that there was general agreement that vitamin D deficiency is associated with a higher prevalence of cancer (and several other diseases), and that the vitamin D hormone can decrease the proliferation of cells and control malignant cell growth.

Most important, perhaps, the participants saw a need for larger studies that could begin to address the many unresolved questions for the field, and they said "academia, public funding agencies, and industry should urgently design appropriate studies to better define the causal relationship between vitamin D nutrition and cancer."

The current information about vitamin D can be confusing. The skin manufactures vitamin D after exposure to ultraviolet radiation, yet dermatologists say that no amount of sun exposure is safe because ultraviolet radiation can cause skin cancer. The amount of vitamin D that might help prevent cancer, if any, is not known.

Nor is it known just how much or how little sunlight is needed to replenish stores of vitamin D because the answer varies depending on the season, a person's skin color (the process takes longer for people with darker skin), a person's distance from the equator, and clothing.

"If you want to increase your vitamin D levels, the safest way is to take supplements," says Dr. Sue Ingles of the University of Southern California, who co-authored a new study on sunlight and advanced prostate cancer among men in San Francisco.

The study found that the risk of prostate cancer was reduced by 50 percent in men who had high levels of sun exposure during their lifetimes, compared with men who had low lifetime levels. The study, in the June 15 *Cancer Research*, included 450 white men with advanced prostate cancer and 455 healthy white men.

"A risk reduction of 50 percent is quite large, given how little is known about what men can do to prevent prostate cancer," says co-author Dr. Esther John of the Northern California Cancer Center. "It will be important to see if other studies replicate these results."

Most of the risk factors for prostate cancer are things that cannot be changed, such as growing older, being African American, and having a family history of the disease. A vitamin D deficiency, on the other hand, may be a modifiable risk factor.

"It would be profoundly important for public health if vitamin D could prevent some prostate cancers," says co-author Dr. Gary G. Schwartz of the Wake Forest University Comprehensive Cancer Center in North Carolina. "Vitamin D is safe, inexpensive, and available, and there's no need to get it from sunlight."

The researchers detected an even greater risk reduction among men in the high-exposure group who had certain forms of a gene involved in regulating vitamin D.

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Cancer Research Highlights

Familial Risk of Lung Cancer Greater in African Americans

Family members of African Americans with early-onset lung cancer are twice as likely to develop lung cancer themselves, as are family members of white early-onset lung cancer patients, according to a study in the June 22/29 *Journal of the American Medical Association*.

Study leader Dr. Michele L. Coté of Wayne State University and her colleagues analyzed case reports of 692 early-onset (before age 50) lung cancer patients and 773 healthy controls. The study population or their proxies provided information about 7,576 of their biological parents, siblings, and children. The family members were analyzed for age, race, smoking history, and whether they had been diagnosed with certain obstructive lung diseases or lung cancer. Two-thirds of the study population were white, and the remainder were African American.

Family members of African American lung cancer patients had a 3.23 times greater risk of developing lung cancer than did the relatives of African American control group members. Family members of white lung cancer patients had a 1.48 times greater risk of developing lung cancer than did relatives of healthy whites.

The researchers found a 1.7-fold increased risk of lung cancer for people with first-degree relatives with lung cancer compared with those without a family history of the disease, after adjusting for race, age, sex, and smoking. "Familial risk in the black population was higher than that in the white population," the researchers wrote. "These findings provide further evidence that lung cancer aggregates in families and that aggregation is stronger in blacks."

Bortezomib Is Superior to High-Dose Dexamethasone for Relapsed Multiple Myeloma

A randomized, phase III clinical trial concludes that bortezomib (Velcade) is superior to high doses of dexamethasone for treating relapsed multiple myeloma. The results, from the Assessment of Proteasome Inhibition for Extending Remissions (APEX) trial, appeared in the June 15 *New England Journal of Medicine (NEJM)*.

Bortezomib is the first of a new class of drugs, proteasome inhibitors, that works against several types of tumors. In 2003, the Food and Drug Administration made bortezomib available to relapsed myeloma patients through fast-track approval, and full approval was given this year. Multiple myeloma is a progressive blood disease, and no standard treatment exists for relapsed patients.

The study, led by Drs. Paul Richardson and Kenneth Anderson of the Dana-Farber Cancer Institute with investigators across North America and Europe, included 669 patients who had undergone 1 to 3 previous treatment regimens. Patients taking bortezomib had higher response rates, a significantly longer time to disease progression, and longer survival than patients taking dexamethasone.

The combined complete and partial response rate was 38 percent for bortezomib versus 18 percent for dexamethasone. After interim analyses strongly favored treatment with bortezomib, the data monitoring committee recommended all patients in the study begin taking the drug, resulting in a relatively short follow-up period of 8.3 months.

"The take-home message is that bortezomib is an effective therapy against relapsed myeloma," writes Dr. Angela Dispenzieri of the Mayo Clinic in an *NEJM* editorial. More research is needed, she notes, given the short follow-up period, and such factors as differences in toxicity and the greater expense of bortezomib compared with high-dose dexamethasone, but bortezomib nonetheless constitutes "a much-needed additional tool against this devastating disease."

Physical Activity and Weight Control Lowers Breast Cancer Risk

A large Chinese epidemiological study provided strong evidence that being more physically active and leaner can significantly reduce the risk of getting breast cancer, particularly among postmenopausal women, according to a report in the June *Cancer Epidemiology, Biomarkers & Prevention*.

The Shanghai Breast Cancer Study compared data from interviews of 1,459 breast cancer cases and 1,556 controls in China. Researchers reported that women in the study with low levels of physical activity and higher body mass index (BMI) levels were at more than twice the risk of developing breast cancer than women who had lower BMIs, and who exercised for the equivalent of about 45 minutes of brisk walking or 20 minutes of vigorous exercise daily.

The women's BMIs were calculated based on measurements, taken by the

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interviewers, of their weight, height, and circumference of waist and hips. Lead author Dr. Alecia S. Malin of Meharry Medical College noted that, "This direct approach enabled us to overcome the primary problem affecting the accuracy of energy balance assessments" based on self-reporting that "leads to underreporting, particularly when overweight people account for their own energy intake."

Extrapolation of the results for Westerners, Dr. Malin added, should take into account the inherent differences in the relationship between BMI levels and disease risk that appear to exist between Western and Asian women. A BMI of 25 kg/m^2 among Western women is considered to be normal weight, while the same BMI level among Asian women is considered to be in the overweight category and was associated with an increased breast cancer risk in this study. ◆

(Spotlight continued from page 3)

"What's interesting here is that it was the combination of sun exposure and genetic variants that made the difference," says Dr. John. "The field is moving toward trying to understand the combined effects of genetic and nongenetic factors, but you need large studies to detect these effects."

The researchers expect to publish results from larger studies now underway involving more Caucasians, as well as African Americans and Hispanics, in northern and southern California.

In October, the *Journal of Steroid Biochemistry and Molecular Biology* is slated to publish 25 papers representing the proceedings of the vitamin D/cancer meeting held in November 2004. ◆

Special Report

BSA Approves Proteomics Initiative

NCI's Board of Scientific Advisors (BSA) yesterday approved the Clinical Proteomics Technologies Initiative, a $104 million program aimed at optimizing current proteomics technologies and developing the new technologies, reagents, systems, and working consortia to significantly advance the field of cancer proteomics research. At its last meeting in March, BSA deferred action on the initiative, requesting that NCI staff work with a board subcommittee to further refine and develop the proposal to address several specific issues.

That process, noted subcommittee chair Dr. Joe Gray, director of the Division of Life Sciences at Lawrence Berkeley National Laboratory, generated a superior product that addressed the issues raised by BSA.

"The revised proposal reflecting BSA's input builds on a 2-year process that sought feedback from the research community through workshops and meetings," said Dr. Anna Barker, NCI deputy director for Advanced Technologies and Strategic Partnerships. "We heard over and over again from across the cancer research enterprise that we need to provide the community with specific support to advance the field of proteomics," Dr. Barker stated, especially in the areas of technology, reagents, bioinformatics, and data standards to ensure reproducibility and comparability of data.

The initiative, she added, is not "all encompassing." Rather, it's "a step forward," meant to bring the field of proteomics "to a point where we can move ahead … hopefully very quickly."

The initiative, explained Dr. Greg Downing, director of NCI's Office of Technology and Industrial Relations, encompasses a three-pronged strategy:

- Establishment of Clinical Proteomic Technology Assessment Consortia, which will be comprised of multidisciplinary teams from different institutions focused on evaluating tools, such as proteomic technologies and reference reagents; developing protocols and performing cross-laboratory studies of common sample sets; and also providing consultative services and training to the community. This component will use the U24 funding mechanism.
- Support of research into overcoming barriers to protein/peptide feature detection, identification, and quantification; and development of mathematical, computational, and predictive approaches for analysis of large scale data. This component will use the R01 and R21/R3 (phased innovation) award mechanisms.
- Creation of a virtual, centralized clinical proteomics reagents resource, which will include resources such as antibodies, peptides, and proteins. This component will use an RFP contracts funding mechanism. ◆

Funding Opportunities

Featured Clinical Trial

Following is a newly released NCI research funding opportunity:

Diet Induced Changes in Inflammation as Determinants of Colon Cancer

PA-05-125
Application Receipt Dates: Oct. 1, 2005; Feb. 1, June 1, Oct. 1, 2006; Feb. 1, June 1, Oct. 1, 2007; Feb. 1 and Jun. 1, 2008

The goal of this PA concept is to foster innovative research that will identify and characterize diet-induced changes in inflammation and colon cancer risk. This PA does not encompass epidemiological studies.

This funding opportunity will use the NIH investigator-initiated research project grants (R01) and exploratory/developmental (R21) award mechanisms. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=2824. Inquiries: Dr. Young S. Kim—yk47s@nih.gov.

For comprehensive information about NCI funding priorities and opportunities, go to http://www.cancer.gov/researchandfunding.

The NIH Roadmap for Medical Research Funding provides a framework of the priorities NIH must address to optimize its research portfolio. It identifies the most compelling opportunities in three main areas: new pathways to discovery, research teams of the future, and re-engineering the clinical research enterprise. For information on additional Roadmap funding opportunities, go to http://nihroadmap.nih.gov ◆

Outpatient Treatment for Older Patients with AML

Name of the Trial

Phase II Randomized Study of Tipifarnib in Older Patients with Previously Untreated Acute Myeloid Leukemia (SWOG-S0432). See the protocol summary at http://cancer.gov/clinicaltrials/SWOG-S0432.

Principal Investigators

Dr. Harry Erba, Southwest Oncology Group; Richard Larson, Cancer and Leukemia Group B; and Dr. Martin Tallman, Eastern Cooperative Oncology Group.

Dr. Harry Erba

Why Is This Trial Important?

Acute myeloid leukemia (AML) is the most common type of leukemia in American adults. This disease typically strikes older adults, a group that may be less able to tolerate the aggressive therapies that are currently used to treat AML, such as combination chemotherapy and stem cell transplantation. Consequently, doctors are searching for new treatment approaches for older patients with AML.

In this study, researchers are testing a new drug called tipifarnib (Zarnestra) to treat patients aged 70 or older who have AML and who are not eligible for standard treatment. Tipifarnib belongs to a class of drugs called farnesyltransferase inhibitors, which inhibit the biochemical signals that tell cancer cells to grow.

"In a previous clinical trial, about 20 percent of AML patients treated with tipifarnib achieved a complete response, and an additional 15 percent achieved partial response," said Dr. Erba. "Those who responded to tipifarnib experienced better survival rates.

"Tipifarnib has several advantages over standard treatments. It is administered orally, which allows patients to be treated in an outpatient setting, and it is generally well tolerated," added Dr. Erba. "We believe that this study represents a novel approach to treating AML in patients who are not eligible for or cannot tolerate standard treatments."

Who Can Join This Trial?

Researchers seek to enroll up to 296 patients aged 70 and over with AML who are not eligible for or who have declined standard treatment. See the full list of eligibility criteria for this trial at http://cancer.gov/clinicaltrials/SWOG-S0432.

Where Is This Trial Taking Place?

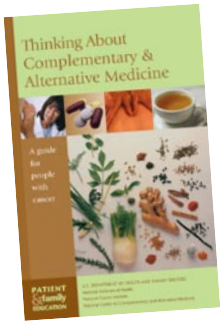
Multiple study sites in the United States and Canada are recruiting patients for this trial. See the list of study sites at http://cancer.gov/clinicaltrials/SWOG-S0432.

Contact Information

See the list of study contacts at http://cancer.gov/clinicaltrials/SWOG-S0432 or call 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



New CAM Brochure Available

Thinking About Complementary and Alternative Medicine, a new brochure from NCI, helps cancer patients and their families find information on this often confusing topic. The booklet is a joint project between NCI's Offices of Education and Special Initiatives and Cancer Complementary and Alternative Medicine and the National Center for Complementary and Alternative Medicine. Written in plain language, it is designed to help cancer patients, caregivers, and health professionals find reliable CAM information and resources.

NCI conducted focus groups and interviews with patients who used complementary treatment with, or instead of, conventional treatment. As a result, the booklet identifies the major CAM domains, provides guidance on evaluating the available cancer CAM information, identifies reliable government sources for CAM information, and gives advice on how to speak with conventional health care providers about CAM and find a suitable CAM practitioner.

Thinking About Complementary and Alternative Medicine is available online at http://www.cancer.gov/cancertopics/thinking-about-CAM. Free copies can also be ordered online or by phone at 1-800-4-CANCER (1-800-422-6237).

Science Writers' Seminar Highlights Blood-Borne Cancers

On June 20, NCI's Press Office hosted a science writers' forum at Dana-Farber Cancer Institute in Boston, the latest in NCI's series of educational seminars. The seminar was attended by journalists from the *Boston Globe, Boston Herald, HealthDay*, and other media outlets in New England. Researchers from Dana-Farber and NCI discussed issues such as allogeneic stem cell transplantation to treat certain types of leukemia, old therapies used in new ways to cure multiple myeloma, and the new methods to treat 40 different types of lymphomas. Speakers included Drs. Ken Anderson and Robert Soiffer of Dana-Farber and Dr. Wyndham Wilson of NCI. The seminar can be viewed via archived webcast at http://videocast.nih.gov/PastEvents.asp.

Web Site Matches Patients to Trials

Breastcancertrials.org (BCT) is a Web-based service for matching breast cancer patients to clinical trials. The nonprofit service is sponsored by NCI; the University of California, San Francisco Comprehensive Cancer Center; and the Center of Excellence for Breast Cancer Care. BCT was launched as a pilot project earlier this month.

Breast cancer patients enter their cancer histories into BCT's secure online database. They are then matched with trials for which they may be eligible. Clinical trial staff make the final determination as to whether a patient is accepted for a trial.

The pilot launch of BCT includes only trials located in the greater San Francisco Bay Area and Sacramento, Calif., but is open to all U.S. patients. For more information, go to http://www.breastcancertrials.org.

New Booklets Available

NCI has updated two booklets in its award-winning *What You Need To Know About Cancer* series. Revised versions of *What You Need To Know About Non-Hodgkin's Lymphoma* and *What You Need To Know About Cancer* were recently posted on NCI's Web site at http://www.cancer.gov/publications. Print copies can be ordered online or by calling 1-800-4-CANCER (1-800-422-6237).

The series of 25 booklets is intended to answer the questions of cancer patients and their families about symptoms, diagnosis, staging, and treatment. Some booklets in the series are as long as 75 pages, and several are available in Spanish. ◆

CCR Grand Rounds

July 5: No Lecture

July 12: Dr. Crystal Mackall, Head, Immunology Section, Pediatric Oncology Branch, Center for Cancer Research, NCI "Integrating Immunotherapy into Existing Cancer Therapies: Challenges and Opportunities"

July 19: Dr. Max S. Wicha, Director, University of Michigan Comprehensive Cancer Center, Distinguished Professor of Oncology, University of Michigan Medical School "Stem Cells in Normal Mammary Development and Breast Cancer"

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. ◆

Community Update

State Cancer Control Plans: The Science of Collaboration

In Michigan, they have a plan: By the end of the decade, the number of new cases of invasive cervical cancer will be slashed by 50 percent. In the same time frame, 80 percent of women in the state will receive an age- and risk-appropriate screening for breast cancer via clinical breast examination and mammography. The Great Lake state has similar hopes for colorectal cancer screening. And if health care providers in Michigan are unclear about the appropriate screening recommendations for these cancers, they can visit the Michigan Cancer Consortium Web site and print off a concise one-page summary of screenings, the age at which they should begin, and their recommended frequency.

All of this is part of Michigan's state cancer control plan, developed by the Michigan Cancer Consortium over the past decade with input from its 80-plus members which, among others, include health insurers, major medical centers, advocacy groups, and two NCI-designated Cancer Centers.

In partnership with the Centers for Disease Control and Prevention's (CDC) National Comprehensive Cancer Control Program (NCCCP), all states are currently developing or implementing comprehensive cancer control plans, as are U.S. territories and a growing number of tribes. According to Dr. Jon Kerner, deputy director, Research Dissemination and Diffusion, in the NCI Division of Cancer Control and Population Sciences, comprehensive cancer control is an emerging model that involves a broad range of activities to integrate research with practice to maximize the impact of limited resources.

The development and implementation of state cancer control plans has been driven in large part by national partnerships between public- and private-sector stakeholders, including NCI, CDC, the American Cancer Society (ACS), C-Change, the American College of Surgeons, and a number of other national organizations. As is the case in Michigan, NCI-designated Cancer Centers often participate at the state level.

With funds from NCCCP and other sources, explains Dr. Kerner, state, tribal, and territorial health agencies develop individual cancer plans to address their own unique cancer burden and resources.

"As they implement cancer plans, they integrate expertise and efforts from many disciplines, including population science, clinical and basic research, public health and clinical practice, health education, public policy, and health communication," he says.

Among other things, NCI has provided support to NCCCP to train state teams on the principles and practice of integrating cancer control science with comprehensive cancer control plans, and collaborated with CDC, ACS, and other federal agencies on the development of Cancer Control PLANET, a Web-based portal that provides tools and resources to help states design, implement, and evaluate evidence-based comprehensive cancer control programs.

When it comes to cancer control planning, Dr. Kerner stresses, collaboration continues to be key.

"We're enhancing our investments in interagency collaborations," he says. "Not only does it reduce duplication of effort, but it's really serving to integrate science with service across the cancer control continuum." ◆

Featured Meetings and Events

A comprehensive calendar of cancer-related scientific meetings and events sponsored by NCI and other scientific organizations is available at http://calendar.cancer.gov/ ◆

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.

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