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NCI Cancer Bulletin

Eliminating the Suffering and Death Due to Cancer

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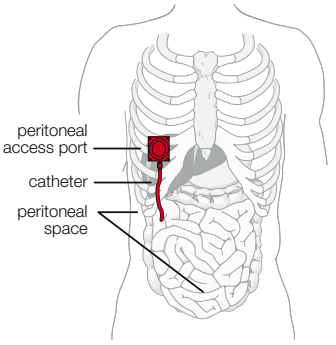
Abdominal Chemotherapy for Ovarian Cancer Improves Survival

Women who received chemotherapy directly in their abdomens as part of treatment for advanced ovarian cancer lived more than a year longer than women who received the same chemotherapy intravenously, researchers reported last week.

The findings confirm and expand recent research showing that intraperitoneal (IP) chemotherapy, which delivers drugs directly to the abdominal cavity through a catheter, can significantly increase survival for some women with the disease.

In the study, women who received chemotherapy intravenously and through an IP route lived on average 16 months longer than women who had IV chemotherapy only, according to findings in the January 5 *New England Journal of Medicine* (*NEJM*).



In IP therapy, a catheter delivers drugs directly to the abdominal cavity.

Even women who completed only one or two of the planned six cycles of IP therapy benefited.

"The results of this and two prior studies demonstrate that IP

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Director's Update

Guest Update by Dr. John E. Niederhuber

Supporting Cancer Drug Development

NCI has an important role to play in the drug development process in the United States. From its expansive clinical trials program to the drug discovery research it performs and funds, the institute believes it has an essential duty to expedite the discovery and development of interventions that will save lives.

Outside of academic and industry circles, very little attention is paid to the multiplicity of steps and tasks required to take a molecule of interest or a therapeutic vaccine concept from initial laboratory investigations to preparation of patient-grade agents ready for testing in appropriate patients. But the public expects—and we want to deliver—more effective and less toxic interventions to prevent and treat cancer, and we are determined to dramatically increase the speed of this process.

Two efforts aimed at doing just that are the Rapid Access to Interventions Development (RAID) and Rapid Access to Preventive Intervention Development (RAPID) programs. These programs don't provide grants to investigators who apply to the programs; instead, they offer important resources and access to expertise and core services

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(Chemotherapy continued from page 1)
chemotherapy should be used to treat many women with this disease," says Dr. Deborah Armstrong of the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, who led the trial.

The study included about 400 women. Half received cisplatin and paclitaxel intravenously; the others received paclitaxel intravenously plus cisplatin and paclitaxel via an IP route.

An *NEJM* editorial notes that such a large survival benefit is rarely seen in cancer clinical trials and should help change how the disease is treated.

As the results were made public, NCI issued a rare clinical announcement to raise awareness about IP chemotherapy for ovarian cancer among physicians and patients. Currently, only about 1 percent of ovarian cancer patients are treated with IP chemotherapy.

"We think the weight of the evidence now supports the use of this treatment for some women with ovarian cancer," says Dr. Edward Trimble, who heads the surgery section of NCI's Cancer Therapy Evaluation Program.

The new study is the eighth randomized clinical trial evaluating IP chemotherapy for selected women and the third sponsored by NCI. The NCI trials included only women who had undergone successful surgery to remove the bulk of their tumors.

"Our take-home message is that women need to have excellent surgery from day one and should be seen by a surgeon who specializes in gynecological cancers," says Dr. Armstrong, who is not herself a surgeon.

Ovarian cancer causes the most deaths of any gynecological cancer in the United States and frequently goes undetected until tumors spread beyond the ovaries.

The NCI announcement—the first since 1999—was warranted, says Dr. Trimble, because IP chemotherapy is widely regarded as an old technology and previous trials have generated little interest among physicians.

IP chemotherapy is not used regularly in part because of increased toxicity associated with the delivery method. But the new study suggests that while some patients experience complications, most problems are manageable and transient. One year after treatment, both groups reported a similar quality of life.

The IP method is "slightly harder" on some patients than conventional chemotherapy, says Dr. Trimble, but he adds: "We're trying to get the message out that we need to accept some short-term toxicity in exchange for the major increase in survival." ◆

By Edward R. Winstead

(Director's Update continued from page 1)
that are essential to the early development of a drug, biologic, or vaccine.

RAID, which operates out of NCI's Division of Cancer Treatment and Diagnosis, was launched in 1998 and has provided support and services to more than 100 investigators working on the development of small-molecule drugs and biologics. Of those projects, 13 small-molecule and 11 biologic agents have proceeded to clinical trials.

The services provided through RAID often entail highly specific expertise in areas such as toxicity testing, pharmacodynamics, histopathology, and the production of materials that meet FDA Good Manufacturing Practice (GMP) standards for testing in humans.

For example, Dr. Elizabeth Jaffe and colleagues at the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins originally developed a novel therapeutic vaccine for pancreatic cancer through another NCI program called an NCDDG. But it took the RAID program to provide the researchers with GMP-quality material for use in the phase I trial of this vaccine. Of the 14 patients in that trial, 3 are still alive 7 years later, one of Dr. Jaffe's colleagues, Dr. Daniel Laheru, recently reported. Data from the phase II trial demonstrated an astounding 76-percent survival rate after 2 years.

A similar program called RAPID has become an important resource for researchers investigating promising chemopreventive agents. Run by NCI's Division of Cancer Prevention, RAPID, although much smaller in scope than RAID, also offers essential services, such as toxicology studies and the development of GMP-grade material, to successful applicants.

More than 20 projects have received support through RAPID since its launch in 2000. One of the agents developed through this work, Se-methylselenocysteine, has demonstrated potent chemopreventive effects in prostate cancer models and will be tested in a phase I trial at Roswell Park Cancer Institute this year. Several other intriguing agents developed with assistance from RAPID look to be on the same track.

In a testament to the success and popularity of RAID, the National Institutes of Health, under the auspices of the Roadmap initiative, has launched its own pilot RAID program, which is also managed by NCI's Developmental Therapeutics Program.

At the moment, not nearly as many anticancer agents are reaching patients as quickly as we would like. But successful programs like RAID and RAPID are serving as catalysts for a new generation of interventions that will herald a new era of hope in our efforts to thwart this disease. ◆

Spotlight

Understanding the Legacy of Nuclear Testing

Starting in the 1940s, the world's superpowers conducted extensive nuclear weapons testing—on the ground, underground, and in the atmosphere. In total, more than 500 nuclear devices were detonated between 1945 and 1980, significantly changing the quantity and distribution of global radiation.

The main long-term health concern following exposure to radioactive fallout from nuclear testing is an increased risk of cancer. As Drs. Steven Simon, André Bouville, and Charles Land of NCI write in the January 2006 *American Scientist*, "The relationship between various forms of radiation exposure and subsequent cancer risk is perhaps the best understood, and certainly the most highly quantified, dose-response relationship for any common environmental human carcinogen." Research has shown that, for most types of cancer, radiation-related risk tends to increase with increasing age over time following exposure. Thus, the authors note that "even though the fallout exposures discussed here occurred roughly 50 to 60 years ago, it is likely that only about half of the predicted total numbers of cancers have occurred so far."

At the request of Congress, NCI has conducted extensive studies of fallout and related doses and risks. The *American Scientist* article explains that fallout distribution across the United States is largely a result of weather conditions, including wind speed and direction at different altitudes and local rainfall rates. Fallout deposition tends to decrease with distance downwind because of dispersion of the cloud bearing the radioactive particles and radioactive decay over time after detonation. However, local "hot spots" of concentrated fallout can occur when passage of the cloud coincides with rainfall.

Fallout deposited on the ground can lead to external whole-body exposure from x-rays and gamma rays emitted from the radioactive particles, as well as internal radiation following ingestion of the radioactive by-products that can contaminate plants and animals. The largest particles are deposited close to the test site; small, lighter particles tend to remain airborne for many days and are dispersed widely. The smaller particles also are readily available for biological uptake whereby they enter the food chain and can be ingested by people.

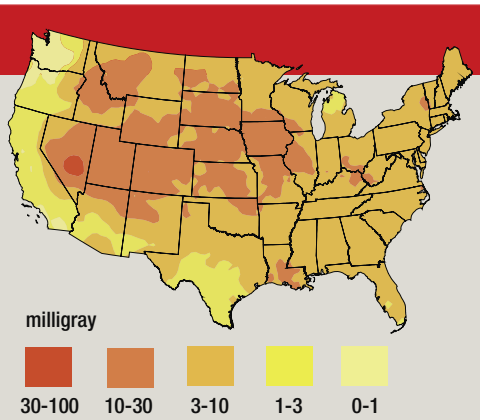
An important example of biological uptake is seen with radioactive iodine, which is produced abundantly in radioactive fallout and can be deposited on pasture grass, consumed and concentrated in milk by grazing dairy animals and, because iodine is essential for human thyroid function, further concentrated in the thyroid glands of people who consume the contaminated milk. Most of the radiation from radioactive iodine is restricted to the thyroid gland. Young children exposed to this radiation have an increased risk of developing thyroid cancer later in life.

Fallout from nuclear testing has likely resulted in some increased health risks to populations in the United States and elsewhere. Research on fallout has resulted in findings that may be helpful in dealing with current and future hazards including those related to nuclear terrorism. ◆

By Sharon Reynolds

Radiation Dose

Total external and internal radiation dose (in mGy) to the thyroid of adults in the United States from all tests at the Nevada Test Site. The distribution of fallout from nuclear testing at the Nevada Test Site was heavily influenced by prevailing wind and rain patterns during the decades of testing.



The Iodine-131 Individual Dose and Risk Calculator is now available on the NCI Web site at http://ntsi131.nci.nih.gov for those who want to estimate their exposure to fallout and risk of thyroid cancer as a result of U.S. nuclear testing at the Nevada Test Site. ◆

Cancer Research Highlights

Immune Response in Colorectal Tumors Linked to Longer Survival

European researchers are reporting that increased levels of a specific family of immune cells in colorectal cancer tumors independently correlate with better progression-free and overall survival. Writing in the December 22 *NEJM*, the researchers also demonstrated that existence of any one of three pathologic signs of early metastatic disease—vascular emboli and lymphatic or perineural invasion, collectively known as VELIPI—inversely correlated with progression-free and overall survival.

The study, led by Dr. Jerome Galon from the French research institute INSERM, involved an analysis of tissue samples from 959 patients who had undergone surgery to treat their cancer.

In 415 samples analyzed using tissue microarray, a large volume of effector memory T cells, in particular CD45RO+ cells, was associated with a superior clinical outcome compared with those with low levels: a median disease-free survival of 36.5 months and overall survival of 53.2 months, compared with 11.1 months and 20.6 months, respectively.

"VELIPI-negative tumors contained high numbers of CD450RO+ cells as compared to VELIPI-positive tumors," the researchers wrote. "In addition, a high density of memory T cells was associated with tumors without lymph node involvement and metastases."

According to Dr. Mac Cheever, on special assignment in NCI's Division of Cancer Biology, it's no surprise that increased overall survival was correlated with VELIPI absence. "What is new and remarkable is the degree to which it was correlated with the presence of tumor-infiltrating memory T cells," he said.

The results confirm the importance of an immune response in patient outcomes, he continued. "The data strongly imply that many cancers now cured by surgery are curable—that is, VELIPI-negative—only because of an ongoing immune response discernable at the time of diagnosis," Dr. Cheever said. "These studies help to validate the substantial current investment in therapeutic vaccines and also should stimulate an even greater interest in preventive vaccines."

Letrozole Superior to Tamoxifen for Breast Cancer

Tamoxifen was the first widespread hormone treatment for breast cancer, and has been targeted toward postmenopausal women with estrogen receptor-positive tumors with great success for nearly 20 years. Aromatase inhibitors are now beginning to supplant tamoxifen as standard hormone therapy, and results from a large international trial (BIG 1-98) involving more than 8,000 postmenopausal women from 27 countries show that letrozole (Femara) is better at preventing breast cancer recurrence and metastasis. The trial results were published in the December 29 *NEJM*.

The study authors wrote that "particularly notable was our finding of a significant reduction in the risk of distant recurrence"—27 percent in favor of letrozole patients. They were also 19 percent less likely to relapse.

In an accompanying editorial, Dr. Sandra Swain of NCI's Center for Cancer Research noted that 5 other large clinical trials had evaluated aromatase inhibitors in almost 30,000 women, with largely positive results. She also commented that aromatase inhibitors are "critically important for improving the outcome among postmenopausal women with breast cancer who have positive or negative lymph nodes and who are at substantial risk for recurrent disease."

Many patients may still continue to rely on tamoxifen because of cost and different side effects. Tamoxifen still produced an 81.4-percent rate of disease-free survival at 5 years. Letrozole increased arthritis, bone fractures, and cardiac events, while blood clots and endometrial cancer were more likely with tamoxifen.

Analyses of Lymphoma Incidence Trends by Subtype Suggest Priorities for Future Research

NCI researchers found striking differences in incidence patterns and time trends by lymphoma subtype, age, sex, and race/ethnic group in a large U.S. population-based assessment published in the January 1 issue of *Blood*.

Although lymphoma is the fifth most common category of neoplasms in the United States, the causes of this group of diseases are largely unknown, noted scien-

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(Highlights continued from page 4)
tists from NCI's Division of Cancer Epidemiology and Genetics (DCEG). The researchers analyzed almost 115,000 lymphoma cases diagnosed between 1992 and 2001 in 12 Surveillance, Epidemiology, and End Results (SEER) registries. The researchers used the 2001 World Health Organization lymphoma classification system in their analysis.

"Analyses of the incidence patterns and trends of the lymphoma subtypes in the general population can provide us with clues regarding etiology and suggest promising areas for future research," said Dr. Lindsay Morton, DCEG research fellow and lead author on the study.

For example, during the 10-year period, rates of diffuse large B-cell lymphoma and follicular lymphoma in the elderly increased 1.4 percent and 1.8 percent per year, respectively, whereas rates for chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) declined 2.1 percent per year, suggesting that exposures to the still unknown causes of these lymphoma subtypes may have changed. The investigators also noted variation in the incidence of lymphoma subtypes by age. "These age differences suggest that the timing of key exposures may differ by subtype," Dr. Morton noted.

The study also included the first comprehensive analysis of lymphoma incidence patterns among Asian Americans, showing considerably lower rates for CLL/SLL and Hodgkin lymphoma. In contrast, whites had the highest burden for most subtypes, especially hairy cell leukemia and follicular lymphoma, whereas African Americans had the highest rates for plasma cell and T-cell lymphomas.

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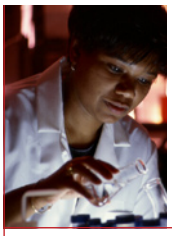

Featured Clinical Trial

Targeted Therapy for Mantle Cell Lymphoma

Name of the Trial
Phase II Randomized Study of Single-Agent Bortezomib Followed by Induction Therapy Comprising Bortezomib in Combination with Dose-Adjusted Etoposide, Prednisone, Vincristine, Cyclophosphamide, Doxorubicin, and Rituximab (DA-EPOCH-R) and Maintenance Therapy Comprising Bortezomib Versus Observation in Patients with Previously Untreated Mantle Cell Lymphoma (NCI-05-C-0170). See the protocol summary at http://cancer.gov/clinicaltrials/NCI-05-C-0170.

Principal Investigator
Dr. Wyndham Wilson, NCI's CCR

Why Is This Trial Important?
Mantle cell lymphoma (MCL) is an aggressive cancer of the immune system. MCL usually responds well to induction chemotherapy (treatment to induce disease remission) but then progresses in most patients. The average survival of patients diagnosed with MCL is 3 to 4 years.

In this trial, researchers will treat MCL patients with the drug bortezomib, followed by induction therapy with bortezomib and a chemotherapy combination known as DA-EPOCH-R, along with the drug filgrastim to stimulate white blood cell production. Half of the patients will then receive maintenance therapy with bortezomib, while the other half will not receive bortezomib unless their disease progresses.

Bortezomib is a new type of drug that blocks the activity of proteins important for cell proliferation, tumor survival, and the formation of new blood vessels to tumors. The NCI-developed DA-EPOCH-R combination has been effective against other difficult-to-treat, aggressive lymphomas. Researchers hope that combining bortezomib with the DA-EPOCH-R regimen will lead to lasting remission of MCL.


Dr. H. Wyndham Wilson

"We are exploring the use of targeted therapy combined with very active chemotherapy in hopes of improving the survival of patients with MCL," said Dr. Wilson. "We hope to prolong the period of remission by administering long-term bortezomib maintenance therapy."

Who Can Join This Trial?
Researchers seek to enroll 80 patients aged 18 or over with previously untreated mantle cell lymphoma. See the list of eligibility criteria at http://cancer.gov/clinicaltrials/NCI-05-C-0170.

Where Is This Trial Taking Place?
This study is taking place at the NIH Clinical Center in Bethesda, Md., and the Dana Farber Cancer Institute in Boston, Mass.

Contact Information
Call NCI's Clinical Studies Support Center at 1-888-NCI-1937 or the Dana Farber Cancer Institute at 1-800-790-4500. The toll-free calls are confidential. ◆

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

FDA Update

FDA Approves Lenalidomide for MDS

The Food and Drug Administration (FDA) has approved lenalidomide (Revlimid) for the treatment of patients with myelodysplastic syndrome (MDS). The approval is only for patients with a specific chromosomal abnormality, a deletion of DNA on chromosome 5. This is the case in 20 to 30 percent of MDS cases, according to the drug's manufacturer, Celgene Corporation.

MDS is a collection of disorders, the hallmark of which is abnormal bone marrow function that leads to inadequate blood cell production. Some forms of MDS can progress to acute myeloid leukemia.

MDS patients may need blood and platelet transfusions and antibiotic therapy for infections. Results from a 148-patient, phase II clinical trial indicated that treatment with the drug in patients with MDS and the chromosome 5 deletion eliminated the need for blood transfusions. The transfusion-free period lasted for an average of 44 weeks, according to the FDA.

Preliminary trial results were presented at the 2005 American Society of Clinical Oncology annual meeting. Researchers reported that 70 percent of those who responded had fewer bone marrow cells with the chromosomal deletion, and the deletion was undetectable in 44 percent of responders.

Lenalidomide is structurally similar to thalidomide, which can cause severe birth defects; it will be made available via a risk-management program designed to prevent fetal exposure. ◆

(Highlights continued from page 5)

Cervical Cancer Cells Can Cause Trouble Years Later

Years after treatment for cervical cancer, some women experience cancerous or precancerous lesions of the vulva and vagina. These lesions can be caused by cervical cancer cells that migrate and lay dormant in the lower genital tract, according to research published in the December 21 *Journal of the National Cancer Institute*.

Researchers from the University of Heidelberg in Germany canvassed 1,500 women with a history of cervical cancer and found 21 who developed vaginal or vulvar cancer or precancerous lesions from 3 to 12 years after treatment—usually hysterectomy. The researchers compared tissue samples from seven of the women with tissue taken from the new lower genital tract lesions.

In six of the cases, the cells of both samples contained identical signatures of human papillomavirus (HPV) infection. HPV causes cervical and genital lesions when the virus integrates into the genome of epithelial cells. But because it invades the genome at a random location, the researchers could say with certainty that cells showing HPV at the same location in the genome sprang from the same population of early cancer cells.

They conclude that the late-onset vaginal and vulvar lesions arose after a population of cells broke from the original cervical lesion early, migrated, and lay dormant. ◆

Funding Opportunities

Training for a New Interdisciplinary Research Workforce

RFA-RM-06-006

Letter of Intent Receipt Date: Feb. 14, 2006.

Application Receipt Date: Apr. 7, 2006.

This is a renewal of RFA-RM-04-015. This funding opportunity will use the R90 and T90 award mechanisms. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3316. Inquiries: Dr. Allison L. Chausmer—achausme@nida.nih.gov

Innovations in Biomedical Computational Science and Technology Initiative (SBIR)

PAR-06-088

Application Receipt Date: Feb. 26, 2006.

This is a renewal of PAR-03-119. This funding opportunity will use the R43 and R44 award mechanisms. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3314. Inquiries: Dr. Peter Lyster—lysterp@mail.nih.gov

Innovations in Biomedical Computational Science and Technology Initiative (SBIR)

PAR-06-089

Application Receipt Date: Feb. 26, 2006.

This is a renewal of PAR-03-119. This funding opportunity will use the R41 and R42 award mechanisms. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3315. Inquiries: Dr. Peter Lyster—lysterp@mail.nih.gov

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Notes

Hooven Named Deputy Director for Management

Thomas Hooven has been named NCI Deputy Director for Management, effective January 9, pending final approval by the Department of Health and Human Services (HHS). Mr. Hooven was previously the associate director for administration at the National Institute of Child Health and Human Development for 6 years and served in a leadership capacity in many trans-NIH activities. Mr. Hooven previously served in a variety of positions at NCI over a 7-year period, including budget analyst, administrative officer, and management analyst. Before returning to NIH in 1999, he served as deputy director of the Office of Program Management and Operations at the Environmental Protection Agency.

FY 2006 NCI Budget Update

On December 30, President Bush signed the appropriations bill for the Departments of Labor/HHS and Related Agencies for fiscal year 2006. The bill includes $28.6 billion for NIH and $4.842 billion for NCI. However, there is a 1 percent across-the-board reduction that reduces the NIH and NCI budget amounts by $286 million and $48 million, respectively. The revised amount for NCI is $4.793 billion, which is $32 million less than what NCI obligated last year.

In a message to NCI staff, NCI Deputy Director Dr. John Niederhuber noted that "Over the past few years, we have become accustomed to adjusting to budget constraints and the current year is no different. It remains critical that we continue to engage in careful planning, monitoring, and reporting of progress made towards NCI's challenge goal to eliminate the suffering and death due to cancer. NCI's Strategic Priorities are a clear signal of where we will be focusing our valuable resources in the year ahead and beyond."

TRWG Seeks Input

NCI's Translational Research Working Group (TRWG) is seeking input on key areas from a wide range of individuals and organizations. This public comment period will end on Friday, January 20. Anyone wishing to post a comment can do so at http://www.cancer.gov/trwg.

Nanotech Seminar Set for January 24

NCI's Nanotechnology Seminar Series will resume on January 24 at 3:00 p.m. in Balcony B of the Natcher Conference Center on the NIH campus. The featured speaker is Dr. Michael Hawkins, chief medical officer of American BioScience, Inc., developers of a nanoparticle albumin-bound delivery platform most recently applied with paclitaxel (Abraxane). The presentation will be webcast at http://videocast.nih.gov. ◆

NCI Listens and Learns

NCI would like to know:

What can NCI do to encourage those people who want cancer information to contact its free Cancer Information Service (CIS) at 1-800-4-CANCER or http://www.cancer.gov?

For people looking for credible cancer information that meets their needs, NCI's CIS is a unique resource. This free service has friendly, fully trained information specialists who can answer questions about cancer by telephone, TTY, instant messaging, and e-mail. They can also provide callers with printed and electronic NCI materials.

Go to http://ncilistens.cancer.gov to register and post your comments. ◆

CCR Grand Rounds

January 17: Dr. Tom Misteli, Principal Investigator, Laboratory of Receptor Biology and Gene Expression, Center for Cancer Research, NCI. "Beyond the Genome Sequence: Nuclear Architecture in Health and Disease"

January 24: Dr. Myles A. Brown, Chief, Division of Molecular and Cellular Oncology, Dana-Farber Cancer Institute. "Genome-Wide Analysis of Steroid Hormone Action"

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. ◆

(Funding Opportunities continued from page 6)

Research on Clinical Decision Making in Life-Threatening Illness

PA-06-101

Application Receipt Dates: Feb. 1, June 1, and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb.1, June 1, and Oct 1, 2008.

This is a renewal of PA-02-118. This funding opportunity will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3317.

Inquiries: Dr. Wendy Nelson—nelsonw@mail.nih.gov ◆

Community Update

HINTS Delivers Open-Access Data on Online Behavior

According to the Pew Internet and American Life Project, some 93 million Americans searched for health information online this year, up from 46 million in 2000. But for health communicators, the big numbers mean little without a deeper understanding of how consumers find and use health information.

Enter the Health Information National Trends Survey (HINTS), a biennial survey of Internet behavior launched by NCI in 2003.

"As part of our effort to improve the science of communication, we decided that we really needed to monitor the strategies people use to get cancer information," says Dr. Robert Croyle, director of NCI's Division of Cancer Control and Population Sciences.

From the beginning, Drs. Croyle and Brad Hesse, who leads HINTS, wanted to include as many health communicators in the project as possible. They solicited wide-ranging input before designing the survey and have made all of the HINTS data freely available online. When researchers download data, they register their research protocol. The site lists some 50 ongoing and completed projects and 6 publications based on the 2003 survey.

The latest publication on trust, reliance, and sources of health information, reported in the December 12/26 *Archives of Internal Medicine*, states that for many adults in the United States, the Internet is the source of first resort for cancer information. Some 64 percent of the nationally representative sample of 6,369 adults say they look for cancer information online, either for themselves or for someone else. Even though older adults search online less frequently than younger adults, 48 percent of those aged 65 and older report researching cancer topics online. And, says Dr. Croyle, "Almost no one goes to libraries anymore."

Yet, Internet information is often considered unreliable. Just 24 percent of respondents say they trust cancer information found on the Internet "a lot." Almost the same proportion say they do not trust such information "at all." Physicians were the most trusted sources, with 62 percent of respondents trusting them "a lot."

"People want to get their information from physicians," says Dr. Croyle, but limited contact means that they tend to turn to the Internet first. As a result, physicians are often confronted with patients waving Web printouts. "Patients want health decisions to be more collaborative, but physicians aren't reimbursed for the time they spend talking through all the printouts," says Dr. Croyle.

Other publications based on the 2003 survey will be forthcoming, says Dr. Croyle, who sees HINTS as a tool to standardize the collection and sharing of data. The HINTS survey itself was designed to complement other large Internet surveys, such as the Pew project. And, says Dr. Croyle, when researchers design local studies, "They can use our survey as a template to make their data most compatible with the national picture." ◆

Featured Meetings and Events

A calendar of scientific meetings and events sponsored by the National Institutes of Health (NIH) is available at http://calendar.nih.gov/cgi-bin/calendar. ◆

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.

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