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Eliminating the Suffering and Death Due to Cancer

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New Chemotherapy Regimen Extends Survival for Patients with Resectable Gastric Cancer

When it comes to chemotherapy for locally invasive gastric cancer, results from an international clinical trial published in the July 6 *New England Journal of Medicine* suggest that timing can make all the difference.

"Adjuvant chemotherapy has not become part of the standard of care in gastric cancer," explains Dr. John Macdonald in an editorial, because previous studies have not shown a clinical benefit for postoperative chemotherapy for this disease. But since fewer than 30 percent of patients with locally invasive gastric cancer can be cured with surgery alone, new treatment strategies are of urgent interest to researchers.

A previous large, phase III trial, the U.S. GI Intergroup Study led by the Southwest Oncology Group (INT 0116), demonstrated improved survival with a combination of postsurgical radiation therapy and chemotherapy consisting of fluorouracil and leucovorin, which has since become a standard treatment. The Medical Research Council Adjuvant Gastric Infusional Chemotherapy (MAGIC) trial has now shown that perioperative chemotherapy—chemotherapy

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Director's Update

A Shared Commitment to a Global Problem

The recent approval of a vaccine that protects against infection by four types of human papillomavirus (HPV), thus preventing the cause of approximately 70 percent of cervical cancer cases, provides an excellent reminder of how our research efforts in the United States stand to benefit millions of people around the world. Approximately 80 percent of cervical cancer cases occur in the developing world, so the availability of this vaccine, as well as other HPV vaccines in development, will have a major impact on international public health.

That reality was driven home repeatedly for me this past week at the International Union Against Cancer (UICC) meeting, the world's largest independent, nonprofit association of organizations dedicated to battling cancer, which includes everything from patient and survivor support and advocacy groups to large nongovernmental organizations engaged in a broad spectrum of activities in cancer screening, prevention, and treatment.

This year's meeting is being held back to back with another important international meeting, the World Conference on Tobacco OR Health. The two meetings, which will host a veritable who's who of international biomedical researchers, display

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given both before and after surgery—can also provide a significant survival benefit.

The investigators predicted that a perioperative chemotherapy regimen would have advantages over postoperative chemotherapy alone, including "increasing the likelihood of curative resection by downstaging the tumor, eliminating micrometastases, rapidly improving tumor-related symptoms, and determining whether the tumor is sensitive to chemotherapy."

The MAGIC trial enrolled patients with adenocarcinoma of the stomach, the lower third of the esophagus, and the esophagogastric junction; about 74 percent of the patients had tumors in the stomach. Participants were recruited from medical centers in Europe, South America, Asia, and New Zealand. Investigators randomly assigned patients to receive either surgery alone or surgery and perioperative chemotherapy with the drugs epirubicin, cisplatin, and fluorouracil (ECF).

Perioperative chemotherapy consisted of three cycles preoperatively and three cycles postoperatively. Epirubicin and cisplatin were given intravenously on the first day of each cycle, and fluorouracil was given daily for 21 days as a continuous intravenous infusion through a catheter attached to a portable infusion pump. The trial protocol allowed for dose modifications in the event of specific side effects.

Surgery was scheduled to take place within 6 weeks of assignment to the surgery-only group, or 3 to 6 weeks after completion of the preoperative chemotherapy cycles in the perioperative chemotherapy group. Patients were followed for a median of almost 50 months.

Only 42 percent of patients in the chemotherapy group completed all pre- and postoperative cycles according to protocol. However, the authors report that despite the low completion rate, "patients assigned to perioperative chemotherapy had a significant survival advantage over those who underwent surgery alone."

At surgery, tumors were significantly smaller in the chemotherapy group. Patients receiving perioperative chemotherapy had a significantly higher likelihood of both progression-free and overall survival. Five-year survival was 36 percent in the chemotherapy group compared with 23 percent in the surgery-only group.

Patients awaiting surgery for gastric cancer now have more than one treatment option, explains Dr. Margaret Mooney of NCI's Cancer Therapy Evaluation Program. "There is effective adjunct therapy for patients with resectable gastric cancer," she says. "The option that this trial tested is to receive chemotherapy with ECF before and after surgery. There is also an option to receive chemotherapy consisting of fluorouracil and leucovorin with radiation therapy after surgery. Both provide survival advantages over resection alone." ◆

By Sharon Reynolds

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the rapidly growing global burden presented by cancer, as well as the intense commitment of international health leaders to making rapid progress to overcome this disease.

This afternoon at the UICC conference, I had the honor of serving on a panel to discuss the future of cancer care. I spoke about research areas where we will see significant progress by the end of the decade: understanding the importance of the tumor microenvironment, the role of cancer stem cells in resistance to therapy, and vaccine therapy for prevention.

Advances in our understanding of the biology of these areas, coupled with our ability to genetically characterize patients and their tumors, will one day completely change how oncologists care for cancer patients. For example, although research into cancer stem cells is a relatively young field, they may offer a novel therapeutic target. There is a growing body of evidence from laboratory and animal-model studies to support the theory that these self-perpetuating cancer cells drive tumor development and growth, and may be the source of cancer's ability to return after apparently being decimated by ablative and cytotoxic therapies.

I was joined on the panel by Dr. Clem Bezold, the president and founder of the Institute for Alternative Futures, and Dr. Eduardo Cazap, the president of the Latin American and Caribbean Society of Medical Oncology, both of whom gave intriguing talks and offered some important perspectives.

Dr. Bezold predicted that over the next two decades, utilizing biomonitoring, cancer care in the United States will shift towards early detection, primary and secondary prevention, and a greater emphasis on healthy lifestyles.

And Dr. Cazap noted that, although developed countries are seeing some significant advances in cancer care, cancer rates in developing countries are rapidly increasing. Political commitments and prioritized interventions that are most appropriate for local conditions, he argued, are needed to improve worldwide cancer health disparities.
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Spotlight

New DNA Analyzer Reveals Rare Mutations in Tumors

A growing number of companies and academic centers have been developing the next generation of DNA sequencers—the machines that turn samples of DNA into readouts of A's, T's, C's, and G's.

Some of the efforts are starting to bear fruit, and a new study offers a glimpse of how powerful new DNA sequencers might benefit cancer patients and researchers.

The study found that a new sequencer developed by 454 Life Sciences in Branford, Conn., was better than conventional sequencers at detecting rare mutations associated with cancer in a sample of lung tumors.

"Tumors are really difficult to analyze because they have a lot of normal cells, and we are interested only in the cancer cells," says Dr. Michael Egholm of 454 Life Sciences.

Conventional sequencers, which employ a method pioneered by Dr. Frederick Sanger in the 1970s, take averages at each DNA location in a sample. As a result, rare mutations might be lost in the statistical noise and never show up.

454 sequencing appears to solve this problem. The method generates so many copies of each molecule that even a rare mutation can "stick out like a sore thumb" at the end of the day.

The company realized several years ago that the sequencer might benefit cancer patients by providing more accurate diagnoses of tumors. To test the machine, the company teamed up with Dr. Matthew Meyerson of the Dana-Farber Cancer Institute.

The study focused on the *epidermal growth factor receptor (EGFR)* gene, which is mutated in some lung cancers and is the target of several anticancer drugs.

Using the new sequencer, the researchers identified all of the known mutations in 22 tumor samples. But they also discovered several mutations overlooked by Sanger sequencers.

"We found the mutations we knew were there, and in the process discovered ones we did not know about," says Dr. Roman Thomas, a medical oncologist at Dana-Farber and the study's lead author.

Further experiments suggested that the newly discovered mutations were real and may have contributed to the cancers, the researchers report in the July *Nature Medicine*.

In one particular tumor, two *EGFR* mutations were found that were unknown when the patient was alive. The researchers suspect that one contributed to the disease while the other may have caused the patient's treatment to fail.

Dr. Thomas points out that reliable genetic information about tumors is critical if some patients are to receive the most appropriate treatment.

"You need a technology that allows you to provide a diagnosis for all patients regardless of the quality of tumor sample," he says. "The 454 method worked well in almost every imaginable type of specimen, including paraffin samples."

Dr. Egholm cautions that the study was small and that more research on the mutations is needed. "But the results are suggestive," he adds.

The technology could also be used to answer questions about cancer biology, including perhaps the role of *EGFR* mutations in lung cancer. Dr. Meyerson and others have reported that certain mutations can help predict the course of disease.

But not all studies have replicated the findings. One theory is that the negative studies failed to detect relevant mutations and more sensitive sequencing might lead to answers.

"We do not know what the answer is, but we believe that we have the technology to resolve the controversy by sequencing more deeply," says Dr. Egholm.

The 454 sequencer, which costs about $500,000, has been on the market since last year, and other high-throughput sequencing technologies are in development.

These could benefit efforts such as The Cancer Genome Atlas (TCGA) Pilot Project, which was launched recently by NCI and the National Human Genome Research Institute.

TCGA will use various technologies to identify aberrant genes for "re-sequencing." Beyond the pilot phase, the ultimate goal is to establish a catalogue of the major genomic changes in cancer. ◆

By Edward R. Winstead

Cancer Research Highlights

Varenicline Helps More Smokers Quit for Longer with Fewer Side Effects

Several articles published in the July 5 *Journal of the American Medical Association* discuss the safety, efficacy, and side effects of a smoking cessation drug, varenicline (Chantix), which was approved by the FDA in May of this year. The related studies were supported by the drug's manufacturer, Pfizer, and conducted by the Varenicline Phase 3 Study Group.

Dr. David Gonzales and colleagues tested the efficacy of 1 mg of varenicline given twice a day for 12 weeks against 150 mg of the sustained-release antidepressant bupropion—also a smoking cessation aid—as well as a placebo. Of the 1,025 smokers who participated, 44 percent who received varenicline were able to quit smoking between weeks 9 and 12, while 29.5 percent quit with bupropion and 17.7 percent quit with placebo. After 52 weeks, abstinence dropped to 21.9 percent for varenicline, 16.1 percent for bupropion, and 8.4 percent for placebo. The test group reported nausea and insomnia, but generally had fewer side effects than those who took bupropion. These results were mirrored by Dr. Douglas E. Jorenby and colleagues, who tested a similar protocol in 1,027 smokers.

A third study, by Dr. Serena Tonstad and colleagues, showed that an additional 12 weeks of treatment with varenicline significantly improved continuous abstinence up to 52 weeks after the study began: 43.6 percent remained smoke free between weeks 13 and 52, compared with 36.9 percent who received a placebo throughout the same period.

In an editorial, Drs. Robert C. Klesges, Karen C. Johnson, and Grant Somes of the University of Tennessee Health Science Center and St. Jude Children's Research Hospital acknowledged that varenicline is effective for smoking cessation, but warned that high dropout rates in the nonvarenicline study groups may have skewed results in favor of the drug. Noting that the majority of participants in the three related studies were unable to quit smoking, even with pharmacologic aids, they wrote, "Patients currently cannot and probably never will simply be able to 'take a pill' that will make them stop smoking. Smokers must want to stop smoking and must be willing to work hard to achieve [that goal]."

Survivors of Childhood Cancer Risk Premature Menopause

A woman who survives cancer as a child has a greatly increased risk of experiencing menopause before she reaches age 40. If this occurs, her risk for osteoporosis, cardiac disease, and psychosexual dysfunction increases.

Researchers working with the Childhood Cancer Survivors Study (CCSS), a retrospective longitudinal cohort study of more than 20,000 childhood cancer survivors diagnosed between 1970 and 1986, found that survivors had nonsurgical premature menopause at a rate 13 times greater than the control group. The affected women were older at time of assessment, more likely to have had Hodgkin lymphoma, less likely to have had leukemia, and had greater ovarian exposure to radiation and/or alkylating chemotherapy agents.

Dr. Charles A. Sklar of Memorial Sloan-Kettering Cancer Center and colleagues identified 2,819 CCSS subjects who were menstruating more than 5 years after their cancer diagnosis; controls were selected from among survivors' siblings, not always from the same families—in this case 1,065 age-matched women with normal menstrual patterns.

In an accompanying editorial in the July 5 *Journal of the National Cancer Institute (JNCI)*, Drs. Wendy Y. Chen and JoAnn E. Manson of Harvard Medical School wrote, "the health consequences of premature menopause are still poorly understood," noting that some of them are controversial, and not all are negative: such women have a lower risk of breast and ovarian cancer. Nonetheless, this study helps clinicians identify women for whom counseling, prevention, screening, and treatment strategies should be considered.

Biomarker IMP3 Predicts Kidney Cancer Metastasis and Survival

Researchers found that expression of the IMP3 protein by renal carcinoma tumors indicates a high risk of metastasis, which is the main cause of death in this most common type of kidney cancer, according to results published in the July issue of *Lancet Oncology*.

Based on a study of 501 primary and metastatic renal-cell tumors, IMP3 expression was greatly increased not

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only in metastatic tumors but also in a subset of primary tumors that were likely to subsequently develop metastases. "Patients with IMP3-positive primary tumors were almost six times more likely to subsequently develop metastasis than were those with IMP3-negative tumors," explain the investigators, led by Dr. Zhong Jiang of the University of Massachusetts Medical Center.

This high predictive value makes IMP3 potentially useful as "an independent prognostic marker that can be used at initial diagnosis of renal-cell carcinoma to identify patients who have a high potential to develop metastasis and who might benefit from early systemic treatment," the researchers suggest.

The metastatic potential of localized kidney tumors is difficult to predict, but about 20 percent of patients with localized tumors develop metastasis, and the median survival for those with metastatic disease is roughly 13 months. "Therefore, biomarkers that can accurately distinguish localized tumors with a high probability of metastasis from those that will remain indolent are needed," the scientists add.

IMP3 immunohistochemical staining "is a simple, inexpensive, and reliable assay" and "can be used at initial diagnosis—the best time for considering early systemic treatment," they recommend.

Chornobyl Nuclear Accident's Impact on Thyroid Cancer Risks

Little has been known about the carcinogenic effects of radioactive iodines on children. The first cohort study on the impact of the 1986 Chornobyl Reactor accident shows that the risk of thyroid cancer in children and young adults in Ukraine is strongly related to the levels of each individual's exposure to radioactive iodine, according to results reported in the July 5 *JNCI*.

Scientists from Ukraine, NCI's Division of Cancer Epidemiology and Genetics (DCEG), Columbia University, and other institutions analyzed data obtained from screening the thyroids of more than 13,000 children who were less than 18 years old at the time of the accident, lived in the most heavily contaminated areas of Ukraine, and had their radiation exposure to the thyroid measured by instrumentation. The analyses reported here are based on the first 2-year cycle (1998–2000) of screening for thyroid nodules by palpation and ultrasound.

Individual thyroid doses were estimated at the time of the accident based on the direct thyroid measurements and questionnaires reporting residence location and milk and food consumption, adjusted for ground contamination.

Forty-five pathologically confirmed thyroid cancers, mostly of the papillary type, were detected among 13,127 cohort members. "Exposure to radioactive iodine [^{131}I] was strongly associated with an increased risk of thyroid cancer among those exposed as children and adolescents," the researchers report. "Thyroid cancer showed a strong, monotonic, and approximately linear relationship with individual thyroid dose estimates, yielding an estimated excess relative risk of more than five-fold per Gy." The researchers estimated that, in the absence of Chornobyl radiation, 11.2 thyroid cancer cases would have been expected compared with the 45 observed; i.e., an increase of 75 percent over the expected value.

Younger age at exposure was associated with an increased risk of radiation-related thyroid cancer, although this interaction effect was not statistically significant. Iodine status, as measured by current urinary iodine excretion or diffuse goiter, a marker of past deficiency, did not influence risk, although it has been considered a potential modifying factor with respect to thyroid cancer.

Data from subsequent screening cycles are being analyzed to examine the risk related to newly arising versus prevalent thyroid cancers. ◆

Missed a Highlight?

The *NCI Cancer Bulletin* Archive allows you to search every issue of this online publication since January 2004. That's over 100 weeks' worth of articles on a variety of cancer research topics and updates. ◆

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International meetings such as the UICC are important, not just because they offer excellent educational opportunities, but because they serve to strengthen the global bonds of the cancer research community—something to which NCI is deeply committed.

It's clear that the worldwide public health threat posed by cancer is formidable. Fortunately, in countries around the globe, there is no shortage of energy, ideas, and talent among those committed to tackling this challenge. ◆

Dr. John E. Niederhuber
Acting Director
National Cancer Institute

Funding Opportunities

Following is a newly released NCI research funding opportunity:

Research on Research Integrity

Announcement Number: RFA-NR-07-001

Letter of Intent Receipt Date: August 14, 2006.

Application Receipt Date: September 14, 2006.

This funding opportunity will use the R01 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3500. Inquiries: Dr. Alexis D. Bakos—bakosa@mail.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.* ◆

Featured Meetings and Events

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

Featured Clinical Trial

Studying Dyskeratosis Congenita

Name of the Study

Genetic and Etiology Study of Cancer Susceptibility in Patients and their Families with Inherited Disorders of the Bone Marrow (NCI-02-C-0052). See the protocol summary at http://cancer.gov/clinicaltrials/NCI-02-C-0052.

Principal Investigators

Dr. Sharon A. Savage and Dr. Blanche Alter, NCI Division of Cancer Epidemiology and Genetics

Dr. Sharon A. Savage

Why This Study Is Important

Dyskeratosis congenita (DC) is a rare disorder characterized by abnormal skin pigmentation around the neck and chest, abnormal fingernails and toenails, and oral leukoplakia (white spots on the mucous membranes of the mouth). Persons with DC tend to have a high risk of developing bone marrow failure, leukemia, or carcinomas, especially of the head and neck. DC belongs to a family of disorders called inherited bone marrow failure syndromes (IBMFS).

Many patients with DC have mutations in genes that are important in the biology of telomeres, which are complex structures that stabilize the ends of chromosomes. These genes are also important in cancer susceptibility. NCI is undertaking an intensive assessment of families with DC, within the setting of its study of IBMFS, to learn more about how genes associated with telomeres contribute to cancer development and to identify new susceptibility genes for DC.

Individuals enrolled in this study may be seen and evaluated at the NIH Clinical Center (costs covered by NIH) or they may participate by providing information from their home communities. All affected individuals and their family members will complete family history and personal medical history questionnaires. They may also be asked to provide a sample of blood and/or buccal (mouth) cells for genetic testing.

Who Can Join This Study

Researchers seek to enroll patients and family members in families with a suspected or proven diagnosis of DC. See the eligibility criteria for the IBMFS study at http://cancer.gov/clinicaltrials/NCI-02-C-0052.

Study Site and Contact Information

This study is taking place at the NIH Clinical Center in Bethesda, Md., but eligible families do not need to come to NIH in order to participate. For more information, visit the study's Web site at www.marrowfailure.cancer.gov or call the IBMFS study referral nurse at 1-800-518-8474. The toll-free call is confidential. ◆

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

Notes

Malone Among Finalists for Career Achievement Medal

Dr. Winfred Malone, of the Chemopreventive Agent Development Research Group in NCI's Division of Cancer Prevention, is one of four finalists for a 2006 Career Achievement Medal. This award honors a federal employee who demonstrates a lifetime commitment to public service. It is part of the Service Achievement Medal program co-founded in 2002 by the Atlantic Media Company and the nonprofit Partnership for Public Service. The program recognizes the dedication and extraordinary civil service work of federal workers across America.

Dr. Malone earned a nomination from his pioneering work in the field of cancer prevention research. In the early 1980s, he created a program to evaluate agents with the potential to prevent, reverse, or delay the process of carcinogenesis. He also contributed to the establishment of the Environmental Protection Agency and its Science Advisory Board.

This year's award recipients will be announced on September 27 in Washington, D.C. Additional information is available at http://www2.govexec.com/SAM/.

Monograph on Uses of Dosimetry in Radiation Epidemiology Now Available

The Radiation Epidemiology Branch (REB) of NCI's DCEG has produced a monograph, *Uses of Dosimetry in Radiation Epidemiology*, which was recently published as a special supplement to the journal, *Radiation Research*. It describes the application of radiation dosimetry methods to epidemiological studies in order to fill a significant void in the technical literature. The collection of 12 papers authored by 60 dosimetry and epidemiology experts from the United States and several other countries describes a wide range of radiation dosimetry methods.

All of the studies described have been associated with the REB research program. Featured are papers on dosimetry methods for studies of populations exposed to medical radiation, reconstruction of doses from radioactive fallout from nuclear testing, dosimetry for exposures from the Chornobyl accident, occupational radiation exposures including exposure to radon, A-bomb survivor dosimetry, biodosimetry, and statistical methods to evaluate and account for uncertainty in dose estimates. The monograph is available online at http://www.rrjournal.org/perlserv/?request=get-archive.

FDA Launches New Monitoring Initiative

On June 26, the Food and Drug Administration (FDA) launched a new initiative to modernize the regulation of clinical trials and bioresearch monitoring. The Human Subject Protection and Bioresearch Monitoring (HSP/BIMO) Initiative focuses on the protection of patients and the integrity of data in clinical trials. The new program addresses the operational changes in clinical trial studies such as expansion of sites, electronic record keeping, and increased participation of vulnerable subjects. HSP/BIMO is part of a Department of Health and Human Services initiative to develop effective therapies and facilitate individualized care management for patients.

FDA Deputy Commissioner for Operations Dr. Janet Woodcock will chair the HSP/BIMO steering committee comprising representatives from the Center for Biologics Evaluation and Research; Center for Food, Safety, and Nutrition; Center for Veterinary Medicine; Office of Regulatory Affairs; and the Office of the Commissioner. HSP/BIMO will collect additional information from industry, academic, and government organizations to improve and expand the program. Additional information is available at http://www.fda.gov/bbs/topics/NEWS/2006/NEW01396.html. ◆

CCR Grand Rounds

July 18: Dr. Giorgio Trinchieri, NIH Fogarty Scholar, NIH. "Toll-Like Receptors and Cancer: Role in Inflammation, Proliferation, and Apoptosis."

July 25: Dr. Stuart Schreiber, Investigator, Howard Hughes Medical Institute; Morris Loeb Professor and Chair, Chemistry and Chemical Biology, Harvard Institute of Chemistry and Cell Biology; Director of Chemical Biology, Broad Institute of Harvard and MIT. "NCI's Initiative for Chemical Genetics."

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.

Note: CCR Grand Rounds will not be held during the month of August. They will resume on Tuesday, September 12. ◆

Bridging the Gap: Turning What We Know About Cancer into What We Do About Cancer

The growing gap between what is and what could be in cancer control and care is the most important issue facing the cancer community today and, while the hopeful side of cancer has never been more hopeful, we do have our work cut out for us.

So much of what we *know* about cancer is not being adequately translated into what we *do*. If current trends persist, by 2020, the number of new cancer cases worldwide will grow to 15 million, and the number of deaths will increase to more than 10 million. An estimated 70 percent of these deaths will occur in developing countries, which are least prepared to address their growing cancer burdens.

These tens of millions of people continue to experience unnecessary cancer suffering and death, not because we don't know how to prevent, detect, or treat it, but because we refuse to ensure that all people worldwide have equal access to lifesaving cancer advances.

That's why the American Cancer Society (ACS) is proud to work with critical global partners like UICC and NCI to do something that hasn't been done before—to unite the world's cancer community to advance the fight against this disease. We will bring together two world conferences that have rarely been held in the same year, and never in the same country: the World Cancer Congress and the 13th World Conference on Tobacco OR Health (www.2006conferences.org).

These conferences will convene 5,500 participants from more than 130 countries: oncologists, public health leaders, tobacco control advocates, cancer association leaders, health ministries, and journalists. The meetings will focus energy and attention not just on talking about cancer, but also on identifying and sharing practical solutions that can make a lifesaving difference in communities around the world.

Why is it so critical to unite the global cancer and tobacco control communities? As the only consumer product proven to kill more than half of its regular users, tobacco killed 100 million people in the last century. Left unchecked, it will kill more than one billion people in this century.

Fortunately, many nations are taking a stand against tobacco by supporting the world's first global public health treaty—the World Health Organization Framework Convention on Tobacco Control (FCTC). As of July 1, 2006, 131 countries have ratified the treaty, making it the most rapidly embraced treaty in United Nations history, but the United States is lagging behind. U.S. ratification and implementation of the treaty is essential to turning the tide of the global tobacco pandemic.

Another area of untapped potential is cervical cancer. In nations where early detection is standard practice, screening and follow-up treatment have reduced cervical cancer deaths by 80 percent. Despite these advances in prevention, in many parts of the world, cervical cancer remains a leading cause of cancer death in women.

FDA approval of the HPV vaccine is one of the most important advances in women's health in recent decades. Successful global implementation of an HPV vaccine offers an unprecedented opportunity to prevent millions of deaths and dramatically reduce the world's cancer burden.

The FCTC and the HPV vaccine are two of many critical topics on which the brightest lights of the global cancer and tobacco control communities will converge in Washington, D.C., on July 8–15. ACS is grateful to NCI for its partnership in making this unique opportunity a reality. NCI's partnership demonstrates a deep commitment to capacity-building and to collaborating with public health professionals worldwide to advance and implement these and other lifesaving cancer solutions. Together, through this unique forum, we will make significant progress toward transforming what is into what could be. ◆

Dr. John R. Seffrin
Chief Executive Officer
American Cancer Society