Surveillance Research Program Bulletin

National Cancer Institute

Web sites: *http://surveillance.cancer.gov;*
http://seer.cancer.gov

The Surveillance Research Program (SRP) directs the collection and analysis of data to answer key questions about cancer incidence, morbidity, mortality, and cancer-related health status in diverse regions and populations in the United States.

## Contents

Spring 2011

Highlights

SRP Study Projects Cancer Costs To Reach at Least $158 Billion in 2020

SRP's Angela Mariotto, Ph.D., and colleagues conducted an analysis to project survivorship and costs of cancer care based on changes in the U.S. population and cancer trends. Based on the growth and aging of the U.S. population, the researchers projected that medical expenditures for cancer in the year 2020 would reach at least $158 billion (in 2010 dollars)—an increase of 27 percent over 2010. The study was published in the Journal of the National Cancer Institute (JNCI).

The investigators used the most recent data available from the National Cancer Institute's (NCI) Surveillance, Epidemiology, and End Results (SEER) Program to estimate cancer prevalence for 2010 and 2020. They obtained U.S. population estimates from the U.S. Census Bureau's National Interim Projections for 2006 to 2020, and used the SEER-Medicare database to develop medical cost estimates.

In 2010, medical costs associated with cancer were projected to reach $124.6 billion, with the highest costs associated with breast cancer ($16.5 billion),

http://costprojections.cancer.gov
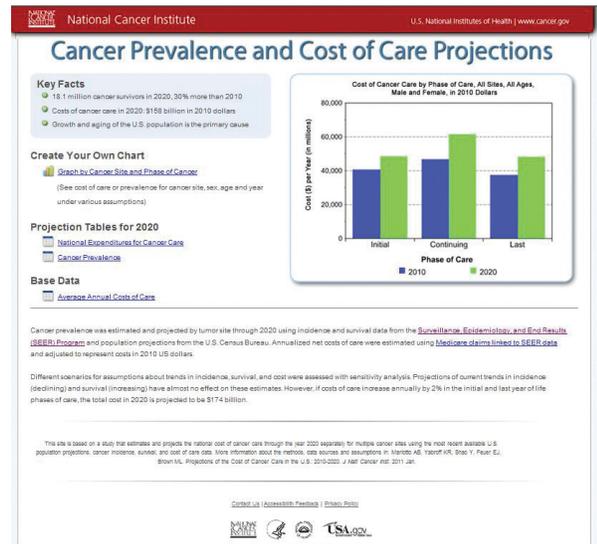
followed by colorectal cancer ($14 billion), lymphoma ($12 billion), lung cancer ($12 billion), and prostate cancer ($12 billion). If newly developed tools for cancer diagnosis, treatment, and follow-up continue to be more expensive, medical expenditures for cancer could reach as high as $207 billion.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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These new projections are higher than previously published estimates of direct cancer expenditures, largely because the researchers used the most recent data available—including Medicare claims data through 2006, which include payments for newer, more expensive, targeted therapies that attack specific cancer cells and often have fewer side effects than other types of cancer treatments. In addition, by analyzing costs according to phase of care, which revealed the higher costs of care associated with the first year of treatment and last year of life (for those who die from their disease), the researchers were able to generate more precise estimates of the cost of care.

The study has received national coverage through various media outlets and was highlighted in a January NCI press release. For more information on the study, including the complete NCI press release and access to an NCI news YouTube video in which Drs. Angela Mariotto and Robin Yabroff discuss the study, go to *http://www.cancer.gov/newscenter/pressreleases/2011/CostCancer2020*.

For more information about these cost projections, visit the newly launched Cancer Prevalence Cost of Care Projections site at *http://costprojections.cancer.gov*.

Citation: Mariotto AB, Yabroff KR, Shao Y, Feuer EJ, Brown ML. Projections of the cost of cancer care in the United States: 2010-2020. *J Natl Cancer Inst*. 2011 Jan 19;103(2):117-28.

Employment Opportunities

Chief, Surveillance Systems Branch

Applications are being accepted for the position of Chief, Surveillance Systems Branch (SSB), to provide leadership for the program. SSB manages the Surveillance, Epidemiology, and End Results (SEER) Program (*http://seer.cancer.gov*), an authoritative, population-based system of cancer data collection and reporting.

SSB conducts research and developmental activities related to the surveillance of cancer patterns in the United States to monitor progress against cancer. In addition to conducting analyses and interpreting data, SSB actively consults with other governmental, private, and public organizations; prepares regular reports, geographical summaries, and journal articles; and responds to requests for information on national cancer statistics. SSB staff includes a Quality Improvement team that conducts studies to evaluate the quality and completeness of registry data and promotes adherence to national and international standards.

The successful candidate must have experience in biostatistics, management of multicenter research studies, and organization of collaborative biomedical research. The position is subject to a background investigation, and U.S. citizenship is required. Additional qualifications include:

- Achievements within professional or other collaborative organizations through participation in and leadership of goal-oriented groups and committees.

- Experience in epidemiology, operations research, and cancer research is not mandatory but desired.

- Analytic skills are required, as demonstrated by published articles in peer-reviewed journals.

- Knowledge of computer systems and software development is desirable, but not required.

Contact: Judith Swan, Surveillance Research Program, *js60y@nih.gov* or 301-435-4958

For more information, visit *http://surveillance.cancer.gov/jobs/ssbchief.html*.

Fellowship and Sabbatical Positions in Cancer Surveillance Research

Cancer Research Training Award (CRTA) and Intergovernmental Personnel Act (IPA)

SRP is accepting applications for CRTA and IPA positions. Because of the cyclical nature of hiring for these CRTA and IPA positions, recruitment is open on a continual basis.

CTRA Positions

CRTA positions range from summer-only to 1 year and involve the following:

- Working on supervised research and assisting with general scientific and administrative support.

- Preparing and disseminating products about cancer research to various audiences through multiple communication and dissemination approaches.

- Developing and maintaining tracking systems in multiple areas and demonstrating database management and analytic skills.

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- Working knowledge of statistical and/or GIS software as well as knowledge of Microsoft Office Suite (MS Word, Excel, PowerPoint, and Access).

- Displaying strong social skills and initiative as this is a collaborative, team-based effort.

IPA Positions

IPA positions are for experienced professionals from academia to spend all or a part of their sabbaticals in SRP and involve the following:

- Collaborating on new or ongoing research projects involving statistical analyses, development of statistical and geographic methods, geovisualization, geographic information systems, or other specialty areas of expertise.

- Working with scientists and public health professionals representing a variety of research disciplines, including cancer control, epidemiology, and surveillance.

- Analyzing, planning, and implementing program-specific research in collaboration with NCI scientists and/or grantees.

- Opportunities to attend NCI-sponsored workshops and scientific presentations.

- Support is available for the publication and presentation of research findings through various professional outlets.

Contact: Eric J. (Rocky) Feuer, Ph.D., Chief, Statistical Methodology and Applications Branch, *rf41u@nih.gov*

For more information on IPA assignments, visit *http://hr.od.nih.gov/hrguidance/employment/IPA/ipa-orgs.htm* and *http://www.opm.gov/programs/ipa/assignF.asp*.

Training and Meetings

2011 Advanced Topics for Registry Professionals

The 2011 Advanced Topics for Registry Professionals seminar will take place on Thursday, May 19, from 8:00 a.m. to 5:00 p.m., through Friday, May 20, from 8:00 a.m. until noon at Disney's Coronado Springs Resort, Orlando/Lake Buena Vista, FL.

The seminar is a joint endeavor between NCI's SEER Program, the Centers for Disease Control and Prevention (CDC), Commission on Cancer (CoC), and Collaborative Stage Data Collection System (CS), and will focus on expanding personal knowledge and building registrar

confidence and expertise in the area of CSv2 coding. The seminar will strengthen registrars' understanding of CSv2 data elements, including Site Specific Factors (SSFs) for breast, prostate, colon, lung, and melanoma; abstracting issues; and information availability. Additional topics include updates on major changes for v02.03, CAnswer Forum, and a preview of the upcoming 2011 CS Reliability Study. Didactic presentations, handout materials, and an opportunity to ask questions and interact with subject matter experts with particular backgrounds in CSv2 will be included.

Visit the SEER Web site, *http://seer.cancer.gov*, for alerts and registration announcements. SEER will not be conducting a postconference training event this year (2011).

SRP News

SRP Staff Awarded for Distinguished Performance

(l. to r.): Mandi Yu, Nadia Howlader, Lawrence Hwang, Benmei Liu, Lois Dickie

SRP staff members were recognized for their outstanding contributions to NCI's Division of Cancer Control and Population Sciences (DCCPS) at the Kelly Government Solutions Distinguished Performance Award ceremony held on February 8, 2011. The following SRP staff members received awards at the event:

Lois Dickie, CTR, a Public Health Analyst in SRP's Surveillance Systems Branch (SSB), was honored for her leadership on the Multiple Primary and Histology (MP/H) rule revisions. She is co-chair of this project and oversees planning, tracking, and communication with Specialty Matter Experts, physicians, and committee members. Ms. Dickie also assumed the lead role for the 2011 SEER workshop at the annual National Cancer Registrars Association (NCRA) conference. She identified the need to revitalize the SEER*Rx process several years ago and is coordinating activities to improve this process.

Lawrence Hwang, M.P.H., a Scientific Communications Editor in SRP's Office of the Associate Director (OAD), was honored for his role in revising the content of the branch descriptions on the SRP Web site. He identified topics and initiatives and interviewed the branch chiefs to determine content to be included. In addition, Mr. Hwang produced a variety of print materials about the SRP reorganization.

Nadia Howlader, M.S., a Mathematical Statistician in SRP's Data Analysis and Interpretation Branch (DAIB), received a distinguished performance award for her work on estimating cancer survival based on cause-of-death information. Ms. Howlader was the lead author of a JNCI article that described recoding of cause-of-death information to facilitate estimating cause-specific survival rates

for subpopulations, including racial/ethnic minorities. The article also discussed the limitations and benefits of various methodological approaches. The results of Ms. Howlader's work are included in the SEER*STAT software, which is available to researchers worldwide. She also developed content for a Web site to assist users in analyzing cause-specific survival rates data. This work represents a major contribution to the analysis of SEER data on survival.

Benmei Liu, Ph.D., a Mathematical Statistician in SRP's Statistical Methodology and Applications Branch (SMAB), was honored for her extraordinary efforts to disseminate state-of-the-art small-area estimates to cancer control planners in an understandable and usable format.

Mandi Yu, Ph.D., a DAIB Mathematical Statistician, received an award for exemplary performance in assessing the risk of individual disclosure in SEER registry data. This is an important area of concern because information is becoming available at the local level and in other databases, creating an increased risk of revealing personal information. Dr. Yu's work has enhanced the use of cancer registry data in public health research.

SRP Staff Attend Workshops in Italy

Angela Mariotto, Ph.D., Acting Chief of SRP's Data Modeling Branch (DMB), was among NCI staff who attended the Combining Epidemiology and Economics for Measurement of Cancer Costs workshops from September 20–24, 2010, in Frascati, Italy. The workshops were hosted by NCI, the University of Roma Tor Vergata, and the Institute of Research on Population and Social Policies. Fifty statisticians, epidemiologists, and health economists from nine countries were in attendance.

The primary goals of the workshops were to: (1) compare and discuss different methodologies developed in country-specific contexts in terms of data availability, prevention and health care policies, and health care systems; and (2) improve dialogue between fields of research and between countries, with the common aim of estimating the current and future burden and cost of cancer.

The workshops included a Cancer Survival Workshop and a Cost of Cancer Care Workshop. The Cancer Survival Workshop provided a forum to discuss the most innovative methods used to estimate and communicate survival from population-based cancer registry data. NCI presentations included: "Estimating Other-Cause Survival by Comorbidity and Health-Adjusted Age," by **Angela**

Mariotto, Ph.D.; "Cancer Survival Query Systems (CSQS): A Tool To Estimate Individual Prognosis," by **Eric J. (Rocky) Feuer, Ph.D.**, Chief of SRP's SMAB; "Cause-Specific Survival," by **Nadia Howlader, M.S.**; and "Using Left Truncation Models To Estimate Life Tables for Cancer Patients," by **Hyunsoon Cho, Ph.D.**, a DMB Mathematical Statistician. The Cost of Cancer Care Workshop provided a forum to compare differences in data collection and methods for estimating the costs of cancer care. NCI presentations included: "Prevalence By Time Since Diagnosis"; "Complete Prevalence and Phases of Care"; and "Recurrences, Extrapolation of Prevalence

Into the Future," by **Angela Mariotto, Ph.D.**; and "Projections of Cancer Incidence and Survival and Corresponding Costs," by Robin Yabroff, Ph.D., an Epidemiologist in NCI's Applied Research Program.

The workshops provided the opportunity for NCI to foster new collaborations and examine current approaches to cancer-cost determination. By attending the workshops, NCI staff hoped to answer questions about the feasibility of developing a standardized evaluation method and to evaluate potential advantages, risks, and challenges in developing standardized methods and estimates.

Other SRP Staff News

Transitions

Dave Stinchcomb

David Stinchcomb, M.A., M.S., began the New Year by transitioning to Westat. "Dave Stinchcomb has served admirably as Chief of the SSB, and we will miss him greatly," stated Brenda Edwards, Ph.D., SRP Associate Director.

Mr. Stinchcomb was named Chief of SSB in 2008. In this position, his responsibilities included serving as Director of the SEER Program, as Contracting Officer Technical Representative (COTR) for Information Management Services, Inc. (IMS), and as SEER Quality Control Team Leader, in addition to managing SEER's research initiatives. He also coordinated data submission and reporting, and provided guidance on SEER*DMS, other electronic data systems, and State Cancer Profiles.

Mr. Stinchcomb received a master's degree in computer science and a second master's degree in geography, with an emphasis on medical and population geography. Before serving as Chief of SSB, he provided extensive leadership for SRP cancer surveillance projects. In particular, he served as the scientific coordinator and technical lead for the nationally recognized State Cancer Profiles interactive Web site; worked as the senior surveillance expert on geocoding, technology, and information systems; and served as a DCCPS expert on issues involving geography,

population estimates, and socioeconomic data for SEER and other scientific databases.

Shunpu Zhang, Ph.D., completed his sabbatical through the IPA mechanism as an SMAB Mathematical statistician in January 2011. "I had a great year at NCI. It has been my great pleasure to get to know all of you and my great honor to have the opportunity to work with you. I really appreciate all of the help you have given me, especially the help and guidance from Dr. Eric (Rocky) Feuer," stated Dr. Zhang.
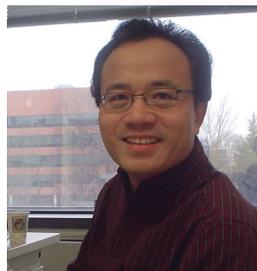
Shunpu Zhang

Dr. Zhang joined SRP in January 2010, providing the program with his expertise in bioinformatics and statistical issues in the analysis of microarrays, especially issues relating to the SEER Residual Tissue Repository. He also worked with other SRP statisticians to develop statistical research opportunities in genetic epidemiology and methods for the analysis and presentation of national cancer statistics.

Dr. Zhang received his Ph.D. in statistics from the University of Alberta. Since 1997, he has been an assistant and associate professor of statistics at the University of Alaska-Fairbanks, and an associate professor and professor of statistics at the University of Nebraska-Lincoln. Dr. Zhang has returned to Lincoln, NE, where he is a professor of statistics at the University of Nebraska-Lincoln. He will teach courses this winter semester in probability measures and quantile regression.

SEER News

2010 SEER Registry Managers and PIs Meeting

The 2010 SEER Program Managers Meeting was held on November 17, 2010, followed by the Principal Investigators (PI) Meeting on November 18–19. The meetings were held at the Natcher Conference Center on NIH's Main Campus in Bethesda, MD. Individuals from NCI's DCCPS and SEER cancer registries were invited to discuss issues in cancer surveillance.

The 4 days of meetings included presentations by SRP and SEER registry staff, special interest group meetings, and discussions of innovative registry activities and current research. At the SEER Program Managers Meeting, SRP staff addressed topics including SEER data quality, new MP/H rules, and results of and future plans for the 2010 Implementation studies. Registries also had the opportunity to discuss changes and solutions they had experienced in 2010. At the SEER PI meeting, SRP and SEER registry staff, along with guest speakers, spoke on capturing treatment, comorbidity, and recurrence data; data collection; cost containment; and communicating cancer statistics. Robert (Bob) Croyle, Ph.D., DCCPS Director, concluded the meetings with a discussion of NCI changes, including the addition of the Institute's new director, Harold Varmus, M.D.

New U.S. Population Data Released on SEER Web Site

U.S. county population estimates for 1969–2009, currently used in the SEER*Stat software to calculate cancer incidence and mortality rates, are available for download. The population estimates represent a modification of the Vintage 2009 annual time series of July 1 county population estimates by age, sex, race, and Hispanic origin produced by the U.S. Census Bureau's Population Estimates Program (*http://www.census.gov/popest/counties/asrh*) in collaboration with the National Center for Health Statistics, and with support from NCI through an interagency agreement. NCI modifications to the Census Bureau estimates are documented in Population Estimates Used in NCI's SEER*Stat (*http://seer.cancer.gov/popdata/methods.html*) Software and are summarized below.

Some notes about the data release:

- Revisions made by the Census Bureau to its population estimation methodology in Vintage 2009 had a significant impact on older age populations. These changes can have an impact on previously calculated rates, particularly at the state and local level and for older age groups. SEER has provided examples of the impact on state-level death rates at *http://seer.cancer.gov/popdata/impact_rates_2009.html*.

- This new release is the final set of population estimates extrapolated from the 2000 Census. As we move further from the 2000 Census, the estimates are more prone to error. Caution should be used in publishing disease rates calculated for recent years, particularly for smaller geographic areas and population subgroups. To provide an indication of how much error there might be in the population estimates for each state, SEER compared the two latest releases with the state-level totals for each state from the 2010 Census. These graphs are available at *http://seer.cancer.gov/popdata/decade_issues.html*.

- The release includes populations for both 2008 and 2009.

The latest U.S. county population estimates are available on the SEER Web site and in SEER*Stat. For details, see *http://seer.cancer.gov/popdata*.

Scarlett Gomez Honored as AJPH Author of the Year

Scarlett Gomez

Scarlett Gomez, Ph.D., Greater Bay Area Cancer Registry, has been honored as the American Journal of Public Health (AJPH) Author of the Year for 2010. The honor was given in recognition for the paper she and colleagues wrote, "Disparities in Breast Cancer Survival Among Asian Women by Ethnicity and Immigrant Status: A Population-Based Study." (*Am J Public Health*. 2010 May;100(5):861-9.)

"Cancer is one of the few diseases of concern in public health for which we are able to disaggregate the data to investigate patterns of incidence and outcomes for specific Asian populations, thanks in large part to the high-quality data on race/ethnicity collected through our SEER cancer registries, which are supported by NCI," she stated. Dr. Gomez's acceptance article was featured in the Editor's Choice section of the January 2011 AJPH issue (*Am J Public Health*. 2011 Jan:101(1):e4-e5).

SEER Registry Staff Profile

Janet Kelly, SEER Alaska Native Tumor Registry

Janet Kelly

Janet Kelly, M.S., M.P.H., is the PI for the SEER Alaska Native Tumor Registry. As PI, Ms. Kelly is responsible for overseeing cancer surveillance for Alaska's Native population and reporting cases annually to the SEER Program. In addition Ms. Kelly serves as the Cancer Surveillance Director of the Alaska Native Tribal Health Consortium in Anchorage, AK. In this role, she provides cancer statistics on Alaska's Native population to providers, tribal leaders, and communities.

Recently, the Alaska Native Tumor Registry completed research on "*Helicobacter pylori* Infection and Markers of Gastric Cancer Risk in Alaska Native Persons," in collaboration with James W. Keck and colleagues from the Arctic Investigations Program, CDC. The registry also completed a paper on the "HPV Genotypes Detected in Cervical Cancer Among Alaska Native Women, 1980–2007," in collaboration with Eileen F. Dunne, M.D., Division of STD Prevention, CDC; Daisy Lee and colleagues, of the Division of Viral and Rickettsial Diseases, CDC; Thomas Hennessy, M.D., Arctic Investigations Program, CDC; and James Tiesinga, M.D., Alaska Native Medical Center Pathology Department. Another article was submitted to the Journal of Circumpolar Health on the "Occurrence of Pancreatic, Biliary Tract, and Gallbladder Cancers in Alaska Native People, 1973–2007," in collaboration with Steven Alberts, M.D., of the Mayo Clinic.

According to Ms. Kelly, the SEER Alaska Native Tumor Registry soon plans "to study human papillomavirus (HPV) types in archival cancer specimens of other HPV-related cancers of head and neck, vulvar, vaginal, penile, and anal cancers among Alaska's Native men and women diagnosed with these cancers."

Recent Publications

Day GE, Lanier AP, Bulkow L, Kelly JJ, Murphy N. Cancers of the breast, uterus, ovary and cervix among Alaska Native women, 1974–2003. *Int J Circumpolar Health*. 2009;69(1):72-86.

Circumpolar Inuit Cancer Review Working Group, Kelly J, Lanier A, Santos M, Healey S, Louchini R, Friborg J, Young K, Ng C. Cancer among the circumpolar Inuit, 1989-2003, I. Background and methods. *Int J Circumpolar Health*. 2008 Dec;67(5):396-407.

Circumpolar Inuit Cancer Review Working Group, Kelly J, Lanier A, Santos M, Healey S, Louchini R, Friborg J, Young K, Ng C. Cancer among the circumpolar Inuit, 1989-2003, II. Patterns and trends. *Int J Circumpolar Health*. 2008 Dec;67(5):408-20.

Wiggins CL, Espey DK, Wingo PA, Kaur JS, Wilson RT, Swan J, Miller BA, Jim MA, Kelly JJ, Lanier AP. Cancer among American Indians and Alaska Natives in the United States, 1999-2004. *Cancer*. 2008 Sep 1;113(5 Suppl):1142-52.

Reichman ME, Kelly JJ, Kosary CL, Coughlin SS, Jim MA, Lanier AP. Incidence of cancers of the oral cavity and pharynx among American Indians and Alaska Natives, 1999-2004. Cancer. 2008 Sep 1;113(5 Suppl):1256-65.

CISNET News

2010 CISNET Annual Meeting

The 2010 Cancer Intervention and Surveillance Modeling Network (CISNET) program meeting was held from December 13–17, 2010, at the Natcher Conference Center on NIH's Main Campus in Bethesda, MD. Individuals from NCI's DCCPS and CISNET programs were invited to discuss issues in cancer intervention and surveillance modeling.

The week-long meeting included sessions on each of the five cancer consortiums (lung, prostate, colorectal, breast, esophageal). A plenary session featured guest speakers discussing topics ranging from "Value of Information

Method: From Theory to Implementation to Its Impact on Setting Priorities," by Andrew Briggs, Lindsay Chair in Health Policy and Economic Evaluation, University of Glasgow Department of Public Health; to "Merging Genetic Simulation Models With CISNET Population Simulation Models," by Chris Amos and Bo Peng, Department of Epidemiology, MD Anderson Cancer Center. The plenary session also provided a platform for PIs to present summaries of major goals and challenges for the next round of CISNET. **Eric J. (Rocky) Feuer, Ph.D.**, discussed the start of the new CISNET funding cycle and changes in the program, including the five multiple PI grants with the coordinating center instead of 15 single PI grants, and the addition of esophageal cancer to the CISNET cancer sites. DCCPS Director Bob Croyle, Ph.D., began the plenary session by congratulating CISNET groups for their work in the program.

CISNET Staff Profile

Pamela McMahon, Ph.D., CISNET Lung Group

Pamela McMahon

Pamela McMahon, Ph.D., is the Contact PI and coordinator of the multiple PI and multi-institution consortium of lung cancer modelers for CISNET's lung group. In conjunction with her role in CISNET, Dr. McMahon is the Associate Director of Massachusetts General Hospital's Institute for Technology Assessment and an Assistant Professor of Radiology at Harvard Medical School. Dr. McMahon also is an outcomes researcher with expertise in the use of simulation modeling to integrate disparate data to inform policies for cancer control. Most recently, her research has encompassed evaluations of lung and breast cancer screening and treatments for prostate cancer, as well as cost and statistical analyses.

Dr. McMahon first joined CISNET in 2004 as an affiliate. Since then, she has used the Lung Cancer Policy Model in joint evaluations of lung cancer screening programs and U.S. population trends in smoking patterns and lung cancer mortality. Currently, NCI supports her work on the development of approaches for modeling genomic and proteomic profiles in lung cancer.

The CISNET lung group will work on three main projects during the next 5 years: (1) a collaboration with the National Lung Screening Trial (NLST) and with the NELSON Lung Screening Trial in Europe to estimate lung cancer deaths avoided by screening, (2) potential roles of biomarkers in screening, and (3) comparing specific types of tobacco control programs.

Recent Publications

Hayes JH, Ollendorf DA, Pearson SD, Barry MJ, Kantoff PW, Stewart ST, Bhatnagar V, Sweeney CJ, Stahl JE, McMahon PM. Active surveillance compared with initial treatment for men with low-risk prostate cancer: a decision analysis. *JAMA*. 2010;304(21):2373-80.

Lee JM, McMahon PM, Kong CY, Kopans DB, Ryan PD, Ozanne EM, Halpern EF, Gazelle GS. Cost-effectiveness of breast MR imaging and screen-film mammography for screening BRCA1 gene mutation carriers. *Radiology,* 2010 Mar;254(3):793-800.

Kong CY, McMahon PM, Gazelle GS. Calibration of disease simulation model using an engineering approach. *Value Health*. 2009 Jun;12(4):521-9.

McMahon PM, Kong CY, Johnson BE, Weinstein MC, Weeks JC, Kuntz KM, Shepard JA, Swensen SJ, Gazelle GS. Estimating long-term effectiveness of lung cancer screening in the Mayo CT screening study. *Radiology*. 2008 Jul;248(1):278-87.

McMahon PM, Kong CY, Weinstein MC, Tramontano AC, Cipriano LE, Johnson BE, Weeks JC, Gazelle GS. Adopting helical CT screening for lung cancer: potential health consequences during a 15-year period. *Cancer*. 2008 Dec 15;113(12):3440-9.

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