

SURVEILLANCE RESEARCH PROGRAM

Spring 2016 e-Newsletter

<http://surveillance.cancer.gov>

<http://seer.cancer.gov>

SRP Associate Director's Message

Greetings from the Surveillance Research Program! We've been pretty busy since our last newsletter. Our most notable change has been our reorganized structure, which reflects our major functions and the future directions of SRP. In this issue you can read all about our new missions and staff along with several other updates and highlights from our program.



Included in our usual sections, "Initiatives" and "New on the Net," I'd like to direct your attention to a few significant announcements. We completed an audit of our PSA values and have re-released the data from 2010 through 2013. In addition, we are working on a pilot study with Unlimited Systems to collect detailed claims data. Since our last newsletter, we have collaborated with CDC, ACS, and NAACCR on two *Annual Reports to the Nation on the Status of Cancer*; last year's special section was on breast cancer incidence by molecular subtype, and this year's was on liver cancer incidence and hepatitis. NCI's enterprise website, cancer.gov, highlights the Annual Report to the Nation as well as other major initiatives for SEER and SRP—read on to see what we've been working on lately and what our main priorities will be in the next few years, such as our collaboration with the Department of Energy's supercomputers! Our entry in the [Cancer Currents Blog](#) also describes how our work helps drive further cancer research.

It was great seeing many of you at our annual SEER Meeting in March! As always, thanks for your collaboration.

Sincerely,

Lynne Penberthy

In this Issue:

Updates

- New SRP Organizational Structure
- Job Opportunities
- New Staff

Initiatives

- Cancer Moonshot Initiative Research Ideas Platform
- PSA Audit
- NCI Announces HDRP
- Detailed Claims Data Pilot

Data

- New Data Release
- SEER-MHOS
- State Cancer Profiles

New on the Net

- SEER*Explorer
- Twitter
- NCI Blogs Feature SEER
- Cancer.gov Update
- Glossary for Registrars
- DYK Video Series
- CI*Rank Tool

Reports, Publications, and Grants

- Annual Report to the Nation
- Biospecimen Research Article
- Publications
- Grants

Updates

New Organizational Structure for SRP

As of April 2015, the Surveillance Research Program has a new structure! This reorganization reflects our major functions and directions for the future of cancer surveillance. Our new structure and corresponding mission statements are now available on surveillance.cancer.gov. Here is SRP's new mission statement:

SRP provides national leadership in the science of cancer surveillance as well as analytical tools and methodological expertise in collecting, analyzing, interpreting, and disseminating reliable population-based cancer statistics. This surveillance infrastructure benefits the public, policymakers, and scientists in understanding changes in cancer incidence and outcomes in all segments of the US population over time.

We now have three branches: Data Quality, Analysis, and Interpretation Branch (DQAIB); Statistical Research and Applications Branch (SRAB); and Surveillance Informatics Branch (SIB). Below is each branch's mission statement.

Data Quality, Analysis, and Interpretation Branch Mission Statement

Our mission is to provide essential information for tracking the nation's progress against cancer and lead the analysis and interpretation of patterns and trends in population-based cancer surveillance data. We provide national leadership to the surveillance community in cancer data collection, quality improvement, education, analysis, interpretation, and reporting of cancer burden.

Statistical Research and Applications Branch Mission Statement

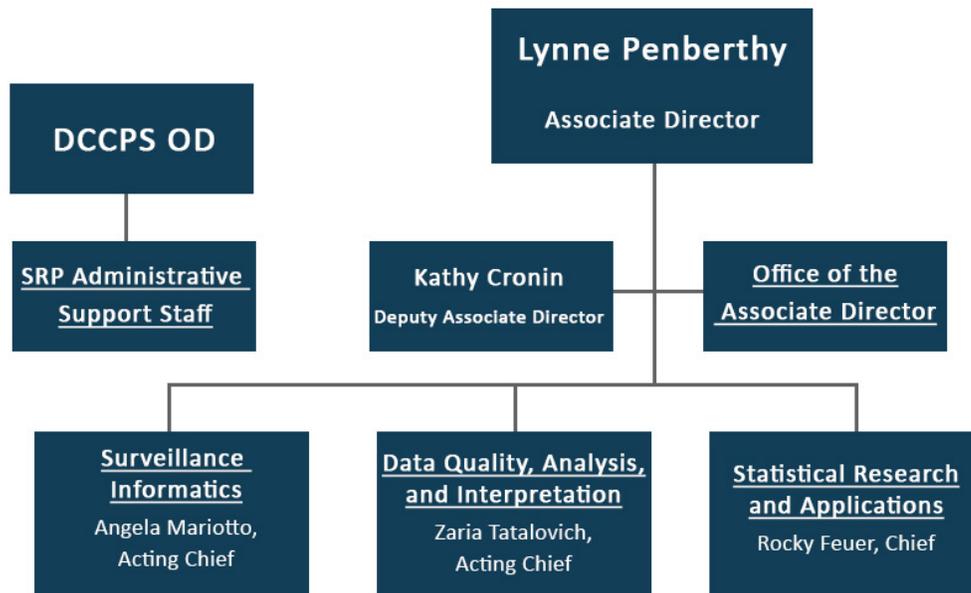
Our mission is to provide optimal statistical methods for the collection, analysis, and presentation of essential measures related to the cancer control, surveillance, and epidemiology programs of the National Cancer Institute and the broader cancer control and research community. These methods are pertinent to cancer outcomes, risk and behavioral factors, spatial and temporal factors, genetic factors, and health care delivery factors.

Surveillance Informatics Branch Mission Statement

Our mission is to coordinate and support research on informatics technology to optimize and enhance the acquisition, storage, retrieval, de-identification, analyses, reporting, and visualization of cancer surveillance systems, in particular of the NCI's SEER Program. Research areas of focus for the Branch include but are not limited to: i) innovative methods and approaches for analyzing, interpreting, reporting, and visualizing data from cancer surveillance systems; ii) more automated and cost effective methods for data capture and integration, leveraging abstraction and the natural language processing pipeline; and iii) linkage of cancer registry data with additional data sources to expand the scope of cancer surveillance measures across the cancer continuum and to remain relevant to cancer research and precision medicine.

New Organizational Structure for SRP, Continued

Here is our new organizational chart:



Job Opportunities

Applications are being accepted for two positions in SRP: Data Quality, Analysis, and Interpretation Branch Chief and a CRTA Fellow for Informatics, NLP, and Machine Learning for Cancer Surveillance. For full descriptions of each position and application information, visit surveillance.cancer.gov/jobs/.

New Staff

Monique Alston joined the Surveillance Research Program as a program specialist. She is looking forward to working on the Cancer Intervention and Surveillance Modeling Network (CISNET). Ms. Alston has worked for various offices within NIH throughout her career, including being a health program assistant for the National Heart, Lung, and Blood Institute, a lead extramural support assistant for the Division of Extramural Activities Support, and most recently for the National Institute of Nursing Research. She has also worked as a part of the Cancer Imaging Program at NCI. She has extensive knowledge in travel. Ms. Alston attended the University of Maryland, where she studied Psychology.



Sherri Cook joined SRP as a member of our Administrative Support Team. Ms. Cook has been with NCI since 2006. She has worked for both the Epidemiology and Genomics Research Program (EGRP) and the Behavioral Research Program (BRP) as a part of the Division of Cancer Control and Population Sciences. She has also worked in private industry managing small business planning and development and accounting departments. She studied Elementary Education and Child Psychology at Bowie State University and Prince George's Community College. Ms. Cook is a member of several human capital and team-building committees, and has also served as a key worker for the Combined Federal Campaign (CFC). She is also an active committee member for the Office of Equity, Diversity, and Inclusion's (OEDI) Special Emphasis Portfolio for the Blacks Employment Program here at NIH, where she has coordinated an outreach program with NIH and the Ernest E. Just Middle School's STEM program in Prince George's County, MD.



New Staff, Continued

Sarah Hussey, MS, has joined the Communications Team of the Surveillance Research Program as a Cancer Research Training Award fellow. She looks forward to helping advance the health communication efforts of SRP, such as projects related to social media, newsletters, and website content. Sarah received her MS in Health Communication from Boston University and her BA in Communication Studies from the University of North Carolina at Chapel Hill. Sarah has previously worked as a Communications Assistant at Galaxy Diagnostics, Inc., a start-up biotech company in Research Triangle Park, NC. Sarah has also worked at an independent neighborhood pharmacy, Governors Pharmacy, in Chapel Hill, NC, where she took on a number of roles including Pharmacy Technician, Public Relations Consultant, and Community Liaison.



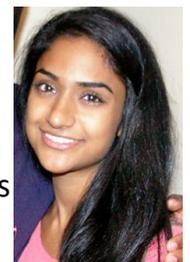
Clara Lam, PhD, joined SRP as a Statistician with a focus on enhancing cancer treatment information in cancer linkage data. She is looking forward to working on projects that will improve the quality of cancer treatment data in SEER and SEER-Medicare and expand our understanding of the patterns of care for non-Hodgkin lymphoma and Hodgkin lymphoma. Clara received her Bachelor of Science in Biology and Psychology at Brandeis University. She received her Master of Public Health and Doctor of Philosophy from the George Washington University. While pursuing her PhD, she was a Clinical Research Training Award pre-doctoral fellow in the Radiation Epidemiology Branch in the Division of Cancer Epidemiology and Genetics (DCEG), where she worked on several projects related to non-Hodgkin lymphoma, cancer treatments, and second cancers research. Her dissertation focused on identifying risk factors for second cancers after non-Hodgkin lymphoma, particularly investigating chemotherapy, radiotherapy, autoimmune conditions, and infections. Her professional interests include primary lymphomas and leukemias, second cancers, and cancer treatments.



Diarmuid Coughlan, MPharm, MSc (Health Econ), PhD, has joined the Surveillance Research Program as a Cancer Prevention Fellow. He is looking forward to working on the projections of the cost of cancer care with Dr. Angela Mariotto. Diarmuid received his Masters in Pharmacy at University of Sunderland, England, Masters in Health Economics at University of York, England, and his PhD from NUI Galway, Ireland. As part of his PhD training, co-sponsored by the NCI, Diarmuid spent two years at Johns Hopkins School of Public Health in the Department of Health Policy & Management. His dissertation focused on the health economics of HPV-related head and neck cancer and how it relates to burden, survivorship, and health literacy. Diarmuid is a hospital pharmacist and has practiced throughout England, Ireland, Australia, and the U.S. His professional interests include how best to analyze cost data and evaluating cancer care resource utilization, and he occasionally blogs for Economics of Cancer website.



Angie Abraham, MPH, MS, has joined the Surveillance Research Program part-time under the Health Communications Internship Program. She has worked with the *Did You Know? Video Series* team and is looking forward to expanding her role in SRP. Angie received her Masters in Public Health from California State University, Fresno and a Masters of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices from Northeastern University. Angie also serves as a part-time Health Communications Intern under the Office of Communications and Public Liaison, where she supports the staff that manages communications-related programs and services for the rest of NCI.



New Staff, Continued

Steve Friedman, MHSA, joined SRP as a Senior Advisor for Operations. He is looking forward to working on various projects including SEER, Natural Language Processing (NLP), and the Clinical Trials Cooperative Group (CTCG). Mr. Friedman joined the National Cancer Institute in 2004, first as a contractor serving as Program Manager for the Protocol and Information Office (PIO) and then in November 2005 as Deputy Head, PIO as a federal employee. In July 2006, he was named as Acting Head, PIO which also included oversight for the CTEP Enterprise IT System. In November 2009, he was named as Chief, Operations and Informatics Branch (OIB). He also served as the DCTD liaison to the NCI CIO's office dealing with such issues as IT security and protecting the privacy of patient data. Mr. Friedman is a survivor of testicular cancer since 1995. In 2003, Mr. Friedman was selected as one of 26 cyclists to ride across the country to raise awareness for cancer clinical trials in the inaugural Tour of Hope. Mr. Friedman served as a founding Director for the Association for the Accreditation of Human Research Protection Programs and is a past President of the Board for the Ulman Cancer Fund for Young Adults. He is the recipient of several NIH Merit Awards and a NIH Director's Award. Mr. Friedman received his Master of Health Services Administration from the George Washington University.



Radim Moravec, PhD, joined the Surveillance Research Program as a CRTA Fellow to work on the SEER Virtual Tissue Repository (VTR). He is looking forward to collaborating within SRP and DCCPS in developing VTR pilot studies that investigate annotating treatment information for tissues, acquired from central registries, to support research on cancer biomarkers. Radim received his PhD from the University of Virginia, where he studied how regulation of membrane traffic confers metastatic potential in epithelial cells. His MS and PhD thesis topics involved determining how the activity of cell-surface membrane receptors is altered in aggressive tumors and the molecular interactions responsible for these processes. Radim also completed an NIH NRSA sponsored postdoctoral fellowship in Pharmacology, where he investigated how the oncogene Disabled homolog 2 regulates inflammatory potential of macrophages during bacterial infections in mice. Radim has worked for GlaxoSmithKline Pharmaceuticals, Fox Chase Cancer Center and the US Patent and Trademark Office. His professional interests include utilizing his cancer genetics and biology background to support cancer surveillance and population-based cancer biospecimen research related to outcomes, quality of care, and pharmacoepidemiology.



Jennifer Moss, PhD, MSPH, joined the Surveillance Research Program as a Cancer Prevention Fellow. She is looking forward to learning more about surveillance and leveraging her social science background to understand geographic trends and disparities in cancer prevention and outcomes. Jennifer received her MSPH and PhD at University of North Carolina, Chapel Hill. Her dissertation focused on adolescent vaccination, patient-provider communication, and the influence of seasonal variation of school requirements. During her time at UNC, she worked at Cervical Cancer Free North Carolina on assessments and evaluations as well as ecological correlates of cervical cancer risk. Jennifer has numerous peer-reviewed publications, posters, and teaching experiences. Her research interests include geographic disparities in cancer prevention behaviors, prevention of reproductive and genital cancers, and adolescent vaccines, especially human papillomavirus (HPV) vaccine.



Initiatives

NCI Launches a Platform to Submit Research Ideas for Cancer Moonshot Initiative

As part of the Vice President's National Cancer Moonshot Initiative, the National Cancer Institute (NCI), part of the National Institutes of Health, has launched an [online engagement platform](#) to enable the research community and the public to submit cancer research ideas to a Blue Ribbon Panel of scientific experts.

Any member of the public is encouraged to submit their ideas for reducing the incidence of cancer and developing better ways to prevent, treat and cure all types of cancer.



The Blue Ribbon Panel, whose members were [announced](#) on April 4 and which held its first meeting on April 11, serves as a working group of the presidentially appointed National Cancer Advisory Board (NCAB). One of the first actions of the panel was to discuss the establishment of several proposed working groups to focus on specific topic areas. Research ideas may be submitted in the following areas:

- Cancer immunology and prevention
- Enhanced data sharing
- Expanding clinical trials
- Implementation sciences
- Pediatric cancer
- Precision prevention and early detection
- Tumor evolution and progression
- Other exceptional opportunities

The ideas that are submitted will be discussed and considered by the proposed working groups and the Blue Ribbon Panel as they deliberate about top cancer research priorities and opportunities that should be part of the Cancer Moonshot. The panel will report its findings to the NCAB later this summer.

To submit your scientific research ideas to the Moonshot Initiative visit: <http://CancerResearchIdeas.cancer.gov/>.

Scientific ideas can also be submitted to cancerresearch@nih.gov or by phone to the Cancer Information Service at 1-800-4-CANCER. To sign up for updates on the engagement platform and other aspects of the National Cancer Moonshot Initiative, please visit the initiative's main website (www.cancer.gov/moonshot-cancer-initiative).

SEER Completes PSA Audit, Re-releases 2010-2013 Data

A routine quality assurance study by registrars that abstracted standardized cases identified concerns regarding the quality of the PSA value in all surveillance data, including SEER. To further evaluate the quality and accuracy of the SEER PSA data, the SEER Program performed and completed a PSA value audit of all invasive prostate cancer cases diagnosed in 2012 within SEER central registries, excluding cases reported from death certificate, autopsy, or nursing home/hospice only. Error rates were significantly lower than predicted. A manuscript is being finalized that summarizes the results of the audit. Cases from 2010-2013 have now been reviewed and PSA errors have been corrected for this data release in April 2016. It is important to note that PSA has been a component of staging for prostate cancer since 2010, hence the focus on more recent cases first.

Prostate cases from 2004 through 2009 are currently being reviewed, and the corrected data will be added upon completion of this review and correction process. Additionally, automated quality control checks have been implemented in SEER central registries for the PSA value to flag inconsistencies between the coded value and text documentation, which will be adjudicated by registrar review.

NCI Announces New Healthcare Delivery Research Program (HDRP)

In April 2015, NCI announced the new Healthcare Delivery Research Program. The following message was sent from Dr. Robert Croyle, Director of DCCPS:

It is my pleasure to announce that the National Cancer Institute's (NCI's) Division of Cancer Control and Population Sciences (DCCPS) has launched a new [Healthcare Delivery Research Program \(HDRP\)](#) to address new challenges and opportunities for cancer control research in the context of health care systems. We are launching a search for a permanent associate director to lead this exciting new program.

At the same time, the [HDRP research staff](#), under the guidance of Acting Associate Director Ann Geiger, will be engaging internal and external experts to identify the most important scientific questions and program objectives for the next decade.

Based in large part upon the expert input we receive from our grantees and stakeholders, we will be creating initiatives and resources to energize and support our cancer control research community and strengthen our health services research portfolio.

As we develop initiatives, we will communicate our priorities and goals broadly and continually assess our progress. I invite you to read my [NCI Blog](#), visit our [HDRP website](#), and [view our video](#) to learn more about the goals and plans for this new program.

Inquiries and comments are welcome: hdrp@imsweb.com or <http://healthcaredelivery.cancer.gov/about/contact.html>.

Pilot Study to Collect Detailed Claims Data

SRP is conducting a pilot study with a nontraditional data source, Unlimited Systems, to supplement treatment and follow-up information in SEER. We are collaborating with Unlimited Systems, an oncology workflow solutions company who provides revenue cycle software applications to oncology practices, to obtain medical claims data from outpatient oncologists in Georgia. Medical claims data captures detailed infusion systemic therapy treatment, including specific agent, frequency, and indication of agent, and is a potential source of cancer case finding. The study objectives are (1) to identify and implement best processes to receive, store, and link billing claims data and (2) to evaluate the completeness and representativeness of information on cancer treatment for cases captured in Georgia. Six outpatient oncology practices in Georgia are participating in the pilot study and are allowing Unlimited Systems to automatically send retrospective and prospective claims data to the SEER Georgia Registry. Currently, we are working with IMS and the Georgia registry to develop processes and algorithms to store and link medical claims data to SEER cases.

Data

SEER Releases New Data

On April 15, 2016, SRP released the 2013 SEER data. This dataset includes SEER incidence and population data associated by age, sex, race, year of diagnosis, and geographic area. In 2013, there were 410,153 malignant cases reported, with a total of 8,234,845 malignant cases recorded from 1973–2013. For more information, visit <http://seer.cancer.gov/data/>. We also released the SEER Cancer Statistics Review (CSR), 1975-2013, which presents the most recent cancer incidence, mortality, survival, and prevalence statistics. The report is now available at http://seer.cancer.gov/csr/1975_2013/.

New Data Added to SEER-MHOS Database

With the addition of cohorts 13 and 14, the Surveillance, Epidemiology, and End Results-Medicare Health Outcomes Survey (SEER-MHOS) linked database now contains data on over 126,000 cancer patients (an increase of over 30,000 from the prior linkage), in addition to almost 2 million MHOS beneficiaries with no history of cancer.

The SEER-MHOS linked database is a population-based data resource that contains information about the health-related quality of life (HRQOL) and other patient-reported outcomes of older adults (ages 65 and over) and disabled Medicare Advantage beneficiaries with and without cancer. The linkage now includes MHOS cohorts 1-14 (1998-2013) as well as cancer data from SEER (1973-2011) for all matches included in the SEER-MHOS file. The SEER-MHOS is the culmination of a federal collaboration between the National Cancer Institute (NCI) and the Centers for Medicare & Medicaid Services (CMS).

SEER is the premier source for US cancer statistics and collects data on individuals living in specific regions of the US who have been diagnosed with cancer. The MHOS is the first self-reported longitudinal survey of Medicare managed care beneficiaries drawn from the entire US. For more information, visit the [SEER-MHOS Web site](#).

State Cancer Profiles Data Release

In June 2015, State Cancer Profiles released new and updated data from a variety of sources. New [NCI SEER](#) and [CDC NPCR](#) incidence data through 2012 are now available. Additionally, the [National Vital Statistics System](#) provided updated death data through 2012. Furthermore, [Small Area Estimates](#) (SAE) were updated for 2008 to 2010. Diet & Exercise data were added from Behavioral Risk Factor Surveillance System (BRFSS, sponsored by CDC), and smoking law data were updated from the [Americans for Nonsmokers' Rights](#). 2013 HPV vaccination data from the National Immunization Survey were also added. Demographic data from the American Community Survey data were updated for 2009 through 2013, and the Small Area Health Insurance Data were updated through 2013. Finally, [prevalence projections](#) were updated to show only the 2015 data.

On February 9, 2016, the most recent modeled county-level estimates derived from NHIS and BRFSS through modeling techniques for the data period 2008-2010 were released at the State Cancer Profiles website under the [Screening and Risk Factors section](#). The following measures are now available:

- Percent of Smokers (Current): Ages 18+ (overall and by gender)
- Percent of Smokers (Ever): Ages 18+ (overall and by gender)
- Percent of Mammogram screening in Past 2 years: ages 40+
- Percent of Pap Smear screening in Past 3 Years: Ages 18+
- Percent of people who Ever had colorectal endoscopy (sigmoidoscopy or colonoscopy): Ages 50+
- Percent of people who had Home based Fecal Occult Blood Test (FOBT) in Past Two Years: Ages 50+
- Percent of people who had Home based FOBT in the past two years or ever had a colorectal endoscopy: Ages 50+

More cancer statistics will be released in the next couple months, so stay tuned!

New on the Net

SEER*Explorer

This spring, the Surveillance Research Program released a new tool for analyzing pre-calculated cancer statistics, called SEER*Explorer. You can test out the beta version here: <http://seer.cancer.gov/explorer/>.

Twitter reaches 3,000 followers!

In April 2016, the [@NCICancerStats](#) Twitter handle reached 3,000+ followers. @NCICancerStats provides the latest cancer statistics, information on new online tools, and resources for researchers. Please follow us, retweet us, or like our tweets if you haven't already!

Blog Articles Highlight the SEER Program, Future Plans, and DOE Collaboration

The SEER Program has been a feature on several pages of NCI's main website, cancer.gov, in the past year. In [Stories of Discovery](#), it explains the history and development of the SEER program, the partnerships with other organizations to provide accurate and timely cancer data, and the importance of SEER. In the [Cancer Currents Blog](#), the article describes the future directions for SRP, including the gathering of treatment data, the Virtual Tissue Repository initiative, and a number of research projects based on newly available SEER data. Another [Cancer Currents Blog entry](#), this one by the Director of NCI's Center for Biomedical Informatics and Information Technology (CBIIIT) Warren Kibbe, highlights the new collaboration between NCI and the Department of Energy (DOE). This initiative will apply DOE's exascale computing to cancer research. [CBIIIT'S website](#) also goes into more detail about the partnership, explaining how SEER data is the focus of the third, population level pilot. This effort will improve the efficiency of SEER and link the data to other information such as electronic medical records. Stay tuned for more information in our next newsletter! Please share these blogs within your networks.

NCI Launches New Cancer.gov Website

In May 2015, NCI launched a new version of [Cancer.gov](#). The new site has an updated design and provides an in-depth look on NCI research, grants, training and funding. The website will continue to provide information on evidence-based prevention, screening, diagnosis, and treatment of different cancers. You can view the same information on Cancer.gov on any computer, tablet, or smart phone. You can also easily share any article or page with others through e-mail or social media sites. Make sure to visit [Cancer.gov](#) and check it out.

Glossary for Registrars

The [Glossary for Registrars](#) is an interactive web-based tool with over 5,000 terms defined for cancer registrars. Use the glossary to find definitions for anatomy terms, cancer-related terms, common diseases (and not-so-common diseases), physiology terms, surgical procedures, other treatment procedures, and much more.

Resources used to populate the glossary include:

- NCI Data Dictionary
- American Brain Tumor Association
- Cancer Registry Management Principles & Practices for Hospitals and Central Registries
- Cancer Treatment Centers of America
- ClinicalTrials.gov
- Fundamentals of Anatomy and Physiology, 3rd edition
- MD Anderson Cancer Center
- MedicineNet.com
-and many others

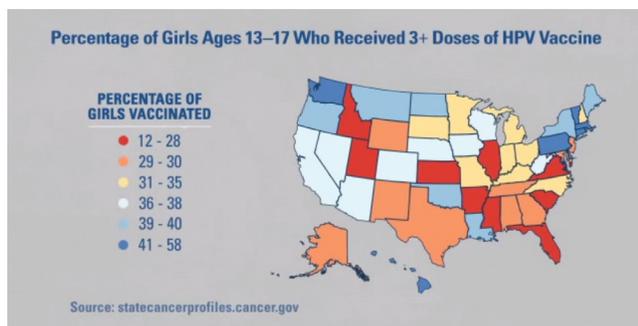
The glossary can be accessed directly from the SEER website or by clicking on linked terms in the Hematopoietic database and [SEER*Rx](#). The glossary is a work in progress. New terms will be added and the tool will be updated quarterly. If you have questions or comments about the glossary, please submit them to [Ask a SEER Registrar](#) and choose "Glossary for Registrars."

Eight New Did You Know? Videos Released

The Did You Know? Video Series provides 2- to 3-minute informational videos on various cancer topics. The videos communicate key statistical data on different types of cancer to a lay audience in understandable, clear, and concise language. Since the last newsletter issue, the Did You Know? team released videos that provide information on [Pancreatic Cancer](#), [Thyroid Cancer](#), the [Human Papillomavirus](#), [Hepatitis and Liver Cancer](#), and [Kidney and Renal Pelvis Cancer](#). Additionally, three overarching videos were released: [Cancer Statistics](#), [Cancer Health Disparities](#) and [Status of Cancer](#). The Cancer Statistics video highlights what they are, where we get the data from, and how they guide research. The Cancer Health Disparities video was released in conjunction with the Bypass Budget to explain cancer health disparities and provide examples. The Status of Cancer video is an update on the rate of new cancer cases, deaths, and the most common cancers in the United States, highlighting findings from the *Annual Report to the Nation*.

Did You Know? Video Series Triumphs: The Cancer Statistics video reached 5,000+ views in the first six months of its debut, launching it into the top eight of the National Cancer Institute's most popular videos of all time. Also, the [Leukemia Statistics](#) video is now the third most popular NCI video, with 10,000+ views. Nine of the Did You Know? videos are now in NCI's top 20!

The videos can be found on the [National Cancer Institute's YouTube page](#) or on the [SEER Website](#). Please share these videos and use them as a resource within your networks.



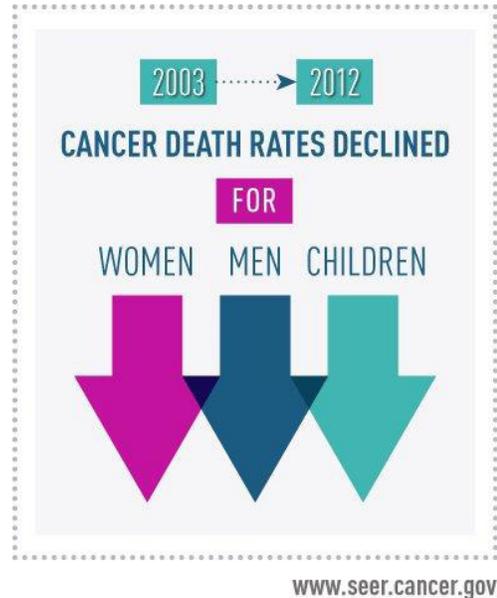
CI*Rank Tool Now Available

The Surveillance Research Program launched web-based [CI*Rank](#) in January 2015. The CI*Rank website presents ranked, age-adjusted cancer incidence and mortality rates by state, county, and special region in the U.S. The site also presents confidence intervals for those ranks. Ranked, age-adjusted U.S. mortality rates for other causes of death are also provided, along with the confidence intervals. Users can compare counties, states, and specific geographical regions such as Appalachia and Gulf Coast counties. Ranking health indices is useful for seeing where a geographic area stands in comparison to other areas. However, ranks are inherently random and are dependent on the variability of the rates. Providing ranks and their level of uncertainty (i.e., the confidence intervals) together demonstrates not only the variability of that area's rates but also the variability of closely ranked areas' rates. Dr. Li Zhu, Mathematical Statistician in SRP, is the NCI scientific lead for this valuable new resource. CI*Rank is available at <http://surveillance.cancer.gov/cirank/>.

Reports, Publications, and Grants

The Annual Report to the Nation

Since our last newsletter, the Surveillance Research Program has collaborated with the North American Association of Central Cancer Registries (NAACCR), the American Cancer Society (ACS), and the Centers for Disease Control and Prevention (CDC) on two Annual Reports to the Nation. Both reports provided an overview of cancer trends as well as a special section. Each overview highlighted continuing declines in cancer death rates for men, women, and children, and for nearly all major cancer sites. From 2002-2011 and 2003-2012, death rates declined by 1.8 percent per year among men and 1.4 percent per year among women. The incidence report highlighted that new cases of lung cancer have continued to decrease along with tobacco use. It is noted that overall cancer incidence rates continued to decrease among men, remained stable among women, and increased among children.



BREAST CANCER IN WOMEN: KNOW THE SUBTYPE

It's important for guiding treatment and predicting survival.

The special section of last year's *Annual Report to the Nation on the Status of Cancer, 1975-2011, Featuring Incidence of Breast Cancer Subtypes by Race/Ethnicity, Poverty, and State* features breast cancer incidence by molecular subtype. For the first time, comprehensive national data on hormone receptor (HR) and human epidermal growth factor receptor 2 (HER2) status were available to determine the incidence of the four breast cancer subtypes by age, race/ethnicity, poverty level, and several other factors. In this section, you will find treatment implications based on breast cancer subtypes and breast cancer rates by racial and ethnic groups.



KNOW THE SCIENCE

HR = Hormone receptor
 HR+ means tumor cells have receptors for the hormones estrogen or progesterone, which can promote the growth of HR+ tumors. Hormone therapies like tamoxifen can be used to treat HR+ tumors.

HER2 = Human epidermal growth factor receptor
 HER2+ means tumor cells overexpress (make high levels of) a protein, called HER2/neu, which has been shown to be associated with certain aggressive types of breast cancer. Trastuzumab and some other therapies can target cells that overexpress HER2.

HR+/HER2- aka "Luminal A"

73% of all breast cancer cases

- Best prognosis
- Most common subtype for every race, age, and poverty level

HR-/HER2- aka "Triple Negative"

13% of all breast cancer cases

- Worst prognosis
- Non-Hispanic blacks have highest rate of this subtype at every age and poverty level

HR+/HER2+ aka "Luminal B"

10% of all breast cancer cases

- Little geographic variation by state

HR-/HER2+ aka "HER2-enriched"

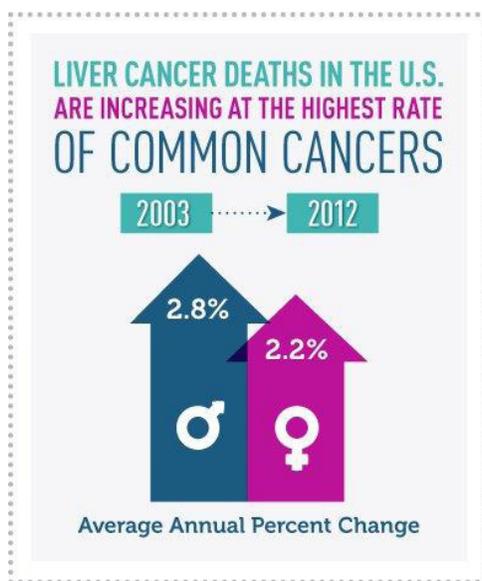
5% of all breast cancer cases

- Lowest rates for all races and ethnicities

www.cancer.gov

Source: Special section of the Annual Report to the Nation on the Status of Cancer, 1975-2011.

In March 2016, experts from the North American Association of Central Cancer Registries (NAACCR), the American Cancer Society (ACS), the Centers for Disease Control and Prevention (CDC), and the National Cancer Institute (NCI) released the *Annual Report to the Nation on the Status of Cancer, 1975-2012, Featuring the Increasing Incidence of Liver Cancer*. In contrast to the decreasing overall trends, deaths due to liver cancer increased at the highest rate of all reported cancer sites, and liver cancer incidence rates increased sharply. Among both men and women, liver cancer deaths are on the rise in the United States, increasing at the highest rate of all common cancers during the period 2003-2012.



www.seer.cancer.gov

Source: Annual Report to the Nation on the Status of Cancer, 1975-2012

The report detailed the association between liver cancer and hepatitis B and C viral infections as well as cirrhosis. It also examined liver cancer incidence by racial/ethnic group and by sex. During 2008-2012, among both men and women, liver cancer incidence rates were highest among non-Hispanic American Indian/Alaska Natives, followed by non-Hispanic Asian/Pacific Islanders and then by Hispanics. The authors of the report found that in all racial and ethnic populations, men had nearly a threefold higher liver cancer incidence rate than women.

To read the full report or see previous Annual Reports to the Nation, visit <http://www.cancer.gov/research/progress/annual-report-nation>.

Biospecimen Research Article Highlights Previous and Future Work

The article “SEER cancer registry biospecimen research: yesterday and tomorrow” provides a review of selected biospecimen articles and responses to a research community questionnaire. The article also illustrates the research potential by developing and providing SEER biospecimen resources. The research and development of this article informed the direction for the SEER Virtual Tissue Repository pilot study. To see the full article, [click here](#).

SRP Staff Publications

Altekruse SF, Petrick JL, Rolin AI, Cuccinelli JE, Zou Z, **Tatalovich Z**, McGlynn KA. Geographic variation of intrahepatic cholangiocarcinoma, extrahepatic cholangiocarcinoma, and hepatocellular carcinoma in the United States. *PLoS One*. 2015;10(3):e0120574. doi: 10.1371/journal.pone.0120574. [\[PubMed Abstract\]](#)

Saraiya M, Unger ER, Thompson TD, Lynch CF, Hernandez BY, Lyu CW, Steinau M, Watson M, Wilkinson EJ, Hopenhayn C, Copeland G, Cozen W, Peters ES, Huang Y, Saber MS, **Altekruse S**, Goodman MT. US assessment of HPV types in cancers: implications for current and 9-valent HPV vaccines. *J Natl Cancer Inst*. 2015 Jun;107(6):djv086. doi: 10.1093/jnci/djv086. pii: djv086. [\[PubMed Abstract\]](#)

Blecker S, Johnson NJ, **Altekruse S**, Horwitz LI. Association of occupation as a physician with likelihood of dying in a hospital. *JAMA*. 2016 Jan 19;315(3):301-3. doi: 10.1001/jama.2015.16976. [\[PubMed Abstract\]](#)

Ryerson AB, Ehemann CR, **Altekruse SF**, Ward JW, Jemal A, Sherman RL, Henley SJ, Holtzman D, Lake A, **Noone AM**, Anderson RN, Ma J, Ly KN, **Cronin KA**, **Penberthy L**, Kohler BA. Annual Report to the Nation on the Status of Cancer, 1975-2012, featuring the increasing incidence of liver cancer. *Cancer*. 2016 May 1;122(9):1312-37. doi: 10.1002/cncr.29936. [\[PubMed Abstract\]](#)

Carrick DM, Mehaffey MG, Sachs MC, **Altekruse S**, Camalier C, Chuaqui R, Cozen W, Das B, Hernandez BY, Lih CJ, Lynch CF, Makhlof H, McGregor P, McShane LM, Phillips Rohan J, Walsh WD, Williams PM, Gillanders EM, Mechanic LE, Schully SD. Robustness of next generation sequencing on older formalin-fixed paraffin-embedded tissue. *PLoS One*. 2015;10(7):e0127353. doi: 10.1371/journal.pone.0127353. [\[PubMed Abstract\]](#)

van Ravesteyn NT, van Lier L, Schechter CB, Ekwueme DU, Royalty J, Miller JW, Near AM, **Cronin KA**, Heijnsdijk EA, Mandelblatt JS, de Koning HJ. Transition from film to digital mammography: impact for breast cancer screening through the National Breast and Cervical Cancer Early Detection Program. *Am J Prev Med*. 2015 May;48(5):535-42. doi: 10.1016/j.amepre.2014.11.010. pii: S0749-3797(14)00668-0. [\[PubMed Abstract\]](#)

Chen HS, Hutter CM, Mechanic LE, Amos CI, Bafna V, Hauser ER, Hernandez RD, Li C, Liberles DA, McAllister K, Moore JH, Paltoo DN, Papanicolaou GJ, Peng B, Ritchie MD, **Rosenfeld G**, Witte JS, Gillanders EM, **Feuer EJ**. Genetic simulation tools for post-genome wide association studies of complex diseases. *Genet Epidemiol* 2015 Jan;39(1):11-9. [\[PubMed Abstract\]](#)

Peng B, **Chen HS**, Mechanic LE, Racine B, Clarke J, Gillanders E, **Feuer EJ**. Genetic data simulators and their applications: an overview. *Genet Epidemiol* 2015 Jan;39(1):2-10. [\[PubMed Abstract\]](#)

SRP Staff Publications, Continued

Mandelblatt JS, Stout NK, Schechter CB, van den Broek JJ, Miglioretti DL, Krapcho M, Trentham-Dietz A, Munoz D, Lee SJ, Berry DA, van Ravesteyn NT, Alagoz O, Kerlikowske K, Tosteson AN, Near AM, Hoeffken A, Chang Y, Heijnsdijk EA, Chisholm G, Huang X, Huang H, Ergun MA, Gangnon R, Sprague BL, Plevritis S, **Feuer E**, de Koning HJ, **Cronin KA**. Collaborative modeling of the benefits and harms associated with different U.S. breast cancer screening strategies. *Ann Intern Med*. 2016 Feb 16;164(4):215-25. doi: 10.7326/M15-1536. [[PubMed Abstract](#)]

Howlader N, Morton LM, **Feuer EJ**, Besson C, Engels EA. Contributions of subtypes of non-Hodgkin lymphoma to mortality trends. *Cancer Epidemiol Biomarkers Prev*. 2016 Jan;25(1):174-9. doi: 10.1158/1055-9965.EPI-15-0921. [[PubMed Abstract](#)]

Smith AW, Seibel NL, **Lewis DR**, Albritton KH, Blair DF, Blanke CD, Bleyer WA, Freyer DR, Geiger AM, Hayes-Lattin B, Tricoli JV, Wagner LI, Zebrack BJ. Next steps for adolescent and young adult oncology workshop: an update on progress and recommendations for the future. *Cancer*. 2016 Apr 1;122(7):988-99. doi: 10.1002/cncr.29870. [[PubMed Abstract](#)]

Kent EE, Breen N, **Lewis DR**, de Moor JS, Smith AW, Seibel NL. US trends in survival disparities among adolescents and young adults with non-Hodgkin lymphoma. *Cancer Causes Control*. 2015 Aug;26(8):1153-62. doi: 10.1007/s10552-015-0609-1. [[PubMed Abstract](#)]

Phillips SM, Padgett LS, Leisenring WM, Stratton KK, Bishop K, Krull KR, Alfano CM, Gibson TM, de Moor JS, Hartigan DB, Armstrong GT, Robison LL, Rowland JH, Oeffinger KC, **Mariotto AB**. Survivors of childhood cancer in the United States: prevalence and burden of morbidity. *Cancer Epidemiol Biomarkers Prev*. 2015 Apr;24(4):653-63. doi: 10.1158/1055-9965.EPI-14-1418. [[PubMed Abstract](#)]

Barr RD, Ferrari A, **Ries L**, Whelan J, Bleyer WA. Cancer in adolescents and young adults: a narrative review of the current status and a view of the future. *JAMA Pediatr*. 2016 May 1;170(5):495-501. doi: 10.1001/jamapediatrics.2015.4689. [[PubMed Abstract](#)]

Barr RD, **Ries LA**, **Lewis DR**, Harlan LC, Keegan TH, Pollock BH, Bleyer WA. Incidence and incidence trends of the most frequent cancers in adolescent and young adult Americans, including "nonmalignant/noninvasive" tumors. *Cancer*. 2016 Apr 1;122(7):1000-8. doi: 10.1002/cncr.29867. [[PubMed Abstract](#)]

Keegan TH, **Ries LA**, Barr RD, Geiger AM, Dahlke DV, Pollock BH, Bleyer WA. Comparison of cancer survival trends in the United States of adolescents and young adults with those in children and older adults. *Cancer*. 2016 Apr 1;122(7):1009-16. doi: 10.1002/cncr.29869. [[PubMed Abstract](#)]

Serrano KJ, **Yu M**, Riley WT, Patel V, Hughes P, Marchesini K, Atienza AA. Willingness to exchange health information via mobile devices: findings from a population-based survey. *Ann Fam Med*. 2016 Jan;14(1):34-40. doi: 10.1370/afm.1888. [[PubMed Abstract](#)]

Grants for FY 2015

SRP competing grant awardees funded for Fiscal Year 2015 are listed below. In addition to these funded grants, SRP received and reviewed 90 grant applications and currently manages about 100 existing, non-competing grants that were processed for continued funding.

SRP Branch	Program Director	Principal Investigator	Research Project Title	Institution
DQAIB	Zaria Tatalovich	Myles G. Cockburn	Innovative solutions to spatial uncertainty in geocoding	University of Southern California
OAD	Rose Fredua	Brent Andrew Coull	Workshop for Junior Biostatisticians in Health Research	Harvard School Of Public Health
OAD	Rose Fredua	Betsy Kohler	2015 North American Association of Central Cancer Registries Annual Conference	North American Association of Central Cancer Registries
OAD	Rose Fredua	Noah Simon	17th IMS New Researchers' Conference	University of Washington
OAD	Susan Scott	Ruth Etzioni	Modeling to Improve Prostate Cancer Outcomes Across Diverse Populations	Fred Hutchinson Cancer Research Center
OAD	Susan Scott	Chin Hur	Controlling Esophageal Cancer: A Collaborative Modeling Approach	Massachusetts General Hospital
OAD	Susan Scott	Chin Hur	Improving Esophageal Adenocarcinoma Prevention, Screening and Treatment	Massachusetts General Hospital
OAD	Susan Scott	Jane Jooyun Kim	Comparative Modeling to Inform Cervical Cancer Control Policies	Harvard School of Public Health
OAD	Susan Scott	Jeanne Mandelblatt	Comparative Modeling: Informing Breast Cancer Control Practice and Policy	Georgetown University
OAD	Susan Scott	Rafael Meza	Comparative Modeling of Lung Cancer Prevention and Control Policies	University Of Michigan
OAD	Susan Scott	Ann Graham Zauber	Comparative Modeling of Colorectal Cancer: Informing Health Policies and Prioritizing Future Research	Memorial Sloan-Kettering Institute of Cancer Research
SIB	Angela Mariotto	David Eric Gerber	Evaluating prior cancer exclusion policy to increase lung cancer trial accrual	University of Texas Southwestern Medical Center
SIB	Angela Mariotto	Chiung-Yu Huang	Statistical Methods for Survival and Recurrent Event Data in Clinical Research	Johns Hopkins University
SRAB	Huann-Sheng Chen	Xihong Lin	Statistical Methods for Analysis of Massive Genetic and Genomic Data in Cancer Research	Harvard School of Public Health
SRAB	Huann-Sheng Chen	Shuangge Ma	Penalization methods for identifying gene environment interactions and applications to melanoma and other cancer types	Yale University
SRAB	Benmei Liu	Chen Li	Statistical Methods for Environmental Data Subject to Detection Limits	University of Kentucky
SRAB	Li Zhu	Jeffrey Morris	Bayesian methods for complex, high-dimensional functional data in cancer research	University Of Texas MD Anderson Cancer Center
SRAB	Li Zhu	Ruth Etzioni	Estimating Overdiagnosis in Cancer Screening Studies	Fred Hutchinson Cancer Research Center

DQAIB – Data Quality Analysis and Interpretation Branch
 OAD – Office of the Associate Director
 SIB – Surveillance Informatics Branch
 SRAB – Statistical Research and Applications Branch