



NATIONAL CANCER INSTITUTE

DIVISION OF CANCER CONTROL AND POPULATION SCIENCES  
**2016 OVERVIEW AND HIGHLIGHTS**



# 2016 OVERVIEW AND HIGHLIGHTS

## Contents

Message from the Director	1
Leadership at a Glance	2
DCCPS Priority Areas	4
Immediate Action and Continued Progress	5
Revisit, Revitalize, and Develop	11
Opportunities for Researchers	15
Investment in Cancer Control Research	16
DCCPS by the Numbers	18

**Division of Cancer Control  
and Population Sciences**

**[cancercontrol.cancer.gov](http://cancercontrol.cancer.gov)**

# Message from the Director



**Robert T. Croyle, PhD**  
Director, DCCPS

## **As we move into 2016, we in the Division of Cancer**

Control and Population Sciences (DCCPS) at NCI look back on 2015 as a year in which we began pivotal work on the goals we've set for shaping our nation's cancer control strategy for the coming decade.

In 2015, we took many important strides in that direction, most notably reorganizing the structure of our division to address new and emerging priorities. For example, we formed the Healthcare Delivery Research Program to serve as the foundation around which health services work throughout the division is organized, with the goal of improving survival and enhancing the patient experience across the cancer control continuum. In our Epidemiology and Genomics Research Program, Dr. Kathy Helzlsouer accepted the role of Associate Director, bringing with her a valuable blend of medical and scientific perspectives—critically necessary to leading an area of science that is increasingly inter- and multidisciplinary. Meanwhile, other DCCPS programs and branches convened working groups, comprising internal and external experts, to identify the most important scientific questions and objectives to be addressed in the coming decade.

Based in large part on those strategic planning efforts, as well as on NCI priorities and those highlighted in the Vice President's cancer initiative, we have selected specific research opportunities on which we plan to focus our greatest efforts in DCCPS. In this issue of our annual Overview and Highlights, we lay out those priorities, briefly describing the challenge for the research community and providing examples of ways in which the division is currently responding to those challenges.

Even as we identify those areas of research in which we hope to have the greatest and most immediate impact, we understand the need to remain nimble so that we can adjust priorities as new opportunities to accelerate progress emerge in rapidly changing scientific and health care contexts.

We are grateful to our partners and to the many experts in our research and advocacy community who have contributed recommendations and advice over the past year as we set our strategic agenda for cancer control. We hope that you will find this issue of Overview and Highlights a valuable source for identifying areas of interest and collaboration and that you will continue to share your perspectives as we work together to make progress against cancer.

*“We understand the need to remain nimble so that we can adjust priorities as new opportunities to accelerate progress emerge in rapidly changing scientific and health care contexts.”*

# Leadership at a Glance



**Office of the Director**  
Dr. Robert Croyle,  
DIRECTOR



**Office of the Director**  
Dr. Deborah Winn,  
DEPUTY DIRECTOR



**Office of the Director**  
Dr. David Chambers,  
DEPUTY DIRECTOR FOR IMPLEMENTATION SCIENCE

## 4 RESEARCH PROGRAMS



**Epidemiology and Genomics Research Program**  
Dr. Kathy Helzlsouer, ASSOCIATE DIRECTOR



**Epidemiology and Genomics Research Program**  
Dr. Britt Reid,  
DEPUTY ASSOCIATE DIRECTOR



**Methods and Technologies**  
Dr. Mukesh Verma, BRANCH CHIEF



**Environmental Epidemiology**  
Dr. Gary Ellison, BRANCH CHIEF



**Genomic Epidemiology**  
Dr. Elizabeth Gillanders, BRANCH CHIEF



**Clinical and Translational Epidemiology**  
Dr. Andrew Freedman, BRANCH CHIEF



**Risk Factor Assessment**  
Dr. Susan Krebs-Smith,  
BRANCH CHIEF



**Surveillance Research Program**  
Dr. Lynne Penberthy, ASSOCIATE DIRECTOR



**Surveillance Research Program**  
Dr. Kathleen Cronin,  
DEPUTY ASSOCIATE DIRECTOR



**Data Quality, Analysis, and Interpretation**  
Dr. Zaria Tatalovich, ACTING BRANCH CHIEF



**Surveillance Informatics**  
Dr. Angela Mariotto, ACTING BRANCH CHIEF



**Statistical Research and Applications**  
Dr. Eric Feuer, BRANCH CHIEF





**Office of the Director**  
 Dr. Shobha Srinivasan,  
 HEALTH DISPARITIES RESEARCH COORDINATOR



**Office of Cancer Survivorship**  
 Dr. Julia Rowland,  
 DIRECTOR



**Behavioral Research Program**  
 Dr. William Klein, ASSOCIATE DIRECTOR



**Behavioral Research Program**  
 Dr. Linda Nebeling,  
 DEPUTY ASSOCIATE DIRECTOR



**Basic Biobehavioral and Psychological Sciences**  
 Dr. Paige Green, BRANCH CHIEF



**Health Behaviors Research**  
 Dr. Susan Czajkowski, BRANCH CHIEF



**Health Communication and Informatics Research**  
 Dr. Bradford Hesse, BRANCH CHIEF



**Science of Research and Technology**  
 Dr. Richard Moser, ACTING BRANCH CHIEF



**Tobacco Control Research**  
 Dr. Michele Bloch, BRANCH CHIEF



**Healthcare Delivery Research Program**  
 Dr. Ann Geiger, ACTING ASSOCIATE DIRECTOR



**Healthcare Delivery Research Program**  
 Dr. Stephen Taplin,  
 DEPUTY ASSOCIATE DIRECTOR



**Healthcare Assessment Research**  
 Dr. Linda Harlan, ACTING BRANCH CHIEF



**Health Systems and Interventions Research**  
 Dr. Sarah Kobrin, ACTING BRANCH CHIEF



**Outcomes Research**  
 Dr. Ashley Wilder Smith, BRANCH CHIEF



# DCCPS Priority Areas

**In this Overview and Highlights, DCCPS** features six priorities that are listed “for immediate action and continued progress” and an additional five priorities “to revisit, revitalize, and develop.” The six priorities for immediate action and continued activity include tobacco control research; health disparities; revitalizing [Surveillance, Epidemiology, and End Results \(SEER\)](#) for research use; precision medicine; HPV vaccination uptake; and observational outcomes research. The five priorities to revisit, revitalize, and develop include survivorship; diet, weight, and physical activity; behavioral science methods; colorectal cancer screening; and geospatial research.

These 11 division-wide priorities reflect ongoing, concerted investments that are responsive to NIH and NCI priorities, such as health disparities and precision medicine. They address behaviors that continue to take an enormous toll on public health, such as tobacco use. And they reflect immense opportunities for advancement, such as increasing uptake of HPV vaccination. However, DCCPS is not focusing on these priorities to the exclusion of other important areas of work. The division continues to invest in research across the cancer control continuum.

For each priority below, we include examples of DCCPS initiatives and activities that illustrate ways in which the division is addressing that priority.

## Immediate Action and Continued Progress

### TOBACCO CONTROL RESEARCH

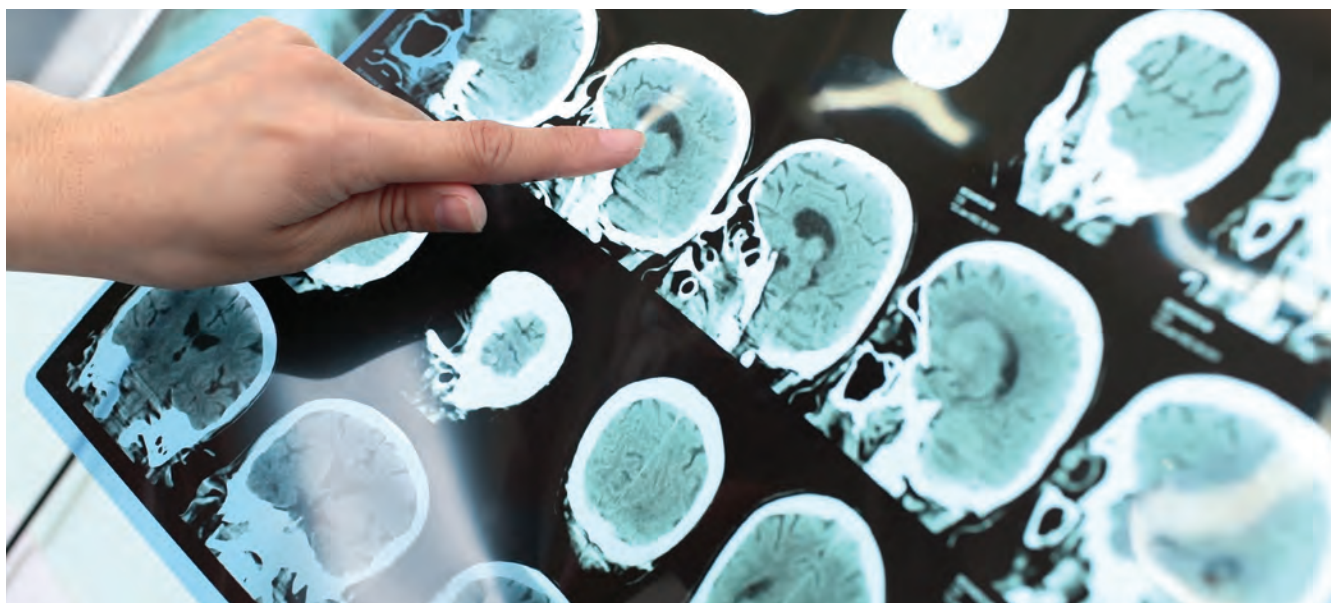
Tobacco use is still the leading cause of preventable death in the US.

Despite half a century of progress in tobacco control and prevention, the devastating health and economic effects of tobacco use continue. In order to bring this epidemic to an end, innovative research is needed to address a myriad of factors, including a changing population of users, evolving patterns of initiation and use, new and modified tobacco products, and a complex and changing policy environment. We must implement what we already know, while not being “limited” by past strategies in tobacco control, supporting cross-cutting research that accelerates progress in behavioral science relevant to tobacco use; treatment development and delivery; policy, system, and environmental changes; and public health interventions.

- The Tobacco Control Research Branch of DCCPS, in partnership with the National Institute on Drug Abuse (NIDA) and the National Institute on Alcohol Abuse and Alcoholism (NIAAA), recently launched the Adolescent Brain Cognitive Development (ABCD) Study, which has awarded 13 grants to study the effects of adolescent substance abuse on the developing brain. The study will follow approximately 10,000 children beginning at ages 9 to 10, before they initiate drug use, through the period of highest risk for substance use and other mental health disorders. Scientists will track exposure to substances (including nicotine, alcohol, and marijuana), academic achievement, cognitive skills, mental

health, and brain structure and function using advanced research methods.

- A new Request for Applications (RFA), Smoking Cessation within the Context of Lung Cancer Screening (RFA-CA-15-011), will be funded in FY 2016 to stimulate research on optimal cigarette smoking cessation approaches delivered in conjunction with lung cancer screening. The studies funded by these awards will evaluate the key components and characteristics of an effective smoking cessation intervention delivered in conjunction with a screening appointment and/or optimal strategies for incorporating existing evidence-based smoking cessation interventions into a variety of low-dose CT screening settings, from large academic hospitals to community health centers.





## HEALTH DISPARITIES

In the United States, rates of preventable and detectable cancers are falling for the general population, but for some cancers, minority communities are still suffering at disproportionate rates. NCI's research priorities in the area of cancer disparities encompass the entire cancer control continuum, from identifying and understanding the role of biology in disparities, to cancer prevention, treatment, and survivorship. A variety of research efforts is needed to better understand and address the disparities that exist in cancer incidence, treatment access, and outcomes. In addition, research is needed to improve methodologies and selection of appropriate research sample sizes that will allow for generalization of findings to racial and ethnic subpopulations across the US.

- Out of the total 800 grants in the portfolio supported by DCCPS, 317 (~40%) include a health disparities component. To inform future research, the division supports a

number of cohorts, such as the Multiethnic/Minority Cohort Study of Diet and Cancer, the Southern Community Cohort Study, and a program project on epidemiology of breast cancer subtypes in African American women.

- NCI is working to ensure that its data collection efforts include a greater focus on underserved communities. A key illustration is the current renewal and expansion of SEER data collection to increase understanding of racial, gender, and geographic disparities. For example, the Annual Report to the Nation, which uses SEER data, reported in 2015 that triple-negative breast cancers — the subtype with the worst prognosis — were highest among non-Hispanic black women, which is reflected in high rates in southeastern states [March 30, 2015, J Natl Cancer Inst]. The expanded data can be imported into the SEER Program's statistical software, the Health Disparities

Calculator (HD\*Calc), to evaluate and monitor any of 11 health disparities measurements.

- Native American populations are exposed to considerable risk factors that significantly increase their likelihood of chronic disease, substance abuse, mental illness, oral diseases, and HIV infection. NIH is supporting PAR-14-260, Interventions for Health Promotion and Disease prevention in Native American Populations, to develop, adapt, and test the effectiveness of culturally appropriate health promotion and disease prevention interventions in these populations. The goal is to promote the adoption of healthy lifestyles, improve behaviors and social conditions, and/or improve environmental conditions related to chronic disease, the consumption of tobacco, alcohol and other drugs, mental illness, oral diseases, and HIV infection.





## REVITALIZING SEER FOR RESEARCH USE

The SEER Program has been supporting research on the diagnosis, treatment, and outcomes of cancer since 1973. SEER's timely, complete, and accurate surveillance data, statistical methodologies and tools, and surveillance infrastructure all support cancer research in health care, technology, and scientific environments that continue to change. In December 2015, Lynne Penberthy, Associate Director for the division's Surveillance Research Program, presented a comprehensive update on the SEER Program to NCI's Board of Scientific Advisors and National Cancer Advisory Board. The presentation provided an overview of the program and also focused on new projects designed to expand SEER's capacity to support research.

- One such new project is the SEER-linked Virtual Tissue Repository, or VTR. The VTR provides a tool for researchers to search de-identified abstracts and linked electronic pathology (ePath) reports to select a set of relevant specimens. The VTR is population based, which permits comparisons of subsets, it is available across a broad spectrum of health care facilities and labs, it allows access to rare cancers and exceptional outcomes, and it links to long-term outcomes, among other benefits. A pilot study of VTR with seven registries for pancreatic and breast cancers is currently under way. The



results of the pilot study will allow researchers to assess best practices across multiple registries, estimate the costs of supporting a SEER-wide system, assess the availability of specimens, and better understand human consent requirements, as requirements now vary by registry.

- Another new SEER-related project that has been proposed is the Virtual Pooled Repository, or VPR. This virtual national cancer registry would provide a tool for researchers to automatically link patients with all US cancer registries, not

only SEER registries. The benefits of such a pooled resource would be many, including opportunities for cohort studies, follow-up for clinical trials, post-marketing surveillance for the FDA, enhanced efficiency and accuracy, and potential cost savings.

## PRECISION MEDICINE

After decades of research, we are poised to enter a new era of cancer prevention and treatment that takes into account people's individual variations in genes, environment, and lifestyle. The President's Budget for NCI for fiscal year (FY) 2016 contains funding increases for priority research to advance the field of precision medicine. Under the [Precision Medicine Initiative \(PMI\)](#), NIH will create a research cohort of more than 1 million American volunteers who will share genetic data, biological samples, and diet/lifestyle information, all linked to their electronic health records if they choose. Research based upon the cohort data will advance pharmacogenomics, the right drug for the right patient at the right dose; identify new targets for treatment and prevention; test whether mobile devices can encourage healthy behaviors; and lay scientific foundation for precision medicine for many diseases.

- To assess clinicians' awareness and knowledge, as well as current and potential use of genomic tests, NCI, in collaboration with the National Human Genome Research Institute and the American Cancer Society, will be fielding The National Survey of Precision Medicine in Cancer Treatment in 2016. This nationally representative survey will look at medical oncologists' experiences, attitudes, and recommendations concerning genomic tests; determine the prevalence of genomic testing in oncology; and identify facilitators and barriers in the

integration of genomic testing into oncology. The findings from the survey will be used to identify future research needs and to better understand the application of precision medicine to cancer treatment patterns and practice.

- DCCPS staff have been engaging with extramural researchers to better understand future opportunities for research in precision medicine. In September 2015, DCCPS convened two workshops that focused specifically on this topic. The first workshop brought together 100 trialists, health outcomes researchers, statisticians, trial administrators, patient advocates, and regulators to focus on basic designs of precision medicine trials in oncology, challenges with patient-reported outcomes (PROs) endpoints in early- and

late-phase trials, and the evolving regulatory framework for the inclusion of PROs in precision medicine trials. A manuscript will summarize recommendations for inclusion of PROs in NCI-sponsored precision medicine trials. The second [precision-related workshop](#) in September 2015 brought together leading screening and cancer control researchers to discuss the state of the science of precision screening for five cancers: prostate, breast, colorectal, cervical, and lung. The intent of the meeting was to brainstorm about how best to move forward with a research agenda to better understand and implement precision screening.



## HPV VACCINATION UPTAKE

In 2014, the President's Cancer Panel released a report calling for a coordinated effort to increase the rates of vaccinations against human papillomavirus (HPV). The report, *Accelerating HPV Vaccine Uptake: Urgency for Action to Prevent Cancer*, calls increasing the rate of HPV vaccinations one of the most profound opportunities in cancer prevention today. The two HPV vaccines – Cervarix and Gardasil – both prevent the two types of HPV that cause 70% of all cervical cancers. Despite this, only 33% of adolescent girls and less than 7% of boys in the US have completed the 3-dose series of either vaccine. DCCPS is pursuing areas of research that could potentially lead to higher vaccination rates.

- NCI and CDC's Division of Cancer Prevention and Control have brought together NCI-designated Cancer Centers, CDC programs, and state and local health departments in an effort to enhance strategies to improve HPV vaccine uptake and increase capacity of cancer centers to conduct research within the context of primary care. In September 2014, NCI awarded supplements to 18 NCI-designated cancer centers to support collaborations with existing state and local coalitions and HPV immunization programs. The short-term goals for this one-year supplement were to conduct an environmental scan and develop and enhance linkages with existing coalitions and programs to increase HPV vaccination uptake in pediatric care



settings. The long-term goals are to utilize enhanced collaborations to develop or expand intervention research to increase HPV vaccination uptake. A synthesis of findings from across the 18 cancer centers is currently under way and will be available in early 2016.

- The importance of a physician's recommendation of the vaccine was highlighted in both the President's Cancer Panel report and a recent systematic review, in which lack of physician recommendation was identified as a prominent barrier to uptake of the HPV vaccine (Holman et al., *JAMA Pediatrics*, 2014). To address this problem, DCCPS developed a new funding opportunity announcement to advance understanding of how the health care delivery system affects HPV vaccine uptake when recommendations to vaccinate are made by physicians and other vaccine providers to adolescents in the United States. The goal of this FOA is to improve the effectiveness of provider

recommendations for the HPV vaccine, with a focus on underserved communities.

- Development of integrated and comprehensive communication strategies may benefit from a multi-level approach that recognizes the complex and related sets of individual, group, and organizational factors. In collaboration with CDC, DCCPS is planning a special interest project competitive supplement, *Multi-Level Communication Strategies to Promote HPV Vaccination Uptake*, to develop and test multi-level health communication strategies to promote HPV vaccination in underserved or high-risk populations. In combination, these strategies should enhance acceptability of HPV vaccination, increase behavioral intentions to vaccinate among parents with vaccine-eligible children, and/or increase behavioral intentions among providers to recommend HPV vaccination in communities where vaccination rates lag behind national goals.



## OUTCOMES RESEARCH

Despite the significant advances in cancer research over the past decade, many patients with cancer do not receive optimum care. In addition, the economic burden associated with cancer is staggering, with costs expected to only increase as the population ages and more expensive screening, diagnostic, and therapeutic strategies are adopted as standards of care. The complexity of research on the quality and economic impact of cancer care requires more comprehensive sources of meaningful data and scientifically sound methods to enhance the linkages of traditional databases and cancer registries. Moreover, outcomes research must increasingly consider not only traditional biomedical endpoints, such as survival and disease-free survival, but also patient-reported outcomes that reflect the perspective of the individual with cancer.

- DCCPS funds the Cancer Care Delivery Research (CCDR) component of the NCI Community Oncology Research Program (NCORP). NCORP is a national network of investigators, cancer care providers, academic institutions, and other organizations that serves as a resource for studying cancer care in the community, where the majority of patients receive care. The goal of NCORP is to generate a broadly applicable evidence base that contributes to improved patient outcomes and a reduction in cancer disparities. The CCDR marks the first time that health care delivery has been a focus of clinical trials groups.

- DCCPS played a leading role in the development of the Patient Reported Outcomes Measurement Information System (PROMIS), which is a system of highly reliable, precise measures of patient-reported health status for physical, mental, and social well-being. PROMIS serves as a well-validated instrument that sets a standard for the collection of patient-reported data in the research community. More recently, NCI has funded the Person-Centered Assessment Resource (PCAR), which provides automated use of four state-of-the-science measurement systems, including PROMIS, NIH Toolbox, Neuro-QOL, and ASCQ-Me, that were originally developed as separate NIH programs. PCAR gives

researchers and others a single place to identify key quality-of-life measures.

- DCCPS provides valuable research opportunities through use of cancer registry-linkages for patient-reported outcomes surveillance. Surveillance, Epidemiology, and End Results (SEER) Program national cancer registry data are linked with CMS-led surveys: the Medicare Health Outcomes Survey (MHOS) and Consumer Assessment of Healthcare Providers and Systems (CAHPS). As of 2015, DCCPS has responded to our 46th request for new SEER-MHOS data, which is publicly available to researchers, and SEER-CAHPS data will become publicly available in 2016.



# Revisit, Revitalize, and Develop

## SURVIVORSHIP

In 2015, there were an estimated 14.5 million cancer survivors in the United States, and that number is projected to increase to almost 19 million by 2024. These exponential increases underscore the growing need to better understand and improve survivorship care and the survivorship experience, including possible physical and financial changes, risks of persistent or late-occurring effects – and interventions to prevent or mitigate them – the psychosocial needs of cancer survivors and their caregivers, the role of physical activity, and the need to develop and integrate effective and efficient models of care.

- Given the host of possible long-term and late effects that require coordinated follow-up care after completion of primary treatment for cancer, researchers and health care delivery systems have expressed the need to understand how best to structure and deliver survivorship care and how to pay for such care. The DCCPS funding opportunity Examination of Survivorship Care Planning Efficacy and Impact, which was recently reissued, aims to stimulate research that will ultimately inform the development and delivery of interventions and best practices in follow-up care for cancer survivors. Another survivorship-related program announcement also was recently reissued, Physical Activity and Weight Control Interventions Among Cancer Survivors: Effects

on Biomarkers of Prognosis and Survival. This funding opportunity encourages transdisciplinary and translational research that will identify the specific biological or biobehavioral pathways through which physical activity and/or weight control may affect cancer prognosis and survival.

- DCCPS continues to convene stakeholders to stimulate advances in the field of cancer survivorship research. The 2016 biennial conference, to be held in June in Washington, DC, in partnership with the American Cancer Society, the LIVESTRONG foundation, and the Centers for Disease Control and Prevention, will focus on “innovation in a rapidly changing landscape.” The workshop Caring for Caregivers and Patients: Revisiting the Research and Clinical Priorities for Informal Cancer Caregiving, convened by DCCPS in May 2015, focused on current opportunities

and challenges in the field and delineated how best to design and disseminate effective interventions to reduce the burden of cancer caregiving. In process is a paper that reviews the meeting proceedings and provides recommendations. DCCPS also is developing a funding opportunity focused on informal caregivers.

- An informational tool soon will be available that will provide survival information for survivors and caregivers. The SEER Cancer Survival Calculator (SEER\*CSC) is a web application that uses SEER data, coupled with Medicare data, to estimate the probabilities of surviving or dying from cancer or from other causes based on a set of patient characteristics. The first SEER\*CSC, focused on oral cancer, is scheduled for release in 2016.

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## DIET, WEIGHT, AND PHYSICAL ACTIVITY

Over the past few decades, the incidence of obesity has risen markedly in the United States and in many other countries around the world. The so-called obesity epidemic has substantial implications for cancer research and cancer control, given that obesity is associated with increased risks of developing cancer at many sites. In recent years, researchers have been focusing on energy balance, or the integrated effects of diet, physical activity, and genetics on growth and body weight over an individual's lifetime, and on how those factors may influence cancer risk. Further interdisciplinary research is needed to refine our understanding of the associations between obesity and specific cancers, the mechanisms underlying these associations and their potential reversibility, and to support behavioral research to help overcome obesity at the individual and population levels.

- The [Automated Self-Administered 24 Hour Recall \(ASA24\)](#) is a fully automated, web-based, self-administered, 24-hour dietary recall, specifically designed for research that provides a low-cost means for investigators to obtain high-quality dietary data. A new mobile version of ASA24 that takes advantage of current best practices for mobile technology and design has been developed and is expected to be released in early 2016. Future studies, such as the NIH Precision Medicine Initiative, are being planned using mobile platforms to allow for a range of data collection.
- The Family Life, Activity, Sun, Health, and Eating Study (FLASHE) is a National Cancer Institute study that assessed psychosocial, generational, and environmental correlates of cancer preventive behaviors among parent-adolescent dyads. A total of 1,479 dyads completed the study in 2014, and the [FLASHE data](#) will be posted in early 2016.
- Women who are overweight or obese when they are diagnosed with breast cancer have a higher risk of cancer recurrence compared to leaner women. Some evidence suggests that losing weight could help lower the risk of cancer recurrence in these women, but this has not been tested in a clinical trial. With co-funding from DCCPS, the Alliance, an NCI Network Clinical Trials Group, is developing a study to test whether a lifestyle intervention intended to result in weight loss will reduce the risk of recurrence in patients with early-stage breast cancer. The anticipated start date is spring 2016.





## BEHAVIORAL SCIENCE METHODS

Cancer morbidity and mortality are greatly influenced by behaviors such as tobacco use, physical activity, vaccination, and sun exposure, and by psychological and behavioral processes including stress, cognition, emotion, and communication. Changes in the health and scientific landscape are posing many important new demands on behavioral research. Fortunately, new data sources, technological innovations, and methodologies have created novel ways to address the changing paradigm in health behavior research, offering the opportunity to adopt a multilevel approach to understanding behavior and the downstream effects of behavior on cancer incidence, progression, and quality of life.

- In order to gauge the performance of team science collaborations, understand the value the collaborations add over more traditional scientific approaches, and inform science policy, NCI's Behavioral Research Program (BRP) established several cross-disciplinary center grant initiatives, with the goal of accelerating scientific progress related to cancer prevention and treatment. The primary charge of the Science of Team Science (SciTS) Team is to better understand the processes, outcomes, and impacts of these large cross-disciplinary initiatives.
- The growth of our aging population will have an enormous impact on health care systems and care providers over the next few decades, requiring the development of creative approaches to ensure



effective treatment and management of chronic diseases in the elderly, both to improve quality of life, and also to reduce hospitalizations. An approach receiving increasing attention is “aging in place,” in which new monitoring tools and technologies are provided to older persons to allow them and their family caregivers to monitor their health, communicate with health care providers, and manage their chronic conditions effectively and safely within their own homes. NCI and the National Institute on Aging (NIA) have jointly released the Collaborative Aging (in Place) Research Using Technology (CART) Funding Opportunity Announcement to develop and validate the infrastructure for rapid and effective conduct of future research utilizing technology to facilitate aging in place, with a special emphasis on people from underrepresented groups.

- Numerous studies have documented that approximately one-third of cancer patients treated with adjuvant chemotherapy experience clinically significant cognitive difficulties that persist for months or years following treatment. In 2016, DCCPS will initiate a concept proposal, Cognitive Science Research to Improve Assessment of Cognitive Impairment Following Cancer Treatment, to solicit research that will apply validated cognitive and neuroscience paradigms to improve measurement and assess changes in acute and late-term cognitive side-effects following adjuvant chemotherapy for non-central nervous system tumors.

## COLORECTAL CANCER SCREENING

Colorectal cancer is one of only a few cancers that can be prevented, and deaths from colorectal cancer have decreased with the use of colonoscopies and fecal occult blood tests. But racial and ethnic disparities in colorectal death rates persist, and the reasons for these differences have not been entirely elucidated. Transdisciplinary research in cancer screening has helped us to better understand how to improve the screening process, including recruitment, diagnosis, and referral for treatment. However, effective messaging is still needed to reach the unscreened, and barriers to health care access must be removed. Successful models are needed for coordinated, high-quality colorectal cancer screening and follow-up care that engages patients and empowers them to complete needed care from screening through treatment and long-term follow-up.

*...effective messaging is still needed to reach the unscreened, and barriers to health care access must be removed.*

- In September 2015, experts from DCCPS – along with representatives from the American Cancer Society (ACS) and CDC – led a colorectal screening workshop in Atlanta, Georgia, the 80% by 2018 Forum: Increasing Colorectal Cancer Screening Rates through Enhanced Partnerships between Comprehensive Cancer Control Coalitions and Federally Qualified Health Centers. Speakers at the forum presented evidence-based research interventions, tools, and resources to support acceleration of colorectal screening rates to 80% by 2018, through enhanced partnerships. The forum has facilitated the creation of evidence-based action plans by the participating teams of stakeholders representing National Community Cancer Centers Programs (NCCCP) and coalitions, federally qualified health centers, primary care associations, ACS Health Systems, local health departments, and practitioners.
- A major research effort funded by DCCPS, the Population-based Research Optimizing Screening through Personalized Regimens (PROSPR) Initiative, supports research to better understand how to improve the screening process (recruitment, screening, diagnosis, referral for treatment) for breast, colon, and cervical cancers. As of 2014, the initiative had assembled data for 3,311,749 patients, 14,489 providers, and 3,918 facilities from a diverse set of institutions that reflect the complexity of medical care in the United States. The overall aim of PROSPR is to develop multisite, coordinated, transdisciplinary research to document, evaluate, and improve the entire screening process. DCCPS is planning to reissue an RFA to collect screening data in FY 2017.
- The Cancer Intervention and Surveillance Modeling Network (CISNET) is a consortium of NCI-sponsored investigators who use statistical modeling to improve our understanding of cancer control interventions in prevention, screening, and treatment and their effects on population trends in incidence and mortality. These models can be used to guide public health research and priorities.

## GEOSPATIAL RESEARCH

Spatial context is a key factor in health, as it can influence the risk of getting a disease, the ability to adopt a healthy lifestyle, and the ease of access to medical services for disease diagnosis and treatment and for preventive care. Geospatial data and tools, therefore, play an important role in cancer research by integrating data on exposure, neighborhood characteristics, and access to health services. Robust geographic information systems are critical to answering key questions about cancer incidence, morbidity, mortality, cancer-related health status, and health disparities in diverse regions and populations, as well as the impact of cancer control interventions on the cancer burden in the United States.

- The DCCPS Web portal [Geographic Information Systems Tools & Data](#) provides links to data sources, describes tools developed by NCI for the analysis and visualization of geographic data, and directs users to other GIS tools and applications.
- DCCPS also is cofunding [Spatial Uncertainty: Data, Modeling, and Communication](#), along with the National Institute of Environmental Health Sciences, the National Institute of Allergy and Infectious Diseases, and the Eunice Kennedy Shriver National Institute of Child Health and Human Development. Spatial uncertainty is the lack of, or the error in, knowledge about an object's geographic position, which leads to uncertainty about the spatial relationship among its neighbors. The original program announcements were issued in 2011 as trans-NIH initiatives and were reissued in 2015 to facilitate multidisciplinary collaborations among researchers to promote the identification, quantification, and communication of spatial uncertainty in health research. An additional goal of the reissuance is to facilitate integration of data collection, information technology, visualization tools, statistical models, and health communication to reduce spatial uncertainty in the planning, implementation, and evaluation of disease control programs.

## OPPORTUNITIES FOR RESEARCHERS

In addition to encouraging the best scientific ideas for researchers through investigator-initiated applications and omnibus solicitations, DCCPS develops and participates in NIH funding opportunities aimed at stimulating new directions in specific research to examine, discover, and test methodologies to improve public health. The following are examples of recent Funding Opportunity Announcements to encourage research projects in emerging or priority areas:

- Improving Outcomes in Cancer Treatment-related Cardiotoxicity (PA-16-035, PA-16-036)
- Early-life Factors and Cancer Development Later in Life (PA-15-124, PA-15-125, PA-15-126)
- Multilevel Interventions in Cancer Care Delivery: Building from the Problem of Follow-up to Abnormal Screening Tests (PAR-15-108)
- Research Aimed at Novel Behavioral Targets to Improve Adolescent Substance Abuse Treatment and Prevention Interventions (PA-15-035)
- Systems Science and Health in the Behavioral and Social Sciences (PAR-15-047, PAR-15-048)
- Time-Sensitive Obesity Policy and Program Evaluation (PAR-15-346)
- Research on the Mechanisms and/or Behavioral Outcomes of Multisensory Processing (PA-15-347)
- Advancing Interventions to Improve Medication Adherence (PA-14-334, PA-14-335)
- Program Announcements for Spatial Uncertainty: Data, Modeling, and Communication (PA-15-009, PA-15-010, PA-15-011)
- End-of-Life and Palliative Needs of Adolescents and Young Adults (AYA) with Serious Illnesses (PA-15-324, PA-15-325)
- Dissemination and Implementation Research in Health (Domestic and International Funding Opportunity) (PAR-13-054, PAR-13-055, PAR-13-056)
- More information about funding opportunities can be found at [cancercontrol.cancer.gov/funding.html](http://cancercontrol.cancer.gov/funding.html).





# Investments in Cancer Control Research

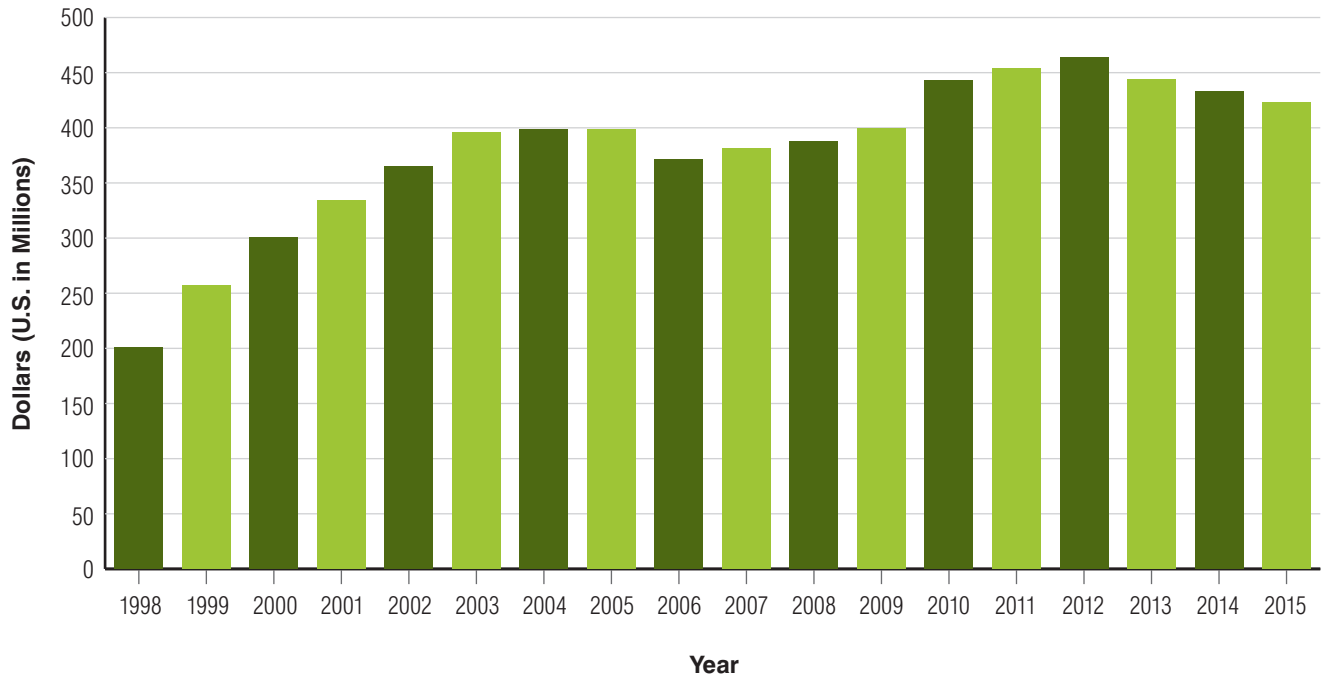
**Researchers funded by DCCPS have advanced the science to improve public health for** nearly two decades, and we celebrate their scientific advances and research accomplishments in cancer control and population sciences. Major programmatic areas include epidemiology and genomics research, behavioral research, health care delivery research, surveillance research, and survivorship research.

In fiscal year 2015, DCCPS funded 726 grants valued at more than \$423 million, with work in the United States and internationally aimed to reduce risk, incidence, and deaths from cancer, and to enhance the quality of life for cancer survivors. While the majority of DCCPS funding is for investigator-initiated research project grants, the division also uses a variety of strategies to support and stimulate research such as multi-component specialized research centers and cancer epidemiology cohorts.

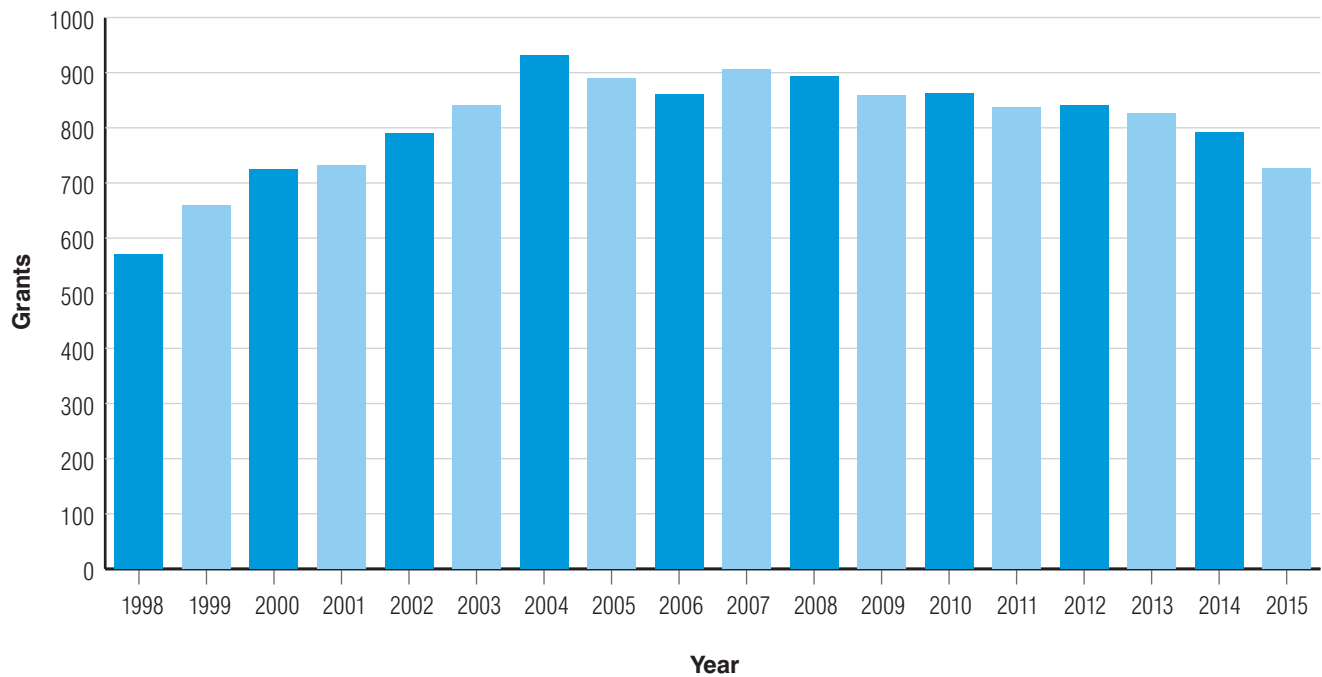
Learn more about the DCCPS grant portfolio and funding trends at [cancercontrol.cancer.gov/current\\_research.html](http://cancercontrol.cancer.gov/current_research.html).

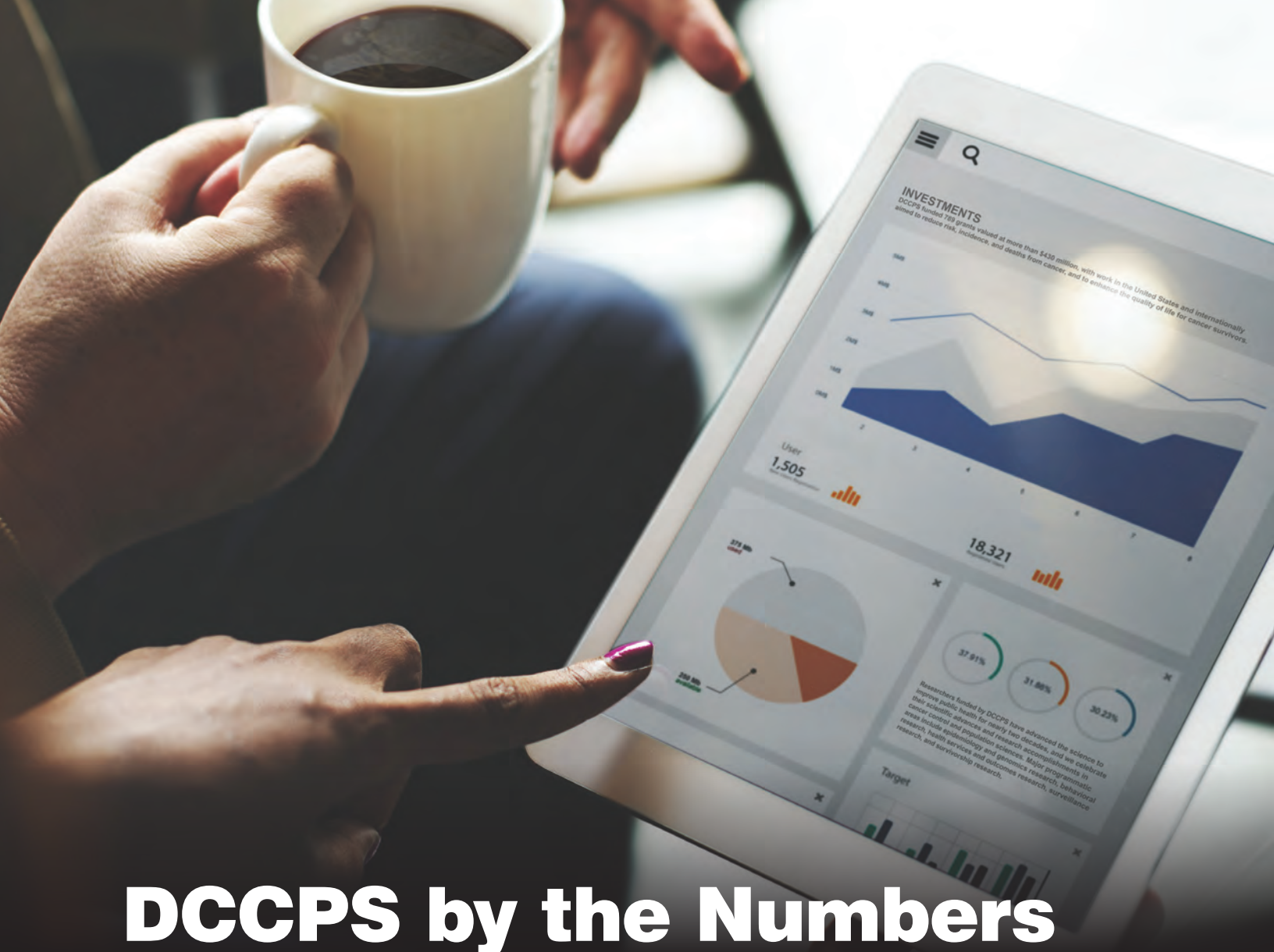
# DCCPS Research Portfolio by Fiscal Year

Total Dollars (in Millions)



Total Grants





# DCCPS by the Numbers

As a window into the many ways DCCPS provides return on investment, we highlight here just a few snapshots of progress from the past year.

**40**

The DCCPS 2015 [New Grantee Workshop](#) brought together approximately 40 new investigators who received their first R01 in 2012 and 2013 to help them successfully manage their grants and advance their careers.

**2,300**

In 2015, the [Team Science Toolkit](#) included nearly 2,300 resources drawn from the range of fields and disciplines creating the evidence-base for effective team science.

**264**

As of FY 2015, 264 peer-reviewed publications had used data from the Health Information [National Trends Survey \(HINTS\)](#), which monitors changes in the rapidly involving fields of health communication and health information technology.

**90**

More than 90 common genetic variations are associated with breast cancer risk. [The Breast Cancer Genetic Epidemiology Challenge](#) is stimulating innovation in breast cancer research by giving participants access to genetic data from thousands of ethnically diverse research participants for the first time.

**93  
million**

In July 2015, more than 450 patients, researchers, practitioners, and advocates participated in a “[Coping with Cancer](#)” Twitter chat about caregiving. The division's Office of Cancer Survivorship, in collaboration with NIMH, led the chat with an expert group of more than 25 cancer centers and advocates. NCI and NIMH coined the hashtag [#CopingCancer](#), which appeared more than 93 million times in a little over an hour as part of the chat.

**137%**

DCCPS co-hosted the [Annual Conference on the Science of Dissemination and Implementation in Health](#) in 2015. The number of abstract submissions nearly tripled — increasing by more than 137% (from 217 in 2012 to 515 in 2015).



**126,000**

The [SEER-Medicare Health Outcomes Survey \(SEER-MHOS\)](#) was updated in FY 2015 to include data on more than 126,000 patients with cancer. Sponsored by NCI and the Centers for Medicare & Medicaid Services, the SEER-MHOS is a major data source for studies of cancer care.

**300  
million**

DCCPS and CDC's Office on Smoking and Health released [Smokeless Tobacco and Public Health: A Global Perspective](#) in 2015, the first-ever report to provide a global estimate of the number of smokeless tobacco users worldwide. Smokeless tobacco is used in a variety of forms in at least 70 countries and by more than 300 million people.

**12**

The [Did You Know? series of short videos](#) from DCCPS explains some of the statistics and trends behind different types of cancer, as well as related topics, such as the link between excess weight and cancer risk. As of 2015, viewers could choose from more than a dozen options by opening the "Choose a video" drop-down menu.

**23**

The DCCPS-sponsored [International Cancer Screening Network \(ICSN\)](#) held its annual meeting in Rotterdam, the Netherlands, in June 2015, focusing on global health. The ICSN comprises 23 member countries.

**15**

As of FY 2015, the [Smokefree.gov](#) initiative had expanded to include 15 smoking cessation and healthy lifestyle text message programs, reaching adult smokers and other audiences such as teens, pregnant women and new mothers, veterans, and Spanish speakers. Subscribers have access to free programs such as SmokefreeTXT, HealthyYouTXT, SmokefreeMOM, and SmokefreeVET.

**28.4%**

The Division's Healthcare Delivery Research Program co-funds the [Medical Expenditure Panel Survey \(MEPS\) Experiences with Cancer Survivorship Supplement](#), which is used to improve national estimates of the burden of cancer. In 2015, DCCPS researchers published key findings on financial hardship among cancer survivors. Financial hardship was most common (28.4%) for cancer survivors aged 18-64 years (Yabroff et al. J Clin Oncol, Dec 7, 2015).

[cancercontrol.cancer.gov](https://cancercontrol.cancer.gov)



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