

RESEARCH



Research

Cancer research spans the continuum from work in human genetics, to tracking statewide patterns of disease incidence and mortality, doing laboratory animal and cell culture experiments, and conducting clinical and population-based studies. In order for this work to have real impact, research findings must be translated into everyday practice. Yet historically, it has taken years, even decades, for cancer prevention and control research to reach average people. For example: the relationship between tobacco smoking and lung cancer was hypothesized before World War I; the first scientific papers linking tobacco smoke to lung cancer appeared over thirty years later (just after World War II); the Surgeon General's Report confirming the relationship was published nearly 15 years later (in 1964); and it was another 15 years before most doctors counseled most of their smoking patients to quit. In terms of early detection and screening, the Pap smear was developed in the early 1940's but was not widely used until the 1970's. Mammography became available in the 1950's but was not widely promoted until the early 1980's. These long lag times have cost people their lives, especially members of minority groups and the medically underserved who tend both to have high rates of cancers and to be the last ones to benefit from technological advances in early detection and treatment.

Over the past decades, a major focus of public health has been directed toward bridging this gap, with some notable successes, including better screening rates for breast and cervical cancers. However, the growing gulf in health disparities underlines the limitations inherent in strategies that are oriented toward secondary prevention. For some cancers, such as prostate, complex public health and psychosocial issues mitigate against making strong, simple suggestions for population-based screening. A public health consensus has not emerged on prostate cancer detection, yet targeted health education for communities at greatest risk is imperative. This is one of many areas that will require research competence across a wide spectrum of disciplines, and active engagement with community members and organizations.

Cancer rate disparities and the inconsistencies between what we learn in conducting studies in easier-to-get-at populations (that also tend to be at lower risk) and what we can apply in less-accessible, higher-risk populations, underscore the gap between public health research and the communities we are working to reach. In response, the focus of public health research has shifted to community-based participatory research (CBPR), where community-based organizations and members are engaged in every aspect of research. This involvement can range from recruiting community members as partners, to study development, to engaging community members in the design of interventions and education materials. This approach shows particular promise in reducing the cancer-related health disparities that persist in South Carolina.

Research

The 2004 SCCA Cancer Report Card and the special (July 2005) symposium issue of the *Journal of the South Carolina Medical Association* have described several areas where health disparities called for more focused research in South Carolina. While a brief description is provided for four major cancer sites here, additional information is available from the Cancer Report Card (on most sites) and the special symposium issue of the *Journal of the South Carolina Medical Association* which focuses in much greater depth on seven sites (breast, prostate, colorectal, lung and bronchus, oral cavity and pharynx, cervix, and esophagus).

Prostate Cancer. South Carolina consistently ranks among the highest states in the nation for deaths due to prostate cancer. In South Carolina, African-American (AA) men are more likely to be diagnosed with prostate cancer than European-American (EA) men and are almost three times more likely to die from prostate cancer than EA men (SCCCR 2005, Drake et al., 2005). Although these disparities have been attributed to factors ranging from socioeconomic differences to genetics, the underlying reasons are not well understood and demand additional research. Community-based research is also needed to develop effective health education programs aimed at helping men make individual decisions regarding the benefits and risks of prostate cancer testing.

Breast Cancer. Although European-American women are more likely to develop breast cancer than African-American women in South Carolina, AA women are 43 percent more likely to die of this disease. African American women are more likely to be diagnosed with late stage breast cancer than European American women (44% versus 32%, respectively). More research is needed to help understand the root causes of these disparities, particularly biological risk factors. Participation of African-American women in clinical trials in South Carolina is crucial to this process (Adams, et al., 2005).

Esophageal Cancer. South Carolina ranks third in the nation for deaths due to esophageal cancer. Both incidence and mortality rates are at least twice as high for African American men as European American men. Rates for a certain type of esophageal cancer, squamous cell carcinoma, are six times higher for African Americans than for European Americans in South Carolina. Smoking and drinking are believed to account for about 95 percent of esophageal cancer. However, the profound disparity in South Carolina death rates cannot be attributed to these factors, as African-American men smoke less than their EA counterparts and their rate of alcoholic beverage consumption is about the same (Hebert, et al., 2005).

Oral/Pharyngeal Cancers. South Carolina consistently ranks among the highest states in the nation for deaths due to oral and pharyngeal cancers. African-American men in South Carolina have far higher mortality rates from these cancers than EA men, and this disparity is significantly more extreme in South Carolina than the rest of the nation (Yen, et al., 2005). About three-quarters of risk for oral and pharyngeal cancers can be attributed to tobacco use and alcohol consumption. However, as with esophageal cancer, behavioral risk factors cannot account for this cancer disparity in South Carolina. The actual causes for these disparities can only be resolved through further research that includes study of social, behavioral, and biological factors (Yen, et al., 2005).

Research

In resolving these questions, South Carolina is fortunate to have several academic institutions that have earned a national reputation for cutting-edge research. These include the University of South Carolina and its cancer research program, which is well known in the fields of diet, physical activity and alternative medicine, as well as for the study of colon, breast, mouth, and prostate cancers. The Medical University of South Carolina/ Hollings Cancer Center (MUSC/ HCC) researchers are leaders in basic science research across a wide range of cancers and in clinical research on esophagus, lung, oral cavity, and bladder cancers. The Greenville Hospital System/ Cancer Center of the Carolinas has a strong cancer research program, whose specialty is Phase I clinical trials. Other clinical research is based in the Pee Dee, at McLeod Health Systems, and in Orangeburg, at Orangeburg Hospital. Clemson University, through its Department of Public Health in the College of Health, Education, and Human Development, is involved in research in cancer prevention, education, and outreach. A new program in Public Health at Benedict College and strong collaborations between both Claflin University and South Carolina State University and the major research universities in the state round out the very competent array of partners who will implement, modify, and evaluate this plan.

“No matter how well-meaning, research conducted elsewhere - or spearheaded by scientists based elsewhere - will not lead to practical advancement of knowledge as to why rates of important diseases are so much higher in South Carolina. Simply put: If we are not willing or able to understand – let alone solve – our problems, no one will be able to understand or solve them for us.”

Dr. James Hebert, Arnold School of Public Health, USC

To address the needs for prevention and control of cancer in South Carolina, MUSC/HCC and USC formed a collaborative arrangement for a statewide Cancer Prevention and Control Program in September 2003. The program places high priority on cancer disparities, of particular importance given the excess cancer risk among African-Americans in South Carolina.

This collaborative effort is networked with the SC DHEC Cancer Prevention and Control Program, the South Carolina Central Cancer Registry, the NCI-funded South Carolina Cancer Disparities Community Network, and the South Carolina Cancer Alliance (SCCA). The SCCA, through its broad-based constituency of community-based organizations, faith-based organizations, cancer survivors, advocates, and researchers, provides an unparalleled opportunity to connect researchers across the cancer spectrum with community members from across the state and to reach and engage the communities in greatest need.

Research

Objective 1. By August 2005, produce a report prioritizing cancer research in South Carolina. The initial phase of the needs reporting was done as part of the Cancer Research Network, funded by the CDC. This occurred on the same timeline as the initial development of the SCCA (i.e., in 2003-4). Refined versions of these reports were published in a special symposium (July 2005) issue of the journal of the South Carolina Medical Association. In June 2006, we will republish these articles in a hardcopy special symposium issue of the Journal of the South Carolina Medical Association. This will allow for incorporating comments from the various communities/constituencies involved. To our knowledge, this is the first time that community-based participatory research (CBPR) has been part of the process of developing research priorities and strategies for a statewide cancer plan.

“Many of us have experienced cancer through the eyes of a loved one and understand that cancer is not just about statistics, it’s about people struggling to stay alive.”

Governor Mark Sanford

Strategy 1. Determine the specific cancer research needs in the state and focus research efforts across institutions conducting cancer research and providing cancer-related care.

By 2 September 2005, begin to inventory and catalogue existing, information resources, databases, systems, and networks for cancer research; through the Data Needs Committee, Research Task Force of the SCCA, monitor this as an ongoing activity. Based on this work, identify needs and refine future plans.

By 15 October 2005, begin to identify specific target populations in relation to specific target cancers where research is warranted (e.g., in rural communities, among high-risk minority populations we could conduct a tobacco-related intervention and combine it with etiologic study of oral cancer and precancerous lesions from which we would learn the underlying reasons for the high rates of disease and poor prognosis in African Americans); through the Research Task Force of the SCCA, monitor this as an ongoing activity.

Strategy 2. Plan for and begin to develop a cadre of junior faculty in the state’s colleges and universities that can promote and conduct research across the full spectrum of cancer prevention and control; including basic epidemiologic and bench-science studies, clinical trials, and health services and policy research.

Research

Objective 2. By October 2005, begin to develop a Core Resource of wide-ranging scientific and administrative expertise to assist South Carolina-based researchers in focusing on specific cancer-related problems and administrative issues.

Strategy 1. Recruit cancer experts from institutions outside South Carolina to consult and assist with developing the capacity to perform in-depth cancer research across the cancer prevention and control spectrum; organize working groups consisting of these individuals who would consult on grant applications, review protocols, and function as consultants or as subcontractors, as appropriate.

Strategy 2. Develop relationships that will lead to long-term collaborations and improve recruitment of faculty into SC-based research (and support) institutions.

Objective 3. By June 2006, the SCCA will launch/sponsor a public relations campaign to educate the South Carolina public about scientific research and participation in cancer research studies.

Strategy 1. Hire a public relations firm/individual to work with the SCCA to develop/create the core underpinnings of the campaign and its priority messages.

Strategy 2. Create a model study participant recruitment campaign that capitalizes on the statewide public relations campaign, which can be used by a variety of research disciplines in cancer control.

Objective 4. By January 2007, gain broad-based institutional support for cancer research by encouraging organizations to assist in cultivating South Carolina as a vibrant, active, and important place to conduct cancer research.

Strategy 1. Obtain the unequivocal political support of leaders in academia, medical care, NGOs, grass roots organizations, and other places of relevance.

Strategy 2. Enable the appropriate group within each research institution to become a strong, unrelenting advocate for cancer prevention and control research.

Research

Objective 5. By June 2007, provide researchers with the most complete and uncomplicated access to research resources of any place in the United States.

Strategy 1. Allow researchers access to identified data to be used at points of greatest efficiency (e.g., around the tissue bank).

Strategy 2. Recognizing that there is not a long track record of academic researchers conducting epidemiologic research utilizing statewide resources such as DHEC's South Carolina Central Cancer Registry (SCCCR) and the Budget and Control Board's Office of Research and Statistics, to create a climate of trust and cooperation that will result in streamlined approval processes to optimize scientific potential.

Strategy 3. Gain support of leaders from organizations providing cancer diagnosis and care to remove the barriers that place South Carolina in an unfavorable position for conducting cancer research optimally responsive to the highest risk population.

Objective 6. By October 2007, develop a core resource that will assist cancer researchers with the recruitment, retention, and compliance of human subjects into cancer research protocols of all types.

Strategy 1. Build on existing resources, and create new core competencies to assist basic science researchers, clinician scientists, and population-oriented researchers with recruiting human subjects into a variety of studies.

Strategy 2. For both observational and intervention studies, develop resources to assist with subject follow-up and retention.

Strategy 3. For intervention trials of all types, develop centralized resources to enhance compliance with protocols.

Strategy 4. Assure that these resources are allocated efficiently in order to optimize effect on cancer incidence, mortality, and post-diagnosis quality of life.

Research

Objective 7. By October 2007, develop training and networking-specific expertise to focus on specific cancer-related problems and issues.

Strategy 1. Recruit senior faculty with established track records in cancer research at a ratio of about 1:6 with junior faculty (use the matching fund provisions of the Centers of Economic Excellence whose signatories include USC, MUSC, Palmetto Health, and the Greenville Hospital System).

Strategy 2. Recruit junior faculty with promise in cancer research at a ratio of about 6:1 with senior faculty (use mechanisms such as the Centenary Program at USC).

Strategy 3. Produce the next generation of skilled cancer researchers in South Carolina, by writing training grants that will focus on ties to populations at highest risk.

Objective 8. By October 2008, develop and oversee a Statewide Tissue Bank, which will collect cancer specimens from all pathology services associated with the three largest medical centers in South Carolina (USC/Palmetto Health, Hollings Cancer Center/MUSC, and the Greenville Hospital System) and provide technical assistance to all other entities that treat cancer patients in South Carolina.

Strategy 1. Obtain strong support for a statewide network of tissue banking from all large medical facilities in the state.

Strategy 2. Expand and deepen research capacity at each of the three largest medical centers, USC/Palmetto Health, the Hollings Cancer Center/MUSC, and the Greenville Hospital System.

Strategy 3. Develop capacity for technical assistance across these three centers and a mechanism for transfer to other facilities to participate using approved protocols.

Strategy 4. Ensure that tissue bank resources can be used for epidemiologic research; ensure linking of these data with descriptive patient information obtained from other state resources (e.g., SCCCR) and data collected as part of approved (at local IRBs) human subjects research.

Research

Objective 9. By October 2008, establish a network of physicians to disseminate Best Practices to community physicians practicing in rural areas.

Strategy 1. Develop an Alumni Network of South Carolina-trained physicians to refer and encourage patients to participate in cancer research projects.

Strategy 2. Work with the medical universities to recruit new physicians to actively participate in research and Best Practices.

Strategy 3. Develop reward systems so that Strategy 2 can really work.

Strategy 4. Involve the SCCA in physician-group state meetings to promote cancer research in the state.

Objective 10. By 2008, establish and maintain closer partnerships among researchers, communities, and community leaders.

Strategy 1. Develop and encourage relationships with community gatekeepers.

Strategy 2. Establish a caucus of community members, gatekeepers, and researchers to address community problems and expand knowledge related to cancer prevention and control research.