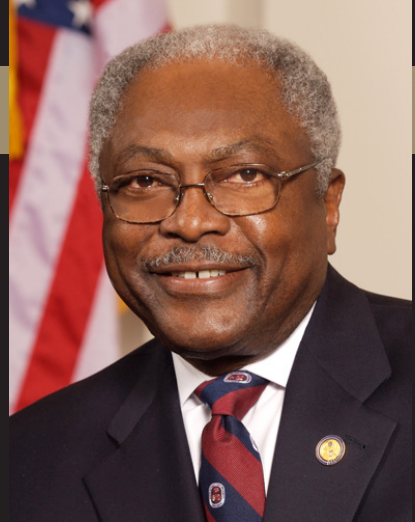


# HEALTH EQUITY IN THE 21<sup>ST</sup> CENTURY: SAVING THE NEXT GENERATION



*Part of the James E. Clyburn  
Health Disparities Lecture Series  
April 29, 2011*

**POSTER SESSION &  
ABSTRACTS**



UNIVERSITY OF  
SOUTH CAROLINA



Institute for Partnerships to  
Eliminate Health Disparities



ARNOLD  
SCHOOL  
OF PUBLIC  
HEALTH



*Health Equity in the 21<sup>st</sup> Century:  
Saving the Next Generation*

**Part of the James E. Clyburn Health Disparities Lecture Series  
April 29, 2011**

**POSTER SESSION &  
ABSTRACTS**

*The poster session and corresponding abstract booklet showcase health disparities research and practice being conducted by University of South Carolina faculty members, research staff, and students as well as community, clinical, and/or agency partners.*

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*\*Denotes student entry*

**Title:** A Pilot and Feasibility Study of Ethnic Differences in Interval Diagnosed Breast Cancers in South Carolina

**Authors:** Swann Arp Adams<sup>1,2</sup>, Emily Smith<sup>1</sup>, Jeanette Fulton<sup>3</sup>, Carri Clark-Sorensen<sup>4</sup>, Donna Keisler<sup>5</sup>, Kamala Swayampakala<sup>1</sup>, Bonnie C. Yankaskas<sup>6</sup>, James R. Hebert<sup>1</sup>

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**Abstract:**

**Background and Significance:** Interval-detected breast cancers (BrCAs) are tumors which arise between regular BrCA screening mammograms and are considered one of the most aggressive forms of breast tumors. With no previously published work having expressly examined interval-detected cancers among African American (AA) women, we sought to describe and compare interval BrCAs and their related histopathology among AA and European American (EA) women in South Carolina.

**Methods:** AA or EA women with no history of BrCA who received mammography screenings between 6/2003 and 6/2006 from a large, local mammography clinic were included (65,766 women, 140,662 visits). Interval-detected BrCA cases (n=46) were identified through the use of both a computer program and medical record review by the research team and a radiologist. Using SAS 9.1, chi-square and t-tests as well as incidence density and polynomial logistic regression were employed in analysis.

**Results:** AA women were more likely to have interval- malignancies (15%) than EA women (9%) (p-value=0.04). In adjusted models, the odds of an interval cancer being detected among AA women was 1.90 (95% CI: 1.04-3.46) times the odds among EA women. No significant association was observed between race and screen-detected cancers. Among EA women who were diagnosed with BrCA, interval cancers were 0.74 times less likely (95% CI: 0.57, 0.95) to be higher grade compared to screen detected cancers (among AA women: OR=1.10, 95%CI: 0.67, 1.8). Similarly, among EA women diagnosed with BrCA, interval cancers were 0.32 times less likely (95% CI: 0.12, 0.90) to have larger size compared to screen detected cancers (ORAA =1.13, 95%CI: 0.44, 2.80).

**Conclusion/Recommendations:** We found evidence that among women who are undergoing routine screening, AA women are more likely to be diagnosed with interval BrCA than EA women. In conclusion, interval cancers may contribute to the large BrCA mortality disparity experienced by AA women.

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**Funding Source:** South Carolina Cancer Center

**Conflict of Interest Statement:** The authors declare no conflicts of interest.



**Title:** Body Mass, Skin Tone Variability, Life Stress, and Racism Predict Resting Blood Pressure among African-American College Women

**Authors:** Cheryl A. Armstead, MS(R), Ph.D., Godwin Mbamalu, Ph.D., and Glenn M. Prince, M.Div., Tawanda M. Greer, Ph.D. & James R. Hébert, MSPH, ScD.

**Abstract:**

**Background & Significance:** Rates of cardiovascular disease for African Americans (AA) in the Southern United States are among the highest in the nation. Racial disparities in early adult pre-hypertension and obesity among African American women (AAW) are a growing concern. Racial differences in lifetime exposure to stress may contribute to pre-hypertension disparities. Studies suggest that AA women's stress exposure and discriminatory experiences related to skin color are qualitatively different than males. This study describes the relative influence of skin color, racism, life stress, and traditional hypertension risk factors on resting blood pressure among young southern AAW.

**Methods:** Four consecutive measurements of systolic (SBP) and diastolic (DBP) blood pressure, facial skin tone, and self-reported frequency of lifetime general stress and racism were assessed among 206 AA female undergraduate students in the USC Biobehavioral Health Laboratory.

**Results:** Stepwise regressions indicated that body mass index [BMI=weight (kg)/height(m)<sup>2</sup>] was the strongest predictor of SBP, accounting for 55.4% of the variance. Skin color accounted for 7.9%, general stress 4.0%, and family history of hypertension 2.6% of total SBP variance. BMI explained 42.3% of the variance in DBP, while skin color explained only 3.7%. Along with BMI and skin color, general stress accounted for only 1.4% change in the variance explained by the overall DBP model. Racial stress was not a significant predictor of either SBP or DBP models.

**Conclusions & Recommendations:** The current study provides preliminary evidence of the relationship among BMI, skin tone, and stress in relation to blood pressure among young southern AAW. Further research will determine if similar relationships hold true for AA men. Our findings suggest that models of pre-hypertension risk among AAW of college age should include measures of obesity, skin color, and stress.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Emerging Global Disparities in West Africa: Urbanicity Affects Blood Pressure and Heart Rate Reactivity to a Speech Stressor in the Cameroon

**Authors:** Cheryl A. Armstead, MS(R), PhD., ScD., Walinjom F. T. Muna, MD, PhD, Godwin Mbamalu, Ph.D., Lucille L. Adams-Campbell, PhD, Norman B. Anderson, PhD, & James R. Hebert, MSPH,

**Abstract:**

Background and Significance: Increased westernization, urbanicity, and stress loads are thought to impact cardiovascular disease rates in emerging West African countries. It is the purpose of this study to examine the interactive influence of urbanicity on cardiovascular reactivity to speech stressors among 103 urban and 93 rural Cameroonians.

Methods: Heart rate, systolic, and diastolic blood pressure (HR, SBP, and DBP) changes from baseline were assessed during a speech preparation period, speech stressor task, and post-speech recovery period in a clinic setting using a Dynamap blood pressure monitor.

Results: After adjusting for income, age, body mass index [BMI=weight (kg)/height(m)<sup>2</sup>], and gender, urban subjects showed greater diastolic reactivity to the pre-speech and speech conditions than to recovery. Urban subjects showed greater reactivity to the speech stressor than to other conditions. Urban subjects showed greater HR reactivity to the speech stressor. Rural subjects showed greater reactivity to the pre-speech and speech stressor and less recovery.

Conclusions & Recommendations: Urbanicity effects blood pressure and heart rate differently for urban and rural Cameroonians. It also affects recovery from stressors. More exploration into the influence of urbanization on hypertension risk factors in developing countries is warranted.

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**Title:** Racial Discrimination Predicts Physical Activity Intensity among Female African American Alumni of a Historically Black University

**Authors:** Cheryl Armstead, MS(R), Ph.D., Godwin Mbamalu, Ph.D., Tawanda Greer, Ph.D. and James Hebert, Sc.D.

**Abstract:**

**Background and Significance:** Determinants of the wide physical activity disparity gradient between college-educated AA and White women are poorly understood. Although Healthy People 2010 focused on decreasing disparities in moderate intensity PA, targeting low-intensity PA as a readily modifiable “gateway” behavior has been shown to be effective in several studies. We know little about how perceived racism affects gateway behaviors for PA in adult AAW, even after controlling for socioeconomic status and access to PA-promoting resources. This study investigated associations between low-intensity PA and two racism domains.

**Methods:** Eighty-four AA female alumni from North Carolina Central University, an HBCU, completed a mail survey. Their mean age was 54.8( $\pm$ 13.7) years. Their BMI was 27.3( $\pm$ 6.0) kg/m<sup>2</sup>. Women reported engaging in low, moderate, and vigorous PA lasting 30 minutes or more, 3.47( $\pm$ 3.56), 2.54( $\pm$ 1.89), and 1.42( $\pm$ 1.34) times per week, respectively. Weekly low-intensity PA was significantly higher than moderate or vigorous PA ( $p$ <.01).

**Results:** Stepwise linear regression models estimated predictors of daily PA intensity. Perceived national increases in perceived racism over the past decade and increased job-related racism predicted 20% of the variance in low-intensity PA ( $p$ <.002). Older age and lower educational attainment predicted increased moderate PA (Adjusted R<sup>2</sup>=.11,  $p$ <.04). Neither moderate, nor vigorous PA was associated with perceived racism.

**Conclusions & Recommendations:** These findings suggest that national anti-Black attitudes and job-related racism negatively impact low-intensity PA, a “gateway” behavior for moderate PA intervention. Age and educational attainment affect moderate intensity PA independent of racism experiences. Stage-based PA interventions must take into account the influence of perceived racism as a stressor and barrier to low intensity gateway behavior modification. Our findings highlight the importance of understanding the role of perceived racism as an important modifying influence on cancer risk factor disparities (e.g. lack of physical activity) among AA college educated women.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Weight Discrimination, Depression and Shift Work Predict Body Habitus Among African American Women

**Authors:** Cheryl Armstead, MS(R), Ph.D.\*, James Burch, Ph.D., Tom Hurley, MSc, Godwin Mbamalu, Ph.D. & James Hebert, Sc.D.

**Abstract:**

**Background and Significance:** Unequal burdens of stressors, such as shift work, racial & weight discrimination, and depressive symptoms may find unique and extreme expression among southern African-American women (AAW). Stress loads may contribute to obesity and CRCA risk through inflammation. Cancer prevention focusing on decreasing obesity and inflammatory risk through diet, exercise, and stress management could exert beneficial effects.

**Methods:** Questionnaire responses from 146 adult AAW from a randomized controlled diet and physical activity intervention study were analyzed. Body habitus was assessed (e.g. body mass index [BMI=weight(kg)/height(m)<sup>2</sup>], fat mass [FM], and waist to hip ratio [WHR]).

**Results:** Participants were obese (Mean BMI of 34.7(±7.7)kg/m<sup>2</sup>). Their average FM in pounds was 91.82(±35.03). Their mean WHR was 0.85(±0.80). Participants engaged in 5.4 years(± 7.9) of lifetime shift work on average. Their reported life stress levels were similar to AA national norms and were higher than White norms (Mean=14.8(±6.6). Depressive symptoms scores were above the screening criterion (6.6, ±5.1). Participants had post-high school educational attainment.

Stepwise linear regression models estimated the role of stressors in predicting body habitus. Weight discrimination was the strongest and most consistent predictor across three body habitus models,. BMI was predicted by increased weight discrimination, depressive symptoms, lifetime shift work, and lower levels of racism ( $R^2=.25$ ,  $p<.001$ ). Predictors of FM were weight discrimination, depressive symptoms, lifetime shift work, ( $R^2=.20$ ,  $p<.001$ ). Only 11% of the variance in the WHR was predicted by weight discrimination and education ( $p<.001$ ).

**Conclusions & Recommendations:** Our results suggest that shiftwork, weight discrimination, and depression contribute to adverse manifestations of body habitus among southern AAW. Studies are needed to understand how weight discrimination “gets under the skin” to produce disparities in body habitus. It is a challenge to identify intervention modalities that improve overall body habitus and reduce stress among southern AAW.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Examining the Influence of Self-rated Health on Perceived Burden Among Black, White, and Latino Caregivers of Older Adults With Alzheimer's Disease

**Authors:** Best, A. L.\* & Spencer, S. M.

**Abstract:**

Background and Significance: Despite a growing interest in caregiving and variations across minority groups, little is known about the influence of self-rated health (SRH) on the caregiver's experience. SRH is one of the most widely used predictors of morbidity and mortality. However, in the caregiving literature, SRH is often used as an outcome, rather than a factor which could affect the individual's interpretation of caregiving. The purpose of this study was to examine racial variations in the influence of SRH on perceived burden using data from the Resources for Enhancing Alzheimer's Caregiver Health (REACH) II Study.

Methods: REACH II participants included 670 African American, Latino, and White caregiver/care recipient dyads. SRH was assessed at baseline with a single item, and caregiver burden was measured using an adapted version of the Caregiver Burden Inventory scale. Univariate statistics were used to describe participant characteristics and the association between SRH and caregiver burden was examined with linear regression. All analyses were carried out using SPSS Version 19® software.

Results: Results of the Chi-square analyses showed that Latino caregivers reported more negative SRH than either African Americans or Whites ( $p < .01$ ). Across all racial groups, SRH was significantly associated with caregiver burden. Among African American and Latino caregivers, better SRH predicted lower burden, while a more complex pattern emerged for Whites.

Conclusions/Recommendations: Family caregiving is a critical part of the long-term care system, saving the government billions of dollars annually. Efforts to reduce burden among caregivers should take into account caregivers' SRH, as well as the racial, ethnic and cultural differences in which SRH, and other factors, influence caregiver health and the caregiving experience. Such information could be used to not only contribute to the literature on caregiving, but also to tailor intervention and respite programs to the diverse needs of dementia caregivers.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Addressing Barriers to Colorectal Cancer Screening Among Minorities in Rural South Carolina

**Authors:** Charles S. Beverley\*, Jr., MS, Whitney Millegan, Diane Reidy, Lauren Workman

**Abstract:**

Background and Significance: Colorectal cancer is the third leading cause of cancer death in the US and SC. Colorectal cancer can be prevented through screening programs, however, only 65.5%. It well established that adults living in rural areas experience barriers to access of colorectal cancer screening. This poster examines innovative programs, policy issues, and solutions to the disparities of colorectal cancer screening in the rural South Carolina.

Methods: Policy brief; This poster contains a review of literature concerning policy influences on healthcare access, innovative programs and initiatives, and recommendations for colorectal cancer screening among minorities in rural South Carolina. Martin, DrPH.

Results: Access to information about colorectal cancer screening, affordability, and distrust of the healthcare system are significant barriers to colorectal cancer screening among rural minorities in South Carolina. South Carolina lacks legislation obligating private insurance companies to cover colorectal cancer screenings among persons 50 years of age and older. In 2014, The Affordable Care Act will require free colorectal cancer screening for adults over 50 who purchase health insurance. In order to address colorectal cancer screening disparities, the Center for Colon Cancer Research (CCCR) at the University of South Carolina has pioneered several community outreach programs and a 70-billboard campaign. In addition, SCOPE SC (Screening Colonoscopies on People Everywhere/South Carolina), founded in 2008, funds colonoscopies for the uninsured citizens of South Carolina.

Conclusion/Recommendations: Interventions aimed at increasing knowledge colorectal screening among African American rural adults is needed in order to demystify and lessen fears of the health care system. Physician-to-patient communication must also be enhanced in order to facilitate effective communication and trust between the patient and provider. South Carolina must also implement legislation to require free coverage of colorectal screening among all insured persons over 50.

**Previously Presented:** South Carolina Public Health Association Meeting, April 2011, Myrtle Beach, SC

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** A Community Navigation Program to Increase Participation in Colon Cancer Screening: WE CAN! (Wellness, Education, Community Awareness, and Navigation) Colon Cancer Program

**Authors:** Heather M. Brandt, PhD, CHES; Tina M. Devlin, MPH, CHES; Annette Cook, MPH, CHES; Lauren Workman, MPH\*; Dawnya Jackson, MS; Swann Arp Adams, PhD; Lucy Annang PhD; Suzanne Swan, PhD

**Abstract:**

Purpose: Colon cancer screening has strong potential to reduce incidence and mortality associated with the disease. Current data show that 65% of screening age adults in South Carolina have ever been screened for colon cancer; African Americans, the un- and underinsured, and rural dwellers in South Carolina participate in screening at much lower rates. To help address these disparities, the WE CAN! program aims to increase awareness of and participation in colon cancer screening using evidence-based and promising approaches with an emphasis on community navigation.

Methods: The program is conducted in Richland and Lexington counties, South Carolina and targets age- and screening-eligible adults, including African Americans age 45 and older. The program includes educational presentations and exhibits in the community to address program goals. Community navigation connects individuals to screening resources in their communities. Immediate, three-, and six-month evaluation assessments are administered to those exposed to the presentation. Evaluation captures awareness, knowledge, screening history and intentions, and key message dissemination by individuals. Logistic regression analyses were used to calculate odds ratios.

Results: Since December 2008, more than 7,400 people have been exposed to the program and 536 (about 7%) have received navigation services. About half (55.1%) self-reported previous colon cancer screening. Of those screened, most reported plans to continue routine screening as recommended (86.8%). When comparing white to African-American participants at baseline, whites were significantly more likely to participate in screening (OR: 2.45, 95% CI: 1.85, 3.23). Also, participants with health insurance were significantly more likely to get screened when compared to those without health insurance (OR: 4.56, 95% CI: 2.59, 8.02).

Conclusions: The program has been well received and provides a useful model for replication. Program results clarify the importance of partnering with community leaders to develop and disseminate culturally relevant messages about the importance of colon cancer screening and facilitate participation in screening.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** The Student Research Experience: Social Networks and Pathways to Transplant Parity for Black Hemodialysis Patients

**Authors:** Teri Browne, Jennifer Worthington, Valerie Stiling, Olivia Jones, Lesley Jacobs, Sonya Davis-Kennedy, Derrick Jordan, Felix Weston, Cassidy Shaver

**Abstract:**

**Background and Significance:** In the United States, black hemodialysis patients are significantly less likely than white patients to be evaluated and listed for a kidney transplant. Using a unique conceptual model, this NIH funded R15 project will explore the role of black hemodialysis patients' social relationships in providing patients with information about how to get a kidney transplant.

**Methods:** This is a 3 year training grant to train 5 undergraduate and 3 graduate social work students on health disparities research. We will survey black hemodialysis patients age 18-65 within 90 miles of Columbia, SC, to answer the research questions: a) What is the role of the various types of social networks in providing information about kidney transplantation to black hemodialysis patients?, and b) What is the relationship between this information transaction and a patient's likelihood of being placed on a kidney transplant waiting list? The students will also receive a rich training on health disparities, and related research.

**Results:** In year one of the grant, students were trained extensively on research, social determinants of health, kidney disease, and kidney transplantation. In 2011-2012, students will continue this training, and work on patient surveys, data entry, and data analysis.

**Conclusion/Recommendations:** The project will: 1. Describe black hemodialysis patients' knowledge about how to get a kidney transplant, and 2. Determine the association between black hemodialysis patients' knowledge and understanding about how to get a kidney transplant, black hemodialysis patients' social network composition, and the likelihood that these patients are listed for a kidney transplant. The research is significant because the knowledge gained can provide suggestions for subsequent interventions that aim to ameliorate the public health problem of kidney transplant disparity.

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**Funding Source:** NIH NIDDK Award no. R15DK088707

**Conflict of Interest Statement:** The authors declare no conflicts of interest.



**Title:** Witnessing to Save Lives: Increasing Breast and Cervical Cancer Screening Among African-American Women in South Carolina

**Authors:** Kimberly Comer, Deloris Williams, Dolores Scott, Rachel Mayo, John Ureda, Vonda Evans, Heather Brandt

**Abstract:**

**Background and Significance:** African-American (AA) women have lower breast cancer incidence yet higher breast cancer mortality and higher cervical cancer incidence and mortality as compared to white women in South Carolina (SC).

**Methods:** The South Carolina Cancer Disparities Community Network (SCCDCN) has partnered with the State Baptist Young Woman's Auxiliary (SBYWA) of the Woman's Baptist Education and Missionary Convention of SC to help reduce cancer health disparities among AA in SC. In 2009, the SCCDCN received supplemental funding from the National Cancer Institute to expand the Witness Project (WP), a culturally competent, community-based, cancer education program aimed at increasing preventive breast and cervical cancer screenings among AA women to additional counties in SC via three of the SBYWA health ministry regions. Through the WP, Lay Health Advisors (LHA) and Witness Role Models (WRM-cancer survivors) participate in an eight hour training session, booster sessions, and commit to conducting three WP sessions in their communities. LHAs and WRMs are charged with increasing awareness, knowledge, screening, and early detection behaviors among AA women.

**Results:** Since December 2009, 10 additional counties have been successfully reached via the WP. 75 women have been trained in the WP and collectively these women have conducted 41 educational sessions reaching 830 individuals in the state. Of the 830 individuals reached, 180 women have requested further assistance (e.g., referrals for low or no cost exams, assistance scheduling an appointment).

**Conclusions/Recommendations:** The WP has been successful in reaching AA women in SC and the SCCDCN is currently seeking additional funding to further increase its dissemination. Educational sessions are ongoing and participants are working hard in their communities to help change the outcomes of cancer in SC. The WP is a promising approach to addressing cancer health disparities in the AA community.

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**Funding Source:** The Witness Project is supported by the South Carolina Cancer Disparities Community Network (SCCDCN) grant (U01CA114601-05S1; PIs: Drs. James Hebert and John Ureda. The SCCDCN is a program funded by the National Cancer Institute as one of 23 Community Network Programs of the Center to Reduce Cancer Health Disparities.

**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Measuring Readiness for Establishing Farmers' Markets at Federally Qualified Health Centers in South Carolina

**Authors:** Darcy A. Freedman, Heather M. Brandt, Y. Omar Whiteside, Vicki M. Young, Lucy Willms, Daniela B. Friedman, & James R. Hebert

**Abstract:**

Introduction: Access to healthy food retail outlets has been identified as a key indicator of healthy communities. Populations with low access to healthy foods (i.e., low-income, minority communities) tend to have high rates of diet-related health conditions and co-morbidities. Initiatives designed to improve access to healthy foods have focused on increasing food retail outlets including the development of farm stands and markets. Locating farmers' markets at federally qualified health centers (FQHC), which provide health care services to medically-underserved communities and vulnerable populations, may be a strategic method for increasing access to healthy foods and reducing health disparities. Although this method of increasing access has been utilized on an extremely limited basis, it aligns with the FQHC history of utilizing a holistic approach to address the needs of their communities.

Methods: In this presentation, we describe an evaluation tool for assessing community readiness for establishing an environmental intervention to increase access to healthy foods in partnership with community health centers. The tool was piloted with a population of FQHCs in South Carolina (N=19) representing 163 practice sites, and ultimately resulted in the selection of one rural community health center site for the implementation of an on-site farmers' market. Content analysis of field notes and reports collected during the readiness assessment process will be presented.

Results: Findings reveal five indicators of readiness (i.e. capacity, social capital, awareness of health problems and solutions, logistical factors, and sustainability) for implementing environmental interventions in partnership with community health centers.

Discussion: This partnership has the potential to significantly increase access to healthy foods in medically-underserved communities.

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**Funding Source:** Centers for Disease Control and Prevention and the National Cancer Institute for Cancer Prevention and Control Research Networks Programs (5U48DP001936)

**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Reducing Health Disparities through Innovative Partnerships: An Alliance of the South Carolina Cancer Prevention and Control Research Network and Federally Qualified Health Centers

**Authors:** Daniela B. Friedman, Msc, PhD, Vicki M. Young, PhD, Darcy A. Freedman, PhD, Swann Arp Adams, PhD, Heather M. Brandt, PhD, CHES, Tisha M. Felder, PhD, MSW, Sudha Xirasagar, MBBS, PhD, John R. Ureda, DrPH, Thomas Hurley, MS, Leepao Khang, MPH, James R. Hébert, ScD

**Abstract:**

Background/Significance: The South Carolina Cancer Prevention and Control Research Network (SC-CPCRN), one of 10 CDC and NCI-funded cancer research networks across the nation, is working to spread and increase the adoption of evidence-based public health interventions with vulnerable populations whose disparities are extraordinarily well documented and with whom we have used community-based participatory research (CBPR) methods to identify and address issues of greatest need.

Methods: Drawing on the experience of University of South Carolina-based faculty and staff committed to CBPR and the South Carolina Primary Health Care Association and Federally Qualified Health Centers (FQHCs), key project partners, the SC-CPCRN works collaboratively with all funded CPCRN-funded institutions. Grant activities being conducted include: training and technical assistance regarding program dissemination and implementation, formative evaluation to gauge FQHCs' readiness and capacity for health/cancer-related research collaborations, and examining strategies for data sharing between the academic institutions and the FQHCs to ensure provision of quality preventive and primary care services.

Implications: The SC-CPCRN is also cultivating a unique relationship with the Family Centers Inc. in Orangeburg SC to develop a local farmers' market at the community health center location. This is an innovative strategy for increasing access to healthy foods, improving diet and other behaviors, and encouraging more sustainable lifestyle changes among South Carolina communities. In addition to making an impact locally, the SC-CPCRN shares expertise and insights with the national CPCRN group by providing leadership to national workgroups aimed at enhancing FQHC relationships throughout the country to improve dissemination and implementation research.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Maternal Obesity and Gestational Weight Gain in Rural Versus Urban Dwelling Women in South Carolina

**Authors:** Alexa Gallagher,<sup>1\*</sup> MSPH, Jihong Liu,<sup>1</sup> ScD, Janice C. Probst,<sup>1</sup> PhD, Amy B. Martin,<sup>1</sup> DrPH, Jeffrey W. Hall,<sup>2</sup> MD

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**Abstract:**

**Background and Significance:** An unhealthy prepregnancy weight and/or gaining excess weight during pregnancy increase the risk for poor pregnancy and birth outcomes. To our knowledge, no studies to date having examined differences in prepregnancy body mass index (BMI) and gestational weight gain (GWG) patterns by rurality.

**Methods:** The 2004-2006 South Carolina birth certificate data (n=132,795) were used. Rurality of residence was determined using Rural-Urban Commuting Area (RUCA) codes. Mothers were categorized as underweight (<18.5 kg/m<sup>2</sup>), normal weight (18.5-24.9), overweight (25.0-29.9), or obese (≥30.0) using their prepregnancy BMI and as having inadequate, adequate, or excessive GWG according to the Institute of Medicine's 2009 GWG guidelines. Chi square tests and multinomial logistic regression adjusted for maternal age, race, marital status, education, parity and tobacco use were used in analysis.

**Findings:** Rural women had higher odds of being obese (adjusted odds ratios (AOR) = 1.21, 95% CI = 1.18, 1.25), overweight (AOR= 1.08; 95% CI = 1.05, 1.11), and underweight (AOR=1.06, 95% CI=1.00, 1.12) compared to urban women. This relationship was found to be partially explained by the higher proportion of minorities living in rural areas.

The relationship between GWG and residence type varied by BMI category. Specifically, among normal weight women, rural women had an increased odds of inadequate GWG (AOR=1.09, 95% CI=1.04, 1.15). Among overweight women, rural women had decreased odds of excessive GWG (AOR=0.92, 95% CI=0.87, 0.98). In obese women, rural women had decreased odds of both inadequate (AOR=0.85, 95% CI=0.80, 0.91) and excessive GWG (AOR=0.86, 95% CI=0.81, 0.92).

**Conclusion/Recommendations:** Rural women were more likely to have an unhealthy prepregnancy weight than urban women. However, rural residence was found to be protective against unhealthy weight gain in overweight and obese women. Future research exploring reasons for these findings as well as confirmation of these results in other populations is necessary.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Strike Out Second Stroke (SOS2): Development of a Physical Activity Program for African American Stroke Survivors and Caregivers

**Authors:** Jennifaye V. Greene\*, Steven P. Hooker, Stacy L. Fritz, Daniela B. Friedman

**Abstract:**

Background: Stroke disability often results in decreased exercise and functional capacity because of physical and cognitive impairments. African Americans (AAs) report higher rates of disability and inadequate amounts of exercise more than Caucasians poststroke. There are few guidelines that address exercise and physical activity (PA) among stroke survivors. Limited data exist on factors that influence PA behavior in AA stroke survivors following stroke rehabilitation. In addition, their caregivers are another group at high risk for decreased PA. Caregiver strain, particularly among AA men caring for their wives, is significantly associated with increased stroke risk which could be partially ameliorated by regular PA.

Objective: To determine salient factors associated with PA behavior in AA stroke survivors and their caregivers poststroke rehabilitation.

Significance: This research is significant because it addresses health disparities that can be partially alleviated via regular PA (particularly walking) in AA stroke survivors and their caregivers following discharge from stroke rehabilitation - a time frame (after discharge) that has been largely ignored in both research and practice.

Methodology: Cognitive interviewing will be used to develop a focus group guide that will aide in determining factors related to PA barriers in AA stroke survivors and their caregivers. This process will refine questions and provide feedback concerning content applicability and grammar. Because content validity has been found to be improved when instrument content is tested with the targeted population, focus groups with AA stroke survivors and caregivers will be conducted. Insights gained will be used to design and implement an intervention for PA.

Results: The results of this research will define factors that motivate AAs to adhere to a plan of care. Thereafter, a framework will be created that delineates how physical therapists can implement a culturally-relevant PA program in AA stroke survivors and their caregivers following poststroke rehabilitation.

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**Title:** Mapping Cancer Mortality-to-Incidence Ratios to Illustrate Racial and Gender Disparities in a High-Risk Population

**Authors:** James R. Hébert, Sc.D.; Virginie Daguise, Ph.D.; Deborah M. Hurley, MSPH; Rebecca C. Wilkerson, MSPH; Catishia M. Mosley, MSPH; Swann A. Adams, Ph.D.; Robin Puett, Ph.D.; James B. Burch, Ph.D.; Susan E. Steck, Ph.D.; Susan W. Bolick-Aldrich, MSPH, CTR

**Abstract:**

**Background:** Comparisons of incidence and mortality rates are the metrics most commonly used to define cancer-related racial disparities. In the United States (US), and particularly in South Carolina (SC), racial differences largely disfavor African Americans (AAs). Computed from readily available data sources, the mortality-to-incidence rate ratio (MIR) provides a population-based indicator of survival.

**Methods:** SC Central Cancer Registry incidence data and Vital Registry death data were utilized to construct MIRs. ArcGIS 9.2 was used to map cancer MIRs by gender and race for eight Health Regions within SC for all cancers combined, and for breast, cervical, colorectal, lung, oral, and prostate cancers.

**Results:** Racial differences in cancer MIRs were observed for both genders for all cancers combined and for most individual sites. The largest racial differences were observed for female breast, prostate, and oral cancers, with AAs having MIRs almost twice those of European Americans (EAs).

**Conclusion:** Comparing and mapping race- and gender-specific cancer MIRs provides a powerful way to visualize the scope of the cancer problem. Using these methods, AAs were found to have much higher cancer MIRs compared to EAs for most cancer sites in nearly all regions of SC. Future work must be directed at explaining and addressing the underlying differences in cancer outcomes by region and race. MIR mapping allows for pinpointing areas where future research has the greatest likelihood of identifying the causes of large, persistent cancer-related disparities. Doing so represents a frontier in advancing public health relevance.

**Previously Published:** Hébert JR, Daguise VG, Hurley DM, Wilkerson RC, Mosley C, Adams SA, Puett R, Burch JB, Steck SE, Bolick-Aldrich S. Mapping cancer mortality-to-incidence ratios to illustrate racial and gender disparities in a high-risk population. *Cancer* 2009;115:2539-52.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.



**Title:** South Carolina Cancer Disparities Community Network

**Authors:** James Hébert, ScD

**Abstract:**

Background and Significance: SCCDCN-II's overarching goal is to contribute materially to: understanding the underlying causes of cancer-related health disparities, specifically in African Americans; discovering and developing effective innovations to lower incidence, improve survival, and reduce suffering; delivering innovations to high-risk populations; and moving them to widespread dissemination. Our goal will be realized by achieving specific aims.

Methods:

1. Use the full range of expertise represented in our partnerships, to increase the knowledge base needed to understand which biomedical and behavioral procedures are most likely to prevent and control cancer in the high-risk African-American communities;
2. Based on discoveries derived from thorough understanding of the literature, careful consideration of our own descriptive studies and observations, and feedback from community partners, to develop and test interventions that are likely to reduce cancer incidence, downstage disease at time of diagnosis, increase longevity, and improve quality of life in people with cancer;
3. To deliver interventions shown to be effective to places of greatest receptivity and public health need and to evaluate them in terms of generalizability; and
4. To disseminate results from successful interventions in the form of interventions within our communities in South Carolina and to work with national partners to determine and distinguish universal elements that will work in most places and others that are more place- and culture-specific.

Implications: The success of SCCDCN-II is predicated on: strong community support; dedication to community-based participatory research; understanding that the philosophical underpinnings and practical methods of applying knowledge are essentially the same across interdisciplinary, translational and community-based participatory research; that the missions of research, education, and service are inseparable and highly interdependent; and that training of the next generation of scientists dedicated to the highest ideals of community-based participatory, interdisciplinary, and translational research is necessary in order to reduce, and then finally eliminate cancer-related health disparities.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Applying Health Behavior Change Principles to Promote Physical Activity in a Weight Loss Trial Among Economically Disadvantaged Women

**Authors:** Rosie L. Hopkins-Campbell, MPH, CHES<sup>1</sup>; Patricia A. Sharpe, PhD, MPH<sup>1</sup>; Sara Wilcox, PhD<sup>2</sup>; Deborah Parra-Medina, PhD, MPH<sup>3</sup>; Michelle Granner, PhD<sup>4</sup>;

**Abstract:**

Background and Significance: Racial and ethnic minorities are at greater risk for chronic disease, obesity, and physical inactivity. Physical activity helps prevent chronic diseases and related complications. Effective weight loss interventions must be driven by culturally appropriate application of behavioral theories. Sisters Taking Action for Real Success (STARS) is a culturally tailored weight loss intervention that applied Social Cognitive Theory, Relapse Prevention Model, Social Support, and the Multidimensional Model of Cultural Sensitivity to develop an interactive skills-building curriculum comprising 16 group sessions.

Methods: Three cohorts were enrolled (n=229; 89% African American; mean age =38.5; 95% obese, 5% overweight; 93% > high school education; 75% employed). A literature review guided development of an initial conceptual model for the intervention. Input from focus groups and a community advisory board assisted in culturally tailoring the curriculum. To address various learning styles, learning occurred through multiple formats including print, demonstration, group discussion, practice, and feedback.

Results: The curriculum and related learning materials focused on theory-based behavior change concepts such as goal setting, self-monitoring, reward/reinforcement, social modeling, cultural tailoring/cultural sensitivity, gradual implementation, and social support for physical activity. Attention to environmental triggers, cues, and norms; coping skills and managing competing interests and activities were also included. Application of these concepts consisted of a physical activity log, sample graduated walking plan, role play, culturally relevant printed materials and images, guided group based walks and exercise, problem-solving to achieve exercise goals, group-based discussion and support among peers, identifying community resources to support physical activity, and exercise incentives that included a pedometer, sports watch, and exercise DVD.

Conclusions/Recommendations: A culturally tailored behavioral intervention must apply behavioral theoretical concepts and cultural sensitivity in developing learning activities and materials.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Healthcare Resource Disparities for Persons Living with HIV and AIDS (PLWHA) in North Carolina and South Carolina

**Authors:** Deshia A. Leonhirth, MBA\*, Janice C. Probst, Ph.D., Saundra Glover, Ph.D., Medha Vyavaharkar, MD, Ph.D., MPH, and Nathan Hale, Ph.D.

**Abstract:**

Background: Entering the fourth decade of the HIV/AIDS epidemic, the southeastern United States disproportionately represents 40% of reported AIDS cases, with the largest proportion from rural areas. This study aims to achieve a further understand whether healthcare resource disparities are present in the rural South, using information from NC and SC.

Methods: A cross-sectional design was used to examine rural-urban differences in prevalence of people living with HIV/AIDS (PLWHA) and presence of RW programs in NC and SC counties. The dependent variables of interest were presence of at least one Ryan White (RW) service program and Federally Funded Qualified Health Center (FQHC). The independent variables were rurality, percent of population below poverty, percent of population uninsured, and percent of population African American. Predictors were separated into quartiles for multivariate analysis.

Results: The mean prevalence of PLWHA in NC was 1.63/1,000 in rural counties (n=60) and 1.82/1,000 in urban counties (n=40). There was no significant difference in prevalence of PLWHA in rural-urban counties of NC and SC. However, there was significant (chi-square 0.0004) rural-urban difference in availability of RW programs and FQHC's (chi-square 0.0073). Across states, 91% of rural counties lack a RW program and 58.22% lack a FQHC. Eighty-four percent of all counties are not served by RW and 42% do not have a FQHC. The multivariate analysis showed that the prevalence rate of rural counties had a positive association with the presence of a RW or FQHC and a negative association with the proportion of African Americans.

Conclusion/Recommendations: The study aims to strengthen existing literature on rural-urban differences in access to care, calling the attention of the Ryan White and the Affordable Care Act budget allocations committee in recognizing the need for funds for these two states, which are traditionally underfunded, in comparison to areas with similar case rates.

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**Funding Source:** Office of Rural Health Policy

**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Finding Messages that Stick: Reproductive Health Workshops for Paraprofessionals

**Authors:** Kathryn Luchok, PhD, (University of South Carolina and the South Carolina Access Initiative, Columbia, SC); Linda Robinson, APRN-BC, MSN, FNP, (South Carolina Access Initiative, Columbia, SC and Richland County DHEC)

**Abstract:**

Background: Failure to communicate ideas that stick with our audience has been called “the Curse of Knowledge”— those with knowledge cannot imagine what it is like to not have that knowledge. Overcoming this can reduce health disparities. Six basic principles can shape our effective communications: Simple Unexpected Concrete Credible Emotional Stories (SUCCEs). When imparting complex information about reproductive health, these principles can guide successful workshops to improve the capacity of paraprofessionals to reach their clients.

Methods: Workshops are formulated by discussions about current gaps/needs. Starting with the premise that sexuality is part of life; we normalize conversation about all options to empower women to make healthy choices for themselves and their families. Using SUCCEs, complex information is simplified, presented in up-beat unexpected yet credible stories, and concrete hands-on demonstrations. The workshops offer new ways of talking to clients about understanding their reproductive system, family planning, pregnancy options counseling, prevention of STI/HIV, and how to have client-focused positive communications. Each workshop includes dialogue and a call to action. Sessions are evaluated by a brief survey that examines confidence with using content and satisfaction with training. Planned follow-up is a Survey Monkey questionnaire that includes a knowledge scale of workshop content and if and how tenets of training are being used in practice.

Results: The 12 workshops to date received high marks and glowing evaluations from paraprofessionals working with primarily African-American populations. Participants report they are armed with new tools to work with clients, and new information for themselves. “It changed my approach to home visitation...I have officially joined the women's health movement....”

Conclusion: The SUCCEs tenets have broad applicability, including for clinicians in patient encounters. These workshops allow us to put into practice tenets and equip paraprofessionals to be on the forefront of bringing these tenets to life with their clients.

**Previously Presented:** Carolina Women's Health Forum, 2010.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.



**Title:** Access to Health Care for Uninsured Adults: An Analysis of Facts, Faces, Faith Communities, and Free Clinics

**Authors:** Amy Brock Martin, Jessica D. Bellinger, Melanie Matney

**Abstract:**

**Objective:** In partnership with the South Carolina Hospital Association and with funding from The Duke Endowment, the South Carolina Rural Health Research Center has been working with communities to document how local healthcare systems are meeting (or not) the needs of uninsured residents.

**Methods:** We used a mixed methods approach of secondary data analysis, key informant interviews and focus groups to describe the local system of care (medical, dental, mental health) and assess the needs and service utilization patterns of the uninsured. We examined hospital and emergency room discharge data and Census files to contextualize need and ecological factors of 14 South Carolina counties. We interviewed uninsured residents, healthcare providers, hospital administrators, and community leaders to describe local healthcare system operations.

**Results:** Principal findings suggest that even thin safety net healthcare systems for the uninsured can impact potentially avoidable emergency room use. Provider volume mattered more than scope of services provided as counties with networks of primary care practitioners providing limited primary care had lower potentially avoidable emergency room rates than those with large, single primary care organizations providing a cadre of primary care services. Communities primarily focus on medical needs with virtually little to no dental or mental health resources for the uninsured. Recurring themes the uninsured include: payment for services equates to improved quality of care, perceptions of misused healthcare resources, and limited access to specialty care.

**Conclusions:** Our findings suggest safety net systems for the uninsured are organic and tend to be reactive to community need, rather than proactive. The role of faith-based organizations is significant in their influence on the scope and corporate culture for safety net systems. For-profit status of healthcare providers had an equally important influence on the healthcare system accessibility for the uninsured. Both factors shaped how uninsured people perceived the accessibility and quality of care available to them in healthcare systems. Examples of safety net systems using innovative business models to improve access to care for the uninsured, in the absence of meaningful public policy will facilitate system solutions that improve access to care for the uninsured statewide.

**Previously Presented:** Fifth International Social Sciences Conference, New Orleans, LA, September 25, 2010

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Provision of the HIV test to Prenatal Latina Patients in South Carolina

**Authors:** Edena Guimarães Meetze\*, Donna Richter, DeAnne Messias, Myriam Torres, Lucy Annang

**Abstract:**

Background and Significance: South Carolina has experienced a rapid growth in the Latino population within the past 15 years. As a result the number of Latino births in the state has increased dramatically within this timeframe. Limited South Carolina Latino health data and communication/language barriers between providers and their Latina patients have made it difficult to assess whether pregnant Latinas are being routinely offered HIV counseling and testing and whether they may decline to be tested, if offered.

Methods: An exploratory, descriptive multi-method qualitative approach was used to explore how prenatal care providers offer information about the administration of HIV screening to pregnant Latina patients. Seven prenatal care clinics and 20 prenatal care health care workers that serve pregnant Latinas in South Carolina participated in the study. Measurements were obtained via audio-recording prenatal care provider interviews, observations of prenatal care visits, and document reviews.

Results: Most providers indicated that pregnant Latinas are more likely than not aware that the HIV test is included in the prenatal panel and that they have the right to refuse the test. Observations also revealed that some providers were not instituting the prenatal HIV screening opt-out process as intended.

Conclusion/Recommendations: Findings from this study suggest that providers need to improve their method of informing LEP pregnant Latinas about what is included in the prenatal panel as well as their right to refuse the HIV test. Providers also need to become familiar with the prenatal HIV screening opt-out approach. Findings also revealed that pregnant Latinas need to be educated on the prenatal HIV testing process.

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**Funding Source:** Center for Disease Control and Prevention's Minority AIDS Research Initiative Grant

**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Poverty and Rural Effects on Edentulism Prevalence

**Authors:** Jordan Mitchell, MBA\*, Kevin Bennett, PhD, Amy Martin, DrPH

**Abstract:**

Introduction: The impact of oral health on functioning and general health has been well-documented. The Surgeon General reports that oral diseases and disorders affect all facets of well-being throughout the lifespan. The disparities that exist in oral health, dental services utilization, and dental needs within the population are widespread. Lower socioeconomic status (SES) is associated with edentulism and fewer dental visits. African Americans and people living in poverty have a higher prevalence of edentulism, as they are more likely to receive an extraction once they begin seeking dental care as compared to Whites and higher socio-economic people, given the same severity of disease. Disparities dental health for urban and rural areas of residence also exists, therefore, the objective of this study was to examine the differences in oral health status among residents of high poverty counties, as compared to residents of other rural or urban counties, specifically on the prevalence of edentulism.

Methods: We used the 2005 Behavioral Risk Factor Surveillance System (BRFSS) and the 2006 Area Resource File (ARF). All analyses were conducted with SAS and SAS-callable SUDAAN, in order to account for weighting and the complex sample design.

Results: Characteristics significantly related to being edentulous include: gender, race, age, health status, employment, insurance, not having a usual source of care, education, marital status, presence of chronic disease, having an English interview, not deferring care due to cost, income, and dentist saturation within the county.

Conclusions: Significant associations between High Poverty Rural and Other Rural counties and higher edentulism prevalence were found, and other socioeconomic and health status indicators remain strong predictors of edentulism.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Do Maternal Characteristics and Demographics Affect Child Influenza Immunization Rates?

**Authors:** Kristin Schuller\* & Janice Probst

**Abstract:**

Background and Significance: Compared to adults, children have a higher risk of influenza-related illnesses and play a major role in the spread of infections through a household. The attack rate among children has been estimated to be 10% to 40% annually, with approximately one percent resulting in hospitalization. Due to the care and nurturing role of mothers, it is important to analyze the relationship between maternal characteristics and childhood immunizations. The purpose of this study is to examine the characteristics of the mother, household, and child to determine which variables or combination of variables yield the most significance in relation to the rate of childhood influenza immunizations.

Methods: SAS callable SUDAAN was used to analyze the role of maternal characteristics, such as age, education, and marital status on the rate of childhood influenza immunizations. Demographic variables, such as the household size, region, and poverty status were also analyzed, along with child's age, sex, race/ethnicity, firstborn status, and insurance status. To test for significant differences and likelihoods Chi-square tests and Odds Ratios were used.

Results: Overall, 56.39% of children aged 19-35 months received a flu vaccination. Factors associated with the increased likelihood of vaccinations include older women, with higher education, and living in the Northeast. Also, a child with private insurance is more likely to be immunized than a child with other types of insurance (public: OR 0.6483, 0.5589, 0.7521; no insurance: OR 0.6759, 0.4694, 0.9732). Hispanic children, when compared to white children (OR 1.1554, 1.0312, 1.2945), were more likely to be vaccinated.

Conclusion/Recommendations: Understanding why mothers choose to or choose not to immunization their child can lead researchers and policy makers to develop and tailor programs to improve immunization education and delivery, especially to groups least likely to participate.

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**Title:** Barriers to Recruitment, Participation and Maintenance Among Economically Disadvantaged Women in a Weight Loss Controlled Trial

**Authors:** Patricia A. Sharpe, PhD, MPH<sup>1</sup>, Gayenell Magwood, PhD, MSN<sup>1,2</sup>  
<sup>1</sup>Arnold School of Public Health, University of South Carolina, <sup>2</sup>College of Nursing, Medical University of South Carolina

**Abstract:**

**Background and Significance:** Economically disadvantaged women have high rates of obesity and chronic disease but face barriers to weight loss program participation. Understanding barriers is important to designing effective community-based intervention research and programs to increase physical activity and healthy dietary choices.

**Methods:** Overweight and obese women, ages 25-50 years, from high-poverty ( $\geq 25\%$ ) neighborhoods were recruited via multiple venues and randomized to a 16-week culturally-tailored intervention, with 8 weeks of telephone support, or control group. Process evaluation tracked recruitment, participation, and barriers. Extensive contact and incentives were used to facilitate retention and address transportation, child care and participation costs.

**Results:** In years 1 and 2, 437 women inquired; 199 were eligible, and 154 (77%) provided baseline measures. They were 89% African American, 71% employed, 91%  $\geq$  high school education. Mean age was 38.5; BMI range=28-70. Most heard of the program via word-of-mouth or fliers (82%). Of the 154 enrolled, 20 were excluded (mainly for medical contraindications), 29 lost contact (disconnected phone, no answer/reply, and/or returned mail), and 105 were randomized. In year 1 (n=47), after randomization, 3 were excluded, 9 lost to follow-up, and 3 dropped out. Return rates for key behavioral data were high (97% for accelerometer data and 97% completion for 3 dietary recalls). Class attendance averaged 22%-100%. Top two reasons for absence were illness and family obligations. Completion of phone support calls was 53%-73%. Family and other competing responsibilities were among the top barriers to behavioral maintenance.

**Conclusions:** Competing family and other responsibilities represent barriers to participation and behavioral maintenance among economically disadvantaged women in a weight loss intervention, even with culturally tailored, enhanced retention efforts.

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**Title:** Making Our Voices Heard: Latino Community Ambassadors Forging Community and System Changes in the Midlands of South Carolina

**Authors:** Julie Smithwick-Leone, MSW; Deborah L Billings, PhD.; Mariangeles Borghini, BSW; Margarita Franco Hernández; Myriam E. Torres, PhD.

**Abstract:**

**Background and Significance:** South Carolina has one of the fastest-growing new Latino populations in the country, yet its health care institutions face challenges in providing the population with adequate health services and resources. The education, outreach and advocacy provided by the PASOs Program in Richland and Lexington Counties has achieved positive results. Now, grassroots leaders involved in PASOs have identified the need to advance the cause of health equity and reproductive justice, despite major challenges brought on by anti-immigrant legislation.

**Methods:** The first goal of the Puentes Project is to build on the strengths and abilities of emerging Latino leaders by helping them develop additional skill sets. The second goal is to establish a collaborative model of decision-making and two-way communication between these community representatives and health care organization leaders to increase health equity. Thirty-two Latino leaders were selected through an extensive interview process and are initiating a three-year training process including leadership, communication, reproductive health and English language skills. The team is one-fourth male, and represents the diversity of the Latino community with regards to countries of origin, income levels, ages, and experiences.

**Results:** Preliminary evaluation results show that the Community Ambassadors are poised to take on these challenges and have begun to do peer-to-peer education and resource navigation in their communities. Ambassadors have begun participating in decision-making processes with health care institutions. Many health organizations are looking to the Ambassadors for confirmation of their efforts to meet the needs of the Latino community and to help them provide more quality services and sustain access to care.

**Conclusions/Recommendations:** As the Community Ambassadors gain knowledge and confidence in their ability to affect change, they will begin to give a voice to this highly underrepresented population and will help change the way public health is typically delivered both in SC and elsewhere.

**Previously Presented:** American Public Health Association Conference, November, 2010

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**Title:** Discovering New Strategies for Delivering Prostate Cancer Information in a Faith-Based African-American Community

**Authors:** Tracey Thomas\*, MA, MS; Shaun Owens, MPH; Daniela B. Friedman, PhD; James R. Hebert, ScD

**Abstract:**

Study Purpose: African-American men are more likely to develop and die from prostate cancer than European-American men. In an effort to address this health disparity, this research focused on identifying culturally appropriate prostate cancer communication strategies in an African-American community in South Carolina. More specifically, the research objectives were to determine (1) where African Americans in a faith-based South Carolina community currently receive general health and cancer information, and (2) how they would be willing to receive prostate cancer information in the future.

Methods: We administered a 17-item demographic survey to 58 men and women ages 21-77 who were participants in a larger National Cancer Institute-funded prostate cancer education study. Information seeking questions focused on these interpersonal and media sources: primary care doctor, health educator, internet, email, radio, newspaper, magazine, text message, mobile phone applications, and mobile voicemail.

Results: Nearly 75% of all participants reported primary doctor as one of their regular sources of health and cancer information followed by television (43%) and newspaper (31%). Although internet, email, and text messaging were not reported as regular sources of cancer information (42%, 40%, and 25%), 57 participants responding to this question reported they would be open to receiving cancer information through these mechanisms. Additionally, 78% of all participants reported owning mobile phones that are capable of receiving text messages and over half of these individuals were willing to receive cancer-related text messages for an upcoming cancer education program.

Research Implications: Findings from this study will be used to guide researchers' follow-up study that will determine the value of using email and text messaging for delivering culturally tailored prostate cancer education messages to African Americans in a faith-based South Carolina community.

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**Title:** Juntas Podemos (Together We Can): Empowering Latinas to Shape Policy to Prevent Childhood Obesity

**Authors:** Myriam Torres, Julie Smithwick-Leone, Jorge Leone

**Abstract:**

Background and Significance: In South Carolina, obesity among Latino children is a critical public health concern. In addition to high rates of overweight and obesity, South Carolina's foreign-born population, mostly Latino, grew faster than any other state in the nation from 2000-2005. With limited information revealing the extent of the obesity epidemic among South Carolina's Latinos and healthcare infrastructure resources to provide adequate, culturally sensitive care, there is great need to understand the causes and extent of the obesity epidemic among school-aged children and better equip nurses, doctors, parents, and teachers for obesity prevention in the state.

Methods: Data were collected via multiple methods:

- 1) Photovoice – Documented Latina mothers' experiences and observations regarding their children's physical activity opportunities or barriers;
- 2) Key informant interviews – Conducted with teachers, coaches, and community stakeholders such as community liaisons, Latino store owners and Department of Parks and Recreation officials to collect data regarding behaviors of Latino children during the physical education classes and/or recess as well as important information on opportunities for exercise in Latino neighborhoods; and
- 3) Focus groups with Latina mothers – Conducted to discuss issues and develop policy recommendations regarding children's physical activity opportunities.

Preliminary Results:

- Main barriers to Latino children's healthy diets and physical activity include lack of recreation infrastructure and unhealthy school lunches.
- Community stakeholders and school staff agreed lack of transportation, Spanish-speaking parents, and out-of-school sports costs were main barriers for Latino children's participation in organized sports.

Conclusion/Recommendations: Final results will be shared with decision-makers from City of West Columbia, Lexington School District Two and Lexington County Department of Health and Environmental Control. Additionally, the Consortium for Latino Immigration Studies, the South Carolina Public Health Institute, and Acercamiento Hispano will post results on their respective webpages. The final report and factsheet will be made available to other South Carolina school districts. Furthermore, we will seek opportunities to present the results in local and national public health conferences.

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**Funding Source:** Robert Wood Johnson Foundation

**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Is Rural America Equipped to Care for Those in Need of Home Health Care?

**Authors:** Samuel D. Towne Jr. MPH, CPH\*; Janice C. Probst PhD; Jordan Mitchell MBA; Zhimin Chen, MS

**Abstract:**

Objective: The number of US adults aged 55 to 75 living in rural areas and small towns is expected to reach 14.2 million by 2020. Our analysis examines whether home health services are equally available to rural and urban older adults, given known disparities in the availability of other providers.

Methods: We conducted a cross-sectional analysis of Medicare's Home Health Compare files and the Spatial Impact Factor databases developed by RTI International to determine if the number of Medicare-certified Home Health Agencies (HHAs) differed across levels of rurality. The dependent variable was the number of Medicare-certified HHAs serving each ZIP Code. We measured rurality using the 2000 Rural Urban Commuting Area (RUCA) classification developed by the USDA. RUCA codes were stratified into Metropolitan areas (1, 2 and 3), Rural areas with a large town (Micropolitan; 4, 5 and 6) Rural areas with a small town (7, 8, and 9), and Remote Rural areas (10). Comparative analysis was assessed using Poisson Regression.

Results: The number of HHAs was highest in the most urban areas (mean = 30.9) compared to all other levels of rurality. The most rural areas had the fewest HHAs, at 3.4 on average. Even after adjusting for household income, race, education, population density, disability for those aged 65 and over, and the count of Medicare eligible and beneficiaries, significant differences remained. With rates in the most urban areas higher than the most rural areas and Micropolitan areas; 3.8 and 3.3 times respectively.

Conclusions: The challenges facing rural HHAs include potential decreases in Medicare reimbursement, lower physician availability and a higher proportion of poor and elderly populations. Without resources in place, residents in more rural areas will be less likely to have access to needed care, resulting in lower quality-of-life.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** The Metabolic Syndrome: Are Rural Residents at Increased Risk?

**Authors:** Tushar Trivedi, MD\*; Jihong Liu, ScD; Janice Probst, PhD; Amy Martin, PhD

**Abstract:**

Background and Significance: Metabolic syndrome, a constellation of metabolic abnormalities, affects slightly more than one-third of American adults. Yet the prevalence and risk factors for metabolic syndrome among American rural residents are unknown.

Methods: We estimated the prevalence and risk factors of metabolic syndrome by residence using data from the 1999-2006 NHANES, restricting to 6,896 participants aged 20 and over with complete information. The National Cholesterol Education Program's Adult Treatment Panel III criterion was used to define metabolic syndrome. Residence was measured at the census tract level using Rural-Urban Commuting Areas definitions. Multiple logistic regression models were used to examine urban-rural differences after adjusting socio-demographic, health, dietary, and lifestyle factors.

Results: The prevalence of metabolic syndrome was higher in rural than urban residents (39.9 vs. 32.8%), among both men (39.7 vs. 33.3%, respectively) and women (40.2 vs. 32.3%). Dwelling in rural areas was associated with significantly higher abdominal obesity, blood pressure and fasting blood glucose. The age and sex adjusted odds ratio (OR) for metabolic syndrome in rural residents was 1.23 (95% CI 1.02-1.49) and was attenuated to 1.06 (95% CI, 0.90-1.25) after adjusting for additional covariates. Older age, lower education, physical inactivity, sedentary lifestyle, higher meat intake, and skipping breakfast were associated with increased odds of metabolic syndrome.

Conclusion: Rural residence was associated with higher prevalence of metabolic syndrome among US adults. Urban-rural differences are partially explained by the differences in demographic composition, diet and sedentary lifestyles among rural residents. The disparity by residence should be addressed in future health programs.

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**Funding Source:** South Carolina Rural Health Research Center

**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Depression Among Rural African American Women with HIV Disease: Possible Roles of HIV-related Stigma and Social Support

**Authors:** Medha Vyavaharkar, PhD, MPH, MD, DNB, DGO, DFP; Linda Moneyham, DNS, RN, FAAN; Sara Corwin, MPH, PhD; Ruth Saunders, PhD; Lucy Annang, PhD, MPH; Abbas Tavakoli, DrPH, MPH, ME

**Abstract:**

Background and significance: This cross-sectional study examined relationships between HIV-related stigma, social support, and depression in a sample of 340 HIV-infected African American women living in rural areas of the Southeastern United States.

Methods: Three aspects of social support (availability of different types of support, sources of support, and satisfaction with support) and two aspects of HIV-related stigma (perceived stigma and internalized stigma) were measured. Perceived availability of support ( $p < .0001$ ), sources of support ( $p = .03$ ), satisfaction with support ( $p = .003$ ), perceived stigma ( $p < .0001$ ), and internalized stigma ( $p < .0001$ ) were all significantly correlated with depression. Social support variables were negatively correlated and stigma variables were positively correlated with depression. HIV-related perceived stigma and internalized stigma were found to mediate the effect of sources of available support on depression.

Implications: Study findings have implications for designing and implementing interventions to increase social support and decrease HIV-related stigma in order to decrease depression among African American women with HIV disease.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Groundwater Uranium and Cancer Incidence in South Carolina

**Authors:** Sara E. Wagner, PhD; James B. Burch, MS, PhD; Matteo Bottai, ScD; Robin Puett, PhD; Dwayne Porter, PhD; Susan Bolick-Aldrich, MSPH, CTR; Tom Temples, PhD; Rebecca C. Wilkerson, MSPH; John E. Vena, PhD; James R. Hébert, ScD

**Abstract:**

Objective: This ecologic study tested the hypothesis that census tracts with elevated groundwater uranium and more frequent groundwater use have increased cancer incidence.

Methods: Data sources included: incident total, leukemia, prostate, breast, colorectal, lung, kidney, and bladder cancers (1996-2005, SC Central Cancer Registry); demographic and groundwater use (1990 US Census); and groundwater uranium concentrations (n=4,600, from existing federal and state databases). Kriging was used to predict average uranium concentrations within tracts. The relationship between uranium and standardized cancer incidence ratios was modeled among tracts with substantial groundwater use via linear or semiparametric regression, with and without stratification by the proportion of African Americans in each area.

Results: A total of 134,685 cancer cases were evaluated. Tracts with  $\geq 50\%$  groundwater use and uranium concentrations in the upper quartile had increased risks for colorectal, breast, kidney, prostate, and total cancer compared to referent tracts. Some of these relationships were more likely to be observed among tracts populated primarily by African Americans.

Conclusion: SC regions with elevated groundwater uranium and more groundwater use may have an increased incidence of certain cancers, although additional research is needed since the design precluded adjustment for race or other predictive factors at the individual level.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Soil Zinc Content, Groundwater Usage, and Prostate Cancer Incidence in South Carolina

**Authors:** Sara E. Wagner, MSPH, PhD; James B. Burch, MS, PhD; Jim Hussey, PhD; Tom Temples, PhD; Susan Bolick-Aldrich, MSPH, CTR; Catishia Mosley-Broughton, MSPH; Yuan Liu, PhD; James R. Hebert, ScD

**Abstract:**

Background: Prostate cancer (PrCA) incidence in South Carolina (SC) exceeds the national average, particularly among African Americans (AAs). Though data are limited, low environmental zinc exposures and down-regulation of prostatic zinc transporter proteins among AAs may explain, in part, the racial PrCA disparity.

Methods: Age-adjusted PrCA rates were calculated by census tract. Demographic data were obtained from the 1990 census. Hazardous waste site locations and soil zinc concentrations were obtained from existing federal and state databases. A geographic information system and Poisson regression were used to test the hypothesis that census tracts with reduced soil zinc concentrations, elevated groundwater use, or increased numbers of agricultural or hazardous waste sites have elevated PrCA risks.

Results: Census tracts with high groundwater use and low zinc concentrations had higher PrCA rate ratios (RR: 1.270; 95% confidence interval: 1.079, 1.505). This effect was not more apparent in areas populated primarily by AAs.

Conclusion: Increased PrCA rates were associated with areas having reduced soil zinc concentrations and elevated groundwater use, although this observation is not likely to contribute to SCs racial PrCA disparity. Statewide mapping and statistical modeling of relationships between environmental factors, demographics, and cancer incidence can be used to screen hypotheses focusing on novel PrCA risk factors.

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**Title:** HIV Testing Among Deep South Residents 50-64 years old with Cardiovascular Disease and/or Diabetes

**Authors:** Lisa T. Wigfall, Edith M. Williams, Neethu Sebastian, Sandra H. Glover

**Abstract:**

Purpose: To describe HIV testing among Deep South residents aged 50 to 64 years old with cardiovascular disease(CVD) and/or diabetes. Methods: Deep South residents from Alabama, Georgia, Louisiana, Mississippi, North Carolina, and South Carolina who completed the 2008 Behavioral Risk Factor Surveillance System (BRFSS) survey were sampled. Associations between chronic health conditions (CVD, diabetes) and human immunodeficiency virus (HIV) testing were examined.

Results: Fewer than one-third (30.8%) of the sample (n = 1017) reported that they had been tested for HIV. Of the weighted sample of adults tested for HIV, the mean age—56.63 ±0.20 SE (95% confidence interval [CI], 56.24-57.03)—was significantly lower than that of those who had never been tested for HIV—57.60 ± 0.12 SE (95% CI, 57.37-57.84; p < .0001). Although not statistically significant, HIV testing was slightly higher among men (53.3%) (p = .9432). Persons with CVD or diabetes were 22% less likely to report that they had been tested for HIV, compared to those with both CVD and diabetes (adjusted odds ratio [AOR], 0.776; 95% CI, 0.611-0.985).

Conclusions: Chronic conditions (CVD, diabetes) among HIV-infected persons can be adversely affected by antiretroviral regimens. All adults 50 to 64 years old should be routinely offered an HIV test if their HIV serostatus is unknown, regardless of perceived risk for HIV/AIDS. Our findings suggest that linking HIV testing with routine checkups for persons with CVD and/or diabetes is a potentially missed opportunity for earlier diagnosis of HIV infection, especially among older adults who are at a greater risk of being diagnosed with AIDS within 1 year of an initial HIV-positive diagnosis.

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**Conflict of Interest Statement:** The authors declare no conflicts of interest.

**Title:** Reasons for Not Adhering to Cervical Cancer Screening Guidelines and HPV Knowledge Among Midlife Women (50-64 years old) Whose HIV Status is Unknown and Last Pap Test was >6 years Ago

**Authors:** Lisa T. Wigfall, Heather M. Brandt, Donna L. Richter, Wayne A. Duffus, Sandra H. Glover

**Abstract:**

Background: Annual Pap tests are recommended for HIV-positive women because their risk increased risk of developing cervical cancer. Late diagnosis of HIV infection combined with poor adherence to Pap test recommendations among midlife women (50-64 years old) further increases risk of being diagnosed with cervical cancer. Women who miss opportunities to detect both HIV infection and precancerous cells face a double jeopardy of being diagnosed with HIV/AIDS and cervical cancer in late disease stages.

Materials and methods: National Health Interview Survey (NHIS) 2008 data were analyzed to describe reasons for not having a Pap test and HPV knowledge of midlife women (n=224) who had never been tested for HIV and last Pap test was more than six years ago. Frequencies and weighted percents are reported.

Results: Of the 20% that had an abnormal Pap test (n=42), only <1% (n=1) had been infected with HPV. A third (33%) did not have a Pap test in the past 6 years (n=65) because they had a hysterectomy, including 11% who had an abnormal Pap test (n=20). Only 12% (n=14) of those who did not have a hysterectomy (n=115) were planning to get a Pap test within a year. Most of these women (40%) had no specific reason for not having a more recent Pap test, whereas 32% attributed poor adherence to healthcare access issues. HPV knowledge: 60% had heard of HPV (n=129); 64% knew HPV caused cervical cancer (n=82); 60% knew HPV was spread through sexual contact (n=79); and 85% did not think that HPV would go away without treatment (n=111).

Conclusions: HIV testing and Pap testing are underutilized by midlife women. Early diagnosis of HIV and precancerous cervical cells are vital to improving health outcomes among midlife women. HIV and cervical cancer prevention messages that target this population are needed.

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**Title:** Uptake of HIV Testing During Post-reproductive Years Among Midlife Women (50-64 years old): An Analysis of 2008 Behavioral Risk Factor Surveillance System Data from Six Deep South States (Alabama, Georgia, Louisiana, Mississippi, North Carolina, and South Carolina)

**Authors:** Lisa T. Wigfall, Donna L. Richter, Myriam E. Torres, Lucy Annang, Lisa L. Lindley Kamala Swayampakala, Wayne A. Duffus

**Abstract:**

Objective: To examine HIV testing uptake among post-reproductive age women. Background: Many women are routinely tested for HIV during pregnancy. Disproportionate numbers of women beyond reproductive age are diagnosed HIV-positive late in the disease course. Some older women and healthcare providers have dismissed early AIDS symptoms as signs of aging. This has resulted in missed opportunities for early initiation of effective antiretroviral therapy. Methods: Behavioral Risk Factor Surveillance System 2008 data were analyzed for non-Hispanic white and non-Hispanic black women (50-64 years) from six Deep South states. Logistic regression analysis examined associations between uptake of HIV testing and population characteristics.

Results: More than half (n=1,091) of our sample (n=2,027) had an HIV test during their post-reproductive years (>45 years old). Women 55-64 years old (AOR=1.69, 95% CI 1.25-2.28; AOR=1.63, 95% CI 1.16-2.30) were more likely to have been tested for HIV during their post-reproductive years than those 50-54 years old. Rural (AOR=0.72, 95% CI 0.54-0.95) and non-Hispanic white (AOR=0.48, 95% CI 0.36-0.65) women were less likely to have been tested for HIV beyond reproductive age than their urban, non-Hispanic black counterparts. Compared to women from single adult households with children, women in other living situations were more likely to have been tested for HIV in more recent years (AOR=1.56, 95% CI 1.11-2.18).

Discussion: Routine HIV testing is underutilized among women during their post-reproductive years. HIV prevention messages that target midlife women are needed to reduce the prevalence of HIV/AIDS and disproportionate burden of late diagnosed HIV infection in this population.

**Previously Presented:** 138th APHA Annual Meeting (2010)

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**Title:** Combating Health Disparities: Using a Community-based Participatory Research Framework to Address Environmental Injustice in Minority Communities

**Authors:** Sacoby Wilson, Herbert Fraser-Rahim, Dayna Campbell, Winston Abara, Kristen Burwell, LaShanta Rice

**Abstract:**

Background and Significance: Eliminating health disparities has been identified as an objective of Healthy People 2020. Previous research has shown that the environment plays a major role in the emergence and perpetuation of health disparities in communities of color, particularly among African Americans. A wealth of research has shown that minority communities have traditionally been afflicted by environmental injustice and are more likely to host or be in close proximity to pollution-intensive facilities such as incinerators, chemical plants, Superfund sites, underground storage tanks, biomass facilities, landfills, and consequently suffer from adverse health outcomes like respiratory and gastrointestinal conditions as a result of this disproportionate burden and exposure.

The Low Country Alliance for Model Communities (LAMC) residents have become the face of environmental injustice in North Charleston, South Carolina. In response to their health disparities, a community-university partnership between LAMC and the University of South Carolina (USC) was organized following the community-based participatory research (CBPR) approach to narrow the divide. The partnership was formed with the aim of assessing pollution levels and public health impacts as well as increasing the community's capacity to address environmental injustice. This partnership illustrates the strength of CBPR by promoting equal representation from the host and university community and putting research into action. While in the second year of a four year cycle, LAMC residents have begun to take ownership over their community and have become empowered to address local environmental justice and health concerns.

Implications: It is anticipated that the outcome of this partnership will reduce pollution levels, improve environmental awareness and stewardship, increase collective efficacy while positively affecting local environmental policy, reduce adverse health outcomes, and ultimately achieve health equity in the region. We suggest establishing more CBPR partnerships to help reverse negative health trends and bring us closer to fulfilling the Healthy People 2020 objectives.

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### *About the Institute for Partnerships to Eliminate Health Disparities*

The mission of the Institute for Partnerships to Eliminate Health Disparities (IPEHD) is to eliminate health disparities through community, academic and other strategic partnerships in South Carolina and beyond. The Institute was created to allow the University of South Carolina to enhance its public and private partnerships. These partnerships provide the opportunity for the pursuit of inter-institutional, multi-disciplinary research, education, and training to address health disparities.

To learn more about IPEHD faculty and staff, current programs, and resources, visit [http://www.sph.sc.edu/health\\_disparities/](http://www.sph.sc.edu/health_disparities/).

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