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A Comparison of Breast and Cervical Cancer Legislation and Screening in Georgia, North Carolina, and South Carolina

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Abstract

We identified legislation (1989–2005) relating to breast and cervical cancer in Georgia, North Carolina, and South Carolina and examined its impact on screening rates for these cancers and on Black-White disparities in screening rates. Legislation was identi-fied using the National Cancer Institute's (NCI) State Cancer Legislative Database (SCLD) Program. Screening rates were identified using the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System. Georgia and North Carolina enacted more laws on breast and cervical cancer than did South Carolina. The laws specifically intended to increase breast and cervical cancer screening were mandates requiring that insurance policies cover such screening; Georgia and North Carolina enacted such laws, but South Carolina did not. However, we were unable to demonstrate an effect of these laws on either screening rates or disparities. This may reinforce the importance of evidence-based health promotion programs to increase screening.

Keywords

African Americans; breast neoplasm; mammography; cervical cancer; legislation

Except for skin cancer, breast cancer is the most common malignancy in women. Early detection, which relies heavily on mammography for screening, is credited with reducing mortality from breast cancer since the early 1990s. Cervical cancer is less common but, like breast cancer, can be controlled through widespread use of screening and the early detection of precancerous lesions through the Pap test.[1,2]

Between 1998 and 2003, the incidence of invasive cervical cancer was 8.9 per 100,000. Rates were greater in minority populations, and in those living in the southern U.S. compared with other parts of the U.S.[3] The Pap test has reduced the incidence of cervical cancer; even so, more than 60% of new cervical cancer cases occur in medically underserved populations.[4] There are many explanations proposed for why African American women are less likely than White women to have a Pap smear, including lack of knowledge about cervical cancer,[5] having had a negative experience in the past when having a Pap smear and pelvic exam,[6] and being concerned about pain during the procedure.[7] A family history of cancer was found to contribute to the likelihood of one having a Pap smear[8] and, interestingly, a woman's perception of general discrimination correlated with a reduced likelihood of having the Pap test.[9] Cervical cancer mortality has declined in the U.S. because of the Pap smear,[10] but Black women are two to three times more likely than White women to die from the disease.

Although breast cancer mortality has declined, African American women continue to experience higher breast cancer mortality than White women.[11] Furthermore, even though African American women have a lower breast cancer incidence,[12,13] they are more likely to present with advanced stage distributions[14–16] and are more likely to die of the disease, compared with White women.[17,18] Differences in breast cancer mortality are believed to be due to lack of access to care,[19] differences in screening rates, differences in treatment received,[20,21] inadequate follow-up after abnormal screening mammography or treatment,[22] and differences in income or insurance coverage.[23] Each of these differences is focused on an individual's circumstances, suggesting that should those circumstances change, mortality rates between African American women and White women will be more similar.

The Southeastern U.S. Collaborative Center of Excellence in the Elimination of Disparities (SUCCEED) focuses on the elimination of disparities in breast and cervical cancer among African American women in the three-state region of Georgia, North Carolina, and South Carolina. SUCCEED is housed in the Prevention Research Center (PRC) at Morehouse School of Medicine (MSM) in Atlanta, Georgia. Overseen by the PRC's consumer-majority Community Coalition Board (CCB), SUCCEED collaborates with partners in the three-state region, and provides training and technical assistance to agencies and organizations throughout the region on evidence-based strategies to increase breast and cervical cancer screening among African Americans. It also provides training and technical assistance in community coalition-building using the *Community Organization and Development for Health Promotion* model, a framework for the development of community partnerships that was pioneered and published over 20 years ago at MSM.[24]

The focus of SUCCEED, and other similar efforts, is largely on evidence-based interventions intended to influence individual behavior by motivating, persuading, or educating women to seek screening. However, policy change at the population level can be more effective than attempting to change individual behavior. For example, policy changes affecting screening rates may include changes in eligibility for public programs, changes in the number or distribution of sites where screening is available, changes in reimbursement for providers, or changes in insurance regulations. Policy changes at the state level are usually brought about by legislation. The purpose of this paper is to explore the effect of recent legislation on breast and cervical cancer screening rates in Georgia, North Carolina, and South Carolina. While increased screening clearly provides a means by which to reduce mortality from breast and cervical cancer, state-level legislative support must be provided in order to assure that women most at risk are able to access preventive services. Efforts to increase screening are underway in these states; even so, it is important to explore whether or not state legislation suf-ficiently supports these efforts.

Methods

We identified legislation focused on breast and cervical cancer in Georgia, North Carolina, and South Carolina using the National Cancer Institute's (NCI) State Cancer Legislative Database (SCLD) Program. The SCLD contains information which has been synthesized from state laws and resolutions addressing selected facets of cancer control, health disparities, genetics, and tobacco. The NCI has monitored such legislation since 1989. Online use access *via* the SCLD database was provided in 2005.

Queries of the database focused on the following search terms and limiters: (1) *breast cancer* and (2) *cervical cancer* (a) *awareness*; (b) *screening programs*; (c) *program evaluation*; (d) *public education*; (e) *underserved populations*; (f) *treatment*; and (g) *research*. This study focused on the years 1989–2007.

Screening rates were identified using the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System. Prevalence and trend data for Georgia, North Carolina, and South Carolina focused on women aged 40 and over who had a mammogram within the past two years and on women from the same states aged 18 and over who had Pap tests within the past three years.

Results

Breast cancer legislation

In Georgia, six House of Representatives bills concerning breast cancer were enacted into law between 1990–2002. The bills provided (1) requirements for individual and group insurers to cover mammograms and Pap smears [two bills]; (2) provisions for in-patient and follow-up care benefits for mastectomies; (3) monitoring of length of stay and discharges from inpatient treatment for patients who have undergone mastectomies; (4) a cancer research fund that allows for taxpayer contributions through individual income tax returns; and (5) revenue funds for cancer screening and treatment *via* the sale of special license plates. There was no relevant legislation in 1989, nor in 2003–2007.

In North Carolina, three State Senate and two House of Representatives bills concerning breast cancer were enacted from 1991–1997, but none in 1989–90. The bills provided (1) requirements for individual and group insurers to cover mammograms and Pap smears; (2) requirements for Medicare supplement policies to cover mam-mograms and Pap smears; (3) requirements for specified private insurers including HMOs, PPOs, and the Teachers' and State Employees' Comprehensive Major Medical Plan to cover mastectomy and reconstructive surgery; (4) requirements for specified health insurers that cover mastectomy and post-mastectomy in-patient care to ensure discharge occurs after consultation with patient and based on individual and medical history; (5) requirements for private insurers that provide coverage for mastectomy to provide coverage for prosthesis and physical complications in all stages of mastectomy, including lymphedemas.

In South Carolina, only one piece of breast cancer legislation was passed during the study period, a House of Representatives bill that was enacted in 1998. The bill requires coverage for hospitalization for mastectomies, benefits for hospitalization for at least 48 hours, and, for patients with early release, coverage for at least one home care visit when ordered by physician.

Hence, legislative efforts in Georgia and North Carolina were similar, while South Carolina's legislation was more limited and dissimilar (Table 1).

Cervical cancer legislation

In Georgia, one House of Representatives bill and one Senate bill were passed. The bills (1) require individual and group insurers to cover mammograms and Pap smears, and (2) establish the Cervical Cancer Elimination Task Force, respectively.

In North Carolina, one House of Representatives bill and three Senate bills were passed between 2003 and 2009. The bills (1) require insurers to cover one annual exam and lab test to screen for early detection of cervical cancer; (2) establish the Cervical Cancer Elimination Task Force; (3) require local school administration to provide reproductive health and safety programs (to include the effects of contracting HPV); and (4) require local boards of education, charter schools, and public and private schools to provide information about cervical cancer to children in the 5th–12th grades.

In South Carolina, one House of Representatives bill was passed, which required the State Department of Health and Environmental Control to study strategies and new technologies that are effective in preventing and controlling cervical cancer.

Table 2 provides a visual comparison of legislation focused on cervical cancer in the three-state region. Again, South Carolina is most limited in legislation passed.

Breast cancer screening rates

An analysis of the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (CDC's BRFSS) reveals that in Georgia in 2008, 78.9% (2,248/2,797) of women aged 40 and over indicated that they had a mammogram within the past two years. In North Carolina during the same time period, 78.5% (6,066/7,645) indicated that they had received a mammogram. In South Carolina, 74.9% (3,982/5,146) of women had received a mammogram within the past two years (Figure 1).

There were small differences in mammography rates by race in each state. In Geor-gia, Black and White women indicated that they had a mammogram within the past two years 83.2% (n=511) and 78.1% (n=1,630) of the time, respectively. Black women in North Carolina indicated that they had a mammogram within the past two years 78.2% (n=970) of the time compared with 79.5% (n=4,773) of the time for White women. Similarly, in South Carolina, Black women indicated that they had a mam-mogram within the past two years 77.3% (n=1,100) of the time compared with 75.1% (n = 2,606) of White women (Figure 2).

Cervical cancer screening rates

An analysis of the CDC's BRFSS reveals that in Georgia in 2008, 87.6% (n=1,960) of women aged 18 and over had a Pap test within the past three years. During the same time period, 86.9% (n=5,432) and 86.1% (n=3,251) of women aged 18 and over had a Pap test within the past three years in North Carolina and South Carolina, respectively (Figure 3). Black and White women aged 18 and over in Georgia reported having had a Pap test within the past three years 89.7% (n=544) and 86.6% (n=1277) of the time, respectively. In North Carolina, 89.4% (n=890) of Black women and 86.6% (n=4,008) of White women aged 18 and over had a Pap test within the past three years. In South Carolina, 90.4% (n=1,009) of Black women and 84.5% (n=2,028) of White women aged 18 years and over had a Pap test within the past three years (Figure 4).

Discussion

We investigated the question of whether state legislation intended to promote breast and cervical cancer screening was successful, either in increasing screening rates generally or in reducing Black-White racial disparities in screening. We reviewed 1989–2005 legislation and 2008 screening rates in Georgia, North Carolina, and South Carolina, the three states included in SUCCEED, a project based at Morehouse School of Medicine and funded by CDC's REACH (Racial and Ethnic Approaches to Community Health) U.S. program.

Regarding breast cancer, Georgia was the most active of the three states, enacting five major pieces of legislation, compared with two in North Carolina and one in South Carolina. North Carolina enacted the most legislation in the area of cervical cancer with five new laws, compared to two in Georgia and one in South Carolina. South Carolina was particularly weak in this area: its lone bill required only that the state health department study new strategies and technology. The Georgia and North Carolina laws that might have been expected to have the greatest short-term impact were those mandating coverage in all health insurance policies for Pap tests and mam-mograms. South Carolina did not enact these mandates.

Of the three states, South Carolina did have the lowest rates of both mammogram and Pap test uptake as reported by BRFSS, but the differences were small. About 79% of women in Georgia and North Carolina reported that they had had a mammogram within the past two years, compared with about 75% of South Carolina women. Similarly, about 88%, 87%, and 86% of women in Georgia, North Carolina, and South Carolina, respectively, reported having had a Pap test within the past three years.

Racial differences were also small and inconsistent in direction. Black women were slightly more likely than White women to report having had a mammogram in the past two years in Georgia and South Carolina, while in North Carolina, the disparity slightly favored White women. In all three states, Black women were somewhat more likely to report having had a Pap test in the past three years than were White women.

In interpreting these findings, it is important to consider the limitations of the BRFSS system. First, the BRFSS questions do not hold respondents to the frequency of screening recommended by most professional organizations. Most women in the sample should have obtained an annual Pap smear and mammogram to be up-to-date according to recommendations. However, they were asked only if they had had a mam-mogram within the past two years and a Pap test within the past three.

Second, BRFSS is dependent on self-reports, and these have been shown repeatedly to be inaccurate for mammograms and Pap tests.[25–28] A substantial percentage of women report mammograms or Pap tests for which there is no medical record, or underestimate the interval since their last mammogram or Pap. Moreover, African American women are more likely to provide these inaccurate reports than are White women,[29] and this has been shown specifically to be true for the BRFSS.[30,31]

Given these limitations, it is probable that the percentage of women who are up-to-date in screening for breast and cervical cancer in the three-state region is smaller than that suggested by BRFSS.

However, there is no reason to believe that these self-reports are more inaccurate in one state than in another; state-to-state comparisons are probably still valid. Thus, South Carolina, which had the least legislation among the three states relating to breast and cervical cancer, also had the lowest screening rates; these rates were only slightly lower than in the other two states. Similarly, South Carolina had screening rates among African American women that were similar to these rates in the other two states.

Thus, even though South Carolina enacted fewer new breast and cervical cancer-related laws during 1989–2007, and did not enact insurance mandates, we were unable to demonstrate a substantial difference in either overall screening rates or screening disparities in South Carolina compared with Georgia and North Carolina. This is consistent with other studies of legislation; for instance, Baker and Chan were unable to show an increase in screening rates in states mandating insurance coverage for direct access to obstetrician-gynecologists.[32]

If legislation—in particular, an insurance mandate—is not effective in increasing screening rates, then community-based strategies, such as those promoted by SUCCEED, are perhaps more critical. Piedmont Health Services and Sickle Cell Agency is an example of an organization in North Carolina that provides breast and cervical cancer education and screenings to low-income, uninsured women. Efforts have led to breast and cervical cancer screenings of 82% of women targeted. Additionally, the Samaritan Clinic in Albany, Georgia has identified several ways to reach uninsured African American women using efforts such as media campaigns and the use of cancer survivors in the community. They have also collaborated with the Albany Baptist Ministers Conference to further enhance

fundraising efforts and volunteerism. In a previously underserved area, the South Carolina based St. James–Santee Family Health Center has increased screening rates (64–67%) to approximate the national average mammography screening rates for community health center patients (69%). The works of these and other organizations have the potential to narrow the racial gap in screening. This is not to say that public policy initiatives or public programs are unimportant. There is no doubt, for instance, that the National Breast and Cervical Cancer Early Detection Program (NBCCEDP), Medicaid, and Medicare have provided access to screening for women who would otherwise have little.[33] Insurance mandates, however, affect only women who have private insurance, and they are more likely to be screened even if their policies do not provide first-dollar coverage.

In terms of increasing legislative support of breast and cervical cancer screening and research, the role of advocacy organizations must be considered. For example, according to the SCLD, the Georgia Breast Cancer Coalition Fund is credited for undertaking the effort that led to the passage of House Bill 1402, enacted in 2002. This legislation establishes the option of purchasing special license plates, with the revenue dedicated to increasing breast cancer screening. No similar legislation was identified in North Carolina or South Carolina. Interestingly, an Internet search for advocacy organizations in these three states reveals few such organizations in South Carolina. This may help explain the limited legislation in that state. However, since there is little evidence, either in our research or that of others, that new legislation will substantially increase screening, it appears that the focus must be on preserving support for current safety-net programs such as NBCCEDP, Medicaid, and Medicare, and on increasing the use of evidence-based health promotion programs.

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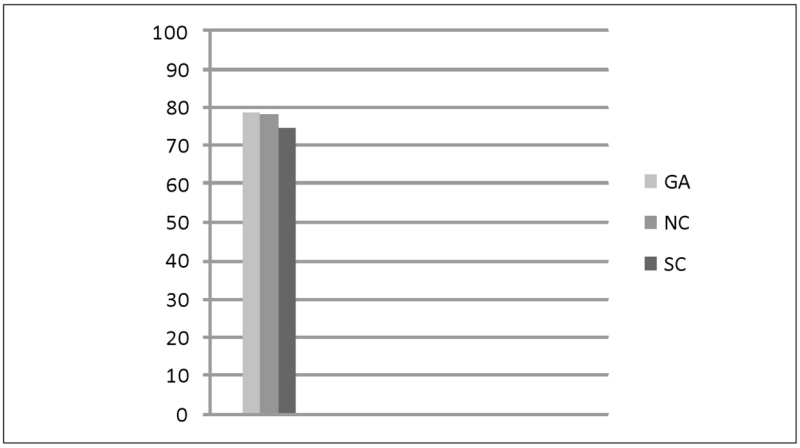

Figure 1.
Women aged 40 and over who had a mammogram within the past 2 years, by state. Source: Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (2008).

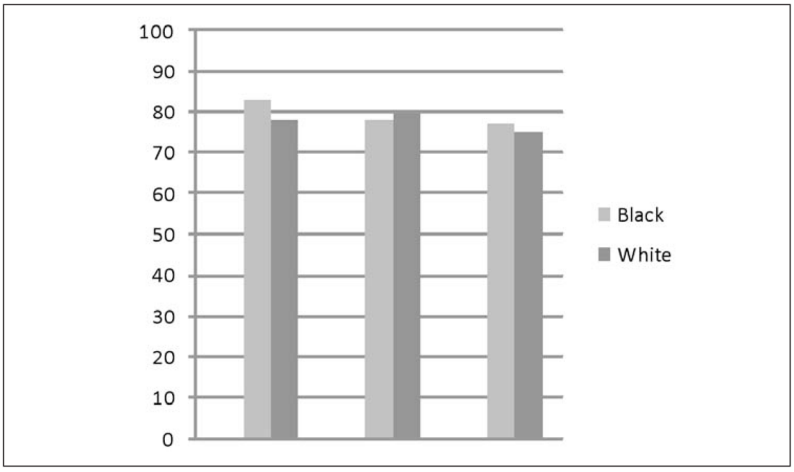

Figure 2.
Women aged 40 and over who had a mammogram within the past 2 years, by state and race. Source: Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (2008).

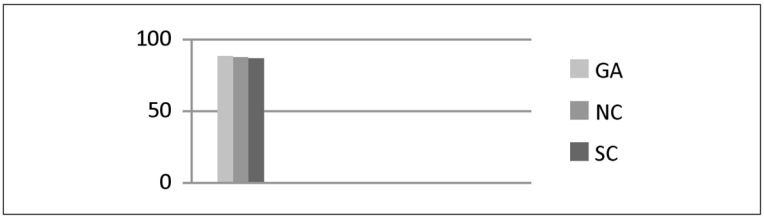

Figure 3.
Women aged 18+ who have had a pap test within the past 3 years.
Source: Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (2008).

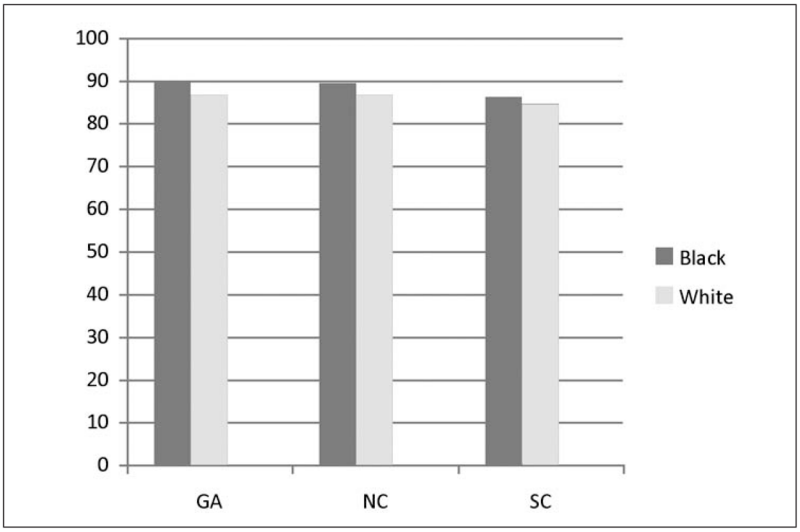

Figure 4.
Women aged 18+who have had a pap test within the past 3 years, by state and race. Source: Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (2008).

Table 1

BREAST CANCER LEGISLATION IN GEORGIA (GA), NORTH CAROLINA (NC), AND SOUTH CAROLINA (SC), 1989–2007

	GA	NC	SC
Mandated mammogram coverage	x	x	
Mandated mastectomy coverage	x	x	x
Mandated coverage for mastectomy prostheses and complications	x		
Cancer Research Fund	x		
Cancer Screening and Treatment Fund	x		

Source: National Cancer Institute's State Cancer Legislative Database.

Table 2

CERVICAL CANCER LEGISLATION IN GEORGIA (GA), NORTH CAROLINA (NC), AND SOUTH CAROLINA (SC), 1989–2007

	GA	NC	SC
Mandated Pap test coverage	x	x	
Cervical Cancer Elimination Task Force	x	x	
Reproductive health education program required in schools		x	
Cervical cancer education program required in schools		x	
State Health Department required to study new strategies and technologies to prevent cervical cancer			x

Source: National Cancer Institute's State Cancer Legislative Database.