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INFLUENCES OF HEALTH INSURANCE AND PRIMARY CARE ON BREAST AND CERVICAL CANCER SCREENING AMONG BLACK WOMEN IN BOSTON

A Dissertation Presented

by

GAIL BARLOW GALL

Submitted to the Office of Graduate Studies
University of Massachusetts Boston
in partial fulfillment of the requirement for the degree of

DOCTOR OF PHILOSOPHY

June 2012

Nursing Health Policy Program

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A Dissertation Presented

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ABSTRACT

INFLUENCES OF HEALTH INSURANCE AND PRIMARY CARE ON BREAST AND CERVICAL CANCER SCREENING AMONG BLACK WOMEN IN BOSTON

June 2012

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Healthy People 2010 promoted breast and cervical cancer screening to reduce cancer among all women and reduce disparities in cancer deaths between Black and White women. The REACH 2010 program targeted improving screening rates among Black women and funded a demonstration project to provide outreach, screening, patient navigation and case management for Black women in Boston.

The purpose of this study was to describe associations between health insurance and primary care (having a primary care provider [PCP], quality of communications and relationship with PCP) on differences in breast and cervical cancer screening reported by Black women born in the United States and those who were foreign born.

The Conceptual Model for Nursing and Health Policy Guidelines for Policy and Program evaluation guided the study. Secondary analysis was performed on data obtained from the Boston Public Health Commission Women's Demonstration Project.

Nearly one third of the study population was foreign born. This population was older and less educated than US born women. Having a PCP had greater influence on cancer screening than did health insurance. US born women were more likely to have a PCP than foreign born women, and to be more satisfied with the quality of communication with their PCP.

US born women were more likely than foreign born women to report ever having had a Pap smear. Health insurance influence cervical cancer screening for US women only, but having a PCP influenced both groups more than birthplace. For US born women, quality of communications with PCP was a strong predictor of having a recent Pap smear.

US born women were more likely to begin mammography earlier, but less likely to have a recent mammogram. Foreign born women with a PCP were more likely to ever have had a mammogram and to have a recent screen than those without a PCP. For US born women, the quality of communication with the PCP was significantly associated with a recent mammogram.

Programs designed to reduce health disparities must address differences within target populations. There is an urgent need to increase access to a diverse and culturally competent interprofessional primary care workforce.

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I would like to thank Dr. Greer Glazer, committee chair, as well as the committee members, Dr. Dee Baldwin, Dr. Jie Chen, and Dr. Jacqueline Fawcett for thoughtfully and generously guiding this study. I am very grateful to the leaders of the Boston REACH 2010 Women's Health Demonstration Project, including Nashira Baril and Dr. Judyann Bigby as well as the members of the BOSTON REACH Coalition who motivated me to undertake this study.

I am indebted to the Theta Alpha chapter of Sigma Theta Tau for supporting my research with the Brenda S. Cherry Doctoral Dissertation Award. I am grateful for the wonderful scholars I have met during my studies who have shared their wisdom, experiences, and support, especially Dr. Edie Barrett, Dr. Gloria Cater, and Dr. Hong Tao. This study would not have been completed without the support of Velina Batchvarov and Caitlin Bowler.

I am dedicating my dissertation to the memory of my parents, Lenore and Albert Barlow, who led by example, to my husband, John, who provided steadfast support, and to the legacy of my children, Lenore, Catherine, and Michael who inspire me, always.

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CHAPTER 1

STATEMENT OF PROBLEM

Healthy People 2010 is a comprehensive national health agenda launched by the Centers for Disease Control and Prevention (CDC) in 2000 (*Healthy People* 2010, 2000). The overarching goals were to increase life expectancy and quality and to eliminate health disparities. The core principals of *Healthy People* 2010 are that an individual's health is indivisible from that of the larger community and that each community contributes to the health of the nation (CDC 2000). The targets set by *Healthy People* 2010 (2000) for all women are reduction of the breast cancer mortality rate to 22.3, from a baseline of 27.9 and cervical cancer mortality rate to 2.0 from a baseline of 3.0 (per 100,000).

Disparities are differences in health status that occur by gender, race or ethnicity, education or income, disability, geographic location, or sexual orientation (CDC, 2000). Racial data are collected and reported by the CDC for the following groups: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, and White (National Center for Health Statistics [NCHS], 2007). The term "Black" refers to those with origins in any of the Black racial groups of Africa (Office of Management and Budget, [OMB], 1997) and does not distinguish among ethnicities. Incidence and mortality rates are health statistics that determine and measure health dis-

parities (National Cancer Institute [NCI], 2005). In the United States, between 2003 and 2007, White women had a breast cancer incidence rate of 121.9 and a death rate of 23.4 compared to an incidence of 114.6 and death rate of 32.4 for Black women (Siegel, Ward, Brawley, & Jemal, 2011). Racial disparities were also noted for cervical cancer, with the incidence and death rate for White women at 7.7 and 2.2 respectively, while for Black women the incidence was 10.7 and death rate was 4.4 (Siegel et al, 2011.). Rates were per 100,000 and age-adjusted to U. S. standard populations.

Breast cancer trends between 1998 and 2007 indicated that the incidence of breast cancer decreased significantly for White and Hispanic women, but remained level for Black women while mortality rates from Black women declined less than for White and Hispanic women (Kohler et al., 2011). In contrast, cervical cancer trends for the period 1998 through 2007 indicated that the incidence and mortality of Black women decreased significantly (Kohler et al., 2011).

In Massachusetts, the three year aggregate breast cancer incidence rate for 2006 through 2008 was 137.3 for White women and 116.0 for Black women. Mortality rates were 21.8 for White women and 29.8 for Black women (Massachusetts Department of Public Health [MA DPH], 2010). Three year aggregate incidence rates for cervical cancer for the period 2006 through 2008 were 5.6 for White women and 10.8 for Black women. Mortality rates were 1.2 for White women and 2.2 for Black women (Massachusetts Department of Public Health [MA DPH], 2010a).

In Boston, the breast cancer incidence and death rates for Black women were 109.0 and 33.7 compared to 152.7 and 32.8 for White women in the same time period (Massachusetts Department of Public Health [MADPH], 2010b). The cervical cancer incidence and death rate disparities were similar: Black women experienced an incidence

rate of 9.8 and a mortality rate of 2.5 in comparison to an incidence rate of 6.5 and a death rate of 0.8 for White women (MADPH, 2010c).

Preventive screening and follow up are effective in reducing both breast and cervical cancer (Saslow et al., 2002, U.S. Preventive Services Task Force, 2002). In Boston, both Black and White women have demonstrated breast and cervical cancer screening rates over 90%, with Black women having higher rates than White women (Liao et al., 2002). However, among Black women in low income neighborhoods, and among recent immigrants, including women from Haiti and Somalia, the screening rates for both breast and cervical cancer were much lower (Ma'at, 2002).

Nationally, Black women were more likely than White women to have disseminated cancer involvement at diagnosis and lower five-year survival rates for breast and cervical cancer at all stages of diagnosis (Jemal et al., 2007). Li, Malone, and Daling, (2003) found that in comparison to non-Hispanic Whites, Blacks were less likely to have breast conserving surgery when recommended, more likely to refuse surgery, and less likely to have radiation treatment.

The CDC established the Racial and Ethnic Approaches to Community Health (REACH) 2010 program as the cornerstone of the agency's efforts to achieve the *Healthy People* 2010 goal of eliminating health disparities (CDC, 2011). REACH 2010 targeted six priority areas: cardiovascular disease, immunizations, breast and cervical cancer screening and management, diabetes, HIV/AIDS, and infant mortality for six racial and ethnic groups: Blacks, American Indians, Alaska Natives, Asian Americans, Hispanic Americans, and Pacific Islanders (CDC, 2011). REACH 2010 supported community coalitions comprised of community-based organizations, local or state health departments, and/or a university or research organization.

The REACH 2010 Boston program was one of four projects implemented in Massachusetts and the only one to target breast and cervical cancer disparities among Black women. The Boston Public Health Commission (BPHC) partnered with the Center for Community Health and Health Equity at the Brigham and Women's Hospital, a teaching affiliate of Harvard Medical School to create the REACH Boston 2010 Breast and Cervical Cancer Coalition (Bigby, Ko, David, & Ferrer, 2003). The initial community needs assessment uncovered factors contributing to breast and cervical cancer disparities. These were limited awareness of risk factors and screening benefits, institutional and cultural barriers to screening, and inadequate follow up of abnormal results. The mission of the project was to create, "with the community, a culturally competent system which promotes screening, education, prevention, treatment, and access to care for Black women and women of African descent in Boston" (BPHC, 2005, p.1). The policy goals were to eliminate health disparities by improving access to the health care system, improving the health care system's capacity to provide needed services, increasing participation by young women and immigrants, raising awareness about disparities, empowering women in the target populations, and creating sustainable membership and leadership in the Coalition (Bigby et al., 2003).

The REACH 2010 Boston Project focused on three projects: the Women's Health Demonstration Project, cultural competency training for providers, and expanded training of Black mammography technicians (Bigby et al., 2003). The Women's Health Demonstration Project linked Black women who received health services at community health centers and an academic medical center with primary care teams that were expanded to include case managers and client navigators. Upon enrollment in the Boston REACH 2010 Women's Health Demonstration Project, women completed a culturally appropriate

medical and social risk assessment tool and reported their health insurance status, association with a primary care provider (PCP), prior utilization of breast and cervical cancer screening and follow up, and their perceptions of the quality of communications and relationships with their PCPs. Enrolled women were linked to primary care if needed and to breast and cervical cancer screening and follow up. Subsequent utilization of screening was tracked through individual patient medical records at the participating health care settings (CDC, 2006).

Access to Care

When released in January 2000, *Healthy People* 2010 moved the national policy on health disparities, from reduction to elimination, and identified access to care as a leading health indicator (CDC, 2000). This reflected a shift towards addressing the complex social, cultural, economic, and health system issues critical to the elimination of health disparities (Chrvala & Bulger, 1999). In 2005, the National Health Disparities Report (NHDR) identified three discrete steps in accessing care: gaining entry into the health care system, getting access to appropriate services, and finding providers who met the needs of individual patients and with whom a relationship based on mutual trust and communication could be established (NHDR, 2005). The NHDR proposed measurements of access based on structural and financial indicators of having health insurance and a usual source of care, patient indicators of satisfaction with relationship and communication with their primary care providers, and successful receipt of needed services (NHDR).

Health insurance is a key factor in receiving preventive services, timely diagnosis of disease as well as prompt therapeutic interventions (Hadley, 2007). Between 1999 and 2008, the percentage of adults with insurance decreased: In 2008, 83.2% of people under age 65 had health insurance, for adults ages 18 to 44, from 79.0% to 75.6%; and for

those 45 to 64, from 87.8% to 86.4% (Agency for Healthcare Quality [AHRQ] National Healthcare Quality Report [NHDR], 2010). Nationally, more than half of the adults who are unauthorized immigrants are uninsured in comparison to a quarter of legal immigrants (Passel & Cohn, 2009). There were between 100,000 and 200,000 unauthorized immigrants in Massachusetts in 2007. Based on the 2008 Kaiser Women's Health Survey (Ranji & Salganicoff, 2011), the percentage of women uninsured for at least four years rose from 20% to 27% between 2004 and 2008 Uninsured women were more likely to be poor and less likely to receive screening mammogram or Pap smear within the previous two years (Ranji & Salganicoff).

Theoretical Significance

There is a paucity of information about how health insurance, having a primary care provider, and patient satisfaction with communication and relationship with the PCP influence access to breast and cervical cancer screening and follow up by Black women in Boston. In particular there is little information regarding potential differences between those who are US born and foreign born. This study proposes to examine the experiences of Black women enrolled in the Women's Health Demonstration Project focusing on the NHDR access indicators and to determine if differences exist between the two groups.

In 2006, Vernice Ferguson urged nursing faculty and students at the University of Massachusetts Boston that "Nursing has unfinished work to be done in the area of eliminating disparities." The National Institute for Nursing Research (NINR) strategic plan for the 21st century proposes to explicate how socio-cultural factors influence cancer prevention, screening, and detection behaviors for ethnic/racial minorities (Grady, 2000).

The dual impetus to reduce health disparities and to diversify the nursing workforce has produced recommendations for research, care, and education (Baldwin, 1996;

Bland, Jones, & Mark, 2005; Porter & Barbee, 2004; Shemblay-Ebron & Boyle, 2004; Underwood, Powe, Canales, Meade, & Im, 2004). Expanding knowledge about differences and similarities in breast and cervical cancer screening practices between US born and foreign born Black women will contribute to the dynamic exchange between health policy and nursing practice (Fawcett & Russell, 2001).

Purpose

The purpose of this study is to describe associations between health insurance and primary care (having a PCP, quality of communications and relationship with PCP) on differences in breast and cervical cancer screening reported by US born and foreign born Black women.

Health insurance and primary care are attributes of health care access and quality. Health insurance includes public and private insurance. In Massachusetts, the uncompensated care pool paid hospitals and community health centers for medically necessary services provided to residents who were low income, demonstrated medical hardships (extremely high medical expenses), or incurred bad debt from emergency services between 1985 and 2007 (Massachusetts Division of Health Care Finance and Policy, 2005; Health Safety Net, 2011). Primary care includes having a primary care provider (PCP) and perceptions of the quality of communications and relationships with the PCP. The study population is US born and foreign born Black women who enrolled in the REACH Boston 2010 Project implemented by the Boston Public Health Commission between 2000 and 2007.

Specific Aims

Aim I: Examine the differences between US born and foreign born Black women in the relation of health insurance, primary care (having a PCP, and satisfaction with the qual-

ity of communications with the PCP, to self report of cervical cancer screening: (ever screened, age at first screening, and recent screen.

Aim 2: Examine the differences between US born and foreign born Black women in the relation of health insurance, primary care (having a PCP, and satisfaction with the quality of communications with the PCP, to self report of breast cancer screening: ever screened, age at first screening, and recent screen.

Conceptual Framework

The Conceptual Model of Nursing and Health Policy (CMNHP) (Fawcett & Russell, 2001) guides this study. The CMNHP was developed to meet specific needs of nursing to articulate the profession's role in the development and evaluation of policies that influence or affect nursing practice, the relationship between nurses and the public, and the health of families, groups, and communities (Fawcett & Russell). The model is based on philosophical assumptions including the premise that "nursing, health systems, and society interact and are constituted by health policies" (Russell & Fawcett, 2005, p.320). The revised CMNHP recognizes four levels of policy. Level 1 is concerned with the "wellness and illness conditions of individuals, families, groups, and communities" (Russell & Fawcett, 2005, p.321), with an emphasis on quality. Level 2 is concerned with "specific nursing practice of health care delivery subsystems" (Russell & Fawcett, p.321), with emphases on quality and cost. Level 3 is concerned with the health care systems of geopolitical communities, states, and the functional condition of the specific health care system with an emphasis on equity of access. Level 4 is concerned with world health practices with an emphasis on quality, cost, and access from a standpoint of social justice (Russell & Fawcett). The CMNHP proposes interaction among the four levels of the

model and health policies, components, and outcomes. There are reciprocal relations between the policy components of health care services, personnel, and expenditures that in turn influence outcomes and future policies. The Conceptual Theoretical Empirical (CTE) structure for this study is shown in Figure 1.

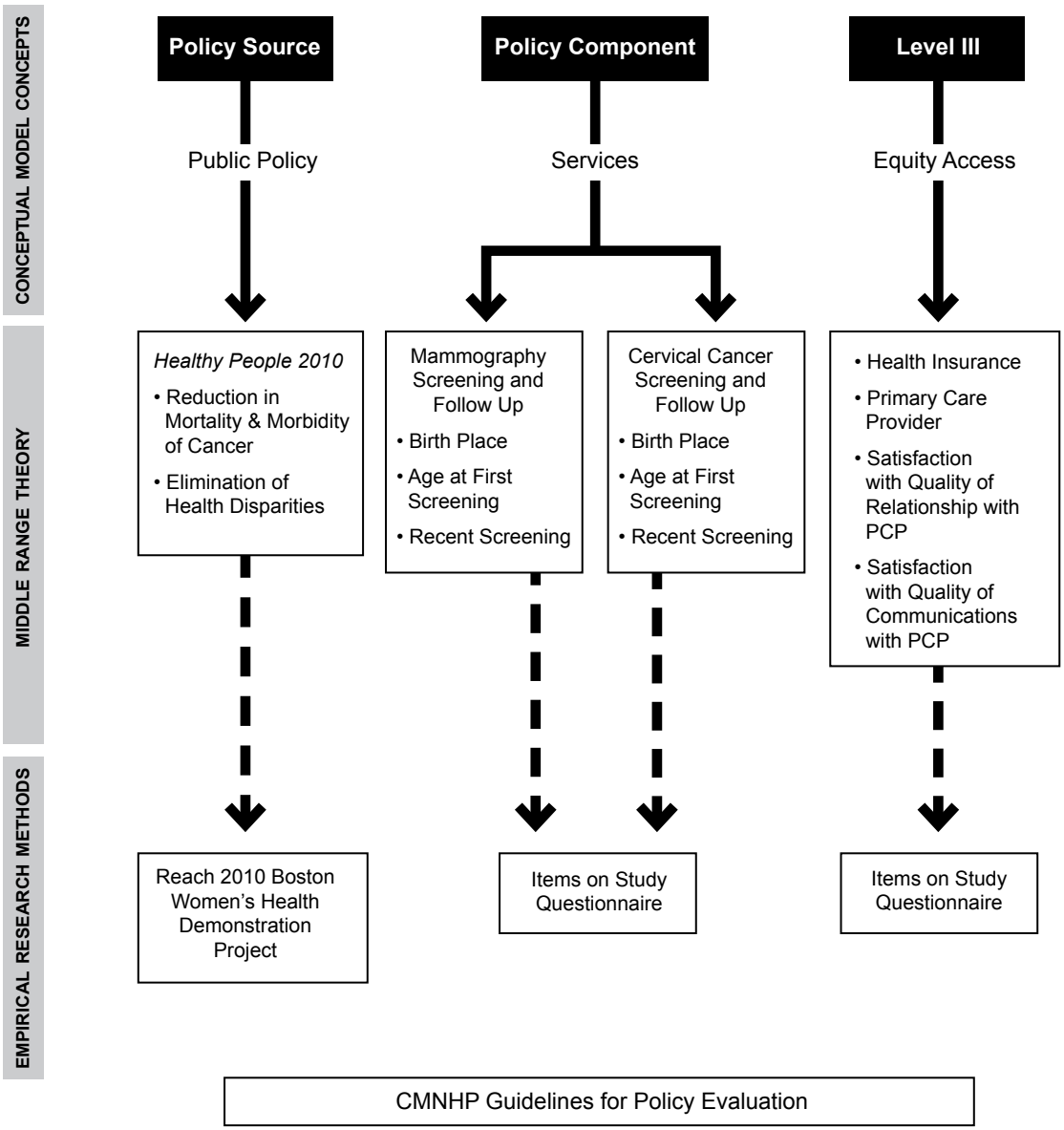

Figure 1. Conceptual theoretical empirical structure for the study

Conceptual Model Concepts

The policy source is a public policy, defined by Fawcett and Russell (2005), formulated by nations, states, cities, and towns The policy component is health care services defined as the "Procedures that nurses and other health care personnel provide, which can range from basic screening tests to complex technology-driven interventions" (Russell & Fawcett, 2005, p. 321). The CMNHP defines this study at Level 3 with a focus on equity of access to efficient and effective health care services. Access to health care is defined as the timely use of health services to achieve optimal outcomes (Millman, 1993). Improving access is a strategy used in the campaign to eliminate health disparities (Agency for Healthcare Research and Quality [AHRQ], 2006).

Middle Range Theory.

The federal policy of interest is *Healthy People* 2010, which is defined as a comprehensive set of health objectives to be achieved by 2010 that include a broad array of public health priorities matched with specific and measurable objectives (CDC, 2000). Two *Healthy People* 2010 objectives are combined: reduction in the morbidity and mortality of cancer and the elimination of health disparities. Health care services are represented by two middle range theory concepts that reflect utilization of healthcare services: Pap smear screening and follow up for all women in the study population and mammography screening and follow-up for the subset of women of 45 years of age and older. Access is represented by the middle range theory concepts of having health insurance, having a primary care provider (PCP), the quality of the communication with the primary care provider, and the quality of the relationship with the primary care provider. Health insurance is defined as having coverage for health care expenses through private or public indemnity or managed care plans including the free care pool. Primary care is

defined as “the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community” (Donaldson, Yordy, & Vanselow, 1994, p. 31). Primary care provider is defined as a physician, nurse practitioner, or physician's assistant who the patient identifies as her usual source of healthcare. Satisfaction is defined as “the state of being satisfied” (Merriam-Webster Online Dictionary, 2008). Quality, defined as “a degree of excellence” (Merriam-Webster Online Dictionary,), is linked to communication with the PCP and relationship with the PCP. Communication is defined as “exchange of information” (Merriam- Webster Online Dictionary). Relationship is defined as “a state of affairs existing between those having relations or dealings” (Merriam- Webster Online Dictionary).

Empirical research methods.

The two *Healthy People* 2010 objectives are operationalized by the REACH 2010 Boston Women's Health Demonstration Project, defined as a program administered by the CDC that supports community coalitions in designing, implementing, and evaluating community-driven strategies to eliminate health disparities (CDC, National Center for Chronic Disease Prevention and Health Promotion (CDC, NCCDPHP, 2005).The study population is defined as Black women born in the United States (US) and foreign born Black women of Boston who enrolled in the Boston Public Health Commission REACH 2010 Women's Health Demonstration Project between 2000 and 2007. US born refers to those individuals with US citizenship at birth, including those born in the United States, Puerto Rico and other US territories, and those born abroad to US citizens (Passel & Cohn, 2009). Foreign born refers to individuals who are not US citizens and born elsewhere than the United States and territories, of parents who are not US citizens (Passel &

Cohn). Personal characteristics are defined as: US born or foreign born, age, and education.. The data source for birth place is the Women's Health Questionnaire (Appendix A). Services are measured by self-report of breast and cervical cancer screening and follow up. Type of health insurance, having a primary care provider, and satisfaction with the quality of the communications and relationships with PCPs in the Women's Health Questionnaire are measured by self-report to items on the REACH 2010 Study Questionnaire.

CMNHP guidelines for policy evaluation.

The CMNHP provides guidelines for policy research including policy analysis, policy evaluation, and program evaluation. The proposed study is a program theory evaluation (Rossi, Lipsey, & Freeman, 2004).

Table 1 (Appendix C) describes how the CMNHP Guidelines are applied to the proposed study. The purpose of the REACH 2010 Boston Project was to reduce barriers to preventive breast and cervical cancer screening and follow up for Black women in Boston. The program goals were to identify Black women, connect them with and support them through screening and follow up, to address breast and cervical cancer within the context of women's health, and to improve their satisfaction with the quality and cultural competency of their care (Bigby, Ko, Johnson, David, & Ferrer, 2003). Stakeholders were women in the target population (limited to Black women in Boston, including new immigrants) their families and social support networks, as well as health care providers, women's health ambassadors, case managers, and client navigators, public health officials, and advocates. The CDC and National Institutes of Health were the initial financial supporters. Subsequent contributors included the city of Boston, the affiliated academic medical center, and community health centers. Additional funding and resources were provided through the CDC's National Breast and Cervical Cancer Early Detection Pro-

gram (NBCCEDP), operated by the Massachusetts Department of Public Health Women's Health Network, which provided free screening and case management for uninsured women. Actual recipients were those Black women who enrolled in the project. Beneficiaries included women who achieved leadership roles within the REACH 2010 Coalition Steering Committee. Unintended beneficiaries included women who underwent screening through different programs because of heightened awareness generated by REACH 2010. Potential harm from the program may have been experienced by women who had false positive screening test results and suffered from anxiety and distress.

The CDC REACH 2010 capacity building model was adopted to increase awareness of breast and cervical cancer among Black women through media campaigns, community organizing, and political activism. The CDC screening guidelines during this study period (Lawson, Henson, Bobo, & Kaeser, 2000) recommended Pap smears for all women aged 18 and above and mammograms for women aged 50 and over. Program effectiveness evaluation was contracted with the Office for Women, Family, and Community Programs, Brigham and Women's Hospital (Bigby, KO, David, & Ferrer, 2003).

Policy context.

This examination of public policy includes the historical, political, social, and economic contexts of the *Healthy People* national agenda. Figure 2, Federal influences on the agenda to eliminate breast and cervical cancer disparities, depicts the timeline of both *Healthy People* policies as well as significant reports, executive, and legislative mandates aimed to achieve this goal.

Timeline of the CDC *Healthy People* Agenda

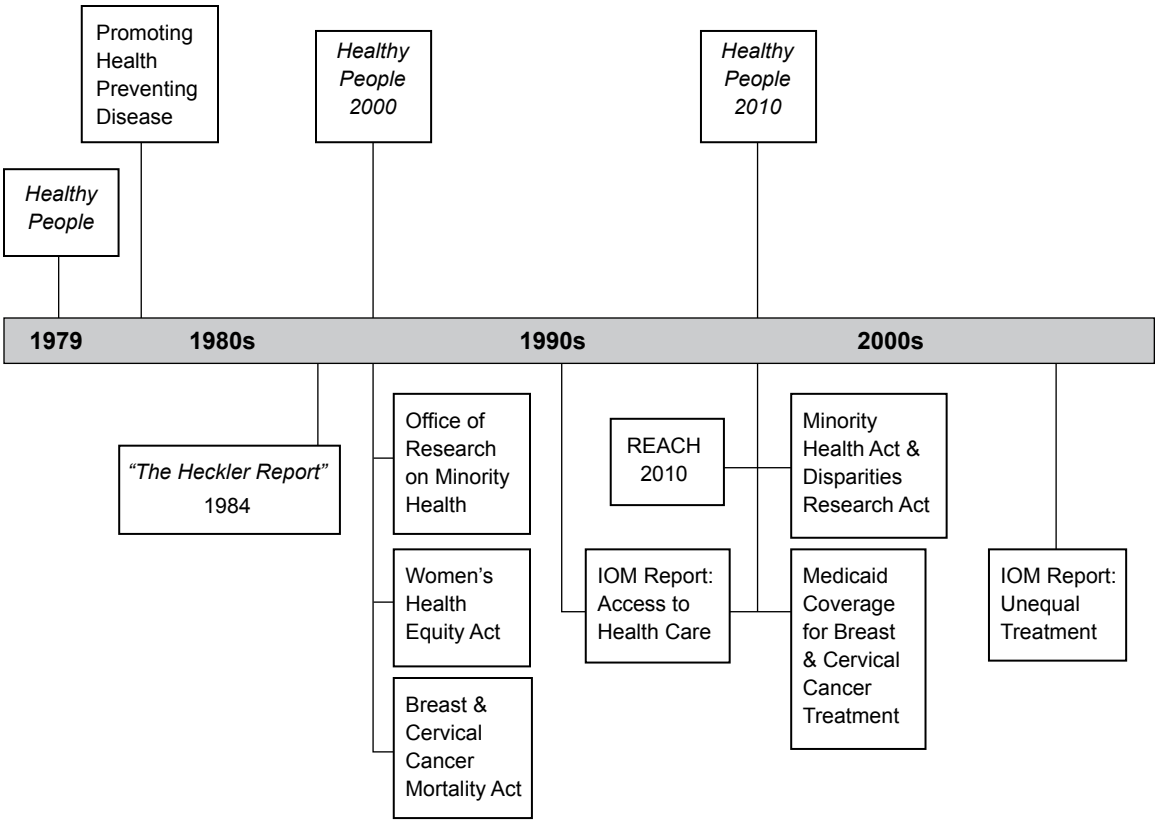

Figure 2. Federal influences on the agenda to eliminate breast & cervical cancer disparities

A comprehensive national agenda of health promotion and disease prevention began in the Carter administration with the 1979 publication of *Healthy People*: *The Surgeon General's Report on Health Promotion and Disease Prevention* (US. Public Health Services [USPHS], 1979). With contributions from private and public sectors, including scientists, business, labor, and academia, the report described progress in national health status, including reduced infant and childhood mortality rates, increased life expectancy, and the challenge of rapidly increasing health care costs. Prevention and health promotion were touted as strategies for saving lives, improving the quality of life, and enhancing

cost effectiveness (USPHS). The report established five national health goals for population groups based on age groups and recommended 15 strategies for preventive health services, health protection, and health promotion (USPHS).

Promoting Health/Preventing Disease: Objectives for the Nation (1980) was published as a companion piece and included the same goals and priority areas as the prior report, while adding 226 measurable objectives. These objectives and a decade long health agenda were innovative, experimental, and unprecedented for including quantifiable targets, progress measurement, and accountability (Mason & McGinnis, 1990). This agenda was subject to four reviews within the decade which identified goals that had been reached and those needing improvement. Concurrently, the CDC encouraged growth of state and local capacity by publishing guidelines for community preventive services (Mason & McGinnis).

In 1984, during the Reagan administration, Secretary of Health and Human Services (and former Massachusetts Congresswoman) Margaret Heckler convened the Task Force on Black and Minority Health which issued a report that is often referred to as "The Heckler Report" (US DHHS, 1985). The Task Force drew upon "An unprecedented comprehensive and coordinated study to investigate the longstanding disparity in the health status of Blacks, Hispanics, Asian/Pacific Islanders, and Native Americans compared to the nonminority population" (US DHHS). Using mortality data, the Task Force identified six causes of death that accounted for the majority of health disparities: cancer, cardiovascular disease and stroke, chemical dependency, diabetes, unintentional injuries, and infant mortality. The Task Force recommended incorporation of minority health initiatives into existing programs, increasing public and private involvement in efforts, and improving research and data collection to ameliorate health disparities (USDHHS).

Planning for *Healthy People* 2000, the second national health agenda, began in 1987 with input from national organizations (including the American Nurses' Association) and state health departments (Mason & McGinnis, 1990). In September 1990, *Healthy People* 2000: *National Health Promotion and Disease Prevention Objectives for the Nation* (US DHHS, 1991) identified three broad goals for health improvement for the next decade: to increase the span of healthy life, to reduce disparities in health status among different populations, and to provide access to preventive health services for all persons. Cancer was a priority area.

During the 1990's there were numerous other reports, legislation, and federal initiatives that were in synchrony with the *Healthy People* 2000 agenda (Figure 2). These included policies that expanded access to breast and cervical cancer detection and, eventually, treatment, as well as those which specifically addressed minority health. Advocacy groups, professional organizations, and legislative champions influenced the federal government to pass legislation and issue executive orders addressing breast and cervical cancer in the 1990s. The Women's Health Equity Act of 1990 (U.S. Congress, House of Representatives, 1990) contained 20 initiatives to address deficiencies that existed for women in the health care. The 101st Congress (1989-1990) passed the Breast and Cervical Cancer Mortality and Prevention Act of 1990 that provided screening and diagnostic services including clinical breast examinations, mammograms, Pap tests, surgical consultation, and diagnostic testing for eligible low income women with abnormal tests (Ryerson, Benard, & Major, 2005 as cited in Tangka, et al., 2006). The National Institutes of Health established the Office of Research on Minority Health in 1990 and launched the Minority Health Initiative in 1992 to focus on research and training programs (National Center on Minority Health and Disparities, 2006).

The Institute of Medicine mandated that an expert panel develop indicators of access to personal health care services known to have measurable effects and outcomes (Milman, 1993). The report, Access to Care (IOM) not only defined access, but identified problems with data collection regarding race and ethnicity. Utilization of clinical breast examinations, mammography, and Pap smears were identified as access indicators. The IOM report recommended research to determine why women did not undergo screening for these cancers, with particular focus on the roles of health insurance and patient costs. A 1997 review of *Healthy People* 2000 identified 95 objectives for which health disparities existed between the general population and at least one target minority population (Chrvala & Bulger, 1999). The *Healthy People* 2000 Progress Review (Satcher, 1998) highlighted reductions in disparities between Black women and white women in mammography utilization and breast cancer mortality.

Healthy People 2010 began in 1997 with the inclusion of diverse population groups, community organizations, and individuals (IOM, 1999). Policymakers identified Leading Health Indicators, including enhanced access to health care, to spur action and monitor progress. Other goals included expanding effective culturally sensitive interventions for diverse populations, and identifying groups at highest risk for poor health. The CDC launched Racial and Ethnic Approaches to Community Health (REACH) in 1999 to eliminate health disparities in priority areas among specific populations (CDC, 2011). The CDC provided initial funding of $9.4 million to community coalitions in 18 states ongoing funding for selected REACH projects (CDC, 2011). In 2007 the CDC reorganized REACH 2010 into REACH U.S. and the Boston Public Health Commission was selected as a Center of Excellence for the Elimination of Disparities (CEED) with a

population focus on African Americans and a disease focus on cardiovascular diseases and breast and cervical cancers (CDC, 2007).

In 2000, Congress enacted the Minority Health and Health Disparities Research and Education Act of 2000 requiring NIH and the National Academy of Sciences to identify data needed to evaluate health disparities and health services access, to describe current systems that effectively collected this data, and funded the National Center on Minority Health and Disparities. This landmark legislation held federal agencies accountable to document and eliminate health disparities.

Under the Clinton administration, in 2000, National Breast and Cervical Cancer Early Detection Program (NBCCEDP) expanded to provide case management and optional state Medicaid treatment coverage for legal residents (CDC, NBCCEDP, 2004). Subsequently, the Bush administration signed legislation to extend coverage to Native Americans who had previously been excluded (National Breast Cancer Coalition, 2005). Another IOM report, Unequal Treatment: Confronting racial and ethnic disparities in health care (Smedley, Stith, & Nelson, 2003) further highlighted the extent and sources of disparities while making recommendations for interventions. The report confirmed the existence of racial and ethnic healthcare disparities and evidence of continual discrimination through a thorough review of the literature, and identified patient and health care system factors including bias, stereotyping, inadequate time for clinical counters, and mistrust as factors that contributed to health care disparities. The report recommended increasing awareness of racial and ethnic health care disparities and a range of interventions to improve patient education and empowerment, health professional education, data collection, monitoring, analysis, and dissemination (IOM, 2003).

The *Healthy People* 2010 *Midcourse Review* (CDC, 2006) assessed progress toward elimination of disparities for each of the *Healthy People* 2010 targets. Black adults experienced disparities in access to care (as measured in having a primary provider and usual source of care). The differences between Black adults and groups with the best access varied between 10% and 49% (CDC, *Healthy People* 2010 Midcourse Review). The report noted that breast and cervical cancer death disparities for Black women were 100% higher in comparison to the group that had the lowest mortality rates, Asia/Pacific Islanders.

The National Cancer Institute (NCI) established a Trans-HHS Cancer Health Disparities Progress Review Group (PRG) of non-governmental experts (CDC, *Healthy People* 2010 Midcourse Review, 2005) to eliminate cancer health disparities,. The PRG described the persistence of health inequities and unequal access to evidence-based prevention, screening, diagnosis, treatment and survivorship support services and identified priority actions involving collaboration within HHS. The Cancer Health Disparities Subcommittee within the HHS Health Disparities Council was charged with reviewing the PRG recommendations for research, intervention development, and service delivery (*Healthy People* 2010, 2005).

Social context.

Social construction is the way in which "society shapes biological findings into discrete entities we consider to be disease" (Lerner, 2000, p.27). Social determinants of health are understood to include not only race and gender, but also geography, socioeconomic status, prejudice towards the disabled, and access to services mediated by health insurance coverage (Krieger, Chen, Waterman, Rehkopf, & Subramanian, 2005; McDonough et al., 2004).

Race has been characterized as a “socially constructed taxonomy” (Williams, 1993, p. 9) that reflects all of the other determinants as well as racism. Evidence linking racial discrimination to breast cancer in Black women was described in an analysis of the Black Women's Health Study, (Taylor et al., 2007). This study used a survey instrument to collect data on health characteristics and behaviors. Five questions were included in the 1997 questionnaire to measure the frequency of discrimination in daily life and breast cancer diagnosis. Discrimination was reported on the job by 58% of the 49,161 respondents, and 66% reported discrimination in one or more situations: job, housing, or by police. There were 593 incident cases of breast cancer among respondents and women who reported discrimination in all three areas were 31% more likely to develop breast cancer than those who did not report any discrimination.

During the social movements of late 20th century, Black women were forced to choose between civil rights and women’s rights (Shambley-Ebron & Boyle, 2004). Black women experienced different forms of political activism in advocating for their breast health needs than did White women for whom technologically advanced care was more easily accessible. Black women have not been well represented in mainstream breast cancer advocacy groups. In criticism of the homogeneity of the movement, breast cancer survivor, lawyer, and advocate Barbara Brenner (2000) wrote: “A breast cancer movement that actually reflects the diversity of those who are affected by breast cancer must represent the entire range of issues that affect all women”

Hines and Thompson (as cited in Shambley-Ebron & Boyle, 2004) enumerated cultural values identified with Black women: dedication to community and family development; promotion of education for collective improvement; spirituality and religious observance, and striving for individual worth and dignity. Baldwin (1996) developed an

Afrocentric model of low income Black women's health using focus groups. Baldwin's model incorporated perspectives of pride in being Black, experiencing oppression, struggling for survival, and trust in family and community members. The role of cultural beliefs and expectations was also explored by Moore (2001) who contrasted the African model of collaboration among family members for help-seeking and care with the Eurocentric emphasis on patient autonomy that is valued in the in the United States healthcare delivery system.

In *The Immortal Life of Henrietta Lacks* (2010) journalist Rebecca Skloot described the experiences of a Black woman in Baltimore who had cervical cancer and was treated at Johns Hopkins University in the early 1950's. The biography illustrated both racism and primacy of family and friends. During the course of her illness, Ms. Lacks was relegated to the segregated wards of the hospital, had cells removed from her cervix for research without permission, and died a painful death separated from her husband and young family of six children.

Newer communities of Black immigrant women bring diverse language, culture, and religious values influenced by their unique histories. Somali women have been uprooted from the Horn of Africa. West African women come from the opposite side of the continent. Women from Cape Verde, Haiti, and the English-speaking Caribbean speak diverse languages, have different spiritual traditions, and their own support networks. Their explanatory models of illness, attributions of cancer causality, and perspectives on how cancer disrupts the integration of body and mind influence utilization of preventive health services (Moore, 2006).

In Boston, the racial and ethnic composition of the city changed substantially between the 1990 and 2000 Census: the percentage of Whites decreased from 59.4% to

49.5%, and the percentage of Blacks decreased from 24.3% to 23.8% (BPHC, 2005), nearly 25% of whom identified themselves as immigrants. In that decade, the Census reported steep increases in Black immigration rates from the following areas: Africa, 71%, Jamaica, 47%, Trinidad, 45%, Barbados, 43%, Cape Verde, 41%, and Haiti, 38% (The Boston Foundation, 2004). Boston is highly segregated, with about 92% of the Black population living in seven neighborhoods (BPHC, 2005). For example, Haitians, who comprise the largest immigrant group in Boston, cluster in the Mattapan, Hyde Park, and Dorchester neighborhoods (Desire, 2007). Blacks in Boston are more likely than White residents to report being treated worse than others because of their race and to recount experiences of insensitive racial comments from providers, inadequate pain management, and poor communication about important information (BPHC, 2005). In recognition of the growing diversity within the Black community, when the BPHC convened the initial Boston REACH 2010 Breast and Cervical Cancer Coalition in 1999, community members representing African Americans, Haitian Americans, Caribbean Americans, and immigrants from Africa were included along with public health officials, advocates, and social service providers (Bigby, KO, David, & Ferrer, 2003).

Economic context.

Cancer screening, detection, and treatment costs contribute to the overall high cost of health care in the United States both on a societal scale and on the lives of those affected. In 2010, cancer costs exceeded 124 billion dollars, including 16.5 billion dollars for breast cancer and 1.55 billion for cervical cancer (Mariotto, Yabroff, Sha, Feurer, & Brown, 2011) and are projected to reach 207 billion by 2020.

The degree to which the substantial resources allocated to advanced screening technologies and pharmacologic interventions for breast and cervical cancer have de-

creased cancer costs has been called into question. Analysis of mortality data from the National Center for Health Statistics between 1991 and 2000 demonstrated that reducing health disparities experienced by Blacks would have averted more deaths than those averted by medical advances (Woolf, Johnson, Fryer, Rust, & Satcher, 2004).

Both US and foreign born Black women are potentially more vulnerable to the economic burdens of cancer as they are more likely to be poor and uninsured than White women. In Massachusetts, more than one half of all Black adults had an annual income of less than $25,000 in 2003, and Blacks were half as likely as Whites to have a high school diploma (CDC, 2004; Liao et al., 2004).

Nationally, immigrants accounted for 86% of the growth of the uninsured between 1998 and 2003, partially because of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, which banned new immigrants, including those arriving legally, from benefiting from publicly funded health and social programs (Fronstin, 2005). In 2004, immigrants accounted for 17% of the Massachusetts workforce (Boston Redevelopment Authority [BRA], 2005). Immigrants were most likely to be employed in health, social service, hotel and restaurant services (BRA, 2005).

In 2005, the BPHC reported that one in nine Blacks were uninsured, twice the rate of Whites (BPHC, 2005) Women who lack health insurance were more likely to delay seeking care and to incur higher costs as well as to be diagnosed at a later stage with lower survival rates than their insured counterparts (Ayanian, Kohler, Abe, & Epstein, 1993; BPHC, 2005; Hoffman, Carbaugh, Yung Moore, & Cook, 2005).

Public policy in Massachusetts has been successful in expanding health insurance coverage especially among adults with family income below 300% of the poverty level, who became insured through expanded public health insurance programs (Long, 2008).

However, the potential impact of rising unemployment on employer-based insurance was estimated at one percentage point decrease in coverage for each percentage point increase in the unemployment rate (Holahan & Cook, 2008). In the Boston metropolitan area, the unemployment rate rose from over four and a half per cent in August, 2008, peaked at greater than eight per cent in early 2010, and was last reported at just under six percent for December, 2011 (U.S. Bureau of Labor Statistics, 2012).

While Long (2008) found that the newly insured reported better access to health providers, the Massachusetts Medical Society (2009) reported critical shortages among internists and family practitioners, and longer waiting times for appointments. The National Association of Community Health Centers (NACH) predicted that by 2015, demand for primary care for 30 million new community health center users, will exceed the current supply of physicians, nurse practitioners, and physician assistants now available by more than 18,000 providers (NACH, 2008).

Summary of the Policy Context

Black women in the United States experience breast and cervical health disparities rooted in a health care system that historically limited access to services through social and economic barriers. In the quarter century that has passed since the Heckler Report (U.S. DHHS, 1985), the existence of health disparities has been identified, delineated, targeted, measured and analyzed. While health care policies of the late 20th and early 21st centuries have been successful at decreasing these disparities, Black women continue to have lower incidence but higher death rates from breast and cervical cancer than White women (U.S. CDC, 2010, 2010a).

Analysis of factors that influence how US and foreign born Black women access breast and cervical screening is warranted. The REACH 2010 Women's Health Demon-

stration Project provided an opportunity to uncover potential differences between these two groups of women. Identification of the influences of health insurance, having a PCP, and perceptions about the quality of communications and relationships with the PCP and differences between these two groups may provide insights into strategies to improve health care access.

This study may have value to policymakers by illustrating the dangers of ignoring differences among ethnic groups. The study may provide the impetus for nursing research to examine appropriate interventions to reduce cancer health disparities including meeting demands for increases in nurse practitioners as primary care providers, expanding opportunities for nursing education at the baccalaureate level and above, fostering interdisciplinary collaboration, and advancing nursing research into health disparities.

CHAPTER 2

LITERATURE REVIEW

This chapter reviews literature pertinent to the study of factors that influenced cervical and breast cancer screening among US born and foreign born Black women. The factors of interest were personal characteristics, health insurance, and primary care. Articles were obtained from OVID, MEDLINE, PUBMED, and CINAHL between 2000 and 2011. Studies were reviewed using the following search terms:

- Regions and countries: Africa, Antigua, Antilles, Bahamas, Barbados, Caribbean, Cape Verde, Dominican, Grenada, Grenadines, Haiti, islands, Jamaica, St. Kitts, St.Lucia, Martinique, Netherlands, Nevis, Somalia, Tobago, Trinidad, United States, St. Vincent, Virgin Islands, West African.
- Study participant descriptors: African American, Black, non-Hispanic Black, immigrant, foreign born, native.
- Cancer types and screening tests: breast, cervical, mammography, Pap smears.
- Policy and service measures and indicators: Health disparities, health insurance, primary care provider, patient centeredness, satisfaction, communication.
- Self-report

Study designs reviewed included original studies, secondary data analysis of survey reports, medical record review, and qualitative methods. Some studies addressed both breast and cervical cancer screening while others focused on either cancer. The majority

of studies used mammography data for breast cancer screening and Pap smear data for cervical cancer screening. In many studies, various terms were used by the authors to describe race and ethnic groups. Terms for African Americans included African Americans, Blacks, and non-Hispanic Blacks. Terms for Hispanics included Hispanics and Latinos. The term for Whites used most often was White. Terms for women of African descent include Caribbean, Haitian, Jamaican, and West African. For this study, US born and foreign born Black women are the terms used to describe the target population.

The articles that yielded data on study variables of interest (immigration, health insurance, primary care provider, satisfaction with quality of communication) are summarized in Table 2. The studies that focused on the methodological issue of self-report are summarized in Table 3. In each table, the studies are presented in alphabetical order by leading author's last name. Study sample, design, methodology, and variables of interest are displayed.

Aim 1

Examine the differences between US born and foreign born Black women in the relation of health insurance, primary care (having a PCP, and satisfaction with the quality of communications with the PCP), to self report of cervical cancer screening and follow up (ever screened, age at first screening, and having a recent screen.

The specific study questions for the first aim were:

1. What were the differences in Pap smear screening between US born and foreign born Black women?
2. What were the differences in Pap smear screening between US born and foreign born Black women associated with health insurance?

3. What were the differences in Pap smear screening between US born and foreign born Black women associated with having a PCP?
4. What were the differences in Pap smear screening between US born and foreign born Black women associated with satisfaction with quality of communications with PCP?
5. What were the differences in Pap smear screening between US born and foreign born Black women associated with satisfaction with quality of relationships with PCP?
6. What model best predicted Pap smear screening for each group of women?

Birthplace, health insurance, having a primary care provider, and satisfaction with the communications with the primary care provider were the independent variables of interest. Many studies focused on the impact of one or more of these factors on both breast and cervical cancer screening. The specific aspects of impact on either cervical or breast cancer screening are noted under the study question for each aim.

Pap smear screening: US and foreign born women

There are many data sources used to describe the screening behaviors of US Born and foreign born Black women. Swan et al. (2010) analyzed patterns and trends in cancer screening in relation to achieving Healthy People 2010 goals using data from the 2005 National Health Interview Survey (NHIS) (Table 2). This cross sectional household study is the principal health information source on the health of civilians with continuous sampling and interviewing. Population indicators included race and ethnicity, poverty level (using 1999 poverty thresholds), education, geographic location (using Metropolitan Statistical Areas [MSA]), usual source of care, health insurance, disability, and immigration status. Data were analyzed using the Survey Data Analysis (SUDAAN) computer package. Pap smear rates were analyzed for women 25 years of age and older.

While screening differences were not detected among different racial and ethnic groups, immigrants who had been in the country less than 10 years had significantly lower predicted margins (PM) of Pap smear screening *(PM 70.8, 95% CI [66.2- 74.4], p=0.001)* than those born in the United States *(PM 78.95, 95% CI [78.0-79.8])* This reveals an association between recent immigration and lower screening rates. Limitations include lack of cross-referencing immigration to race/ethnicity and failure to investigate potential variances based on countries of origin.

DeAlba, Hubbell, McMullin, Sweningson, and Saitz (2005) evaluated associations between citizenship status and receipt of breast and cervical cancer screening among immigrant women in California using logistic regression models on data collected on the 2001 California Health Interview Study (Table 2) Immigrants who were naturalized citizens were more likely to ever have had a Pap smear *(OR =1.54, 95% CI [1.10, 2.15])* and to have received a smear within the past three years than those who had not obtained citizenship *(OR =1.51, 95%CI [1.15, 1.99])*.

In the study of Haitian immigrant women in eastern Massachusetts, Green, Freund, Posner, and David (2005) found differences in Pap smear screening behaviors in comparison to native born Black, English-speaking Caribbean, or Latina women (Table 2). Women living in neighborhoods with large Haitian immigrant populations were surveyed by trained trilingual canvassers (English, Haitian Creole, and Spanish). The final sample included 700 women, aged 40 and older of whom 40% were classified as Haitian. The SAS statistical package was used and the effect of demographic and health care characteristics on self-reported Pap smear rates was analyzed using multivariate logistic regression. Haitian women had lower Pap smear rates than women of other ethnic groups

($p \leq .01$). Adjustment for demographic factors (age, marital status, education level, and household income) only partially accounted for differences.

In a recently published qualitative study of barriers to cervical cancer screening for Haitian women in a Miami neighborhood, Menard et al. (2010) analyzed data from in-depth interviews conducted by community health workers with 15 women (Table 2). The grounded theory approach was used to identify themes which Menard and colleagues classified as structural, psychosocial barriers. Structural barriers included immigration status, lack of health insurance, and perceived costs of care.

Two studies examined cancer screening behaviors of specific minority ethnic groups relevant to this study (Table 2). In a Massachusetts Department of Public Health (MADPH) survey of Cape Verdeans, 69% of women over 18 reported a Pap smear within the past year, and 79% of women over 40 reported a mammogram in the past year (Beagan, Oppedisano, & Pearlman, 2010). Chart review of Cambodian, Somali, and Vietnamese immigrant women in Portland, Maine, yielded data indicating that Somali women had lowest rates of breast, cervical, and colorectal cancer screening (Samuel, Pringle, James, Fielding, & Fairfield, 2009).

These studies range from large national and state secondary analyses to those focusing on particular ethnicities and locations. The data provide evidence that foreign born women, including Black women, experience differences in cervical cancer screening.

Pap smear screening associated with health insurance

Differences in insurance coverage between Black adults and other racial and ethnic groups were explored in the 2009 report on the role of healthcare coverage for communities of color issued by the Kaiser Family Foundation (Thomas & James, 2009). In this report, data from the 2009 Current Population Study indicated that Blacks had

higher rates of uninsurance and public insurance in comparison to Whites, Asians, Native Hawaiian or Pacific Islanders and that 36% of non-citizen Blacks were uninsured in comparison to 20% of Black citizens (Table 2). Swan et al. (2010) found higher rates of Pap smear screening relating to insurance coverage in data from the 2005 National Health Interview Survey (Table 2). There were significant differences in screening associated with types of insurance ($p \leq 0.001$). Private or military insurance was associated with highest reports of Pap smear screening rates *(PM 79.9, 95% CI [78.9-80.9])*, in comparison to public insurance *(PM 76.7,95% CI [74.9-78.5])*, and uninsured *(PM 74.0, 95% CI [71.9-76.2])*.

O'Malley, Forrest, and Mandelblatt (2002), examined the role of health insurance as part of a study of factors influencing cancer screening of low income women in Washington, D.C., by conducting a random-digit-dial survey in low-income census tracts. The sample included 1,205 women over age 40, among whom 82% were Black. Those who had private health maintenance organization (HMO) plans were significantly *(OR 1.89, 95% CI [1.11, 3.17, p< .01])* more likely to have Pap smears than those with other insurance.

Fretts, Rodman, Gomez-Carrion, Goldberg, and Sachs (2000) used two surveys conducted by lay health advisors to determine utilization of preventive health services among minority women aged 45 to 64 in an underserved section of Boston. One survey, an in-depth structured interview, was conducted after patients completed a visit with a nurse practitioner or physician in one of two selected community health centers. The second, a brief self-administered survey, was distributed to women attending individual or group health information sessions in homes or churches. The total sample size was 206, with 75% identifying themselves as Black, 31% having public insurance, 41% having

private or HMO insurance, and 26% having none (2% did not respond). There were significant differences in both breast and cervical cancer screening among women surveyed in the community. For cervical cancer screening, 93% of insured reported a recent Pap smear in comparison to uninsured women with a rate of 77% ($p < 0.001$).

In the study of California immigrants (DeAlba et al., 2005) reported significant difference in insurance coverage associated with insurance status ($p<.001$) that influenced report of cervical cancer screening. Immigration, defined in this study as living in the United States for less than ten years, was associated with lower Pap smear screening. Foreign born women were 22% less likely than US born to have had a Pap smear within the past three years. The differences in recent mammography (within two years) for women aged 40 and older was 32% less for foreign born women in comparison to US born women. This study is relevant because it uncovers an association between recent immigration and lower screening rates. Limitations include lack of cross-referencing immigration to race/ethnicity and failure to investigate potential variances based on countries of origin. In Peterson, Han, and Freund's 2003 study on Pap smear follow up among minority women screened in Boston clinics, women with Medicaid insurance had inadequate follow up in comparison to those with private insurance *(OR 1.9, 95% CI =1.01,3.5)*. In Green, Freund, Posner, and David's (2005) eastern Massachusetts study, significant ($p<0.001$) differences in Pap smear rates between Haitian immigrants and others was partially explained by health insurance.

Overall, health insurance contributed to higher cervical cancer screening (DeAlba et al., 2005; Fretts et al., 2000; Green, Freund, Posner, & David, 2005; Peterson, Han, & Freund, 2003). The influence of insurance differed by payment model (public, private, or uninsured) and organization (HMO) in comparison to other models (O'Malley, Forrest,

& Mandelblatt's, 2002), citizenship status (DeAlba, et al.) and ethnicity (Green et al.). These studies provide a background for further research into examining the role of type of insurance on cancer screening for both US born and foreign born women.

Pap smear screening associated with having a primary care provider

In their study of national cancer screening trends, Swan et al. (2010) found that having a usual source of care significantly ($p<0.001$) influenced cervical cancer screening among respondents (Table 2). For women with a usual source of care the predictive margin (PM) of having a recent Pap smear was 79 *(95% CI [78.4. - 80.2l])*. In comparison, for women without a usual source of care or emergency room users, the predictive marginl was 71.7 *(95% CI [69.4- 74.1])*.

In Selvin and Brett's analysis of the 1998 NHIS data, having a usual source of care predicted both mammography and Pap screening self-report for non-Hispanic Black women (Table 2). In comparison with Non-Hispanic White and Hispanic women, non-Hispanic Black women aged 40-64, a usual source of care was a significantly stronger predictor of having a Pap smear within the past three years *(OR 6.66, 95% CI [3.62, 12.26], p <0.05)*.

In O'Malley, Forrest, and Mandelblatt's study (2002) of low income women's adherence to breast, cervical, and colon cancer recommendations for screening, the authors examined primary care features and created measures of comprehensiveness of service delivery, coordination, continuity with a single provider, accessibility, and the patient-clinician relationship in a Primary Care Assessment Survey (Table 2). O'Malley and colleagues (2002) also created a visit continuity variable with four mutually exclusive categories: no usual site of care; having a usual site, but no regular clinician at that site; having a usual site and a regular clinician at that site, but sees for only some visits,

and having a usual site and seeing the same regular clinician for most visits. Adherence to Pap tests, clinical breast exams, and mammography recommendations were significantly associated ($p<0.01$) with having site of usual care with any degree of continuity in comparison to not having a usual site of care.

In the study of foreign born women in Californian, having a usual source of care was associated with receiving cancer care (DeAlba et al., 2005). Green, Freund, Posner, and David (2005) studied Pap smear rates among Haitian immigrant women in Boston. Having a single site for primary care was positively associated with having a Pap smear within the past three years ($p=0.03$).

Pap smear screening associated with satisfaction with quality of communication with primary care provider

In a qualitative study of motivation to follow-up abnormal Pap smears among low-income women in Texas, Breitkopf et al. (2004) conducted semi-structured interviews with 120 women between the ages of 25 and 50 who attended family planning clinics staffed by advance practice nurses sponsored by the University of Texas Medical Branch (Table 2). Forty participants were Black. The quality of patient-provider communications was associated with perceptions about the importance of follow up, including telling the patient the importance of follow up, providing information about risk of not following up, and providing encouragement and reassurance. Several respondents particularly mentioned the value of the provider actually sitting down to explain findings.

Conversely, poor communication traits, characterized by uncaring attitude, insufficient information, scaring the patient, and inconsiderate behavior were most frequently cited clinic-based barriers to follow up. This study is helpful in that it specifically addresses the issue of follow up for abnormal cervical cancer screening. However, limita-

tions include the small sample size and the lack of specific information about ways in which Black women, whether US born or foreign born perceived how the quality communications influenced their screening behavior.

O'Malley and Forrest (2002) assessed primary care performance in a community-based telephone random digit dialing survey of women over 40 who lived in lower income census tracts in Washington, D. C. (Table 2). The sample included 1,205 women, 82.7% of whom self-identified as Black/African American. Independent variables included comprehensiveness of service delivery, coordination of care, continuity of care, and accessibility. Dependent variables were trust, compassion, and communication. Communication was positively and significantly associated with high levels of geographic accessibility *(OR 1.91, 95% CI [1.12, 3.25])*, medium *(OR 2.4, 95% CI [1.65, 3.35])* and high *(OR 6.90, 95% CI [4.34, 10.93])* levels of organizational accessibility, high levels of comprehensiveness *(OR 6.63, 95% CI[3.88,11.34])* and high levels of coordination of specialty care *(OR 3.55, 95% CI [2.21,5.71])*.

Pap smear screening associated with satisfaction with quality of relationship with primary care provider

Another dimension of the survey conducted by O'Malley, Sheppard, Schwartz, and Mandelblatt in 2004 focused on factors that predicted trust in primary care providers and explained the role of trust on the use of preventive services by Black women (Table 2). The main outcome variable was a summary index of preventive services that included mammography, Pap tests, CBE, colorectal cancer screening, blood pressure, height and weight measurement, diet counseling, and depression screening. In logistic regression analysis, controlling for the effects of insurance status, primary care, and patient char-

acteristics, higher trust was associated with greater report of recommended preventive services, *(OR 2.3,95% CI [1.3, 4.0])*.

Aim 2

Examine the differences between US born and foreign born Black women in the relation of health insurance and primary care (having a PCP, and satisfaction with the quality of communications with the PCP, to self report of breast cancer screening (ever screened, age at first screening, and having a recent screen.).

What were the differences between US born and foreign Black women in mammography screening?

1. What were the differences between US born and foreign born Black women in mammography screening associated with health insurance?
2. What were the differences between US born and foreign born Black women in mammography screening associated having a primary care provider?
3. What were the differences in mammography screening between US born and foreign born Black women associated with satisfaction with quality of communications with PCP?
4. What were the differences in mammography screening between US born and foreign born Black women associated with satisfaction with quality of relationships with primary care provider.
5. What model best predicts mammography screening for each group of women?

Mammography screening between US born and foreign born women

In the study of citizenship status and cancer screening among foreign born women in California DeAlba and colleagues (2005) found that among women immigrants over 40, those who became naturalized citizens were more likely to report ever having a

mammogram *(OR 2.15, 95% CI [1.65, 2.81])* and to have been screened within the past two years *(OR 2.15, 95% CI [1.65, 2.78])* than immigrants who did not become citizens (Table 2).

David, Ko, Prudent, Green, Posner, and Freund (2005) compared lifetime and recent mammography use in Haitian women with native born Black, Caribbean and Latina women in the same eastern Massachusetts neighborhoods using a community-based cross-sectional survey (Table 2). The sample included 329 respondents, 43% of whom were Haitian. In multivariate regression analysis of lifetime mammography use, Black women reported differences in screening patterns by language and ethnicity. The unadjusted odds ratios of ever having a mammogram were lowest for Haitians *(OR.23, 95% CI [0.08, 0.69)*, and US born Black women, *(OR.25, 95% CI [0.66, 0.97])*, but increased somewhat for women from English speaking Caribbean islands *(OR .32, 95% CI 0.12, 0.88])*, and Latinas *(OR,.42, 95% CI [0.09, 1.93])* in comparison to White women. However, there were no differences among these groups and Whites for rates of having a mammogram in the previous two years. These studies illustrate that differences in breast cancer screening patterns may occur within broad racial categories among different ethnic groups.

Mammography screening between associated with health insurance.

In the study of the 2005 NHIS report on cancer screening, Swan, Breen, Graubard, McNeel, Blackman, Tangka, and Ballard-Barbesh (2010) found significant differences in report of recent mammogram among women over 40 associated with health insurance types ($p < .001$), (Table 2). Reports of recent mammography were highest for those with private or military insurance *(PM 69.4 [95% CI 68.1-70.7])*, in comparison to those with public insurance *(PM 63.8 [95% CI 60.8-66.8])*, and private insurance *(PM*

55.5 [95% CI 51.7-59.3). Selvin and Brett (2003), however, did examine race and ethnicity in their analysis of the 1998 NHIS data and found that private health insurance was positively associated with increased self-report of breast cancer screening for non-Hispanic White, non-Hispanic Black, and Hispanic women. For non-Hispanic Black women, Medicaid insurance predicted recent mammography use *(OR 2.04; 95%CI [1.07, 3.89])* (Table 2). O'Malley, Forrest, and Mandelblatt (2002), examined the role of health insurance by conducting a random-digit-dial survey in low-income census tracts. The sample included 1,205 women over age 40, among whom 82% were Black. Those who had private health maintenance organization (HMO) plans were significantly ($p < .01$) more likely to have and mammograms (OR 1.95, 95% CI=1.15, 3.31) than women with other models of insurance organization (Table 2).

Fretts et al. (2000) found significant differences in breast cancer screening among women surveyed in Boston (Table2). Insured women had significantly better rates of breast cancer screening, with 85% of insured women having had a mammogram within the past two years in comparison to only 65% of uninsured women ($p<0.001$).
Greene, Torio, and Klassen (2005) measured sustained mammography use by urban Black women in an eastern U.S. city (Table 2) . Study participants were recruited from women between the ages of 52 and 79 years who participated in a free breast cancer screening program or were identified by friends and neighbors. In comparison to neighborhood U.S. Census characteristics, the group was a representative sample. The sponsoring hospital's Institutional Review Board (IRB) approved the study design and protocols, including the informed consent and compensation provisions. Two Black women trained for this study conducted and taped structured interviews. An index of "Being well-screened" was developed based on mammography screening guidelines. The

index achieved a Cronbach's alpha coefficient of .70, indicating moderate reliability. In this study, Black women, women with any type of health insurance were significantly (p <.010) more likely to be well-screened based on reported past, present, and future use of mammography, than those without insurance. Differences between US and foreign Black women were not examined.

Insurance influenced patterns of use as well as age of initiating screening in studies of mammography use at the Massachusetts General Hospital (MGH) (Blanchard et al., 2004, & Colbert et al., 2004, Table 2). Blanchard's study found that overall women with insurance received screening more frequently than those without. Colbert's group found racial and ethnic differences in age at first screening based on type of health insurance. Black women with private insurance had a median age of 40.5 years for initiating mammography screening, six months later than White women with private insurance (p<0.01). The median age of first screening was significantly (p<0.01) later at 46.6 years for women without private insurance or with Medicaid, and there were no significant differences in race and ethnicity. This study did not examine differences between US and foreign born Black women.

Overall, health insurance was found to contribute to higher screening (Blanchard et al., 2004; Fretts et al, 2000; and Selvin & Brett, 2003). The influence of insurance differed by payment model (public, private, or uninsured) and organization type (HMO) (Swan, Breen, Graubard, McNeel, Blackman, Tangka, & Ballard-Barbash, 2010; O'Malley, Forrest, & Mandelblatt, 2002), and between Pap smears and mammography utilization (Selvin & Brett, 2003), and ethnicity (Green et al., 2005). These studies provide a background for further research into examining the role of type of insurance on cancer screening based on US or foreign birthplace.

Mammography screening and having a primary care provider

Several studies suggest that an association between having a primary care provider as a usual source of care and breast screening behaviors (Table 2). In their study of the cancer screening data, Swan, et al., (2010) found that having a usual source of care influenced recent mammography. Among women over 40, the predicted margin (PM) of having a recent mammogram was higher for women with a usual source of care *(PM 67.9, 95% CI [66.7- 69.2])* than for those without *(PM 54, 95%CI [49.6-58.3])*, (p<0/001). Selvin and Brett (2003) found that having a usual source of care strongly predicted recent mammography for Non-Hispanic Black women in comparison to Non-Hispanic White and Hispanic women *(OR 6.24, 95% CI = 3.01,12.92, $p<0.05$)*. In O'Malley, Forrest, and Mandelblatt's study (2002) of low income women's adherence to breast, cervical, and colon cancer recommendations for screening, adherence to mammography recommendations were significantly associated (p<0.01) with having site of usual care with any degree of continuity in comparison to not having a usual site of care.

Bobo, Shapiro, Schulman and Wolters (2004) looked at mammography screening among women enrolled in the NBCCEDP to identify areas for improving rates of timely rescreening. Bobo and colleagues (2004) used a retrospective cohort selected from four CDC-funded state mammography programs including Maryland, New York, Ohio, and Texas. Medical record data were extracted and telephone interviews were conducted with 1,685 enrollees who had an index mammogram with a distribution of 54% White, 17.9% Black, 19% Hispanic, 6% American Indians/Alaskan Natives, 3% to Asians/Pacific Islanders, and 2% to women who did not identify a specific race/ethnicity. Among all respondents, women with a usual source of care were more likely to be rescreened at 18 months (73.8%, p <0.01) and 30 months (83.0 %, p <0.01) than those without. A limita-

tion of this report is that specific analysis of the role of having a usual source of care for Black women was not reported.

In Greene, Torio, and Klassen's (2005) study there were associations between having a usual source of care, and seeing a doctor within the past year, and being well-screened. Slightly over 95% of women who were well-screened had a usual source of care in comparison to 81% of those who were not well-screened ($p<0.001$).

Colbert and colleagues (2004) found a positive association between younger initiation of mammography screening and having a PCP. There was a significant difference in median age of having a first mammogram between women with a PCP (40.3 years) and those without (42.1 years), ($p<0.01$). However, specific information about Black women and onset of screening was not reported. In David and colleague's study of mammography utilization comparing Haitian women with other groups (2005), having a regular source of care was positively associated with self-report of ever having a mammogram ($p=.004$) and recent mammogram ($p=.004$) for all women.

These studies present evidence that having a usual source of care positively influences breast and cervical cancer screening and surveillance (Bobo, Shapiro, Schulman, & Wolters, 2004; Colbert et al., 2004; Green, Freund, Posner, & David, 2005; Greene, Torio, & Klassen, 2005; O'Malley, Forrest, & Mandelblatt, 2002; Selvin & Brett, 2003; and Swan, Breen, Graubard, McNeel, Blackman, Tangka, & Ballard-Barbash, 2010). The studies of Green, Freund, Posner, and David, and David, Ko, Prudent, Green, Posner and Freund (2005) provide greater insight into the role of primary care in the Boston area for a specific ethnic group (Haitian) within the larger group of Black women.

Mammography screening associated with satisfaction with quality of communications with primary care provider

In a review monograph included in the Institute of Medicine Report Unequal Treatment (Smedley, Stith, & Nelson, 2003), Cooper and Roter (2003) classified skills associated with patient-centered communication: data gathering through open-ended questions; relationship-building using empathy; respect and support; partnering, and counseling. Cooper and Roter found that patient satisfaction was associated with a high level of participatory decision-making, informational style, sensitivity, and partnership-building. Cooper and Roter asserted that patient and provider race and ethnicity as well as gender, age, social class, literacy, health status, and normative expectations influenced the quality of communications.

Two articles report findings of analysis of the 2001 Commonwealth Fund Health Care Quality Survey (Johnson, Saha, Arbeleaz, Beach, & Cooper, 2004; Saha, Arbalaez, & Cooper, 2003; Table 2). The survey was conducted using random-digit dial telephone method in a six-month period in 2001, with up to 20 contact attempts made per household. The overall response rate was 54.3%. Data were weighted to make the final results representative of all US adults aged 18 and older. The final sample consisted of 6, 299 respondents, 1,037 of whom were Black and 10% of whom were of Caribbean heritage.

Black respondents were 58.1% female, had a mean age of 42.5 years, were more likely to be urban dwellers, and were significantly more likely than other groups to live in the South ($p < 0.05$). Johnson et al. (2004) used the survey data to determine if patient-provider communication variables explained racial and ethnic differences in perceptions of PCP and health care system bias and cultural competence. There were significant ($p < 0.001$) differences in perceptions about communications found in the study, notably that

Hispanics and Asians, in contrast to Blacks and Whites, were more likely to agree that the physician listened to everything they wanted to discuss, that they understood everything the physician said, were involved in medical decision-making as much as they wanted, and that the physician spent as much time with them as they wanted. There were no associations made about ethnic groups within the racial group designated African American. Saha, Arbalaez, and Cooper (2003) used the survey data to determine whether differences in patient-physician quality of interactions explained racial differences in patients' satisfaction with health care and the use of basic services (Table 2). Five questions about specific physician behaviors at the most recent visit were asked as explanatory variables.

Three of these assessed the quality of communications: the physician's listening; the patient's ability to understand everything that was said; and if the physician involved the patient in decisions as much as the patient would have preferred. For Black patients surveyed, listening, *(OR 1.77, 95% CI1.17, 2.68)* and participatory decision making *(OR 1.81, 95% CI 1.05, 3.13)* were significantly ($p<.05$) associated with patient satisfaction. In this study, Blacks did not express preference for race concordance with physicians, nor was concordance associated with satisfaction or health service utilization.

There were several limitations to this study. Survey questions asked specifically about the most recent physician encounter, which may have limited respondents' overall sentiments about provider communications. Respondents were also grouped into large racial categories. Interactions among the variables of race, ethnicity, gender, screening, and satisfaction with provider communications were not reported.

Bobo, Shapiro, Schulman, and Wolter's's study (2004) of mammography rescreening in the NBCCEDP program found that women who received strong encouragement from a physician or nurse to be rescreened reported significantly higher rates of re-

screening at 18 months (77.4%, $p < 0.001$) and 30 months (86.4%, $p < 0.001$), than those without such encouragement. A limitation of this study is that the influence of encouragement on the subgroup of Black women who constituted 18% of the sample (n=1630), was not reported separately.

Provider communication skills contributed to mammography screening among a dozen Black women who participated in a qualitative study conducted by Thomas (2004). The study group was between the ages of 40 and 64, and all had academic degrees from associate to the doctoral level. Four participants were registered nurses. Participants kept journals and participated in taped interviews. Suggestions for providers included components of communications: explaining the mammogram procedure; listening and creating an unhurried climate, as well as being personable and friendly. Thomas (2004) suggested that additional research include studies with larger samples drawn from multiple racial, ethnic, and geographic areas that examine variations in screening

Only one published study addressed the role of communication in mammography screening for minority women in greater Boston. Moy et al. (2005) conducted focus groups with 49 women recruited from primary care clinics in greater Boston. Among the 16 Black women included in the sample, the only aspect of provider communication that was reported to influence screening was that racial concordance between patient and physician was characterized by greater physician patience. This study has several limitations, including study size, a convenient sample selection, and inconsistency in focus group leadership.

Overall, there is a paucity of information about patient satisfaction with the primary care provider-patient communication and its link to breast and cervical screening behaviors among US and foreign born Black women. Although Bobo and colleagues (2004)

were able to show a link between provider communication and overall mammography rescreening, the particular influence of provider communication on Black women was not reported. The qualitative studies reviewed (Breitkopf et al., 2004; Moy et al., 2005; O'Malley & Forrest, 2002; and Thomas, 2004) provided evidence that satisfaction with communication can influence Black women's screening behavior, but each of these had limitations in size, in sample composition, methodology, and generalizability. None of these studies addressed the influence of quality of communication on foreign born Black women. Thomas (2004) recommended that nurses engage in multidisciplinary research to expand understanding of the influences of culture on health behaviors.

Mammography screening associated with satisfaction with quality of relationships with primary care provider

Structural and interpersonal factors are components of patient-provider relationships. Structural aspects include coordination, continuity of care, and accessibility. Interpersonal aspects include trust, respect, perceived discrimination, cultural competence, and compassion. Using the 2001 Commonwealth Fund Survey Data set, Blanchard and Lurie (2004) examined how patients' perceptions of bias impacted utilization of preventive health services including cervical cancer screening within the previous three years for all women over 18 years of age, and mammography within the prior year for all women over the age of 50. Other preventive measures included fecal occult blood testing for all respondents over 50 years of age, receipt of a physical examination in the previous twelve months, optimal chronic disease care for diabetes and/or cardiovascular disease, prompt receipt of needed care, and following doctor's advice. Blanchard and Lurie used multivariate logistic regression to test the relationship between negative perceptions of the patient-provider relationship and utilization of preventive health measures. For

Blacks, 14.1% perceived being treated with disrespect or being looked down upon, significantly higher (p=0.06) than whites (9.04%), but less than Hispanics (19.4%, p<0.001) and Asians (20.2%, p<0.001). Respondents who perceived disrespect in their treatment were significantly less likely (p<0.001) to utilize preventive services other than cancer screening. In contrast, Black and Hispanic respondents were more likely to receive optimal cancer screening than Whites or Asians. There were several limitations to this study. Differences in cancer screening uptake between men and women were not reported. Although the authors attributed better cancer screening among Blacks and Hispanics to the availability of community programs that were potentially more culturally sensitive, this hypothesis was not tested. Differences among ethnic groups included in the term "Black" were not evaluated.

O'Malley, Forrest, and O'Malley (2000) conducted a qualitative study to examine relationships between the attributes of primary care and low income women's receipt of cancer screening services. Focus group participants were women over 40 years of age, two groups were predominately Black and two were predominately Spanish-speaking who received their care at community health centers in Washington DC. Semi-structured, open-ended questions prompted discussion of ambulatory care experiences and attributes of care that the women valued. The content areas that emerged were accessibility, patient-provider relationship, comprehensive scope of services, continuity with the same clinician, and accountability. Within these themes, priorities included concern and respect from staff and clinicians, willingness to spend time with them, and availability of social and mental health services. The authors concluded that "It appears that the category of physician-patient relationship is vital to the conceptual framework of primary care for these low-income women, and it may be a link in the chain without which other features

(continuity, comprehensiveness, coordination, accessibility, accountability) cannot function optimally" (O'Malley, Forrest, & O'Malley, 2000, paragraph 19).

O'Malley and colleagues developed a Primary Care Assessment Survey based on the findings in the qualitative study and conducted a telephone survey of women over age 40 in Washington, DC, census tracts with > 30% of households below 200% of federal poverty threshold. Two articles describing the findings were published simultaneously in 2002 (O'Malley & Forrest, and O'Malley, Forrest, & Mandelblatt) and a third article was published later (O'Malley, Sheppard, Schwartz, & Mandelblatt, 2004).

O'Malley and Forrest (2002) examined the strength of the relationship with physicians in relation to the respondents' assessment of primary care performance which was rated according to accessibility, continuity, comprehensiveness, and coordination. The patient physician relationship was operationalized as ratings of trust, communications, and physicians' demonstration of compassion. In this sample of 1,205 women, 82% were Black, 66% were homeowners, 62% were retired, and over 70% had a high school education or more education. Four primary care features were associated with positive ratings of the patient-provider relationship: continuity with a single clinician; practice accessibility; comprehensiveness, and coordination of specialty services. This report reinforced the findings of the smaller qualitative study but did not address the how the quality of the patient-provider relationship influenced cancer screening.

One dimension of the survey focused on factors that predicted trust in primary care providers and explained the role of trust on the use of preventive services by Black women (O'Malley, Sheppard, Schwartz, & Mandelblatt, 2004). The main outcome variable was a summary index of preventive services that included mammography, Pap tests, CBE, colorectal cancer screening, blood pressure, height and weight measurement, diet

counseling, and depression screening. In logistic regression analysis, controlling for the effects of insurance status, primary care, and patient characteristics, higher trust was associated with greater report of recommended preventive services, *(OR: 2.3,95% CI = 1.3, 4.0)*.

Limitations of these studies are reliance on a sample that excludes those without traditional telephone service, and potential miscalculations in self-report of cancer screening. The investigators did not distinguish different ethnic groups within the study sample. However, the survey response rate was a robust 85% and the sample included 800 Black women.

The evidence suggests that elements of the patient-provider relationship including perceptions of trust (O'Malley, Forrest, & Mandelblatt, 2003; O'Malley, Sheppard, Schwartz, & Mandelblatt, 2004) and providers' demonstrations of concern, compassion, and willingness to spend time with patients and include them as participants in their health care decision-making (O'Malley, Forrest, & O'Malley, 2000). Reports from the Commonwealth Fund Health Care Survey (Blanchard & Lurie, 2004) did not find that racial concordance was a significant factor. Several studies were able to demonstrate an association between patients' perceptions about the quality of the patient provider relationships and use of preventive services (Blanchard & Lurie, 2004; O'Malley, Forrest, & Mandelblatt, 2003; O'Malley, Sheppard, Schwartz, & Mandelblatt, 2004).

There is a need for further studies to determine how the quality of the relationship is associated with breast and cervical cancer screening among Black women in Boston, and to identify differences in subgroups such as women from the Caribbean, Africa, and the Middle East. Additionally, there is a lack of evidence on how patients' perceptions of

the relationship with providers influence the receipt of follow up evaluation for abnormalities detected in screening procedures.

Self report of Breast and Cervical Cancer Screening

Most of the reviewed studies used self-report of breast and/or cervical cancer screening services as the primary methodology. These included national telephone surveys such as NHIS, the Commonwealth Fund and Kaiser Foundation reports, and target audiences in metropolitan and rural areas. One study used a combination of self-report questionnaire and another used door-to-door canvassers. There were three studies that used medical record review: Two of these were from the mammography data base at a tertiary care hospital (Blanchard, Colbert, Puri, Weissman, Moy, Kopans et al., 2004; Colbert et al., 2004). A third was Peterson, Han, and Freund's 2003 record review from another medical center.

Patient self-report (SR) of screening is often used in ambulatory health care research to reduce costs, including those attributed to medical record review (RR). A number of studies have demonstrated the validity of self-report of breast and cervical cancer screening in comparison to medical record review. The validity of mammography SR is examined in four studies summarized in Table 3 (Caplan, Mandelson, & Anderson, 2003; Etzi, Lane, & Grimson, 1994; Norman et al., 2003; Zapka et al., 1996).

Zapka and colleagues (1996) conducted a mail survey of 397 ethnically diverse women in western Massachusetts and found 83% concordance of SR and RR for mammography. Caplan, Mandelson, and Anderson (2003) validated mammography SR in a managed care population (N=900) in King County, Washington. Caplan and colleagues (2003) found 82.7% overall agreement between SR and RR and underestimation of the time gap between mammograms. Norman and colleagues (2003) reported a case control

comparison study of SR of mammography among 4,575 women with and 4,682 women without breast cancer selected from five metropolitan areas in the US. Using telephone survey methodology, Norman and colleagues (2003) found high specificity and sensitivity for mammography recall in both groups. Etzi, Lane, and Grimson (1994) validated SR among mammography van users using a telephone survey of county health center patients and verified mammograms for 99% of the women who reported testing, with declining accuracy of dates over time.

One study validated SR of Pap smears. Sawyer, Earp, Fletcher, Daye, and Wynn (1989) compared Pap screening SR and in a small sample (<100) of rural Black women and found 80% congruence. Additionally, women who saw nurse practitioners were more likely to accurately report their last Pap smear than those seeing physicians.

Differences in SR accuracy exist when comparing breast and cervical cancer screening within same study groups. SR for mammography is more likely to be accurate than for Pap smears (Caplan, Mandelson, & Anderson, 2003; Paskett, 1996; and Puleo, 2005).

Multiple studies examined both breast and cervical cancer screening. In a study of low income African American women (Paskett et al., 1996) found 67% agreement between Pap smear SR and RR, and 77% agreement on mammography screening. Paskett and colleagues attributed the difference in the accuracy of SR between these Pap smears and mammograms to screening methods: Pap smears are collected during routine examinations in comparison to mammography which is a separate laboratory procedure. Caplan et al. (2003) compared accuracy of breast and cervical cancer screening SR to RR in a telephone study of 480 women enrolled in a Colorado managed care program. Mammography agreement was 88.4% and Pap smear agreement was 87.2 %. Puleo et al. (2005)

also found differences in follow up recall by SR and RR for both mammography (81%) and Pap smear (61%).

Only one article focused on accuracy of self report of follow up recommendations for abnormal mammography and Pap smears (Puleo et al., 2005). The study compared self report of follow up tests by survey and chart audits from women who had received care at one of four community health centers. Puleo et al. found higher congruency between the two sources for mammography follow up, 81%, than for the Pap sample (61%) and concluded that self-report was a reliable method of assessing follow up of recommendations.

A recent and most robust study of the accuracy of self-report data for preventive services was published in 2008. Rauscher, Johnson, Cho, and Walk conducted a literature review and meta-analysis of studies that validated cancer screening self-reports. Rauscher et al. produced summary random-effects estimates for sensitivity and specificity, separately for mammography, and Pap smears as well as other screening tests. The sensitivity was highest for mammograms (.95) and Pap smears (.93), but specificity was lowest for mammograms (.61) and Pap smears (.48). Their findings indicate that screening rates estimated in self-report surveys such as the NHIS tend to overestimate the frequency of screening and underestimate disparities, especially for Black and Hispanic groups. These studies indicate that the rates reported in this and other studies need to be interpreted with caution.

Summary

The literature review provides differences in breast and cervical cancer screening rates between US and foreign born women. Several studies revealed that having health insurance consistently predicted better uptake of breast and cervical cancer screening in a

number of settings, but that differences in the type of coverage, such as private versus public, and health maintenance in comparison to indemnity plans, influenced uptake. A few studies concluded that risks of incurring costs not covered by insurance were a barrier second only to concern about cancer detection. Having a primary care provider generally influenced breast and cervical cancer screening, including having recent Pap smears and timely initiation of mammography. The literature was limited by a lack of studies that differentiated how health insurance, having a PCP, and the quality of communication and relationship with PCP influenced screening between US and FB Black women from a variety of countries. The methodological approach of using self-report data was reviewed and clearly indicated that potential for overestimating breast and cervical cancer screening as well as underestimating disparities. However, financial, time, organizational, and ethical considerations of conducting medical record review prevented comparing self report to medical record review in this study.

CHAPTER 3

METHODOLOGY

This chapter includes a description of the study design, setting and sample, study variables, the measurement instruments, study procedure, analytic plan, and considerations for protection of human subjects.

The Conceptual Model of Nursing and Health Policy (CMNHP) guidelines for program evaluation served as the methodological basis of the study (see Figure 1, Chapter 1). Secondary data analysis was used to evaluate differences in breast and cervical cancer screening and follow up between US and foreign born Black women who enrolled in the REACH Boston 2010 Women's Demonstration Project implemented by the Boston Public Health Commission (BPHC) between 2000 and 2007.

Research Design

A descriptive correlation design was used to guide the study and address the purpose, aims and specific questions.

Study Purpose, Aims and Specific Questions

The purpose of this study was to describe associations between health insurance and primary care (having a PCP, quality of communications and relationships with PCP) on differences in breast and cervical cancer screening reported by US born and foreign born Black women.

Aim I: Examine the differences between US born and foreign born Black women in the relations of health insurance, primary care (having a PCP, and satisfaction with the quality of communications with the PCP, to self report of cervical cancer screening (ever screened, age at first screening, and recent screen).

The specific study questions for the first aim:

1. What were the differences in Pap smear screening between US born and foreign born Black women?
2. What were the differences in Pap smear screening between US born and foreign born Black women associated with health insurance?
3. What were the differences in Pap smear screening between US born and foreign born Black women associated with having a PCP?
4. What were the differences in Pap smear screening between US born and foreign born Black women associated with satisfaction with quality of communications with PCP?
5. What were the differences in Pap smear screening between US born and foreign born Black women associated with satisfaction with quality of relationships with PCP?
6. What model best predicted Pap smear screening for each group of women?

Aim 2: Examine the differences between US born and foreign born Black women in the relations of health insurance, primary care (having a PCP, and satisfaction with the quality of communications with the PCP, to self report of breast cancer screening (ever screened, age at first screening, and recent screen).

The specific questions for the second aim:

1. What were the differences between US born and foreign Black women in mammography screening?

2. What were the differences between US born and foreign born Black women in mammography screening associated with health insurance?
3. What were the differences between US born and foreign born Black women in mammography screening associated having a primary care provider?
4. What were the differences in mammography screening between US born and foreign born Black women associated with satisfaction with quality of communications with PCP?
5. What were the differences in mammography screening between US born and foreign born Black women associated with satisfaction with quality of relationships with primary care provider.
6. What model best predicts mammography screening for each group of women?

Research Setting

The Women's Health Demonstration Project (WHDP) identified the target population as Black women (including those born in the United States and foreign born women) between the ages of 18 to 75 years of age who received their health care at primary care practices in five Boston community health centers and one academic medical center ambulatory primary care practice. For mammography questions, only women aged 45 and older were included in analysis. Participants were recruited at community health centers and one academic medical center primary care practice by Women's Health Ambassadors, community health workers trained to promote breast and cervical cancer screening among Black women during the study period, 2000 through 2007.

Study Instruments

There were two instruments used in the WHDP study. These were: the Women's Health Questionnaire (Appendix A) and the Study Questionnaire (Appendix B).

Women's Health Questionnaire.

The Women's Health Questionnaire was adapted from a larger study done by national centers investigating Black infant mortality in Boston. The questionnaire contained 73 questions covering personal characteristics, general health screening, behavior risks, family history and previous health problems, reproductive health, social and emotional health, and stress. For the purposes of this study, only three items were used from the Women's Health Questionnaire: age, education level, and birthplace. The specific language for each question was taken from the Consumer Assessment of Healthcare Providers and Systems Survey (CHAPS, 2000) sponsored by Agency for Healthcare Research and Quality (AHRQ). The Flesch-Kincaid grade level of this instrument was 7.6 (Weitzel, 2003). Content validity for this instrument was not conducted for its use in the WHDP.

Study Questionnaire.

Project leaders, Dr. Judyann Bigby (formerly chief of Brigham and Women's Hospital Center for Health Equity) and Nashira Baril of the Boston Public Health Commission, with REACH 2010 Coalition members, designed the Study Questionnaire (Appendix B) to gather more detailed information about breast and cervical cancer screening and follow up. Language from the National Health Information Survey Cancer Supplement (2000) was the resource for items that measured insurance, having a primary care provider, and questions about screening experiences. Content validity was tested through focus groups, which were designed and implemented by consultants from the Boston University School of Public Health (Baril, 2011). There were three groups, two in English and

one in Spanish, of 6-10 women. Changes were made to the Study Questionnaire based on focus group findings. The final version contained 77 questions. The Flesch-Kincaid grade level analysis (Weitzel, 2003) was 6.4.

Study Variables

Independent variables.

The independent variables for this study were birthplace, type of health insurance, having a primary care provider satisfaction with the quality of communications with the primary care provider, and satisfaction with the quality of relations with the primary care provider (PCP). Birthplace was a dichotomous variable (US/non-US). Health insurance was a nominal variable with three categories: uninsured (free care), public, and private insurance. Having a primary care provider was a dichotomous variable.

Four items were used to measure satisfaction with quality of communications with primary care provider. Each item asked the respondent to rate their own or their provider's communication skills from a choice of poor, fair, good, and excellent. These four items were previously used in the Commonwealth Fund Survey on Disparities in Quality of Health Care (Scott, Collins, Tenney, & Hughes, 2001). A scale was created for the purpose of this study, with values one (poor) to four (excellent). The response range was four to sixteen. The Cronbach's alpha for this scale was 92.

Eight items were used to measure satisfaction with the quality of relationship with the primary care provider. For each item, the respondent was asked to agree, disagree, or have no opinion. These were scored: one for disagree, two for no opinion, and three for agree, resulting in a response range of eight to 24. A low score indicated low levels of satisfaction and a higher score indicated higher levels of satisfaction. The scale had a Cronbach's alpha of 88.

Table 4 contains the independent variables, item numbers on the questionnaire, type of variable, and range.

Dependent variables.

The dependent variables for Aim 1, cervical cancer screening and follow up, were: ever having a Pap smear, age at first Pap smear, and having a recent (<12 months) Pap smear. The dependent variables for Aim 2: breast cancer screening and follow up were: ever having a mammogram, age at first mammogram, and having a recent mammogram (within the last twelve months). All of the dependent variables were dichotomous with the exception of age at first test (Pap smear and/or mammogram) which was continuous. (Table 5).

Data Access

Access to the REACH 2010 data was controlled jointly by the Boston Public Health Commission and the Center for Health Equity at the Brigham and Women's Hospital, a founding member of Partners Healthcare. Nashira Baril, Director of the REACH US New England Center of Excellence in the Elimination of Disparities at the BPHC, authorized data use (Appendix C).

Study Sample

The study sample included 901 women aged 18-75 who completed both the questionnaires. The mean age was 40.67 (range 18-75). There were 632 women who were born in the US (70.1%) and 269 foreign born women (29.9%). Table 6 displays the study sample data.

Study procedure

Data Analysis

The data were analyzed using PSSW 18. The PASW 18 Missing Values Program was used when missing data exceeded 10% of data. Descriptive data analysis included frequency and distributions. Bivariate analyses to determine impact of independent variables on dependent variables included Chi square, independent samples t-test, binary logistic regression, ANOVA, and correlation test statistics. The Bonferroni correction was applied to bivariate analyses to limit likelihood of a type 1 error; with three dependent variables the alpha was set at .016 (Polit and Beck, 2012). Predictive models were created using binary logistic regression for categorical values and linear regression for continuous variables.

Aim 1: Cervical Cancer screening. A variety of statistical techniques were used to answer each study question.

1. Pap smear screening differences between US born and foreign born Black women for the dichotomous outcome variables: ever have a Pap smear, have a Pap smear in the last twelve months, ever contacted about an abnormal, were determined using frequency distribution and *Chi-square* tests. Comparison of mean age of first Pap smear was achieved using the independent samples *t*-test.
2. Differences between US and foreign born Black women for Pap smear screening outcomes associated with health insurance were determined using frequency distribution and chi-square tests. ANOVA determined any association between type health insurance and mean age of first Pap smear.
3. Differences between US and foreign born Black women for Pap smear screening outcomes associated with having a PCP were determined using the chi square test on

dichotomous dependent variables and the independent samples *t*-test for the continuous variable. Independence between US and foreign born Black women and PCP was determined using Cochran Mantzel-Haenzel Test of conditional independence (Agresti, 1990).

4. The association between quality of communication with the PCP was determined using binary logistic regression for categorical dependent variables. The Pearson correlation was used to determine significance of differences in mean age of first Pap smear.
5. The association between quality of relationships with the PCP was determined using bivariate logistic regression for categorical dependent variables. The Pearson correlation was used to determine differences in mean age of first Pap smear. There were no associations between quality of relationship with the PCP for any independent variables for either US born or foreign born Black women. Consequently, no comparisons were made between groups and this independent variable was not included in the predictive model for cervical cancer screening.
6. The predictive model was created using the independent variables that were significantly associated with outcomes in bivariate analysis. The test statistics were binary logistic regression for categorical outcome variables and linear regression for the continuous variables.

Aim 2: Breast cancer screening and follow up.

1. Mammography screening differences between US and foreign born Black women were determined using frequency distribution and chi-square tests with categorical dependent variables: ever having been screened, having been screened in the last twelve months, and contact about an abnormal result. Comparison of mean age of first mammogram was achieved using the independent samples *t*-test.

2. Differences in mammography screening between US and foreign born Black women associated with health insurance were determined using frequency distribution and bivariate logistic regression for categorical dependent variables. ANOVA determined any association between type of health insurance and mean age of first Pap smear.
3. Differences in mammography screening between US and foreign born Black women associated with having a PCP were determined using frequency distribution and *Chi-square* tests on dichotomous dependent variables. The independent samples *t*-test determined whether differences in mean ages of first mammogram were associated with having a PCP.
4. Differences in mammography screening between US and foreign born Black women associated with quality of communication with the PCP were determined using frequency distribution and bivariate logistic regression for categorical dependent variables and the Pearson correlation for the continuous variable.
5. The influence of quality of relationships with the PCP was determined using frequency distribution and bivariate logistic regression for dependent variables and the Pearson correlation for the continuous variable. As there were no associations between this independent variable and any of the outcome variables, it was not included in comparisons between US born and foreign born groups nor a predictive model.
6. The predictive model was created using the independent variables that were significantly associated with outcomes in bivariate analyses. The test statistics were binary logistic regression for categorical outcome variables and linear regression for the continuous outcome variable.

Human Subjects Consideration

The Partners Human Research Protection Committee granted approval to the Women's Health Demonstration Project to evaluate the program and this study was granted expedited review as an amendment to the original WHDP. The University of Massachusetts/Boston Institutional Review Board granted expedited review. The doctoral candidate completed the social behavioral health and biobehavioral CITI programs prior to submission.

Summary

In this study, data from two study instruments, the Women's Health Questionnaire and the Study Questionnaire, were examined to determine differences in self-report of breast and cervical cancer screening between two groups of women enrolled in the REACH 2010 Women's Health Demonstration Project. The study was approved by the regulatory human subjects review boards of Partners Healthcare and the University of Massachusetts. Descriptive and analytic methods were applied to determine if associations existed between independent variables and cancer screening reports.

CHAPTER 4

RESULTS

This chapter describes the sample and reports results of data analysis for each study aim and related research question for cervical and breast cancer screening.

Birthplace (Table 7)

Key findings were that 70% of the study population (*N*=901) were born in the United States and 30% were born abroad. Women from the Caribbean/West Indies region (162), represented nearly 60% of the all foreign born women and the largest regional group. Of these, 72 were from the Dominican Republic (27% of foreign born). Other islands represented were Haiti and Jamaica with 26 women from each country (each 10% of foreign born). The second largest region represented was Africa, with 90 women representing more than a third of the foreign born. The two largest ethnic groups among the African nations were the 36 women from the Cape Verde Island (13% of foreign born), and 29 women from Somalia (11% of foreign born).

Age (Table 8)

US women were significantly younger than foreign born women with a mean age of 39.9 compared to 42.6 (t= 2.31, df =899, p=.021). Jamaican women had the highest mean age (43.54 years) and Cape Verdean women had the lowest (36.47).

Education (Table 9)

US women were significantly more likely (χ^2=30.67, df=3, p=<.001) than foreign born women to have more than a high school education. Among the ethnic groups examined, less than half of Dominican and Somali women had high school diplomas. Haitian women (n=26) had highest rates of college completion (15.4%). In contrast, none of the Somali women reported completing college.

Health insurance (Table 10)

There were three categories of health insurance: free care, public, and private. The overall difference in insurance status between US and foreign born women was significant (t = 65.27, p<.001). US born women were significantly less likely to have free care *(OR .27, [95% CI .18, .40, p=<.000)* in comparison to foreign born women. Among the selected countries, more than half of Haitians (54.2%) and Cape Verdeans (54.3%) had free care. Haitians had lowest rates of public insurance (20.8%). Jamaicans had highest rates of private insurance (36%). Somalis had highest rates of public insurance (69%) and lowest rates of private insurance (6.9%).

Primary Care (Table 11)

Three independent variables measured primary care. These were having a primary care provider (PCP), quality of communications with PCP, and quality of relationships with PCP. Among women aged 18-75, US born women were significantly more likely to report having a PCP than foreign born women (t=5.26, df=1, p=.017). There were no differences between US and foreign born women's report of having a PCP among women aged 45 years and older. Nearly all Dominicans reported having a PCP, but only slightly more than a third of Somalis women did.

Quality of communications with PCP

Foreign born women reported a significantly lower satisfaction level than did US women, scoring a mean of 12.86 out of a possible 16 in comparison to a mean of 13.32 for US women (t=2.31, df =739, p=.021). Jamaican women reported the highest levels of satisfaction with communication (14.91) and Somali women the lowest (10.20). There were no significant differences in satisfaction with quality of communications between US and foreign born women ages 45 and above. There were no significant differences in mean scores for satisfaction with quality of relationships between US born and foreign born women for the entire sample and for those ages 45 and above.

Study Aim 1. Cervical cancer screening.

There were four dependent variables for each question: ever having had a Pap smear, having had a Pap smear in the last twelve months, age of first Pap smear.

Question 1 (Table 12): **What were the differences in Pap smear screening and follow up between US born and foreign born women?** US born women were significantly more likely to report ever having had a Pap smear than foreign born women (n=892, t=15.85 df=1, p=<.001), df=1, p=<.001.) There were no differences between US born and foreign born women for having a recent Pap smear of for age of first Pap smear.

Question 2 (Table 13): **What were the differences in Pap smear screening and follow up between US born and foreign born women associated with having health insurance?** Health insurance was associated with one outcome variable for US women: ever having had a Pap smear. There was no association between type of health insurance and any cervical cancer screening measures for foreign born women.

Ever having had a Pap smear: was positively associated with free care *(OR=7.04, df=1, 95% CI 1.47, 33.83 p=.015)* in comparison to public insurance and private insurance for US born women.

Question 3 (Table 14): **What were the differences in Pap smear screening between US born and foreign born women associated with having a PCP?** Having a PCP was a significant factor for both US and foreign born women for only one cervical cancer measure.

Ever having had a Pap smear: US women with a PCP were significantly more likely to report ever having had a Pap smear (n= 624, χ^2=28.14, df=1, p=.000) than those without a PCP. Foreign born women with a PCP were significantly more likely to report ever having had a Pap smear (n=265, χ^2=32.71, df=1, p=.000) than those without a PCP. Between US and foreign born women, the association of having a PCP and ever having had a Pap smear was a stronger than birthplace as measured by the Breslow-Day test of homogeneity of the odds ratio, Cochran's test of conditional independence (χ^2=59.60, df=1, p=.000) and the Mantel-Haenszel Common Odds Ratio Estimate *(OR= .093 95% CI.45, 19, p=.000)*.

Question 4: What were the differences in Pap smear screening between US born and foreign born women associated with satisfaction with quality of communications with PCP? The mean score of quality of communications, measured on a scale of 0-16, was associated with only one cervical cancer measure, recent screening, and only for US born women.

Have you had a Pap smear this year?: Women who reported having a recent Pap reported greater satisfaction with quality of communications as measured by a mean

score of 13.65 in comparison to those less satisfied with a mean score 12.92 (*n*= 544 df=542, *t*= 3.48, *p*=.001).

Question 5: What were the differences in Pap smear screening between US born and foreign born women associated with satisfaction with quality of relationships with PCP? There were no differences in screening outcomes associated with this variable for either US born or foreign born women.

Question 6: What models best explain Pap smear screening for US and foreign born women in this study? Binary logistic models were attempted for dichotomous variables: ever having a Pap smear, and having a recent Pap smear. A linear regression model was created for age of first Pap smear.

US born women. (Table 15). An interaction term PCP*insurance was created due to the high correlation between insurance and PCP. Ever having had a Pap smear: Health insurance and having a PCP were the only two independent variables associated with this outcome on bivariate analyses. When the model included the interaction term PCP*insurance, there were no significant predictors.

Have you had a Pap smear within the last twelve months: the model included age, education, insurance, having a PCP, quality of communication with the PCP, and an interaction term, PCP*insurance. Having a PCP was treated as a constant by SPSS and excluded from analysis as was the interaction term. Having a Pap smear in the last twelve months was positively associated with quality of communications with PCP *(OR=1.12, df =1, 95% CI = 1.02, 1.22, p=.002)*. This indicates that for every one unit increase in the Quality of Communications scale, there is a 12% increase in the odds of having a Pap smear in the last twelve months. However, as age increases there is a slight but significant

negative likelihood of having a recent Pap *(OR=.98, df= 1, 95% CI =.96, .99, p=.001)*.

Age of first Pap smear. There were no significant associations between independent variables age, education, type of insurance, and having a PCP and this outcome variable.

Foreign born women. (Table 15). Predictive models were successfully created for having a recent Pap smear, and age of first Pap smear.

Ever having had a Pap smear: PCP was the only significant independent variable on bivariate analysis (n= 269, df=1, χ^2= 32.71, p=.000). When PCP was entered into the binary logistic model with the interaction variable PCP*insurance in forward stepwise conditional logistic regression, PCP remained the sole independent variable associated with ever having a Pap smear (n= 269, df=1, *OR= 12.17 df=1,[95% CI 4.55, 32.53] p=.000)*. The wide confidence interval indicated need for a larger sample.

Have you had a Pap smear within the last twelve months? Bivariate analyses indicated that only age (n=237m df=23, t=4.03, p=.000), and level of education (n=235, χ^2= 9.47, p= .02) were associated with a recent Pap smear. The binary logistic regression model included age and education. Having a Pap smear in the last twelve months was positively associated with two levels of education. Those with some vocational training or associated degree beyond high school (n=245, df=1, *OR= 4.02, 95% CI [1,19, 13.54]*, p = .03) and those four years of college or more (n= 245, df=1, *OR = 4.29, 95% CI [1.26, 14.55, p =*.02) were significantly more likely to have a recent Pap smear. There was a very slight negative association with age (n=245, DF=1, *OR=.96, 95% CI [.94, .98], p*=.001).

Age of first Pap smear: The mean age of the foreign born women was 41.61 and their mean age of first Pap was 26.41. Age was the only independent variable associated

with age of first Pap (*n*=191, R2= .24, df= 1, *t*= 4.31, p=.000) and accounted for 24% of the variance. Age of beginning cervical cancer screening increased with age of respondents.

Summary

There were differences in cervical cancer screening between US and foreign born Black women. Those born in the US were more likely to have ever been screened. Health insurance, primary care, age and education were all found to be associated with screening. Free care insurance was significantly associated with these two outcome variables for US born women only. Having a PCP was positively associated with screening for both groups of women for ever having been screened and quality of communication was positively associated with a recent screen for US born women only.

For US born women, quality of communications with PCP predicted having a Pap within the past twelve months. For foreign born women, having a PCP was the sole predictor for ever having a Pap smear. Higher levels of education were associated with recent screening, while age was associated with lower reports of recent screening as in the US born group.

Study Aim 2: Breast Cancer Screening.

There were three dependent variables for each question: ever having had a mammogram, having had a mammogram in the last twelve months, and age of first mammogram. There were 347 cases aged 45 and over, 236 (68%) were US born and 111 (32%) were foreign born.

Question 1: (Table 16). **What were the differences in breast cancer screening between US born and foreign born women?** Differences between US and foreign born

women were identified for two outcome variables: having a recent mammogram and age of first mammogram. US women were significantly more likely than foreign born women to begin screening earlier: the mean age of first mammogram for US women was 39.63 years, and for foreign born women, the mean was 44.74 years (n=258, t=4.31, df=253, $p \leq .000$). Foreign born women were significantly more likely than US born women to have had a mammogram within the last year (n=211, χ^2 =12.5, df=1, p=<.001). There were no differences between US and foreign born women in ever having had a mammogram.

Question 2: What were the differences in mammography screening between US born and foreign born associated with health insurance? There were no significant differences in breast cancer screening between US born and foreign born Black women associated with health insurance.

Question 3 (Table 17): **What were the differences in mammography screening between US born and foreign born associated with having a PCP?** Having a PCP was significantly associated with mammography screening for foreign born women only and for two outcome variables: ever having been screened and having had a mammogram in the last twelve months. Foreign born women with a PCP were significantly more likely to ever have been screened than those without a PCP (n=98, χ^2 =18.12, df =1, $p \leq .001$). Foreign born women with a PCP were significantly more likely to report a recent screen than those without a PCP (n=94 χ^2 =6.92 df =1, p=.009). For women born in the US, there were no associations between having a PCP and mammography screening measures.

Question 4: What were the differences in mammography screening between US born and foreign born Black women associated with of satisfaction with quality

of communications with the PCP? Quality of communications was significantly associated with recent mammography screening for US women (n=198, t=2.45, DF=196, p=.015).

Question 5: What were the differences in mammography screening between US born and foreign born women associated with quality of relationships with the PCP? There were no significant findings for this independent variable for either US or foreign born women.

Question 6: What models best explain mammography screening and follow up for US and foreign born women?

US born women. Quality of communication with PCP was significant for recent screening on bivariate analysis. There were no other significant findings for any outcome variables for US born women.

Foreign born women. The number of cases available for multivariate analysis in this group was small (n=111). Power analysis was conducted for each outcome variable for a moderate effect size with a power of .80 and an alpha of .05 (Polit & Beck, 2012) to determine the adequate sample size needed for the number predictors included in a regression model.

Ever have a mammogram? Having a PCP was the only significant independent variable on bivariate analyses (n=106, χ^2= 18.12, DF=1, p=.000). In this group, 92% of the women reported having a PCP. Health insurance, age, and education were not associated with this outcome.

Have you had a mammogram this year? Two variables were significant on bivariate analyses. These were PCP (n= 102, χ^2= 6.92, df =1, p=.009), and age (n=100, t=-2.19,

df=98) which were entered stepwise into a binary logistic regression model. There was a strong positive association between PCP and recent mammogram (*n*=102, df=1, *OR 9.92, 95% CI [1.09, 90.18], p*=.04), which indicated nearly a tenfold increase in likelihood of recent mammogram for those women with a PCP. Although this sample size met the criteria for a power of .80 and a moderate effect size, with two predictors in the model, the large confidence interval suggests need for a larger sample size. There was a relationship between age and recent mammogram (*n*=102, df=1, *OR 1.06, 95% CI [1.00, 1.13]*, *p*=.05), which means for each additional year of age reported, there was a six percent increase in likelihood of having a recent mammogram.

Age first mammogram: There were only 80 cases available for analyses, but this number met the recommendation of Tabachnik and Feidell (2007) as cited in Polit and Beck (2012, p. 442) that the sample size should be greater than 50 cases plus eight times the number of predictors. In this model, the dependent variable was regressed on two independent variables (age and PCP). Regression of age of first mammogram on these two predictor variables accounted for 37% of variance (*n*=80, R^2 =.38, df = 2, *F*=23.32, *p*=.000). The positive relationship between age and age of first mammogram indicated that older respondents began mammography at higher ages (*B*=.54, *t*= 5.89, *95% CI [.41, .83], p*=.000). The negative relation between having a PCP and age of first mammogram indicated that having a PCP was associated with earlier onset of mammography screening (*B*=-.23, *t*=-2.57, *95%CI [-16.85, -2.13], p*=.012).

Summary

Despite the small sample size, differences were detected between US and foreign born Black women in mammography screening. US born women were younger in age for first mammogram while foreign born women were more likely to report recent screening. Types of health insurance and educational levels were was not associated with screening practices for either group. Having a PCP was associated with ever having been screened and having a recent mammogram for foreign born women but not for US born women. For foreign born women, having a PCP increased the likelihood of recent screening and decreased the age of first screening. For US born women, quality of communications was positively associated with recent mammography.

CHAPTER 5

DISCUSSION

The purpose of this study was to describe influences of health insurance and primary care on breast and cervical cancer screening reported by US and foreign born Black women. This chapter reviews key findings of the study questions in the context of the Healthy People 2020 objectives. Study limitations are described and opportunities for future research are identified. Policy implications for nursing and opportunities for further research are discussed within the context of the Conceptual Model of Nursing and Health Policy (Fawcett & Russell, 2001).

The Women's Health Demonstration Project (WHDP) data provided valuable information on ethnic differences within a population that was described only by racial designation. This study found demographic, differences among immigrant ethnic groups in comparison to US born Black women. There were differences in cancer screening between US born and foreign born women. Health insurance, primary care, including satisfaction with communications with the PCP, education, and age influenced screening practices.

Nativity

Since the inception of the WHDP in 2000, there has been a 22% increase in the foreign born population in Massachusetts, whose total population is approaching one million. This represents 14% of the total state population, and includes rapid expansion of

immigrants from Africa (Massachusetts Social and Demographic Characteristics, 2011). A key finding in this study was that the largest foreign born ethnic group was from the Dominican Republic, most often classified not by race, but by ethnicity (Hispanic) and whose primary language is Spanish. Dominicans are also the largest immigrant group in Boston (BPHC, 2010). The other ethnic groups represented Haitian Creole, Cape Verdean Creole, and Somali linguistic minorities. Healthy People 2020 (CDC, 2011) includes lack of English proficiency as social determinant of health that is associated with decreased access to health care services.

Nativity and cervical cancer screening. Differences existed in lifetime Pap smear screening both between US and foreign born Black women and among different ethnic groups. US women were significantly more likely to report being screened at least once which is consistent with a studies comparing immigrants to native born women (Beagan, Oppedisano, & Pearlman, 2010; DeAlba et al., 2005; Green et al. 2005; Menard et al., 2010; and Samuel et al., 2009). These data have implications for prevention through human papilloma virus (HPV) immunization as well as access to timely, safe, and effective management of abnormalities. Relevant objectives in Healthy People 2020 include achieving a rate of 93% for cervical screening according to most recent guidelines, 10% reduction in uterine cancer and invasive uterine cancer, and 10% increase PCP counseling regarding Pap smears, as well as establishing and maintaining accurate cancer registries in 51 states and territories.

Nativity and breast cancer screening. In this study, US born women were significantly more likely to start screening at an earlier age than were foreign born women. Somali and Dominican women started screening later than other groups. This is consistent with racial and ethnic differences in mammography initiation reported by Colbert et

al. (2004), with Blacks, Latinas, and non-English speaking women initiating screening at later ages than Whites.

Significant differences were also detected in recent screening, with foreign born women more likely to have recent screening. This is consistent with a recent review by Breen, Gentleman and Schiller (2011) indicating significant upward trend in recent mammography among immigrants in the US less than 10 years (P=.05), along with a significant (P=.05) downward trend among US natives, notably among Whites (P=.05). However, for lifetime screening mammography, in this study there were no differences between US born and foreign born women, both of which (94% for US, and 96% for foreign born) greatly exceeded Healthy People 2010 objectives as well as the Healthy People 2020 objective of 81% between women aged 50 to 74. Relevant breast cancer objectives in Healthy People 2020 include 10% reduction in late stage diagnosis and breast cancer mortality, and 10% increase the percent of women aged 50 to 74 who receive counseling about mammograms from PCP.

Health Insurance

This study found significant health insurance differences between US and foreign born women. US born women had highest rates of health insurance coverage (including public and private), followed by Somalis, Jamaicans, Dominicans, Haitians, and Cape Verdeans. This is consistent with Thomas and James 2009 study of healthcare coverage for communities of color finding higher rates of uninsurance among Black immigrants than US born. However, even those without insurance were covered for screening under the state's "free care pool" and /or the National Breast and Cervical Cancer Detection Program. *Healthy People* 2020 set as target goal of 100% health insurance coverage (the same as *Healthy People* 2010) based on 2008 data that 83.2% of the population had

health insurance. In the 2008 Behavioral Risk Factor Survey, 95% of Bostonians reported having health insurance with a range of 96% for those whose income was below $25,000 to 98% for those above $50,000 and no disparities were noted in coverage (BPHC, 2010).

Health insurance and cervical cancer screening. Health insurance was associated with screening for US born women only: free care was positively associated with ever having had a Pap smear. There was a stronger association between nativity and screening than between health insurance and screening. The absence of differences in screening between US and foreign born Black women associated with health insurance type differs from Peterson, Han, and Freund's 2003 findings of differences in follow up for minority women in Massachusetts covered by Medicaid, but is consistent with Green, Freund, Posner and David's 2005 study of Haitian women. The finding that US born women with free care had better lifetime screening is of interest because of health insurance policy changes implemented since the study period ended in 2007. Innovative insurance packages developed in response to state and federal health reform covering preventive services may improve access to screening. Health services covered by insurance policies that follow new guidelines for initiation of screening at age 21 (ACOG, 2009) as well as HPV immunization for both males and females (US DHHS CDC, 2010b) should decrease cervical cancer. Careful monitoring of insurance packages, as well as access to immunizations and screening is needed to identify populations at risk.

Health insurance and breast cancer screening. Health insurance was not associated with mammography screening outcomes for either US or foreign born Black women in this study. This contrasts not only with local studies (Blanchard et al., 2004; Colbert, 2004; and Fretts, 2000), but also with more recent national trends (Swan et al., 2010). The near universal coverage of Boston women due to free care may contribute to the lack of

findings related to health insurance. However, as with cervical cancer screening, changes in federal guidelines (Mandelblatt et al., 2009) recommending biennial mammography for all women between the ages of 50 and 74 will likely impact insurance coverage for screening and need careful monitoring.

Primary Care

In this study, 91% of US born Black women reported having a primary care provider, significantly higher than foreign born women (85%). According recent data for Boston (BPHC, 2010), 89% of women have primary care providers, with Black women (88%) and Latinas (84%) reporting slightly lower rates than Whites (92%). However, this study found a broad range of having a PCP among foreign born Black women, with Somali women having the lowest rates (67%). Different PCP rates are consistent with findings of David, Ko, Prudent, Green, Posner, and Freund (2005) about Haitian women, and DeAlba et al. (2004) on length of time in the US and naturalization. Cape Verdean women in this study had higher rates (89% of PCP) than Cape Verdeans in southeastern Massachusetts with 77% having a PCP (Beagan, Oppedisano, & Pearlman, 2007). *Healthy People* 2020 set a target that 95% of all persons will have a specific source of ongoing of care, and is developing objectives to increase numbers of primary care providers including physicians, physician assistants, and nurse practitioners. Two state initiatives designed to improve PCP accessibility include the MA DPH Healthcare Workforce Center and the MA League of Community Health Centers Provider Loan Repayment Program funded by state, grant, and commercial lenders (National Association of Community Health Centers, 2008).

Primary care and cervical cancer screening. Having a PCP was significantly associated with ever having a Pap smear for both US and foreign born Black women in

this study, but not for recent screening, or initiation of screening. This is consistent with national studies (DeAlba et al., 2005; Swan et al., 2010) as well as Green, Freund, Posner and David, Ko, Prudent, Green, Posner, and Freund's 2005 study of Haitian women in Boston. This finding is relevant because it emphasizes the value of having a PCP for all ethnic groups of women.

Primary care and mammography screening. Having a PCP was significantly associated with ever having been screened and having a recent mammogram for foreign born women, which is consistent with national (Swan, et al., 2010) and local studies (Colbert et al., 2003; Green, Freund, Posner, & David, 2005). The tenfold increase in likelihood of recent mammography for foreign born women with a PCP indicates the importance of assuring access to primary care as a component of health services that should be carefully monitored by health delivery organizations and health insurers.

Quality of communications with PCP

In this study, US born women reported significantly higher satisfaction levels with quality of communication with their PCPs than did foreign born women. Somali women reported lowest scores and Jamaican women highest. Attributes of communication included respondents' assessments of their own ability to talk to their PCP and communicate effectively with those from different racial or ethnic backgrounds, and the ability of PCP to talk to patient and communicate effectively with those from different racial or ethnic backgrounds. Dissatisfaction with communication among Somali women is consistent with findings described by the Samuel et al. (2009) study of Somali women's concerns about screening and Pavlish, Noor, and Brandt's examination of health beliefs and healthcare interactions (2010). These identified discomfort with male providers (Samuel et al.) as well as expectations for longer appointment times, inexperience with preven-

tive screening, and frustrations with interpreter services. Relevant *Healthy People* 2020 objectives include increasing access to primary care providers, but thus far lack specific objectives for improving PCP competencies in working with linguistic minorities. Further research is needed to identify barriers to improving provider communications, patient satisfaction, and health systems capacity to improve screening services

Satisfaction with PCP communications and cervical cancer screening. Recent Pap smear screening was significantly associated with higher satisfaction with this measure for US born women only. Studies including Black women, undifferentiated by ethnicity, have consistently noted value placed on provider communication (Breitkopf et al., 2004; O'Malley & Forest, 2002).

Satisfaction with PCP communications and breast cancer screening. There was no significant association between satisfaction with quality of communications and breast cancer screening for US born women. This would be consistent with Thomas' 2004 qualitative study of Black women.

Age

In this study, US born women were significantly younger than foreign born, with a wide range of variation among ethnic groups. Age is a factor in both cervical and breast cancer screening as guidelines for each type of cancer screening include specific age groups and are sensitive to changes. Examples include the change in Pap smear screening recommendation from three years after initiation of intercourse or age 21 to no screening prior to age 21, the age-based recommendations for HPV immunization for both genders, and recent switch in mammography guidelines for a window of ages 50 to 74 for biennial screening. *Healthy People* 2020 objectives relevant to age include HPV immunization schedule compliance. Recent reports of ethnic, racial, and state-based disparities in

achieving all three doses within the recommended schedules infer need to target at risk populations including use of stronger provider recommendations (Dorrell, Stokely, Yankey, Liang, & Markowitz, 2011).

Age and cervical cancer screening. Age was associated with recent screening for both US and foreign born women: older women were less likely to be screened within the past year. Age was also associated with later screening initiation for foreign born women.

Age and breast cancer screening. Age was a factor for foreign born women: as age increased, so did age of first reported screening as well as likelihood of having a more recent screen.

Both of these findings indicate that there is a need to target all women with cultural and age appropriate messages. Among immigrant groups, the wide variation in resources in their native countries, explanatory theories of health, and expectations about health care services implies need for expertise in outreach and care management, especially for adolescents and women beyond childbearing years.

Education

In this study, there was a difference between US and foreign born women in educational attainment as well as among immigrant groups. Education is a factor in cervical screening for foreign born women, with higher education contributing more recent Pap smears. *Healthy People* 2010 addressed health literacy, but not basic education as a goal. *Healthy People* 2020 has identified high school graduation within four years of initiation as a leading health indicator and a key social determinant of health.

Healthy People 2020 and Health Disparities

CDC released Healthy People 2020 with new and renewed targets for access to care and reduction in cancer mortality. In the new health agenda, previous *Healthy People*

objectives of reducing and eliminating disparities are now included under health equity, defined as: "attainment of the highest level of health for all people" (National Partnership for Action, 2011). Health equity includes attaching equal value to all, and elimination of avoidable health inequities. *Healthy People* 2020 will monitor indicators and social determinants of health by race/ethnicity, gender, sexual identity and orientation, disability or special health care needs, and urban or rural settings. Crucial areas of health care disparities work have been identified: collecting accurate data, incorporating disparities reports into the health quality agenda, influencing leadership and changing organizations (Betancourt, 2011).

Conceptual Model of Nursing and Health Policy

Examination of the self-reported breast and cervical screening practices uncovered differences in lifetime, recent, and screening initiation between US born and foreign born Black women influenced by nativity, ethnicity, age, education, health insurance, and primary care. Awareness of these differences provide direction for creating and implementing policies to successfully achieve *Healthy People* 2020 goals for increasing cancer screening, decreasing cancer mortality, and increasing having health insurance coverage and patient-centered primary care.

The CMNHP may facilitate the role of nursing in promoting health equity and eliminating health disparities by providing a framework for evaluating implementation of the Institute of Medicine Future of Nursing Report (National Research Council, 2011), produced in collaboration with the Robert Wood Johnson Foundation. In this report an interprofessional task force including nursing and other health care leaders called for changes in national health policy related to nursing. The key recommendations addressed nursing practice, education, and status: that nurses practice to the full extent of their

education and training, achieve higher levels of education and training through seamless academic progression, practice as full interprofessional partners in the delivery and in redesign of effective high quality health care in the United States.

The American Association of Colleges of Nursing (AACN) provides standards for nursing education and the leadership to execute these recommendations (AACN, 2011). The AACN also provides standards and toolkits for inclusion of cultural competency at all levels of nursing education to achieve health equity (AACN, 2011b) and has joined in the Interprofessional Education Collaborative (IPEC) to describe core competencies for collaborative practice (IPEC, 2011).

Study Limitations

Study limitations include use of a convenience sample, and absence of medical chart review for verification of self report data. There are also limitations based on the quality of the instruments. This is an evaluation study and examined the data for patterns that were not initially part of the program purpose or implementation plan. The challenges encountered present opportunities to develop better data collection instruments and policy evaluation strategies. Another limitation is the small sample size of subsets of the study from various ethnic groups. These small numbers limited the power of statistical analysis.

Recommendations for Further Study

There is need to conduct further research on access to care for women who may not be counted in large descriptive categories such as race, but identify strongly with their unique ethnic backgrounds. The study provides impetus to collect data on ethnicity as well as, or perhaps more importantly than race. Differences among ethnic groups and their selected service sites merit further study at granular levels. It seems reasonable to

hypothesize those ethnic differences including language, religion, cultural mores and perspectives developed from prior experiences, may influence health care decision making as much as racial designations. Further research is needed to learn more about patients' perspectives of communication and relationships with PCPs and the influence these factors have on preventive screening, particularly as the medical home movement evolves, and performance measures become institutionalized.

APPENDIX A

WOMEN'S HEALTH QUESTIONNAIRE

WOMEN'S HEALTH QUESTIONNAIRE

Thank you for agreeing to answer some questions about your health. We hope that you will learn [illegible] about your health and that you will be better able to talk and ask questions about your health issues.

Being healthy is more than having a good medical check-up. To stay well, women can also eat a healthy diet, exercise, and pay attention to the stress in their lives. Some life issues make it hard for a woman to take the best care of herself. When women have problems taking care of their families, with work, or with housing they often neglect to take care of themselves.

Doctors, nurses, and other staff can help women find ways to deal with the stresses in their lives. To help, we need to know about what issues affect you most. We will ask you about traditional medical problems and also about issues related to your well being. We want to know about housing, work, safety, and concerns about money that might affect your health. We can connect you with case managers or counselors to find resources to help you to deal with these types of problems. We can also connect you to agencies or resources outside the health center. It may take more than 1 or 2 visits to address these concerns. By working together, we hope we can offer you more comprehensive care and better resources for a healthy lifestyle.

All of the information in this questionnaire is confidential and will not be discussed with anyone who is not involved in your health care. This form will become part of your medical record. If you find a question or part of a question that you do not want to answer, you can leave it blank. Please feel free to [illegible] questions about anything that is not clear.

_____ is working together with the Boston Public Health Commission and others concerned about women's health. We realize that some issues are more difficult to solve than others with existing resources. However, we will use the information that we obtain from all the women in this project to learn more about the kinds of programs and resources that are needed. We will then work to increase the resources available to women who most need them.
Thank you for your time.

Tips for completing the questionnaire:

1. Please use BLUE or BLACK PEN to complete the questionnaire.
2. Please use "X" in the check boxes, and try to stay IN the box (do not make stray marks on the paper.)

What is/are your primary language(s)?	Like this! NOT like this! ☒ English ☐ Spanish ✓ Other: _____

External ID Number _____ ☐ Self administered ☐ With interviewer

Program Code: ☐ RCH/WHDP ☐ BHSI ☐ HBHC ☐ Q1 ☐ Q2 ☐ Q3

I. Introduction:

1. What is your name?	First: _____ Last: _____
2. What is your date of birth?	MM\DD\YY_______________
3. How old are you? _____	What is your height (inches)? _____ What is your weight (lbs)? _____
4. Where were you born?	State: _____ Country: _____
5. What is/are your primary language(s)?	☐ English ☐ Spanish ☐ Other: _____
6. Are you comfortable speaking English?	☐ Yes ☐ No

7. Each woman has a personal opinion about her racial or ethnic identity. We respect this and ask you to check as many or as few of the boxes below as you wish. We ask this question because some racial/ethnic groups may not receive all of the support they need in order to live healthy lives and we hope to learn from you which services are most needed by you and others who have a similar racial/ethnic identity.

What is your ethnic background?

☐ Latina or Hispanic:
- ☐ Cuban
- ☐ Dominican
- ☐ Puerto Rican
- ☐ Central American
- ☐ South American
- ☐ Mexican
- ☐ Other: _____

☐ African American

☐ Native American

☐ Native Hawaiian

☐ Other Ethnic Group: _____

☐ Caribbean/West Indian:
- ☐ Haitian
- ☐ Jamaican
- ☐ Trinidadian
- ☐ Antiguan
- ☐ Other: _____

☐ Asian:
- ☐ Vietnamese
- ☐ Cambodian
- ☐ Laotian
- ☐ Chinese
- ☐ Japanese
- ☐ Indian
- ☐ Other: _____

☐ European:
- ☐ Irish
- ☐ Portuguese
- ☐ Russian
- ☐ Other: _____

☐ Jewish

☐ Middle Eastern

☐ African:
- ☐ Somalian
- ☐ Nigerian
- ☐ Senegalese
- ☐ Cape Verdean
- ☐ Other: _____

What is your racial identity?

☐ American Indian

☐ Asian

☐ Black

☐ White

☐ Native Hawaiian/Pacific Islander ☐ Other: _____

8. Which of the following best describes you?	☐ Heterosexual or straight ☐ Gay or Lesbian ☐ Bisexual ☐ Not sure
9. How would you best describe your relationship status? (please check one response)	☐ married, living with partner ☐ married, not living with partner ☐ single, living with partner ☐ have a current partner, not living together ☐ no current partner ☐ other_____

10. What is the highest level of education you completed? (please check one response)

☐ No formal school	☐ GED
☐ Grade 1-8 (primary)	☐ Technical or vocational school, some college, 2 year college or associate degree
☐ Grade 9-11 (secondary)	☐ 4 year college (bachelor's degree)
☐ High school graduate (secondary)	☐ Graduate school

☐ Other:_____

11. If you are currently going to school or attending an educational program, what school or program?	

II. Physical Health: Doctors and nurses have always been interested in helping you to stay healthy. The following questions deal with preventive health, physical health and reproduction.

Access to Care		
12. How would you rate your overall health?	☐ Excellent ☐ Good ☐ Fair ☐ Poor	
13. Do you have a regular health care provider?	☐ Yes ☐ No	
14. Do you have medical insurance for yourself?	☐ Yes ☐ No If yes, please specify ALL types:	
15. If you have children under 18, do they **all** have medical insurance?	☐ Yes ☐ No ☐ No children under 18	

Prevention

We want to ask you what you do to stay healthy and avoid getting sick.

16. Outside of getting health care, there are things women can do for their own physical and mental health. Would you say that you regularly do any of the following: (Check all that apply.)

Take a multivitamin everyday	☐
Take calcium, calcium with vitamin D or drink milk for strong bones	☐
Keep track of your menstrual periods regularly so if there is a change you can get help	☐
Exercise 30 minutes at least 5 times a week	☐
Spiritual and religious practice	☐
Meditation, dance, or other stress-reducing activities	☐
Eat 5 servings of fruits and/or vegetables a day	☐
Use healers, alternative therapies or herbal medicines	☐

17. Have you had a Pap smear within the past 2 years?	☐ Yes ☐ No ☐ Uncertain ☐ Never had one If yes, when? MM\YY__________
18. Have you ever had an abnormal Pap smear?	☐ Yes ☐ No ☐ Uncertain
19. Have you had a hysterectomy?	☐ Yes ☐ No If yes, why? _____
20. Do you know how to examine your breasts for lumps?	☐ Yes ☐ No
21. Do you examine your breasts for lumps?	☐ Yes ☐ No
22. Has your doctor or provider examined your breasts for lumps in the last two years?	☐ Yes ☐ No
23. Have you ever had a breast lump?	☐ Yes ☐ No If yes, have you had a biopsy? ☐ Yes ☐ No
24. Have you had a mammogram within the last 2 years?	☐ Yes ☐ Uncertain ☐ No ☐ No, I am under AGE 40 ☐ Never had one If yes, when? MM\YY ________

Immunizations	
25.Have you had a tetanus booster?	☐ Yes ☐ No ☐ Uncertain If yes, when? MM\YY __________
26.Have you had a test for TB?	☐ Yes ☐ No ☐ Uncertain If yes, result? ☐ Negative ☐ Positive ☐ Uncertain If yes, when? MM\YY __________
Questions 27-29 for women 50 years or over only	
27. Have you ever had a test for cancer of the colon or large intestine (colonoscopy or sigmoidoscopy)?	☐ Yes ☐ No If yes, when? MM\YY __________
28. Have you had a flu shot within the last year?	☐ Yes ☐ No
29. Have you ever had the pneumonia shot (Pneumovax)?	☐ Yes ☐ No
Family History	
30. Has anyone in your family ever been diagnosed with breast cancer?	☐ Yes ☐ No If yes, who? ☐ Mother ☐ Sister ☐ Other:_____

31. Has anyone in your immediate family (mother, father, sister, brother) had a history of:

Heart problems before the age of 60	☐ Yes	☐ No
Diabetes	☐ Yes	☐ No
Cancer	☐ Yes	☐ No
Alcohol or drug problems	☐ Yes	☐ No

Medical Questions

32. Have you had any of the following medical concerns now or in the past?

	Now	In the past
Anemia	☐	☐
High blood pressure	☐	☐
Asthma	☐	☐
Diabetes	☐	☐
Blood clots	☐	☐
Arthritis, lupus or other joint problems	☐	☐

	Now	In the past
Thyroid problems	☐	☐
Tuberculosis	☐	☐
High cholesterol	☐	☐
Heart problems	☐	☐
Stomach problems	☐	☐
Liver problems or hepatitis	☐	☐
Kidney disease	☐	☐
Cancer - what kind?_____	☐	☐
Vision problems	☐	☐
Dental problems	☐	☐
Fibroids	☐	☐
Depression	☐	☐
Anxiety or panic attacks	☐	☐
Other mental health problems	☐	☐
Alcohol or drug problems	☐	☐
Sexual problems	☐	☐
Problems with weight (overweight or underweight)	☐	☐
Problem with diets, dieting, or eating habits	☐	☐
Problems with your menstrual periods	☐	☐
Problems getting pregnant	☐	☐
Repeated urinary tract or bladder infections	☐	☐
Vaginal infections, itching or discharge	☐	☐
33. Have you had menopause or the change of life?	☐ Yes ☐ No	
34. Please list all the prescription, non-prescription, and over-the counter medications or remedies you currently take:		
35. Do you have any allergies to any medications?	☐ Yes ☐ No If yes, to which ones? _____	
36. Have you had any past surgeries?	☐ Yes ☐ No If yes, what surgeries and in what year? _____	

37. Have you ever or do you currently smoke cigarettes?	☐ In the past ☐ Currently ☐ No
38. Does anyone else in your household smoke?	☐ Yes ☐ No
39. Do you currently drink beer, wine, or other alcoholic beverages?	☐ Yes ☐ No ↘ If yes, how often do you drink? ☐ Almost every day ☐ weekly ☐ monthly ☐ less than monthly ↘ If yes, how much do you drink each time? ☐ 1-2 drinks ☐ 2-3 drinks ☐ 4 drinks or more
40. Have you abused prescription drugs or drugs such as marijuana, cocaine, or heroin?	☐ Yes ☐ No

Sexual and Reproductive Health

We ask the following questions to better know how to help you and any future children you may have to be healthy.

41. During the past 12 months, have you had sexual contact with:	☐ Only men ☐ Only women ☐ Men and women ☐ I did not have sexual contact with anyone.
42. Have you had unprotected or unsafe sex in the last year?	☐ Yes ☐ No
43. Have you ever had a sexually transmitted disease (STD) or infection?	☐ Yes ☐ No
If yes, have you had any of the following?	Chlamydia ☐
	Gonorrhea ☐
	Syphilis ☐
	Trichomonas ☐
	Herpes ☐
	Genital warts ☐
	Pelvic infection ☐
	Vaginal infections ☐
	HIV infection ☐
	Don't know ☐
44. Have you ever had an HIV test?	☐ Yes ☐ No

45. Are you currently using birth control? ↘ If YES, check all that apply:	☐ Yes ☐ No ☐ Currently pregnant ☐ Not necessary Why? _____

☐ IUD	☐ Patch	☐ Vaginal ring
☐ Rhythm method	☐ Condoms	☐ Morning after pill
☐ The Pill	☐ Suppositories	☐ Withdrawal
☐ Norplant	☐ Foam, Jelly, Creams	☐ Depo Provera
☐ Tubes Tied or Hysterectomy	☐ Diaphragm	☐ Monthly shot

46. Have you ever used emergency contraception (morning after pill)?	☐ Yes ☐ No
47. Would you like more information on emergency contraception?	☐ Yes ☐ No
48. Do you have any concerns about birth control?	☐ Yes ☐ No
49. Would you like to become pregnant in the near future?	☐ Yes ☐ No
↘ If yes, are you taking folic acid?	☐ Yes ☐ No

50. Have you ever been pregnant in the past? ☐ Yes ☐ No, skip to # 52

↘ If YES, how many of the following have you had?

Pregnancies	0☐ 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9 or more☐
Live births	0☐ 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9 or more☐
Premature birth	0☐ 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9 or more☐
Miscarriages	0☐ 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9 or more☐
Stillbirths	0☐ 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9 or more☐
Abortions	0☐ 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9 or more☐
Pregnant when you didn't mean to be	0☐ 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9 or more☐

51. Have you ever had a child who died?	☐ Yes ☐ No
↘ If YES, at what age(s) did your child(ren) die?	Age at death: _____ Age at death: _____ Age at death: _____

III. Social and Emotional Health: Being healthy is not just about having a healthy body. Your health is also affected by your social and emotional life. We ask the following questions to learn about your home and community, work and economic support, safety and stress.

Home and Community: The place where we live and the people we live with can affect our [illegible]he following questions to learn about how we can work together with [illegible] home and community healthy places to live.

53. Do you have any housing concerns? ☐ Yes ☐ No

name but by their relationship to you.) Then check whether each lives in your household always or sometimes, whether in school, employed, or disabled.

Relationship to you (e.g. husband, sister, partner)	Age	Always lives in household	Lives on and off in household	Going to school/college	Employed outside of the home	Disabled or with special needs	Prefer not to answer
Self		☐	☐	☐	☐	☐	☐

↘ If YES, what are they?

(Check all that apply)

- eviction (or threatened eviction) ☐
- overcrowding ☐
- homeless ☐
- pay more than 1/2 income for housing ☐
- moved twice or more over last year ☐
- losing housing subsidy ☐
- unsafe neighborhood ☐
- other (for example mold, plumbing, pests) ☐
  Describe_____

54. Do you have a car or have access to a car in case of an emergency? ☐ Yes ☐ No

Social and Emotional Support	
55. Generally speaking, do you: (Check all that apply.) ☐ Have someone to talk to and confide about your personal problems (e.g. friend, relative, spiritual guide, health care provider) ☐ Have someone to help care for your child(ren) ☐ Have someone to help you with daily chores if you were sick ☐ Have someone to take you to a health appointment when needed ☐ Participate in a community, church, or other group	
56. Are there other types of support that you do not have that you feel you need to help you in your life right now? ↘ If YES, what are they? _____	☐ Yes ☐ No
57. Has there been a time in your life when, for one month or more, you felt hopeless, had no interest in the future, or felt depressed?	☐ Yes ☐ No
58. In the last year, have you thought about or tried to harm yourself?	☐ Yes ☐ No

Work and Economic Support: Sometimes, it is hard to feel our healthiest if we are worried about economic problems. The following questions will help us to understand how economic issues might affect you and if there are community services you might want. It will also help us to know what services are needed that do not exist.	
59. Are you currently working? ↘ If YES, what do you do? (Include all jobs if more than one.)	☐ Yes ☐ No _____
60. How many hours do you work outside the home, per week?	_____Day time hrs. _____Night time hrs.
61. If you are receiving cash assistance from the Department of Transitional Assistance, do you think your checks will stop anytime within the next 12 months?	☐ Yes ☐ No ☐ Uncertain ☐ Not receiving
62. During the past year have you ever been without money so that you had problems meeting your or your family's basic needs? For example, were you unable to buy enough food for your family, unable to pay your rent or mortgage, had your phone disconnected, or had your electricity shut off?	☐ Yes ☐ No

Comme

63. Do you have problems paying for any of the following health needs for yourself or your family? (check all that apply)	SELF	FAMILY
prescription or non-prescription medications	☐	☐
doctor or clinic visits	☐	☐
emergency room visits	☐	☐
eye glasses or hearing aides	☐	☐
health insurance premiums, co-payments	☐	☐
dental care	☐	☐
family planning methods	☐	☐
medical equipment	☐	☐
transportation to medical appointments	☐	☐
mental health services	☐	☐
home health care services	☐	☐
other:_____	☐	☐

Safety

To be healthy we need to be safe. We ask the following questions because we want to know if we can help you and your family to be safer at home, at work, and with the important people if your life.

64. Do you think you have been exposed to any of the following hazards at work?

Excess noise	☐ No	☐ In past	☐ Currently
Unsafe machinery or equipment	☐ No	☐ In past	☐ Currently
Dusts, smells, or other substances in the air	☐ No	☐ In past	☐ Currently
Skin contact with unsafe chemicals, materials, or other substances	☐ No	☐ In past	☐ Currently
Emotional stress	☐ No	☐ In past	☐ Currently
Discrimination (sexual, racial, or cultural)	☐ No	☐ In past	☐ Currently
Lack of adequate protective equipment	☐ No	☐ In past	☐ Currently
Sexual harassment	☐ No	☐ In past	☐ Currently
Other	☐ No	☐ In past	☐ Currently

65. Are there any firearms like guns in your home?	☐ Yes	☐ No
↳ If YES, are they locked in a safe place?	☐ Yes	☐ No
66. Are there any working smoke detectors in your home?	☐ Yes	☐ No

67. Do your children under 18 sit in a car seat and/or wear their seat belts?	☐ Yes	☐ No	☐ Sometimes
	☐ No children under 18		

68. Have you ever felt unsafe or been afraid of anyone, such as your partner, a relative, or anyone else?	☐ Yes ☐ No
69. Is anyone trying to control you, such as who you see and talk to, where you go and what you wear, or how you spend your money?	☐ Yes ☐ No
70. Has anyone ever hurt you, such as hit, kicked, slapped, punched or forced you to perform sexual acts against your will?	☐ Yes ☐ No

Stress: We ask the following questions to learn from you what stresses you have in your life and if you need help dealing with them.

71. Have any of the following problems affected you or someone you are close to in a way that caused you stress or worry during the past year? (Check all that apply.)

- Financial or employment problems ☐
- Legal or immigration problems ☐
- Health or mental health problem, or disability ☐
- Care of an elderly family member ☐
- Death of family member or someone close to you ☐
- Violence against you or your children ☐
- Getting along with your partner or someone close to you ☐
- Getting access to social services you need ☐
- Language barriers ☐
- Experience of discrimination (being prevented from doing something or being made to feel inferior based on gender, race/ethnicity, socioeconomic position or class, sexual preference.) ☐
- Partner or someone close to you has a problem with drugs or alcohol ☐
- Other issue(s): ☐

_____

Conclusion

72. Being able to communicate well with your health care providers is an essential part of staying healthy. Have you had concerns about communicating with any of your health care providers?	☐ Yes ☐ No If YES, please describe: _____ _____ _____
73. Please list any specific issues, concerns or questions you want to be sure to talk with your health care provider or case manager about today.	_____ _____ _____

Thank you very much for taking the time to fill out this questionnaire.

APPENDIX B

STUDY QUESTIONNAIRE

Date completed _____ Site ID_____ Patient ID ____

Study Questionnaire

Thank you for taking the time to complete this questionnaire.

This questionnaire includes questions about your general health, breast health screening, cervical screening, and talking with your health care provider.

All of the information in this questionnaire is confidential. We will not discuss it with anyone who is not involved in this research project. If you find a question or part of a question that you do not want to answer, you may leave it blank. If you do not understand a question or part of a question, please ask the case manager for help.

Date completed _____ Site ID_____ Patient ID ____

CONFIDENTIAL

Women's Health Demonstration Project
Study Questionnaire

1. Are you currently...	☐ Employed for wages ☐ Self employed ☐ Out of work for more than 1 year ☐ Out of work for less than one year ☐ Home maker ☐ Student ☐ Retired ☐ Unable to work ☐ Other _____
2. What is your annual household income?	☐ Less than $10,000 ☐ $10,000 to $15,000 ☐ $15,000 to $20,000 ☐ $20,000 to $25,000 ☐ $25,000 to $35,000 ☐ $35,000 to $50,000 ☐ Greater than $50,000
3. Do you have health insurance? (check all that apply)	☐ Free Care ☐ Medicaid, Mass Health, Boston Health Net ☐ Blue Cross Harvard, Tufts, other ☐ NHP ☐ Medicare ☐ No, or self-pay

Date completed _____ Site ID_____ Patient ID ____

I. General Health

4. Over the past year has your primary care provider talked to you about the following health-related issues? If yes, did s/he offer you the information you needed in each area?

	Talk about?			Offer information?		
	Yes	No	N/A	Yes	No	N/A
family planning and contraception	☐	☐	☐	☐	☐	☐
safe sex practices	☐	☐	☐	☐	☐	☐
sexually transmitted diseases or infections	☐	☐	☐	☐	☐	☐
diet and nutrition	☐	☐	☐	☐	☐	☐
physical activity and exercise	☐	☐	☐	☐	☐	☐
smoking	☐	☐	☐	☐	☐	☐
alcohol and/or other drug use	☐	☐	☐	☐	☐	☐
perimenopause or menopause	☐	☐	☐	☐	☐	☐
domestic violence	☐	☐	☐	☐	☐	☐

5. In the **PAST YEAR**, have you had any pregnancies?

☐ Yes If yes, how many? ____ ☐ **No, skip to question 12**

6. If yes, would you say that your pregnancy (or pregnancies) was (were) planned, unplanned, or are you unable to say? [If more than one pregnancy, check all that apply.]

☐ planned (number of planned pregnancies____)
☐ unplanned (number of unplanned pregnancies____)
☐ unable to say (number of pregnancies, unable to say____)

7. If you were pregnant, which of the following did you experience? [If more than one pregnancy, check all that apply.]

☐ normal birth (full term birth)
☐ premature
☐ still birth
☐ miscarriage
☐ abortion

8. If you had a normal, premature, or stillbirth over the past year, did you receive **prenatal care** at a doctor or nurse-midwives' office, health center, or hospital clinic or other medical site?

☐ No
☐ Yes, doctor's office
☐ Yes, health center
☐ Yes, hospital clinic
☐ Yes, other medical site: _____
☐ I have not had a normal, premature or stillbirth in the past year

Date completed _____ Site ID_____ Patient ID ____

9. If you had prenatal care, when did you begin prenatal care?

   ☐ No prenatal care
   ☐ First three months
   ☐ 3 to 6 months
   ☐ 7 to 9 months

10. Did your primary provider (doctor or nurse practitioner) know about your pregnancy?

   ☐ Yes
   ☐ No, I do not have a provider
   ☐ No, I did not see or talk to my provider during this time
   ☐ No, I saw or talked to my provider during this time but we did not discuss pregnancy

   If yes, did s/he talk to you about prenatal care and/or give you information about caring for yourself during pregnancy?

   ☐ Yes ☐ No ☐ Unable to say

11. Did you receive health care during this RECENT pregnancy from a community midwife, herbalist, or other alternative provider?

   ☐ Yes ☐ No

Date completed _____ Site ID_____ Patient ID ____

II. Breast Health - for women 45 years or older (if younger than age 45, skip to page 9)

A mammogram is a special x-ray that can find breast lumps before you or your doctor can feel them. During the mammogram the technician places your breasts, one at a time, between two plates to take the x-ray.

12. Have you ever had a mammogram?

☐ **No, please check √ all the reasons why you did not have a mammogram.**

- ☐ It's hard to find a doctor
- ☐ X-rays make me sick
- ☐ My doctor didn't recommend one
- ☐ I did not have childcare
- ☐ I can not afford one; I don't have insurance
- ☐ X-rays cause cancer
- ☐ The wait for an appointment was so long that I forgot about the appointment
- ☐ The appointment hours were not convenient
- ☐ Mammograms hurt
- ☐ Never thought about it; didn't know I should have one
- ☐ I don't need one because I haven't had any problems
- ☐ I do not have any lumps in my breast
- ☐ I had a mammogram before
- ☐ I am afraid to find out the results
- ☐ I do not have a family history of breast cancer
- ☐ I do not have transportation
- ☐ I am too young to have a mammogram
- ☐ It is a sign that I am getting old
- ☐ I kept putting it off
- ☐ I don't believe in having mammograms
- ☐ Other **Specify:**_____

If you never had a mammogram, please skip to question 22.

☐ **Yes. Please check all the reasons why you had a mammogram.**

- ☐ Because of a new breast problem
- ☐ Follow-up for an old breast problem
- ☐ Part of a routine physical exam or check-up
- ☐ My doctor recommended it
- ☐ A nurse or other health care provider recommended it
- ☐ I asked for it myself
- ☐ I have a history of breast cancer
- ☐ Other **Specify:**_____
- ☐ DON'T KNOW

Date completed _____ Site ID_____ Patient ID ____

13. What is the best estimate of your age when you received your first mammogram?

____ years old ☐ DON'T KNOW

14. Have you had a mammogram this year?

☐ Yes ☐ No

15. Were you ever contacted by a doctor, nurse or other health care provider because of an abnormal result in your mammogram?

☐ Yes, abnormal result in mammogram
☐ **No, skip to question 20**

If yes, how long ago was this?

☐ Less than 1 year ago
☐ 1-3 years ago
☐ More than 3 years ago

16. Do you remember why you had that mammogram?
(Check all that apply)

☐ I found a breast lump
☐ The doctor or nurse found a breast lump
☐ I had pain in my breast
☐ I had discharge from my nipple
☐ It was a routine mammogram
☐ I have a relative who has had breast cancer
☐ some other reason **Specify:**_____
☐ DON'T KNOW

17. Was this mammogram done in a doctor's office, a clinic, a health center, a hospital, or some other place?

☐ Doctor's office
☐ Health center
☐ Hospital
☐ Radiology lab
☐ Mobile van
☐ Other **Specify:** _____
☐ DON'T KNOW

17a. What were you told about your mammogram results? Please check all that apply.

☐ It was normal
☐ You needed another mammogram right away
☐ You needed another mammogram in the next 4-6 months
☐ You needed to have some other type of procedure or test

(please write what you were told here: _____

Date completed _____ Site ID_____ Patient ID ____

17b. Have you talked about the results of your mammogram with your health care provider?

☐ Yes ☐ No

17c. After reviewing the results of your mammogram, has your provider encouraged you to have more tests or procedures?

☐ Yes ☐ No

18. Did you have a follow-up appointment because of the abnormal mammogram?

☐ Yes ☐ No

If yes, how long did you have to wait to schedule that appointment?
☐ Less than 1 week
☐ Less than 1 month
☐ 1-3 months ago
☐ More than 3 months
☐ DON'T KNOW

If NO, why didn't you have the follow-up appt?
☐ Lack of transportation
☐ I rescheduled it
☐ Cost too much
☐ Afraid of what the doctor might find
☐ Too busy with work or couldn't get off from work
☐ Doctor or clinic cancelled the appointment
☐ Too many other health problems
☐ The last time it turned out to be nothing
☐ Other **Specify:** _____
☐ DON'T KNOW

19. Did you keep that appointment?

☐ Yes ☐ No

If no, what was the reason you did not keep the appointment?
☐ Lack of transportation
☐ I rescheduled it
☐ Cost too much
☐ Afraid of what the doctor might find
☐ Too busy with work or couldn't get off from work
☐ Doctor or clinic cancelled the appointment
☐ If I have breast cancer, I would rather not know
☐ Having more procedures or tests would be painful or embarrassing
☐ If I have breast cancer, there is nothing that can be done about it
☐ Too many other health problems
☐ The last time it turned out to be nothing
☐ Other **Specify:** _____
☐ DON'T KNOW

Date completed _____ Site ID_____ Patient ID ____

20. How did you feel about the experience of having a mammogram?

	Agree	Disagree	DON'T KNOW
I felt anxious while I was in the waiting room before I had my mammogram.	☐	☐	☐
The person who did my mammogram was helpful and made me feel at ease.	☐	☐	☐
There was someone in the office to answer my questions or help me understand what was happening.	☐	☐	☐
I felt anxious while I was waiting to hear the results of my mammogram.	☐	☐	☐
I will have a repeat mammogram.	☐	☐	☐
Having a mammogram was reassuring for me.	☐	☐	☐
A mammogram can find breast cancer early, when it is easiest to treat	☐	☐	☐

21. In the past two years, have you ever learned about mammography from a workshop or presentation that wasn't connected with a doctor's office or a health center? For example, a presentation at a neighborhood center, senior citizen center, a church, or in someone's home?

☐ Yes ☐ No

If yes, did you have a mammogram as a result of that presentation or workshop?

☐ Yes ☐ No

22. Do you currently have or have you had breast cancer?

☐ Yes ☐ No

Date completed _____ Site ID_____ Patient ID ____

III. Cervical Screening

A Pap smear is a test that can find abnormal cells on your cervix. The cervix is the opening to your womb or uterus. A doctor uses a thin wooden stick and tiny special brush to scrape cells from the cervix.

23. Have you ever had a Pap smear?

☐ **No, please check √ all the reasons why you did not have a Pap smear.**

☐ It's hard to find a doctor
☐ My doctor didn't recommend one
☐ I did not have childcare
☐ I can not afford one; I don't have insurance
☐ The wait for an appointment was so too long
☐ I forgot about the appointment
☐ The appointment hours were not convenient
☐ Pap smears are embarrassing or hurt
☐ Never thought about it; didn't know I should have one
☐ I don't need one because I haven't had any problems
☐ I do not feel sick
☐ I had a Pap smear before
☐ I am afraid to find out the results
☐ I do not have transportation
☐ I am too old to have a Pap smear
☐ I don't have sex
☐ I kept putting it off
☐ I don't believe in having Pap smears
☐ I've had genital surgery that makes Pap smears hard to have
☐ Other **Specify:**_____

If you never had a Pap smear, please skip to question 31.

☐ **Yes. – If yes...**

_____ **How many Pap smears have you had within the last 3 years?**___

Please √ all the reasons why you had a Pap smear.

☐ Part of a routine physical exam or check-up
☐ My doctor recommended it
☐ A nurse or other health care provider recommended it
☐ I asked for it myself
☐ Other **Specify:**_____
☐ DON'T KNOW

Date completed _____ Site ID_____ Patient ID ____

24. What is the best estimate of your age when you received your first Pap smear?

    _____ years old ☐ DON'T KNOW

25. Have you had a Pap smear this year?

    ☐ Yes ☐ No

26. Were you ever contacted by a doctor, nurse or other health care worker because of an abnormal Pap smear result?

    ☐ Yes ☐ **No, skip to question 29**

27. Did you have a follow-up appointment for the abnormal Pap smear?

    ☐ Yes ☐ No

    If yes, when was your follow- up appointment?

    ☐ Within three months
    ☐ 3 – 6 months after
    ☐ More than 6 months
    ☐ Don't know

    If NO, why didn't you have the follow-up appt? (**NOW SKIP TO QUESTION 29**)

    ☐ Lack of transportation
    ☐ I rescheduled it
    ☐ Cost too much
    ☐ Afraid of what the doctor might find
    ☐ Too busy with work or couldn't get off from work
    ☐ Doctor or clinic cancelled the appointment
    ☐ Too many other health problems
    ☐ The last time it turned out to be nothing
    ☐ Other **Specify:** _____
    ☐ DON'T KNOW

28. Did you keep that appointment?

    ☐ Yes ☐ No

    If no, what was the reason you did not keep the appointment?

    ☐ Lack of transportation
    ☐ I rescheduled it
    ☐ Cost too much
    ☐ Afraid of what the doctor might find
    ☐ Too busy with work or couldn't get off from work
    ☐ Doctor or clinic cancelled the appointment
    ☐ Too many other health problems
    ☐ The last time it turned out to be nothing
    ☐ Other **Specify:** _____
    ☐ DON'T KNOW

Date completed _____ Site ID_____ Patient ID ____

29. How did you feel about the experience of having a Pap smear?

	Agree	Disagree	DON'T KNOW
I felt anxious while I was in the waiting room before I had my Pap smear.	☐	☐	☐
The person who did my Pap smear was helpful and made me feel at ease.	☐	☐	☐
There was someone in the office to answer my questions or help me understand what was happening.	☐	☐	☐
I felt anxious while I was waiting to hear the results of my Pap smear.	☐	☐	☐
I will have a Pap smear again.	☐	☐	☐
Having a Pap smear was reassuring for me.	☐	☐	☐

30. In the past two years, have you ever learned about Pap smears from a workshop or presentation that wasn't connected with a doctor's office or a health center? For example, a presentation at a neighborhood center, senior citizen center, a church, or in someone's home?

☐ Yes ☐ No

If yes, did you have a Pap smear as a result of that presentation or workshop?
☐ Yes ☐ No

31. Do you currently have or have you ever had cervical cancer?

☐ Yes ☐ No

Date completed _____ Site ID_____ Patient ID ____

IV. Provider and clinical staff

Some people have a regular health care provider. A provider is someone that knows the most about your health. Your provider may be a doctor, a nurse or other health care worker. Please respond to the following questions as they pertain to *your* provider.

32. Do you have a regular health care provider? ☐ Yes ☐ No

    If no, skip to question 56

33. What is the race/ethnicity of your provider?

    ☐ Black ☐ White ☐ Latino ☐ Asian ☐ Other:_____ ☐ Don't know

34. What is the gender of your provider? ☐ Female ☐ Male

35. How long have you been seeing your provider? _____ years_____ months
    (number) (number)

36. **In the last year,** what is the total number of providers you have seen **at this health center** or hospital? _____

37. **In the last year,** what is the total number of providers you have seen **at other health centers** or hospitals? _____

Please rate your PROVIDER on the following, using the scale at the right.	**Agree**	**No opinion**	**Disagree**
38. I feel comfortable with my provider			
39. My provider is interested in me and my family			
40. My provider understands my concerns and my situation			
41. My provider shows respect for me and my family members			
42. My provider tries to deliver the best care regardless of my race or ethnicity			
43. My provider asks the right questions to understand my health needs			
44. My provider always examines me when it is necessary			
45. My provider always explains my medical problems in a way I can understand			

Date completed _____ Site ID_____ Patient ID ____

46. How respectful and courteous is your provider during your visit?

☐ completely respectful and courteous ☐ mostly respectful and courteous

☐ somewhat disrespectful ☐ not at all respectful

47. If your provider is not completely respectful and courteous, what do you think might be the reasons for the provider's attitude or behavior?

_____

_____

Please state whether you agree or disagree with the following statements.

48. My provider gives directions too fast when he/she examines me.

☐ Agree ☐ Disagree

49. My provider seems to know what he/she is doing.

☐ Agree ☐ Disagree

50. How would you rate your ability to talk with your provider about your health?

Poor	Fair	Good	Excellent
1	2	3	4

51. How would you rate the ability of your provider to communicate effectively with you?

Poor	Fair	Good	Excellent
1	2	3	4

Date completed _____ Site ID_____ Patient ID ____

52. In general, how would you rate your ability to communicate effectively with providers from a different racial or ethnic background than you?

Poor	Fair	Good	Excellent
1	2	3	4

53. In general, how would you rate the ability of providers from a different racial or ethnic background than you to communicate effectively with you?

Poor	Fair	Good	Excellent
1	2	3	4

54. In general, how would you rate your ability to understand your provider's explanations regarding Pap smear and/or treatment recommendations following an abnormal Pap smear?

Poor	Fair	Good	Excellent
1	2	3	4

55. (If over age 40) In general, how would you rate your ability to understand your provider's explanations regarding mammography and/or treatment recommendations for abnormal mammograms?

Poor	Fair	Good	Excellent
1	2	3	4

☐ Not over 40

Date completed _____ Site ID_____ Patient ID ____

Please rate your CLINIC on the following, using the scale at the right.	**Agree**	**No opinion**	**Disagree**
56. I feel comfortable when I come to get care here			
57. I am always welcomed and made to feel comfortable when I arrive for an appointment			
58. There are pictures on the walls and reading materials that reflect my culture and community			
59. I have access to someone who speaks my language			
60. The clinic tries to deliver the best care regardless of a patient's race or ethnicity			
61. The clinic staff represent the people from my community			
62. I feel comfortable getting information about and care for breast problems at this clinic			
63. The clinic has convenient and easy to access services for breast examinations			
64. The clinic has convenient and easy to access services for mammography			
65. The clinic has convenient and easy to access services for Pap smears			
66. The services for breast problems and screening for cancer are respectful of the needs of diverse women			
67. The services for gyn exams and Pap smears are respectful of the needs of diverse women			

68. How respectful and courteous are the other clinic staff during your visit?

☐ completely respectful and courteous

☐ mostly respectful and courteous

☐ somewhat disrespectful

☐ not at all respectful

69. If the other clinic staff is not completely respectful and courteous, what do you think might be the reasons for their attitude or behavior?

_____

_____

_____

70. Within the past 12 months, when you went to get health care, were you treated:

- ☐ Better than people of other races
- ☐ Worse than people of other races
- ☐ The same as people of other races
- ☐ Only got health care with people of the same race
- ☐ No health care in past 12 months
- ☐ Don't know/Not sure

71. On average, in the past 12 months, in non-health care settings, were you treated:

- ☐ Better than people of other races
- ☐ Worse than people of other races
- ☐ The same as people of other races
- ☐ Don't know/Not Sure

72. Within the past 30 days, have you felt emotionally upset (for example angry, sad, or frustrated) as a result of how you were treated based on your race?

- ☐ Yes
- ☐ No
- ☐ Don't know/Not sure

73. Within the past 30 days, have you experienced any physical symptoms (for example a headache, an upset stomach, tensing of your muscles, or a pounding heart) as a result of how you were treated based on your race?

- ☐ Yes
- ☐ No
- ☐ Don't know/Not sure

Date completed _____ Site ID_____ Patient ID ____

V. Conclusion

74. Have you ever taken part in a study about breast or cervical cancer?

☐ Yes ☐ No

75. Do you know anyone who has taken part in a study about breast and cervical cancer?

☐ Yes ☐ No

If so, what did they tell you about their experience?

_____

_____

_____

76. Did you find the questions in this survey helpful or not helpful?

☐ Helpful ☐ Not helpful

Comments: _____

_____

_____

77. How did you hear about the study?

☐ Case manager at the clinic or health center
☐ Provider or social worker at the clinic or health center
☐ A friend told me about the study
☐ A member of the REACH Coalition
☐ Radiology Technologist
☐ Other _____

Date completed _____ Site ID_____ Patient ID ____

79. Please check factors that made it easier to take part in the Women's Health Study?

___ Recommendation from my provider (e.g. nurse/nurse practitioner, primary care provider, other clinical staff)
___ Recommendation from my case manager
___ The study was done where I receive my health care
___ A researcher of my own age or race/ethnicity talking to me about the study
___ I heard an advertisement (e.g. over the radio, television)
___ Support from my family (e.g. spouse/partner, other family members)
___ I would receive money for taking part in the study
___ My friend or family member told me about the study
___ Recommendation from my church
___ Having childcare and/or reliable transportation made it easier to take part in the study
___ Having a friend or family member who also took part in the study
___ I was interested in finding out more about my health
___ Having a friend or family member who is ill made me want to learn more about my own health
___ Other **Specify**:_____

Thank you for taking the time to complete this questionnaire.

APPENDIX C

TABLES

Table 1. CMNHP Guidelines for Policy and Program Evaluation applied to this study

Policy to be evaluated	**Healthy People 2010/REACH 2010 Boston Project** • Focus: Health care services: Breast and cervical cancer screening and follow-up • Level: CMNHP Level 3: equity of access
Problem	Breast and cervical cancer disparities experienced by Black women in Boston • Factors addressed: Barriers to breast and cervical cancer (BCC) screening, lack of adequate follow up of abnormal BCC screening, lower mammogram screening rates among immigrant women, and lack of satisfaction with relationships and communications with providers. • Magnitude: Black women in Boston experience death rates for breast cancer equal to that of White women for whom the incidence is much higher and more than double the death rate for cervical cancer than for White women, despite similar incidence.
Solutions	• Aims 1 - 2 Program theory: Enrollment of women in the target population, improved tracking, case management for linkage to primary care, health insurance coverage, cultural competency training, and community outreach would reduce BCC disparities.
Stakeholders	• Aims 1 - 2 • Recipients, policy makers, taxpayers, and agency employees: • CDC REACH Program, BPHC, health care systems, Black women and other coalitions. Local, state, and federal policy makers. State leadership now includes former Principal Investigator, Dr. Bigby, now Executive Secretary of Health and Human Services, and former BPHC Executive Director, John Auerbach, now the Commissioner of Massachusetts Department of Public Health.
Costs	Not addressed
Benefits	• Aims 1-2 • Intended: Earlier detection of BCC, decreased mortality, decreased health disparities, increased cultural competency of health care providers, and increased capacity of women in the target population to advocate for and use health care appropriately. • Unintended: Detection and treatment of other health care problems in the target population.

Table 1. CMNHP Guidelines for Policy and Program Evaluation applied to this study (cont.)

Recipients	• Target group: Aims 1-2 • Unintended: Women of other racial and ethnic groups and their networks. • Potential harm: False-positive screening tests may cause stress and anxiety. There may be as unintended consequences of treatment for detected cancers.
Implementation	• Efficiency: Aim 1-2 • Formulation: Breast and Cervical Cancer Coalition Community Action Plan • Leadership and authority: Boston Public Health Commission • Evaluation: Office of Women, Family, and Community Programs, Brigham and Women's Hospital, Partners Health Care System • Fiscal resources: Federal, city, and philanthropic support. • Human resources: Staff from the BPHC, community health centers and primary practice sites in academic medical centers, and Coalition members. Material resources: Educational and social marketing materials, office and meeting space and infrastructure support from the BPHC and Brigham and Women's Hospital.

Table 2. Breast and Cervical Cancer Screening Literature

Author, Date	**Study Characteristics**
Beagan, Oppedisano, & Perlman (2010)	*N*= 550 convenience sample Methodology: in-person survey administered by trained community health workers (CHW). Independent variables: age, gender, education, length of time in U.S. Dependent variables: neighborhood safety, health status, primary care provider, dental care, perception of bias, hypertension, hypercholesterolemia, obesity, physical activity, diet, tobacco, alchohol and drug use, cancer and HIV screening, diabetes diagnosis, monitoring; family history of chronic disease,
Bernard, Lawson, Anderson, & Helsel (2005)	*N* = 1,134, 325 medical records of women with abnormal Pap smears, with African American women comprising 13.7% of sample. Methodology: secondary data analysis and medical record review of the NBC-CEDP data base between 1991-2000. Independent Variables: Age and race/ethnicity (White, Black, Asian/Pacific Islander, American Indian/Alaska Native, or Hispanic). Dependent Variables: Follow up of initial and second Pap smears classified as ASC-US, or LSIL.
Blanchard, Colbert, Puri, Weissman, Moy, Kopans et al. (2004)	*N*= 19,579 women, White (15, 971), Black (869), Non-Asian and Non-Hispanic (18,268), Hispanic (774), and Asian (578). Methodology: Medical record review of women who received 254,818 screening mammograms at the Massachusetts General Hospital (MGH) between January 1, 1985 and February 19, 2002. Independent Variables: Race, ethnicity, language, site of residence, income, having health insurance, and having a primary care provider. Dependent Variables: Mammography utilization.

Table 2. Breast and Cervical Cancer Screening Literature (cont.)

Blanchard, & Lurie (2004)	*N*= 6722 adults ≥18, over-sampling of minority households, groups classified as Asian, Black/African American, Hispanic/Latino, Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, White, or other mixed race. Methodology: Secondary analysis of Commonwealth Fund 2001 Health Care Quality Survey: nationwide random-digit dial survey conducted in English, Spanish, Mandarin, Cantonese, Vietnamese, or Korean. Independent Variables: gender, age, education, income, insurance status, presence of chronic illness, English as primary language at home, having a primary care physician. Dependent variables: Perceptions about provider relationship, utilization and optimal care.
Bobo, Shapiro, Schulman, & Wolters (2004)	*N*=1,685 White, non-Hispanic (47%), Black, non-Hispanic (17.9%), Hispanic (26.6%), and Other (8.5%) from four state programs. Methodology: Telephone interview and chart review. Independent Variables: Age, ethnicity, urbanization, education, marital status, income, language, foreign born, move since index mammogram, medical history, health care access, social support. Dependent Variables: Rescreening at 18 and 30 months after index.
Breitkopf, Catero, Jaccard, & Berenson (2004)	*N*=120 women (40 African American, 40 Caucasian, 40 Hispanic) ages of 25 to 50 who attended family planning clinics staffed by advance practice nurses sponsored by the University of Texas Medical Branch. Methodology: Semi structured interviews that were taped, transcribed, and verified for completion and accuracy. Content analysis was conducted on the interview material using description, reduction, and interpretation.
Colbert, Kaine, Bigby, Smith, Moore, Rafferty et al. (2004)	*N*=940 women classified by race (Black, 72), (White, 684) and ethnicity (Non-Hispanic/non-Asian, 835, Non-Hispanic, 881, Asian, 46, and Hispanic, 59) who received their first mammogram at MGH between January 16, 2000 and February 19, 2002. Methodology: Medical record review, sample survey, MGH patient demographic data base. Independent Variables: Race, ethnicity, (Black, Asian, Hispanic, White) language, site of residence, income, having health insurance, and having a primary care provider. Dependent Variables: Age at which women began mammography screening.

Table 2. Breast and Cervical Cancer Screening Literature (cont.)

Cooper, Roter, Johnson, Ford, Steinwachs, & Powe (2003)	Sample: Patients: 252 Adults, 142 African Americans, 110 White; Physicians: 31, 18 African Americans, 13 White Methodology: Cohort study using audiotapes of patient encounters, and patient interviews pre- and post-visits in 16 urban primary care practices in Baltimore and Washington. Independent Variables: Race concordance between African American and White patients and physicians. Dependent Variables: Patient-physician communication, visit characteristics, and patient ratings of care.
David, M., Ko, L., Prudent, N., Green, E., & Freund, K. (2005)	*N*=329 women in Eastern MA: 143 Haitian, 80 White, 55 African American, 26 English speaking Caribbean, and 22 Latina, age >40, language: English or Haitian Creole. Methodology: community based cross sectional interviewer based survey of census blocks estimated to have >20 % or at least 10 Haitian families by key informants and census data. Instrument based on NHIS survey cancer supplement questions. Independent variables: age, race. ethnicity, marital status, education, insurance, having primary care provider. Dependent variables: ever having had a mammogram, mammogram within previous 2 years.
D'Alba, I, Hubbell, F.A., McMullin, J.M., Sweningson, J.M, & Saitz, R. (2005)	*N*=6320 Cervical cancer screening analysis, (47% naturalized citizens), and 3828 Breast cancer screening analysis (65% naturalized citizens). Methodology: cross-sectional study from the 2001 California Health Interview Study. Independent variables: self-reported citizenship status (US/non-US), age, race/ehtnicity, education level, income > or < 200% federal poverty level, health insurance, primary care, years in US (> or < 10), health status, and English proficiency. Dependent variables: ever having had a Pap smear, a Pap smear in last3 years, ever having had a mammogram, a mammogram in last 2 years.

Table 2. Breast and Cervical Cancer Screening Literature (cont.)

Fretts, Rodman, Gomez-Carrion, Goldberg, Sachs, Myers et al. (2000)	Post Provider Visit survey *N*=206, 75% African American Community-Based Survey: *N*=252, 78% African American Methodology: Compared two surveys of disease burden and preventive health services among women aged 45-64 in and underserved region of Boston. Independent Variables: Age, education, ethnic group, (White not Hispanic, Black or African American, Hispanic, Asian, Other, No answer), health care visit in last two years, regular care at a clinic, type of visit, health insurance. Dependent Variables: Cardiovascular risk factors, preventive health care services.
Green, Freund, Posner, & David (2005)	*N*=700 women: 40% Haitian 22%African American, 7% English-speaking Caribbean, 10% Latina, and 20% White, non Hispanic. Methodology: Cross-sectional, community-based survey of women >40 living in Boston, Brockton, Cambridge, and Somerville census tracts with over 20% of households with Haitian immigrants (2000-2002). Independent Variables: Ethnicity, age, education, marital status/domestic partner, income, health insurance, primary care site, female physician, linguistic access, Boston residency, physical exam Dependent Variables: Pap ever, recent.
Greene, Torio, & Klassen (2005)	Sample: 576 African American women between the ages of 52 and 79. Methodology: Structured interview Independent Variables: Age, marital status, education, income, having health insurance, history of breast abnormalities, and recent Pap smear screening. Dependent Variables: Sustained mammography use.
Johnson, Saha, Arbeleaz, Beach, & Cooper (2004)	*N*=6299 reporting race as White, African American, Hispanic or Asian. Methodology: Secondary analysis of Commonwealth Fund 2001 Health Care Quality Survey: nationwide random-digit dial survey conducted in English, Spanish, Mandarin, Cantonese, Vietnamese, or Korean. Response rate: 54.3%. Independent Variables : Self-reported race or ethnicity Dependent Variables: Respondents' perceptions of bias and cultural competence with primary care providers when seeking health care overall.

Table 2. Breast and Cervical Cancer Screening Literature (cont.)

Menard, J., Koblenz, K., Maldonado, J.C., Barton, B., Blanco, J, & Diem, J. (2010).	*N*=15 women of Haitian ancestry, age 41 to 60 without history of cervical cancer. Methodology: Community based participatory research with interviews conducted by community health workers in subjects' homes in English or Haitian Kreyol using an interview guide. Data analyzed using grounded theory.
Moy, Park, Feibelman, Chiang, & Weissman (2005)	*N*=49 women, 19 Asian, 16 African American, 14 Hispanic recruited from outpatient departments, having had one prior mammogram and no history of cancer. Methodology: Semi-structured interview guide. Used the Theory of Planned Behavior and the Attitude-social influence efficacy model. Co-facilitated by psychologist and physicians of whom one was Spanish-speaking and another was Cantonese-speaking. Content analysis applied to transcribed tapes of groups.
O'Malley, A. S. & Forrest, C. B. (2002)	*N*=1,205 women >40, 82.7% African American Method: Random digit dialing survey of households in Washington, D.C. census tracts with >30% of households below 200% of federal poverty level. Response rate: 85%. Independent Variables: Comprehensive service delivery, coordination, continuity of care, and accessibility. Dependent Variables: Patient-physician relationship: Trust, compassion, and communication.
O'Malley, Forrest, & Mandelblatt, J. (2002)	*N*=1,205 women > 40, 82% African American. Methodology: Random-digit dial telephone survey targeted of in Washington, D.C. census tracts with >30% of household below 200% of federal poverty level. Response rate: 85%. Independent Variables: Age, income, race/ethnicity, education, work status, marital status, family size, home ownership, health status, insurance status, cancer knowledge, attitudes, beliefs, primary care, and patient-clinician relationship. Dependent Variables: Adherence to cervical, breast, and colorectal cancer screenings.
O'Malley, A. S., Forrest, C. B., & O'Malley, P. G. (2000)	Sample: *N*=15 African Americans, 8 Latinas, and 1 White women aged 40 or over. Methodology: Participants recruited from 4 communities. Tools were interviews, focus groups, content analysis of transcriptions. Inter-rater reliability was measured. Focus group questions included: what kinds of things are most important to you where you get your health care, what do you think about the car e you receive there, what are the good things/bad things about care, what could be improved, what and where would be the ideal clinic?

Table 2. Breast and Cervical Cancer Screening Literature (cont.)

O'Malley, A. S., Sheppard, V. S., Schwartz, M., & Mandelblatt, J. (2004)	Sample: 961 African American women over age 40 who had a usual source of care. Methodology: Random-digit dial telephone survey targeted at household located in Washington, D.C. census tracts with >30% of household below 200% of federal poverty level. Response rate: 85%. Independent Variable: Trust in one's primary care provider. Dependent Variables: Receipt of nine interventions recommended by the U.S. Preventive Services Task Force.
Peterson, Han, & Freund (2003)	*N*=423 women (60% of whom were Black) screened at academic medical center clinics in Boston, MA. Methodology: Medical record review Independent Variables: Race and ethnicity (Black, Hispanic, White, Asian), age. Dependent Variables: Pap smear follow up.
Saha, Arbalaez, & Cooper (2003)	*N*=6299 adults reporting race as White, African American, Hispanic or Asian. Methodology: Secondary analysis of Commonwealth Fund 2001 Health Care Quality Survey: nationwide random-digit dial survey conducted in English, Spanish, Mandarin, Cantonese, Vietnamese, or Korean. Response rate: 54.3%. Independent Variables: self-reported race or ethnicity. Dependent Variables: satisfaction with health care, quality of patient-physician interaction, cultural sensitivity, race concordance, and utilization of preventive services.
Samuel, Pringle, James, Fielding & Fairfield (2009)	*N*=100 women age 50-75 from Cambodia, Somalia and Vietnam in Portland, ME. Methodology: Chart review (85) and structured interviews (15). Independent variables: nativity, age, years in US, marital status, history of breast, cervical, or colorectal cancer, year of most recent Pap, Clinical Breast Exam (CBE), mammogram, colonoscopy/sigmoidoscopy, and fecal occult blood test (FOBT). Dependent variables: receipt of screening tests (chart review); barriers to screening.

Table 2. Breast and Cervical Cancer Screening Literature (cont.)

Selvin & Brett (2003)	*N*=5,509 women aged 40-64 years, 3,995 Non-Hispanic White, 780 Non-Hispanic Black, and 734 Hispanic. Methodology: Secondary data analysis of cancer screening data from the adult prevention supplement to the 1998 NHIS. Independent Variables: Race and ethnicity, income, education, marital status, residence (MSA), health insurance coverage, health status, and smoking status. Analysis was performed using SUDAAN. Dependent Variables: Receipt of Pap smear within three years previous to interview. Receipt of mammogram within two years previous to interview.
Swan, Breen, Graubard, McNeel, Blackman, Tangka, & Ballard-Barbash (2010)	Pap smear: *n*=14194 women aged 25 or older, 2087of whom were classified as Black. Mammograms: *n*=9908 women aged 40 or over, 1353 of whom were classified as Black. Methodology: secondary data analysis of NHIS surveys 2005. Used predicted marginal ratio to adjust for multiple logistic regression model adjusted prevalence ratio (PM) Independent Variables: age. education, race and ethnicity, poverty level, usual source of care, health insurance, immigration, saw/talked to a doctor in the past 12 months, saw, talked to an OBGYN in past 12 months. Dependent Variables of interest: Mammography within the last two years for women > 40. Pap smear within the last 3 years for women > 25.
Thomas, E. (2004)	*N*=12 African American women between ages 40 and 64, with academic degrees and health insurance. Methodology: Purposive sampling through urban churches and word of mouth. Data generated from participants' journals.
Thomas, M., & James, C. (2009).	*N*=200,000 individuals Methodology: descriptive analyses of data from 2009 Current Population Survey

Table 3. Literature on self-report

Author, Date	**Study Characteristics**
Caplan, Mandelson, and Anderson, 2003	*N*=949 women aged 50-80 members of a health maintenance organization Methodology: self report and electronic record review Independent variable: self report Dependent variable: documented mammogram Findings: Self report overestimated recorded screening by 8.2%. Overall agreement: 82.7%, with kappa value of 0.52.
Etzi, Lane, and Grimson, 1994	*N*=237 low income women aged 50-75 who received mammograms on public health vans and visited one of 5 community health centers. Methodology: telephone survey and manual record review Independent variables: self report of mammography ever and recent dates. Dependent variables: documented mammography and dates Findings: agreement decreased over time, with forward telescoping.
Norman et al., 2003	*N*= mammography histories of 2,495 women aged 40–64 years with incident breast cancer diagnosed in 1994–1998, *n*= 25% random sample of 615 controls never diagnosed with breast cancer, all reporting a mammogram in the past 5 years. Methods: Case- control medical record review and comparison with self report of recent screening mammogram . Independent variable: self-report of mammography at one and two years. Dependent variables: medical record documentation of screening at one and two years
Paskett, 1996	*N*=555 women, 70% of whom were low-income African American, aged 40-64 and ≥65, from low income housing communities in two southern cities. Methodology: face to face interviews conducted by women of the same ethnic background and medical record review. Independent variable: self-report of Pap smear Dependent variable: documented Pap smear in medical record

Table 3. Literature on self-report (cont.)

Puleo, 2005	*N*=449; subset of mammography: *n*=230, subset of Pap smears, *n*=219. Methodology: random sample of women from four community health centers with abnormal results. Independent variable: self-report of Pap smear Dependent variable: documented Pap smear in medical record
Rauscher, Johnson, Cho, and Walk, 2008	*N*=29 studies on published in US between 1966 and 2007. Methodology: meta-analysis Continencies examined: true positives, false positives, false negatives, and true negatives Estimated: sensitivity and specificity, (and positive predictive value;
Sawyer, Earp, Fletcher, Daye, and Wynn, 1989	*N*=98 rural Black women Methodology: structured 30 minute home interview conducted by lay Black interviewers. Independent variable: self-report of Pap smear Dependent variable: documented Pap smear in medical record
Zapka et al., 1996	*N*=397 ethnically diverse women in western Massachusetts. Methodology: mail survey Independent variable: self report of mammography Dependent variable: medical record documentation of mammography.

Table 4. Independent variables

Measure	Item #	Type	Range
Health insurance: uninsured (free care), public, private	3	Nominal	0-3
Having a PCP	32	Dichotomous	0,1
Quality of relationships with PCP		Response	Scale
How would you rate your ability to talk with your provider about your health?	50	Poor Fair Good Excellent	Poor = 1 Fair = 2 Good = 3 Excellent = 4
How would you rate the ability of your provider to communicate effectively with you?	51		
In general, how would you rate your ability to communicate effectively with providers from a different racial or ethnic background than you?	52		
In general, how would you rate the ability of providers from a different racial or ethnic background than you to communicate effectively with you?	53		
Summary Scale: QUALCOM	Cronbach's alpha, 92		
Quality of Relationships with PCP		Scale	
I feel comfortable with my provider.	38	Agree No opinion Good	Agree = 1 No opinion = 2 Good = 3
My provider is interested in me and my family.	39		
My provider understands my concerns and my situation.	40		
My provider shows respect for me and my family members.	41		
My provider tries to deliver the best care regardless of my race or ethnicity.	42		
My provider asks the right questions to understand my health needs.	43		
My provider always examines me when it is necessary.	44		
My provider always explains my medical problems in a way I can understand.	45		
Summary Scale: QUALREL	Cronbach's alpha, 88		8 - 24

Table 5. Dependent variables

Dependent Variables			
Measure	Item #	Variable Type	Range
Cervical cancer screening and follow up			
Ever had a Pap Smear?	23	Dichotomous	0,1
Age first Pap smear?	24	Continuous	18-75
Have you had a Pap this year?	25	Dichotomous	0,1
Breast cancer screening and follow up			
Ever had a mammogram?	12	Dichotomous	0, 1
Age first mammogram?	13	Continuous	45-75
Have you had a mammogram this year?	14	Dichotomous	0,1

Table 6. Study participant characteristics: $N = 901$

Variable / Range	Mean	Standard Deviation
Age (18-75)	40.67	13.51
	Count	**Percent**
Under 45 (18-44)	554	61.5%
45 and older (45-75)	347	38.5%
Birth location		
US Born	632	70.1%
Foreign Born	269	29.9%
Region of origin		
Caribbean/West Indies	161	17.9%
Dominican Republic	72	8%
Haiti	26	2.9%
Jamaica	26	2.9%
Central America	12	1.3%
Africa	90	10%
Cape Verde	36	4%
Somalia	29	3.2%
Europe	2	.2%
Middle East	1	.1%
South America	3	.3%
Education		
< High School	231	25.6%
HS/GED	292	32.4%
Vocational/tech/AD/some college	310	34.4%
4 years of college	64	7.1%
Insurance		
None	215	24.4%
Public	444	50.4%
Private	222	25.2%
PCP		
Yes	798	89.2
No	97	10.8
	Mean	**Standard Deviation**
Communications with PCP (QUALCOM) Scale range 4-16	13.19	2.55
Relationship with PCP (QUALREL) Scale range 8-24	23.11	2.45

Table 7. Study participant birthplace

Variable	**Percent**	**StD / Counts**
Birthplace: *N* = 901	**Percent of Total**	**Counts**
US	70.1%	632
Foreign Born	29.9%	269
Region of origin	**Percent of Foreign Born**	
Caribbean/West Indies	59.85%	161
Dominican Republic	26.76%	72
Haiti	9.66%	26
Jamaica	9.66%	26
Other	13.75%	37
Central America	4.46%	12
Africa	33.45%	90
Cape Verde	13.38%	36
Somalia	10.78%	29
Other	9.29%	25
Europe	.75%	2
Middle East	.37%	1
South America	1.11%	3

Table 8. Age differences between US and Foreign born women

	US Born		**Foreign Born**		***T*-test or Pearson χ^2**	
Descriptive characteristics	Mean/ Count	SD/%	Mean/ Count	SD/%	**Score/df**	**Sig**
Age (*N* = 901)	39.9/632	13.45/70.1%	42.6/269	13.54/29.9%	*t*=2.31/899	.021
Selected countries						
Dominican Republic			42.8/77	12.39		
Haiti			40.38/26	12.99		
Jamaica			43.54/26	12.82		
Cape Verde			36.47/ 36	12.52		
Somalia			38.72/ 29	15.26		

Table 9. Education differences between US and Foreign born women age 45 and older

	US Born		**Foreign Born**		***T*-test or Pearson χ^2**	
Descriptive characteristics	Mean/ Count	SD/%	Mean/ Count	SD/%	**Score/df**	**Sig**
Education (*N* = 347)	235	68.3%	109	31.7%	χ^2 = *30.67/3*	.000
<High school diploma	61	26%	62	50.4%		
HS diploma/GED	80	34%	27	24.8%		
> HS diploma, < Bachelor's	79	33.6%	16	14.7%		
=>Four year college	15	6.4%	4	3.7%		
Education by country	Count	Percent				
		< HS	HS/GED	>HS<Bachelor	≥ 4 years	
Dominican Republic	71	52.11%	23.94%	19.71%	4.23%	
Haiti	23	34.6	19.2	30.8	15.4	
Jamaica	26	19.23	42.31	34.62	3.85	
Cape Verde	35	44.44	25%	27.78	2.78	
Somalia	29	58.62	27.59	13.79	0	

Table 10. Insurance differences between US and Foreign born women

Health Insurance	**US Born**		**Foreign Born**		**Test statistic**		
	Count	Percent	Count	Percent	Score/DF	95% CI	Signifi-cance
Age 18-75, *N*=881							
	619	70.3%	262	29.7%	χ^2 = 65.27/2		.000
Uninsured/free care	104	16.8%	111	42.4%	OR = .27 df=1	.18, .40	.000
Public Insurance	342	55.3%	102	38.9%	OR =.95 df=1	.65, 1.34	.79
Private Insurance	173	27.9%	49	18.7%			
Total	619	100%	262	100%			
Age 45-75, *N*= 342							
	232	67.8%	110	32.2%	χ^2 = 21.04/2		.000
Uninsured/free care	43	18.5%	46	41.8%	OR= .39, df=1	.17, .63	.001
Public Insurance	132	56.9%	44	40.%	OR=1.05, df=1	.57. 1.94	.87
Private Insurance	57	24.6%	20	18.2%			
Total	232	100%	110	32.2%			

Health insurance differences by county					
County	Dominican Republic *n*=71	Haiti *n*=23	Jamaica *n*=26	Cape Verde *n*=35	Somalia *n*=29
Uninsured/free care	47.2%	20.8%	32%	37.1%	69.%
Public Insurance	11.1%	25%	36%	8.6%	6.9%
Private Insurance	100%	100%	100%	100%	100%

Table 11. Primary care differences between US and Foreign born women

Primary Care	**US Born *n*=629**		**Foreign Born *n*=266**		**Test Statistic**	
Do you have a regular PCP?	Yes Count/%	No	Yes Count/%	No	**Score/ df**	**Sig**
Ages 18-75 **Total: *n* = 895**	570/ 90.6%	59/ 9.4%	227/ 85.3%	39/14.7%	χ^2 = 5.35/1, *p*= .02	
Select Countries						
Dominican Republic			71/ 98.6%	1/1.39%		
Haiti			21/84&	4/16%		
Jamaica			26/100%	0/0%		
Cape Verde			31/88.57	4/11.43%		
Somalia			10/34.8%	19/65.52%		
	US Born *n*=629		**Foreign Born *n*=266**		**Test Statistic**	
Satisfaction with Quality of Communications with PCP	Mean/ Count	SD	Mean/ Count	SD	**Score/ df**	**Sig**
Scale 0-16 Ages 18-75 Total: *n* = 895	Scale 0-16	2.46	12.86	2.73	*T*= 2.31 *p*=.021	
Select Countries			62	50.4%		
Dominican Republic *n*=71			11.51	2.25		
Haiti *n*=21			13.71	2.24		
Jamaica *n*=26			14.19	2.64		
Cape Verde *n*=31			12.81	2.55		
Somalia *n*=10			10.20	4.59		

Table 12. Aim 1, Question 1. Cervical cancer screening: significant differences between US and foreign born women

Outcome Variable	**US Born**		**Foreign Born**		**Analysis**	
Descriptive characteristics	Mean/ Count	SD/%	Mean/ Count	SD/%	**Score/df**	***P* value**
Have you ever had a Pap smear? Valid *N* = 892						
Yes	612	97.8%	245	92.1%	$\chi^2 = 15.85$	.000
No	14	2.2%	21	7.9%		
Total	626	100%	266	100%		

Table 13. Aim 1, Question 2 Cervical cancer screening: influence of health insurance

Dependent variable			**Descriptive data**				**Analysis**	
Ever had a Pap Smear?								
			Yes		No		Score/ 95% CI	*P*
	#	%	#	%	#	%		
US Women: *n*=613							OR =7.04 1.47, 33.83	.015
Free care	104	17	96	92.3	8	7.7	OR=1.01 .18 , 5.58	.989
Public	338	55.1	334	98.8	4	1.2	reference	
Private	171	27.9	169	98.8	2	98.8		
Total	613	100	599	97.7	14	2.3		
Free care	111	42.7	102	39.2	9	3.5	OR =1.32 .34, 5.12	.685
Public	101	38.8	93	35.8	8	3.1	OR=1.29 .33, 5.10	.72
Private	48	18.5	45	17.3	3	1.2	reference	
Total	260	100	240	92.3	20	7.7		

Table 14. Aim 1, Question 3 Cervical screening: influence of primary care provider and quality of communications with PCP on screening

Dependent variable			**Descriptive data**				**Analysis**	***P* Value**
Have you ever had a Pap Smear?								
US born women, *n*=624								
PCP			Yes		No		χ^2 = 28.14, df =1	*.000*
	#	%	#	%	#	%		
Yes	566	90.7	610	97.8	7	1.1		
No	58	09.3	51	88.2	7	1.1		
Total	624	100	610	97.8	14	2.2		
Foreign born women n= 265								
PCP			Yes		No		χ^2 = 32.71, df=1	.000
	#	%	#	%	#	%		
Yes	226	85.30	217	81.9	9	3.4		
No	39	14.7	27	10.2	12	4.5		
Total	265	100	244	92.1	21	7.9		
Between US and Foreign born women *n*= 889							Breslow Day χ^2 = .975, df =1	.001
							Cochran's χ^2 = 59.60, df=1	.000
							Mantel Haenszel Common OR Estimate = .093 95% CI .05, .19	.000
Have you had a Pap smear in the last 12 months?							*T*= 3.48, df= 542	.001
US Born women *n*=544								
Quality of Communication			Mean		StD			
Yes	**292**		13.65		2.39			
No	252		12.92		2.48			
FB women *n*=209								
Quality of Communication			Mean		StD		*T*=1.24, df=207	.26
Yes	118		13.03		2.67			
No	91		12.56		2.70			

Table 15. Aim 1. Question 6: Cervical Cancer screening predictors for US born women

Dependent variable	**Sample size**	**Independent variable**	**Odds ratio**	**95% Confidence interval**	***P* value**
Have you had a Pap smear in the last 12 months?	626	Age	.98, df=1	.96, .99	.001
		Quality of communication with PCP	1.12, df=1	1.02, 1.22	.002

Table 16. Question 6: Cervical cancer screening predictors for Foreign born women

Dependent variable	**Sample size**	**Independent variable**	**Test Statistic**	**95% Confidence interval**	***P* value**
Ever have Pap	269	PCP	OR = 12.17, df=1	4.55, 32.53	.000
Pap this year	245	Education: at least some training beyond high school such as vocational education, an associate's degree, or some college	OR = 4.02, df=1	1.19, 13.54	.03
	245	Education: four years of college or more	OR =4.29, df=1	1.26. 14.55	.02
	245	Age	OR=96, df= 1	.94, .98	.001
Age first Pap	191	Age	*t* =4.31, df=1		.000

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