

Health Insurance

Introduction

Insurance status has been implicated as a contributing factor to disparities in breast cancer outcomes. Several studies have reported a correlation between lack of insurance and lower rates of screening, higher risks of advanced stage at diagnosis, lower likelihood of receiving recommended treatment, and lower survival.

The U.S. health care delivery system has undergone widespread changes that have great impact on the medically underserved. While the insurance industry and government public programs provide some access to cancer care services for some newly diagnosed Californians, many people remain untreated. The extensive literature on health coverage assesses how insurance status – a predictor of access and quality of care – impacts breast cancer outcomes.

Background/ Definitions

Health insurance is an important indicator of access and quality of care, yet there is an uneven distribution of coverage across California's (and the nation's) population. California's uninsured rate has persistently exceeded the national average.¹ In 2004, approximately 6.5 million California children and adults under age 65 went without health insurance, representing slightly more than 20 percent of the non-elderly population (ages 0–64 years).² For women, the numbers in California are similar, with 21 percent of women lacking health insurance.

Among those with health insurance, there are several main sources, each with potential differences in access and quality of care. For coverage offered by public programs, Medi-Cal

and Medicare are the main sources. Generally, eligibility for Medi-Cal includes adults under age 65 who have family incomes below 200 percent of the Federal Poverty Level (FPL). Legal residents and citizens who are 65 or older and disabled persons younger than 65 are eligible for Medicare coverage. Private insurance is obtained primarily through employment-based coverage or self-purchase. While employment-based insurance accounts for more than half of the state's non-elderly medical coverage, it is not equally distributed among the state's diverse ethnic populations and has been steadily declining. While workers in businesses with fewer than 10 employees are most likely to be uninsured, 20 percent of California's uninsured work in businesses with more than 500 employees. Employment-based health insurance is much less prevalent among young adults (ages 18–34) and among working families earning less than \$25,000 per year than among adults ages 35–64 and families with higher incomes.²

Some population groups are more acutely disadvantaged for health coverage. According to the 2005 California Health Interview Survey (CHIS) data, the distribution of health coverage and insurance type varies for women ages 18 and older by age group, race/ethnicity, family income, employment status and immigration status (Table 1). A significant proportion of non-elderly women lack health insurance and Hispanics are nearly twice as likely as any other racial/ethnic group to be uninsured. Immigrants, particularly non-citizens (35.5%), are much more likely to be uninsured. Even among women who have health insurance, the distribution in type of insurance varies by age, race/ethnicity, family income, employment status and immigration status. Women who are young, American Indian/ Alaskan

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Native, poor, or immigrants are more likely to be covered by Medi-Cal whereas employment-based coverage is most common among White and Asian / Pacific Islander women, wealthier women, and U.S. citizens. It is important to make these

distinctions in type of insurance since they may influence access as well as quality of care.

Table 1. Current Health Insurance Coverage (%) by Selected Demographic Factors, Women ages 18 and older, California, 2005*

	Uninsured	Medicare	Medi-Cal	Employer-based Coverage	Privately-Insured	Other Public
Age Group						
18–24	22.4%	.5%	22.2%	40.4%	10.5%	3.1%
25–39	17.3%	.5%	14.6%	60.4%	5.5%	1.6%
40–64	13.3%	3.5%	7.6%	66.5%	7.4%	1.7%
≥ 65	0.8%	94.8%	0.8%	2.6%	0.8%	<.01%
Race/ Ethnicity						
African American	11.5%	17.5%	18.7%	45.6%	3.3%	3.0%
American Indian/ Alaska Native	13.0%	16.9%	23.7%	41.8%	2.3%	2.0%
Asian American/ Pacific Islander	14.1%	15.1%	7.6%	55.1%	7.1%	1.7%
Hispanic/Latina	27.7%	7.4%	19.4%	39.9%	2.8%	2.6%
White	7.0%	22.5%	5.2%	56.1%	8.1%	0.9%
Other Single/ Multiple Race	13.1%	15.1%	15.2%	51.3%	4.3%	*1.0%
Family Income (percent of Federal Poverty Level[§] (FPL))						
0–99% FPL	28.6%	17.4%	37.9%	11.0	2.4%	2.5%
100–199% FPL	24.0%	23.7%	16.6%	28.2%	4.5%	2.8%
200–299% FPL	12.9%	25.4%	6.2%	46.9%	6.3%	2.3%
≥ 300% FPL	5.8%	12.6%	1.5%	71.5%	7.8%	0.7%
Current Employment Status						
Full-time (≥ 21 hrs/week)	12.2%	2.2%	6.3%	71.6%	5.9%	1.7%

Identifying Gaps in Breast Cancer Research

Part-time (≤ 20 hrs/ week)	15.5%	9.4%	11.6%	49.6%	12.2%	1.2%
Employed, not at work last week	17.0% [†]	4% [†]	4.3% [†]	61.7%	11.4% [†]	2.2% [†]
Unemployed & looking for work	32.8%	2.7%	27.8%	26.0%	7.3%	3.4%
Unemployed & not looking for work	13.1%	36.1%	13.1%	31.0%	5.3%	1.4%

Citizenship & Immigration Status

U.S. born citizen	8.3%	20%	8.3%	55%	6.9%	1.3%
Naturalized citizen	13.6%	18.7%	7.6%	52.6%	5.9%	1.6%
Non-citizen	35.5%	3.6%	21.8%	32.5%	3.7%	2.8%

* Source: 2005 California Health Interview Survey (CHIS).

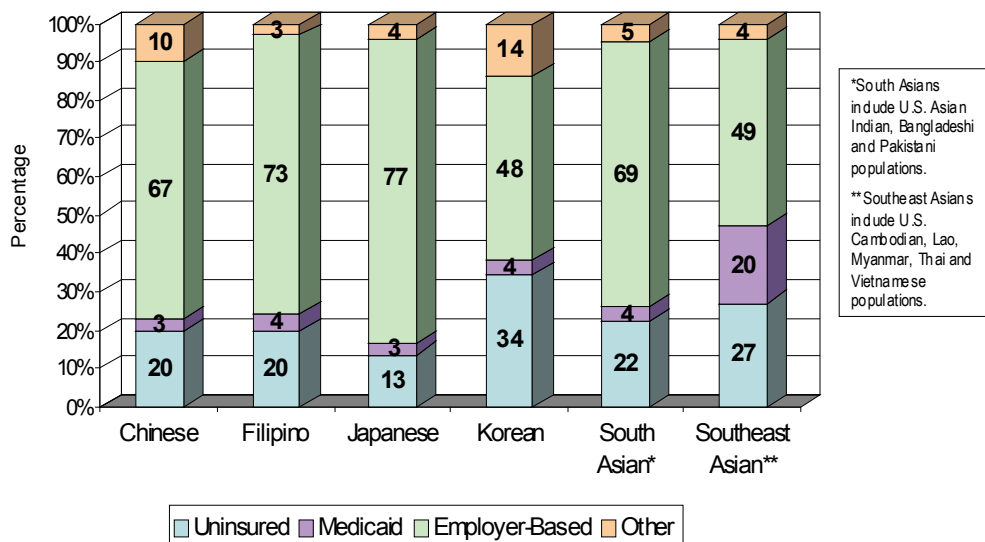
[†] Statistically unstable; estimate based on sample size.

[§] Federal Poverty Level was \$16,090 for a family of three in 2005.

Note: Rows may not total 100% due to rounding.

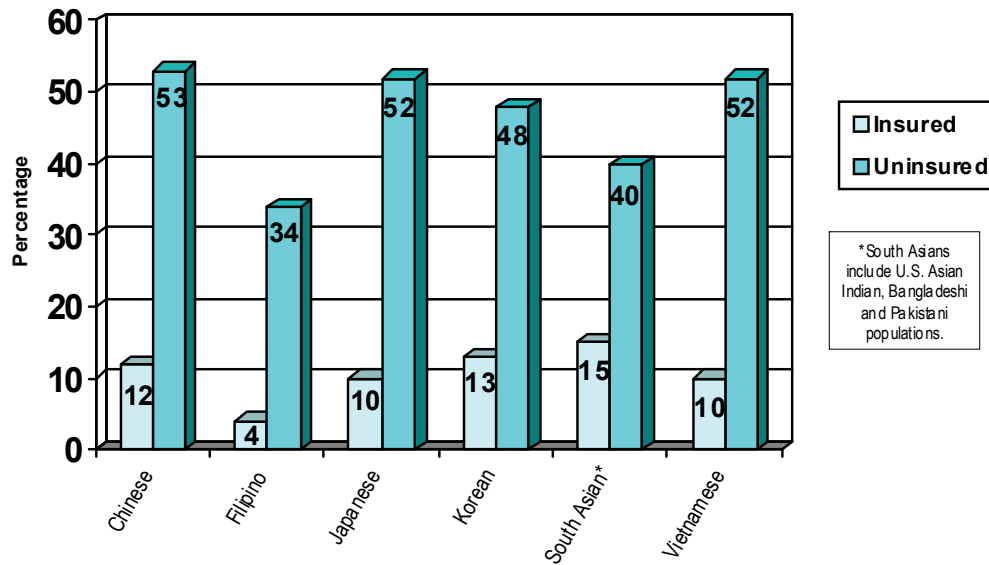
Disaggregation of national data for Asian American populations reveals marked differences between different Asian ethnic groups in insurance status and rates (Figure 1), as well as access to a usual source of care (Figure 2).³

Figure 1. Health Care Insurance Status for Selected U.S. Asian Populations, 1997*



* Adapted from Brown et al.³

Figure 2. No Usual Source of Care for Insured and Uninsured Selected U.S. Asian Populations, Ages 0-64,



* Adapted from Brown et al.³

While the aggregate (federal) uninsured rate for all Asians or Pacific Islanders in 1997 was 20.7 percent, the rate for Korean Americans (34 percent) nearly equaled that of the U.S. Hispanic population (34.2 percent) during that same year.⁴ Thus, aggregate federal and state population health (and other) data may not accurately reflect the health status reality of individual population groups

This review will examine the impact of health insurance on the following four areas: 1) receiving screening for breast cancer; 2) being diagnosed with breast cancer, 3) undergoing treatment for breast cancer, and 4) dying from breast cancer. Finally, we will review existing national and state initiatives aimed at addressing the insurance barriers to breast cancer screening and treatment. We will also make specific policy recommendations based on this review of the literature.

Review of Health Insurance Literature

Screening

Screening practices are critical for breast cancer because they can heavily impact the stage of diagnosis and, subsequently, treatment and survival. Numerous barriers to cancer screening have been well documented. In this review, we will focus on three: 1) lack of health insurance; 2) absence of usual source of care; and 3) cost of screening.

Health Insurance

Health insurance has been repeatedly identified as a strong predictor of breast cancer screening.⁵⁻¹¹ A recent analysis of the Behavioral Risk Factor Surveillance System (BRFSS) from 1996–2000 suggests that those without insurance are 50 percent as likely to have undergone mammogram screening after controlling for age, education, urban location, and health status. To put this in further perspective, roughly 35 percent of the

nation's African American women and Hispanics/Latinas without health insurance were predicted to undergo mammography screening, compared to close to 60 percent of those with Medicaid.¹¹ Specifically in California, 64 percent of insured women versus 28 percent of uninsured women over age 40 reported having a mammogram in the preceding year.¹² Population-based cross-sectional studies using self-reported information have shown that lack of insurance is a critical structural barrier^{8, 13} for immigrant¹⁴ and Hispanic/Latina women across immigration status.¹⁵ These findings were replicated in smaller studies with specific racial/ethnic groups, including Asian Americans,¹⁶⁻¹⁹ Pacific Islanders,^{20, 21} and other minority groups.²² The overwhelming literature supports health insurance as a strong determinant of screening utilization.

While health coverage is generally thought to be reflective of socioeconomic status (SES), several studies examining insurance while adjusting for sociodemographic variables have suggested that health coverage may also be an independent predictor of utilization of screening services.^{11, 14, 15} This independent association between insurance status and screening utilization has been repeatedly shown in studies across racial/ethnic groups.^{14, 15, 23-26} These findings indicate that while health coverage is strongly associated with socioeconomic status and race/ethnicity, it can also be a structural barrier that independently influences screening practices.

The findings from studies of screening practices underscore the need for continued efforts to ensure that the medically underserved have adequate access to screening services, especially those who are un- or underinsured. That this strategy can be effective has been confirmed by several real-world

examples. A meta-analysis of “access enhancing” strategies suggests mammogram utilization can be increased by 20 percent,²⁷ and data from the National Breast and Cervical Cancer Early Detection Program (NBCCEDP), which provides federal screening support for mammograms, indicate that as many as one-third of the women utilizing the program had never had a mammogram previously.^{28, 29} Unfortunately, current funding levels for this program only allowed 12–14 percent of eligible women to undergo testing between 2002 and 2003.³⁰

Usual Source of Care

While providing insurance coverage for screening services is likely a necessary condition for achieving high screening rates, it is probably not sufficient. As we contemplate policy options, we should also emphasize the importance of a patient having one provider or one health center that serves as her primary source for health care. Several studies have clearly shown that even after controlling for insurance status and other sociodemographic factors, those who identified some usual source of care were two to six times more likely to have undergone a screening mammogram.³¹⁻³³ In many of these studies, having a usual source of care is more important than insurance status. For example, in one study, Hispanics/Latinas with Medicaid were twice as likely to have had a mammogram than those without insurance, but those who identified a usual source of care were over six times as likely to have had a mammogram.³³ Other studies have also shown that especially among low-income women, having a usual source of care is more important than insurance.³⁴ Finally, data from the Medical Expenditure Panel Survey suggests that even among the insured, those enrolled in a more integrated health delivery system were more likely

to undergo mammogram screening and that this finding may be most pronounced for ethnic minorities. In this study, Hispanic/Latina patients enrolled in a Health Maintenance Organization (HMO) were three times as likely to have had a mammogram as were other Hispanic/Latina patients, after adjusting for age, income, education and health status.³⁵

Cost of Screening

Finally, while providing coverage for screening and ensuring a connection with a usual source of care are critical; these services should also be provided with a minimal financial burden on the patient. The literature shows that cost is a perceived barrier to screening mammography. Women who are uninsured or receive public assistance are less likely to utilize screening services if they believe that they have to pay out-of-pocket.³⁶ In the recent analysis of the BRFSS, the authors found that those who cited medical cost as a barrier to screening were 30–40 percent less likely to undergo mammogram screening, compared to those who did not cite cost as a barrier. This finding held for all racial and ethnic groups.¹¹

Limitations

There are some common limitations in many of the existing studies. Health insurance coverage was often evaluated as a dichotomous variable, with little expansion of the type of coverage (e.g. private vs. public programs). Furthermore, these studies were of cross-sectional design, often based on self-reported practices. The use of telephone-based surveys or convenience sampling is prone to selection or participation bias, with overrepresentation of groups of a certain ethnicity, nativity, language proficiency, and socioeconomic status. Self-reported responses are also subject to

recall and social acceptability bias. Widespread campaigns emphasizing the importance of screening, particularly in subpopulations, may often produce a tendency for the respondents to provide a more socially acceptable answer.¹⁵ This may be particularly true in minority populations who have been reported to have over-reporting rates as high as 25 percent.^{37, 38}

Although there are potential biases resulting from study design issues, findings have still been fairly convincing in linking lack of health coverage and lack of a usual source of care with failure to utilize screening services. Despite these clear barriers, mammography screening rates for women ages 40–64 years have continued to improve, with close to 60–65 percent of women of diverse racial and ethnic backgrounds reporting having had an appropriate screening mammogram.¹¹ On the positive side, this indicates the great potential to substantially boost screening rates for ethnic and racial minorities who are more likely to be uninsured and without a usual source of care. On the negative side, it is concerning that despite similar rates of screening, racial and ethnic minorities are still far more likely to present with advanced stages of breast cancer.³⁹

Diagnosis

We have established that those without insurance or usual source of care are less likely to undergo screening. This section covers the potential implications of this. That is, does lack of screening lead to increased rates of late stage – and, hence, less curable – breast cancer? Additionally, is there a link between insurance status and stage at diagnosis? Finally, we will explore mechanisms independent of screening that may lead to later stage of diagnosis among the uninsured.

With regard to the issue of screening and stage at diagnosis, there is evidence from large insurance databases (including over 1.5 million women over age 50) that those without screening mammograms are over twice as likely to present with late stage of disease.⁴⁰ In addition, data from the NBCCEDP suggest that on initial screening of this uninsured cohort, many of whom had not had previous mammograms, only 40 percent of the screened cancers were stage I disease. On subsequent screenings, 76 percent of invasive cancers were stage I disease.²⁸ Although not definitive proof, this suggests that providing access to regular screening for this uninsured cohort results in cancers being detected at an earlier and more curable stage of disease. This association between screening rates and stage of diagnosis has been observed by others.^{41, 42, 42-44}

Since insurance status is related to screening rates and screening rates are associated with stage at diagnosis, it should come as no surprise that insurance status is also associated with stage at diagnosis. In an analysis of nearly 10,000 patients with breast cancer in the Florida tumor registry, patients without insurance were 50 percent more likely to present with late-stage disease, compared

with those who had private insurance, after controlling for age, education, income, race, and co-morbidities.⁴⁵ Interestingly, in this same study, those with Medicaid were 87 percent more likely to present with late stage disease compared with privately insured patients. While this suggests that factors other than insurance are at play, caution should be used when looking at single-point-in-time measurements of Medicaid status. The reason is that patients may be enrolled in Medicaid concurrent with their cancer diagnosis. This is suggested by an analysis of the Medi-Cal enrollment files, where nearly 20 percent of women on Medi-Cal diagnosed with breast cancer did not have Medi-Cal benefits in the year prior to their diagnosis. In addition, this affected the likelihood of presenting with late-stage disease, which was reduced by over 40 percent when only those patients enrolled in Medicaid prior to their diagnosis were studied.⁴⁶

While lack of insurance almost certainly leads to lower levels of screening and later stages of diagnosis, one should not assume that the link between insurance status and stage at diagnosis is completely mediated through screening. Just because a patient is screened does not mean that she will necessarily be diagnosed in a timely fashion. First a radiologist must recognize that an abnormality exists, then a patient must be contacted for further evaluation, finally the patient must be able to make and keep the follow-up appointments. Data from the Henry Ford Health system in Detroit suggest that close to 20 percent of their patients with abnormal mammograms had inadequate follow-up.⁴⁷ In addition, data from the University of California, San Francisco (UCSF) Medical Center suggest longer time from an abnormal mammogram to diagnosis for minority populations.⁴⁸ One can imagine that those without

insurance and without a usual source of care are more likely to have difficulty arranging appropriate follow-up. Efforts to decrease death rates from breast cancer must ensure that every link in the chain of care is strong. In this case, this means that mammograms need to be read by trained breast radiologists, that appropriate systems need to be in place to ensure that patients are contacted about abnormal results, and that patients need to have timely follow-up.

Treatment

One of the final links in the chain is treatment. Two studies from Florida suggest that the uninsured are less likely to receive breast conservation surgery, compared to those who are privately insured.^{49, 50} In the study by Roetzheim, et al., uninsured patients were 30 percent less likely to undergo breast conservation, compared to privately-insured patients, after controlling for age, co-morbidities, stage, and ecologic measures of income and education.⁴⁹ In terms of other breast cancer treatments, Bickell et al., in a study of 677 women in six New York City hospitals, found that among those patients with greater than stage IA tumors, 49 percent of those with health insurance – versus 24 percent of those without – were referred to a medical oncologist.⁵¹ In this same study, those who were not referred to a medical oncologist were five times as likely to have under-use of appropriate radiotherapy, chemotherapy, or hormonal therapy, after adjusting for age, race, co-morbidities, and stage. In contrast, a small number of studies found no association between insurance coverage and treatment. One study found no significant relationship between insurance type and treatment after adjusting for hospital type.⁵² Similarly, Parviz et al. found that there was no influence of patient age, race, surgeon, or insurance status on

the rate of mastectomy among medically indigent patients.⁵³

Overall, the literature on the link between health insurance and treatment is more limited and somewhat more contradictory than that for screening and diagnosis. However, given the expansion of treatments for early-stage breast cancers using very effective but also very expensive drugs such as trastuzumab (Herceptin), letrozole, and anastrozole, it is very likely that those without the means to pay will find it increasingly difficult to find ways to obtain such care.

Survival

For women with breast cancer, early diagnosis and optimal treatment may greatly enhance survival. As reviewed above, the current literature suggests that access to health insurance promotes screening, earlier diagnosis, and, perhaps, more appropriate treatment, subsequently influencing survival. However, few studies exist on the impact of health coverage on cancer survival. Investigators using population-based cancer registries in several states to examine the relationship between health insurance coverage and survival rates report an increased risk for death among uninsured and Medicaid patients, compared to privately insured patients, after adjusting for stage of diagnosis.^{54, 55} Among late-stage patients, Bradley et al. found that Medicaid enrollees enjoyed a two-fold enhanced survival rate for the eight-year study period over non-Medicaid enrollees. However, the study was severely limited by the investigators' inability to state whether non-Medicaid enrollees were uninsured or privately insured.⁵⁶ Previously described work in Florida by Roetzheim and colleagues suggests that those without insurance had a 30 percent increase in the

hazard of death compared to those with private insurance. Interestingly, this difference disappears completely when stage at diagnosis is controlled for, suggesting that the increased death rate is indeed being mediated by advanced stage of diagnosis.⁴⁹

A significant limitation in many of the survival studies is the lack of co-morbidity data. Because co-morbidity is often highly associated with economically disadvantaged patients and lack of insurance, it could potentially confound the relationship between insurance status and survival. Indeed, studies focusing on racial differences in survival suggest that among breast cancer patients, competing co-morbidities such as diabetes and hypertension are a more prevalent cause of death than breast cancer.⁵⁷ Disparities in survival may also be partly explained by lead-time bias, whereby certain groups appear to have better survival because of their earlier diagnosis (i.e., with a longer lead-time). Another explanation is length-time bias, in which higher screening rates among privately-insured patients may lead to detection of cancers that spread more slowly and are less likely to result in earlier death. Survival studies are prone to these two potential biases, making them difficult to evaluate. Unfortunately, there is no information in the literature about the effect that these biases may have on reported risk estimates.

In summary, disparities in survival across insurance groups are not well documented and are limited by the factors identified above. However the available data suggest that there is a link between insurance coverage and cancer survival that is largely mediated by advanced stage of diagnosis among the uninsured.

Current Policy Initiatives NBCCEDP and CDP: EWC

Overview

The National Breast and Cervical Cancer Early Detection Program (NBCCEDP) is a federal program, administered by the Center for Disease Control (CDC), which provides grant money to states to provide screening services for breast and cervical cancer. States are asked to provide \$1.00 for every \$3.00 in federal grant funding. The program was authorized in 1990 as part of the Breast and Cervical Cancer Mortality Prevention Act (PL 101-354). California implemented the program through the Cancer Detection Programs: Every Woman Counts (CDP:EWC) initiative. This initiative is funded through a grant from the CDC, through 50 percent of the revenues from the tobacco tax for breast cancer control, and from funds from Proposition 99.⁵⁸ The following individuals are eligible for breast cancer screening under the program in California:

- Women 40 and older who live in California
- Women with a family income below 200 percent of the Federal Poverty Line
- Women without health insurance or who have a co-payment and deductible that they cannot afford

Screening Data

Between 2001 and 2005, 315,000 women received a mammogram through the CDP:EWC in California. Of these, roughly equal proportions were provided to those between 40–49 and those 50–64. In California, Hispanics were the most represented group in the program, representing 67 percent of those who were provided

mammograms, versus 10 percent for whites, 14 percent for Asian/Pacific Islanders, and 3 percent for African Americans.⁵⁹ During that same time period, 1,887 breast cancers were detected.

Unfortunately, while substantial progress has been made with this program, only a fraction of those eligible for screening are actually being screened. National data by racial and ethnic group as well as

the dominant barrier to providing screening to a larger number of eligibles, other chapters in this report examine issues of culture (Section II, Chapter D) and social environment (Section III), which may explain the lower screening rate for certain populations.

Table 2. Number of individuals eligible for screening and number and percent of eligible screened for the NBCCEDP 2002-2003 (2005-2006 for California)

Race/Ethnicity	Number Eligible (thousands)	Number Screened (thousands)	Percent of Eligibles Screened
Total*	4,007	529	13.2%
White	1,972	221	11.2%
African American	714	74	10.4%
Asian/Pacific Islander	221	31	14%
Hispanic	1,016	166	16.3%
Total: California [†]	1,236	167	13.5%

* From Tangka et al.³⁰

[†] California Department of Health Services, Cancer Detection Section⁶⁰

total population data for California is summarized below in Table 2.

The small size of the fraction of those eligible being screened mainly has to do with current funding levels for the program. Actual federal funding for this program in fiscal year 2006 was \$201.2 million. Using mean cost estimates derived by Mansley and colleagues of \$290 per woman served, total state and federal costs for this program would have to total \$1.2 billion to provide screening for all those eligible.⁶¹ For California alone, the cost would be close to \$360 million per year, which is obviously above the total federal allocation. While funding is certainly

Screening Efficiency

Given the limited resources available for screening this population, it is important to examine how efficient screening is under the NBCCEDP. While there are numerous measures of efficiency, we will look at three: the positive predictive value of an abnormal mammogram (percentage of abnormal mammograms that lead to a cancer diagnosis); the recall rate (those in whom further workup is recommended); and the number of cancers detected per 1,000 screening mammograms. We will use comparisons among different groups in the NBCCEDP and between the NBCCEDP and the UK National Health Service Breast Screening Program (NHSBSP) to

provide some relative perspective.

In terms of the positive predictive value, these differed by race and ethnicity in the United States. Examining only patients with abnormal *subsequent* mammograms, the positive predictive value of an abnormal mammogram was 5.8 percent for whites, 6.1 percent for African Americans and only 2.8 percent for Hispanics.⁶² This suggests that perhaps for Hispanics, the largest ethnic group served by the California program, efforts to improve efficiency of screening can be undertaken. We will discuss this further below. For recall, the rate for those undergoing subsequent screening mammograms is 6.8 per 100 screens in the NBCCEDP, versus 3.6 in the UK. In terms of cancers detected, the rate for those undergoing subsequent screening mammograms was 3.4 per 1,000 mammograms in the NBCCEDP, versus 5.4 in the UK NHSBSP program.⁶³ In the UK, fewer patients are recalled, yet more cancers are diagnosed. We will discuss below lessons that can be learned from the UK that may be applicable for the NBCCEDP.

Treatment Provisions: The BCCPTA

In 2000, President Clinton signed the Breast and Cervical Cancer Prevention and Treatment Act into law (PL 106-354). California passed implementing legislation in 2001 and began the program in January 2002. Under the federal program, all individuals who are eligible for and receive a diagnosis of breast or cervical cancer under the NBCCEDP are eligible for treatment of their cancer through Medicaid. In addition, California has expanded the program to include eligible individuals who received their diagnosis outside of the NBCCEDP program, as long as their diagnosis and eligibility are confirmed by a

qualified NBCCEDP provider. In addition, in California, individuals under age 65 without satisfactory immigration status are eligible, as well as men and those individuals with insurance whose premiums, deductibles, and co-payments exceed \$750 and who have income under 200 percent of the poverty level.

Additional Services: WISEWOMAN

The Well Integrated Screening and Evaluation for Women across the Nation (WISEWOMAN) is a federally-funded demonstration project aimed at Latina women, age 40–64, in California who are eligible for the CDP:EWC program. This project is currently in four pilot clinic sites and aims to provide evaluation, education, and referral regarding cardiac risk factors.⁶⁴ As mentioned previously, efforts to decrease the survival disparity of women diagnosed with breast cancer will also have to focus on the competing co-morbid conditions which contribute to mortality differences.

Conclusions and Future Directions

With the limitations and caveats provided in this paper, the bulk of the evidence suggests that health insurance increases breast cancer screening rates, which, in turn, leads to diagnosis of breast cancer at an earlier, more curable, stage of disease and fewer deaths from breast cancer. Fortunately, members of the CBCRP's Strategy Team are able to examine and build upon well-established federal/state programs designed to provide screening, diagnosis, and treatment of breast cancer for the uninsured and underinsured population of California. Our policy recommendations, therefore, suggest that we build upon the knowledge that has been gleaned from these programs and fill the gaps in knowledge

through targeted research initiatives. Our specific recommendations for the Strategy Team are as follows:

- **Work closely with State officials from the Department of Health Services Cancer Detection Section to identify current gaps in the CDP:EWC.**
 - They should be asked to provide a detailed briefing to the entire Strategy Team or to the appropriate subcommittees regarding initiatives (outside of substantial increases in funding) that they believe would more effectively serve the eligible population.
- **Improve the efficiency of screening programs.** In an ideal world, we would ask that the NBCCEDP be fully funded to provide screening for all eligible individuals. While this should remain a goal, the likelihood of such substantial funding increases in the current Federal budget environment is low. Therefore, we must find a way to provide more mammograms under current funding levels.
 - **Improve the quality of mammograms provided.** In practice, this means decreasing the recall rates, while at the same time increasing the number of cancers detected per abnormal mammogram. In the UK, this is partly accomplished through stringent certification guidelines and continued feedback for mammogram readers. These same initiatives could also be applied to the Medi-Cal program.
- **Consider a pilot project that restricts the reading of mammograms in a region or county only to those mammographers who read over 1,000 (or other appropriate number) per year.**
- **Provide constant feedback to all mammographers who read for the program regarding their recall rates and their cancer detection rates compared to their peers (average or upper 10 percent of their peers).**
- **Consider decreasing the screening frequency from a yearly to an every-other-year basis.** This approach should be explored with caution, given that it could have clinical consequences. The U.S. Preventive Task Force (USPSTF) recommends screening mammography, with or without clinical breast examination, every 1–2 years for women age 40 and older, although there is evidence that 12-month intervals may be better than 24 months.⁶⁵ Thus, decreasing the frequency of screening should be tested to determine if subsequent mammogram follow-up rates decreased substantially and whether this had an effect on subsequent incidence and stage of breast cancer, compared to yearly mammograms.
- **Focus efforts on potentially under-screened populations.**

- California data suggest that only 3 percent of the population screened in the CDP:EWC program are African American. Is this reflective of their proportion of the eligible population or are they underrepresented? If so, do we know why? If not, research initiatives should be aimed at finding out why.
- **Examine strength of patient-provider relationships under the CDP:EWC and Medi-Cal.**
 - As discussed previously, having an identified usual source of care may be more important than insurance status for predicting screening rates.
 - The CDP:EWC has a network of physicians and health care providers that coordinate screening and arrange for diagnostic and treatment services.
 - Do patients view these physicians as a usual source of care? If not, what can be done to better strengthen that relationship?
 - What data do we have for the Medi-Cal program regarding usual source of care? Should efforts be put in place to improve and strengthen those relationships?
- **Evaluate data on breast cancer diagnosis under the CDP:EWC and Medi-Cal.**
 - What percentage of patients with abnormal mammograms under the CDP:EWC and Medi-Cal go on to receive follow-up diagnostic tests?
 - What is the time lag between abnormal mammogram and diagnosis?
 - What are the reasons for lack of follow-up and increased time lag? If not known, then this could be an area of research focus.
- **Evaluate data on treatment provided to those diagnosed under the CDP:EWC.**
 - What percentage of patients diagnosed with breast cancer under the CDP:EWC actually receive treatment under Medi-Cal?
 - What accounts for those who do not undergo treatment? If not known, then this also could be an area of research focus.
- **Consider funding additional pilot projects aimed at providing treatment of co-morbidities identified in women screened under the CDP:EWC program.**
 - Patients could be screened for high blood pressure, diabetes, and obesity while undergoing breast cancer screening. Funding for treatment (including, as an example, diet and exercise interventions with women having a body surface area of over 30) could be provided as part of the pilot project.

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