Cancer Screening in California:

Findings from the 2001 California Health Interview Survey

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UCLA CENTER FOR HEALTH POLICY RESEARCH

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The California Health Interview Survey (CHIS) is a collaboration of the UCLA Center for Health Policy Research, the California Department of Health Services, and the Public Health Institute. Funding for CHIS 2001 was provided by the California Department of Health Services, The California Endowment, the National Cancer Institute, the California Children and Families Commission, the Centers for Disease Control and Prevention (CDC), and the Indian Health Service. For more information on CHIS, visit *www.chis.ucla.edu.*

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PREFACE

Ralph Coates, PhD, and Nancy Breen, PhD

Ralph Coates is Associate Director for Science in the Division of Cancer Prevention and Control at the Centers for Disease Control and Prevention and CDC project officer for CHIS.

Nancy Breen is an Economist in the Division of Cancer Control and Population Sciences at the National Cancer Institute and NCI project officer for CHIS.

The National Cancer Institute (NCI) and the Centers for Disease Control and Prevention (CDC) are jointly responsible for monitoring the cancer screening objectives of Healthy People 2000 and 2010. In this capacity, we collaborated on the Cancer Control Module to the 2000 National Health Interview Survey (NHIS). The NHIS is the premier source of data and estimates on health status and health care use for the United States (U.S.) population. In 1998, we learned that California, which has the largest and most diverse population in the nation, was launching a new survey modeled on the NHIS. We were delighted to have the opportunity to participate in this survey by fielding questions from the NHIS related to cancer control in the 2001 California Health Interview Survey (CHIS 2001). Now, cancer-related health status and health care use in California can be compared with national data. Further, CHIS 2001 provides estimates for the three largest racial and ethnic groups in each county (or for regions of sparsely-populated counties). It also provides estimates for racial and ethnic groups that constitute large proportions of the California population but are negligible proportions of the total U.S. population. Such data are especially attractive to CDC and NCI because they enhance national surveillance and provide a model for state surveillance.

When NCI and CDC became involved in this project, each organization had specific goals for the types of data they wanted. NCI's primary goal was to collect data on racial and ethnic groups for which findings from national surveys are too small to provide robust estimates. NCI was especially interested in data on American Indians, Alaska Natives, Asian-Americans, Native Hawaiians and other Pacific Islanders. CHIS 2001 was fielded in five languages and provides the first sample large enough to allow researchers to separately analyze and compare different Asian groups, including Chinese, Japanese, Filipinos, Koreans, and Cambodians. CHIS 2001 also provides the largest health survey sample ever of American Indians in both rural and urban settings.

CHIS data will allow NCI to conduct ecologic analysis at the county level. Finally, NCI wanted to ensure that the NHIS and CHIS estimates could be compared. To meet this goal, all of the CHIS 2001 questions—not just those related to cancer control—were reviewed. The only differences were where CHIS 2001 has updated or otherwise improved questions and these were reviewed again to make sure the results would still be comparable.

A major part of CDC's mission is to prevent disease and promote health through surveillance, public health research, and effective public health interventions and programs. CHIS contributes to each of these activities. It provides population-based information about the cancer-related risk factors, behaviors, and resources of California residents. It provides a rich source of information to better understand conditions that influence risk factors and cancer prevention and control activities. And, perhaps most importantly from CDC's perspective, it provides information to state and local public health, community groups, and health care providers that they can use to conduct needs assessments, plan programs, target interventions, and evaluate their efforts. CHIS's ability to provide information at the county level where community programs and interventions are actually implemented is particularly relevant. In addition, CHIS's wealth of data on specific racial and ethnic groups and other under-served populations will help address disparities among these populations.

CHIS is an important resource that can be linked to and complement other data sources that support cancer planning efforts, including the California Cancer Registry, the Behavioral Risk Factor Surveillance System, and other

California surveys and surveillance systems. We anticipate that this report will be only one of many ways in which CHIS will be used to support California's efforts to reduce the burden of cancer.

The Division of Cancer Control and Population Sciences at NCI and The Division of Cancer Prevention and Control (DCPC) at the Centers for Disease Control and Prevention (CDC) are pleased to have been able to support CHIS 2001. On behalf of our respective divisions we would like to express our appreciation to the CHIS Team at the University of California, Los Angeles, the Public Health Institute and the California Department of Health Services for the fine survey they developed, fielded and are now making available to users. This report examines cancer screening in California adults based on data from CHIS 2001, the largest state-level health survey in the nation. Chapters on effective screening tests for breast, cervical, and colorectal cancers present disparities in use by race and ethnicity as well as by family income, insurance status, usual source of care, and proficiency in English. Local-level screening rates for California counties and county groups are also presented and some policy implications of the findings are discussed. The California Endowment is to be commended for supporting and disseminating this report on cancer screening.

We at NCI and CDC look forward to subsequent data from CHIS to trace cancer control services in California over time. We hope that California's daring move to improve the information available on health status and health care service use will encourage other states to focus additional resources on developing similar data collection systems.

EXECUTIVE SUMMARY

summary

Despite significant decreases in the rates of many common cancers since 1990 and declining mortality rates, cancer remains the nation's second leading cause of death, afflicting half of all men and one-third of all women in the United States during their lifetimes.[1] In California, it is estimated that 133,000 new cases will be diagnosed and nearly 53,000 people will die from cancer in 2003, ranking it second only to heart disease.[2]

Early detection and diagnosis of cancer can save lives. Five-year relative survival rates for common cancers such as breast, prostate, colorectal, and cervical are above 90% if the cancer is discovered before it spreads to other parts of the body. After metastasis, survival rates drop to 34% for prostate cancer, 23% for breast cancer, 15% for cervical cancer, and 9% for colorectal cancer. Regular screening is the key to diagnosing these cancers at the early, more treatable stage.

This report examines cancer screening in California based on data from the 2001 California Health Interview Survey (CHIS 2001), the largest state-level health survey in the nation.

CERVICAL CANCER SCREENING

The benefits of the Pap test for cervical cancer are dramatic.[3] California's Pap test screening rate (86.2%) approaches the Healthy People 2010 goal of 90% screened. But certain segments of California's population still experience delayed screening and treatment, putting them at increased risk of dying unnecessarily from this preventable and curable (if detected early) cancer. In addition, people of color face a higher risk of developing cervical cancer, along with lower survival rates.[4,5]

Race, Ethnicity and Income

Asian women are five times as likely as white women to have never had a Pap test—22.8% vs. 4.5%. The proportion of Latinas who have never had a Pap test (9.8%) is also more than double that of white women. Asian and Native Hawaiian and Other Pacific Islander (NHOPI) women report the lowest three-year Pap test utilization (71.5% and 69.1%, respectively). Pap test utilization is significantly greater among higher-income women (89.1%) than among lower-income women (81.3%).

Race, Ethnicity and Insurance Status

California's uninsured women are significantly less likely to have received Pap tests within the previous three years than insured women. In particular, uninsured Asian women have an abysmally low Pap test rate (49.2%) compared to all other uninsured groups. Although nine out of 10 women with employment-based coverage have been screened for cervical cancer in the past three years, racial/ethnic disparities in screening rates exist: only 62.6% of NHOPI women, 81.4% of Asian women and 85.7% of other/single multiracial women have been screened during that time. Medi-Cal coverage appears to benefit Latinas, American Indian and Alaska Natives (AIANs) and African Americans: three-year screening rates are 92.1%, 91.4% and 90.3%.

1 American Cancer Society. Cancer Facts & Figures 2003. Atlanta, GA: American Cancer Society, Inc.; 2003.

2 American Cancer Society, California Division, and Public Health Institute, California Cancer Registry. California Cancer Facts and Figures 2003. Oakland, CA: American Cancer Society, California Division, September, 2002.

3 UC Davis Health System. (2001). Description of Cervical Cancer Stages and Treatments. Available at *http://www.ucdmc.ucdavis.edu/ucdhs/health/a-z/46CERVICALCANCER/doc46decriptionstages.html*.

4 Kwong SL, Perkins CI, Morris CR, Cohen R, Allen M, Schlag R, Wright WE. Cancer in California: 1988-1998. Sacramento, CA: California Department of Health Services, Cancer Surveillance Section, December, 2000.

5 Miller BA, Kolonel LN, Bernstein L, Young, Jr. JL, Swanson GM, West D, Key CR, Liff JM, Glover CS, Alexander GA, et al. (eds). *Racial/Ethnic Patterns of Cancer in the United States 1988-1992*, National Cancer Institute. NIH Pub. No. 96-4104. Bethesda, MD, 1996.

Race, Ethnicity and Usual Source of Care

Screening rates increase by as many as 17 percentage points if a woman has a usual source of care (88.5% vs. 71%). Among Asian women, those who have a usual source of care have much higher screening rates (75.8%) than women who have no usual source of care (44.5%).

English Proficiency

Limited English proficiency (LEP) poses a barrier to receipt of a Pap test. This barrier is most pronounced among Asian women: only 61.3% of Asian women with limited English proficiency report having a recent Pap test, compared with 74.5% of Asian women who speak English well.

Reasons for Not Being Screened

Among adult women, the top three reasons for not having a Pap test in the past three years are: 1) "putting it off"; 2) "haven't had problems"; and 3) "too expensive/no insurance." Among Asian women—the racial/ethnic group with the lowest three-year screening rate—"haven't had problems" and "didn't know needed the test" top the list.

MAMMOGRAPHY SCREENING FOR BREAST CANCER

Research has demonstrated the value of mammograms for early detection of breast cancer, and the value of mammogram screening for improving the likelihood of surviving breast cancer.[6,7] In California, 75.5% of women 40 and older report having a mammogram in the past two years—a rate that exceeds the Healthy People 2010 (HP2010) goal of 70%. But many groups in the state fall far short of the goal, including Asian and NHOPI women, women with low income, women with no insurance or with no usual source of care, and women with limited English proficiency.

Race, Ethnicity and Income

Mammography rates among Asians, AIANs, and Latinas are lower than among whites and African Americans. Women with incomes below 200% of the federal poverty level (FPL) have lower mammography rates than women with incomes at or above 200% FPL (69% vs. 78.8%). Among women with family incomes below 200% FPL, NHOPIs (58.7%), AIANs (61%) and Asians (63.2%) have very low screening rates, falling well short of the HP2010 goal.

Race, Ethnicity and Insurance Status

Only 50.2% of uninsured women ages 40-64 have had a mammogram in the past two years, making them significantly less likely to be screened than women covered by Medi-Cal (71.6%), women with employment-based coverage (78.8%), or those with privately purchased coverage (76.5%). Among uninsured women ages 40-64, Asians have the lowest screening rate (39.5%) and all groups have screening rates below 57%—far short of the goals set forth in HP2010.

Usual Source of Care

In California, women ages 40 and older who have a usual place to go for health care are much more likely to have received a mammogram in the past two years than women with no usual source of care (78.2% vs. 42.6%). Having a usual source of care significantly increases the likelihood of getting a mammogram for California women whether they are insured or uninsured.

6 Alexander FE, Anderson TJ, Brown HK, Forrest AP, Hepburn W, Kirkpatrick AE, et al. Fourteen years of follow-up from the Edinburgh randomised trial of breast-cancer screening. Lancet. 1999; 353(9168):1903-8

7 Tabar L, Vitak B, Chen HH, Yen MF, Duffy SW, Smith RA. Beyond randomized controlled trials: organized mammographic screening substantially reduces breast carcinoma mortality. Cancer. 2000; 91(9):1724-31.

English Proficiency

Women who report that they do not speak English well or do not speak English at all are less likely to be screened than women who speak English well (65.7% vs. 76.9%). This difference is most notable among Asian women: Only 58.1% of Asian women with limited English proficiency report having a recent mammogram, compared with 71.6% of Asian women who speak English well.

Reasons for Not Being Screened

One of the most common reasons California women report for not having a mammogram is that their doctor never told them they should have the test. Others include that the test is expensive or they don't have insurance, that they haven't had problems, that they have put off the test, or that the test is painful or embarrassing.

COLORECTAL CANCER SCREENING

When colorectal cancer (CRC) is detected early, there is a 90% five-year survival rate; the five-year survival rate for those with advanced disease is only 9%. CRC screening—the primary methods being fecal occult blood testing (FOBT), flexible sigmoidoscopy, and colonoscopy—decreases CRC mortality.[8,9] Unfortunately, the proportion of the population that receives screening is quite low. In California, 53.2% of adults ages 50 and older have received recent CRC screening. Women, Latinos, Asians, NHOPIs, those with low incomes, those with limited access to care, and those with language barriers are the least likely to have had a recent CRC screening test.

Gender, Race/Ethnicity and Income

More than 2.3 million California adults ages 50 and older (30%) report never having been screened for colorectal cancer. Among these adults, Latinos and Asians are at particular risk compared with other racial and ethnic groups. Women are less likely than men to have been recently screened (48.5% vs. 58.7%), a finding that persists across racial and ethnic groups. Rates of *recent* CRC screening also vary by race and ethnicity. Higher family income level is strongly associated with having a recent colorectal screening exam.

Race, Ethnicity and Insurance Status

Only one out of five uninsured California adults (19.7%) reports recent colorectal screening, compared with approximately half of those with Medi-Cal (46.2%) or employment-based insurance (51.4%). Among uninsured adults, Latinos (14.2%) are less likely to report recent screening than whites (21.2%) or African Americans (30.3%). Even among those with employment-based insurance, the type of insurance associated with the highest levels of screening, rates vary by race and ethnicity.

Usual Source of Care

In California, adults with a usual source of care are more than three times as likely to have had recent colorectal screening than those with no usual source of care (55.5% vs. 18.3%). The difference among Latino adults is particularly striking. Latinos with a usual source of care are nearly four times as likely to have received recent colorectal screening as Latinos with no usual source of care (40.8% vs. 11%).

English Proficiency

Only one-third of California adults who report that they do not speak English well or do not speak English at all have recently been screened for colorectal cancer, compared with more than half of those who speak English well (35.5% vs. 55.1%).

8 Hardcastle JD, Chamberlain JO, Robinson MH, et al. Randomised controlled trial of faecal-occult-blood screening for colorectal cancer. Lancet. 1996; 348(9040):1472-7.

9 Newcomb PA, Norfleet RG, Storer BE, et al. Screening sigmoidoscopy and colorectal cancer mortality. Journal of the National Cancer Institute. 1992; 84(20):1572-5.

Reasons for Not Being Screened

One of the most common reasons given for not undergoing CRC screening among Californians is the absence of any current health problems which underscores the need to emphasize prevention and early detection. This is mentioned most frequently by Asians and Latinos, the same groups that are screened least frequently. The state's women, who are screened less frequently for colorectal cancer than the state's men, most frequently mention "the doctor didn't tell me I needed it" as the reason they do not get screened.

PROSTATE CANCER SCREENING WITH PSA TEST

Prostate cancer screening with the PSA blood test, which remains controversial within the medical community, has not been universally adopted in California. Only 43% of men 50 and older report having a PSA test in the past year and 44.3% report that they have never had a PSA test. The most significant barriers to PSA screening in California include: family income below 200% of the federal poverty level; lack of insurance; Latino ethnicity, American Indian/Alaskan Native and Asian races; lack of a usual source of care; and being in the younger age group of 50-64 years.

Race, Ethnicity and Income

The 44.3% of men 50 and older who report never having been screened for prostate cancer range from approximately 40% of whites and African Americans to more than 50% of AIANs and more than 60% of Latinos and Asians. Men with family incomes below 200% of the federal poverty level are more than one third less likely to have been screened than men above that income level. Higher-risk African Americans are recommended to begin screening at age 45 rather than 50. The 45+ age group appears to have lower screening rates than the 50+ age group among African Americans regardless of income, suggesting that the rates in this sub-group between the ages 45 and 49 are very low.

Race, Ethnicity and Insurance Status

Among men ages 50-64, those with employment-based insurance are more than twice as likely to have a recent PSA test as uninsured men (40.3% vs. 17.1%). Medi-Cal recipients also show a lower rate of PSA screening (28.8%) than those with employment-based insurance. Among men with employment-based insurance, there are differences in screening by race and ethnicity. Latinos and Asians are much less likely to have been screened than whites.

Usual Source of Care

Californians with a usual source of care are nearly four times more likely to receive an annual PSA test than those without one (45.6% vs. 11.8%). Among the uninsured, men who have a usual source of care are more than *eight* times more likely to receive an annual PSA test than those without a usual source of care (26% vs. 3.9%). Even among the insured, having a usual source of care significantly increases screening rates for men by nearly tripling their rates of annual PSA testing (46.5% vs. 16.9%).

English Proficiency

Men who report that they speak English only, very well, or well are more than twice as likely to have received a PSA test in the past year as those who report that they do not speak English well or do not speak English at all (45.3% and 22.1%).

PSA Test Awareness

Among California men age 50 and older, one out of four (24.6%) report that they have never heard of a PSA test. More than a third of Asians (42.4%), Latinos (35.9%), and AIANs (34.6%) have never heard of a PSA test, compared with one out of five whites (20.4%). These racial and ethnic groups are also the least likely to have had a PSA test in the past year.

POLICY RECOMMENDATIONS

Policies should target raising the screening rates of Californians who have low-incomes, have no health insurance, who lack a regular place to get health care and who have difficulties in communicating in English. But culturally-tailored programs and policies are also warranted because racial and ethnic disparities in cancer screening persist—even for Californians who have higher incomes, have health insurance, have a regular source of care and who speak English well. To reduce the cancer burden in California we have the following recommendations:

- Educate people of the appropriate age and gender regarding the importance of cancer screening, with a particular focus on the fact that screening should be done in the *absence of any symptoms or problems.*
- Promote screening among immigrant communities, with a particular focus on Asians, NHOPIs, Latinos, AIANs and those who face English-language barriers.
- Support programs that raise awareness among health care providers of disparities in cancer screening and current recommendations for appropriate screening, with a particular focus on providers who serve the uninsured, low-income populations, those with no usual source of care, and those with limited English proficiency. In addition, health care providers must inform *healthy* patients of cancer screening recommendations that may be appropriate for them.
- Improve access to care and expand insurance coverage for receipt of cancer screening tests.
- Support exemplary programs such as *Every Woman Counts* (formerly called the Breast and Cervical Cancer Control Program and the Breast Cancer Early Detection Program). The California Department of Health Services administers *Every Woman Counts*, the largest public cancer screening program in the nation. These programs provide free screening for breast and cervical cancer to low-income women with no or limited health insurance. Development of programs for colorectal cancer awareness and screening modeled on the *Every Woman Counts* program could be particularly effective.

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Despite the important contributions of all these colleagues, any errors or omissions are the responsibility of the authors.

The authors are grateful for the generous support provided by The California Endowment. The California Endowment, a private, statewide health foundation, was established in 1996 to expand access to affordable, quality health care for underserved individuals and communities. The Endowment provides grants to organizations and institutions that directly benefit the health and well-being of the people of California.

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1. CANCER SCREENING IN CALIFORNIA: AN OVERVIEW

INTRODUCTION

Despite significant decreases in the rates of many common cancers since 1990, both in California and nationally, as well as declining mortality rates, cancer remains a serious health problem among adults.[10,11] It is the nation's second leading cause of death, with half of all men and one-third of all women in the United States developing cancer during their lifetimes. In addition, cancer imposes enormous costs on society. The National Institutes of Health estimates that in 2002, cancer cost the country $171.6 billion in direct and indirect costs ($60.9 billion in medical bills, $15.5 billion in lost productivity due to illness, and $95.2 billion in lost productivity due to premature death).[10] Moreover, each person who dies of cancer loses an estimated average of 15 years of life, making cancer the leading cause of death in terms of years of life lost.[12]

In California, it is estimated that 133,000 new cases will be diagnosed and nearly 53,000 people will die from cancer in 2003.[11] Approximately two of out of every five Californians will develop cancer in their lifetimes and one in five will die of the disease. Cancer is the state's second leading cause of death, accounting for 23% of all deaths; only heart disease kills more people. Although cancer incidence and mortality *rates* have been decreasing, the number of people with cancer and cancer-related deaths is increasing due to California's growing and aging population.[13]

Cancer is characterized by the uncontrolled growth of abnormal cells. If its spread is not stopped or controlled, the result is death. However, early detection and diagnosis of cancer can save lives. Indeed, the stage at which cancer is diagnosed is one of the strongest predictors of survival. Five-year relative survival rates for common cancers such as breast, prostate, colorectal, and cervical are above 90% if the cancer is discovered before it metastasizes, or spreads to other parts of the body.[11] However, once the cancer has spread to other parts of the body, survival rates drop to 34% for prostate cancer, 23% for breast cancer, 15% for cervical cancer, and 9% for colorectal cancer. Cancer screening can detect some cancers at an earlier stage. For example, there has been a shift to earlier-stage diagnosis for breast cancer that is believed to be related, at least in part, to successful efforts to improve breast cancer screening. Detection of pre-cancerous lesions in the cervix through screening may raise the survival rate for cervical cancer to over 95%. In addition, although there has been a decrease in the incidence of both early- and late-stage colorectal cancer, the decrease has been twice as large for late-stage colorectal cancer. [11]

This report examines cancer screening in California based on data from the 2001 California Health Interview Survey (CHIS 2001), the largest state-level health survey in the nation. We focus on the use of cancer screening tests among adults who have not been diagnosed with the site-specific cancer: Pap test for cervical cancer; mammography for breast cancer; fecal occult blood test (FOBT), colonoscopy, and/or sigmoidoscopy for colorectal cancer; and prostate specific antigen (PSA) test for prostate cancer. Currently, the U.S. Preventive Services Task Force (USPSTF), a group of health experts that reviews published research and makes recommendations about preventive health care, has recommendations for use of screening tests for cervical, breast, and colorectal cancer: Pap tests for women beginning within three years of onset of sexual activity or at age 21 (whichever comes first), and screening at least every three years until age 64 (for 65 and older, screening is advised only among symptomatic women and for those who have had

10 American Cancer Society. Cancer Facts & Figures 2003. Atlanta, GA: American Cancer Society, Inc.; 2003.

11 American Cancer Society, California Division, and Public Health Institute, California Cancer Registry. California Cancer Facts and Figures 2003. Oakland, CA: American Cancer Society, California Division, September, 2002.

12 Ries LAG, Eisner MP, Kosary CL, Hankey BF, Miller BA, Clegg L, Mariotto A, Fay MP, Feuer EF, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2000, National Cancer Institute. (2003). Bethesda, MD, *http://seer.cancer.gov/csr/1975_2000*.

13 Kwong SL, Perkins CI, Morris CR, Cohen R, Allen M, Wright WE. Cancer in California: 1988-1999. Sacramento, CA: California Department of Health Services, Cancer Surveillance Section, December, 2001.

recent abnormal results); a mammogram every one to two years for women age 40 and older; and colorectal cancer screening for men and women age 50 and older.[14,15,16]

Although the USPSTF currently does not recommend for or against routine PSA testing, the American Cancer Society recommends that health care providers discuss the potential risks and benefits of early detection and treatment of prostate cancer to aid informed decisions about testing and to offer screening to men starting at age 50 (age 45 for higher risk groups such as African-American men and men with at least two first-degree relatives with a history of prostate cancer). However, the ACS emphasizes that professionally guided decisions regarding PSA testing should be made on an individual basis following discussion of the potential risks and benefits.[10,17] Although it is still unclear whether the benefits of PSA testing outweigh the risks, the data presented in this report can serve as a baseline measure of PSA test use among California men.

We present the rates of cancer screening test use reported by adults in California in 2001 in four chapters, one for each cancer site. In each chapter, we begin by presenting screening rates by race and ethnicity and continue to focus on racial and ethnic disparities throughout. Next, we examine screening by family income, insurance status, usual source of care, and proficiency in English. Then, we report local-level screening rates for California counties and county groups. Finally, we discuss some policy implications of our findings. All comparative statements in this report reflect statistically significant differences ($p < 0.05$), unless otherwise noted.

14 U.S. Preventive Services Task Force. *Screening for Breast Cancer*. Recommendations and Rationale. February, 2002. Agency for Healthcare Research and Quality, Rockville, MD. *http://www.ahrq.gov/clinic/3rduspstf/breastcancer/brcanrr.htm.*

15 U.S. Preventive Services Task Force. *Screening for Colorectal Cancer: Recommendations and Rationale.* July, 2002. Originally in: Annals of Internal Medicine. 2002;137:129-31. Agency for Healthcare Research and Quality, Rockville, MD. *http://www.ahrq.gov/clinic/3rduspstf/colorectal/colorr.htm.*

16 U.S. Preventive Services Task Force. *Screening for Cervical Cancer*. AHRQ Publication No. 03-515A, January, 2003. Agency for Healthcare Research and Quality, Rockville, MD. *http://www.ahrq.gov/clinic/3rduspstf/cervicalcan/cervcanrr.htm.*

17 U.S. Preventive Services Task Force. *Screening for Prostate Cancer*. Recommendations and Rationale. December, 2002. Originally in: Annals of Internal Medicine. 2002;137:915-6. Agency for Healthcare Research and Quality, Rockville, MD. *http://www.ahrq.gov/clinic/3rduspstf/prostatescr/prostaterr.htm.*

2. CERVICAL CANCER SCREENING IN CALIFORNIA

INTRODUCTION

Cervical cancer is the second most common cancer among women worldwide. In California, an estimated 33,800 women were living with cervical cancer in 2002.[18] Although cervical cancer is almost entirely preventable due to the effectiveness of screening with the Pap test and follow-up treatment, 1,735 California women were newly diagnosed and 470 women died from this cancer in 2002.

Following national trends, California's cervical cancer rate has dropped by 75% since 1950, a decline associated with increased screening.[18] The benefits of early detection are dramatic: cervical cancer five-year survival rates could potentially be over 95% for diagnosis of pre-cancerous lesions (stage Ia), 80-90% for stage Ib, 60% for stage IIb, 40% for stage III, and 20% for stage IV.[19] With early detection, the outlook for survival is even more hopeful in light of recent findings from clinical trials, which indicate that new treatments could increase survival rates by 20-50%.[20] But, despite these encouraging trends, certain segments of California's population still experience delayed screening and treatment. As a result, these segments are at great risk of dying unnecessarily from this *preventable* disease that, if detected early, is *curable*.

Unlike most other cancers in California, people of color face a higher risk of developing cervical cancer, along with lower survival rates. In California, Latinas have the highest risk developing the disease, while African-American women are most likely to die from cervical cancer.[21] In addition, Asian women, particularly Vietnamese women, face an even greater risk because they have a high incidence of cervical cancer and appreciably lower screening rates than other women.[22] Because there has been no conclusive evidence suggesting that certain racial and ethnic groups are predisposed to the disease biologically, the disparities that do exist are largely attributed to delayed screening and treatment, underscoring the critical need for raising screening among these high-risk groups.

Pap tests remain the most common screening test for detecting cervical cancer in the United States and have long been regarded as cost-effective and accurate. At $20-$40 a test, the Pap test is sensitive enough that only one in 10 women falsely tests for abnormalities and about 20-45% of women falsely test for having no abnormalities. [23,24] Recently, there has also been some interest in implementing more widespread use of the human papillomavirus (HPV) detection test, given that HPV has been identified as a significant risk factor in developing cervical cancer. [25,26] The American Cancer Society, National Cancer Institute (NCI), and American College of Obstetricians and Gynecologists recommend yearly Pap tests for women beginning within three years of the onset of sexual activity or age 21 (whichever comes first). [27,28,29] The Centers for Disease Control and Prevention (CDC) and the U.S. Preventive Services Task Force (USPSTF) also recommend Pap tests after the onset of sexual activity, but repeated every *three* years.[30] In 2003, the USPSTF put forth new guidelines that recommend against "routinely screening women older

18 Perkins CI, Kwong SL, Morris CR, Cohen R, Allen M, Wright WE. Cancer in California, 2002. Sacramento, CA: California Department of Health Services, Cancer Surveillance Section, December, 2001.

19 UC Davis Health System. (2001). Description of Cervical Cancer Stages and Treatments. Available at: *http://www.ucdmc.ucdavis.edu/ucdhs/health/a-z/46CERVICALCANCER/doc46decriptionstages.html*

20 Josefson, D. Adding chemotherapy improves survival in cervical cancer. British Medical Journal. 1999 Mar 6; 318(7184): 623.

21 Kwong SL, Perkins CI, Morris CR, Cohen R, Allen M, Schlag R, Wright WE. Cancer in California: 1988-1998. Sacramento, CA: California Department of Health Services, Cancer Surveillance Section, December, 2000.

22 Miller BA, Kolonel LN, Bernstein L, Young, Jr. JL, Swanson GM, West D, Key CR, Liff JM, Glover CS, Alexander GA, et al. (eds). *Racial/Ethnic Patterns of Cancer in the United States 1988-1992*, National Cancer Institute. NIH Pub. No. 96-4104. Bethesda, MD, 1996.

23 Wright TC, et al. HPV DNA testing of self-collected vaginal samples compared with cytologic screening to detect cervical cancer. Journal of the American Medical Association 283(1):81-86 (January 5, 2000).

24 U.S. Preventive Services Task Force, *Guide to Clinical Preventive Services*: Second Edition (1996).

25 Solomon D, Schiffman M, Tarone R, for the ALTS Group, Comparisons of three management strategies for patients with atypical squamous cells of undetermined significance: baseline results from a randomized trial. Journal of the National Cancer Institute. 2001; 93:293-299.

26 Human papillomavirus testing for triage of women with cytologic evidence of low-grade squamous intraepithelial lesions: baseline data from a randomized trial. The Atypical Squamous Cells of Undetermined Significance/Low-Grade Squamous Intraepithelial Lesions Triage Study (ALTS) Group. Journal of the National Cancer Institute. 2000; 92(5): 397-402.

27 American Cancer Society CD, and Public Health Institute, California Cancer Registry. California Cancer Facts and Figures, 2001. Oakland, CA: American Cancer Society, California Division.

28 Breen N, Wagener DK, Brown ML, Davis WW, Ballard-Barbash R. Progress in cancer screening over a decade: results of cancer screening from 1987, 1992, and 1998 National Health Interview Surveys.

29 American College of Obstetricians and Gynecologists. Routine cancer screening. ACOG opinion, no. 185. Washington, D.C., 1997.

30 U.S. Preventive Services Task Force, *Guide to Clinical Preventive Services*: Second Edition (1996)

than age 65 for cervical cancer if they have had adequate recent screening with normal Pap smears and are not otherwise at high risk for cervical cancer.[31]

Healthy People 2010 cervical cancer screening goals are expressed as Pap tests within the past three years.[32] In addition, several benchmarks on screening report the three-year prevalence, notably the National Committee on Quality Assurance (NCQA), which develops HEDIS (the Health Plan Employer Data and Information Set) quality of care measures for health plans.[33] We therefore focus our discussion on racial/ethnic and geographic disparities using the *three-year Pap test screening rates*, though we initially report overall prevalence rates of *never had a Pap test* and *annual Pap test* by race and ethnicity. These rates are based on two of the CHIS 2001 questions: "Have you ever had a Pap test for cervical cancer?" and "How long ago did you have your most recent Pap test?" The screening population excludes women who have been diagnosed with cervical cancer and women who have had a hysterectomy.

RACE/ETHNICITY AND INCOME

Among California's adult female population, age 18 and older, 8.3% report never having had a Pap test. Nearly seven in 10 women (68.9%) received a Pap test over the last year, and a much higher proportion (86.2%) received at least one Pap test over the past three years, approaching the HP2010 goal of 90% (Exhibit 1).

EXHIBIT 1. PAP TESTS BY RACE/ETHNICITY, WOMEN AGE 18 AND OLDER, CALIFORNIA, 2001

	NEVER SCREENED	SCREENED IN PAST YEAR	SCREENED IN PAST THREE YEARS
RACE/ETHNICITY	**%**	**%**	**%**
WHITE	4.5	71.3	89.0
LATINO	9.8	69.3	86.4
ASIAN	22.8	53.8	71.5
AFRICAN AMERICAN	4.6	73.7	90.8
AIAN	*	71.2	92.1
NHOPI	*	49.5	69.1
OTHER/MULTIRACIAL	9.5	73.5	85.7
WOMEN AGE 18 AND OLDER	**8.3**	**68.9**	**86.2**

Note: Rates of Pap test do not include women diagnosed with cervical cancer or women who had a hysterectomy. American Indian and Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

31 U.S. Preventive Services Task Force. (2003). Screening for Cervical Cancer Update, 2003 Release. Available: *http://www.ahcpr.gov/clinic/uspstf/uspscerv.htm.*

32 U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. (n.d.). Healthy People 2010. Available: *http://www.health.gov/healthypeople/.*

33 National Committee on Quality Assurance. (2002). The State of Health Care Quality 2002, Cervical Cancer Screening. [Online]. Available: *http://www.ncqa.org/sohc2002/sohc_2002_ccs.html.*

Exhibit 1 shows that an alarmingly high proportion of Asian women have never had a Pap test (22.8%). This rate is five times the rate for white women (4.5%). The proportion of Latinas who have never had a Pap test (9.8%), and that of "other race" and multiracial women (9.5%), is also high compared to white women (4.5%). Annual Pap test rates are lowest for Native Hawaiian and Other Pacific Islander (NHOPI) (49.5%) and Asian (53.8%) women. Asian and NHOPI women also report the lowest three-year Pap test utilization (71.5% and 69.1%, respectively). All other racial and ethnic groups have screening rates that are statistically similar or greater than the state average.

Exhibit 2 presents the screening rates for lower-income women (less than 200% of the federal poverty level, or FPL) and higher income women (200% FPL and above). Pap test utilization is significantly greater among higher-income women, suggesting that income has a profound impact on raising screening rates for cervical cancer. Moreover, the income effect appears greatest for Asians and NHOPIs. A significantly greater proportion of higher-income Asian women (77.4%) report having a recent Pap test compared to lower-income Asian women (58.7%). In addition, an approximate 20-point percentage gap exists between lower-income and higher-income NHOPI women, although this difference is not statistically significant. Yet, even among higher-income women, three-year Pap test utilization rates for Asian (77.4%) and NHOPI women (78.2%) still lag well behind other groups.

EXHIBIT 2. PERCENT WITH A PAP TEST IN THE PAST THREE YEARS BY RACE/ETHNICITY AND INCOME, WOMEN AGE 18 AND OLDER, CALIFORNIA, 2001

	WOMEN AGE 18 AND OLDER	BELOW 200% FPL	200% FPL AND ABOVE
RACE/ETHNICITY	**%**	**%**	**%**
WHITE	89.0	81.6	91.1
LATINO	86.4	84.9	89.6
ASIAN	71.5	58.7	77.4
AFRICAN AMERICAN	90.8	88.3	92.8
AIAN	92.1	85.4	97.2
NHOPI	69.1	57.3	78.2
OTHER/MULTIRACIAL	85.7	85.8	85.6
WOMEN AGE 18 AND OLDER	**86.2**	**81.3**	**89.1**

Note: In 2001, the annual income at 100% of the Federal Poverty Level (FPL) was $9,039 for one person, $11,569 for a family of two, $14,128 for a family of three, and $18,104 for a family of four. Women diagnosed with cervical cancer or women who had a hysterectomy were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

Source: 2001 California Health Interview Survey

RACE/ETHNICITY AND INSURANCE STATUS

Access to care factors such as insurance coverage and usual source of care may also explain the variations in cervical cancer screening by race and ethnicity. California's uninsured women are significantly less likely to receive three-year Pap tests (75.1%) than insured women. Uninsured Asian women have an abysmally low Pap test rate (49.2%) compared to all other uninsured groups (Exhibit 3).

Among the insured, three-year Pap tests are highest for women who have other public coverage (94.5%), such as Access to Infants and Mothers (AIM) and Family Pact. Women who have health care coverage through their own or a family member's employer ("employment-based") and those who purchase health insurance in the individual market ("privately purchased") have screening rates that are also high compared to other groups: 90.4% and 87.5%, respectively. Although nine out of 10 women with employment-based coverage have been screened for cervical cancer in the past three years, racial/ethnic disparities in screening rates exist: only 62.6% of NHOPI women, 81.4% of Asian women and 85.7% of other/single multi-racial women have been screened during that time.

Medi-Cal or Healthy Families coverage appears to benefit Latinas, AIANs and African Americans: three-year screening rates are very high (92.1%, 91.4% and 90.3% respectively) compared to other groups. This Pap test rate for Latinas covered by Medi-Cal or Healthy Families is higher than the rate for uninsured Latinas (79.7%). Surprisingly, it is also higher than the rate for Latinas with job-based health insurance (89.3%), though this difference is not significant. There are a couple of possible explanations for this screening pattern: Medi-Cal/Healthy Families benefits may be better than benefits in some job-based health plans, and Latinas with Medi-Cal/Healthy Families may be younger than Latinas with job-based insurance, resulting in Pap tests being more prevalent in this group.

Screening rates do not significantly improve when comparing the uninsured (49.2%) with the Medi-Cal/Healthy Families population (53.4%) for three-year Pap tests among Asian women. This suggests that non-financial barriers may deter Asian women from getting screened. However, Pap test rates among Asian women do significantly increase for those with job-based coverage, private insurance coverage, and other public coverage. There were too few observations on uninsured NHOPI women to make comparisons with the NHOPI women covered by Medi-Cal/Healthy Families.

EXHIBIT 3. PERCENT WITH A PAP TEST IN THE PAST THREE YEARS BY RACE/ETHNICITY AND INSURANCE COVERAGE, WOMEN AGES 18-64, CALIFORNIA, 2001

	WOMEN AGES 18-64	UNINSURED	MEDI-CAL/ HEALTHY FAMILIES	EMPLOYMENT-BASED	PRIVATE	OTHER PUBLIC
RACE/ETHNICITY	%	%	%	%	%	%
WHITE	90.3	75.6	85.7	92.6	90.0	94.7
LATINO	86.6	79.7	92.1	89.3	91.1	90.9
ASIAN	72.4	49.2	53.4	81.4	70.1	96.9
AFRICAN AMERICAN	91.5	76.5	90.3	94.5	89.5	*
AIAN	93.1	78.9	91.4	96.5	*	*
NHOPI	69.0	*	76.0	62.6	*	*
OTHER/MULTIRACIAL	85.9	86.3	83.3	85.7	88.1	94.4
WOMEN AGES 18-64	**87.0**	**75.1**	**85.8**	**90.4**	**87.5**	**94.5**

Note: Women diagnosed with cervical cancer or women who had a hysterectomy were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

We also examined elderly women, age 65 and older, separately from nonelderly women because of the different sources of health insurance. Although the U.S. Preventive Services Task Force has recently recommended that Pap tests need not be continued among women who are 65 and older who have had a history of normal test results, CHIS 2001 was conducted prior to these new guidelines.[34]

Although almost all of California women age 65 and older have some form of medical coverage, primarily through Medicare, disparities in cervical cancer screening still exist by type of coverage. For senior women with insurance, three-year screening rates are highest among the Medicare plus private insurance group (82.9%), followed by those with Medicare plus Medi-Cal, or the "dually eligible" (71.9%, Exhibit 4).

These dually eligible seniors qualify for Medi-Cal because of their low-incomes and/or disabilities. Three-year screening rates are lower among senior, insured women who have Medicare only (68.4%) compared to those with other types of insurance. Three-year screening rates for elderly Asian women (61.2%) are both significantly lower than rates for other groups and well below the state average (79.1%). Asian women who are dually eligible for Medi-Cal and Medicare are less likely to have received at least one Pap test over the past three years (56%) than other women. Screening rates are also low among white women who are dually eligible (71.8%) and who have Medicare only (69%), though the differences between these rates and other groups' are not statistically significant.

EXHIBIT 4. PERCENT WITH A PAP TEST IN THE PAST THREE YEARS BY RACE/ETHNICITY AND INSURANCE COVERAGE, WOMEN AGES 65 AND OLDER, CALIFORNIA, 2001

	WOMEN AGE 65 AND OLDER	MEDICARE + MEDI-CAL	MEDICARE + PRIVATE	MEDICARE ONLY
RACE/ETHNICITY	**%**	**%**	**%**	**%**
WHITE	80.9	71.8	83.4	69.0
LATINO	79.1	79.4	83.7	77.5
ASIAN	61.2	56.0	74.0	*
AFRICAN AMERICAN	84.5	81.0	90.0	*
AIAN	83.2	*	89.8	*
NHOPI	*	*	*	*
OTHER/MULTIRACIAL	82.9	86.5	78.4	*
WOMEN AGE 65 AND OLDER	**79.1**	**71.9**	**82.9**	**68.4**

Note: Women diagnosed with cervical cancer or women who had a hysterectomy were not included in these analyses. Estimated rates for uninsured women 65 and older are not included because the sample size was too small. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

34 U.S. Preventive Services Task Force. (2003). Screening for Cervical Cancer Update, 2003 Release. Available: *http://www.ahcpr.gov/clinic/uspstf/uspscerv.htm.*

RACE/ETHNICITY AND USUAL SOURCE OF CARE

Low screening rates among insured women signal that barriers other than financial may prohibit women from receiving recommended preventive cervical cancer services. When a woman has a usual or regular place for primary care, the likelihood of receiving preventive Pap tests increases. [35,36,37,38,39] In Exhibit 5, we present screening rates by race/ethnicity, insurance status, and usual source of care for women 18 and older. Screening rates increase by as many as 17 percentage points if a woman has a usual source of care (88.5% vs. 71%). Indeed, we find that, similar to the previously cited studies, an *uninsured* woman with a usual source of care has a screening rate (79.7%) that is slightly higher than the screening rate for an *insured* woman without a usual source of care (74.2%).

Among Asian women, those who have a usual source of care have much higher screening rates (75.8%) than women who have no usual source of care (44.5%). Even among insured Asian women, screening rates are dramatically higher (78.4%) for women who have a usual source of care compared to those with no usual source of care (46.2%). For all women, those who are insured with a usual source of care have significantly higher rates of screening than insured women without a usual source of care (89.6% vs. 74.2%). Having a usual source of care has a substantial impact on screening rates for uninsured African-American women (a 26.8% gain) and uninsured white women (a 13.5% gain).

EXHIBIT 5. PERCENT WITH A PAP TEST IN THE PAST THREE YEARS BY RACE/ETHNICITY, INSURANCE STATUS, AND USUAL SOURCE OF CARE (USOC), WOMEN AGE 18 AND OLDER, CALIFORNIA, 2001

	WOMEN AGE 18 AND OLDER		UNINSURED		INSURED	
	USOC	NO USOC	USOC	NO USOC	USOC	NO USOC
RACE/ETHNICITY	%	%	%	%	%	%
WHITE	90.6	74.7	80.9	67.4	91.1	78.2
LATINO	89.3	75.1	83.5	72.9	91.3	78.6
ASIAN	75.8	44.5	54.7	42.6	78.4	46.2
AFRICAN AMERICAN	92.1	74.0	84.3	57.5	92.7	85.6
AIAN	93.2	79.8	76.9	*	95.5	76.1
NHOPI	72.6	*	*	*	72.8	*
OTHER/MULTIRACIAL	87.1	77.1	89.8	80.6	86.7	73.7
WOMEN AGE 18 AND OLDER	**88.5**	**71.0**	**79.7**	**67.4**	**89.6**	**74.2**

Note: Women diagnosed with cervical cancer or women who had a hysterectomy were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

35 Swan J, Breen N, Coates RJ, Rimer BK, Lee NC. Progress in cancer screening practices in the United States: results from the 2000 National Health Interview Survey. Cancer. 2003 Mar 15;97(6):1528-40.

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37 Xu KT, Usual source of care in preventive service use: a regular doctor versus a regular site. Health Services Research. 2002; 37(6):1509-29.

38 O'Malley AS, Mandelblatt J, Gold K, Cagney KA, Kerner J. Continuity of care and the use of breast and cervical cancer screening services in a multi-ethnic community. Archives of Internal Medicine. 1997 Jul 14; 157(13):1462-70.

39 Ettner SL, The timing of preventive services for women and children: the effect of having a usual source of care. American Journal of Public Health. 1996; 86(12):1748-54.

RACE/ETHNICITY AND ENGLISH PROFICIENCY

Women with limited English proficiency (LEP) may face barriers in receiving cervical cancer screening. In California, women who report that they do not speak English well or do not speak English at all are slightly less likely to have had a recent Pap test than women who speak English well (82.8% vs. 86.8%, Exhibit 6). However, this difference is most striking among Asian women. Only 61.3% of Asian women with LEP report having a recent Pap test compared to 74.5% of Asian women who speak English well. Although white women have among the highest rates of recent cervical cancer screening, they show a similar pattern, white women with LEP are less likely to be screened than white women who speak English well (78.6% and 89%, respectively). But even among women who speak English well, racial and ethnic disparities persist: NHOPIs (69.1%), Asians (74.5%), and Latinas (85.3%) who speak English well are less likely to be screened than whites who speak English well (89%).

COUNTY DATA ON SCREENING RATES, INSURANCE AND USUAL SOURCE OF CARE

For each county or county group, we present three-year Pap test screening rates in Exhibit 7. We also present the percent of the screening population that is insured and the percent that has a usual source of care by county or county group. There is little variation in three-year screening rates among California's counties, although screening rates are slightly lower in the Northern and Sierra counties and the San Joaquin Valley counties compared to other geographic areas. Screening rates are lowest in Shasta county (80.3%), which also has one of the lowest rates of women with a usual source of care (81.5%). Butte (84.7%); Humboldt and Del Norte (88.5%); Siskiyou, Lassen, Trinity, and Modoc (82%); Tehama, Glenn, and Colusa (81.7%); and Sutter and Yuba (83.9%) counties also have low screening rates. In San Joaquin Valley, the counties of Fresno (82.7%), Stanislaus (82.7%), and Merced (82.8%) have screening rates that are among the ten lowest in the state. This may partially be explained by lower insurance coverage rates in Fresno (83.7%) and Merced (82.9%) counties as well as lower rates of usual source of care (85.4% and 86.3%, respectively). Stanislaus County also has a low proportion of women with a usual source of care (83.2%). In the Central Coast region, Monterey and San Benito counties have the lowest screening rate (83.8%), which could be associated with the lower proportion of insured women (81.4%) and women with a usual source of care (82.3%) in these counties compared to the rest of the state. The Southern California counties of Orange (84.3%) and Imperial (85.6%) also have

EXHIBIT 6. PERCENT WITH A PAP TEST IN THE PAST THREE YEARS BY RACE/ETHNICITY AND ENGLISH PROFICIENCY, WOMEN AGE 18 AND OLDER, CALIFORNIA, 2001

	ENGLISH ONLY, VERY WELL OR WELL	NOT VERY WELL OR NOT AT ALL
RACE/ETHNICITY	**%**	**%**
WHITE	89.0	78.6
LATINO	85.3	87.5
ASIAN	74.5	61.3
AFRICAN AMERICAN	90.8	*
AIAN	92.1	*
NHOPI	69.1	*
OTHER/MULTIRACIAL	85.3	88.4
WOMEN AGE 18 AND OLDER	**86.8**	**82.8**

Note: Women diagnosed with cervical cancer or women who had a hysterectomy were not included in these analyses. American Indian /Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

EXHIBIT 7. PERCENT WITH A PAP TEST IN THE PAST THREE YEARS, PERCENT INSURED, AND PERCENT WITH A USUAL SOURCE OF CARE, WOMEN AGE 18 AND OLDER, CALIFORNIA COUNTIES OR COUNTY GROUPS, 2001

	RECENT PAP TEST, WOMEN 18 AND OLDER		INSURED, WOMEN 18 AND OLDER		WITH A USUAL SOURCE OF CARE, WOMEN 18 AND OLDER	
	%	95% CI	%	95% CI	%	95% CI
NORTHERN AND SIERRA COUNTIES	**85.3**	**(83.6 – 87.0)**	**86.4**	**(84.8 – 87.9)**	**86.6**	**(84.9 – 88.3)**
BUTTE	84.7	(80.0 – 89.4)	85.9	(81.6 – 90.1)	79.5	(73.8 – 85.2)
SHASTA	80.3	(74.7 – 85.9)	89.8	(85.8 – 93.9)	81.5	(75.5 – 87.6)
HUMBOLDT, DEL NORTE	88.5	(83.8 – 93.2)	85.5	(80.7 – 90.3)	90.9	(87.6 – 94.2)
SISKIYOU, LASSEN, TRINITY, MODOC	82.0	(76.2 – 87.7)	78.1	(72.3 – 84.0)	91.5	(87.6 – 95.3)
MENDOCINO, LAKE	86.0	(81.3 – 90.8)	85.0	(80.5 – 89.5)	85.8	(81.3 – 90.4)
TEHAMA, GLENN, COLUSA	81.7	(76.0 – 87.3)	83.4	(78.7 – 88.1)	86.5	(81.8 – 91.2)
SUTTER, YUBA	83.9	(78.8 – 89.0)	88.6	(84.4 – 92.8)	90.6	(86.4 – 94.7)
NEVADA, PLUMAS, SIERRA	89.6	(85.5 – 93.6)	87.5	(83.0 – 92.0)	89.2	(85.0 – 93.3)
TUOLOMNE, CALAVERAS, AMADOR, INYO, MARIPOSA, MONO, ALPINE	88.6	(84.1 – 93.1)	89.3	(85.1 – 93.6)	89.5	(84.8 – 94.2)
GREATER BAY AREA	**87.6**	**(86.2 – 89.0)**	**90.5**	**(89.2 – 91.8)**	**90.2**	**(89.1 – 91.3)**
SANTA CLARA	86.5	(83.1 – 89.9)	89.5	(86.0 – 93.1)	87.2	(83.9 – 90.5)
ALAMEDA	87.9	(84.5 – 91.3)	90.2	(87.1 – 93.3)	91.7	(89.4 – 94.1)
CONTRA COSTA	89.4	(86.2 – 92.6)	93.5	(91.0 – 96.0)	93.5	(91.1 – 95.9)
SAN FRANCISCO	85.7	(82.7 – 88.7)	87.5	(84.9 – 90.2)	88.2	(85.6 – 90.7)
SAN MATEO	86.3	(81.3 – 91.2)	93.0	(89.9 – 96.2)	90.1	(86.9 – 93.4)
SONOMA	90.3	(85.7 – 94.8)	87.4	(82.8 – 92.0)	91.7	(88.1 – 95.3)
SOLANO	87.3	(84.0 – 90.6)	92.5	(90.0 – 95.0)	91.7	(88.9 – 94.5)
MARIN	92.3	(88.8 – 95.7)	93.5	(90.5 – 96.5)	90.5	(86.9 – 94.2)
NAPA	87.1	(81.9 – 92.4)	90.9	(86.8 – 95.0)	91.4	(87.7 – 95.0)
SACRAMENTO AREA	**88.8**	**(86.3 – 91.4)**	**90.7**	**(88.3 – 93.0)**	**92.2**	**(90.3 – 94.1)**
SACRAMENTO	89.0	(85.4 – 92.5)	90.0	(86.7 – 93.3)	92.1	(89.5 – 94.7)
PLACER	89.5	(85.3 – 93.7)	96.2	(93.8 – 98.6)	94.5	(91.5 – 97.4)
YOLO	86.6	(82.1 – 91.1)	88.4	(84.3 – 92.6)	92.1	(88.5 – 95.6)
EL DORADO	89.8	(85.1 – 94.5)	90.0	(85.9 – 94.2)	89.3	(84.9 – 93.7)

Note: Women diagnosed with cervical cancer or who had a hysterectomy were not included in these analyses.

(continued on next page)

Source: 2001 California Health Interview Survey

low rates of screening, which may again be associated with lower insurance coverage rates (82.9% and 84.4%, respectively) and regularity in source of care (84.5% and 84.6%, respectively). For the Greater Bay Area counties, screening rates as well as coverage rates and regularity of care are among the highest in the state.

EXHIBIT 7. PERCENT WITH A PAP TEST IN THE PAST THREE YEARS, PERCENT INSURED, AND PERCENT WITH A USUAL SOURCE OF CARE, WOMEN AGES 18 AND OLDER, CALIFORNIA COUNTIES OR COUNTY GROUPS, 2001 (CONTINUED)

	RECENT PAP TEST, WOMEN 18 AND OLDER		INSURED, WOMEN 18 AND OLDER		WITH A USUAL SOURCE OF CARE, WOMEN 18 AND OLDER	
	%	95% CI	%	95% CI	%	95% CI
SAN JOAQUIN VALLEY	**84.4**	**(82.5 – 86.3)**	**82.8**	**(81.0 – 84.6)**	**85.8**	**(84.0 – 87.6)**
FRESNO	82.7	(78.0 – 87.5)	83.7	(79.4 – 88.0)	85.4	(81.0 – 89.8)
KERN	86.3	(82.5 – 90.0)	80.7	(76.3 – 85.1)	83.9	(79.8 – 88.0)
SAN JOAQUIN	84.8	(80.5 – 89.1)	84.0	(79.8 – 88.2)	88.6	(84.8 –92.5)
STANISLAUS	82.7	(77.4 – 87.9)	85.8	(81.3 – 90.2)	83.2	(78.0 – 88.5)
TULARE	86.1	(81.6 – 90.6)	79.6	(74.5 – 84.8)	87.8	(82.8 – 92.8)
MERCED	82.8	(77.4 – 88.1)	82.9	(78.3 – 87.6)	86.3	(82.4 –90.2)
KINGS	85.1	(80.1 – 90.1)	82.5	(77.7 – 87.2)	87.1	(82.7 – 91.4)
MADERA	88.1	(83.2 – 93.0)	80.2	(74.6 – 85.9)	86.7	(81.9 – 91.5)
CENTRAL COAST	**85.9**	**(83.6 – 88.3)**	**83.9**	**(81.5 – 86.2)**	**86.8**	**(85.0 – 88.7)**
VENTURA	85.3	(80.3 – 90.3)	85.3	(80.9 – 89.6)	91.2	(88.2 – 94.2)
SANTA BARBARA	85.4	(81.2 – 89.5)	79.7	(74.8 – 84.7)	85.7	(81.6 – 89.8)
SANTA CRUZ	89.1	(85.3 – 92.9)	87.3	(82.4 – 92.2)	88.0	(83.9 – 92.2)
SAN LUIS OBISPO	88.9	(85.1 – 92.7)	86.7	(82.5 – 90.8)	82.4	(77.6 – 87.3)
MONTEREY, SAN BENITO	83.8	(78.1 – 89.5)	81.4	(75.6 – 87.2)	82.3	(77.6 – 86.9)
LOS ANGELES	**85.6**	**(84.3 – 86.9)**	**79.3**	**(77.9 – 80.6)**	**84.6**	**(83.4 – 85.8)**
LOS ANGELES	85.6	(84.3 – 86.9)	79.3	(77.9 – 80.6)	84.6	(83.4 – 85.8)
OTHER SOUTHERN CALIFORNIA	**85.8**	**(84.2 – 87.4)**	**83.1**	**(81.6 – 84.6)**	**86.0**	**(84.6 – 87.4)**
ORANGE	84.3	(81.1 – 87.4)	82.9	(80.0 – 85.9)	84.5	(81.9 – 87.2)
SAN DIEGO	86.5	(83.7 – 89.2)	83.5	(80.7 – 86.3)	88.5	(86.1 – 90.9)
SAN BERNARDINO	87.5	(84.2 – 90.9)	82.5	(79.0 – 86.1)	85.2	(81.9 – 88.5)
RIVERSIDE	85.9	(82.6 – 89.1)	83.2	(79.6 – 86.9)	85.0	(81.4 – 88.5)
IMPERIAL	85.6	(81.1 – 90.0)	84.4	(79.8 – 89.0)	84.6	(80.0 – 89.2)
STATEWIDE	**86.2**	**(85.5 – 86.9)**	**84.1**	**(83.5 – 84.8)**	**86.9**	**(86.3 – 87.5)**

Note: Women diagnosed with cervical cancer or who had a hysterectomy were not included in these analyses.

Source: 2001 California Health Interview Survey

MULTIPLE DETERMINANTS OF CERVICAL CANCER SCREENING

We further examined the effects of race, place of residence, income, health insurance and usual source of care on cervical cancer screening (Pap testing in the past three years), in addition to other relevant factors, including age, education, health status, marital status and family history of cancer. In addition, we include language and the percentage of a woman's lifetime spent in the United States in our analysis. Even when we account for other determinants, race/ethnicity does matter in cervical cancer screening. The outlook is favorable for most women of color: Nonelderly African-American women and Latinas are more likely to be screened than white women; AIAN and NHOPI women are just as likely to be screened as white women. Only Asian women face significantly lower odds of being screened than all other groups. Among elderly women, African Americans are more likely to be screened than whites. In addition, while there is no significant difference in screening rates between elderly white women and elderly NHOPI, AIAN or Latina women, elderly Asian women are less likely to be screened. Thus, taking into account income, education, family history, health status, place of residence, percent of lifetime in the United States, language and other relevant determinants described earlier, *Asian* women, both the nonelderly and the elderly, are still less likely to be screened for cervical cancer.

REASONS FOR NO RECENT CERVICAL CANCER SCREENING

Among all women age 18 and older, the top three reasons for not having a Pap test in the past three years are: 1) "putting it off"; 2) "haven't had problems"; and 3) "too expensive/no insurance." Among Asian women—the racial/ethnic group with the lowest three-year screening rate—"haven't had problems" and "didn't know needed the test" topped the list of reasons. These findings illustrate the importance of raising awareness among Asian women. In addition, improving financial access could benefit NHOPI women, who cited "too expensive/no insurance" as the top reason for not being screened.

CONCLUSIONS AND POLICY IMPLICATIONS

Healthy People 2010 (HP 2010) goals target an increase in the proportion of women age 18 and older who receive a Pap test from the baseline of 79.9% in 1998 to 90% in the year 2010.[40] While California has reached the targets set forth for breast cancer screening, the state's cervical cancer screening proportion for women 18 and older is 86.2%—still below the HP 2010 target.

The good news is that screening rates are either close to or exceed the 90% HP 2010 target among white women (89%), AIAN women (92.1%), African-American women (90.8%), and Latinas (86.4%). However, we consistently find lower screening rates among NHOPI and Asian women compared to all other racial and ethnic groups. Indeed, our examination of the multiple determinants of cervical cancer screening shows that language, access and acculturation (measured as percent of lifetime in the United States) are significant for nonelderly women. Policies that address these important factors could raise the screening rates for Asian women— the group with the lowest screening rate for cervical cancer in California.

40 U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. (n.d.). Healthy People 2010. Available: *http://www.health.gov/healthypeople/.*

California's Cancer Detection Section (CDS) has been noted by the National Governors' Association as a "best practice" program. CDS administers the Breast and Cervical Cancer Control Program (BCCCP), a federally funded program that provides free breast and cervical cancer screening and diagnosis in several California locations to women who qualify (income at or below 200% of the federal poverty level), and have no or limited health insurance coverage.[41] For free cervical cancer screening services, women must meet the income and insurance criteria and be 25 years or older. During fiscal year 2001-02, it is estimated that CDS provided breast and cervical cancer screening to approximately 20,000 women.[42]

In addition, the Centers for Disease Control and Prevention has designated the California Department of Health Services' (DHS) *Every Woman Counts* campaign as an exemplary program. *Every Woman Counts* provides the first statewide cervical cancer hotline in the United States that targets Asian American women. The campaign has done so through expansion of hotline services to offer information in Chinese (Mandarin and Cantonese dialects), Korean and Vietnamese, in addition to English and Spanish; and with department-sponsored radio and print advertisements in Chinese, Korean and Vietnamese to spread awareness about the hotline among Asian-American women. According to the California DHS, the campaign resulted in an increase in the number of calls to the hotline from 24 in April 2000 to 576 in June 2000. On average, the hotline receives approximately 60-80 calls per month, three times the number received prior to the Asian language campaign.[43]

In order to eliminate the disparities in cervical cancer screening presented in this chapter, the following specific policies should be considered:

- **Continue federal and state funding support for exemplary programs such as the ones implemented by the California Department of Health Services Cancer Detection Section's *Every Woman Counts* campaign.** The California DHS Cancer Detection Section has been successful in broadening its outreach and awareness campaign in multiple languages. Low screening rates, particularly among Asian women and Asian-language speakers and Latinas, warrant continued periodical campaigns such as the one conducted during the launch of the program.

- **Improve access to care for all women, especially women who face barriers to care due to lack of language access.** State bills such as SB 853 (Escutia) proposed in the 2002-2003 California legislative session clarifies the ability of the Department of Managed Health Care to establish linguistic access and cultural competency standards for health plans. Lack of language services impedes Californians from receiving preventive services and consequently increases their likelihood of late stage diagnosis. Because SB 853 focuses on insured members, women with no health care coverage still will face insurmountable barriers in receiving cervical cancer screening and other important preventive care. Thus policies that expand coverage would surely raise the Pap test screening rates for the state's uninsured women.

- **Specific counties with high proportions of groups at risk (the uninsured, those without a regular source of care, Asian and NHOPI women) should also consider county-based programs that are culturally and linguistically appropriate.** State efforts need to be augmented by county efforts to raise the rates of cervical cancer screening. For example, the Los Angeles county regional cancer detection partnership, Partnered for Progress, is a model for the state

41 The Breast and Cervical Cancer Control Program (BCCCP) and the Breast Cancer Early Detection Program (BCEDP) are now part of the California Department of Health Service's Cancer Detection Program: *Every Woman Counts*.

42 California Detection Programs: *Every Woman Counts*. Available: *http://www.dhs.ca.gov/ps/cdic/ccb/cds/documents/cdsinfo.pdf*

43 The California Cancer Detection Section. (2000). Cancer Screening and Treatment Programs. Available: *http://www.dhs.ca.gov/cancerdetection/.*

in that it has pioneered the creation of ethnic-based taskforces that have engaged multi-ethnic stakeholders and have resulted in more community and provider participation in this program.[44]

- **State monies acquired through tobacco taxes and used to fund the Breast Cancer Early Detection Program (BCEDP) do not explicitly cover cervical cancer screening.[45] Pap test screening is inexpensive and cost-effective. Therefore, the allocation of tobacco tax revenue monies to the BCEDP should also cover cervical cancer screening.** While California has reached the targets set forth for breast cancer screening, the proportion for women 18 and older with recent cervical cancer screening is 86.2% still below the HP 2010 target. A continued financing stream to support free or affordable cervical cancer screening must be made available to ensure the eventual elimination of cervical cancer-related deaths.

- **State and federal policies should promote screening and continuity of care among low-income women.** Screening rates are particularly low among low-income women who have no usual source of care regardless of whether they had some form of medical coverage. Specifically, among Medi-Cal beneficiaries, continuity of care could be jeopardized with the reinstitution of quarterly certification of their eligibility. Policies that assure continuous health insurance coverage, both public and private, would lessen the discontinuity of receiving regular health care and improve the chances of getting screened for cervical cancer.

- **The role of providers must be underscored in ensuring that women are appropriately tested.** Unlike most other cancers in California, people of color face a higher risk of developing cervical cancer, along with lower survival rates. Programs should raise provider awareness of persisting disparities in cervical cancer screening, and train them in conveying to their patients, in a culturally competent manner, the importance of a regular Pap test. Our results show that even among the insured, nonelderly women who are covered by Medi-Cal have lower screening rates (85.8%) than those with employment-based coverage (90.4%). Despite Medi-Cal's coverage of routine Pap tests, women covered by Medi-Cal still report lower rates. This lower rate is disturbing particularly for a high risk, low-income population. It is crucial to raise awareness and create incentives for screening among Medi-Cal health plans and providers as well as others who serve women who have no regular source of care, are uninsured, are low income, or are linguistic minorities.

44 For more information on Partnered for Progress, the Los Angeles Regional Cancer Detection partnership, see: *http://www.dhs.ca.gov/ps/cdic/ccb/cds/region4.htm*

45 The Breast Cancer Early Detection Program (BCEPD) along with the Breast and Cervical Cancer Control Program (BCCCP) are now part of the California Department of Health Service's Cancer Detection Program: Every Woman Counts.

3. BREAST CANCER SCREENING IN CALIFORNIA: MAMMOGRAPHY

INTRODUCTION

Breast cancer is the most common cancer among women in California as well as nationally.[46,47] The California Cancer Registry estimates that by the end of 2003, more than 212,000 Californians will be living with breast cancer. In addition, it is estimated that in 2003, 22,000 California women will be diagnosed with breast cancer and 4,000 will die from it.[48] Although breast cancer is the most common cancer among women of all races and ethnicities, there is variation by race and ethnicity in the prevalence of, incidence of, and mortality due to breast cancer. In California, white women have the highest incidence, but African-American women have the highest mortality rate. In addition, the rate of new cases of breast cancer diagnosed among Asian and Pacific Islander women in California has been increasing, despite decreases in incidence among other racial/ethnic groups. Breast cancer mortality has been declining among white women for some time, while mortality in African-American and Hispanic women has only recently started to show significant decreases. Because the incidence of breast cancer has not decreased, these decreases in mortality have been attributed to the effects of earlier diagnosis, resulting in treatment begun at an earlier stage of the disease. Meanwhile, mortality rates have not changed for Asian and Pacific Islander women.

Most experts agree that early detection of breast cancer is the best defense against the disease given the limited knowledge of the mutable factors that contribute to breast cancer risk.[46,49] One of the best predictors of surviving breast cancer is the stage of the disease at diagnosis: The earlier the diagnosis, the better the survival rate. Among women diagnosed with breast cancer, five-year survival rates are 96% when the cancer is present only in the breast. This survival rate drops to 77% when the cancer has spread to lymph nodes and adjacent tissue, and plummets to just 23% when the cancer has spread to other parts of the body before being discovered.[50,51] Therefore, early diagnosis of the disease is critical for survival.

Scientific research has demonstrated the value of mammograms for early detection of breast cancer.[52,53] Research has also demonstrated the value of mammogram screening for improving the likelihood of surviving breast cancer. Clinical trials show that breast cancer screening can reduce mortality by 30% or more among women age 50 and older.[54,55] Although reductions in mortality are somewhat smaller for women ages 40-49, there is evidence of significant reductions for this age group as well.[56,57] In California, breast cancer mortality rates are now 20% lower than they were in 1973, a decline that has been attributed in large part to the success of public health efforts to increase the number of women having mammograms.[50,51]

A recent review of the evidence from clinical trials on breast cancer screening has suggested that mammogram

46 American Cancer Society, California Division, and Public Health Institute, California Cancer Registry. California Cancer Facts and Figures, 2003. Oakland, CA: American Cancer Society, California Division, September, 2002.

47 Perkins CI, Kwong SL, Morris CR, Cohen R, Allen M, Wright WE. Cancer in California, 2002. Sacramento, CA: California Department of Health Services, Cancer Surveillance Section December, 2001.

48 A very small percentage of men in California get breast cancer each year. Approximately 150 men are diagnosed with breast cancer annually and about 30 men die from the disease in California each year.

49 Kelsey JL, Bernstein L. Epidemiology and prevention of breast cancer. Annual Review of Public Health 1996;17:47-67.

50 Perkins CI, Allen MA, Wright WE, Takahashi E, Stoodt G, Cohen R. Breast cancer in California: Stage at diagnosis and Medi-Cal status. Sacramento, CA: California Department of Health Services, Cancer Surveillance Section; March, 2000.

51 Ries LAG, Eisner MP, Kosary CL, Hankey BF, Miller BA, Clegg L, et al. SEER Cancer Statistics Review, 1973-1998. Bethesda, MD: National Cancer Institute; 2001.

52 Maibenco D, Daoud Y, Phillips E, Saxe A. Relationship between method of detection of breast cancer and stage of disease, method of treatment, and survival in women aged 40 to 49 years. The American Surgeon. 1999; 65(11):1061-6.

53 McCarthy EP, Burns RB, Freund KM, Ash AS, Shwartz M, Marwill SL, et al. Mammography use, breast cancer stage at diagnosis, and survival among older women. Journal of the American Geriatrics Society. 2000; 48(10):1226-33.

54 Alexander FE, Anderson TJ, Brown HK, Forrest AP, Hepburn W, Kirkpatrick AE, et al. 14 years of follow-up from the Edinburgh randomised trial of breast-cancer screening. Lancet. 1999; 353(9168):1903-8.

55 Tabar L, Vitak B, Chen HH, Yen MF, Duffy SW, Smith RA. Beyond randomized controlled trials: organized mammographic screening substantially reduces breast carcinoma mortality. Cancer. 2000; 91(9):1724-31.

56 Andersson I, Janzon L. Reduced breast cancer mortality in women under age 50: updated results from the Malmo Mammographic Screening Program. Journal of the National Cancer Institute. Monographs. 1997; 22:63-7.

57 Berry DA. Benefits and risks of screening mammography for women in their forties: a statistical appraisal. Journal of the National Cancer Institute. 1998; 90(19):1431-9.

screening may not be associated with reductions in mortality.[58,59] However, many researchers disagree with the findings of this review.[60,61,62] Although the debate over this issue continues, the preponderance of the evidence favors mammography as an important means of detecting breast cancer early and improving survival of the disease.[52,53,54] Furthermore, based on the scientific evidence currently available, the National Cancer Institute (NCI), American Cancer Society (ACS), and U.S. Preventive Services Task Force (USPSTF) continue to recommend that women 40 and older receive regular mammograms with or without a clinical breast exam. NCI and USPSTF recommend getting a mammogram every one to two years starting at age 40 and the ACS recommends annual mammograms starting at age 40.[63,64]

In this chapter, we examine breast cancer screening with mammography, reporting rates of receiving a mammogram in the past two years among women age 40 and older who were never diagnosed with breast cancer. CHIS 2001 asked women several questions about mammograms. The results included here are based on two of them: "Have you ever had a mammogram?" and "How long ago did you have your most recent mammogram?"[65] We examine rates of screening with mammograms by several important characteristics: race/ethnicity, income, insurance coverage, usual source of

EXHIBIT 8. MAMMOGRAPHY BY RACE/ETHNICITY, WOMEN AGE 40 AND OLDER, CALIFORNIA, 2001

	NEVER SCREENED	SCREENED IN PAST YEAR	SCREENED IN PAST 2 YEARS
RACE/ETHNICITY	**%**	**%**	**%**
WHITE	8.1	62.4	78.1
LATINO	17.7	55.4	69.9
ASIAN	17.2	54.4	67.2
AFRICAN AMERICAN	9.4	62.8	78.5
AIAN	10.0	55.8	68.8
NHOPI	*	47.5	63.4
OTHER/MULTIRACIAL	16.8	56.7	69.6
WOMEN AGE 40 AND OLDER	**10.7**	**60.4**	**75.5**

Note: Women diagnosed with breast cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

58 Gotzsche PC, Olsen O. Is screening for breast cancer with mammography justifiable? Lancet. 2000; 355(9198):129-34.

59 Olsen O, Gotzsche PC. Cochrane review on screening for breast cancer with mammography. Lancet. 2001; 358(9290):1340-2.

60 Senn S. Screening for breast cancer with mammography. Lancet. 2001; 358(9299):2165; 2167-8.

61 Duffy SW. Interpretation of the breast screening trials: A commentary on the report paper by Gotzsce and Olsen. The Breast. 2001;10:209-212.

62 Miller AB. Screening for breast cancer with mammography. Lancet. 2001;358(9299):2164; discussion 2167-8.

63 U.S. Preventive Services Task Force. *Screening for Breast Cancer*. Recommendations and Rationale. February, 2002. Agency for Healthcare Research and Quality, Rockville, MD. Available at: *http://www.ahrq.gov/clinic/3rduspstf/breastcancer/brcanrr.htm*.

64 American Cancer Society, California Division, and Public Health Institute, California Cancer Registry. California Cancer Facts and Figures 2003. Oakland, CA: American Cancer Society, California Division, September, 2002.

65 Respondents who reported that their most recent mammogram was a follow-up for a previous problem or was because of a specific breast problem were not excluded from these analyses. The mammography rates reported in this study represent women who had at least one mammogram in the *past two years*. The question that addresses the reason for having a mammogram is only asked about the most recent mammogram, so there is no way to determine whether women who reported that their most recent mammogram was not a routine screening exam had a previous mammogram in the past two years that *was* a routine screening exam. In addition, nearly all women (90.3%) who had ever had a mammogram reported that their most recent mammogram was part of a routine exam or was a baseline/initial mammogram.

health care, English proficiency and area of residence. We also report results from a multivariate model of mammogram screening that includes several other important factors.

RACE/ETHNICITY AND INCOME

In California, 75.5% of women age 40 and older who have not been diagnosed with breast cancer report that they have had a mammogram in the past two years (Exhibit 8). Nationally, 70.1% of women in this age group have been screened in the past two years.[66] On the other hand, nearly 1.6 million women in California (24.5%) who should be getting regular mammograms report that they have not received them at recommended intervals, including 686,000 who have never had a mammogram (10.7%).

The Healthy People 2010 (HP2010) goal is to increase the percentage of women age 40 and older who have received a mammogram in the previous two years from a 1998 baseline of 67% to 70% in 2010. Although the overall screening rate for mammograms in California exceeds the HP2010 goal, there are disparities in the receipt of appropriate screening that result in many groups *not* meeting this goal. Women in certain racial and ethnic groups, those with low incomes, and those with limited access to health care are less likely to meet the screening target for breast cancer.

Native Hawaiians and other Pacific Islanders (NHOPI) have a very low rate of having a mammogram in the past two years (63.4%), but this rate is not significantly different from that of other racial and ethnic groups (Exhibits 8 and 9). Rates among Asians, American Indians and Alaska Natives (AIAN), and Latinas are lower than among whites and African Americans. However, rates among racial and ethnic groups vary according to income and access to health care.

In California, women with incomes below 200% of the Federal Poverty Level (FPL) have lower mammography rates than women with incomes at or above 200% FPL (69% vs. 78.8%). Among women with family incomes below 200% FPL, NHOPIs (58.7%), AIANs (61%) and Asians (63.2%) have very low screening rates. Latinas and Asians in this lower-income group have significantly lower screening rates than whites in the same income category, and only whites and African Americans exceed the HP2010 goal of 70%. For women with incomes above 200% of the FPL, the

EXHIBIT 9. PERCENT WITH A MAMMOGRAM IN THE PAST TWO YEARS BY RACE/ETHNICITY AND INCOME, WOMEN AGE 40 AND OLDER, CALIFORNIA, 2001

	WOMEN AGE 40 AND OLDER	BELOW 200% FPL	AND ABOVE 200% FPL
RACE/ETHNICITY	**%**	**%**	**%**
WHITE	78.1	71.6	80.1
LATINO	69.9	66.5	75.7
ASIAN	67.2	63.2	69.5
AFRICAN AMERICAN	78.5	72.8	83.1
AIAN	68.8	61.0	74.3
NHOPI	63.4	58.7	66.4
OTHER/MULTIRACIAL	69.5	61.5	74.7
WOMEN AGE 40 AND OLDER	**75.5**	**69.0**	**78.8**

Note: In 2001, the annual income at 100% of the Federal Poverty Level (FPL) was $9,039 for one person, $11,569 for a family of two, $14,128 for a family of three, and $18,104 for a family of four. Women diagnosed with breast cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

Source: 2001 California Health Interview Survey

66 Swan J, Breen N, Coates RJ, Rimer BK, Lee NC. Progress in cancer screening practices in the United States: Results from the 2000 National Health Interview Survey. Cancer. 2003; 97:1528-1540.

mammography rates among almost all racial and ethnic groups exceed the goal of 70% set by the Healthy People 2010 initiative—only NHOPIs and Asians with higher incomes still fall below this important benchmark. However, even among higher-income women there is variation by race and ethnicity. Asians (69.5%) and Latinas (75.7%) in this income group are less likely to be screened than whites or African Americans (80.1% and 83.1%, respectively.

RACE/ETHNICITY AND INSURANCE STATUS

Insurance is another important factor in determining receipt of mammograms. Women with no insurance are much less likely to have had a mammogram in the past two years. Only 50.2% of uninsured women ages 40-64 report having a mammogram in the past two years (Exhibit 10). Uninsured women are significantly less likely to be screened than women covered by Medi-Cal (71.6%), women with employment-based coverage (78.8%), or those with privately-purchased coverage (76.5%). Among uninsured women ages 40-64, Asians have the lowest screening rate (39.5%) and all groups have screening rates below 57%—far short of the goals set forth in HP2010. Despite the high rates of screening among women with employment-based insurance coverage, there are differences by race and ethnicity. Asian women with employment-based coverage are significantly less likely to be screened than whites (71.6% vs. 80.5%), and NHOPIs are the only women with this coverage who have rates below 70%.

Screening rates tend to be higher among women age 65 and older than among women 40-64 (Exhibit 11). This difference may reflect greater access to health care among older women due to the availability of Medicare coverage for this age group.

Among women age 65 and older, those who are able to purchase a private plan to supplement Medicare coverage have the highest rate of mammography screening—well above the goals set by HP2010 (Exhibit 11). Women in this age group covered by Medicare only have the lowest rates,

EXHIBIT 10. PERCENT WITH A MAMMOGRAM IN THE PAST TWO YEARS BY RACE/ETHNICITY AND INSURANCE COVERAGE, WOMEN AGES 40-64, CALIFORNIA, 2001

	WOMEN AGES 40-64	UNINSURED	MEDI-CAL	EMPLOYMENT-BASED	PRIVATE
RACE/ETHNICITY	**%**	**%**	**%**	**%**	**%**
WHITE	76.9	45.2	72.0	80.5	78.4
LATINO	69.2	56.4	70.4	76.2	75.6
ASIAN	67.0	39.5	70.4	71.6	66.4
AFRICAN AMERICAN	76.7	56.1	74.8	80.2	67.2
AIAN	68.8	*	71.1	77.7	*
NHOPI	61.8	*	*	62.8	*
OTHER/MULTIRACIAL	69.6	55.2	72.1	72.2	77.5
WOMEN AGES 40-64	**74.2**	**50.2**	**71.6**	**78.8**	**76.5**

Note: Women diagnosed with breast cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

significantly lower than those with Medicare plus Medi-Cal or those with Medicare plus private coverage (64.8% compared with 72.6% and 82.9%, respectively). These varying screening rates by type of insurance suggest that the safety net provided by Medi-Cal for older women with low income or disabilities improves the chances of receiving screening. However, those covered by Medicare plus Medi-Cal have lower rates than those with Medicare plus private insurance, suggesting that the safety net could be strengthened. In addition, many women age 65 and older who are covered by Medicare and whose incomes are too high to qualify for Medi-Cal but too low to allow the purchase of a private supplement are not receiving appropriate screening for breast cancer. The low screening rates among those women covered by just Medicare suggest that Medicare coverage alone is not enough. Within each type of insurance, there is little significant variation by race and ethnicity except for women covered by Medicare only. In this group, Latinas have the lowest screening rate (44.6%).

RACE/ETHNICITY AND USUAL SOURCE OF CARE

Having a usual source of care may be even more important for receiving appropriate screening for breast cancer than having insurance.[67] In California, women age 40 and older who have a usual place to go for health care are much more likely to have received a mammogram in the past two years than women with no usual source of care (78.2% vs. 42.6%, Exhibit 12).[68] In fact, women with no usual source of care have screening rates below 45% regardless of race and ethnicity except for AIAN women, whose screening rate with no usual source of care is 67.4%. Interestingly, among AIAN women, there is little difference in screening rates between those with a usual source of care and those without one.

Having a usual source of care significantly increases the likelihood of getting a mammogram for California women whether they are insured or uninsured. Among *uninsured* women, only one third of those with no usual source of care (35.9%) have had a recent mammogram, but more than half

EXHIBIT 11. PERCENT WITH A MAMMOGRAM IN THE PAST TWO YEARS BY RACE/ETHNICITY AND INSURANCE COVERAGE, WOMEN AGE 65 AND OLDER, CALIFORNIA, 2001

	WOMEN AGE 65 AND OLDER	MEDICARE + MEDI-CAL	MEDICARE + PRIVATE	MEDICARE ONLY
RACE/ETHNICITY	**%**	**%**	**%**	**%**
WHITE	80.4	73.2	83.0	66.8
LATINO	74.6	78.1	80.4	44.6
ASIAN	67.8	61.6	82.2	*
AFRICAN AMERICAN	83.8	80.5	86.2	94.1
AIAN	68.8	*	69.6	*
NHOPI	72.4	*	*	*
OTHER/MULTIRACIAL	69.3	51.6	77.5	*
WOMEN AGE 65 AND OLDER	**79.0**	**72.6**	**82.9**	**64.8**

Note: Women diagnosed with breast cancer were not included in these analyses. Estimated rates for uninsured women 65 and older are not included because the sample size was too small. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

67 Breen N, Wagener DK, Brown ML, Davis WW, Ballard-Barbash R. Progress in cancer screening over a decade: Results of cancer screening from the 1987, 1992, and 1998 National Health Interview Surveys. Journal of the National Cancer Institute. 2001; 93:1704-1713.

68 The definition of a usual source of health care in this report excludes emergency rooms and urgent care facilities.

EXHIBIT 12. PERCENT WITH A MAMMOGRAM IN THE PAST TWO YEARS BY RACE/ETHNICITY, INSURANCE STATUS, AND USUAL SOURCE OF CARE (USOC), WOMEN AGE 40 AND OLDER, CALIFORNIA, 2001

	WOMEN AGE 40 AND OLDER		UNINSURED		INSURED	
	USOC	NO USOC	USOC	NO USOC	USOC	NO USOC
RACE/ETHNICITY	%	%	%	%	%	%
WHITE	80.3	42.8	54.9	24.4	81.3	50.4
LATINO	74.1	44.2	63.2	44.9	76.7	42.2
ASIAN	70.0	35.8	46.1	27.2	71.8	45.6
AFRICAN AMERICAN	79.8	43.0	61.9	*	80.7	48.5
AIAN	68.9	67.4	*	*	76.0	*
NHOPI	61.3	*	*	*	60.3	*
OTHER/MULTIRACIAL	72.9	40.0	54.9	*	75.3	*
WOMEN AGE 40 AND OLDER	**78.2**	**42.6**	**57.5**	**35.9**	**79.6**	**48.1**

Note: Women diagnosed with breast cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

of those with a usual source of care have been screened recently (57.5%). Similarly, among the *insured*, less than half of women with no usual source of care have been screened (48.1%), compared with over three fourths of women with a usual source of care (79.6%). Even among women who have both a usual source of care and insurance, there is variation in screening by race and ethnicity. Latinas, Asians, and NHOPIs are all less likely to have had a recent mammogram than whites.

RACE/ETHNICITY AND ENGLISH PROFICIENCY

Limited English proficiency (LEP) can be a barrier to receipt of preventive health care services such as cancer screening. In California, women who report that they do not speak English well or do not speak English at all are less likely to be screened than women who speak English well (65.7% vs. 76.9%, Exhibit 13). This difference is most notable among Asian women. Only 58.1% of Asian women with LEP report having a recent mammogram, compared with 71.6% of Asian women who speak English well. However, even among women who speak English well, racial and ethnic disparities persist. Asians and Latinas who speak English well are less likely to be screened than whites who speak English well (71.6%, 71.8%, and 78.1%, respectively). NHOPIs and AIANs also have low screening rates among those who speak English well, but taking into account LEP does not affect the screening rates for these groups.

EXHIBIT 13. PERCENT WITH A MAMMOGRAM IN PAST TWO YEARS BY RACE/ETHNICITY AND ENGLISH PROFICIENCY, WOMEN AGE 40 AND OLDER, CALIFORNIA, 2001		
	ENGLISH ONLY, VERY WELL OR WELL	NOT WELL OR NOT AT ALL
RACE/ETHNICITY	**%**	**%**
WHITE	78.1	75.4
LATINO	71.8	68.2
ASIAN	71.6	58.1
AFRICAN AMERICAN	78.5	*
AIAN	68.4	*
NHOPI	63.4	*
OTHER/MULTIRACIAL	70.4	63.8
WOMEN AGE 40 AND OLDER	**76.9**	**65.7**

Note: Women diagnosed with breast cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

COUNTY DATA ON SCREENING RATES, INSURANCE AND USUAL SOURCE OF CARE

In California, the percentages of women 40 and older who report having a recent mammogram vary somewhat by county of residence (Exhibit 14). The rates range from 68.1% in Stanislaus County and 69.5% in Lake and Mendocino counties to 84.5% in Yolo County. Variation in rates by county is likely due to a variety of factors, including racial and ethnic distribution, age distribution, and access to care. Exhibit 14 also presents county and county group rates of insurance coverage and usual source of care that may be associated with the differences in mammography rates.

Though there is some variation in mammography rates by county, almost all counties already exceed the HP2010 goal of 70%. These high mammography rates and the minimal variation by county may be partially attributable to the statewide public screening program administered by the California Department of Health Services, Cancer Detection Programs: *Every Woman Counts.*[69] *Every Woman Counts* provides free mammograms and breast health education to women with low income or inadequate insurance coverage. By targeting these groups, *Every Woman Counts* may serve to minimize variation in rates of mammography by county and to increase rates among women who would otherwise lack access to screening with mammograms.

69 The California Department of Health Service's Cancer Detection Program: *Every Woman Counts* was previously called the Breast and Cervical Cancer Control Program (BCCCP) and the Breast Cancer Early Detection Program (BCEDP).

EXHIBIT 14. PERCENT WITH A MAMMOGRAM IN PAST TWO YEARS, PERCENT INSURED, AND PERCENT WITH A USUAL SOURCE OF CARE, WOMEN AGE 40 AND OLDER, CALIFORNIA COUNTIES OR COUNTY GROUPS, 2001

	RECENT MAMMOGRAM, WOMEN 40 AND OLDER		INSURED, WOMEN 40 AND OLDER		WITH A USUAL SOURCE OF CARE, WOMEN 40 AND OLDER	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
NORTHERN AND SIERRA COUNTIES	**74.2**	**(72.4 – 76.1)**	**91.0**	**(89.8 – 92.2)**	**92.6**	**(91.4 – 93.7)**
BUTTE	71.8	(66.1 – 77.4)	92.2	(89.1 – 95.4)	85.7	(80.9 – 90.5)
SHASTA	74.4	(69.1 – 79.7)	92.6	(89.3 – 96.0)	93.3	(89.9 – 96.7)
HUMBOLDT, DEL NORTE	77.4	(71.5 – 83.4)	89.6	(84.6 – 94.6)	93.7	(90.9 – 96.5)
SISKIYOU, LASSEN, TRINITY, MODOC	71.4	(66.1 – 76.7)	86.3	(82.0 – 90.6)	94.5	(91.7 – 97.3)
MENDOCINO, LAKE	69.5	(64.1 – 74.9)	86.6	(82.6 – 90.7)	92.3	(89.1 – 95.4)
TEHAMA, GLENN, COLUSA	74.6	(69.4 – 79.9)	87.6	(83.5 – 91.7)	93.8	(90.8 – 96.8)
SUTTER, YUBA	73.9	(68.0 – 79.8)	91.1	(87.1 – 95.0)	94.6	(91.6 – 97.6)
NEVADA, PLUMAS, SIERRA	75.5	(70.8 – 80.2)	94.8	(92.4 – 97.3)	92.8	(90.0 – 95.7)
TUOLOMNE, CALAVERAS, AMADOR, INYO, MARIPOSA, MONO, ALPINE	78.2	(73.4 – 82.9)	94.1	(91.4 – 96.8)	95.1	(92.5 – 97.6)
GREATER BAY AREA	**78.4**	**(76.8 – 80.1)**	**94.4**	**(93.4 – 95.4)**	**94.9**	**(94.0 – 95.8)**
SANTA CLARA	74.7	(70.3 – 79.0)	94.5	(92.2 – 96.8)	93.7	(91.3 – 96.0)
ALAMEDA	80.4	(76.2 – 84.5)	94.8	(92.2 – 97.4)	95.9	(93.8 – 97.9)
CONTRA COSTA	80.1	(75.9 – 84.2)	96.6	(94.6 – 98.5)	96.9	(95.4 – 98.3)
SAN FRANCISCO	78.0	(74.1 – 82.0)	91.6	(88.8 – 94.4)	94.1	(91.8 – 96.3)
SAN MATEO	79.9	(75.1 – 84.6)	94.4	(91.7 – 97.1)	94.3	(91.8 – 96.9)
SONOMA	78.3	(73.0 – 83.5)	90.9	(87.1 – 94.7)	93.9	(90.7 – 97.2)
SOLANO	77.8	(73.5 – 82.0)	94.0	(91.4 – 96.6)	94.6	(92.1 – 97.1)
MARIN	80.2	(74.9 – 85.4)	97.5	(95.8 – 99.2)	95.5	(92.6 – 98.4)
NAPA	80.6	(75.5 – 85.8)	96.2	(93.3 – 99.0)	94.9	(91.8 – 98.1)
SACRAMENTO AREA	**78.6**	**(75.4 – 81.9)**	**93.5**	**(91.4 – 95.6)**	**93.2**	**(91.0 – 95.4)**
SACRAMENTO	77.5	(72.9 – 82.1)	92.6	(89.5 – 95.7)	92.6	(89.4 – 95.8)
PLACER	81.5	(76.6 – 86.3)	97.5	(95.5 – 99.4)	95.9	(93.5 – 98.3)
YOLO	84.5	(79.6 – 89.3)	93.6	(90.4 – 96.7)	95.6	(92.9 – 98.2)
EL DORADO	77.7	(71.2 – 84.2)	93.4	(90.6 – 96.3)	91.4	(87.4 – 95.3)

Note: Women diagnosed with breast cancer were not included in these analyses.

(continued on next page)

Source: 2001 California Health Interview Survey

EXHIBIT 14. PERCENT WITH A MAMMOGRAM IN PAST TWO YEARS, PERCENT INSURED, AND PERCENT WITH A USUAL SOURCE OF CARE, WOMEN AGE 40 AND OLDER, CALIFORNIA COUNTIES OR COUNTY GROUPS, 2001 (CONTINUED)

	RECENT MAMMOGRAM, WOMEN 40 AND OLDER		INSURED, WOMEN 40 AND OLDER		WITH A USUAL SOURCE OF CARE, WOMEN 40 AND OLDER	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
SAN JOAQUIN VALLEY	**73.8**	**(71.6 – 76.0)**	**89.3**	**(87.7 – 90.9)**	**91.5**	**(90.1 – 92.8)**
FRESNO	75.0	(70.2 – 79.8)	90.6	(87.4 – 93.8)	93.6	(91.1 – 96.0)
KERN	69.9	(64.7 – 75.1)	87.3	(83.3 – 91.2)	89.3	(85.6 – 93.0)
SAN JOAQUIN	77.0	(71.6 – 82.3)	92.0	(88.6 – 95.4)	92.9	(90.1 – 95.8)
STANISLAUS	68.1	(61.9 – 74.3)	88.1	(83.4 – 92.8)	88.4	(83.6 – 93.2)
TULARE	76.8	(71.2 – 82.4)	86.0	(81.0 – 91.0)	92.5	(89.0 – 95.9)
MERCED	76.8	(71.4 – 82.2)	89.6	(85.0 – 94.2)	89.0	(85.0 – 93.0)
KINGS	74.5	(68.8 – 80.3)	91.8	(88.0 – 95.6)	94.1	(91.2 – 97.1)
MADERA	78.8	(73.4 – 84.2)	89.5	(85.5 – 93.5)	92.3	(88.9 – 95.8)
CENTRAL COAST	**74.1**	**(71.4-76.8)**	**89.5**	**(87.5 – 91.5)**	**91.6**	**(89.9 – 93.2)**
VENTURA	73.3	(67.9 – 78.7)	90.0	(85.9 – 94.0)	93.2	(90.2 – 96.1)
SANTA BARBARA	73.1	(67.8 – 78.4)	86.1	(81.5 – 90.6)	91.9	(88.2 – 95.6)
SANTA CRUZ	79.1	(74.0 – 84.1)	94.1	(91.2 – 96.9)	95.5	(92.8 – 98.2)
SAN LUIS OBISPO	76.5	(71.4 – 81.5)	90.8	(86.9 – 94.6)	88.4	(84.3 – 92.6)
MONTEREY, SAN BENITO	72.1	(66.3 – 78.0)	88.4	(83.7 – 93.1)	88.1	(83.6 – 92.7)
LOS ANGELES	**74.2**	**(72.6 – 75.7)**	**86.8**	**(85.6 – 88.1)**	**91.3**	**(90.3 – 92.4)**
LOS ANGELES	74.2	(72.6 – 75.7)	86.8	(85.6 – 88.1)	91.3	(90.3 – 92.4)
OTHER SOUTHERN CALIFORNIA	**75.0**	**(73.3-76.7)**	**91.4**	**(90.2 – 92.5)**	**92.3**	**(91.2 – 93.4)**
ORANGE	76.1	(72.9 – 79.3)	91.8	(89.6 – 94.0)	91.5	(89.3 – 93.7)
SAN DIEGO	74.8	(71.8 – 77.8)	92.1	(90.2 – 94.0)	94.2	(92.5 – 95.8)
SAN BERNARDINO	75.9	(72.0 – 79.8)	91.3	(88.5 – 94.0)	91.5	(88.9 – 94.1)
RIVERSIDE	72.4	(68.0 – 76.7)	89.6	(86.5 – 92.7)	91.8	(89.1 – 94.5)
IMPERIAL	76.1	(70.8 – 81.4)	88.2	(84.1 – 92.3)	87.8	(83.6 – 91.9)
STATEWIDE	**75.5**	**(73.4 – 82.9)**	**90.6**	**(90.1 – 91.2)**	**92.6**	**(92.1 – 93.1)**

Note: Women diagnosed with breast cancer were not included in these analyses.

Source: 2001 California Health Interview Survey

MULTIPLE DETERMINANTS OF SCREENING MAMMOGRAPHY

We further examined the contribution of race, place of residence, income, health insurance and usual source of care on mammogram screening in a multivariate model. We developed logistic regression analyses for women 40-64 and for women 65 and older, and found that insurance status and having a usual source of care are important determinants of screening for both age groups. Among nonelderly women, even after accounting for access to care and other sociodemographic factors such as age and education, Asians and low-income women are less likely to be screened. Among women 65 and older, race and ethnicity is not a significant determinant of screening; however, low-income women in this age group continue to be the least likely to be screened.

REASONS FOR NO RECENT MAMMOGRAM

CHIS 2001 asked women who never had a mammogram or who had not had one in the past two years for the most important explanation. One of the most common reasons reported by women is that a doctor has never told them they should have the test. Others include that the test is expensive or the women don't have insurance, that the women haven't had problems, that they have put off the test, or that the test is painful or embarrassing. These findings are consistent with previous research that has identified lack of physician recommendation, cost, absence of symptoms, and fear of pain or embarrassment as reasons for not been screened.[70,71,72,73] Among Asian women, a group with particularly low rates of recent screening mammography, common reasons for not being screened include that they don't have any problems, they put it off, the doctor didn't tell them they needed it, it is painful or embarrassing, and it is expensive or they don't have insurance. Among Latina women, a group with the highest rates of never having been screened common reasons include that they haven't had problems, they put it off, the doctor didn't tell them they needed it, and it is expensive or they don't have insurance.

CONCLUSIONS AND POLICY IMPLICATIONS

Overall, 75.5% of California women 40 and older report having a mammogram in the past two years—a rate that exceeds the HP2010 goal of 70%. Despite this encouraging finding, many groups in California fall far short of the HP2010 goal. Asian and NHOPI women, women with low income, women with no insurance or with no usual source of care, and women with limited English proficiency are less likely to have had a mammogram in the past two years. Also worth noting is that these data were collected during a period of low unemployment and high economic growth. Since that time, there has been a downturn in the economy, an increase in unemployment, loss of funding for safety-net health care provisions and limitations to the benefits provided by employers who offer job-based insurance.

70 Fox SA, Stein JA. The effect of physician-patient communication on mammography utilization by different ethnic groups. Medical Care. 1991; 29(11):1065-82.

71 Bastani R, Marcus AC, Hollatz-Brown A. Screening mammography rates and barriers to use: a Los Angeles County survey. Preventive Medicine. 1991; 20(3):350-63.

72 Taplin SH, Urban N, Taylor VM, Savarino J. Conflicting national recommendations and the use of screening mammography: does the physician's recommendation matter? The Journal of the American Board of Family Practice. 1997; 10(2): 88-95.

73 Rimer BK, Keintz MK, Kessler HB, Engstrom PF, Rosan JR. Why women resist screening mammography: patient-related barriers. Radiology. 1989; 172(1):243-6.

Public policy and community action can help those population groups less likely to receive preventive mammography screening get the appropriate screening tests by doing the following:

- **Promote screening among women from immigrant communities, including Asians, NHOPIs, and Latinas, by providing culturally sensitive and language-appropriate materials and interventions.** Asian, AIAN, and Latina women have significantly lower screening rates than white or African-American women, and the highest rates of never having had a mammogram are among Latinas and Asian women. NHOPI women also have very low rates of having a recent mammogram. Furthermore, as mentioned above, Asian and Latina women frequently mention the following reasons for not being screened: they don't have any problems, the doctor didn't tell them they needed it, and it is expensive or they didn't have insurance. These findings can help inform programs targeted at increasing screening rates among these groups.

  In order to promote mammography use among Latina, Asian, AIAN, and NHOPI women, health care providers should be trained to provide culturally competent care that addresses and acknowledges cultural barriers, including English language proficiency, cultural attitudes and beliefs about breast health, perceived risk of breast cancer and acculturation level. In addition, language barriers can pose a significant problem for Asian and Latina women. In order to address language issues, providers should offer adequate translation services to women seeking care at their facilities and provide language-appropriate materials and information related to breast health, mammography use and breast cancer detection. Health care providers should be encouraged to recommend mammograms to all women age 40 and older regardless of their race/ethnicity, income level, or insurance status. Health care providers should also be educated about the *Every Woman Counts* program so that they can refer women who may qualify to providers who work with the program.

- **Improve access to care and expand insurance coverage for all women, but especially for non-elderly women.** Lack of adequate medical insurance poses a significant barrier to receipt of breast cancer prevention services, particularly among minority groups such as Asian, NHOPI and Latina women. Among uninsured women ages 40-64, only half have had a mammogram in the past two years (50.2%, compared with 71.6% of women with Medi-Cal coverage and 78.8% of women with employment-based insurance). Even though many of these uninsured women may be eligible for free mammograms through the *Every Woman Counts* program, they have not received this service. Women are more likely to receive a mammogram if they are insured, because having insurance facilitates their having a regular health care provider and reduces financial barriers to obtaining preventive services, such as screening and mammograms. Therefore, in order to increase rates of mammography screening and promote early detection and prevention of breast cancer, insurance coverage must be expanded to cover mammography services for both nonelderly and elderly women.

  Currently, several federal bills that address coverage and expansion of mammography services are pending in Congress (HR 292, S548, HR 1064, HR 1354, HR 1328). Passing these bills would be an important step in improving access to mammography services for women who are insured. However, since these bills mainly concern Medicaid and Medicare populations, women who are uninsured would still suffer from difficulty in accessing mammograms. Additional measures should be taken to improve mammography rates among uninsured women.

- **Continue support for the Cancer Detection Programs: *Every Woman Counts.*** Currently, the California Department of Health Services supports *Every Woman Counts* as part of the National Breast and Cervical Cancer Early Detection Program. *Every Woman Counts* provides mammography services to women in California who meet specified eligibility requirements such as low income or lack of insurance. Despite the availability of free mammograms through *Every Woman Counts*, many women in California continue to be screened at lower rates. Women with low incomes, no insurance, and no usual source of care are much less likely to have had a recent mammogram. In addition, Latina, Asian, AIAN, and NHOPI women have lower screening rates than whites and African Americans.

  State and local governments, in cooperation with community groups, can increase the number of women who participate in the *Every Woman Counts* program by doing the following:

  1. Increase awareness of *Every Woman Counts* through culturally appropriate education and communication strategies. Despite the availability of free mammograms to women with low income and inadequate insurance, many women who may qualify for a free mammogram are not utilizing this program. Low-income Asian and Latina women are less likely to have had a recent mammogram than their higher-income counterparts. In addition, among uninsured women, only 39.5% of Asians report having had a recent mammogram. Finally, Asian women with limited English proficiency are less likely to have had a recent mammogram than Asian women who speak English well.
  2. Increase outreach efforts to women at the highest risk of not having had a recent mammogram. Outreach to Asian and NHOPI women and women who face language barriers is critical. In California, 1.6 million women age 40 and older report not having had a mammogram in the past two years (24.5%), including nearly 700,000 who report never having had a mammogram (10.7%). Asians, NHOPIs, Latinas, AIANs, women with low income, those with no insurance and those with limited English proficiency are at particular risk of not having had a recent mammogram.
  3. Continue funding for the *Every Woman Counts* program to ensure that free mammograms remain available to these groups, with particular focus on expanding the number and range of providers that offer free mammograms for women eligible under the *Every Woman Counts* program. Currently, approximately 2,000 providers in California offer clinical services such as breast cancer screening through the *Every Woman Counts* program.[74]

74 California Detection Programs: Every Woman Counts. Available: *http://www.dhs.ca.gov/ps/cdic/ccb/cds/documents/cdsinfo.pdf*

4. COLORECTAL CANCER SCREENING IN CALIFORNIA

INTRODUCTION

Colorectal cancer (CRC) is the third most common cancer in California, with an estimated 136,000 Californians alive today who have been diagnosed with CRC.[75] The California Cancer Registry estimates there will be 14,300 new diagnoses and 5,000 deaths from colorectal cancer in 2003. The lifetime risk for a diagnosis of CRC is 6.1% for men and 5.9% for women; the risk of death is 2.6% for men and 2.7% for women.[76] Outcomes for people with colorectal cancer are highly dependent upon the stage of disease at the time of diagnosis. When CRC is detected early, there is a 90% five-year survival rate; the five-year survival rate for those with advanced disease is only 9%.[77] The great public health challenge is to maximize the proportion of cases that are identified at a stage at which the disease is curable.

Currently, screening consists of several modalities, which are implemented based upon patient and physician preferences. The primary CRC screening methods are fecal occult blood testing (FOBT), flexible sigmoidoscopy, and colonoscopy. FOBT uses test cards to detect trace amounts of blood in stool; positive tests necessitate follow-up to determine the source of bleeding. Sigmoidoscopy uses a flexible endoscope to directly visualize the lower 50-60 centimeters of the colon. Colonoscopy is similar to sigmoidoscopy, but uses a longer endoscope, enabling examination of the entire colon (approximately 150 cm). Endoscopic exams (sigmoidoscopy and colonoscopy) are the most important elements of CRC screening programs. These procedures not only detect early-stage cancers, but, by detecting polyps that can subsequently be removed, these tests can actually prevent early lesions from progressing to cancer.

A growing body of research has demonstrated that CRC screening decreases disease mortality. Four large population-based studies have been conducted using FOBT; these studies reported that FOBT decreases CRC mortality by 15-33%, and can decrease the number of people who develop the disease by 20%.[78,79,80,81] Similar evidence supports the use of sigmoidoscopy as a primary screening modality to detect and prevent CRC.[82,83,84] Colonoscopy can be used either as a primary screening test, to investigate clinical symptoms, or as follow-up after a positive initial screening test with FOBT or sigmoidoscopy. As a result of the accumulating evidence, CRC screening is recommended by the American Cancer Society, the Centers for Disease Control and Prevention, the National Cancer Institute and the U.S. Preventive Services Task Force.

The incidence of CRC in California declined significantly between 1988 and 1996.[85,86] This trend is attributed to increased screening, especially the use of sigmoidoscopy. Unfortunately, the proportion of the population that receives screening is still quite low. In the 2000 National Health Interview Survey (NHIS), only 41% of men and 37.5% of women were recently screened. There appear to be significant barriers to widespread use of CRC screening.[87]

75 American Cancer Society, California Division, and Public Health Institute, California Cancer Registry. California Cancer Facts and Figures 2003. Oakland, CA: American Cancer Society, California Division, September, 2002.

76 American Cancer Society. Cancer Facts & Figures. Atlanta, GA: American Cancer Society, 1996.

77 Ries LA MB, Hankey BF, et al. SEER Cancer Statistics Review 1973-1991: Tables and Graphs. NIIH Pub. 94-2789 1994.

78 Hardcastle JD, Chamberlain JO, Robinson MH, et al. Randomised controlled trial of faecal-occult-blood screening for colorectal cancer. Lancet. 1996; 348(9040):1472-7.

79 Kronborg O, Fenger C, Olsen J, et al. Randomised study of screening for colorectal cancer with faecal-occult-blood test. Lancet. 1996; 348(9040):1467-71.

80 Kewenter J, Brevinge H, Engaras B, et al. Results of screening, rescreening, and follow-up in a prospective randomized study for detection of colorectal cancer by fecal occult blood testing. Results for 68,308 subjects. Scandinavian Journal of Gastroenterology. 1994; 29(5):468-73.

81 Mandel JS, Bond JH, Church TR, et al. Reducing mortality from colorectal cancer by screening for fecal occult blood. Minnesota Colon Cancer Control Study. New England Journal of Medicine. 1993; 328(19):1365-71.

82 Selby JV, Friedman E, Quesenberry CP, Weiss NS. A case-control study of screening sigmoidoscopy and mortality from colorectal cancer. New England Journal of Medicine. 1992; 326(10):653-7.

83 Newcomb PA, Norfleet RG, Storer BE, et al. Screening sigmoidoscopy and colorectal cancer mortality. Journal of the National Cancer Institute. 1992; 84(20):1572-5.

84 Muller AD, Sonnenberg A. Prevention of colorectal cancer by flexible endoscopy and polypectomy. A case-control study of 32,702 veterans. Annals of Internal Medicine. 1995; 123(12):904-10.

85 Cress RD, Morris CR, Wolfe BM. Cancer of the colon and rectum in California: trends in incidence by race/ethnicity, stage, and subsite. Preventive Medicine. 2000; 31(4):447-53.

86 Inciardi JF, Lee JG, Stijnen T. Incidence trends for colorectal cancer in California: implications for current screening practices. The American Journal of Medicine. 2000; 109(4):277-81.

87 Swan J, Breen N, Coates RJ, et al. Progress in cancer screening practices in the United States: results from the 2000 National Health Interview Survey. Cancer. 2003; 97(6):1528-40.

In this chapter, we examine use of screening tests for colorectal cancer in California, reporting rates of receiving either an FOBT in the last 12 months or an endoscopic exam (sigmoidoscopy or colonoscopy) in the last five years among men and women age 50 and older who report not being diagnosed with colon or rectum cancer. CHIS 2001 asked respondents several questions about screening for colorectal cancer. The results included here are based on responses to questions asking if respondents had ever done a home blood test (FOBT), how long ago they did the most recent FOBT, if they had ever had a sigmoidoscopy or colonoscopy, and how long ago they had their most recent sigmoidoscopy or colonoscopy. We examine rates of colorectal screening by several important characteristics: race/ethnicity, income, insurance coverage, usual source of health care, English proficiency and area of residence. We also report results from a multivariate model of colorectal screening.

GENDER, RACE/ETHNICITY AND INCOME

In California, more than 2.3 million adults age 50 and older (30%) report never having been screened for colorectal cancer (Exhibit 15). Among adults who have never been screened, Latinos and Asians are at particular risk compared with other racial and ethnic groups.

Only slightly more than half (53.2%) of California adults 50 and older have been recently screened for colorectal cancer (Exhibit 15). Rates of recent CRC screening vary by gender. Women are less likely than men to have been recently screened (48.5% vs. 58.7%). These gender-based differences are consistent across racial and ethnic groups, and consistent with similar findings of gender-based differences in screening rates that have been noted in prior surveys of CRC screening.[88,89] Rates of recent CRC screening also vary by race and ethnicity. Only 37% of Latinos, 39.1% of Native Hawaiians and other Pacific Islanders (NHOPIs), and 45.9% of Asians have been screened recently, compared with 56.4% of whites. Latina women are at particular risk—less than one third report having a recent CRC screening test (32.6%).

Family income level is strongly associated with having a recent colorectal screening exam. In California, adults with incomes below 200% of the Federal Poverty Level (FPL) are less likely than adults with higher incomes to have had a recent screening test (46.4% vs. 56.2%). These findings parallel other analyses of CRC screening, which also found income-based disparities.[90, 91]

Among adults between the ages of 50 and 64, those with higher incomes are more likely to be screened than those with lower incomes (50.6% vs. 35.7%, Exhibit 16). There is also variation by race and ethnicity. Among low-income nonelderly adults, Latinos have significantly lower screening rates than other racial and ethnic groups. However, even among higher-income adults, racial and ethnic disparities are present. Asians and Latinos are less likely to have had a recent colorectal screening test than whites or African Americans.

Similar to adults under 65, those who are 65 and older with higher incomes are more likely to have received recent CRC screening than those with lower incomes (65.6% vs. 55.1%, Exhibit 16). Among low-income elderly adults, Latinos have significantly lower screening rates than whites or African Americans, and Asians have lower screening rates than African Americans. Unlike their younger counterparts, there is no significant variation by race and ethnicity among higher-income elderly adults.

88 Breen N, Wagener DK, Brown ML, et al. Progress in cancer screening over a decade: results of cancer screening from the 1987, 1992, and 1998 National Health Interview Surveys. Journal of the National Cancer Institute. 2001; 93(22):1704-13.

89 Trends in screening for colorectal cancer—United States, 1997 and 1999. Morbidity and Mortality Weekly Report. 2001; 50:162-166.

90 Breen N, Wagener DK, Brown ML, et al. Progress in cancer screening over a decade: results of cancer screening from the 1987, 1992, and 1998 National Health Interview Surveys. Journal of the National Cancer Institute. 2001; 93(22):1704-13.

91 Hiatt RA, Klabunde C, Breen N, et al. Cancer screening practices from National Health Interview Surveys: past, present, and future. Journal of the National Cancer Institute. 2002; 94(24):1837-46.

EXHIBIT 15. RECENT COLORECTAL CANCER SCREENING BY GENDER AND RACE/ETHNICITY, ADULTS AGE 50 AND OLDER, CALIFORNIA, 2001

	ADULTS AGE 50 AND OLDER		MEN		WOMEN	
	NEVER SCREENED	RECENT CRC SCREENING	NEVER SCREENED	RECENT CRC SCREENING	NEVER SCREENED	RECENT CRC SCREENING
RACE/ETHNICITY	%	%	%	%	%	%
WHITE	24.9	56.4	22.3	62.6	27.2	51.3
LATINO	53.3	37.0	49.4	42.4	56.6	32.6
ASIAN	41.8	45.9	42.1	48.1	41.6	43.8
AFRICAN AMERICAN	29.9	55.1	26.1	61.3	32.5	50.7
AIAN	33.4	49.6	33.8	53.5	33.1	46.7
NHOPI	41.7	39.1	*	*	36.2	36.0
OTHER/MULTIRACIAL	30.9	53.9	30.1	58.2	31.8	49.8
ADULTS AGE 50 AND OLDER	**30.0**	**53.2**	**27.6**	**58.7**	**32.0**	**48.5**

Note: Recent CRC screening refers to FOBT in the past year or sigmoidoscopy/colonoscopy in the past five years. Adults diagnosed with colon or rectum cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

EXHIBIT 16. PERCENT WITH RECENT COLORECTAL CANCER SCREENING BY RACE/ETHNICITY, AGE AND INCOME, ADULTS AGE 50 AND OLDER, CALIFORNIA, 2001

	AGES 50-64		AGE 65 AND OLDER	
	BELOW 200%FPL	200% FPL AND ABOVE	BELOW 200% FPL	200% FPL AND ABOVE
RACE/ETHNICITY	%	%	%	%
WHITE	42.2	52.3	56.5	66.1
LATINO	26.0	39.8	47.8	61.6
ASIAN	35.4	43.7	49.7	60.7
AFRICAN AMERICAN	41.8	54.3	62.1	63.0
AIAN	42.4	42.8	53.9	73.8
NHOPI	*	*	*	*
OTHER/MULTIRACIAL	40.1	52.9	54.7	66.0
ALL RACIAL/ETHNIC GROUPS	**35.7**	**50.6**	**55.1**	**65.6**

Note: In 2001, the annual income at 100% of the Federal Poverty Level (FPL) was $9,039 for one person, $11,569 for a family of two, $14,128 for a family of three, and $18,104 for a family of four. Recent CRC screening refers to FOBT in the past year or sigmoidoscopy/colonoscopy in the past five years. Adults diagnosed with colon or rectum cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

It is also important to note that older Californians (65 and older) consistently have higher screening rates than adults ages 50-64 across racial and ethnic groups (Exhibit 16; see also Exhibits 17 and 18). Overall, only 47% of adults ages 50-64 have received recent screening, compared with 61.4% of those 65 years or older. The fact that older adults are screened more often than their younger counterparts may reflect greater access to care resulting from the availability of Medicare coverage in this age group.

RACE/ETHNICITY AND INSURANCE STATUS

Having insurance coverage is an important factor that determines access to colorectal cancer screening and may partially explain disparities in screening rates. Among both nonelderly and elderly adults, there are significant differences in screening rates across different types of health insurance. Among adults between the ages of 50 and 64, those who are uninsured have the lowest rates of screening (Exhibit 17). Only one out of five uninsured adults (19.7%) report recent colorectal screening, compared with approximately half of those with Medi-Cal (46.2%) or employment-based insurance (51.4%). Although adults covered by Medi-Cal are more likely to be screened than uninsured adults, they are less likely to be screened than adults covered by employment-based insurance. This suggests that the safety net provided by Medi-Cal is very important in receipt of screening, but that it could be improved. Among uninsured adults, Latinos (14.2%) are less likely to report recent screening than whites (21.2%) or African Americans (30.3%). Even among those with employment-based insurance—the type of insurance with the highest rates of screening—rates vary by race and ethnicity. Latinos (39.7%), AIANs (41.4%), and Asians (44.5%) are less likely to have been screened recently than whites or African Americans (53.5% and 55.2%, respectively).

Among California adults age 65 and older, those covered by Medicare with private supplemental insurance coverage (65.3%) are more likely to have been screened than those with Medicare only (50.6%) or those covered by a combination of Medicare and Medi-Cal (52.6%, Exhibit 18). These findings suggest that being able to afford supplemental insurance coverage is important for receiving colorectal screening among elderly adults. Elderly adults who qualify for Medi-Cal

EXHIBIT 17. PERCENT WITH RECENT COLORECTAL CANCER SCREENING BY RACE/ETHNICITY AND INSURANCE COVERAGE, ADULTS AGES 50-64, CALIFORNIA, 2001

	ADULTS AGES 50-64	UNINSURED	MEDI-CAL	EMPLOYMENT-BASED	PRIVATE
RACE/ETHNICITY	**%**	**%**	**%**	**%**	**%**
WHITE	50.8	21.2	51.1	53.5	51.7
LATINO	31.8	14.2	35.8	39.7	32.4
ASIAN	41.1	23.1	49.1	44.5	32.6
AFRICAN AMERICAN	49.9	30.3	44.2	55.2	*
AIAN	42.7	*	58.7	41.4	*
NHOPI	*	*	*	*	*
OTHER/MULTIRACIAL	49.4	31.7	53.3	55.2	*
ADULTS AGES 50-64	**47.0**	**19.7**	**46.2**	**51.4**	**48.2**

Note: Recent CRC Screening refers to FOBT in the past year or sigmoidoscopy/colonoscopy in the past five years. Adults diagnosed with colon or rectum cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

EXHIBIT 18. PERCENT WITH RECENT COLORECTAL CANCER SCREENING BY RACE/ETHNICITY AND INSURANCE COVERAGE, ADULTS AGE 65 AND OLDER, CALIFORNIA, 2001				
	ADULTS AGE 65 AND OLDER	MEDICARE + MEDI-CAL	MEDICARE + PRIVATE	MEDICARE ONLY
RACE/ETHNICITY	%	%	%	%
WHITE	62.9	53.9	65.2	53.6
LATINO	51.9	45.4	64.9	30.1
ASIAN	54.2	50.1	64.2	38.8
AFRICAN AMERICAN	62.5	59.0	65.7	70.1
AIAN	62.5	52.2	68.7	*
NHOPI	62.1	*	85.1	*
OTHER/MULTIRACIAL	60.8	54.8	67.3	*
ADULTS AGE 65 AND OLDER	**61.4**	**52.6**	**65.3**	**50.6**

Note: Recent CRC Screening refers to FOBT in the past year or sigmoidoscopy/colonoscopy in the past five years. Adults diagnosed with colon or rectum cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

in addition to Medicare have similar screening rates to those covered by Medi-Cal alone. Among elderly adults, Latinos and Asians are at greatest risk for having low rates of recent colorectal screening. Older Latinos and Asians covered by Medicare only are at particular risk of not receiving appropriate colorectal cancer screening. Less than one-third of Latino adults (30.1%) and less than half of Asian adults (38.8%) with Medicare only report having recent colorectal screening.

RACE/ETHNICITY AND USUAL SOURCE OF CARE

Having a usual source of care increases the likelihood of timely receipt of colorectal screening. Research suggests that having a usual source of care may be even more important than insurance coverage in receipt of appropriate cancer screening.[92,93] In California, adults with a usual source of care are more than three times as likely to have recent colorectal screening than those with no usual source of care (55.5% vs. 18.3%, Exhibit 19). Furthermore, having a usual source of care significantly increases the likelihood of recent colorectal screening for California adults, regardless of their insurance status. Among uninsured adults with no usual source of care, only one in ten (10.1%) reports recent colorectal screening; however, having a usual source of care more than doubles the likelihood of recent colorectal screening (25.1%). Similarly, among the insured, adults with a usual source of care are more than twice as likely to have received recent colorectal screening as insured adults with no usual source of care (57% vs. 23.3%).

92 Breen N, Wagener DK, Brown ML, Davis WW, Ballard-Barbash R. Progress in cancer screening over a decade: Results of cancer screening from the 1987, 1992, and 1998 National Health Interview Surveys. Journal of the National Cancer Institute. 2001; 93:1704-1713.

93 Swan J, Breen N, Coates RJ, Rimer BK, Lee NC. Progress in cancer screening practices in the United States: Results from the 2000 National Health Interview Survey. Cancer. 2003; 97:1528-1540.

The difference in receipt of recent screening between those with and without a usual source of care is consistent across all racial and ethnic groups with sufficient sample sizes to make reliable estimates in this category (Exhibit 19). But the difference among Latino adults is particularly striking. Latinos with a usual source of care are nearly four times as likely to have received recent colorectal screening as Latinos with no usual source of care (40.8% vs. 11%).

RACE/ETHNICITY AND ENGLISH PROFICIENCY

Rates of recent colorectal cancer screening vary by English proficiency. In California, only one-third of adults who report that they do not speak English well or do not speak English at all have recently been screened for colorectal cancer, compared with more than half of those who speak English well (35.5% vs. 55.1%, Exhibit 20). This difference between those who speak English well and those with LEP is found among Latinos, Asians, and whites. However, even among adults who speak English well, racial and ethnic disparities persist. Latinos and Asians who speak English well are less likely to have been screened than whites who speak English well (43.2%, 48.9%, and 56.5%, respectively).

COUNTY DATA ON SCREENING RATES, INSURANCE AND USUAL SOURCE OF CARE

In California, the percent of adults who report recent screening for colorectal cancer varies by place of residence. The rates of recent colorectal screening range from 40.1% in Imperial County and 40.3% in Kings County to 60% and 60.5% in Sacramento and Placer counties, respectively (Exhibit 21). Regionally, rates of recent colorectal screening are lower in the Northern and Sierra Counties (49.4%), Los Angeles County (50.1%), and the San Joaquin Valley (51.6%) than in the Sacramento Area (59.1%) or the Greater Bay Area (56.5%). Regional variation in colorectal screening rates may be related to several factors, including racial and ethnic distribution, age distribution and variation in access to care. For example, the counties with the lowest screening rates, Imperial and Kings, also have among the lowest percentages insured (91.8% and 92.3%, respectively) and

EXHIBIT 19. PERCENT WITH RECENT COLORECTAL CANCER SCREENING BY RACE/ETHNICITY, INSURANCE STATUS AND USUAL SOURCE OF CARE (USOC), ADULTS AGE 50 AND OLDER, CALIFORNIA, 2001

	ADULTS AGE 50 AND OLDER		UNINSURED		INSURED	
	USOC	NO USOC	USOC	NO USOC	USOC	NO USOC
RACE/ETHNICITY	%	%	%	%	%	%
WHITE	58.4	21.0	26.7	9.4	59.3	24.5
LATINO	40.8	11.0	17.6	*	44.9	16.1
ASIAN	48.8	16.7	30.3	*	50.1	*
AFRICAN AMERICAN	56.1	*	36.8	*	56.9	*
AIAN	51.0	*	*	*	52.0	*
NHOPI	40.1	*	*	*	38.4	*
OTHER/MULTIRACIAL	57.1	*	37.7	*	58.1	*
ADULTS AGE 50 AND OLDER	**55.5**	**18.3**	**25.1**	**10.1**	**57.0**	**23.3**

Note: Recent CRC screening refers to FOBT in the past year or sigmoidoscopy/colonoscopy in the past five years. Adults diagnosed with colon or rectum cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

among the lowest percentages with a usual source of care (90.2% and 92.2%, respectively). The counties with the highest CRC screening rates, Sacramento and Placer, are among the counties with the highest percentages insured (97.8% and 96.5%, respectively) and with a usual source of care (96.5% and 96.2%, respectively).

MULTIPLE DETERMINANTS OF COLORECTAL CANCER SCREENING

We further examined the contribution of race, place of residence, income, health insurance and usual source of care on colorectal cancer screening in a multivariate model. We developed two separate models, one for adults ages 50-64 and one for adults 65 and older. Insurance status and having a usual source of care are important determinants of cancer screening for both age groups. Among nonelderly adults, even after we account for access to care and other socioeconomic factors such as poverty and education, women, Asians, and Latinos are less likely to be screened. Among Californians 65 and older, race and ethnicity are not significant determinants of screening; however, women older than 65 continue to be less likely than men in that age group to be screened.

REASONS FOR NO RECENT COLORECTAL CANCER SCREENING

Prior research has identified several main reasons explaining why individuals may not participate in screening programs, including absence of health problems, practical obstacles and concerns about pain or discomfort.[94] One of the most common reasons for not undergoing testing is the absence of any current health problems. In California, this reason is mentioned most frequently by Asians and Latinos, the same groups that are screened least frequently. The state's women are screened less frequently for colorectal cancer than the state's men. Little is known about the reasons for this gender discrepancy. However, the most frequently mentioned reason for not being screened among California women is "the doctor didn't tell me I needed it." In addition, women are more likely than men to say they find the screening exams painful and/or embarrassing.[95]

EXHIBIT 20. PERCENT WITH RECENT COLORECTAL CANCER SCREENING BY RACE/ETHNICITY AND ENGLISH PROFICIENCY, ADULTS AGE 50 AND OLDER, CALIFORNIA, 2001

	ENGLISH ONLY, VERY WELL OR WELL	NOT WELL OR NOT AT ALL
RACE/ETHNICITY	**%**	**%**
WHITE	56.5	38.9
LATINO	43.2	31.4
ASIAN	48.9	41.0
AFRICAN AMERICAN	55.1	*
AIAN	49.5	*
NHOPI	40.0	*
OTHER/MULTIRACIAL	54.2	50.9
ADULTS AGE 50 AND OLDER	**55.1**	**35.5**

Note: Recent CRC screening refers to FOBT in the past year or sigmoidoscopy/colonoscopy in the past five years. Adults diagnosed with colon or rectum cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

94 Vernon SW. Participation in colorectal cancer screening: a review. Journal of the National Cancer Institute. 1997; 89(19):1406-22.

95 CHIS 2001 asked about reasons for not having a home blood test and reasons for not having a recent colonoscopy or sigmoidoscopy in separate questions. However, the rank order of reasons was the same for both questions.

EXHIBIT 21. PERCENT WITH RECENT COLORECTAL CANCER SCREENING, PERCENT INSURED AND PERCENT WITH A USUAL SOURCE OF CARE, ADULTS AGE 50 AND OLDER, CALIFORNIA COUNTIES OR COUNTY GROUPS, 2001

	RECENT CRC SCREENING, ADULTS 50 AND OLDER		INSURED, ADULTS 50 AND OLDER		WITH A USUAL SOURCE OF CARE, ADULTS 50 AND OLDER	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
NORTHERN AND SIERRA COUNTIES	**49.4**	**(47.6 – 51.2)**	**93.1**	**(92.2 – 94.1)**	**92.7**	**(91.7 – 93.7)**
BUTTE	51.2	(45.6 – 56.7)	95.7	(93.6 – 97.7)	90.0	(86.5 – 93.4)
SHASTA	50.1	(45.0 – 55.3)	93.3	(90.5 – 96.1)	92.4	(89.5 – 95.3)
HUMBOLDT, DEL NORTE	48.5	(42.7 – 54.3)	93.1	(90.5 – 95.7)	93.3	(90.4 – 96.2)
SISKIYOU, LASSEN, TRINITY, MODOC	45.9	(41.0 – 50.9)	91.5	(88.7 – 94.3)	92.5	(89.7 – 95.3)
MENDOCINO, LAKE	43.8	(38.6 – 49.0)	89.7	(86.5 – 92.9)	94.0	(91.6 – 96.4)
TEHAMA, GLENN, COLUSA	43.8	(38.4 – 49.2)	90.5	(87.2 – 93.9)	93.3	(90.1 – 96.5)
SUTTER, YUBA	51.8	(46.0 – 57.5)	95.2	(92.7 – 97.6)	95.1	(92.6 – 97.5)
NEVADA, PLUMAS, SIERRA	52.5	(47.3 – 57.7)	95.4	(92.7 – 98.0)	93.0	(90.0 – 96.0)
TUOLOMNE, CALAVERAS, AMADOR, INYO, MARIPOSA, MONO, ALPINE	52.9	(47.8 – 58.0)	92.6	(89.6 – 95.6)	92.6	(89.8 – 95.4)
GREATER BAY AREA	**56.5**	**(54.6 – 58.3)**	**95.7**	**(94.9 – 96.5)**	**95.5**	**(94.7 – 96.2)**
SANTA CLARA	58.5	(53.9 – 63.1)	95.0	(92.8 – 97.1)	93.3	(91.1 – 95.6)
ALAMEDA	55.3	(50.3 – 60.3)	96.2	(94.0 – 98.4)	96.3	(94.4 – 98.2)
CONTRA COSTA	57.3	(52.6 – 62.1)	97.5	(95.9 – 99.0)	96.1	(94.4 – 97.8)
SAN FRANCISCO	54.9	(50.4 – 59.4)	93.3	(91.1 – 95.5)	95.7	(93.9 – 97.5)
SAN MATEO	59.2	(54.1 – 64.4)	95.2	(92.9 – 97.5)	94.7	(92.5 – 96.9)
SONOMA	48.2	(42.6 – 53.8)	95.5	(93.0 – 98.1)	96.8	(94.8 – 98.8)
SOLANO	57.8	(53.4 – 62.2)	96.5	(94.6 – 98.4)	96.3	(94.4 – 98.2)
MARIN	59.3	(53.8 – 64.9)	98.0	(96.5 – 99.4)	97.9	(96.5 – 99.3)
NAPA	55.4	(50.2 – 60.5)	96.8	(94.6 – 98.9)	94.7	(92.1 – 97.3)
SACRAMENTO AREA	**59.1**	**(55.8 – 62.4)**	**97.4**	**(96.3 – 98.6)**	**96.1**	**(94.7 – 97.4)**
SACRAMENTO	60.0	(55.3 – 64.7)	97.8	(96.2 – 99.5)	96.5	(94.7 – 98.4)
PLACER	60.5	(55.0 – 66.0)	96.5	(94.2 – 98.8)	96.2	(94.0 – 98.3)
YOLO	54.3	(47.8 – 60.9)	97.4	(95.6 – 99.2)	94.9	(91.2 – 98.5)
EL DORADO	54.8	(48.7 – 61.0)	96.2	(94.4 – 98.1)	93.8	(91.0 – 96.6)

Note: Recent CRC screening refers to FOBT in the past year or sigmoidoscopy/colonoscopy in the past five years. Adults diagnosed with colon or rectum cancer were not included in these analyses.

Source: 2001 California Health Interview Survey

(continued on next page)

EXHIBIT 21. PERCENT WITH RECENT COLORECTAL CANCER SCREENING, PERCENT INSURED, AND PERCENT WITH A USUAL SOURCE OF CARE, ADULTS AGE 50 AND OLDER, CALIFORNIA COUNTIES OR COUNTY GROUPS, 2001 (CONTINUED)

	RECENT CRC SCREENING, ADULTS 50 AND OLDER		INSURED, ADULTS 50 AND OLDER		WITH A USUAL SOURCE OF CARE, ADULTS 50 AND OLDER	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
SAN JOAQUIN VALLEY	**51.6**	**(49.4 – 53.9)**	**93.1**	**(91.9 – 94.3)**	**94.1**	**(93.1 – 95.2)**
FRESNO	57.1	(51.8 – 62.4)	93.2	(90.3 – 96.1)	96.6	(94.9 – 98.3)
KERN	51.1	(45.8 – 56.4)	93.8	(91.2 – 96.3)	91.8	(88.7 – 95.0)
SAN JOAQUIN	48.5	(43.2 – 53.8)	93.9	(91.1 – 96.7)	93.2	(90.4 – 96.0)
STANISLAUS	53.2	(47.2 – 59.3)	94.8	(92.4 – 97.3)	95.1	(92.5 – 97.6)
TULARE	45.1	(39.3 – 50.9)	89.3	(85.3 – 93.3)	93.2	(90.2 – 96.2)
MERCED	49.6	(43.7 – 55.4)	90.7	(86.7 – 94.8)	94.3	(91.6 – 96.9)
KINGS	40.3	(33.9 – 46.6)	92.3	(88.6 – 96.0)	92.2	(88.9 – 95.6)
MADERA	58.9	(53.4 – 64.5)	93.9	(91.0 – 96.8)	94.8	(92.1 – 97.6)
CENTRAL COAST	**54.4**	**(51.7 – 57.1)**	**93.1**	**(91.7 – 94.6)**	**92.2**	**(90.8 – 93.7)**
VENTURA	51.4	(46.1 – 56.6)	93.4	(90.5 – 96.3)	92.2	(89.4 – 95.0)
SANTA BARBARA	59.0	(53.6 – 64.3)	92.7	(89.6 – 95.9)	93.6	(90.6 – 96.5)
SANTA CRUZ	53.3	(46.9 – 59.6)	92.2	(88.8 – 95.6)	91.4	(87.7 – 95.1)
SAN LUIS OBISPO	59.2	(53.8 – 64.6)	93.0	(89.9 – 96.1)	91.7	(88.6 – 94.9)
MONTEREY, SAN BENITO	52.6	(46.4 – 58.8)	93.7	(90.5 – 96.9)	91.8	(88.4 – 95.3)
LOS ANGELES	**50.1**	**(48.4 – 51.8)**	**89.8**	**(88.8 – 90.9)**	**92.2**	**(91.2 – 93.1)**
LOS ANGELES	50.1	(48.4 – 51.8)	89.8	(88.8 – 90.9)	92.2	(91.2 – 93.1)
OTHER SOUTHERN CALIFORNIA	**53.2**	**(51.3 – 55.0)**	**93.9**	**(93.0 – 94.8)**	**93.3**	**(92.3 – 94.2)**
ORANGE	54.8	(51.4 – 58.2)	94.2	(92.5 – 95.9)	92.7	(90.8 – 94.6)
SAN DIEGO	54.4	(51.1 – 57.6)	94.2	(92.7 – 95.8)	94.2	(92.6 – 95.7)
SAN BERNARDINO	46.0	(41.4 – 50.6)	92.8	(90.3 – 95.2)	93.6	(91.3 – 95.9)
RIVERSIDE	55.7	(51.3 – 60.1)	94.0	(92.0 – 95.9)	92.6	(90.4 – 94.8)
IMPERIAL	40.1	(33.6 – 46.7)	91.8	(88.2 – 95.3)	90.2	(86.6 – 93.9)
STATEWIDE	**53.2**	**(52.3 – 54.0)**	**93.3**	**(92.8 – 93.7)**	**93.6**	**(93.2 – 94.0)**

Note: Recent CRC screening refers to FOBT in the past year or sigmoidoscopy/colonoscopy in the past five years. Adults diagnosed with colon or rectum cancer were not included in these analyses.

Source: 2001 California Health Interview Survey

CONCLUSIONS AND POLICY IMPLICATIONS

In California, 52.3% of adults age 50 and older have received recent CRC screening. Previous research suggests that CRC screening in California is increasing.[96] In 1999, it was estimated that 44% of Californians had been recently screened. But, despite indications of an upward trend, there are disparities in receipt of CRC screening. Women, Latinos, Asians, Native Hawaiians and other Pacific Islanders (NHOPI), those with low incomes, those with limited access to care, and those with language barriers are less likely to have had a recent CRC screening test. Thus, public policy efforts should include the following:

- **Focus on women as a population group that under-utilizes colorectal cancer screening programs.** In California, women are screened less frequently for colorectal cancer than men. Among women who have not been screened recently, the most commonly given reason is that their physicians did not raise the issue of colorectal cancer. In addition, women are more likely to find the screening exams painful and/or embarrassing than men. It is important to increase awareness about colorectal cancer screening among women and encourage providers to follow current guidelines for colorectal cancer screening. Suggesting tests could increase screening rates among women.

- **Improve acceptance of colorectal screening exams among Latinos, Asians, and NHOPIs.** Latinos, Asians, and Native Hawaiians and other Pacific Islanders (NHOPI) are less likely to be screened than whites or African Americans. Even after adjusting for sociodemographic factors (such as poverty, access to care and education levels) Asians and Latinos are less likely to receive screening than whites or African Americans. Culturally relevant and targeted educational programs and materials should be developed to increase screening among these groups.

- **Increase awareness of the fact that CRC screening targets individuals with *no symptoms.*** One of the most common reasons given for not having a recent CRC screening test is the absence of any current health problems. This reason is especially prominent among Asians and Latinos, the same groups that are screened the least frequently. Furthermore, the discomfort and embarrassment associated with testing needs to be minimized. As a second focus of educational efforts, the perceived stigmatization associated with testing for CRC needs to be minimized.

- **Develop and strengthen relationships between both insured and uninsured patients and their provider of choice as a potential way to improve screening.** Access to care is a critical factor affecting screening rates. A total of 57% of insured adults ages 50-64 with a usual source of care report recent CRC screening; for an uninsured person in the same age range with no usual source of care, this likelihood drops to 10.1%. Across insurance status, those with a usual source of care are two to three times more likely to be screened than those with no usual source of care. For patients with a usual source of care, a provider recommendation for colorectal cancer screening may increase rates of screening.

In summary, within California the last decade has seen a significant increase in the acceptance of CRC screening tests. At the time of CHIS 2001, 53.2% of California residents had received a recent test for CRC. California should be applauded for its achievements, and implored to continue its efforts.

96 Trends in screening for colorectal cancer—United States, 1997 and 1999. Morbidity and Mortality Weekly Report. 2001; 50:162-166.

5. PROSTATE CANCER SCREENING IN CALIFORNIA

INTRODUCTION

Prostate cancer is the most common cancer among males of all races and ethnic groups in California, and trails only lung cancer as the second-leading cause of cancer death. In 2002, the California Cancer Registry estimated that California would have 20,500 new cases of prostate cancer, representing 30% of all new cancer diagnoses among men in the state; 3,080 deaths, representing 11% of all male cancer deaths; and 103,200 men living with prostate cancer.[97]

Prostate cancer and its risk factors are still poorly understood. Age is the most established risk factor; prostate cancer is rare before the age of 50 and increases steadily with age. Several studies have demonstrated an association between prostate cancer and dietary factors, including fat, meat, and calcium.[98,99,100] African-American men are more than twice as likely to have the cancer and to die from it than other races in all age groups. The incidence (rate of new cases per population) is slightly higher in urban areas than in rural settings; however this may be due to greater access to screening. A family history of prostate cancer has also been shown to be a risk factor.[101,102]

The issue of whether or not health care providers should screen for prostate cancer remains controversial. Critics of screening point out that the literature has not demonstrated a survival advantage for screening and early detection. In addition, it has not been established whether the potential benefits of screening for prostate cancer with the PSA test outweigh the potential harms. While PSA is highly "prostate-specific," there is not a perfect cut-off for a normal test, leading to both false-positive and false-negative diagnoses. Since prostate cancer is often a slow-growing tumor and only one third of all men diagnosed with prostate cancer will ultimately die from the disease, there is a potential for over-treatment. Moreover, recent studies have highlighted the significant negative impact on quality of life that treatment (surgery or radiation) can have, underscoring the risks associated with detecting non-lethal cancers.[103,104] Screening may also be associated with other harms such as unnecessary anxiety or biopsies, although there is currently little empirical evidence for this.[105]

The U.S. Preventive Services Task Force (USPSTF) is an independent panel of experts that systematically reviews the evidence and develops recommendations for clinical preventive services. In December 2002, USPSTF reviewed the evidence for prostate cancer screening.[106] PSA was given an "I" rating, meaning that the evidence was "insufficient" to recommend for or against routine PSA testing. The USPSTF found good evidence that PSA screening can detect early-stage prostate cancer. However, there is mixed and inconclusive evidence regarding whether early detection improves health outcomes. Prior to this most recent rating, the task force recommended against the routine use of PSA because it was ineffective or its harms outweighed its benefits. Healthy People 2010 did not set a PSA screening goal for the nation. Its only goal regarding prostate cancer was to decrease the prostate cancer death rate by 10%.[107]

97 Perkins CI, Kwong SL, Morris CR, Cohen R, Allen M, Wright WE. Cancer in California, 2002. Sacramento, CA: California Department of Health Services, Cancer Surveillance Section, 2002.

98 Chan JM, Stampfer MJ, Ma J, Gann PH, Gaziano JM, Giovannucci EL. Dairy products, calcium, and prostatecancer risk in the Physicians' Health Study. American Journal of Clinical Nutrition. 2001; 74:549-54.

99 Gann PH, Hennekens CH, Sacks FM, Grodstein F, Giovannucci EL, Stampfer MJ. Prospective study of plasma fatty acids and risk of prostate cancer. Journal of the National Cancer Institute. 1994; 86:281-6.

100 Harvei S, Bjerve KS, Tretli S, Jellum E, Robsahm TE, Vatten L. Prediagnostic level of fatty acids in serum phospholipids: omega-3 and omega-6 fatty acids and the risk of prostate cancer. International Journal of Cancer. 1997;71:545-51.

101 Hayes RB, Liff JM, Pottern LM, et al. Prostate cancer risk in U.S. blacks and whites with a family history of cancer. International Journal of Cancer. 1995; 60:361-4.

102 Whittemore AS, Wu AH, Kolonel LN, et al. Family history and prostate cancer risk in black, white, and Asian men in the United States and Canada. American Journal of Epidemiology. 1995; 141:732-40.

103 Penson DF, Litwin MS. Quality of life after treatment for prostate cancer. Current Urology Reports. 2003;4:185-95.

104 Penson DF, Litwin MS. The physical burden of prostate cancer. The Urologic Clinics of North America. 2003;30:305-13.

105 U.S. Preventive Services Task Force. *Screening for Prostate Cancer: Recommendations and Rationale*. December, 2002. Originally in *Ann Intern Med* 2002;137:915-6. Agency for Healthcare Research and Quality, Rockville, MD. *http://www.ahrq.gov/clinic/3rduspstf/prostatescr/prostaterr.htm*

106 Harris R, Lohr KN. Screening for prostate cancer: an update of the evidence for the U.S. Preventive Services Task Force. Annals of Internal Medicine. 2002; 137:917-29.

107 U.S. Department of Health and Human Services. *Healthy People 2010*. With Understanding and Improving Health and Objectives for Improving Health. Washington, DC: U.S. Government Printing Office.

Proponents of screening with the PSA test point out that screening has led to a greater number of early-stage cancers being identified, when they are still curable. In fact, more than 60% of newly diagnosed cancers are due to PSA alone, with no clinical signs or symptoms ("screening").[108] Due to the prolonged natural history of prostate cancer, the full impact of screening probably will not be determined for at least five years, when there will be more than 15 years of experience with PSA. Currently, two large randomized, controlled clinical trials are underway in the United States and Europe, which should produce results over the next five years and determine whether screening leads to earlier detection of a more curable form of prostate cancer.[109]

Despite the pending evidence, two major physician organizations, the American Cancer Society (ACS) and the American Urological Association (AUA), currently recommend that physicians should: 1) discuss the potential risks and benefits of early detection and treatment of prostate cancer to aid informed decisions about testing, and 2) offer screening, consisting of PSA blood testing and digital rectal examination, to all men starting at the age of 50 as long as they have at least a ten-year life expectancy. The age cutoff is lowered to 45 for African-American men and men who have at least two first-degree relatives with a history of prostate cancer.[110,111,112] However, both the ACS and the AUA emphasize that decisions regarding screening with the PSA test should be made on an individual basis in conjunction with a discussion of the potential risks and benefits.

Although it is still unclear if the benefits of PSA testing outweigh the risks, the aim of this chapter is to establish a baseline measure of current PSA test use by California men and to identify disparities in rates of access to the PSA test. CHIS 2001 included seven questions pertaining to the use of the PSA test for prostate cancer screening. One of the questions read, "How long ago did you have your most recent PSA test?" The results presented here are based on that question. Our sample consists of a total of 9,074 men who responded to this question and who do not report a prior history of prostate cancer. By excluding men with diagnosed prostate cancer, we are reporting PSA test use essentially for the purpose of preventing this disease.

RACE/ETHNICITY AND INCOME

In California, 44.3% of men 50 and older report that they were never screened for prostate cancer (Exhibit 22). This ranges from approximately 40% of whites and African Americans older than 50 to more than 50% of American Indian/Alaskan Natives (AIAN) and more than 60% of Latinos and Asians. Overall, only 43% of California men have been screened in the past year, with much lower rates for Latinos and Asians. Throughout this PSA testing report, Latinos and Asians consistently report lower screening rates than other groups.

108 National Cancer Institute. Surveillance, Epidemiology, and End Results. Vol. 2003.

109 De Koning HJ, Auvinen A, Berenguer Sanchez A, et al. Large-scale randomized prostate cancer screening trials: program performances in the European Randomized Screening for Prostate Cancer trial and the Prostate, Lung, Colorectal and Ovary cancer trial. International Journal of Cancer. 2002; 97:237-44.

110 Prostate-specific antigen (PSA) best practice policy. American Urological Association (AUA). Oncology (Huntingt) 2000; 14:267-72, 277-8, 280 passim.

111 Smith RA, von Eschenbach AC, Wender R, et al. American Cancer Society guidelines for the early detection of cancer: update of early detection guidelines for prostate, colorectal, and endometrial cancers. Also: update 2001–testing for early lung cancer detection. CA: A Cancer Journal for Clinicians. 2001; 51:38-75; quiz 77-80.

112 Smith RA, Cokkinides V, von Eschenbach AC, et al. American Cancer Society guidelines for the early detection of cancer. CA: A Cancer Journal for Clinicians. 2002; 52:8-22.

EXHIBIT 22. PSA TESTS BY RACE/ETHNICITY, MEN AGE 50 AND OLDER, CALIFORNIA, 2001		
	NEVER SCREENED	SCREENED IN PAST YEAR
RACE/ETHNICITY	**%**	**%**
WHITE	38.5	47.7
LATINO	63.3	28.4
ASIAN	65.4	27.1
AFRICAN AMERICAN (45+)	53.1	32.7
AFRICAN AMERICAN (50+)	42.0	41.7
AIAN	52.8	31.7
NHOPI	*	*
OTHER/MULTIRACIAL	44.6	42.7
MEN AGE 50 AND OLDER	**44.3**	**43.0**

Note: Rates for men age 50 and older do not include African Americans ages 45-49. Men diagnosed with prostate cancer were not included in these analyses. American Indian/ Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

Exhibit 23 compares screening rates by race, family income above and below 200% of the Federal Poverty Level (FPL), and age above and below 65. The NHOPI sample size was inadequate for this analysis. While the rates for all men are relatively low, men with family incomes below 200% FPL are more than one third lower than men above that income level. Asians stand out as the group with lower rates of screening compared to other groups among both income brackets (21% for the low-income category, 31% for the high-income category; data not shown).

The association between screening rates and income is similar among the two age groups, as demonstrated by the similar disparity between the two income levels within each age group (15.5% for the 50-64 group and 18.3% for the 65+ group, Exhibit 23). Among men 50-64, Latinos, Asians, and whites with higher incomes (more than 200% FPL) are more likely to be screened for prostate cancer than those with lower incomes (less than 200% FPL). In addition, there

EXHIBIT 23. PERCENT WITH A PSA TEST IN THE PAST YEAR BY RACE/ETHNICITY, AGE AND INCOME, MEN AGE 50 AND OLDER, CALIFORNIA, 2001				
	AGES 50-64		AGE 65 AND OLDER	
	BELOW 200%FPL	200% FPL AND ABOVE	BELOW 200% FPL	200% FPL AND ABOVE
RACE/ETHNICITY	**%**	**%**	**%**	**%**
WHITE	29.0	42.2	43.7	62.1
LATINO	21.3	31.0	34.5	42.1
ASIAN	14.2	25.1	27.1	49.7
AFRICAN AMERICAN (45+)	19.5	31.2	NA	NA
AFRICAN AMERICAN (50+)	28.5	44.6	45.8	45.0
AIAN	*	32.0	*	*
NHOPI	*	*	*	*
OTHER/MULTIRACIAL	*	39.4	*	59.8
ALL RACIAL/ETHNIC GROUPS	**24.2**	**39.7**	**39.2**	**57.5**

Note: In 2001, the annual income at 100% of the Federal Poverty Level (FPL) was $9,039 for one person, $11,569 for a family of two, $14,128 for a family of three, and $18,104 for a family of four. Rates for men ages 50-64 do not include African Americans ages 45-49. Men diagnosed with prostate cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI. Not applicable is abbreviated NA.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

is more than a 15-point percentage difference in screening rates by income category among African-American men in this age group, though the difference is not statistically significant at the 0.05 level (the difference is significant at the 0.1 level). However, this differential in screening rates between income groups disappears in the older African-American group. This notable finding begs the question of whether higher-income elderly African Americans are being denied the additional access to screening that members of other groups are given or, alternatively, whether lower-income elderly African Americans are being given greater access as compared to other groups. This analysis cannot answer the question; however, the rather surprising statistic of 45.8% screening rate in the lower-income elderly African Americans needs further explanation.

To address an important policy issue regarding whether higher-risk African Americans are being screened at a younger age, we must look at the effect of including the 45-49 year-old age range in the African-American group. The 45+ group appears to have lower screening rates than the 50+ group among African Americans in both income categories, suggesting that the rates in this sub-group between 45 and 49 are very low.

What is apparent in this analysis is that among all of the demographic groups analyzed, the 65+ age group consistently has higher screening rates (see also Exhibit 25). Access, or, more specifically, health insurance coverage, may account for this consistent finding.

RACE/ETHNICITY AND INSURANCE STATUS

Insurance status may be particularly important for PSA testing, a point that is underscored by the low PSA testing rate of 17.1% among the uninsured, considerably lower than the rate among those with Medi-Cal (28.8%) or employment-based insurance (40.3%, Exhibit 24). Among white men ages 50-64, there is a 24-percentage point difference in PSA screening rates between the uninsured and employment-based coverage. In addition, there are significant differences between white men who are uninsured and those who have either Medi-Cal or privately purchased insurance. Clearly, the impact of insurance is significant. However, the effect of all insurance types is not equal: Medi-Cal recipients show a lower rate of PSA screening (28.8%) than those with employment-based (40.3%) or privately purchased insurance (40.6%).

EXHIBIT 24. PERCENT WITH A PSA TEST IN THE PAST YEAR BY RACE/ETHNICITY AND INSURANCE COVERAGE, MEN AGES 50-64, CALIFORNIA, 2001

	MEN AGES 50-64	UNINSURED	MEDI-CAL	EMPLOYMENT-BASED	PRIVATE
RACE/ETHNICITY	**%**	**%**	**%**	**%**	**%**
WHITE	40.7	19.2	31.5	43.4	43.5
LATINO	25.7	13.6	30.1	30.6	*
ASIAN	22.0	*	*	26.1	*
AFRICAN AMERICAN (45+)	28.0	*	33.3	27.3	*
AFRICAN AMERICAN (50+)	39.5	*	45.3	38.9	*
AIAN	30.8	*	*	31.2	*
NHOPI	55.2	*	*	*	*
OTHER/MULTIRACIAL	39.1	*	*	40.4	*
MEN AGES 50-64	**36.5**	**17.1**	**28.8**	**40.3**	**40.6**

Note: Rates for men ages 50-64 do not include African Americans ages 45-49. Men diagnosed with prostate cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

Employment-based insurance is the only category in this age group with adequate sample size to compare nearly all of the racial and ethnic groups. The analysis mirrors previous exhibits on race and ethnicity, with both Asians and Latinos having significantly lower rates than whites. In addition, at the age 45 cutoff, the screening rate for African Americans is much lower overall by more than ten percentage points. Interestingly, African Americans with employment-based insurance appear to have lower screening rates than those with Medi-Cal (38.9% vs. 45.3%; although this difference is not significant), unlike whites, who have higher screening rates with employment-based insurance than with Medi-Cal (43.4% vs. 31.5%).

Among men age 65 and older, the uninsured group is very small (Exhibit 25). The majority of men in this age group have some form of insurance, usually Medicare, which began covering routine PSA testing in January 2000. Similar to their younger insured counterparts, Medicare plus Medi-Cal insured men have a lower rate of PSA screening than men with other types of insurance. Overall, men insured by Medicare plus Medi-Cal have much lower screening rates (36.8%) than men insured by either Medicare only (51%) or Medicare plus other private insurance (58.8%). In this analysis, having coverage in addition to Medicare appears beneficial as long as it is not Medi-Cal. Within this Medicare plus Medi-Cal group, Medi-Cal coverage for African Americans does not appear to boost screening rates as it does for those in the younger age group.

In summary, among younger men, Latinos and Asians have significantly lower screening rates than men from other racial/ethnic groups. African-American men who are 45 and older also appear to have lower screening rates than other men. Among older men, there appears to be less variation in screening rates by racial/ethnic group than among younger men. Insurance coverage by Medicare among the elderly may partially explain these differences in screening rates between older and younger men.

EXHIBIT 25. PERCENT WITH A PSA TEST IN THE PAST YEAR BY RACE/ETHNICITY AND INSURANCE COVERAGE, MEN AGE 65 YEARS AND OLDER, CALIFORNIA, 2001

	MEN AGE 65 AND OLDER	MEDICARE + MEDI-CAL	MEDICARE + PRIVATE	MEDICARE ONLY
RACE/ETHNICITY	**%**	**%**	**%**	**%**
WHITE	57.7	42.0	60.6	56.3
LATINO	37.3	35.2	47.9	*
ASIAN	36.4	26.3	48.5	*
AFRICAN AMERICAN	45.3	33.4	49.7	*
AIAN	33.4	*	*	*
NHOPI	46.9	*	*	*
OTHER/MULTIRACIAL	49.0	52.6	54.6	*
MEN AGE 65 AND OLDER	**53.4**	**36.8**	**58.8**	**51.0**

Note: Men diagnosed with prostate cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

RACE/ETHNICITY AND USUAL SOURCE OF CARE

Another significant barrier to accessing prostate cancer screening services is not having a usual source of health care (USOC). Men with a usual source of health care have higher rates of PSA test use. As shown in Exhibit 26, those with a usual source of care report nearly four times the rate of annual PSA screening than those without a usual source (45.6% vs. 11.8%). Among the uninsured, men who have a usual source of care report screening rates that are more than eight times higher than those without a usual source of care (26% vs. 3.9%). Even among the insured, those with a usual source of care have nearly triple the rate of annual PSA testing than those with no usual source of care (46.5% vs. 16.9%).

Insufficient sample sizes limit our analyses by racial/ethnic group. However, among men who have both insurance and a usual source of care, our results indicate that Asians, AIANs, and Latinos are significantly less likely to be screened than white men. In addition, among Latino and white men who have a usual source of care, those who are insured are significantly more likely to receive screening services than those who are uninsured. For insured white men, having a usual source of care also significantly increases their likelihood of receiving PSA tests by nearly tripling their screening rates (50.6% vs. 18%).

EXHIBIT 26. PERCENT WITH A PSA TEST IN THE PAST YEAR BY RACE/ETHNICITY, INSURANCE STATUS AND USUAL SOURCE OF CARE (USOC), MEN AGE 50 AND OLDER, CALIFORNIA, 2001

	MEN AGE 50 AND OLDER		UNINSURED		INSURED	
	USOC	NO USOC	USOC	NO USOC	USOC	NO USOC
RACE/ETHNICITY	%	%	%	%	%	%
WHITE	49.9	14.1	28.9	*	50.6	18.0
LATINO	32.5	*	22.4	*	34.4	*
ASIAN	28.6	*	*	*	29.5	*
AFRICAN AMERICAN (45+)	34.5	*	*	*	35.3	*
AFRICAN AMERICAN (50+)	43.5	*	*	*	43.8	*
AIAN	34.6	*	*	*	33.8	*
NHOPI	*	*	*	*	*	*
OTHER/MULTIRACIAL	45.5	*	*	*	44.6	*
MEN AGE 50 AND OLDER	**45.6**	**11.8**	**26.0**	**3.9**	**46.5**	**16.9**

Note: Rates for men ages 50 and older do not include rates for African Americans ages 45-49. Men diagnosed with prostate cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

EXHIBIT 27. PERCENT WITH A PSA TEST IN THE PAST YEAR BY RACE/ETHNICITY AND ENGLISH PROFICIENCY, MEN AGE 50 AND OLDER, CALIFORNIA, 2001		
	ENGLISH ONLY, VERY WELL OR WELL	NOT WELL OR NOT AT ALL
RACE/ETHNICITY	**%**	**%**
WHITE	47.7	36.9
LATINO	34.1	22.8
ASIAN	32.4	18.2
AFRICAN AMERICAN	41.7	*
AIAN	32.1	*
NHOPI	*	*
OTHER/MULTIRACIAL	42.6	*
MEN AGE 50 AND OLDER	**45.3**	**22.1**

Note: Men diagnosed with prostate cancer were not included in these analyses. American Indian/Alaska Native is abbreviated AIAN and Native Hawaiian and other Pacific Islander is abbreviated NHOPI.

* Estimate was not statistically reliable.

Source: 2001 California Health Interview Survey

RACE/ETHNICITY AND ENGLISH PROFICIENCY

Limited English proficiency (LEP) may be another barrier to accessing prostate cancer screening. Men who report that they speak English very well, or well are more than twice as likely to have received a PSA test in the past year as those who report that they do not speak English well or do not speak English at all (45.3% and 22.1%, respectively, Exhibit 27). In addition, among men who report that they speak English well, disparities in screening rates exist—Asians (32.4%), Latinos (34.1%), and AIANs (32.1%) have significantly lower rates of screening than whites. Furthermore, Latinos and Asians with LEP have significantly lower rates of screening than Latinos and Asians who report that they are proficient in English. These findings suggest that LEP may be a significant barrier to receipt of PSA testing, particularly for Asian and Latino men.

COUNTY DATA ON SCREENING RATES, INSURANCE AND USUAL SOURCE OF CARE

In California, the percent of men who report having a PSA test in the past year varies by place of residence. The rates of PSA test in the past year range from 32% in Tehama, Glenn, and Colusa counties and 33.5% in Yolo County to 53.3% in Ventura County (Exhibit 28). Regionally, the Central Coast (49.7%) has higher screening rates than the Sacramento Area (36.4%), Greater Bay Area (40.8%), Los Angeles (41.7%), San Joaquin Valley (41.9%), and Northern and Sierra Counties (42%). County and regional variations in PSA screening rates may be related to several factors, including racial and ethnic distribution, age distribution, and variation in access to care. For instance, certain counties with lower screening rates, such as Imperial and Los Angeles counties, also have lower rates of percent with insurance and percent with a usual source of care. However, low screening rates do not necessarily correspond to low rates of insurance or usual source of care due to the effects of other factors, such as age and race/ethnicity. In addition, having health insurance may not correspond to receipt of PSA tests because of the lack of consensus on the efficacy of PSA tests among health care professionals and cancer societies.

EXHIBIT 28. PERCENT WITH A PSA TEST IN THE PAST YEAR, PERCENT INSURED AND PERCENT WITH A USUAL SOURCE OF CARE, MEN AGE 50 AND OLDER, CALIFORNIA COUNTIES OR COUNTY GROUPS, 2001

	RECENT PSA TEST, MEN 50 AND OLDER		INSURED, MEN 50 AND OLDER		WITH A USUAL SOURCE OF CARE, MEN 50 AND OLDER	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
NORTHERN AND SIERRA COUNTIES	**42.0**	**(39.0 – 45.0)**	**91.9**	**(90.3 – 93.6)**	**90.7**	**(88.9 – 92.5)**
BUTTE	43.3	(33.5 – 53.1)	97.2	(94.4 – 100.0)	88.1	(81.7 – 94.4)
SHASTA	44.2	(28.5 – 46.1)	93.1	(89.2 – 97.1)	92.9	(88.0 – 97.8)
SISKIYOU, LASSEN, TRINITY, MODOC	43.5	(35.6 – 51.5)	90.9	(86.1 – 95.6)	90.3	(85.4 – 95.2)
MENDOCINO, LAKE	40.1	(31.9 – 48.2)	88.2	(83.0 – 93.4)	93.3	(89.4 – 97.2)
TEHAMA, GLENN, COLUSA	32.0	(23.6 – 40.5)	89.0	(83.2 – 94.7)	91.8	(86.2 – 97.3)
SUTTER, YUBA	42.2	(33.3 – 51.1)	93.5	(89.3 – 97.6)	92.5	(87.8 – 97.1)
NEVADA, PLUMAS, SIERRA	42.1	(33.7 – 50.5)	92.7	(87.3 – 98.2)	91.9	(86.3 – 97.5)
TUOLOMNE, CALAVERAS, AMADOR, INYO, MARIPOSA, MONO, ALPINE	47.4	(38.9 – 55.9)	87.9	(82.1 – 93.8)	87.0	(81.3 – 92.6)
GREATER BAY AREA	**40.8**	**(37.9 – 43.8)**	**95.2**	**(93.8 – 96.5)**	**94.7**	**(93.3 – 96.0)**
SANTA CLARA	39.0	(31.8 – 46.2)	94.2	(90.4 – 98.0)	91.7	(87.5 – 95.9)
ALAMEDA	40.4	(32.3 – 48.5)	95.4	(91.5 – 99.3)	97.2	(94.7 – 99.7)
CONTRA COSTA	39.7	(32.1 – 47.3)	97.0	(95.0 – 99.0)	93.9	(90.3 – 97.6)
SAN FRANCISCO	37.8	(30.7 – 44.9)	93.1	(89.7 – 96.5)	93.7	(90.2 – 97.3)
SAN MATEO	47.4	(38.6 – 56.2)	94.0	(89.8 – 98.2)	94.7	(91.3 – 98.1)
SONOMA	39.8	(30.8 – 48.9)	95.2	(91.1 – 99.3)	96.7	(94.0 – 99.5)
SOLANO	36.2	(29.7 – 42.7)	97.8	(95.9 – 99.7)	96.4	(93.8 – 98.9)
MARIN	51.4	(42.5 – 60.3)	96.7	(93.9 – 99.5)	98.4	(96.6 – 100.0)
NAPA	47.1	(38.8 – 55.3)	96.9	(94.4 – 99.4)	92.6	(88.6 – 96.6)
SACRAMENTO AREA	**36.4**	**(31.3 – 41.6)**	**97.8**	**(95.8 – 99.8)**	**95.4**	**(93.2 – 97.7)**
SACRAMENTO	33.9	(26.6 – 41.2)	98.4	(95.5 – 100.0)	96.1	(92.9 – 99.3)
PLACER	42.8	(33.8 – 51.8)	94.4	(89.8 – 99.1)	96.2	(92.7 – 99.7)
YOLO	33.5	(24.2 – 42.8)	100.0		94.7	(87.8 – 100.0)
EL DORADO	44.3	(34.9 – 53.7)	97.4	(95.3 – 99.6)	91.2	(86.0 – 96.4)

Note: Men diagnosed with prostate cancer were not included in these analyses.

(continued on next page)

Source: 2001 California Health Interview Survey

EXHIBIT 28. PERCENT WITH A PSA TEST IN THE PAST YEAR, PERCENT INSURED AND PERCENT WITH A USUAL SOURCE OF CARE, MEN AGE 50 AND OLDER, CALIFORNIA COUNTIES OR COUNTY GROUPS, 2001 (CONTINUED)

	RECENT PSA TEST, MEN 50 AND OLDER		INSURED, MEN 50 AND OLDER		WITH A USUAL SOURCE OF CARE, MEN 50 AND OLDER	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
SAN JOAQUIN VALLEY	**41.9**	**(38.4 – 45.5)**	**93.8**	**(92.1 – 95.5)**	**94.0**	**(92.4 – 95.6)**
FRESNO	47.2	(38.6 – 55.7)	93.0	(88.2 – 97.9)	97.5	(95.1 – 99.9)
KERN	38.8	(30.4 – 47.1)	95.2	(92.0 – 98.5)	91.1	(86.2 – 96.0)
SAN JOAQUIN	39.4	(31.3 – 47.5)	95.0	(90.7 – 99.2)	92.6	(87.9 – 97.3)
STANISLAUS	35.1	(26.1 – 44.1)	97.1	(94.8 – 99.5)	97.0	(94.5 – 99.5)
TULARE	43.4	(33.9 – 52.8)	88.7	(82.7 – 94.8)	90.7	(85.2 – 96.2)
MERCED	51.2	(42.1 – 60.3)	88.8	(82.3 – 95.2)	93.6	(89.4 – 97.7)
KINGS	42.5	(31.1 – 53.9)	92.2	(86.4 – 98.0)	91.7	(86.3 – 97.1)
MADERA	44.0	(35.2 – 52.9)	95.2	(90.8 – 99.6)	94.1	(89.6 – 98.5)
CENTRAL COAST	**49.7**	**(45.4 – 54.0)**	**92.9**	**(90.9 – 95.0)**	**92.0**	**(89.9 – 94.1)**
VENTURA	53.3	(44.9 – 61.7)	95.0	(91.2 – 98.8)	93.8	(90.3 – 97.4)
SANTA BARBARA	50.9	(42.0 – 59.8)	93.6	(89.4 – 97.9)	92.8	(88.5 – 97.1)
SANTA CRUZ	42.8	(33.0 – 52.6)	89.1	(82.9 – 95.2)	88.8	(82.3 – 95.2)
SAN LUIS OBISPO	40.9	(32.5 – 49.4)	90.1	(84.8 – 95.3)	89.7	(84.5 – 94.9)
MONTEREY, SAN BENITO	52.9	(42.6 – 63.2)	93.2	(88.7 – 97.8)	91.9	(86.5 – 97.3)
LOS ANGELES	**41.7**	**(39.0 – 44.4)**	**89.1**	**(87.3 – 90.9)**	**89.8**	**(88.2 – 91.5)**
LOS ANGELES	41.7	(39.0 – 44.4)	89.1	(87.3 – 90.9)	89.8	(88.2 – 91.5)
OTHER SOUTHERN CALIFORNIA	**46.3**	**(43.2 – 49.3)**	**93.8**	**(92.3 – 95.2)**	**92.4**	**(90.9 – 94.0)**
ORANGE	46.4	(40.9 – 51.9)	93.8	(91.1 – 96.5)	92.5	(89.6 – 95.3)
SAN DIEGO	42.2	(37.1 – 47.4)	94.5	(92.2 – 96.9)	92.8	(90.2 – 95.4)
SAN BERNARDINO	49.3	(41.6 – 57.1)	92.2	(88.1 – 96.3)	92.1	(87.7 – 96.5)
RIVERSIDE	51.0	(43.8 – 58.2)	94.2	(91.1 – 97.2)	92.3	(88.6 – 96.0)
IMPERIAL	40.0	(29.0 – 51.1)	87.7	(80.6 – 94.7)	89.2	(82.9 – 95.4)
STATEWIDE	**43.0**	**(41.6 – 44.3)**	**92.9**	**(92.2 – 93.6)**	**92.4**	**(91.7 – 93.1)**

Note: Men diagnosed with prostate cancer were not included in these analyses.
Source: 2001 California Health Interview Survey

MULTIPLE DETERMINANTS OF PROSTATE CANCER SCREENING

In addition to the factors we have examined previously, such as income, race and ethnicity, insurance, usual source of care and region, in a multivariate analysis, we also examined how age, language, percentage of one's lifetime spent in the United States, education, current health status, marital status, number of visits to a physician in the last year and family history of prostate cancer is related to an individual's participation in prostate cancer screening.

In the 50-64 year-old age group, we found that likelihood of prostate cancer screening is less for younger men, Asians, those with a smaller percentage of life spent in the United States, those with less education, those with fair or poor self-reported health status, unmarried men, those with fewer visits to a health care provider in the past year and those with no usual source of health care. Among the 65 and older group, the most important variables are fairly similar with a few notable differences—race and ethnicity, percentage of life spent in the United States, and having a usual source of care are not significant. In contrast to younger men, elderly men are screened less with increasing age. In addition, men with higher incomes, men with a family history of prostate cancer and married men are more likely to be screened.

PSA TEST AWARENESS

Unlike other screening tests such as Pap tests and mammograms, the use of the PSA test is not yet well established and it is not clear how familiar men are with the test. CHIS 2001 asked men if they had ever heard of the PSA test. Among men 50 and older, one out of four (24.6%) report that they have never heard of a PSA test. More than a third of Asians (42.4%), Latinos (35.9%), and AIANs (34.6%) have never heard of a PSA test, compared with one out of five whites (20.4%). These racial and ethnic groups are also the least likely to have had a PSA test in the past year, with only 27.1% of Asians, 28.4% of Latinos, and 31.7% of AIANs reporting that they were screened recently, compared to 47.7% of whites.

CONCLUSIONS AND POLICY IMPLICATIONS

The results presented in this report demonstrate that prostate cancer screening with the PSA blood test has not been universally adopted in California. Only 43% of men 50 and older report having a PSA test in the past year and 44.3% report that they never had a PSA test. There are many issues that may be affecting screening rates. On the one hand the test is non-invasive as compared with screening for cervical, colorectal and breast cancer; is relatively inexpensive; and is covered by most insurers, including Medicare and Medi-Cal. However, its efficacy as a screening test to decrease prostate cancer mortality has yet to be determined, and this may prevent some providers from offering testing. Whether men are being "offered the option of PSA screening," per the American Cancer Society (ACS)/American Urological Association (AUA) recommendations, but refusing it, cannot be determined from this study.

The findings presented in this report demonstrate that the most significant barriers to accessing PSA screening in California include: family income below 200% of the Federal Poverty Level; lack of insurance; Latino ethnicity, American Indian/Alaskan Native and Asian races; lack of a usual source of care; and being in the younger group of 50-64 years in our analysis. Even among those who would be expected to have adequate access to health care, such as white men and men with private insurance, screening rates are below 50%. The high-risk African-American population has screening rates in the low 40% range for 50-64 year-olds, and slightly higher in the 65 years and older age group. This trend is contrary to the premise that younger men have the most to gain from screening and early detection. Moreover, when African Americans age 45-49 are included in the analysis, the screening rates for this high-risk group drop to the 30% range.

In order to address these disparities in access to prostate cancer screening, the following policy recommendations should be considered:

- **Promote physician understanding and explanation of the potential benefits and risks of PSA testing and current evidence regarding PSA screening.** Given the conflicting opinions among health care providers and cancer agencies regarding the efficacy of PSA testing, efforts need to be directed toward raising provider awareness of the evidence regarding the risks and benefits of PSA testing. Public and private health plans must provide primary care providers a balanced account of the scientific evidence regarding these risks and benefits. In addition, health plans should encourage primary care providers to discuss prostate cancer risk and PSA tests with their patients to determine the most appropriate course for each individual.
- **Increase access to prostate cancer screening services through expanded health care coverage.** Lack of insurance coverage or a usual source of health care strongly affects a man's ability to access prostate cancer screening services and other medical care. As noted earlier, only 17.1% of uninsured men between 50 and 64 and 11.8% of those with no usual source of care report being screened. It is important to note that health insurance coverage may lead to increased use of health services, including screening for prostate cancer. However, increasing the health care coverage for all groups, particularly under-served populations, would ensure that all men have equal access to professionally-guided information from health care providers and health plans.
- **Increase awareness of prostate cancer screening through culturally appropriate and community-based programs in order to reduce racial/ethnic disparities in screening rates.** Evidence that Asian, Latino and AIAN men are more likely to report never having heard of the PSA test suggests that either providers or education materials may not be culturally competent. Health care providers and prostate cancer screening programs should offer culturally sensitive information and services. Delivering competent care for all cultures behooves providers to weigh the benefits of early detection against the potential harms of increased anxiety, over-treatment and treatment side effects. California men of diverse racial and ethnic backgrounds should have equal access to information on this cancer, the course of action to detect and treat it, and the consequences of these actions.
- **Promote continuity of care through regular contact with a health care provider.** Having a usual source of care is extremely important in the receipt of prostate cancer screening. Even among insured men, having a usual source of care vastly increases screening rates (46.5%) compared with those with no usual source of care (16.9%). Moreover, a regular health care provider who is familiar with the patient would be best able to provide an ongoing discussion of the potential risks and benefits of early detection and treatment of prostate cancer to aid informed decisions about testing.

6. GENERAL CONCLUSIONS AND POLICY IMPLICATIONS

The statewide rates for having a recent Pap test and recent mammogram are encouraging. In California, 86.2% of women 18 and older have received a Pap test in the past three years and 75.5% of women 40 and older have had a mammogram in the past two years. The rate for Pap tests is approaching the HP2010 goal of 90%, and the rate for mammograms has surpassed the HP2010 goal of 70%. However, the rates of recent colorectal screening are less encouraging. Among men and women 50 and older, only 53.2% report recent screening for colorectal cancer. Among men 50 and older, 43% report having received a PSA test in the past year. Although it is still unclear whether the benefits of PSA testing outweigh the risks, these data can serve as a baseline measure of PSA test use among California men. Despite some encouraging findings on the statewide level, there is considerable variation in screening rates for these cancer sites by race and ethnicity, income, access to care and English proficiency. Asians, Latinos, low-income adults, the uninsured, those with no usual source of care and adults with limited English proficiency are less likely to report having a recent screening test.

In California, screening rates vary dramatically by race and ethnicity. Asians report lower screening rates than whites for all four screening sites. Native Hawaiians and other Pacific Islanders (NHOPI) also consistently report some of the lowest screening rates in California. Rates among NHOPIs are significantly lower than for whites for Pap tests and colorectal screening, but not for mammography and PSA tests (probably because of the small sample sizes of NHOPIs in the mammogram and PSA screening populations). In addition, Latinos report lower screening rates than whites for mammography, colorectal cancer screening and PSA testing. AIAN adults are less likely to have been recently screened with mammography or the PSA test than whites.

Screening rates are also consistently lower among adults with family incomes below 200% of the Federal Poverty Level (FPL). This difference is found even for Pap tests and mammograms, tests that are provided free of charge to women with low income and no or limited health insurance through the *Cancer Detection Programs: Every Woman Counts.*[113] This program is funded by a federal grant through the National Breast and Cervical Cancer Early Detection Program and through state tobacco tax revenue.

Across all four screening tests, access to care is extremely important in reported use of screening tests. Among nonelderly Californians, uninsured adults are much less likely to report recent screening than adults with any type of insurance. However, there is variation by type of insurance among those with some form of health insurance. Adults with employment-based insurance coverage have among the highest screening rates, whereas adults covered by Medi-Cal (California's Medicaid program, which covers low-income adults who are parents of minor children, aged, and blind or disabled) tend to be screened at lower rates than those with employment-based insurance. Among elderly adults, those who can afford to purchase coverage to supplement Medicare report the highest screening rates. Those covered by Medicare alone tend to report the lowest screening rates by type of insurance. However, those covered by a combination of Medicare and Medi-Cal also report low screening rates.

The impact of having a usual source of care is striking for all four cancer screening tests. In every case, uninsured respondents with no usual source of care report the lowest rates of cancer screening—for example, only 10.1% of adults 50 and older report recent screening for colorectal cancer. However, even among insured respondents, those with no usual source of care are less likely than those with a usual source of care to have been screened recently. This is true across racial and ethnic groups as well.

113 The California Department of Health Service's Cancer Detection Program: *Every Woman Counts* was previously called the Breast and Cervical Cancer Control Program (BCCCP) and the Breast Cancer Early Detection Program (BCEDP).

Respondents who report limited English Proficiency (LEP) have lower screening rates than respondents who speak English well. However, there is some variation in these findings by race and ethnicity across the four screening sites. For all four sites, Asians who speak English well are more likely to have been screened recently than Asians with LEP. Among Latinos, those with LEP are less likely to report recent screening for colorectal cancer or for prostate cancer than Latinos who speak English well. Finally, whites with LEP are less likely to have been screened recently for cervical cancer and for colorectal cancer.

Despite some encouraging findings on the statewide level, Asians, Latinos, low-income adults, the uninsured, those with no usual source of care and adults with limited English proficiency report low screening rates. Public policy and community action can help these population groups to receive appropriate preventive cancer screening tests by doing the following:

- Promote screening among immigrant communities, with a particular focus on Asians, NHOPIs, Latinos and those who face English-language barriers by providing culturally sensitive and language-appropriate materials and interventions.
- Educate people of the appropriate age and gender regarding the importance of cancer screening, with a particular focus on the fact that screening should be done in the *absence of any symptoms or problems*. One of the most common reasons reported for not having received a recent PAP test, a recent mammogram, or recent colorectal cancer screening is "haven't had any problems." People need to be aware that cancer screening is most effective in terms of survival if the cancer is diagnosed at the earliest possible stage—before symptoms develop.
- Support programs that raise provider awareness regarding disparities in cancer screening and current recommendations for appropriate screening, with a particular focus on providers who serve the following communities: the uninsured, low-income populations, those with no usual source of care and those with limited English proficiency. The role of providers in ensuring appropriate screening is crucial. A provider recommendation is one of the major predictors influencing receipt of cancer screening. In addition, physician understanding and explanation of the potential risks and benefits of PSA testing are critical to ensure that decisions regarding PSA testing are informed, professionally guided and appropriate for the individual.
- Support the development of practice guidelines that provide impetus for health plans and providers to recommend and administer cancer screening tests. Because there are HEDIS standards for Pap tests and mammograms, health plans and providers have incentives to provide these routine tests.[114] There are no such quality-of-care standards for colorectal cancer screening. Though there are a myriad of other factors that explain differences in screening rates, lack of HEDIS standards for colorectal cancer screening may point to why cervical cancer screening rates (86.2%) and breast cancer screening rates (75.5%) are relatively high compared to colorectal cancer screening rates (53.2%).

114 HEDIS (the Health Plan Employer Data and Information Set) is a set of standardized performance measures designed to ensure that purchasers and consumers have the information they need to reliably compare the performance of managed health care plans. HEDIS is sponsored, supported and maintained by NCQA (National Committee for Quality Assurance).

- Improve access to care and expand insurance coverage for receipt of cancer screening tests. Having insurance and having a usual source of care are critical factors affecting receipt of recent screening tests. Uninsured Californians with no usual source of care report extremely low rates of recent cancer screening. People are more likely to receive screening if they have insurance because having insurance increases the likelihood that a person has a regular health care provider and also reduces financial barriers to obtaining preventive services such as cancer screening. Expense or lack of insurance is another commonly reported reason for not receiving a recent cancer screening test.

- Support exemplary programs such as *Every Woman Counts*. The California DHS administers the largest public cancer screening program in the nation. This program provides free screening for breast and cervical cancer to low-income women with no or limited health insurance. Nearly 168,000 women were screened for breast or cervical cancer between July 2001 and June 2002 in this program.[115] Sixty-two percent of the women screened were Latina and 11% were Asian/Pacific Islanders. Development of programs for colorectal cancer awareness and screening modeled on the Every Woman Counts program could be particularly effective.

Although the findings presented in this report are for California, they have national relevance for several reasons. First, CHIS 2001 provides the most detailed data available in the United States on Asians, Native Hawaiians and other Pacific Islanders, and American Indians/Alaska Natives. Second, CHIS 2001 was conducted in five languages in addition to English: Spanish, Chinese, Korean, Vietnamese, and Khmer, thus informing policy makers on the needs of segments of the population in California and in the United States that are typically not represented in population-based surveys. Third, CHIS 2001 provides detailed information regarding racial and ethnic identity, socioeconomic status and access to care. A population-based survey that includes this type of information allows not only study of disparities by race/ethnicity, but also allows for examination of the relationship between race and ethnicity, screening and other important factors such as socioeconomic status, access to care and cultural differences. Fourth, the differences in screening rates by insurance status and usual source of care point to some clear policy recommendations that are applicable nationally as well as in California.

115 American Cancer Society, California Division, and Public Health Institute, California Cancer Registry. California Cancer Facts and Figures 2003. Oakland, CA: American Cancer Society, California Division, September, 2002.

appendix

DATA SOURCE

The findings presented in this report are based on data from the 2001 California Health Interview Survey (CHIS 2001). CHIS 2001 interviewed 55,428 households drawn from every county in California for its random-digit dial (RDD) telephone survey, providing a sample that is representative of the state's non-institutionalized population living in households. Data were weighted to the 2000 Census. CHIS 2001 interviewed one sample adult in each household. In households with children, CHIS 2001 interviewed one adolescent ages 12-17 (a total of 5,801), and obtained information for one child under age 12 by interviewing the adult who was most knowledgeable about the child (a total of 12,592). Westat, a private survey research organization, conducted the RDD portion of the CHIS 2001 interviews between November 2000 and September 2001. In addition to the RDD sample, CHIS 2001 conducted an oversample of American Indians and Alaska Natives residing in both urban and rural areas and oversamples of Japanese, Vietnamese, South Asians, Koreans, and Cambodians; this report does not include data from these oversamples.

Expert teams reviewed all CHIS 2001 questionnaires to ensure that question wording was culturally appropriate for a variety of population groups. Questionnaires were also translated, and interviews were conducted in six languages: English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, Korean, and Khmer (Cambodian). Outreach campaigns were conducted in communities of color to encourage the participation of populations that often have low participation rates in surveys. These campaigns used media and materials that were both culturally and linguistically appropriate to the particular communities.

CHIS 2001 covered a broad range of public health concerns, including health insurance coverage, eligibility for and participation in public health care programs, access to and use of health care services, health and mental health status, chronic conditions (asthma, cancer, cardiovascular disease, arthritis, and diabetes), health behaviors (including diet and physical activity, alcohol and tobacco use, and cancer screening and prevention), dental health, women's health, and demographic characteristics (including employment; income; race; Latino, Asian, and Pacific Islander ethnicity; nativity of the respondent and his or her parents; citizenship; immigration status; and English proficiency).

CHIS is a collaboration of the UCLA Center for Health Policy Research, the California Department of Health Services, and the Public Health Institute. Funding for CHIS 2001 has been provided by the California Department of Health Services, the National Cancer Institute, The California Endowment, the California Children and Families Commission, the Centers for Disease Control and Prevention (CDC), and the Indian Health Service.

For more information on CHIS, please visit *www.chis.ucla.edu.*

BRIEF DESCRIPTION OF VARIABLES USED

CHIS 2001 includes a wide range of demographic and health information obtained from respondents, including extensive information on race and ethnicity as well as information on the prevalence of asthma, access to health care, and emergency department use and hospitalization due to asthma.

Race and Ethnicity

Respondents were first asked if they are of Latino or Hispanic origin. They were then asked which one or more of the following racial groups they would use to describe themselves: Native Hawaiian and other Pacific Islander, American Indian and Alaskan Native, Asian, African American, or white. Any respondent who selected more than one racial group or who said they were Latino and selected a racial group were asked which group they most identified with. Responses to this question were used to categorize respondents who identified more than one race or ethnicity into the following racial and ethnic categories: Latino, white, African American, Asian, Native Hawaiian and other Pacific Islander (NHOPI), American Indian and Alaska Native (AIAN), and other. Respondents who did not select a single

race or ethnicity with which they most identified were assigned to the "other" race category. Finally, any respondent who said he or she was AIAN and reported that he or she was enrolled as a member of a tribe was assigned to be AIAN.

The number of NHOPI in the CHIS 2001 sample is relatively small (n = 219 adults using the classification described in the previous paragraph). Estimates for this group were reported whenever the sample size permitted.

Cancer Screening Populations and Variables

The populations used in data analyses for each chapter were defined based on the age ranges recommended for screening by the major cancer societies. Analyses of cervical cancer screening were limited to women age 18 and older who reported no diagnosis of cervical cancer and no hysterectomy. Analyses of screening mammography included women age 40 and older who reported no diagnosis of breast cancer. Analyses of screening for colorectal cancer were limited to women and men age 50 and older who reported no diagnosis of colon cancer and no diagnosis of rectal cancer. Finally, analyses of prostate cancer screening included men age 50 and older who reported no diagnosis of prostate cancer.

Estimates of rates of cancer screening were based on responses to questions in the women's health and cancer control modules in CHIS 2001. The women's health module included questions about Pap tests and mammograms. Women were asked if they had ever had a Pap test to check for cervical cancer. Those women who responded "yes" were asked several follow-up questions, including "How long ago did you have your most recent Pap smear test?" We used this question to determine the proportion of women who had a Pap test in the past three years. Women older than 30 were also asked several questions about mammography. The mammography results in this report are based on the following questions: "Have you ever had a mammogram?" and "How long ago did you have your most recent mammogram?"

The cancer control module in CHIS 2001 included questions about colorectal cancer screening and the PSA test for prostate cancer screening. Men and women 40 and older were asked a series of questions about colorectal cancer screening. In this report, we present rates of receiving *either* an FOBT in the last 12 months, *or* an endoscopic exam (sigmoidoscopy or colonoscopy) in the last five years among men and women age 50 and older who reported not being diagnosed with colon or rectal cancer. These rates are based on responses to the following questions: "Have you ever had a sigmoidoscopy, colonoscopy, or proctoscopy to look for signs of cancer or other problems in your colon?" "How long ago did you have your most recent exam?" "Have you ever done a blood stool test using a home test kit?" and "How long ago did you do your most recent home blood stool test?" Men age 45 and older were asked several questions pertaining to the use of the PSA test for prostate cancer screening. The results presented in this report for screening with the PSA test are based on responses to the following questions: "Have you ever heard of a PSA test or 'prostate-specific antigen' test to detect prostate cancer?", "Have you ever had a PSA test?" and "How long ago did you have your most recent PSA test?"

Usual Source of Care

Please note that the definition of usual source of care used in this report excludes emergency and urgent care facilities from being considered a usual source of care. Respondents were asked, "Is there a place that you *usually* go when you are sick or need advice about your health?" If respondents said "yes," they were then asked about the type of place they went to most often. Respondents who reported that they most often used the emergency department or an urgent care facility as their usual source of care were categorized as having no usual source of care.

LIMITATIONS

CHIS is a large survey designed to be representative of the state's non-institutionalized population living in households. However, as with any survey, there are caveats that should be kept in mind when using these findings. First, CHIS is a telephone survey of people living in households and weighted to reflect this non-institutionalized population. Therefore, certain populations (such as those living in nursing homes or prisons) are excluded. In addition, populations without access to telephones may be excluded or under-represented. However, the proportion of Californians without access to a telephone is very small, and even for the very poorest population and some relatively isolated groups it does not exceed 12 percent. Moreover, recent studies show that the health characteristics of those with and without telephones are not as different as they have been in the past.[116,117] In addition, information collected by CHIS 2001 was used in weighting the sample to mitigate the effects of this characteristic of telephone surveys.

Second, the findings presented in this report are based on self-reported, cross-sectional data. It is possible that respondents' self-reports were influenced by a recall bias. There is some evidence that self-reported recent use of screening tests may overestimate actual screening rates.[118,119] In addition, because this was a cross-sectional survey, caution should be taken in drawing causal conclusions from statistical relationships found in this study.

Finally, response rates should be taken into account with other factors in interpreting findings from CHIS 2001 and other surveys. The overall response rate for CHIS 2001 is a composite of the screener completion rate and the extended interview completion rate. CHIS 2001 used a conservative method for calculating the response rate that allocates undetermined numbers. Using this conservative method, the screener completion rate was 59.2%. For the adult survey, the extended interview completion rate was 63.7%, resulting in an overall response rate of 37.7%. Overall response rates for the adult survey varied by sampling strata (ranging from 30% in San Francisco County to 68.9% in Colusa, Glen, and Tehama counties). The child survey had an extended interview completion rate of 87.6%, and the adolescent survey had an extended interview completion rate of 63.5%. The lower completion rate for adolescents is largely due to parents not giving permission for the adolescent interview. If these non-responses are excluded, the rate increases to 84.5%. The overall response rate of 37.7% for adults is not very different from the response rate of 43.4% reported for the 2000 BRFSS in California (another recently conducted telephone survey). The response rate for CHIS 2001 is lower than the response rate for the 1999 National Survey of

116 Anderson JE, Nelson DE, Wilson RW. Telephone coverage and measurement of health risk indicators: Data from the National Health Interview Survey. American Journal of Public Health. 1998;88:1392-1395.

117 Ford ES. Characteristics of survey participants with and without a telephone: Findings from the Third National Health and Nutrition Examination Survey. Journal of Clinical Epidemiology. 1998;51:55-60.

118 McGovern PG, Lurie N, Margolis KL, Slater JS. Accuracy of self-report of mammography and Pap smear in a low-income urban population. American Journal of Preventive Medicine. 1998 Apr;14(3):201-8.

119 Volk RJ, Cass AR. The accuracy of primary care patients' self-reports of prostate-specific antigen testing. American Journal of Preventive Medicine. 2002 Jan;22(1):56-8.

America's Families (NSAF). The response rate for the California sample of the 1999 NSAF was 51.7%. However, the 1999 NSAF used monetary incentives for participation, whereas CHIS 2001 did not. Nevertheless, it should be noted that many factors need to be taken into account in assessing the representativeness of the survey data. For more information on these issues, please see *CHIS 2001 Methodology Report Series: Report 4—Response Rates.*[120]

STATISTICAL ANALYSES AND REPORTING OF FINDINGS

All estimates presented in this study have a "coefficient of variation" (CV) less than or equal to 0.30, unless otherwise noted. The CV provides information about the precision of estimates from survey data. It was determined that estimates with a CV greater than 0.30 should not be presented because the "true" estimate might be very different from the one that was calculated. All comparative statements reflect statistically significant differences ($p < 0.05$) unless otherwise noted. Respondents with "don't know," "refused," or otherwise missing responses were excluded from the numerator and denominator in analyses.

120 California Health Interview Survey. *CHIS 2001 Methodology Report Series: Report 4—Response Rates*. Los Angeles, CA: UCLA Center for Health Policy Research, 2002.

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