

CALIFORNIA HEALTH CARE ALMANAC



One Million Lives: Cancer in California

JUNE 2012

Introduction

More than one million Californians alive today have a history of cancer. In 2009, more than 55,000 Californians died of cancer, and more than 147,000 new cancer cases were diagnosed. The treatment of cancer represented \$125 billion in health care spending nationally in 2010. The good news is that cancer mortality rates have fallen by 22% since 1989 and rates of new invasive cancers have dropped 9%.

The bad news is that while we know a great deal about who gets cancer and who dies from it, we do not know much about the quality of the care provided or its cost. The delivery of cancer care is complex, with teams of cancer professionals providing care in a variety of settings and systems, from community practices to large-scale, comprehensive cancer centers. Among these providers, recommendations differ on the best approach to and/or timing of cancer screening and treatment. Significant racial and ethnic disparities also exist for both cancer incidence and mortality in California.

This report examines cancer in California, including trends and disparities in incidence and mortality, costs of cancer care, and location and providers of cancer care. The report also highlights available cancer quality measures and recent data on national health care spending on cancer treatment.

KEY FINDINGS INCLUDE:

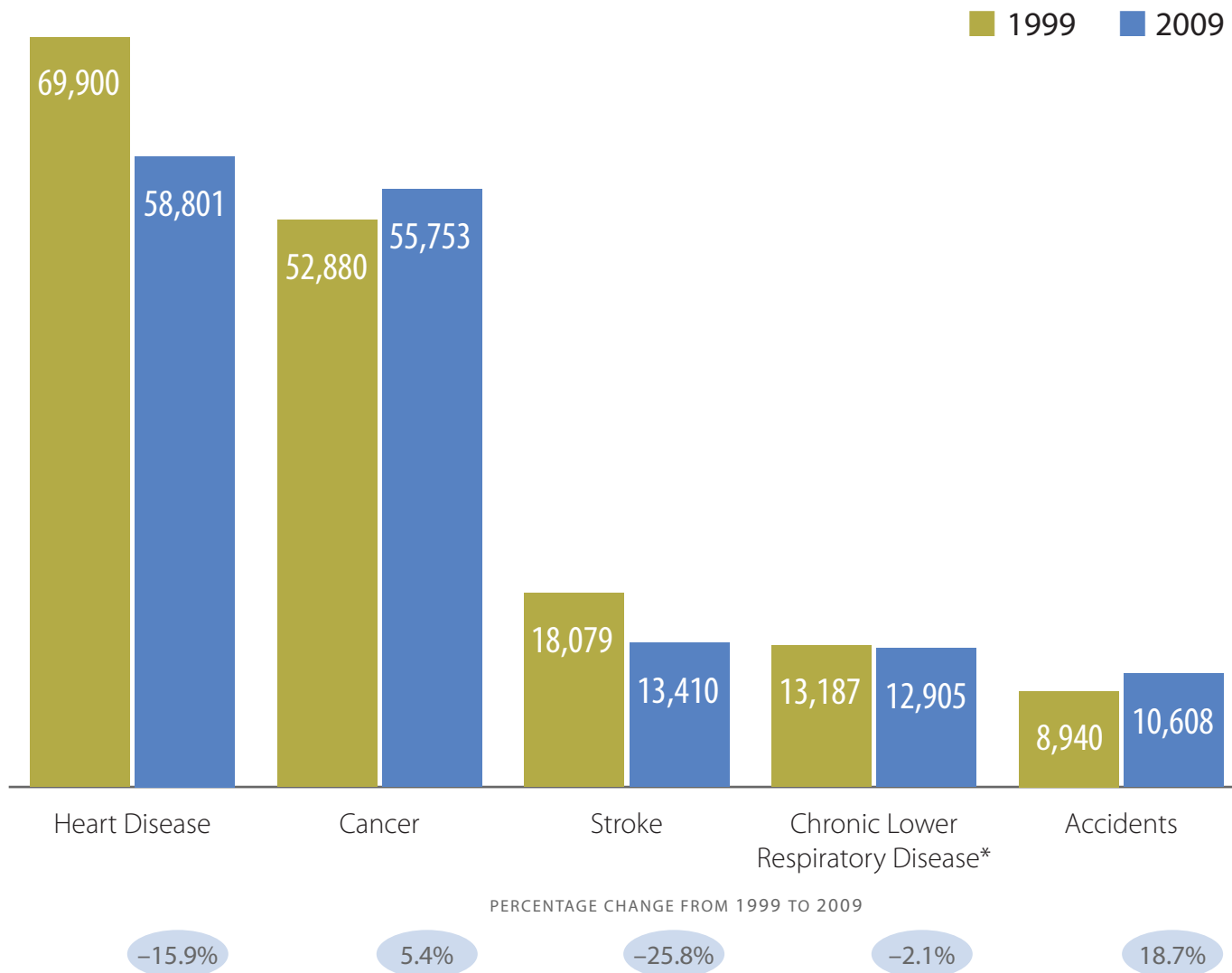
- In 2009, breast and prostate cancer together accounted for nearly half of all cancers in California.
- Mortality rates in California for African Americans in 2009 were 30% to 90% higher than other groups for all cancers, and two to six times higher for prostate cancer.
- Over the last 12 years, the majority of national spending on cancer care has shifted from hospital inpatient stays (64% in 1997) to outpatient and office-based care (58% in 2009).
- Nationally in 2010, the five most expensive cancers represented over half of all cancer spending.
- In California in 2008, private insurance and Medicare were the two largest payer categories for cancer care, each accounting for 40% of all spending.
- In 2007, cancer patients in California were more likely to be admitted to the hospital or ICU in the last month of life than were patients across the US.
- Despite the recognized desire of most patients to die at home, one-third of Medicare cancer patients with a poor prognosis died in a hospital in California in 2007. California also used hospice less than many other states for cancer patients at the end of life.

Cancer in California

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Leading Causes of Death, California, 1999 and 2009



Cancer in California

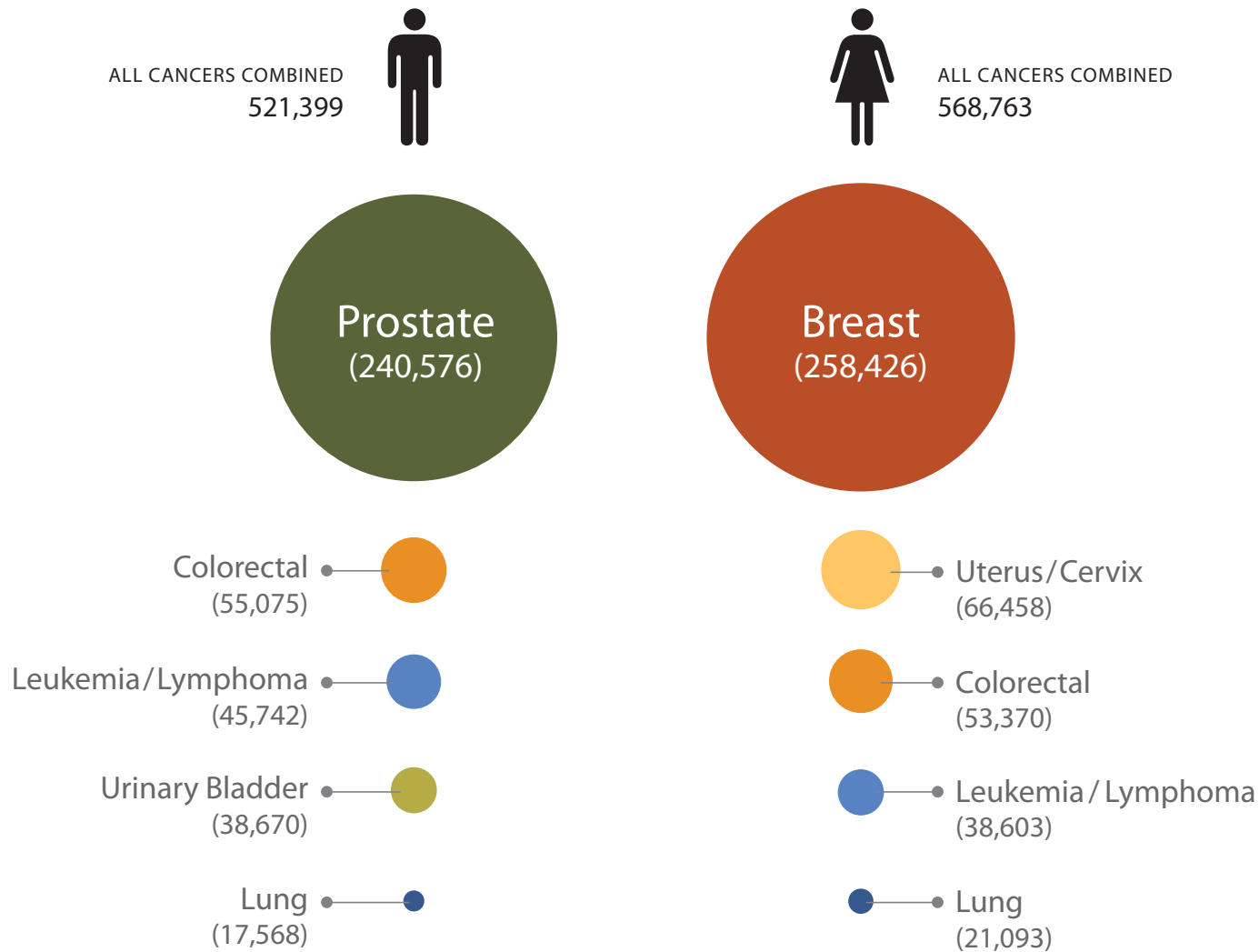
Overview

Cancer has been the second leading cause of death in California for more than a decade. Over this period, deaths from cancer have increased slightly, while deaths from heart disease have declined 16%. In 2009, cancer accounted for 24% of all California deaths.

*Includes chronic obstructed pulmonary disease (COPD), emphysema, chronic bronchitis, and other respiratory illnesses.

Source: California Department of Public Health, Death Records.

Prevalence of Five Most Common Cancers, by Gender, California, 2009



Cancer in California

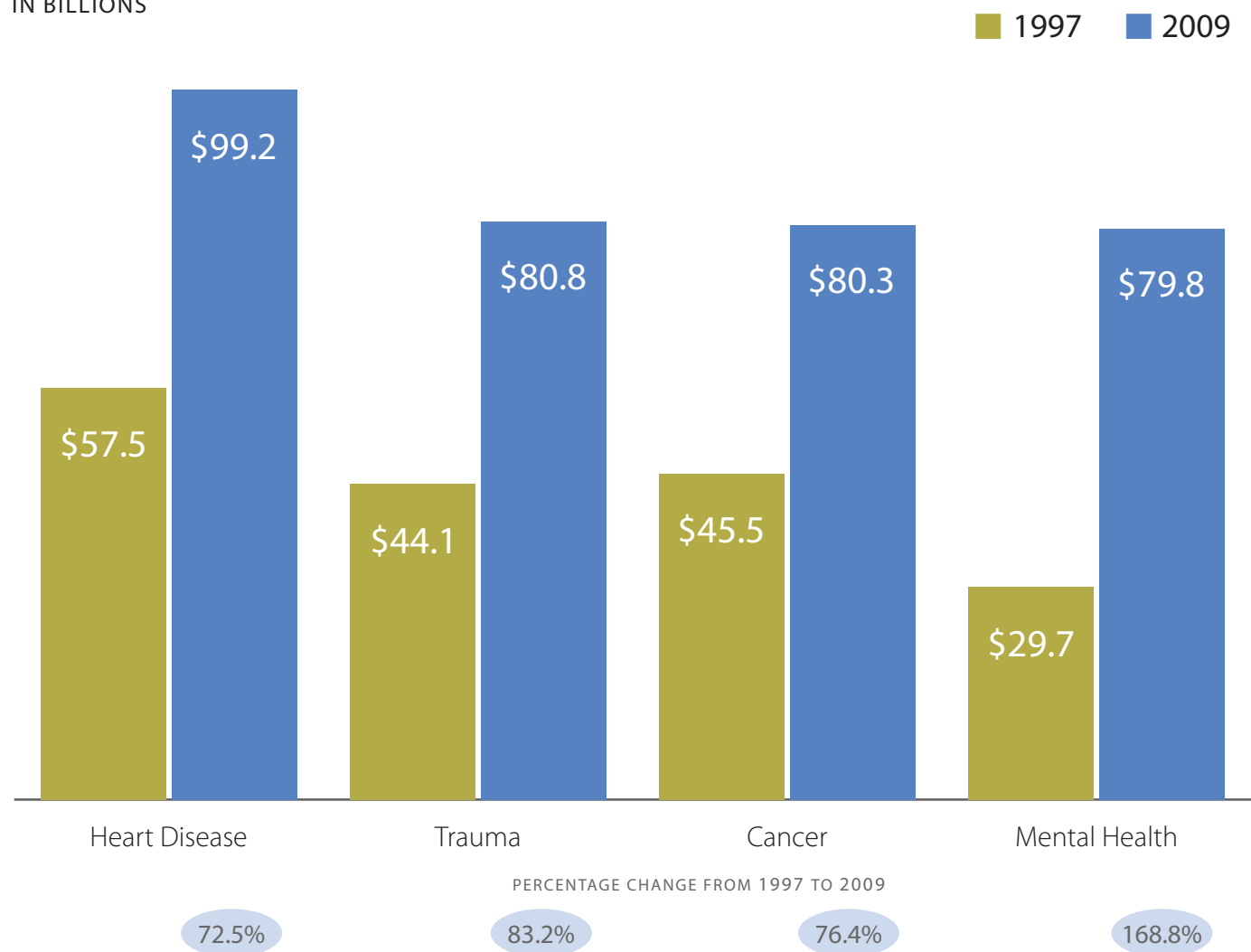
Overview

Over one million Californians who are alive today — almost 3% of the population — have a history of cancer. The most common cancers are prostate for men and breast for women.

Source: California Cancer Registry, special data request, December 15, 2011.

Expenditures on Four Most Costly Conditions, United States, 1997 and 2009

IN BILLIONS



Cancer in California

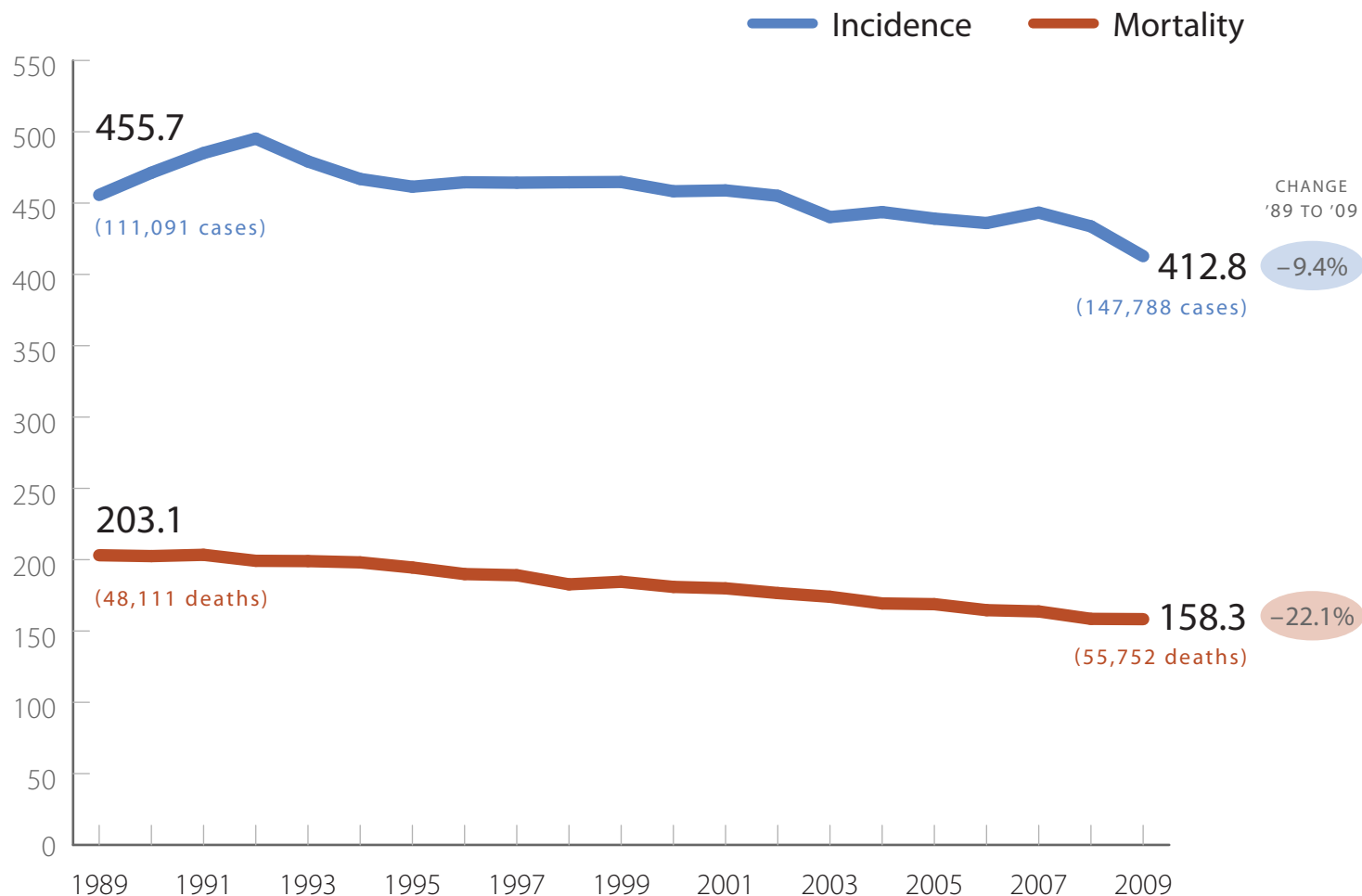
Overview

Nationally, cancer was the third costliest condition in 2009, following heart disease and trauma.

Source: Agency for Healthcare Research and Quality. Total Expenses and Percent Distribution for Selected Conditions by Source of Payment: United States, 1997 and 2009. Medical Expenditure Panel Survey Household Component Data.

Cancer Incidence and Mortality Rates, California, 1989 to 2009

PER 100,000 POPULATION



Cancer in California

Incidence and Mortality

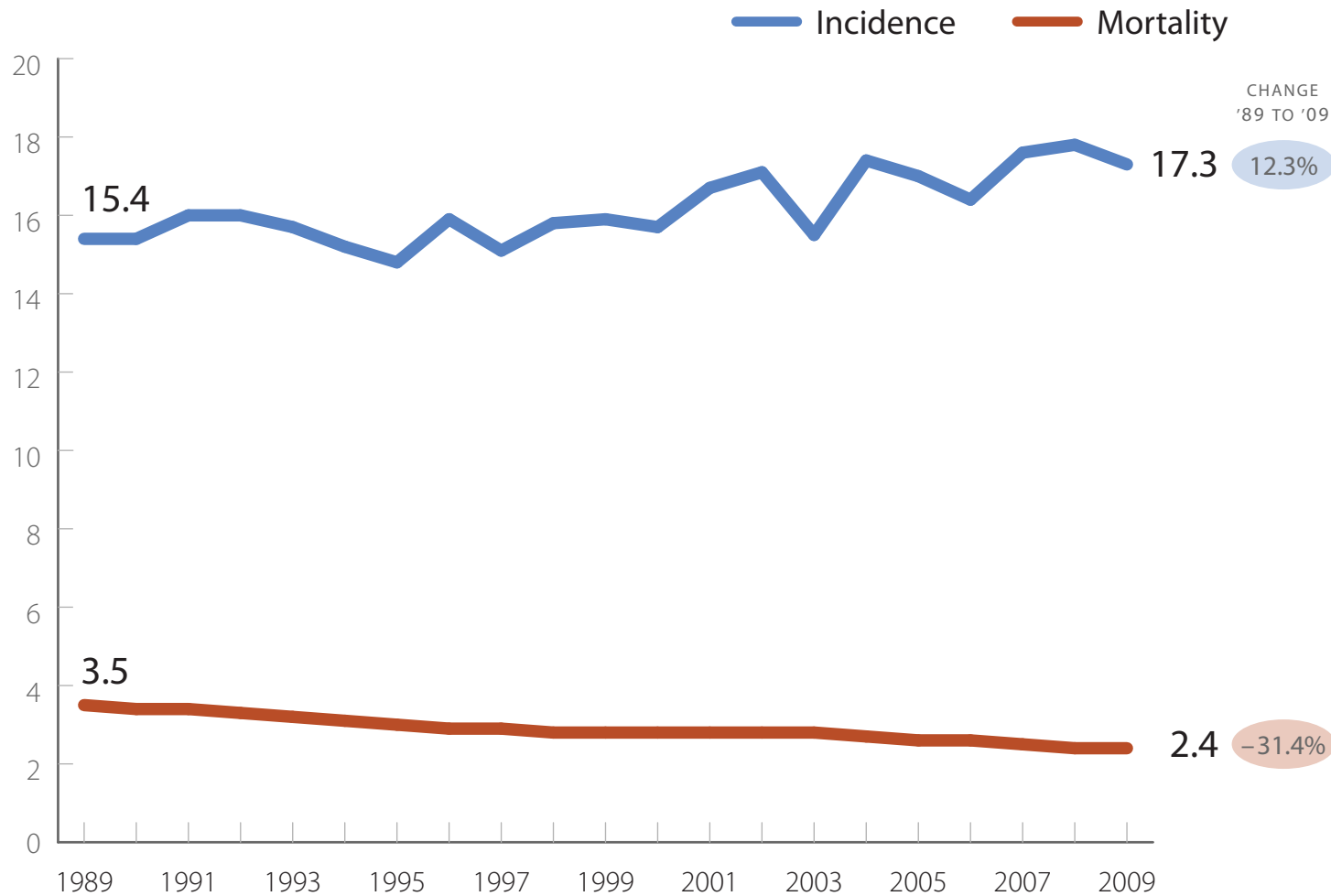
In California, death rates from cancer are declining faster than are incidence rates for new cancers. Since 1989, invasive cancer incidence rates decreased 9% while mortality rates dropped 22%. In 2009, more than 147,000 Californians were diagnosed with invasive cancers, and more than 55,000 died from cancer.

Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. The Veterans Health Administration did not report cancer cases to CCR in 2005–2009; therefore, incidence counts for adult males in 2005–2009 are underestimated and should be interpreted with caution.

Source: California Cancer Registry, Annual Statistical Tables by Site, accessed December 5, 2011.

Childhood Cancer Incidence and Mortality Rates, California, 1989 to 2009

PER 100,000 POPULATION



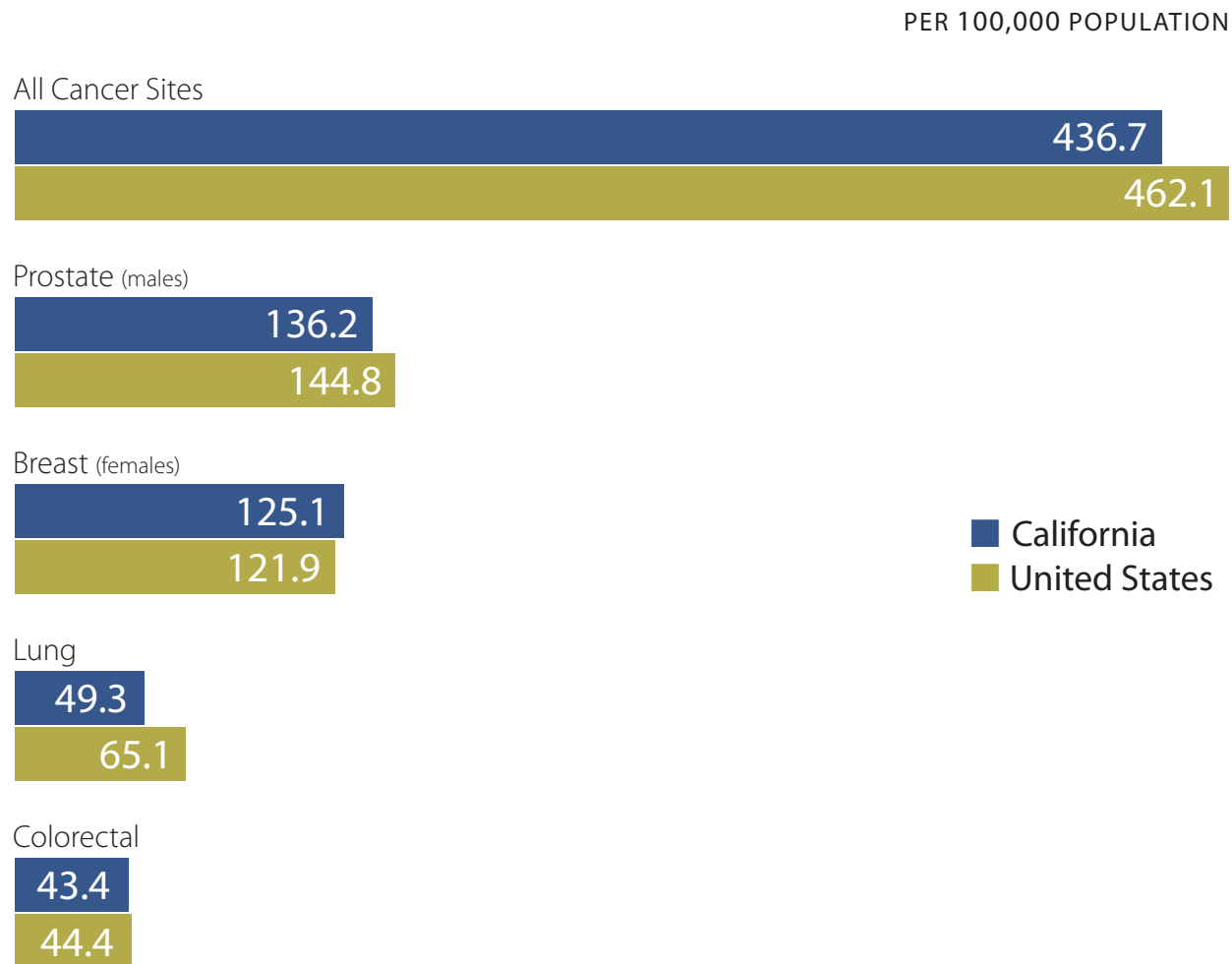
Cancer in California Incidence and Mortality

While incidence rates for adult cancer have fallen over the last twenty years, incidence rates for childhood cancer have risen 12%. Childhood mortality rates have fallen 31% over that time.

Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. Children are aged 0 to 19 years old.

Source for incidence: California Cancer Registry, Special Data Request December 5, 2011. Source for mortality: National Cancer Institute, State Cancer Profiles, accessed June 29, 2012.

Selected Cancer Incidence Rates, California vs. United States, 2008



Cancer in California

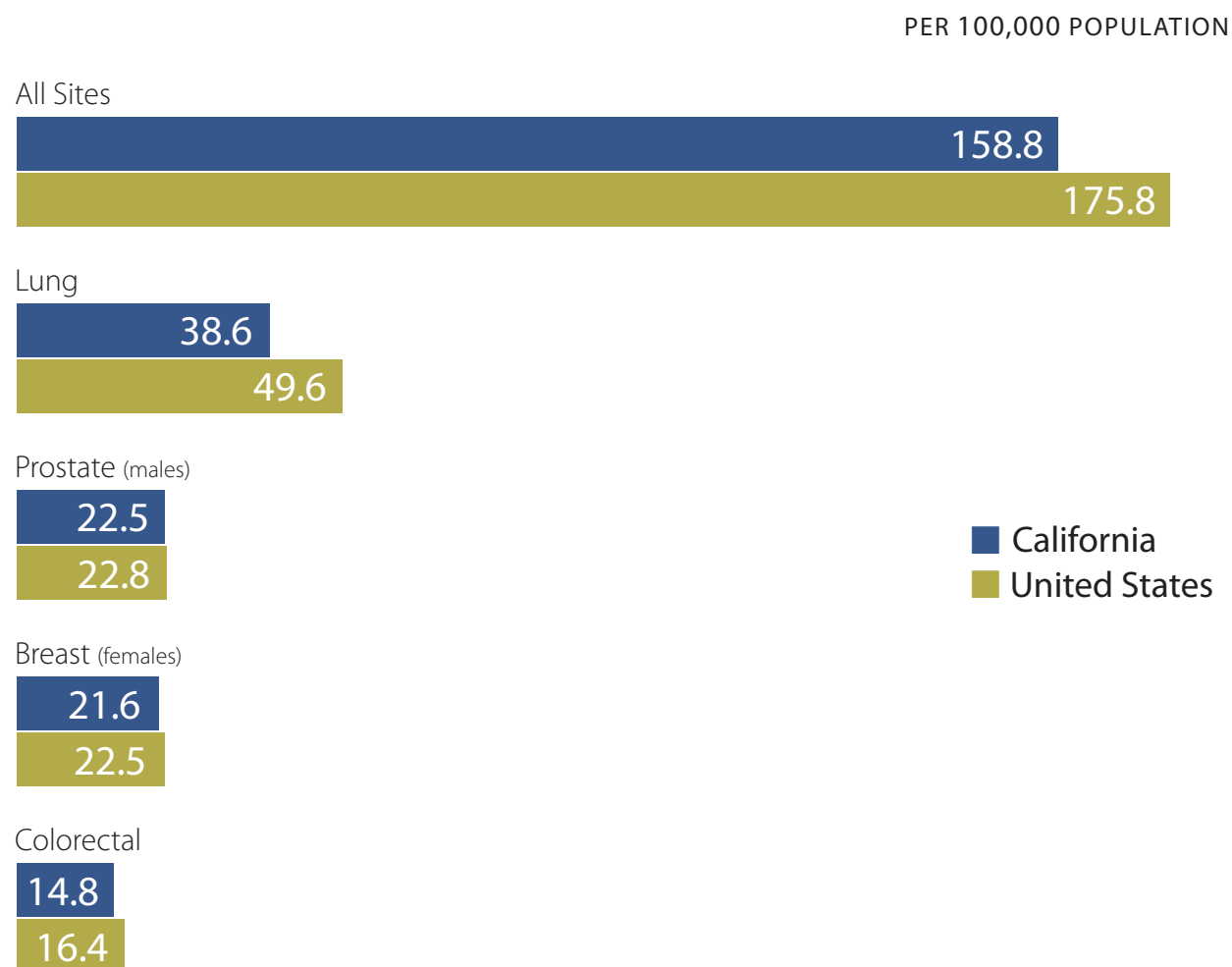
Incidence and Mortality

In 2008, California had a lower overall incidence of cancer than the US, and lower incidence rates for three of the four most prevalent cancers, with the exception of breast cancer.

Note: Rates are age-adjusted. Excludes in situ cancers, except bladder.

Source: U.S. Cancer Statistics Working Group, *United States Cancer Statistics: 1999–2008 Incidence and Mortality Web-based Report*, Centers for Disease Control and Prevention and National Cancer Institute; accessed May 21, 2012.

Selected Cancer Mortality Rates, California vs. United States, 2008



Cancer in California

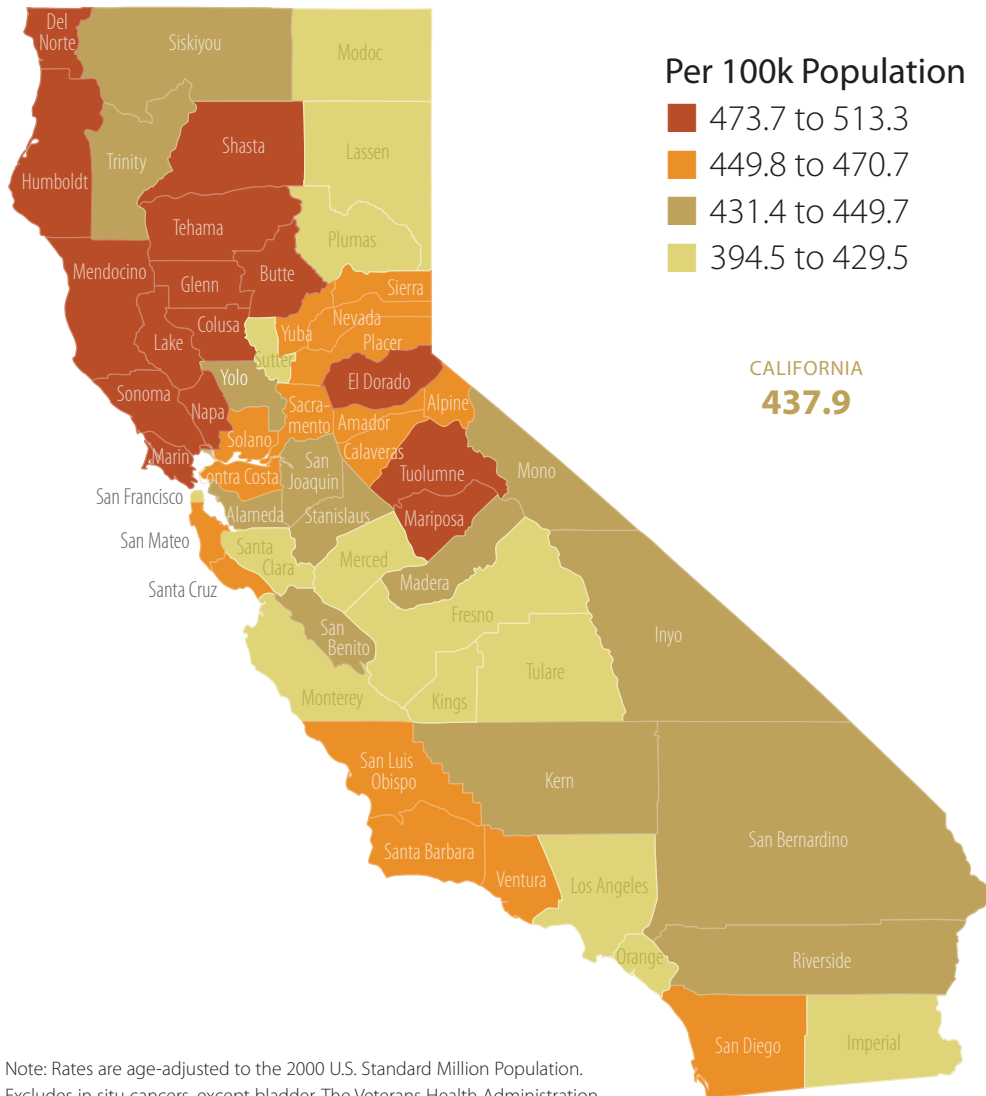
Incidence and Mortality

As with incidence rate, California had a lower overall cancer mortality rate than the United States in 2008, as well as lower mortality rates for the four most prevalent cancers.

Note: Rates are age-adjusted.

Source: Centers for Disease Control and Prevention, Division of Cancer Prevention and Control, State Cancer Facts, accessed May 21, 2012.

Cancer Incidence Rates, by County, California, 2005 to 2009



Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. The Veterans Health Administration did not report cancer cases to CCR in 2005–2009; therefore, incidence counts for adult males in 2005–2009 are underestimated and should be interpreted with caution.

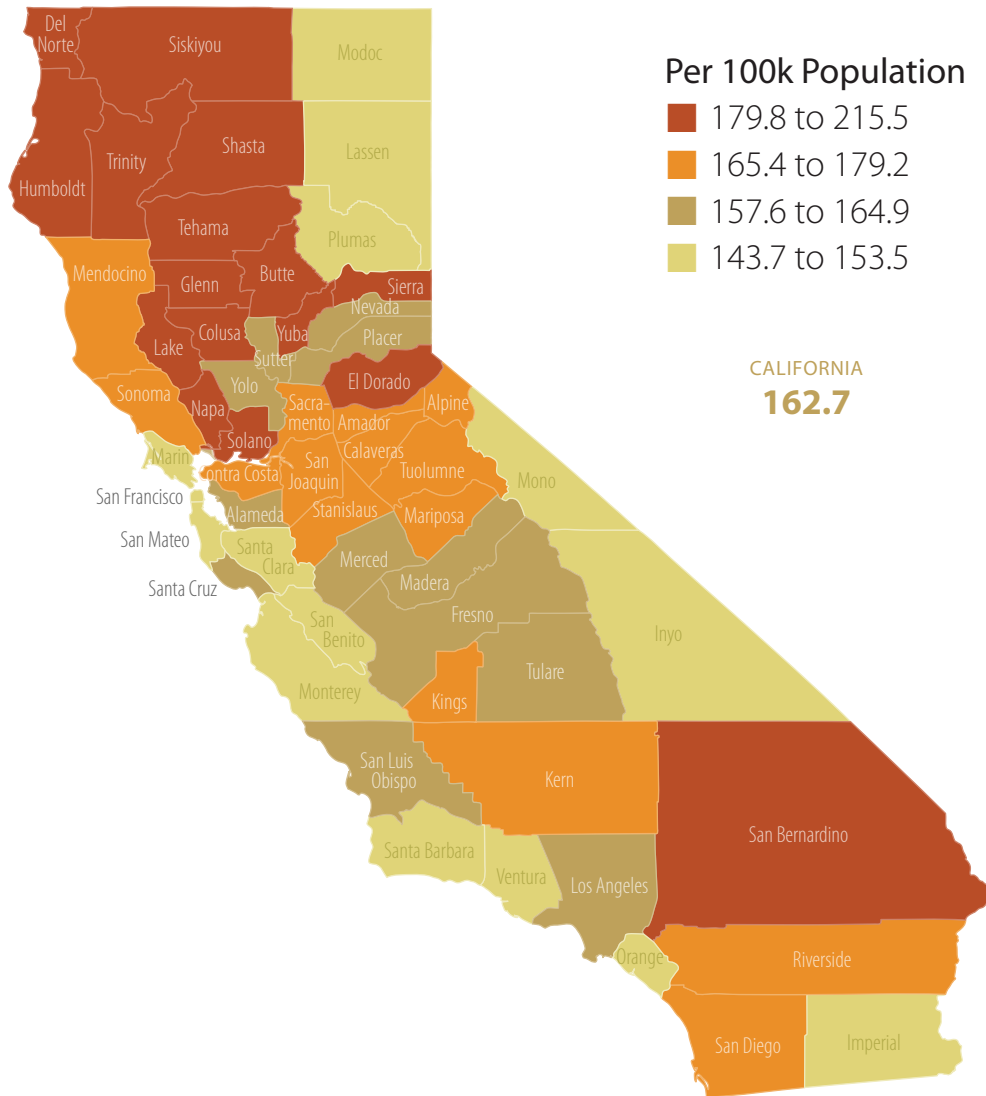
Source: California Cancer Registry, Web Query Tool, www.cancer-rates.info, accessed December 20, 2011.

Cancer in California

Incidence and Mortality

Cancer incidence varies widely within California. California's most populous county, Los Angeles, has relatively low cancer incidence rates, while many of the state's rural northern counties have relatively high incidence rates.

Cancer Mortality Rates, by County, California, 2005 to 2009



Cancer in California

Incidence and Mortality

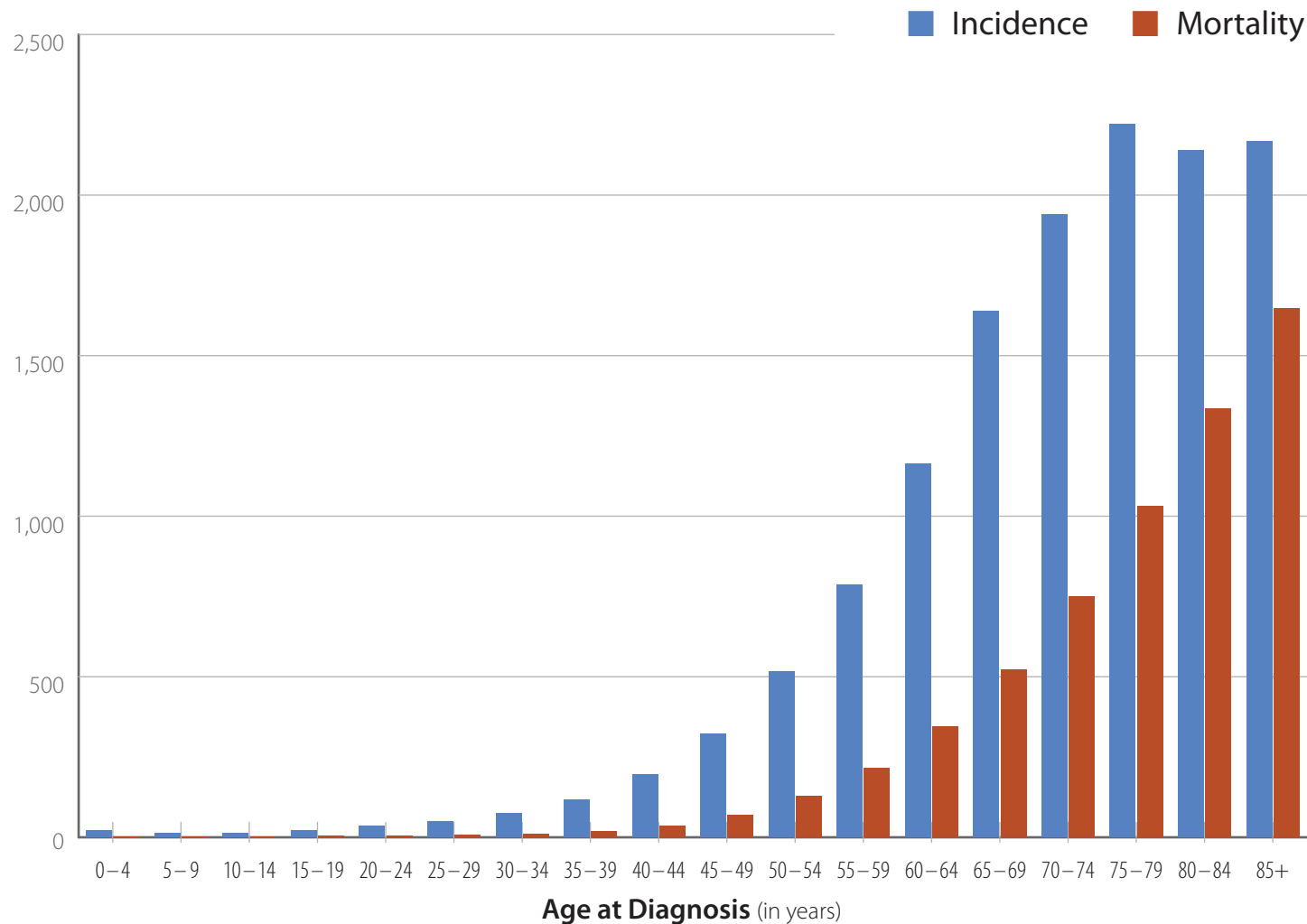
Cancer mortality, like incidence, varies widely within California. The counties with the highest mortality rates are concentrated primarily in northern rural counties.

Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population.

Source: California Cancer Registry, Web Query Tool, www.cancer-rates.info, accessed December 20, 2011.

Cancer Incidence and Mortality Rates, by Age, California, 2005 to 2009

PER 100,000 POPULATION



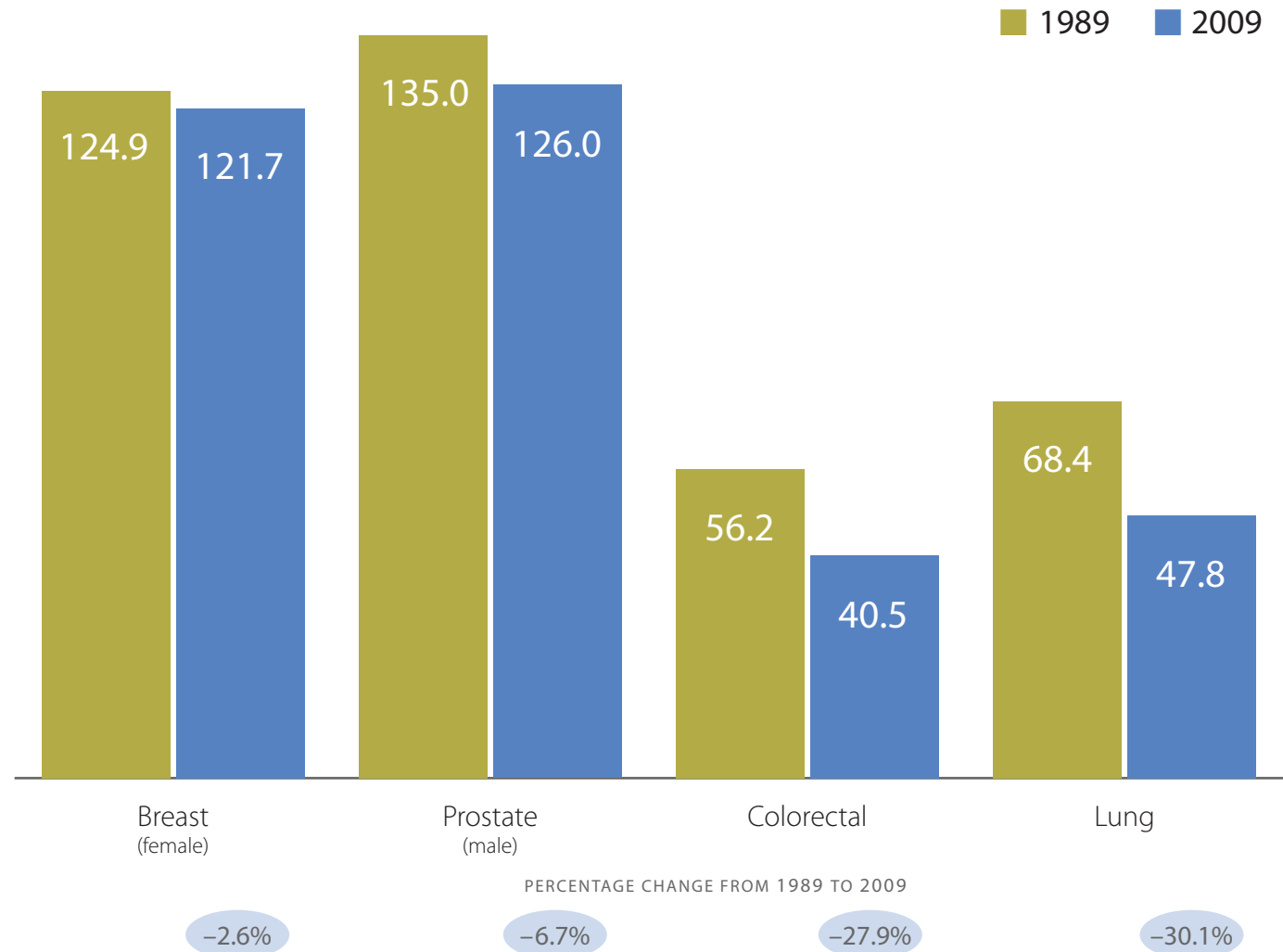
Cancer incidence and mortality rates both rise steadily with age, with pronounced increases beginning in middle age and continuing through the lifespan.

Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. The Veterans Health Administration did not report cancer cases to CCR in 2005–2009; therefore, incidence counts for adult males in 2005–2009 are underestimated and should be interpreted with caution.

Source: California Cancer Registry, Annual Statistical Tables by Site, accessed December 5, 2011.

Selected Cancer Incidence Rates, California, 1989 and 2009

PER 100,000 POPULATION



Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. The Veterans Health Administration did not report cancer cases to CCR in 2005–2009; therefore, incidence counts for adult males in 2005–2009 are underestimated and should be interpreted with caution.

Source: California Cancer Registry, Annual Statistical Tables by Site, accessed December 2, 2011.

Cancer in California

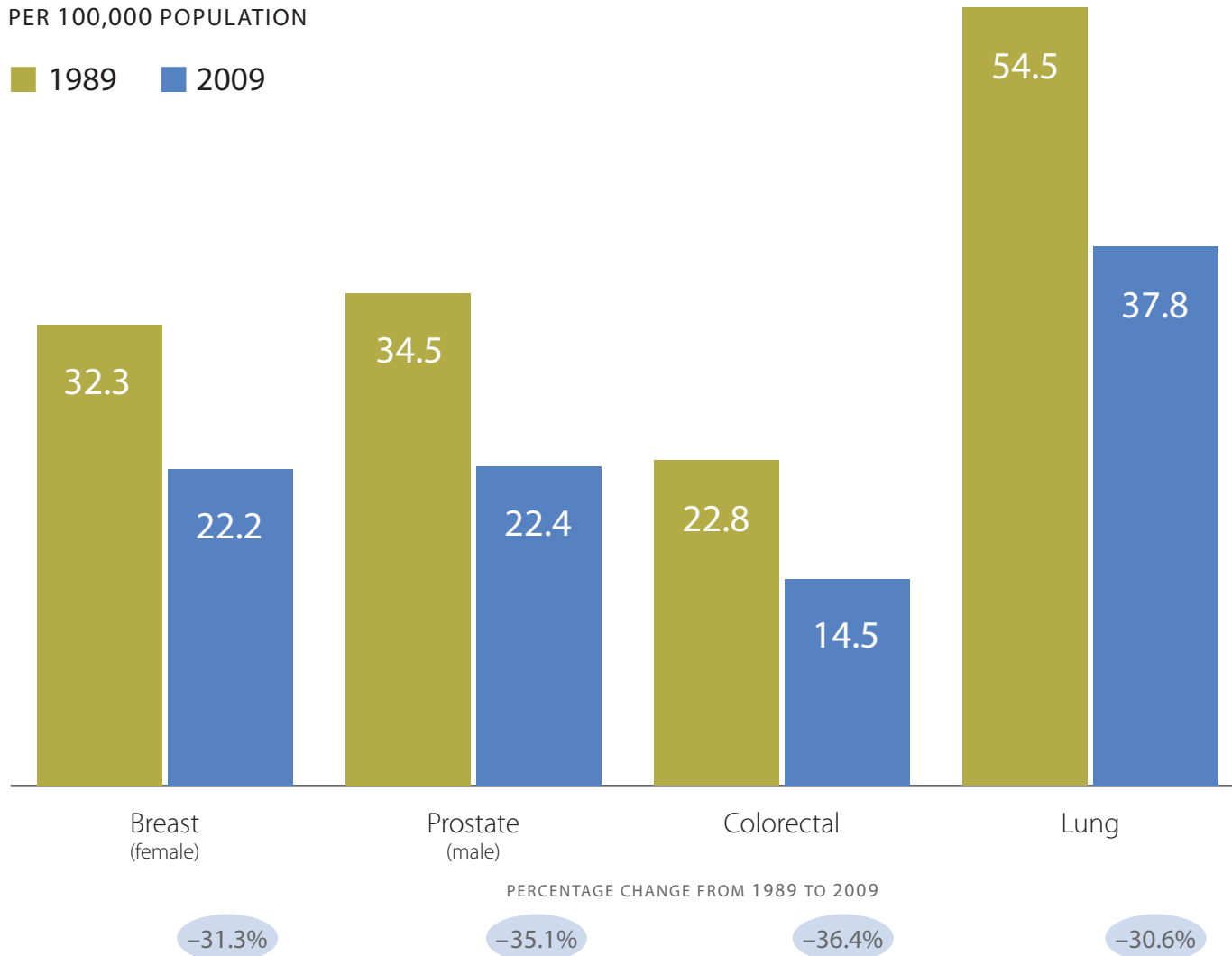
Incidence and Mortality

Incidence rates for the four most prevalent cancers in California decreased from 1989 to 2009. Lung cancer and colorectal cancer incidence had the largest declines over the last two decades, likely due to decreased numbers of smokers and increased screening for colorectal cancer, which can detect precancerous growths that can be removed before cancer develops.

Selected Cancer Mortality Rates, California, 1989 and 2009

PER 100,000 POPULATION

■ 1989 ■ 2009



Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population.

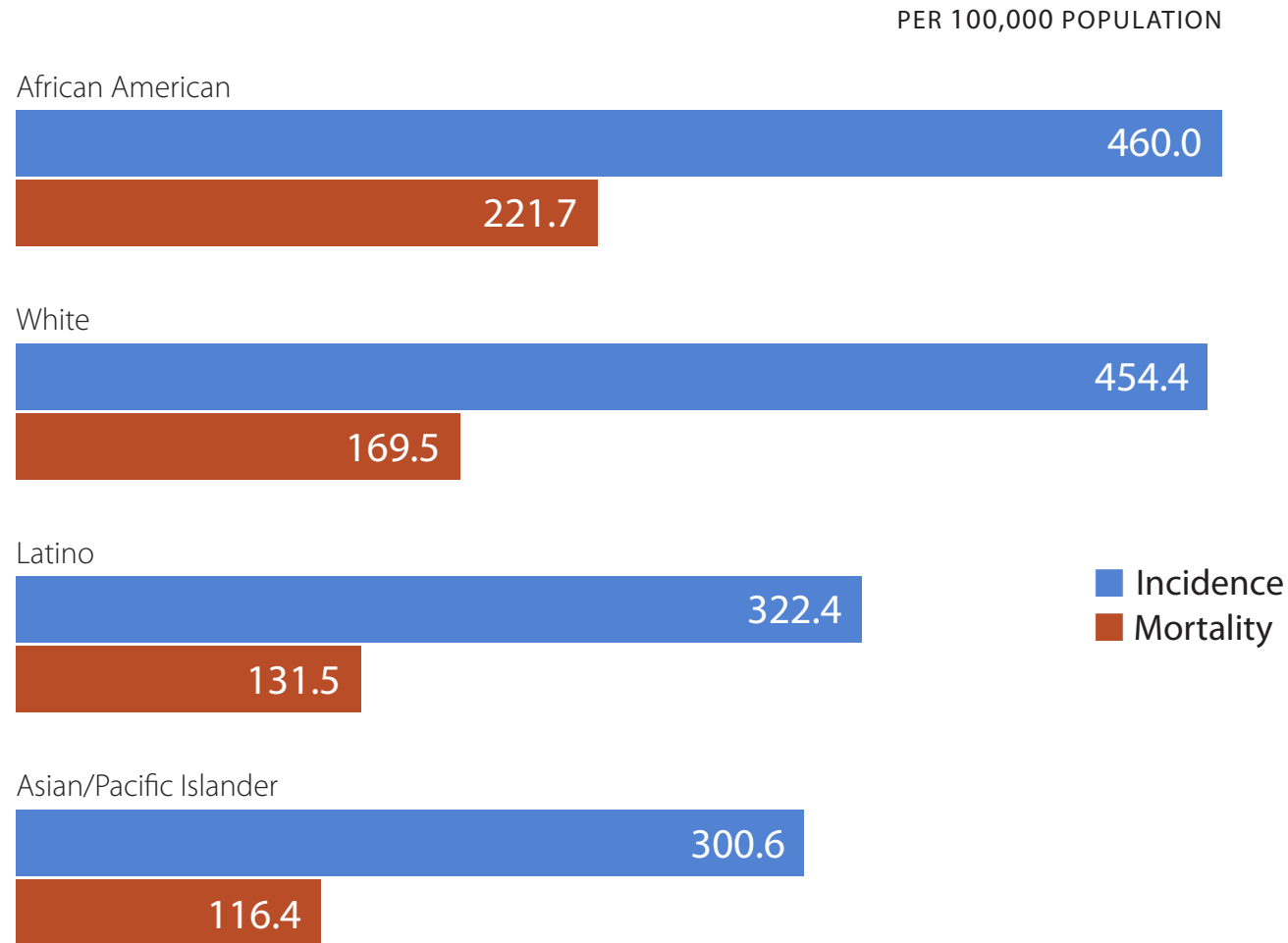
Source: California Cancer Registry, Annual Statistical Tables by Site, accessed December 2, 2011.

Cancer in California

Incidence and Mortality

Mortality rates for the four most common cancers in California declined overall by 30% or more over the last two decades. Lung cancer continues to have the highest mortality rate of the four cancers.

Cancer Incidence and Mortality Rates, by Race/Ethnicity, California, 2009



Cancer in California

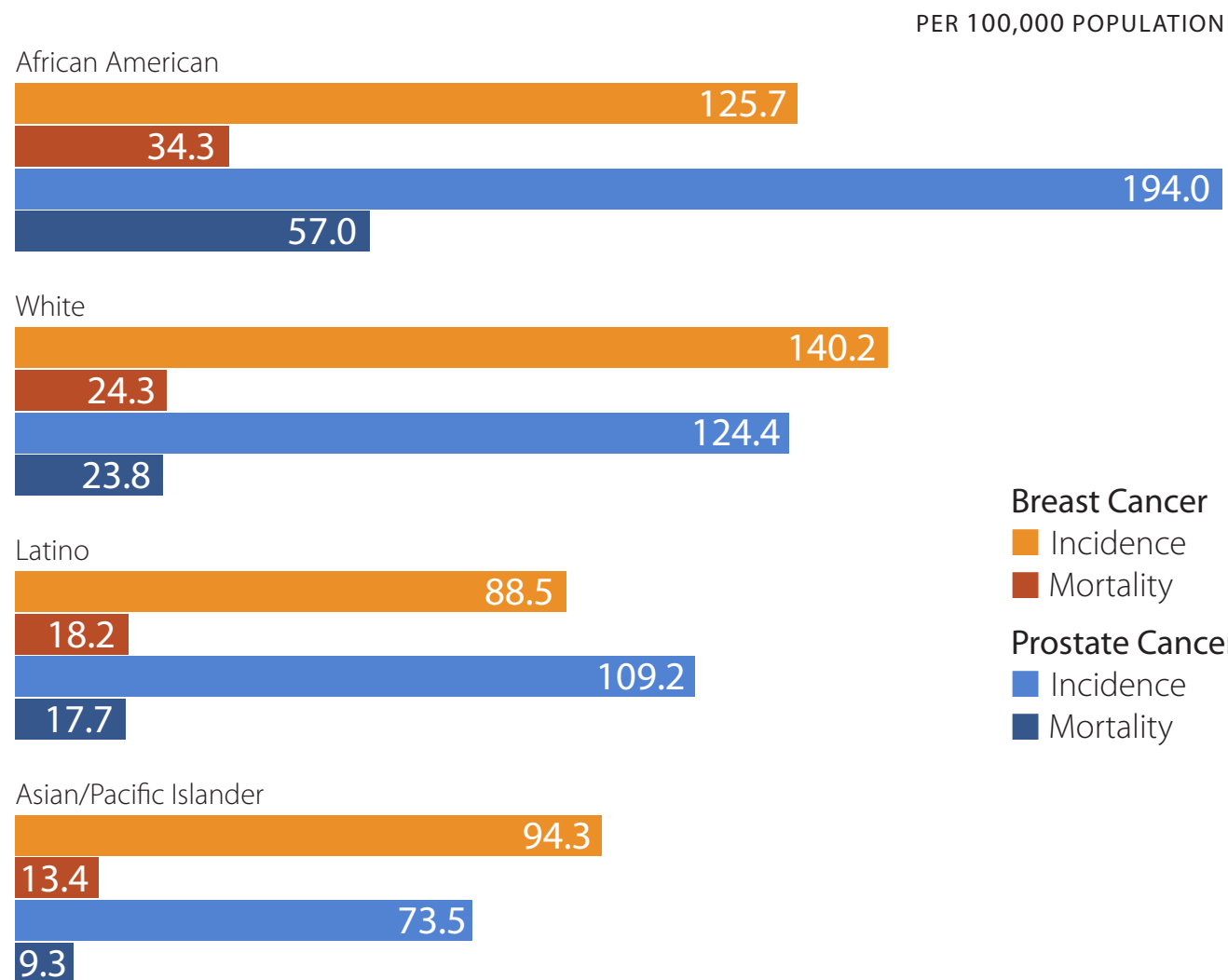
Incidence and Mortality

Cancer incidence and mortality rates vary widely across racial and ethnic groups in California. African Americans have the highest incidence and mortality rates for all cancers in California.

Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. The Veterans Health Administration did not report cancer cases to CCR in 2005–2009; therefore, incidence counts for adult males in 2005–2009 are underestimated and should be interpreted with caution.

Source: California Cancer Registry, Annual Statistical Tables by Site, accessed December 2, 2011.

Breast and Prostate Cancer Incidence and Mortality Rates, by Race/Ethnicity, California, 2009



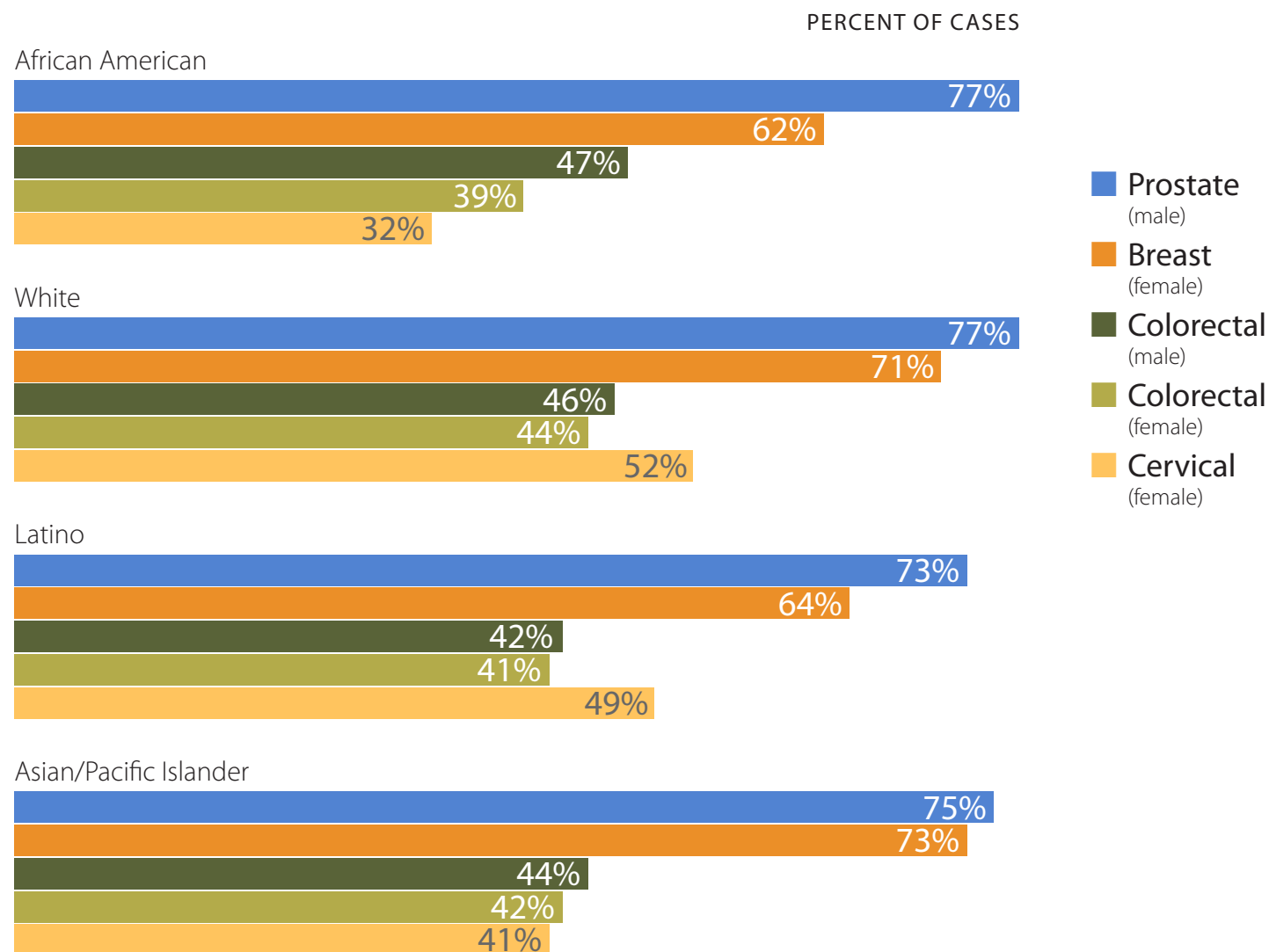
Cancer in California Incidence and Mortality

African Americans have much higher prostate cancer incidence and mortality rates than other racial and ethnic groups in California. Whites have the highest incidence rates for breast cancer, while African Americans have the highest breast cancer mortality rates.

Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. The Veterans Health Administration did not report cancer cases to CCR in 2005–2009; therefore, incidence counts for adult males in 2005–2009 are underestimated and should be interpreted with caution. Breast cancer rates are for females.

Source: California Cancer Registry, Annual Statistical Tables by Site, accessed December 2, 2011.

Selected Cancers Diagnosed at Early Stage, by Race/Ethnicity, California, 2009



Cancer in California

Incidence and Mortality

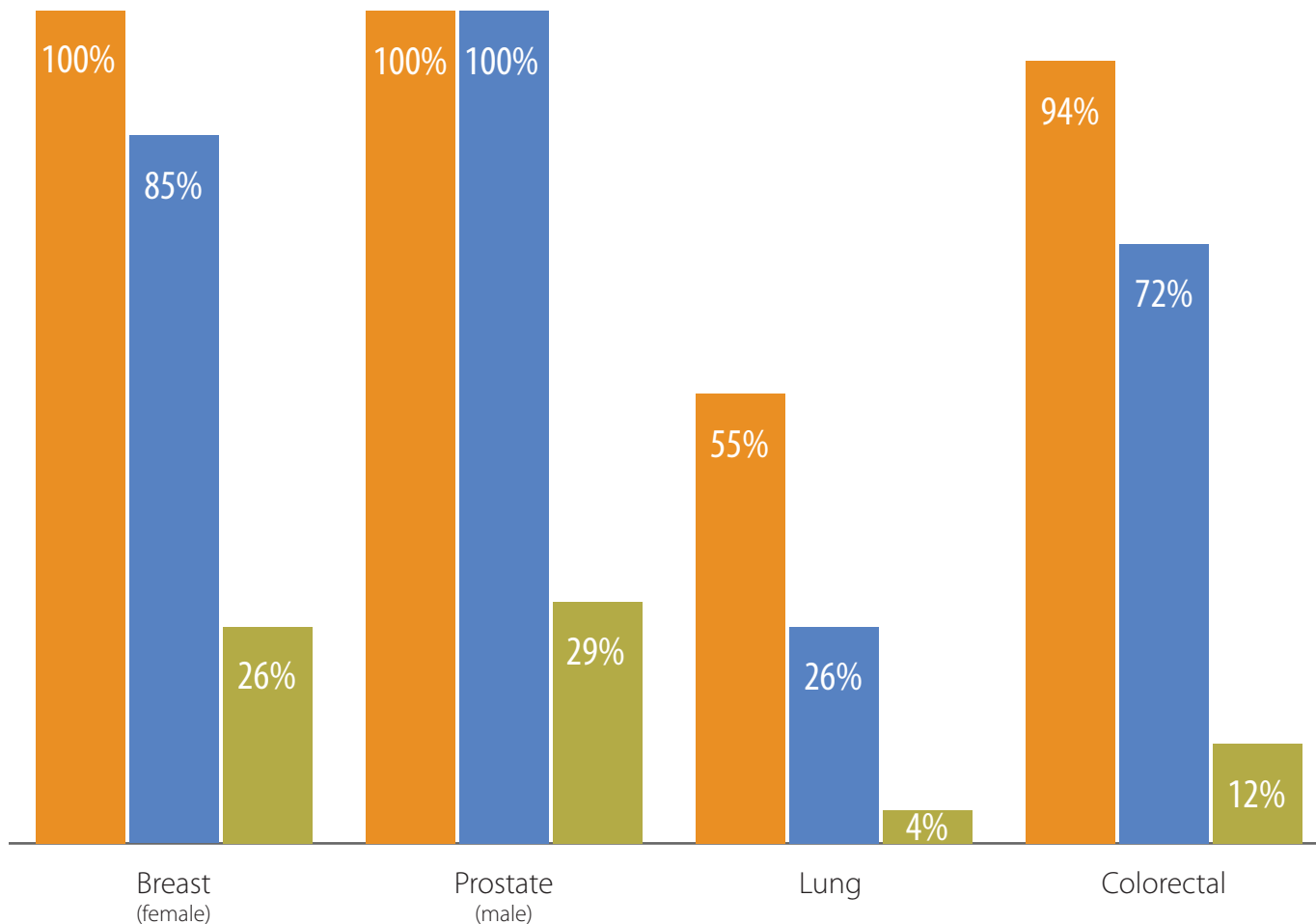
In 2009, racial disparities in the early diagnosis of cancer were greatest for cervical and breast cancer and smallest for prostate cancer. African American and Latino women had the lowest rates of early diagnosis of breast cancer. The prognosis for individuals diagnosed with cancer is much better if the cancer is found in early stage.

Note: Early stage is in situ or localized.

Source: California Cancer Registry, California Department of Public Health, *California Cancer Facts and Figures 2012*.

Five-Year Relative Survival,* by Stage at Diagnosis, Selected Cancers, California, 2000 to 2009

■ Localized
 ■ Regional
 ■ Distant



*Estimate of the probability that an individual will not die from cancer within five years from diagnosis, after adjusting for expected mortality from other causes.

Note: Localized means confined to primary site; Regional means spread to regional lymph nodes; Distant means cancer has metastasized. See Appendix E for relative survival rates by stage at diagnosis for additional cancers in 1990–1999 and 2000–2009.

Source: California Cancer Registry, California Department of Public Health, *California Cancer Facts and Figures 2012*.

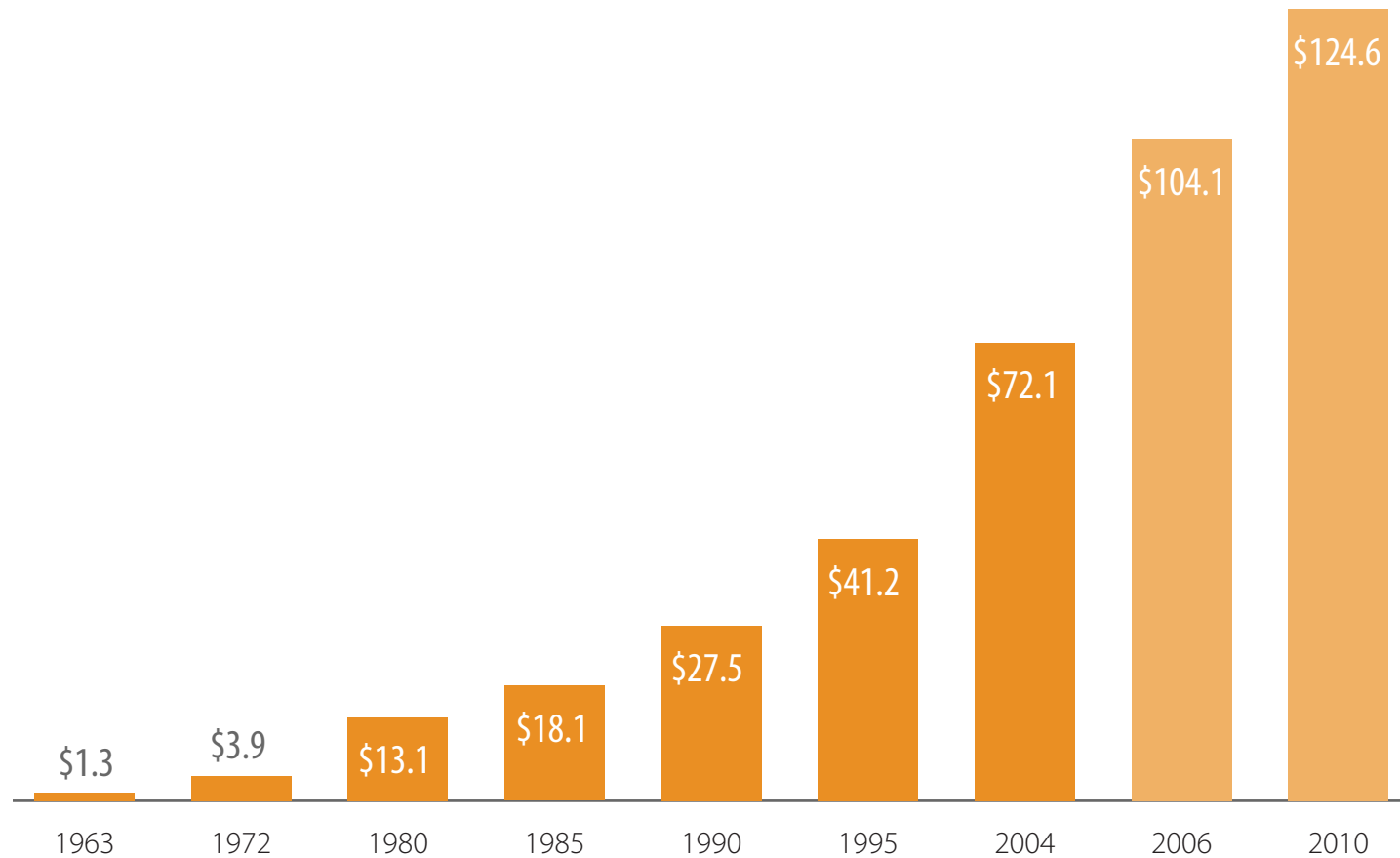
Cancer in California

Incidence and Mortality

One hundred percent of Californians diagnosed with breast and prostate cancer at localized stage were expected to survive five years.

Cancer Treatment Expenditures, United States, 1963 to 2010, selected years

IN BILLIONS



Note: Starting in 2006, cancer care expenditures began to be estimated using new methods with the most recent cancer incidence, survival, and cost of care data. As a result, these estimates of cancer care expenditures may not be directly comparable to those reported elsewhere. The 2010 expenditures are an NCI projection.

Sources: National Cancer Institute, Cancer Trends Progress Report, 2007 update and 2009/2010 update. National Cancer Institute, Cancer Prevalence and Cost of Care Projections, www.costprojections.cancer.gov, accessed November 28, 2011.

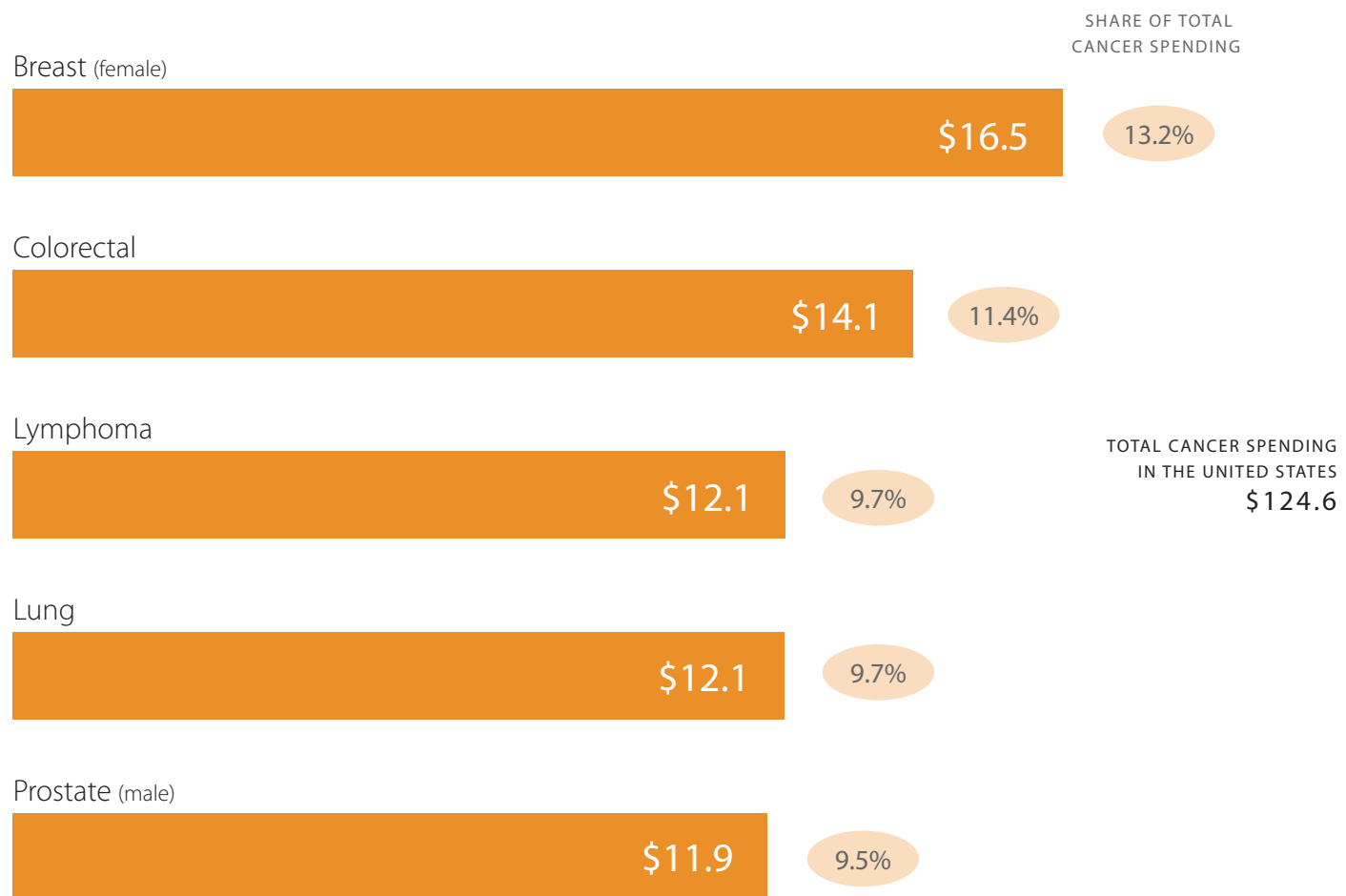
Cancer in California

Cost of Care

Over the last half century, national expenditures on cancer treatment have grown dramatically. For 2010, national cancer treatment expenditures were estimated to be \$125 billion.

Estimated Costs of Cancer Care, Top Five Cancers, United States, 2010

IN BILLIONS



Cancer in California

Cost of Care

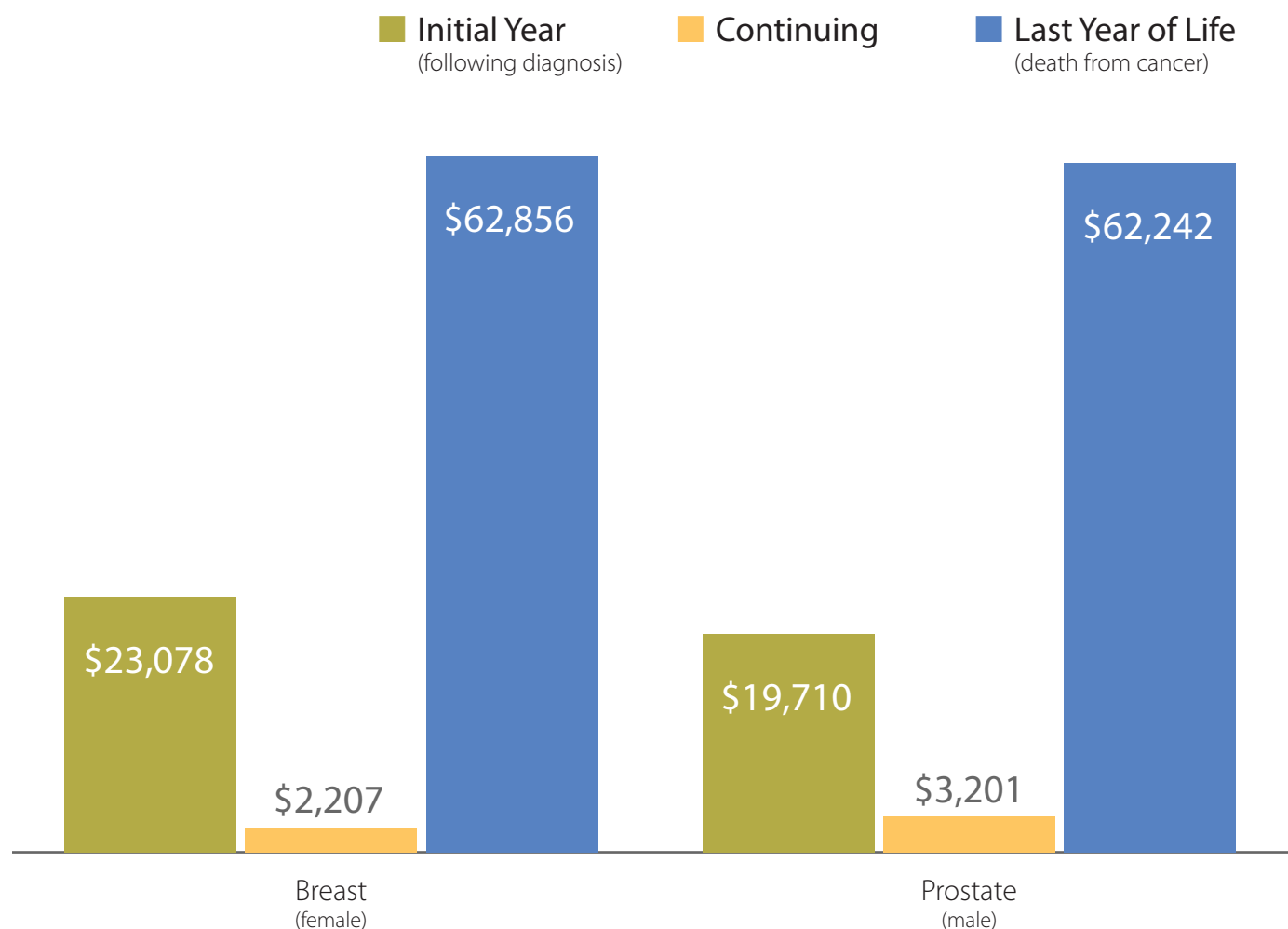
The five most expensive cancers account for more than half of all cancer spending in the United States.

Note: Cancer costs were estimated from Medicare claims data linked to the SEER data among Medicare beneficiaries aged 65 years and older with a cancer diagnosis. See article for complete methodology.

Source: Mariotto, A. et al., "Projections of the Cost of Cancer Care in the United States: 2010–2020," *Journal of the National Cancer Institute* 2011; 103; 117–128.

Costs of Breast and Prostate Cancer, by Phase of Care, United States, 2010

AVERAGE ANNUAL COST



Notes: Continuing includes all months in-between first 12 months following diagnosis and last 12 months of life. Months of survival are first applied to last year of life, then to initial year, then to continuing. Costs include adjustments for patient deductibles and coinsurance expenses.

Source: National Cancer Institute, Cost of Cancer Care by Phase of Care, www.costprojections.cancer.gov.

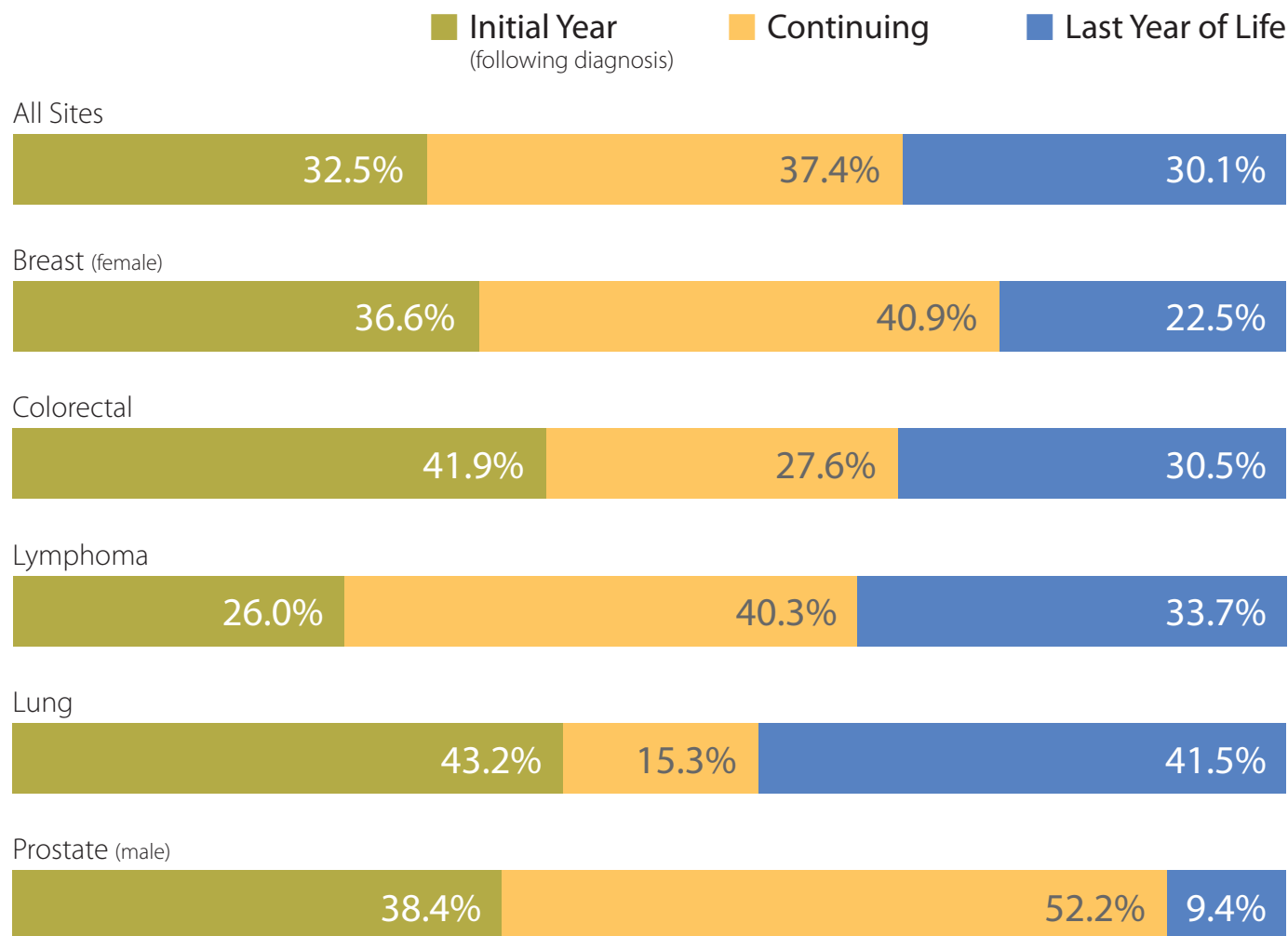
Cancer in California

Cost of Care

For an individual with cancer, treatment costs can be quite high, especially in the first year after diagnosis and the last year of life.

The average annual cost of treatment in the last year of life exceeds \$60,000 for both breast and prostate cancer. While annual costs in the continuing phase are low, lifetime costs in this phase can be quite high, as a cancer patient can live many years, or even decades, with the disease.

Distribution of Costs of Selected Cancers, by Phase of Care, United States, 2010



Cancer in California

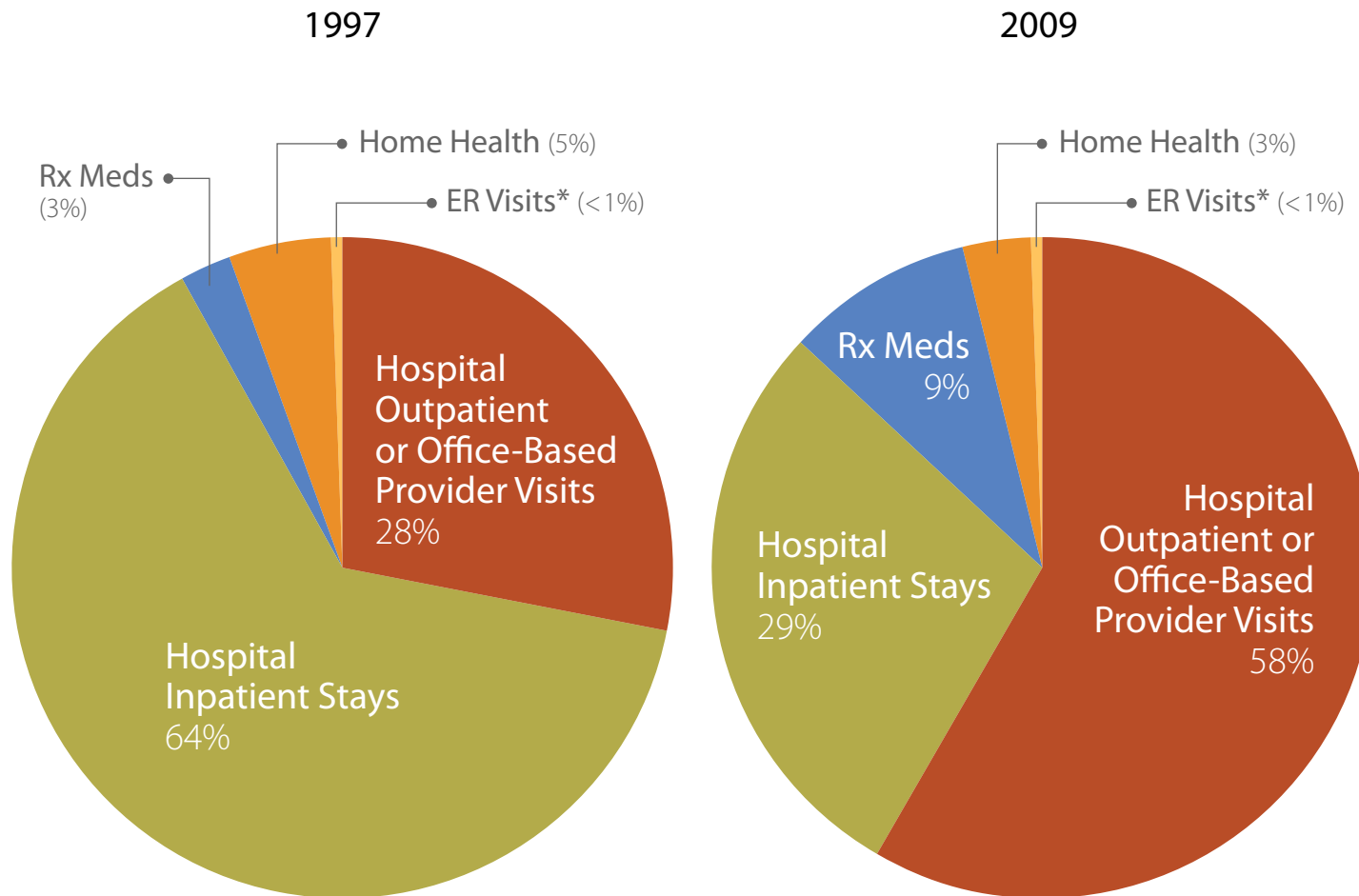
Cost of Care

The distribution of costs for cancer care differ across the five most expensive cancers, due in part to their typical survival rates. For example, costs are concentrated in the continuing phase for prostate cancer, which has relatively high survival rates, while costs are concentrated in the initial and last years for lung cancer, which has relatively low survival rates.

Notes: Continuing includes all months in-between first 12 months following diagnosis and last 12 months of life. Months of survival are first applied to last year of life, then to initial year, then to continuing.

Source: National Cancer Institute, Cost of Cancer Care by Phase of Care, www.costprojections.cancer.gov.

Cancer Expenses, by Type of Service, United States, 1997 and 2009



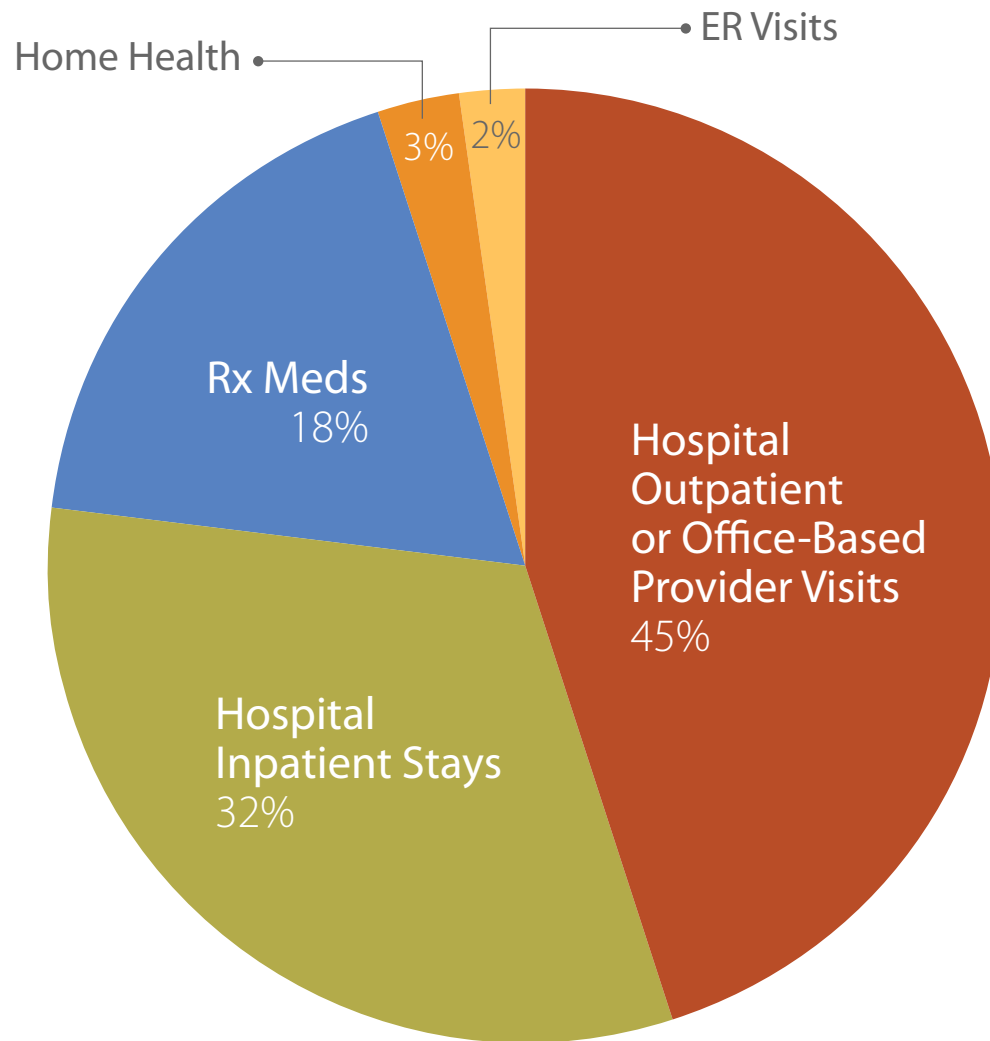
From 1997 to 2009, expenses for cancer treatment showed a shift from hospital inpatient stays to outpatient and office-based provider visits. Over this period, the percentage of total spending on drugs tripled.

*Relative standard error equal to or greater than 30%.

Note: Percents do not always add to exactly 100 due to rounding.

Source: Agency for Healthcare Research and Quality. Total Expenses and Percent Distribution for Selected Conditions by Type of Service: United States, 1997 and 2009. Medical Expenditure Panel Survey Household Component Data.

Cancer Expenses, by Type of Service, California, 2007 to 2008



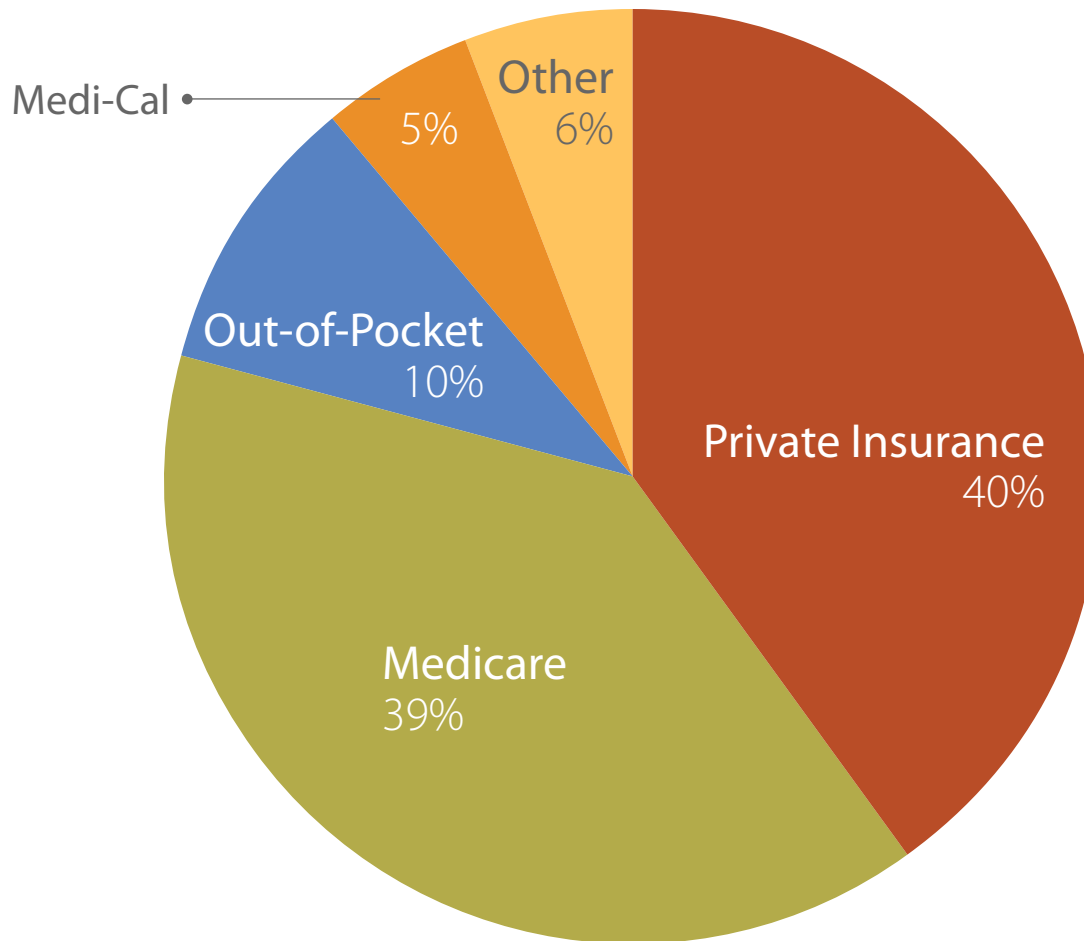
Cancer in California

Cost of Care

In California, most of the cancer expenses go toward hospital outpatient and physician office visits, while drugs constitute nearly one-fifth of all expenses.

Source: Analysis of the 2007–2008 Medical Expenditure Panel Survey data with state-level weights for California by Hao Yu, PhD.

Cancer Expenses, by Payer, California, 2007 to 2008



Cancer in California

Cost of Care

Private insurance and Medicare are the largest payers for cancer care in California, with each payer accounting for two-fifths of expenses.

Notes: Private Insurance includes Tricare. Other includes other public programs such as Department of Veterans Affairs (except Tricare); other federal sources (Indian Health Service, military treatment facilities, and other care provided by the federal government); other state and local sources (community and neighborhood clinics, state and local health departments, and state programs other than Medicaid); and other public (Medicaid payments reported for persons who were not enrolled in the Medicaid program at any time during the year). Other also includes Workers' Compensation; other unclassified sources (e.g., automobile, homeowner's, liability, and other miscellaneous or unknown sources); and other private insurance (any type of private insurance payments reported for persons without private health insurance coverage during the year, as defined in MEPS).

Source: Analysis of the 2007–2008 Medical Expenditure Panel Survey data with state-level weights for California by Hao Yu, PhD.

Cancer Screening Tests, California vs. United States 2010

Pap Smear within the Past 3 Years (women 18 and older)



Mammogram within Past 2 Years (women 40 and older)



Sigmoidoscopy or Colonoscopy Ever (50 and older)



Blood Stool Test within the Past 2 Years (50 and older)



Cancer in California

Quality of Care

More than three-quarters of women in California and the nation received recommended screening tests for breast and cervical cancer in 2010. Over the last few years, cancer screening has received heightened public attention, as some experts have endorsed new guidelines calling for less frequent screening in recognition of the potential risks of screening tests.

Note: United States is median rate for 50 states and DC.

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System Survey Data, accessed January 9, 2012.

Cancer Screening Guidelines, 2012

AMERICAN CANCER SOCIETY GUIDELINES	← VS →	US PREVENTATIVE SERVICES TASK FORCE (USPSTF) RECOMMENDATIONS
<ul style="list-style-type: none"> Annual mammogram for women age 40 and older. Clinical breast exam (CBE) every 3 years for women in 20s and 30s, annually starting at age 40. Optional breast self-examination (BSE) for women (informed of benefits and limitations) starting in their 20s. Annual mammogram and MRI for women at high risk. Women at moderately increased risk should discuss MRI testing with their doctors. 	Breast	<ul style="list-style-type: none"> Mammogram every 2 years for women aged 50 to 74 years. No recommendation on CBE beyond mammography in women 40 years or older.[†] Recommends against teaching BSE. No recommendation on either digital mammography or magnetic resonance imaging (MRI) instead of film mammography.[†]
<ul style="list-style-type: none"> Pap test screening every 3 years for women ages 21 through 30. Co-testing with Pap test plus HPV testing every 5 years is the preferred screening method for women ages 30 to 65. Pap-test screening every 3 years for women ages 30 to 65 is an acceptable alternative. Discontinue screening for women older than 65 who have had regular screening during last 10 years and no pre-cancers found in last 20 years. 	Cervical	<ul style="list-style-type: none"> Pap test screening every 3 years for women ages 21 through 65. Co-testing with Pap test plus HPV testing every 5 years is an appropriate alternative for women ages 30 to 65. Discontinue screening for women older than 65 who meet criteria for adequate prior testing and appropriate follow-up (e.g., three or more negative Pap tests in a row).
<ul style="list-style-type: none"> Screening only after discussion with health care provider about uncertainties, risks, and potential benefits of screening. Screening discussion at age 50 for men with average risk and expected to live at least 10 years; discussion at age 45 or 40 for men at high risk. Men who decide to be screened should be tested with the prostate specific antigen (PSA) blood test. Men who choose to be tested who have a PSA of less than 2.5 ng/ml, may only need to be retested every 2 years. Those with PSA level of 2.5 ng/ml or higher should be retested annually. 	Prostate	<ul style="list-style-type: none"> Current evidence is insufficient to assess the balance of benefits and harms of prostate cancer screening in men younger than age 75 years. USPSTF updating its screening recommendations. New recommendation likely to advise against PSA testing.

Even among cancer experts and advocacy groups, screening guidelines for cancer can be conflicting, causing providers, and consumers, to be confused about which screening is beneficial and when it should be given.

*Prior to 2009, first Pap recommended at younger of age 21 or 3 years after sexual intercourse, due to low cancer risk in adolescents and likelihood of cell abnormalities going away on their own.

†Current evidence is insufficient to assess the additional benefits and harms of screening method.

Source: American Cancer Society; United States Preventive Services Taskforce.

Cancer Screening Performance of Medical Groups, Riverside County, 2011

Cancer in California

Quality of Care

MEDICAL GROUP	BREAST*	CERVICAL†	COLORECTAL‡	OVERALL QUALITY RATING
Southern California Permanente Medical Group – Riverside	86%	73%	72%	★★★★
Family Practice Medical Group of San Bernardino, Inc.	83%	44%	41%	★★★
Beaver Medical Group	78%	33%	67%	★★★
Riverside Medical Clinic	76%	35%	65%	★★★
PrimeCare Medical Network, Inc.	76%	32%	45%	★★★
Empire Physicians Medical Group	72%	37%	37%	★★★
Desert Oasis Healthcare	71%	32%	43%	★★★
Pomona Valley Medical Group, Inc.	72%	32%	41%	★★
Loma Linda University Health Care	66%	29%	42%	★★
Riverside Physician Network	64%	29%	36%	★★
Prospect Medical Group	64%	28%	39%	★★
Pinnacle Medical Group	62%	36%	44%	★★
Upland Medical Group, Inc.	61%	31%	33%	★★
Hemet Community Medical Group	59%	36%	35%	★★
Angeles IPA	62%	28%	21%	★
Vantage Medical Group	56%	26%	24%	★

*Women ages 42 to 69, with a mammogram during the past two years.

†Women ages 24 to 65, with a single Pap smear during the past three years.

‡Ages 50 to 80, tested for colorectal cancer using any one of four recommended tests.

Note: Alpha Care Medical Group had incomplete data and Children's Physician Medical Group had too few patients to report.

Source: California Office of the Patient Advocate, Medical Group Ratings, accessed December 13, 2011. Screening performance data by county are available at www.opa.ca.gov.

The prevalence of screening varies across medical groups in California. For example, in Riverside County, the highest-rated medical group screened more than 70% of its patients for colorectal, cervical, and breast cancer, while the lowest-rated group screened only one-quarter of its patients for colorectal and cervical cancer.

Quality Process of Care Measures, Breast and Colorectal Patients, California vs. United States, 2008

	CALIFORNIA		UNITED STATES	
	PERFORMANCE RATE	CASES	PERFORMANCE RATE	CASES
Breast Cancer				
Post breast conserving surgery radiation therapy	83.7%	4,730	86.3%	52,077
Adjuvant chemotherapy	80.5%	1,055	87.2%	13,326
Adjuvant hormonal therapy	76.2%	5,958	81.1%	64,090
Colorectal Cancer				
Adjuvant chemotherapy	84.4%	801	88.1%	10,571
Surgical resection includes at least 12 nodes	79.3%	2,893	82.2%	35,943
Post surgery radiation therapy	89.5%	334	89.6%	4,188

Cancer in California

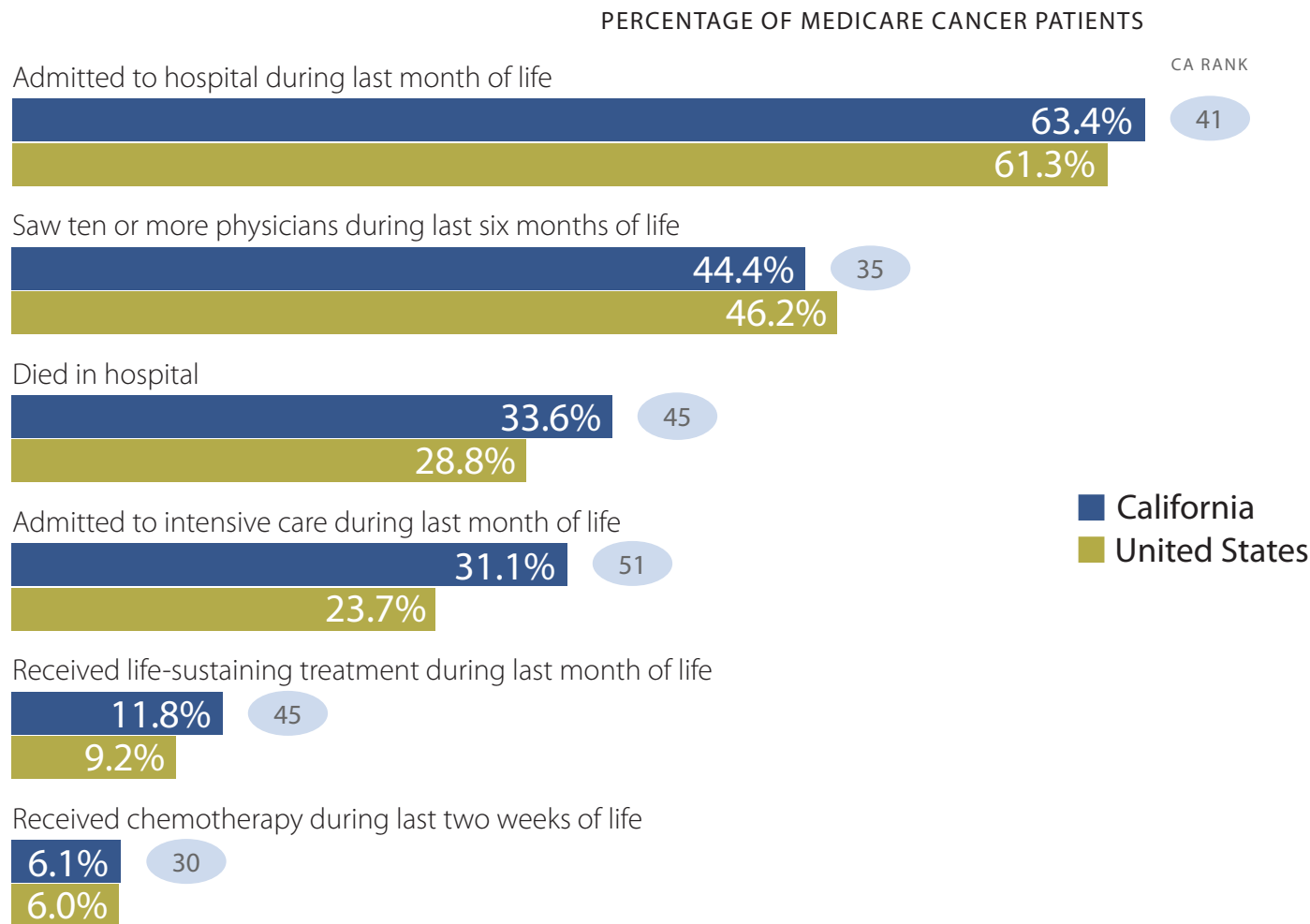
Quality of Care

Public reporting of cancer care quality is challenging for a variety of reasons, including that cancer treatment is spread across multiple providers and settings of care. In 2008, California cancer providers participating in the American College of Surgeons' voluntary National Cancer Data Base performed slightly worse on average than participating US providers on five of the six reported measures.

Notes: Data presented for 107 Commission on Cancer (CoC) accredited programs in California and 1,368 CoC accredited programs in US. See Appendix C for measure definitions.

Source: American College of Surgeons, Commission on Cancer, Cancer Program Practice Profile Reports (CP3R), special data request.

End-of-Life Care for Medicare Cancer Patients, California vs. United States, 2003 to 2007



Note: Data population includes Medicare patients, aged 65 to 99, with poor prognosis cancer diagnoses, with full Part A and B entitlement and no HMO enrollment during the measurement period, and who died during the measurement period. Rates adjusted for age, sex race, cancer type, and non-cancer chronic conditions. California also has higher hospital days and ICU days per cancer patient during the last month of life.

Source: The Dartmouth Atlas, special data request; D. Goodman, E. Fisher, et al, "Quality of End-of-Life Cancer Care for Medicare Beneficiaries: Regional and Hospital-Specific Analyses," *The Dartmouth Atlas Project*, November 16, 2010.

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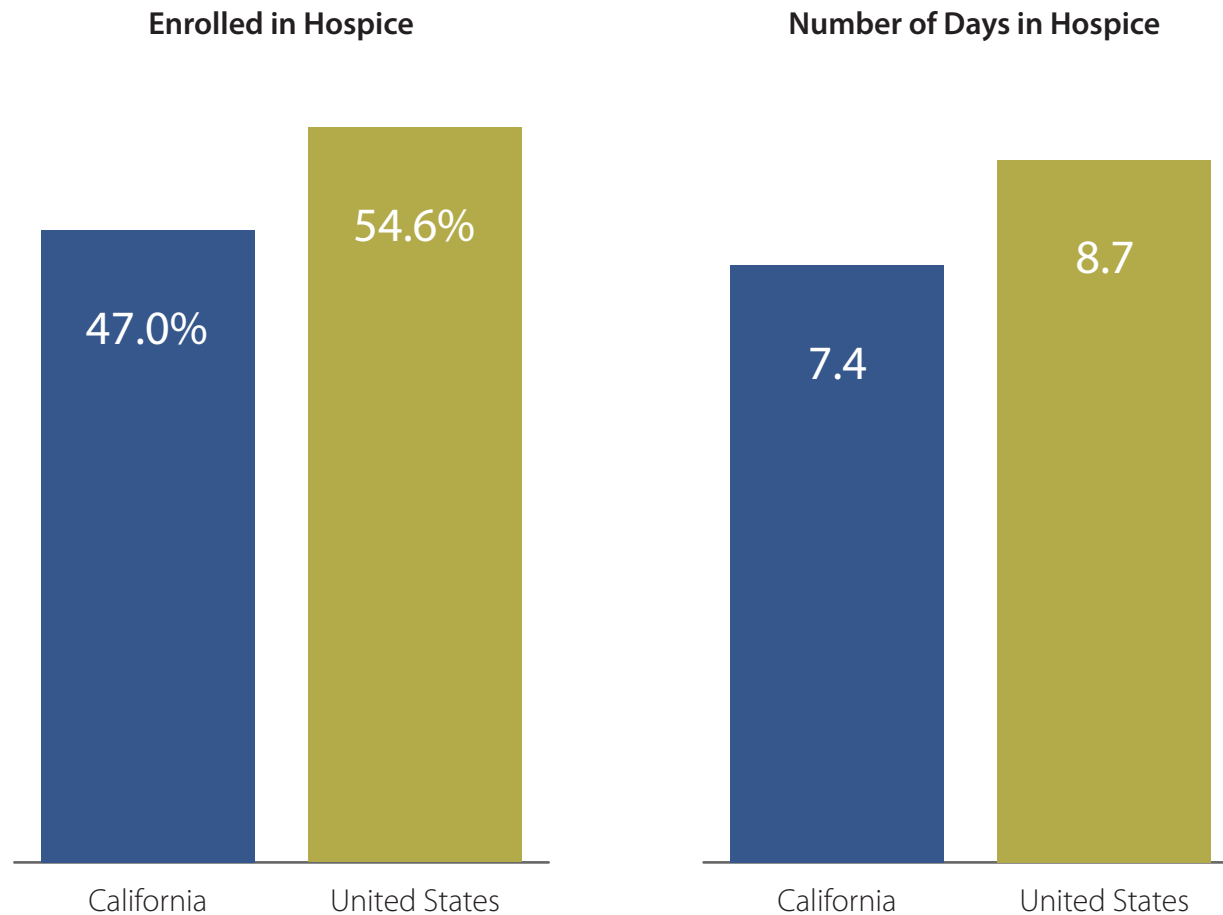
Quality of Care

The intensity of care delivered to Medicare cancer patients at the end of life in California is higher than the national average. Cancer patients in California were more likely to be admitted to or die in the hospital than in the US. A recent survey found that 70% of Californians prefer to die at home.* More care at the end of life may not be indicative of better care.

**Final Chapter: Californians' Attitudes and Experiences with Death and Dying*, California HealthCare Foundation, February 2012.

Hospice Use for Medicare Cancer Patients, California vs. United States, 2003 to 2007

DURING THE LAST MONTH OF LIFE...



Note: Data population includes Medicare patients, aged 65 to 99, with poor prognosis cancer diagnoses, with full Part A and B entitlement and no HMO enrollment during the measurement period, and who died during the measurement period. Rates adjusted for age, sex, race, cancer type, and non-cancer chronic conditions.

Source: The Dartmouth Atlas, special data request; D. Goodman, E. Fisher, et al, "Quality of End-of-Life Cancer Care for Medicare Beneficiaries: Regional and Hospital-Specific Analyses," *The Dartmouth Atlas Project*, November 16, 2010.

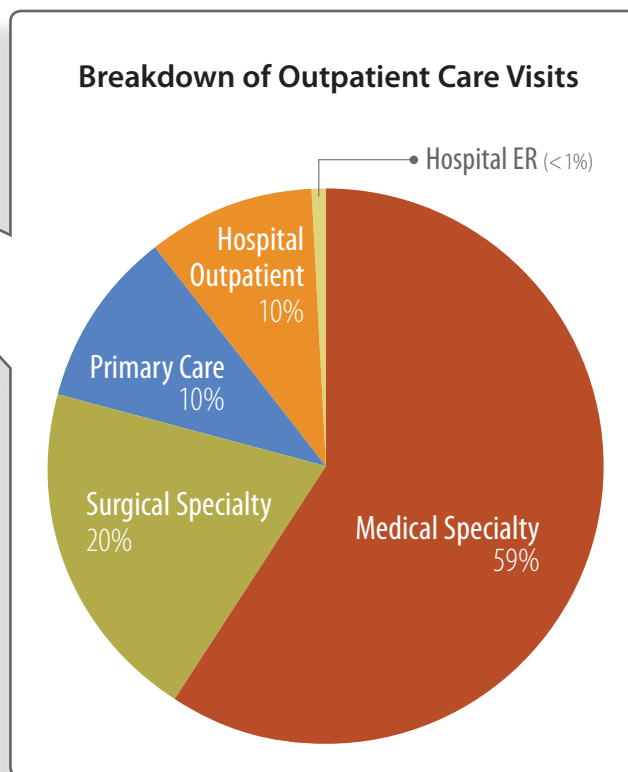
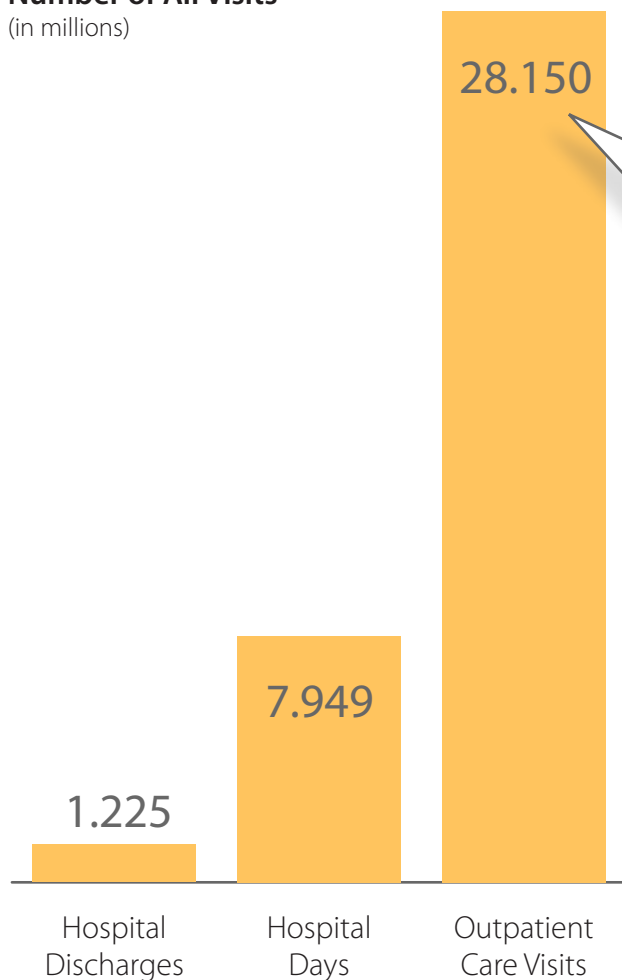
Cancer in California

Quality of Care

In many cases, hospice care can help improve the quality of life for cancer patients with a poor prognosis, helping manage their pain and allowing them to die at home. California uses hospice less often than most other states for Medicare cancer patients at the end of life, ranking 44th in the nation on this measure.

Use of Inpatient and Outpatient Care for Cancer Treatment, United States, 2007

Number of All Visits
(in millions)



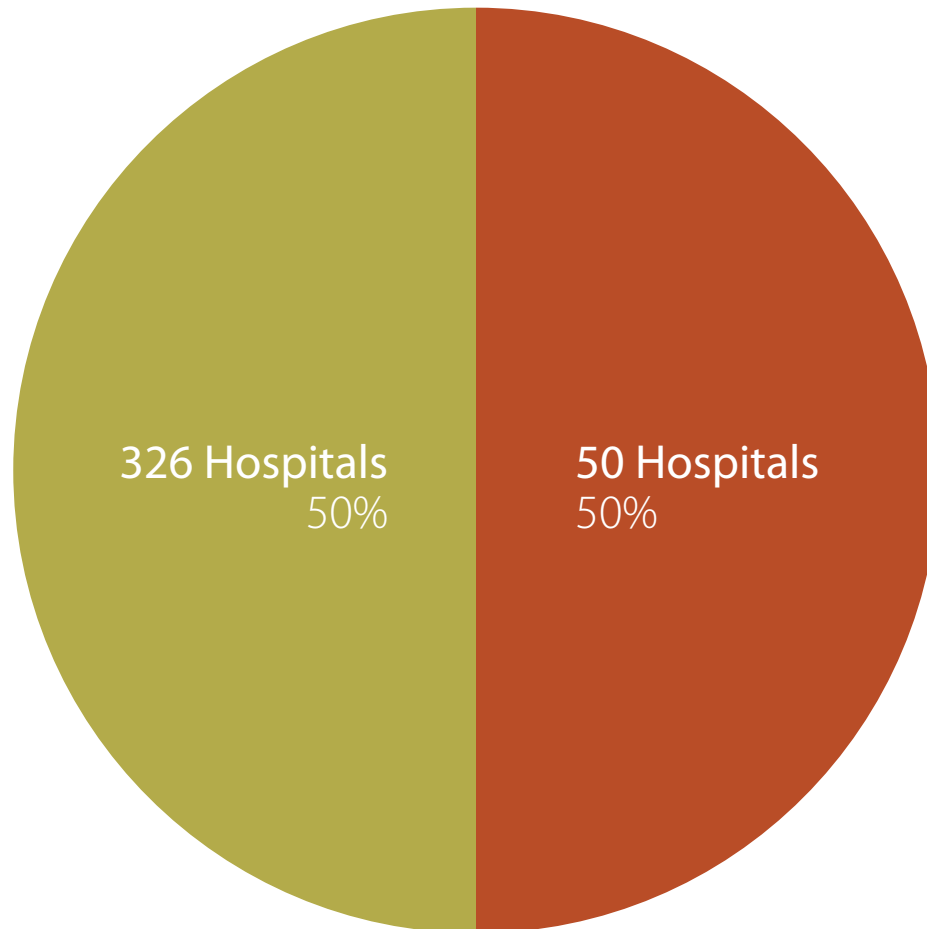
Cancer care in the US is now largely delivered in an outpatient care setting. In 2007, there were more than 20 times as many outpatient visits as hospital discharges for cancer; nearly 90% of the outpatient visits occurred in physician offices.

Note: Percents do not always add to exactly 100 due to rounding.

Source: Center for Disease Control and Prevention, National Hospital Discharge Survey, Data Highlights-Selected Tables, 2007; Ambulatory Medical Care Utilization Estimates for 2007.

Breakdown of Cancer Discharges, California, 2010

TOTAL NUMBER OF HOSPITALS WITH ANY CANCER CASES: 376



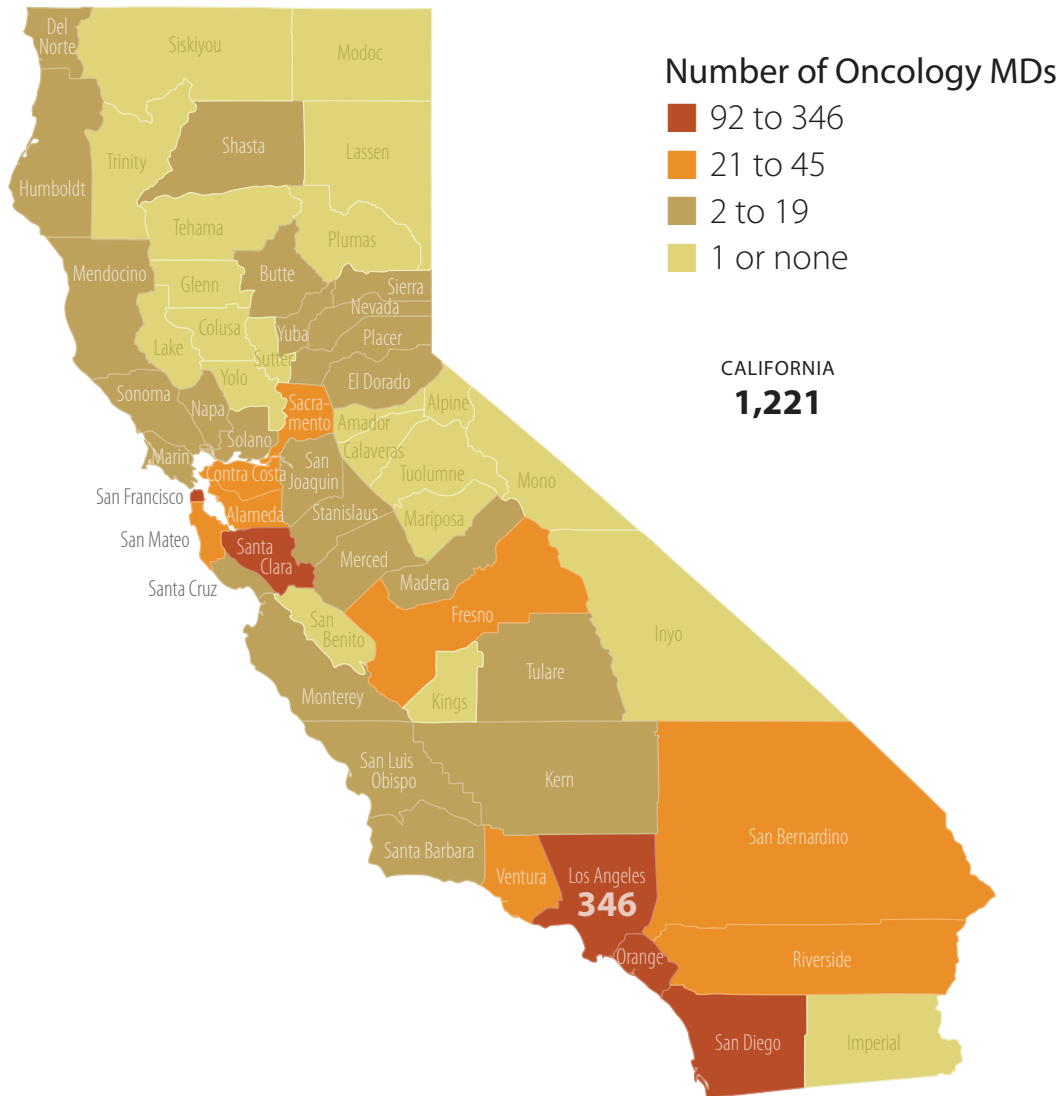
Cancer in California

Treatment

California's inpatient cancer care is concentrated at a small number of facilities; half of the cancer discharges in 2010 were treated at 50 hospitals. California is home to 10 of the 66 National Cancer Institute (NCI) cancer centers, and an estimated 16% of cancer discharges were treated at an NCI-affiliate (not shown).

Source: State of California, Office of Statewide Health Planning and Development (OSHPD), Patient Discharge Data Pivot File, 2010.

Oncology Physicians, by County, California, 2011



Cancer in California

Treatment

While the majority of cancer care is delivered in an outpatient setting, little data exist on cancer treatment in these locations. In California, more than 1,200 licensed physicians reported oncology as their primary practice area. More than one-quarter of these physicians practiced in Los Angeles County, the most populous county in the state. Many rural counties had few or no oncology physicians.

Note: Data includes actively licensed California MDs who self-reported oncology as primary practice area. Region is based on county of residence.

Source: Medical Board of California, Special Data Request, November 2011.

Data Resources

Agency for Healthcare Research and Quality

Medical Expenditure Panel Survey Data

www.meps.ahrq.gov

Data on cancer expenditures by type of service and payer.

American College of Surgeons Commission on Cancer

www.facs.org/cancer

Accredits cancer programs and operates the National Cancer Data Base.

Behavioral Risk Factor Surveillance System Survey Data

www.cdc.gov

Survey includes questions on cancer screening.

California Cancer Registry

www.ccrca.org

Data and reports on cancer diagnosis, incidence, and mortality in California, including an annual facts and figures report with county-level data. Also houses web query tool.

Centers for Disease Control and Prevention (CDC)

State Cancer Profiles

www.statecancerprofiles.cancer.gov

Data on cancer incidence and mortality at state and national level, with some county-level detail.

The Dartmouth Atlas of Health Care

www.dartmouthatlas.org

Reports and data on intensity of care provided to Medicare patients.

National Cancer Institute

www.cancer.gov

Reports on national incidence, mortality, and costs.

Acknowledgments

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FOR MORE INFORMATION



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Appendix A: Incidence and Mortality Rates, Selected Cancers, California, 1989 and 2009

	INCIDENCE RATE PER 100,000 POPULATION			MORTALITY RATES PER 100,000 POPULATION		
	1989	2009	% CHANGE	1989	2009	% CHANGE
Prostate (male)	135.0	126.0	-6.7%	34.5	22.4	-35.1%
Breast (female)	124.9	121.7	-2.6%	32.3	22.2	-31.3%
Lung	68.4	47.8	-30.1%	54.5	37.8	-30.6%
Colorectal	56.2	40.5	-27.9%	22.8	14.5	-36.4%
Uterus	23.3	23.5	0.9%	4.2	4.0	-4.8%
Melanoma	13.9	19.6	41.0%	3.1	2.6	-16.1%
Non-Hodgkin Lymphoma	17.0	18.1	6.5%	7.6	6.0	-21.1%
Urinary Bladder	20.4	17.9	-12.3%	4.3	3.8	-11.6%
Kidney	9.2	13.9	51.1%	3.6	3.5	-2.8%
Ovary	15.4	11.7	-24.0%	9.0	7.9	-12.2%
Leukemia	12.7	10.8	-15.0%	7.5	6.7	-10.7%
Pancreas	11.3	10.5	-7.1%	10.4	10.4	0.0%
Oral and Pharynx	12.3	9.9	-19.5%	3.6	2.4	-33.3%
Liver	3.2	7.7	140.6%	3.1	5.6	80.6%
Stomach	10.3	7.7	-25.2%	6.5	4.2	-35.4%
Cervix Uteri	11.5	7.6	-33.9%	3.3	2.3	-30.3%
Testis	4.8	5.4	12.5%	0.3	0.3	0.0%
Brain	5.6	4.7	-16.1%	4.6	4.4	-4.3%
Hodgkin Lymphoma	2.6	2.6	0.0%	0.6	0.4	-33.3%

Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. The Veterans Health Administration did not report cancer cases to CCR in 2005-2009; therefore, incidence counts for adult males in 2005-2009 are underestimated and should be interpreted with caution.

Source: California Cancer Registry, Annual Statistical Tables by Site, accessed January 9, 2012.

Appendix B: Race/Ethnicity Breakdowns

Incidence and Mortality Rates, Selected Cancers, California, 2009

	AFRICAN AMERICAN	WHITE	LATINO	ASIAN/PACIFIC ISLANDER	ALL RACES
Incidence					
All Invasive	460.0	454.4	322.4	300.6	412.8
Breast (female)	125.7	140.2	88.5	94.3	121.7
Prostate (male)	194.0	124.4	109.2	73.5	126.0
Colorectal	55.1	41.3	34.2	37.8	40.5
Lung	63.2	55.0	26.9	36.8	47.8
Mortality					
All Cancers	221.7	169.5	131.5	116.4	158.3
Breast (female)	34.3	24.3	18.2	13.4	22.2
Prostate (male)	57.0	23.8	17.7	9.3	22.4
Colorectal	22.6	14.9	12.4	11.8	14.5
Lung	52.8	43.9	20.9	27.5	37.8

Note: Rates are age-adjusted to the 2000 U.S. Standard Million Population. Excludes in situ cancers, except bladder. The Veterans Health Administration did not report cancer cases to CCR in 2005–2009; therefore, incidence counts for adult males in 2005–2009 are underestimated and should be interpreted with caution.

Source: California Cancer Registry, Annual Statistical Tables by Site, accessed December 2, 2011.

Cancer Screening, California, 2010	AFRICAN AMERICAN	WHITE	LATINO	OTHER
Blood Stool Test within the Past 2 Years (50 and older)	34.9%	29.6%	20.1%	24.3%
Sigmoidoscopy or Colonoscopy Ever (50 and older)	62.0%	69.1%	45.9%	56.9%
Mammogram within Past 2 Years (women 40 and older)	84.7%	79.8%	76.3%	73.6%
Pap Smear within the Past 3 Years (women 18 and older)	83.1%	81.9%	84.0%	65.6%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System Survey Data, accessed October 13, 2011.

Appendix C: Quality Process of Care Definitions, Breast and Colorectal Cancer

CANCER / MEASURE	DEFINITION
Breast	
Adjuvant chemotherapy	Combination chemotherapy is considered or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1cN0M0, or Stage II or III hormone receptor negative breast cancer.
Adjuvant hormonal therapy	Tamoxifen or third generation aromatase inhibitor is considered or administered within 1 year (365 days) of diagnosis for women with AJCC T1cN0M0, or Stage II or III hormone receptor positive breast cancer.
Post breast conserving surgery radiation therapy	Radiation therapy is administered within 1 year (365 days) of diagnosis for women under age 70 receiving breast conserving surgery for breast cancer.
Colorectal	
Adjuvant chemotherapy	Adjuvant chemotherapy is considered or administered within 4 months (120 days) of diagnosis for patients under the age of 80 with AJCC Stage III (lymph node positive) colon cancer.
Radiation therapy	Radiation therapy is considered or administered within 6 months (180 days) of diagnosis for patients under the age of 80 with clinical or pathologic AJCC T4N0M0 or Stage III receiving surgical resection for rectal cancer.
Surgical resection includes at least 12 nodes	At least 12 regional lymph nodes are removed and pathologically examined for resected colon cancer.

Source: American College of Surgeons, Commission on Cancer, Quality of Care Measures, www.facs.org.

Appendix D: Radiation Oncology MDs and Self-Reported Practice/Specialty, by County, California, 2011

	NUMBER OF MDs, BY CERTIFICATION TYPE		
	PRIMARY PRACTICE AREA AND BOARD	BOARD ONLY	SECONDARY PRACTICE AREA AND BOARD
California	275	99	7
Alameda	10	2	0
Alpine - Amador - Calaveras	1	0	0
Butte	2	1	0
Colusa - Glenn - Tehama	0	0	0
Contra Costa	6	4	0
Del Norte - Humboldt	1	0	0
El Dorado	0	0	0
Fresno	5	0	0
Imperial	0	0	0
Inyo - Mono	0	0	0
Kern	1	0	0
Kings	0	0	0
Lake	0	0	0
Lassen - Modoc - Plumas	0	0	0
Los Angeles	81	21	4
Madera	0	0	0
Marin	4	3	0
Mariposa - Tuolumne	0	0	0
Mendocino	0	1	0
Merced	0	1	0
Monterey	5	3	0
Napa	4	0	0
Nevada	1	0	0

	NUMBER OF MDs, BY CERTIFICATION TYPE		
	PRIMARY PRACTICE AREA AND BOARD	BOARD ONLY	SECONDARY PRACTICE AREA AND BOARD
Orange	15	13	0
Placer	2	0	0
Riverside	5	2	1
Sacramento	16	5	0
San Benito	0	0	0
San Bernardino	13	4	0
San Diego	25	10	1
San Francisco	12	4	0
San Joaquin	5	2	0
San Luis Obispo	2	1	0
San Mateo	13	5	1
Santa Barbara	3	3	0
Santa Clara	22	5	0
Santa Cruz	2	0	0
Shasta	2	0	0
Sierra - Yuba	1	0	0
Siskiyou - Trinity	0	0	0
Solano	0	1	0
Sonoma	8	1	0
Stanislaus	2	3	0
Sutter	0	0	0
Tulare	1	2	0
Ventura	5	2	0
Yolo	0	0	0

Appendix E: Five-Year Relative Survival, by Stage at Diagnosis, Select Cancers, California, 1990 to 1999 and 2000 to 2009

	ALL STAGES		LOCALIZED		REGIONALIZED		DISTANT	
	1990–1999	2000–2009	1990–1999	2000–2009	1990–1999	2000–2009	1990–1999	2000–2009
Prostate (male)	97%	100%	100%	100%	96%	100%	35%	29%
Breast (female)	88%	91%	98%	100%	78%	85%	18%	26%
Lung	15%	15%	49%	55%	19%	26%	3%	4%
Colon and Rectum	64%	66%	91%	94%	66%	72%	8%	12%
Uterus	85%	83%	96%	97%	68%	69%	19%	18%
Melanoma	90%	91%	95%	99%	53%	62%	13%	16%
Non-Hodgkin Lymphoma	52%	66%	68%	80%	58%	70%	42%	58%
Ovary	43%	45%	91%	92%	72%	75%	27%	30%
Pancreas	4%	6%	15%	23%	5%	8%	2%	2%
Oral and Pharynx	59%	63%	80%	85%	48%	59%	27%	35%
Cervix Uteri	72%	71%	92%	93%	55%	61%	15%	19%
Testis	94%	94%	99%	99%	95%	95%	71%	72%
Hodgkin Lymphoma	81%	83%	89%	89%	89%	91%	70%	73%

Source: California Cancer Registry, Special Data Request, December 5, 2011; California Cancer Registry, California Cancer Facts and Figures 2012.