

CALIFORNIA HEALTH CARE ALMANAC



Quality of Care: Signals of Change

NOVEMBER 2014

Introduction

Over the last few years, the quality of health care delivered in California has improved on a number of measures, including care for heart attack and heart failure patients. However, significant racial and ethnic disparities persist, particularly for maternal and infant mortality.

Quality of Care: Signals of Change looks at a variety of measures, including maternal health and childbirth, children’s health, and management of chronic conditions. Data on patient safety, nursing homes, home health, and end-of-life measures are also included.

KEY FINDINGS INCLUDE:

- California hospitals showed improvement in the timely and effective delivery of care for heart attack and heart failure patients. Inpatient mortality rates for several heart-related conditions and procedures were cut in half.
- Racial disparities persisted in hospital admissions for diabetes and heart patients.
- Maternal mortality rates declined overall, but rates for African American women were still significantly higher than for other racial/ethnic groups.
- Cesarean section rates remained stable since 2009 after rising for a decade.
- Compared to the United States, California’s nursing homes performed better on a number of measures, including weight loss, depression, and preventing falls, but performed worse on the physical restraint of patients.
- California home health agencies performed better than the nation on some measures related to physical and mental health, but were among the worst in improving activities of daily living.
- Medicare patients in California were more likely than those nationwide to die in a hospital and to have an ICU admission in the days preceding death.

Quality of Care

CONTENTS

Maternal Health and Childbirth 3

Children’s Health.....13

Chronic Conditions19

Diabetes..... 20

Cancer 23

Heart Health and Stroke 27

Respiratory Health..... 32

Mental Health 33

Patient Safety..... 37

Nursing Homes..... 42

Home Health..... 44

End of Life..... 46

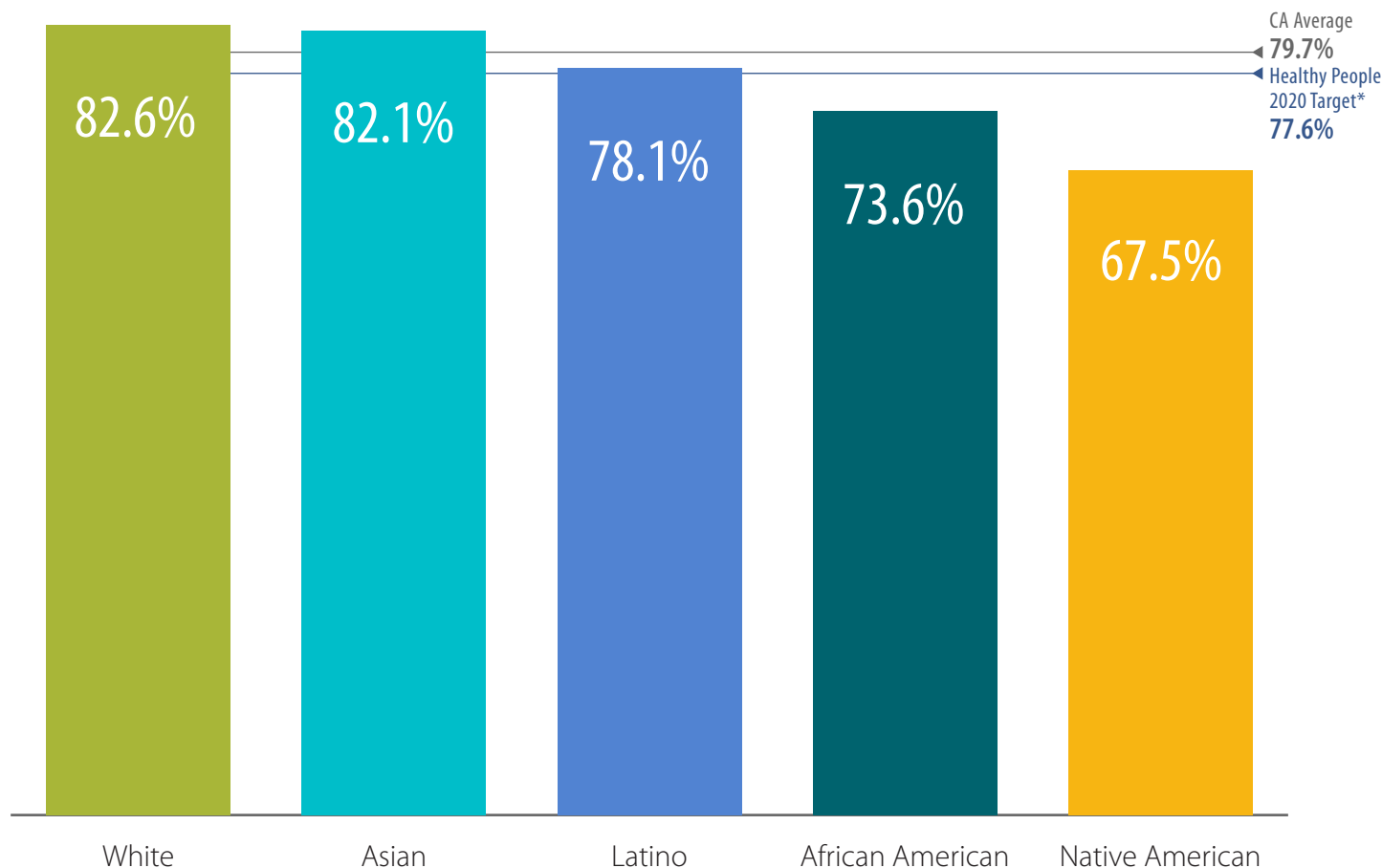
Data Resources..... 49

Appendices 50

Adequate Prenatal Care, by Race/Ethnicity

California, 2010 to 2012

PERCENTAGE OF LIVE BIRTHS, (THREE-YEAR AVERAGE)



*The US government's Healthy People 2020 establishes science-based 10-year national objectives for improving the health of all Americans, www.healthypeople.gov.

Notes: Adequacy is measured using the Adequacy of Prenatal Care Utilization Index, which classifies care into categories (Inadequate, Intermediate, Adequate, and Adequate Plus) based on the timing of prenatal care, number of visits, and gestational age.

Sources: National Center for Health Statistics, final natality data from www.marchofdimes.com/peristats, accessed July 15, 2014; M. Kotelchuck, "An Evaluation of the Kessner Adequacy of Prenatal Care Index and a Proposed Adequacy of Prenatal Care Utilization Index," *American Journal of Public Health* 84 (1994): 1,414-20.

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Maternal Health and Childbirth

The adequacy of prenatal care in California varied by race/ethnicity during the time period shown.

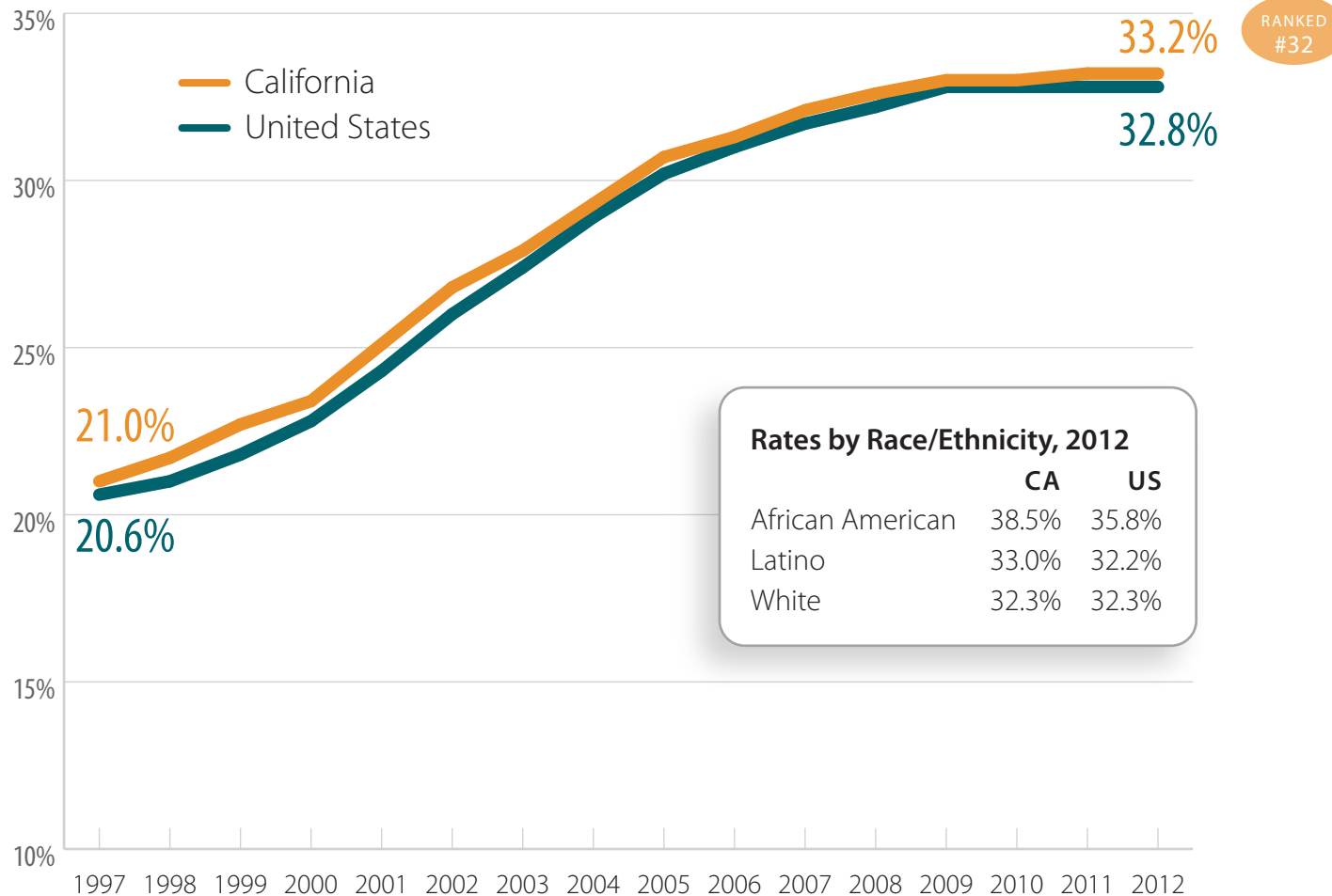
Among Native Americans, 68% of births had "adequate" or better prenatal care, while births among Whites showed a significantly better rate of 83%.

Prenatal care has been shown to improve pregnancy outcomes, particularly by increasing birthweight and decreasing the risk of preterm delivery.

Cesarean Deliveries

California vs. United States, 1997 to 2012

PERCENTAGE OF LIVE BIRTHS BY CESAREAN DELIVERY



Quality of Care

Maternal Health and Childbirth

After rising for more than a decade, rates of cesarean delivery in the US and California have remained stable since 2009, at around 33%. Rates varied by race/ethnicity in 2012, with African American mothers having the highest rates.

C-sections are associated with more maternal rehospitalizations as well as more complications requiring infants to be admitted to neonatal intensive care units.

Sources: Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, *Births: Final Data for 2011*, National Vital Statistics Reports 62, no. 1 (June 28, 2013); CDC, *Births: Final Data for 2012*, National Vital Statistics Reports 62, no. 9 (December 30, 2013); CDC, VitalStats, accessed July 16, 2013, www.cdc.gov; CDC, National Center for Health Statistics, "Recent Trends in Cesarean Delivery in the United States," *NCHS Data Brief #35* (March 2010).

Birth-Related Trauma

California vs. United States, 2004 and 2010

	CALIFORNIA		UNITED STATES	
	2004	2010 (RANKED)	2004	2010
Injury to Newborn (per 1,000 live births)	2.2	1.8 #9*	2.7	2.0
Obstetric Trauma (per 1,000 vaginal deliveries)				
Vaginal Deliveries Without Instrument Assistance	27.8	20.9 #12	30.0	22.8
Vaginal Deliveries with Instrument Assistance	144.6	119.1 #4	171.7	141.4

*California was tied with Rhode Island for rank.

Notes: Rates are observed. Rank is out of 39 states. Rates of injury to newborn exclude newborns weighing less than 2,000 grams and newborns with injury to brachial plexus or with osteogenesis imperfecta (genetic disorder in which the bones are formed improperly, making them fragile and likely to break). "Obstetric trauma" involves third- or fourth-degree lacerations, and rates are adjusted by age.

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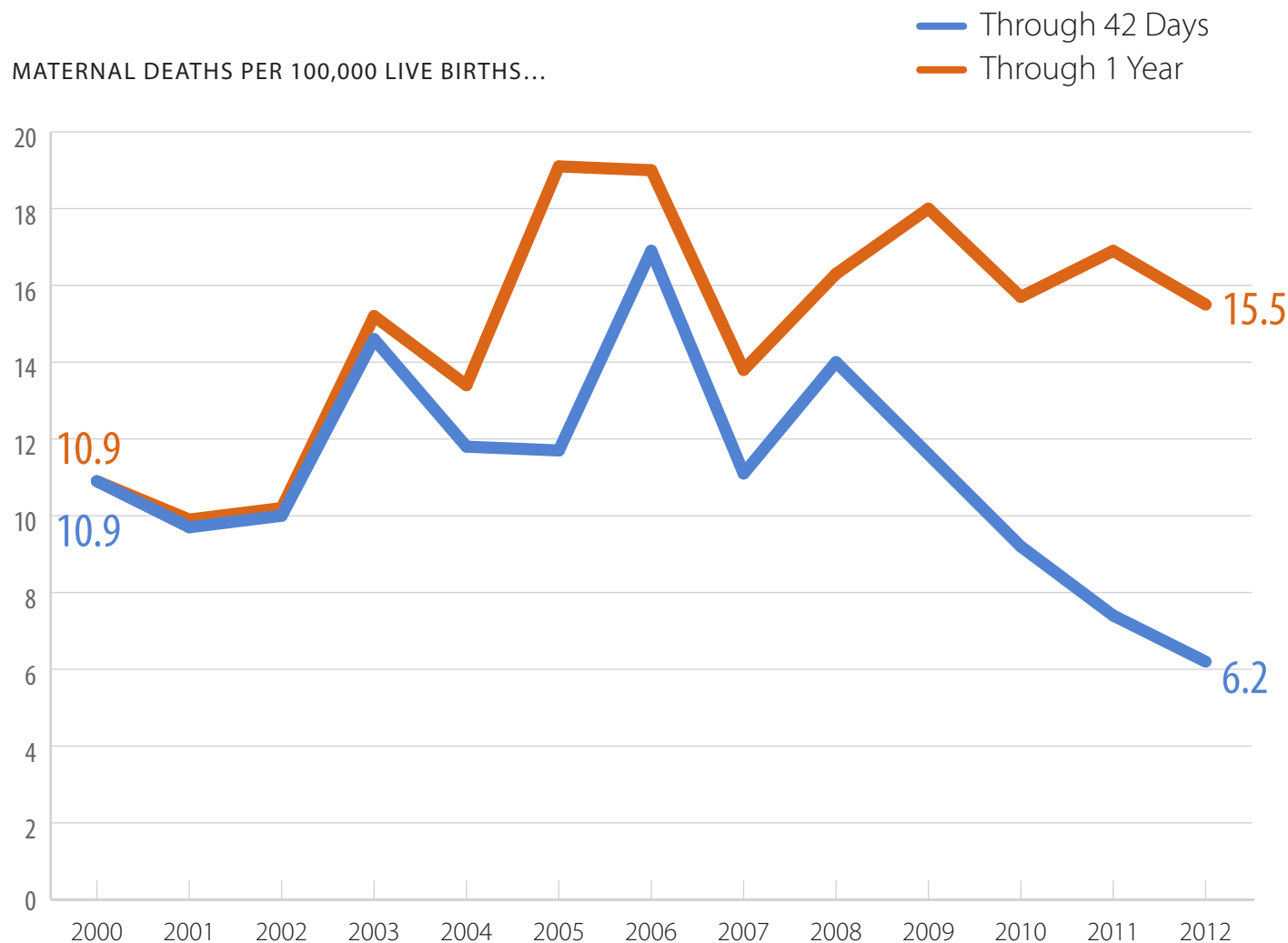
Maternal Health and Childbirth

Since 2004, California and the nation improved performance on three indicators measuring trauma to babies and mothers during childbirth. In 2010, California performed better than the national average on all three measures.

Maternal Mortality Rates

California, 2000 to 2012

MATERNAL DEATHS PER 100,000 LIVE BIRTHS...



Notes: Through 42 Days refers to deaths while pregnant or up to 42 days postpartum. Through 1 Year refers to deaths while pregnant or within 1 year of childbirth from any cause related to or aggravated by the pregnancy or its management.

Sources: California Department of Public Health's (CDPH) Maternal, Child, and Adolescent Health Program, special data request, August 25, 2014; CDPH's Maternal, Child, and Adolescent Health Program, *California Grant Application and Annual Report for the Maternal and Child Health Services Title V Block Grant Program, FFY 2014-2015, Abridged Document*, www.cdph.ca.gov; Centers for Disease Control and Prevention, "Pregnancy Mortality Surveillance System," www.cdc.gov.

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Maternal Health and Childbirth

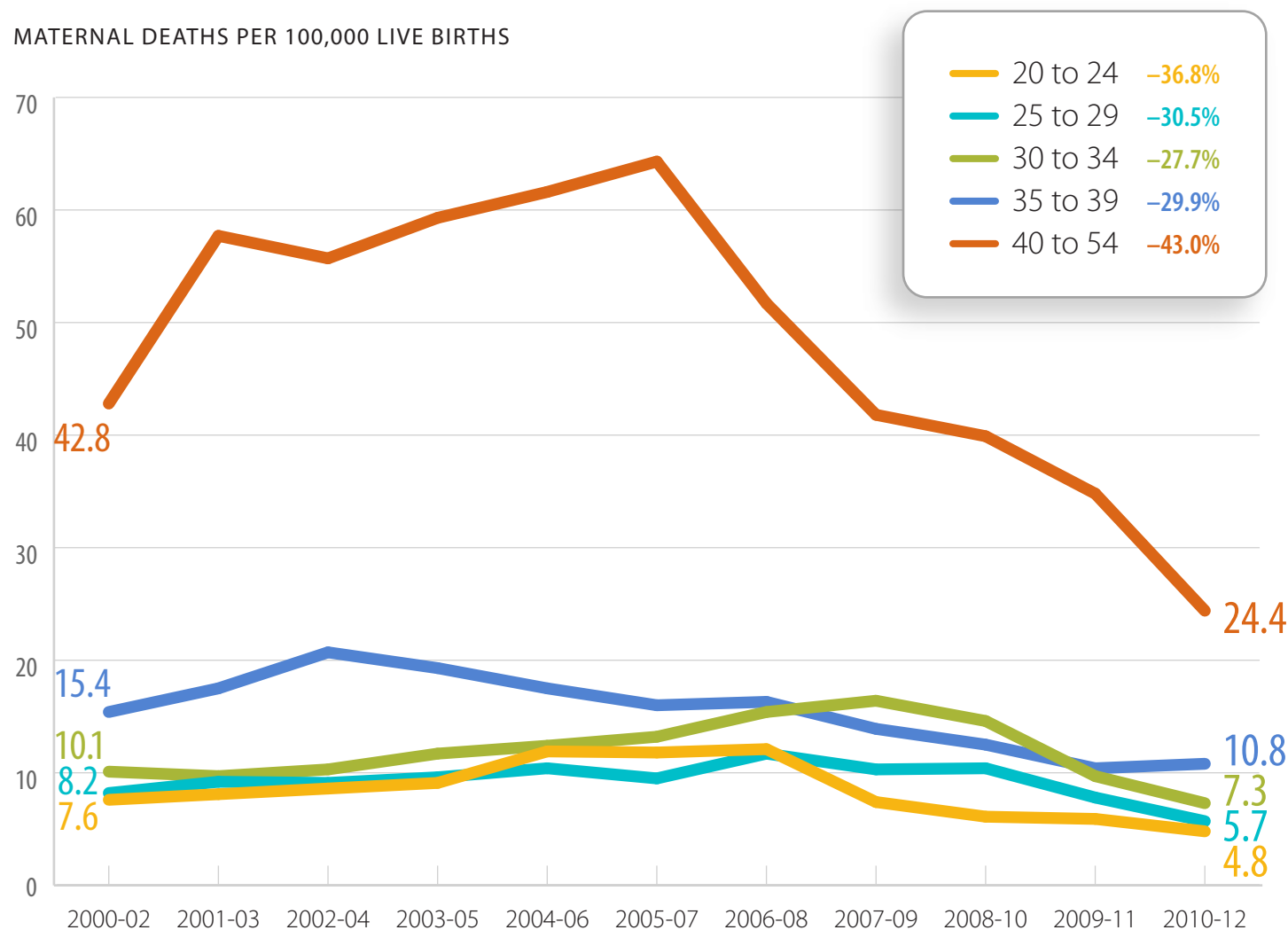
From 2008 to 2012, California experienced a dramatic decline in the maternal mortality rate through 42 days, which dropped to a 13-year low of 6.2 in 2012. However, this strong decline was not seen when monitoring maternal deaths that occurred within one year of childbirth. The longer-term mortality rate may reflect the impact of chronic disease or obesity during pregnancy and/or include some misclassifications of the timing of death.*

*The California Department of Public Health's Maternal, Child, and Adolescent Health Program is investigating these trends as part of its continued surveillance of maternal mortality.

Maternal Mortality Rates, by Age of Mother

California, 2000 to 2012

MATERNAL DEATHS PER 100,000 LIVE BIRTHS



Notes: Maternal mortality refers to deaths while pregnant or up to 42 days postpartum. A three-year moving average is used.

Source: California Department of Public Health's Maternal, Child, and Adolescent Health Program, special data request, August 25, 2014.

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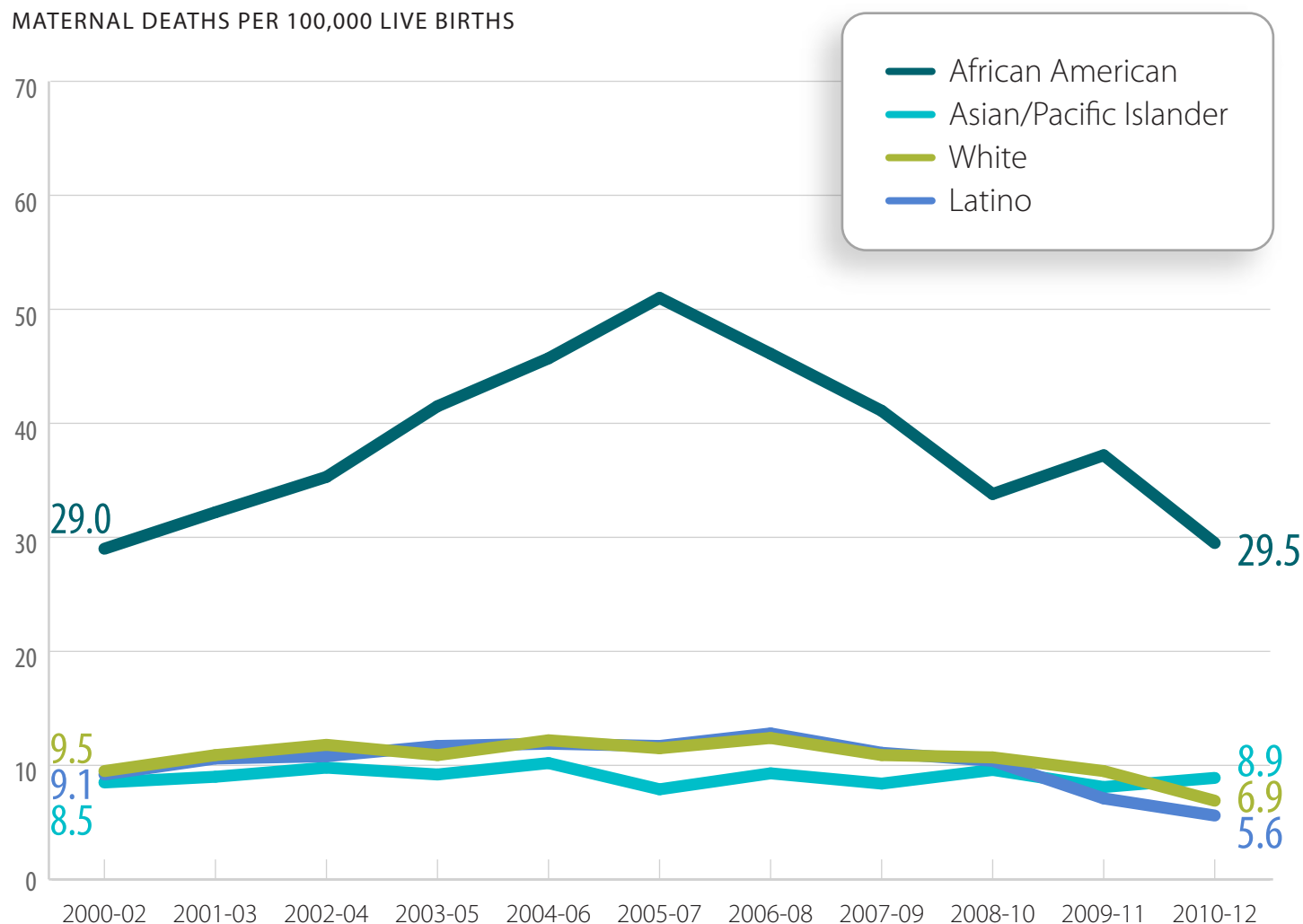
Maternal Health and Childbirth

In 2010-2012, maternal mortality rates (MMR) for mothers age 40 and older were at least two times higher than any other age group. From 2000-2002 to 2010-2012, all age groups experienced declines of more than 25% in the MMR. Mothers age 40 to 54 experienced the largest drop over this time period. The MMR for this group dropped from a high of 64.3 in 2005-2007 to 24.4 in 2010-2012.

Maternal Mortality Rates, by Race/Ethnicity

California, 2000 to 2012

MATERNAL DEATHS PER 100,000 LIVE BIRTHS



Notes: Maternal mortality refers to deaths while pregnant or up to 42 days postpartum. A three-year moving average is used.

Source: California Department of Public Health's Maternal, Child, and Adolescent Health Program, special data request, August 25, 2014.

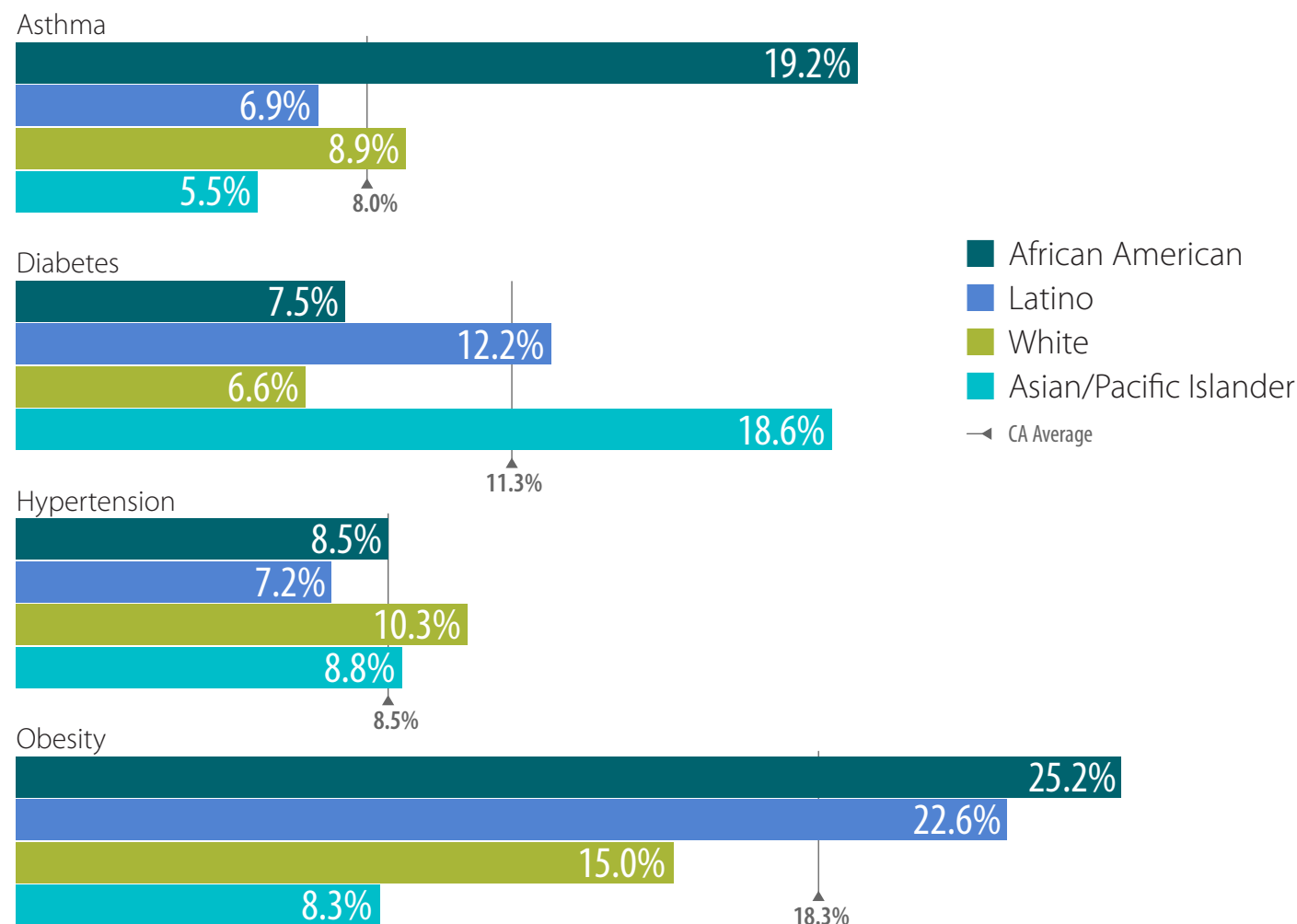
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Maternal Health and Childbirth

Over the last decade, African American mothers in California were over three times more likely to die while pregnant or within 42 days postpartum than mothers of other races/ethnicities. Maternal Mortality Rates for African American, White, and Latino mothers all dropped by more than 40% from their highs in the mid-2000s to the 2010-2012 period.

Selected Chronic Conditions Before or During Pregnancy

by Race/Ethnicity, California, 2012



Notes: Data based on a survey of 6,810 California female residents with a live birth in 2012. Diabetes includes gestational diabetes. Hypertension includes preeclampsia and eclampsia. Obesity rates are before pregnancy only and based upon body mass index (BMI); obesity is 30 and higher. BMI calculated only for women of height within 48 and 83 inches and weight within 75 and 399 pounds, and excludes values outside of 13 to 69.99.

Source: California Department of Public Health's Maternal, Child, and Adolescent Health Program, Maternal and Infant Health Assessment Survey, 2012, special data request, August 25, 2014.

Quality of Care

Maternal Health and Childbirth

The presence of chronic conditions before or during pregnancy can have a negative impact on the outcome of a pregnancy. In a 2012 survey, more than 20% of African American and Latino mothers reported they were obese prior to pregnancy. Approximately 19% of African American women reported they had asthma and almost 19% of Asian women reported they had diabetes before or during pregnancy.

Childbirth-Related Quality Measures

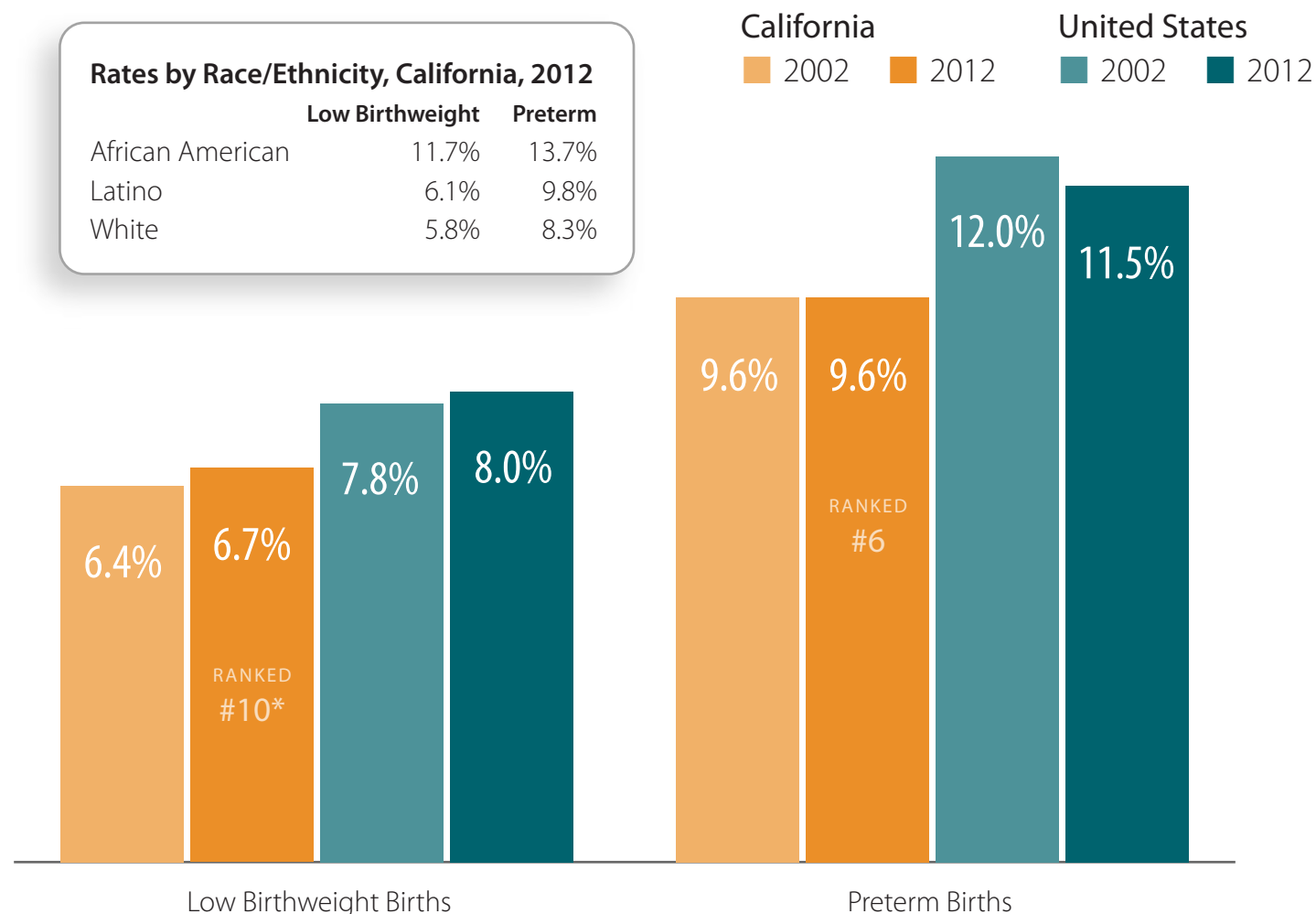
California vs. United States, 2002 and 2012

Quality of Care

Maternal Health and Childbirth

California's rates of low birthweight births and preterm births were lower than the national average.

California's rates for both measures were also below the Healthy People 2020* targets of 7.8% for low birthweight and 11.4% for preterm birth. African Americans had higher rates of both low birthweight and preterm births than Latinos or Whites.



*California was tied with Iowa and Nebraska for the rank.

Notes: Low birthweight is less than 2,500 grams. Preterm birth is less than 37 completed weeks of gestation. Rank is out of 50 states and the District of Columbia.

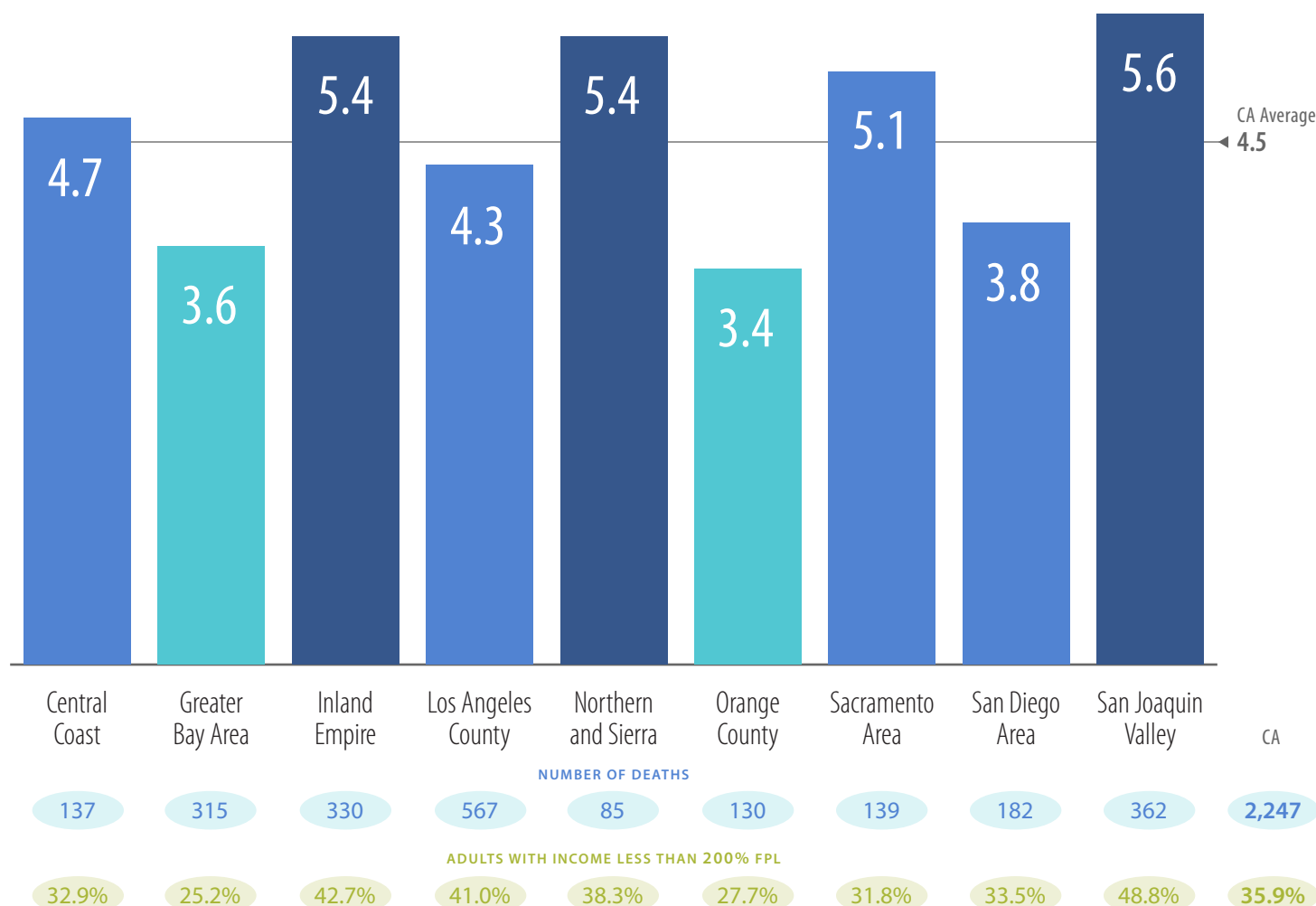
Sources: Centers for Disease Control and Prevention (CDC)'s National Center for Health Statistics, "Births: Final Data for 2012," *National Vital Statistics Reports* 62, no. 9 (December 30, 2013); CDC, "VitalStats," accessed May 2, 2014, www.cdc.gov/nchs/vitalstats.htm.

*The US government's Healthy People 2020 establishes science-based 10-year national objectives for improving the health of all Americans, www.healthypeople.gov.

Infant Mortality and Deaths, by Region

California, 2012

INFANT DEATHS PER 1,000 LIVE BIRTHS



Quality of Care

Maternal Health and Childbirth

Infant mortality rates varied across California in 2012, with the highest rates in the San Joaquin Valley, the Inland Empire, and Northern and Sierra Counties. Orange County and the Greater Bay Area, the two regions with the lowest rate of adults with income less than 200% of the federal poverty level, had the lowest infant mortality rates in the state.

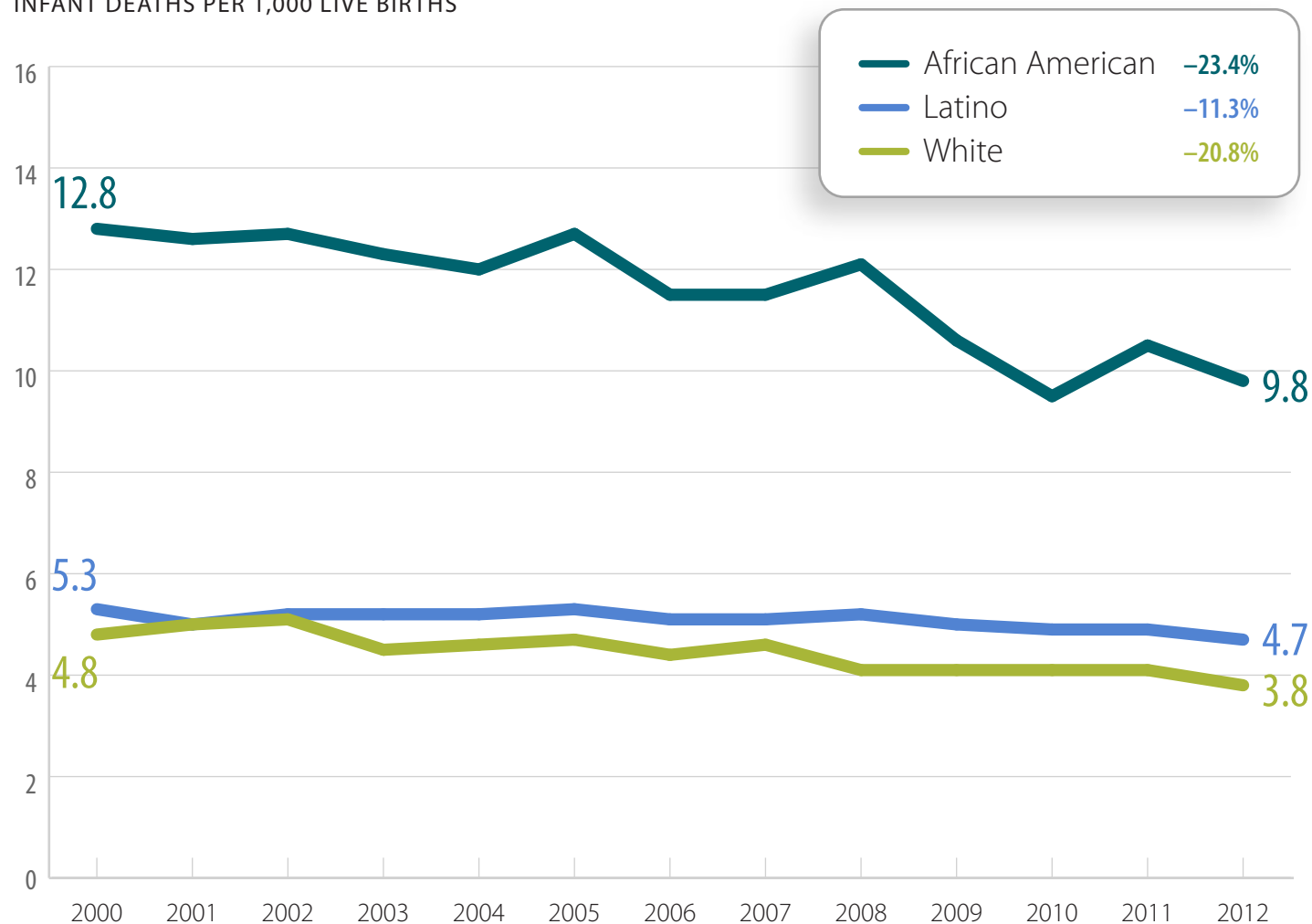
Notes: Infant is under 1 year. FPL is federal poverty level; 100% of FPL was defined in 2011 as an annual income of \$22,350 for a family of four.

Source: Author analysis using California Department of Public Health's Maternal, Child, and Adolescent Health Program, *Infant Mortality*, January 2014, www.cdph.ca.gov; University of California Los Angeles, California Health Interview Survey, 2011/12, accessed September 4, 2014, www.healthpolicy.ucla.edu/chis.

Infant Mortality, by Race/Ethnicity

California, 2000 to 2012

INFANT DEATHS PER 1,000 LIVE BIRTHS



Note: Infant is under 1 year.

Source: California Department of Public Health's Maternal, Child, and Adolescent Health Program, *Infant Mortality*, January 2014, www.cdph.ca.gov.

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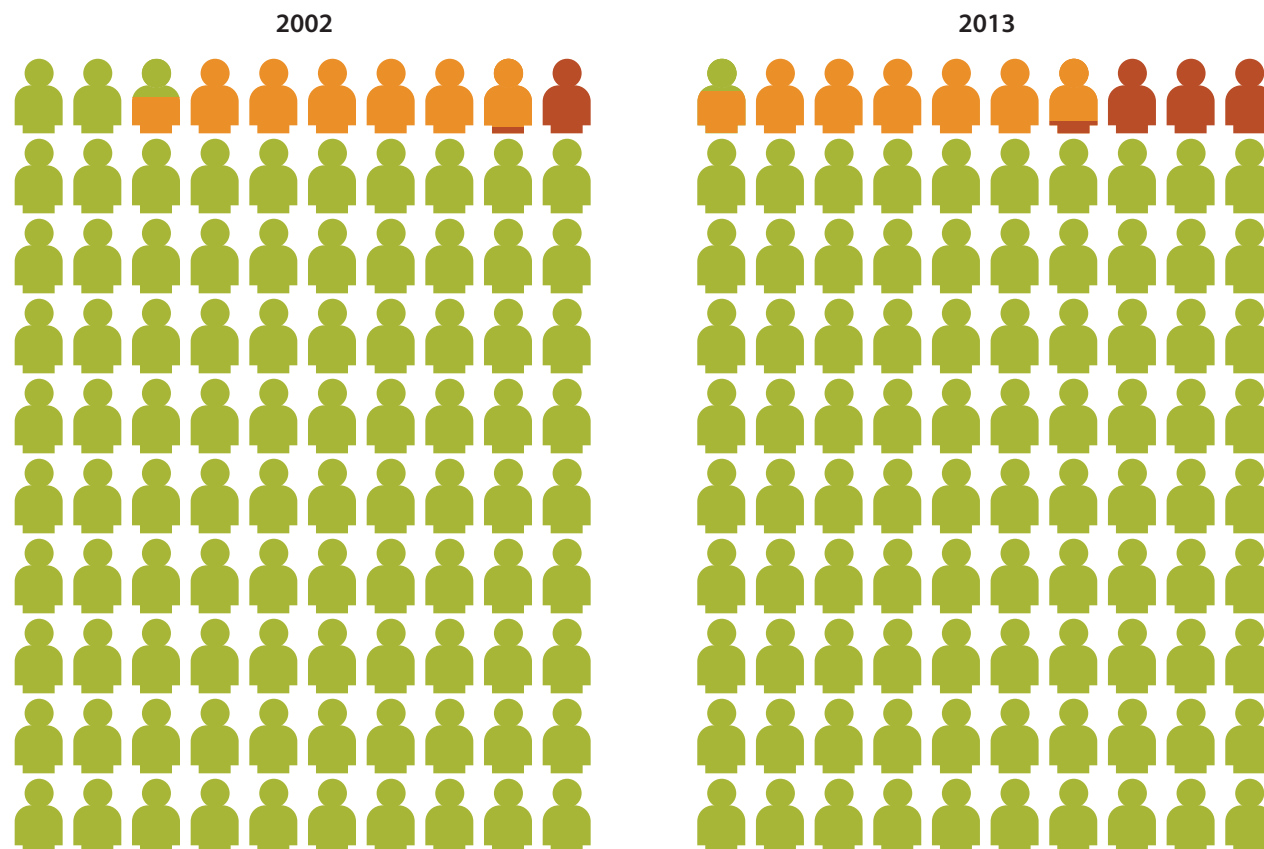
Maternal Health and Childbirth

Infant mortality rates for Whites and African Americans in California declined by 20% or more from 2000 to 2012. The infant mortality rate for Latinos also experienced double-digit declines over the same time period. Despite the declines, African American rates remained two times higher than those for Latinos and Whites.

Vaccination Coverage Among Kindergarten Children

California, 2002 and 2013

 **Received All Required Immunizations**
 (92.3% vs. 90.2%)
  **Conditional Entrants**
 (6.5% both years)
  **Personal Belief Exemptions**
 (1.1% vs. 3.2%)



Notes: Data are from fall school-year assessments. The estimated percentage of children age 4 to 6 in kindergarten who had all required immunizations: four or more doses of diphtheria, tetanus, and pertussis vaccine (DTP); three or more doses of polio vaccine; two or more doses of measles, mumps, and rubella vaccine (MMR); three or more doses of hepatitis B vaccine; and one or more doses of varicella or chickenpox vaccine or physician-documented varicella disease. Conditional entrant students do not meet all vaccination requirements because they either lack at least one vaccine dose, have a temporary medical exemption for one or more doses, or have transferred and have no record available yet. Personal belief exemptions are allowed for any and all vaccinations and are given with a letter or affidavit from a child's parent or guardian stating that immunizations are against their beliefs. The chart does not include 0.2% of students in both years who had permanent medical exemptions.

Source: California Department of Public Health's Immunization Branch, Statewide Kindergarten Assessment Results, 2002-03 and 2013-14.

Quality of Care

Children's Health

Immunization rates of kindergarten children have declined slightly in California since 2002. One contributing factor is the increase in personal belief exemptions, which have grown to 3% of children in 2013. This increase is due, in part, to growing parental concern about the safety of vaccines, based on unproven links between vaccines and autism.

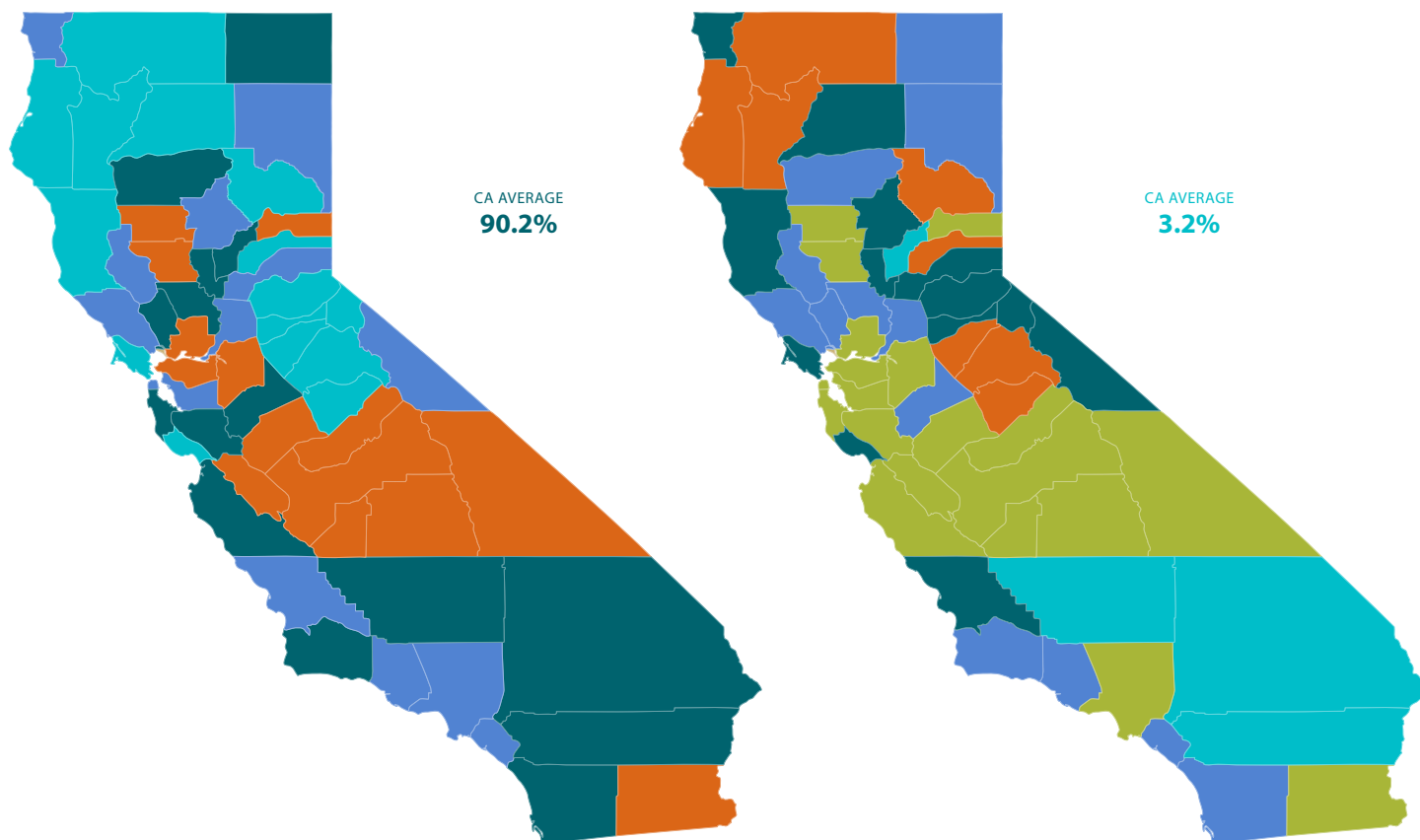
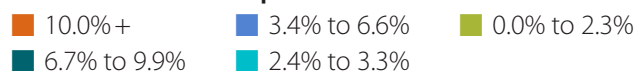
Vaccination Coverage and Personal Belief Exemptions

Among Kindergarten Children, by County, California, 2013

All Required Immunizations



Personal Belief Exemptions*



*Allowed for any and all vaccinations and are given with a letter or affidavit from child's parent or guardian stating that immunizations are against their beliefs.

Notes: Data are from fall school-year assessments. The estimated percentage of children age 4 to 6 in kindergarten who had all required immunizations: four or more doses of diphtheria, tetanus, and pertussis vaccine (DTP); three or more doses of polio vaccine; two or more doses of measles, mumps, and rubella vaccine (MMR); three or more doses of hepatitis B vaccine; and one or more doses of varicella or chickenpox vaccine or physician-documented varicella disease.

Source: California Department of Public Health's Immunization Branch, Statewide Kindergarten Assessment Results, 2013-14.

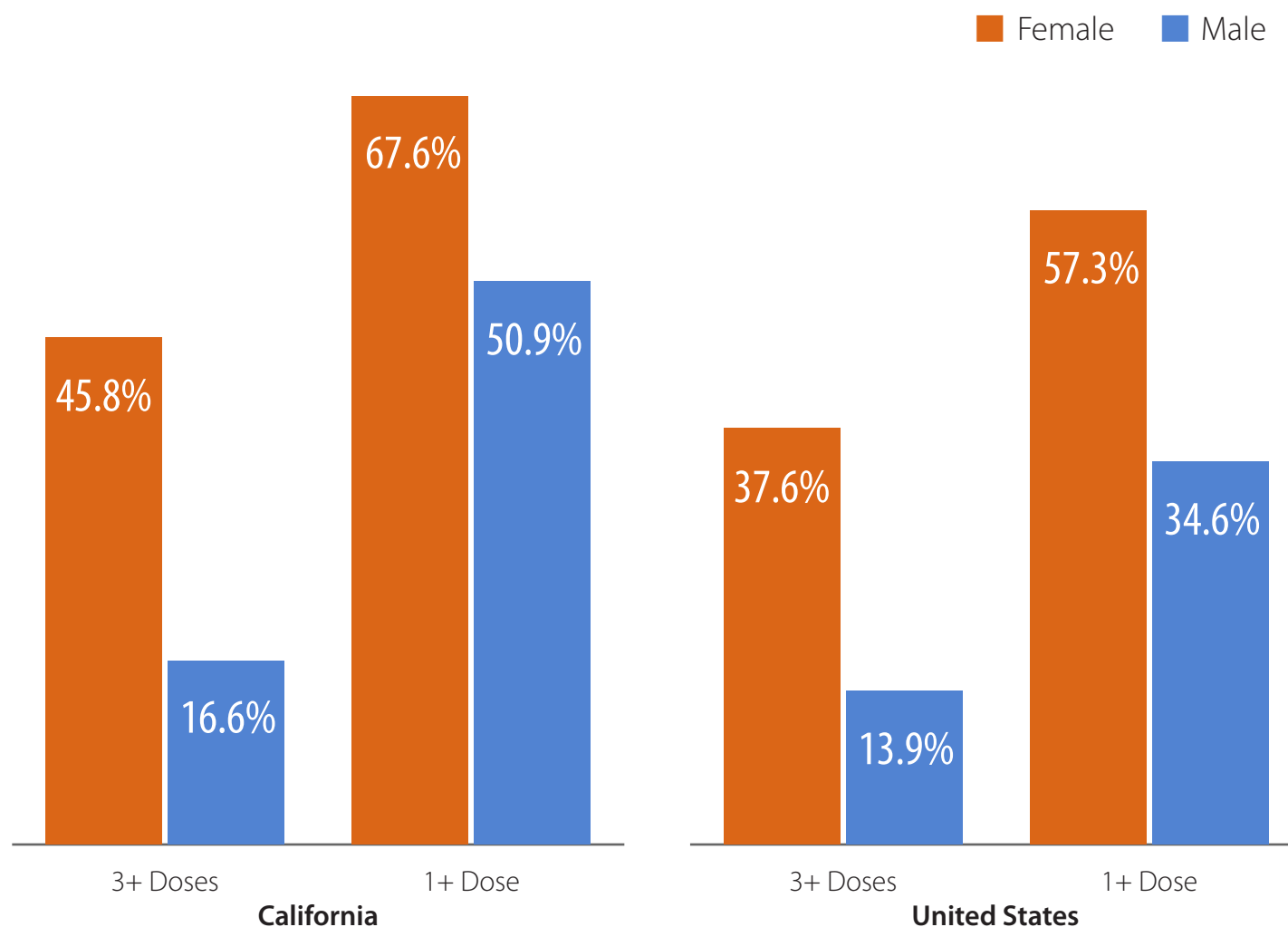
Quality of Care

Children's Health

Vaccination coverage and personal belief exemptions ranged widely by county in 2013. At the extreme, in Nevada County only 72% of kindergarten students were vaccinated, and 21% had personal belief exemptions. According to the CDC, epidemics of many preventable diseases could return, resulting in unnecessary illness, disability, and death.

Adolescents Receiving HPV Vaccine, by Doses and Gender

California vs. United States, 2013



Note: Adolescents are age 13 to 17.

Source: Centers for Disease Control and Prevention, "National, Regional, State, and Selected Local Vaccination Coverage Among Adolescents Age 13-17, United States 2013," *Morbidity and Mortality Weekly Report* 63, no. 29 (July 25, 2014): 625-33.

Quality of Care

Children's Health

In 2006, the Advisory Committee on Immunization Practices (ACIP) began recommending three doses of the human papillomavirus (HPV) vaccine as a preventive measure against various types of cancer* for preteen girls, and in 2011 added a recommendation for boys.

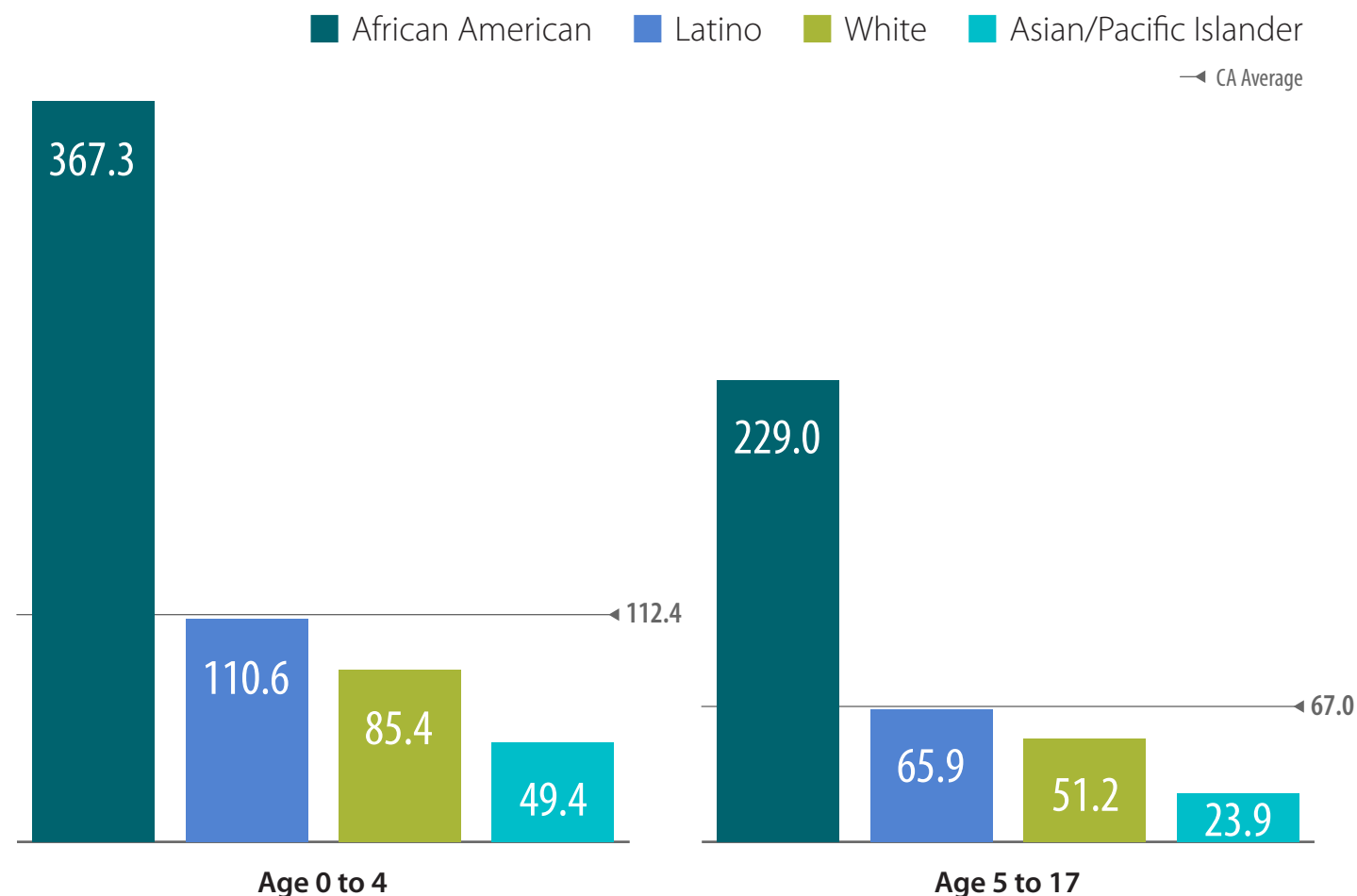
California had a higher rate of both girls and boys who received the vaccine in 2013 than the nation overall; however, less than half of California teenagers received the recommended three doses.

*The HPV vaccine protects against HPV types that most commonly cause anal, cervical, penile, throat, vaginal, and vulvar cancers.

Pediatric Asthma ED Visits, by Race/Ethnicity

California, 2012

ED VISITS PER 10,000 POPULATION



Note: Rates are adjusted by age.

Source: California Department of Public Health's Environmental Health Tracking Program, Asthma Data Query, accessed July 2, 2014, www.ehib.org.

Quality of Care

Children's Health

In 2012, African American children of all ages were much more likely than other racial/ethnic groups to visit the emergency department (ED) for asthma. For all racial/ethnic groups, children age 0 to 4 were more likely to visit the ED for asthma than children age 5 to 17.

Prevalence of Overweight or Obese Children

by Income Level, California, 2003 and 2011/12



Quality of Care

Children's Health

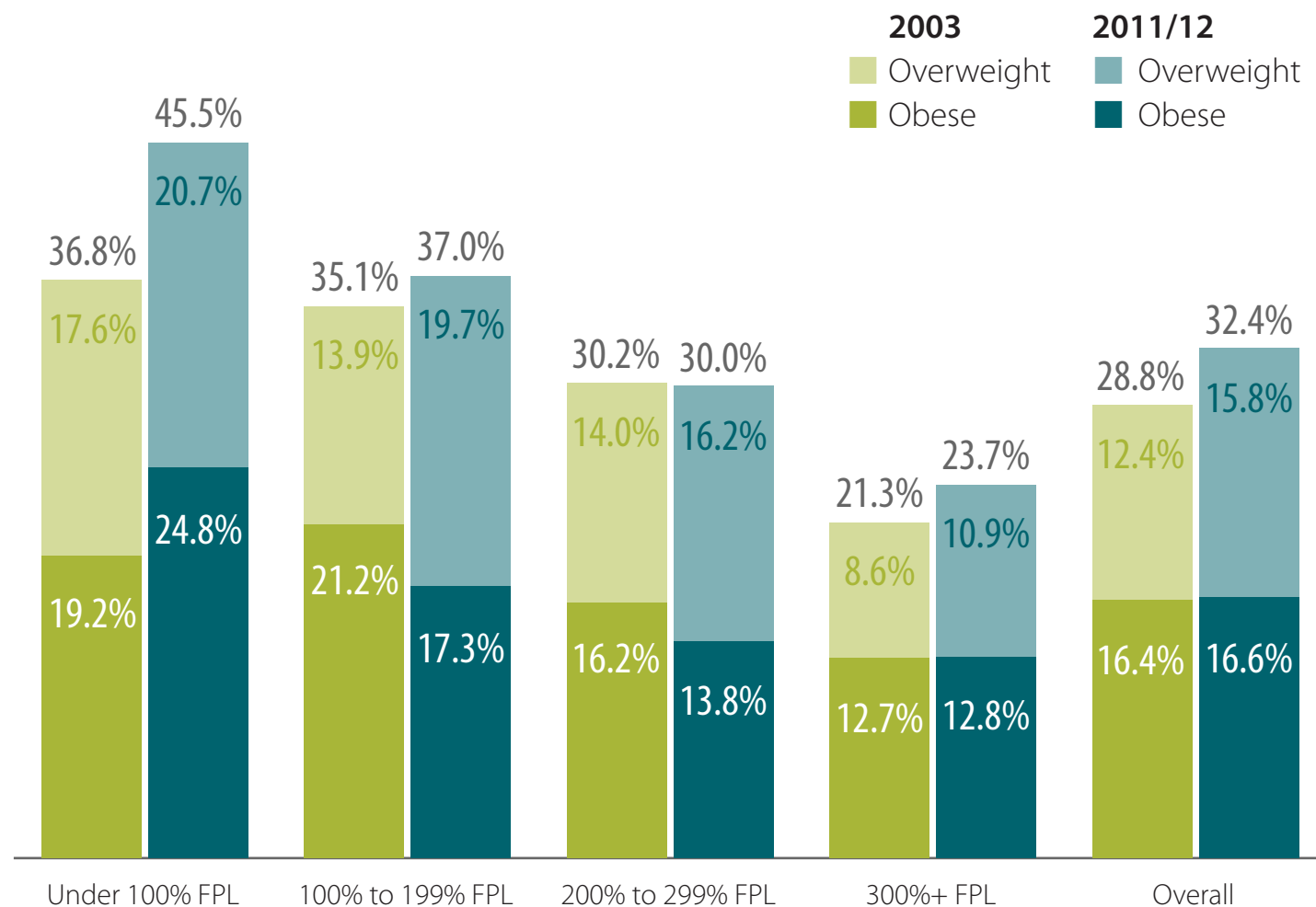
About one in five California children living in families with incomes under the federal poverty level (FPL) were overweight or obese in 2011/12. In contrast, less than one in 10 children living in families with incomes at least 300% of the FPL were overweight or obese.

Notes: Data reflect children age 2 to 11 whose weight for age was at or above the 85th percentile on gender and age-specific CDC BMI guidelines. FPL is federal poverty level; 100% of FPL for a family of four was defined in 2011 (year used for survey stratifications) as an annual income of \$22,350; it was \$18,400 in 2003.

Source: University of California Los Angeles, California Health Interview Survey, 2003 and 2011/12, accessed May 7, 2014, www.healthpolicy.ucla.edu/chis.

Prevalence of Overweight or Obese Teens

by Income Level, California, 2003 and 2011/12



Quality of Care

Children's Health

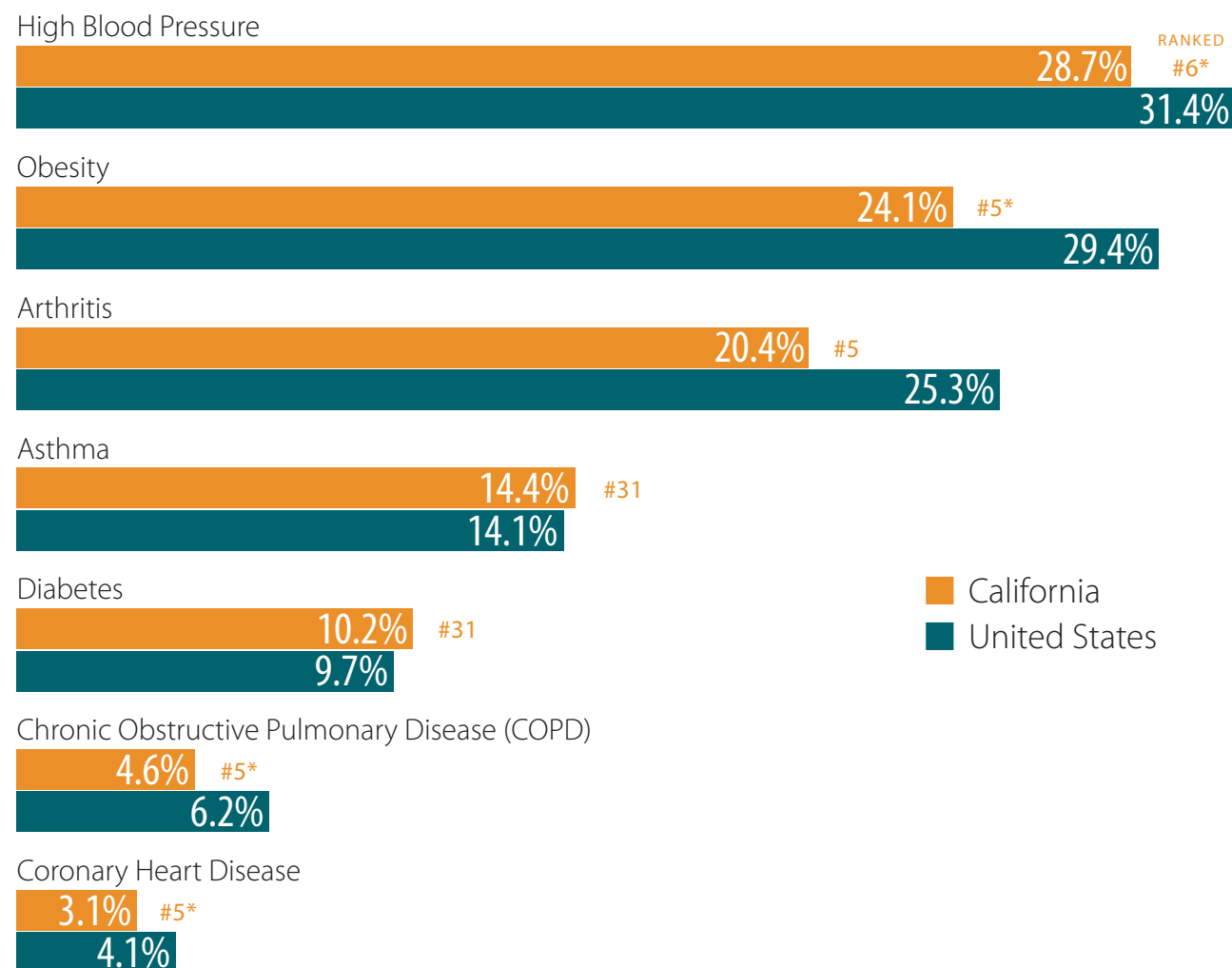
Nearly one-third of California's teens were overweight or obese in 2011/12. The highest rates were among those from the poorest families, where 46% were overweight or obese. This lowest-income group also saw the largest increase in overweight or obese teens between 2003 and 2011/12.

Notes: Data reflect teens age 12 to 17. Teens with a BMI at or above the 85th percentile based on height and weight were classified as overweight. Teens with a BMI at or above 95th percentile were classified as obese. FPL is federal poverty level; 100% of FPL for a family of four was defined in 2011 (year used for survey stratifications) as an annual income of \$22,350; it was \$18,400 in 2003.

Source: University of California Los Angeles, California Health Interview Survey, 2003 and 2011/12, accessed May 7, 2014, www.healthpolicy.ucla.edu/chis.

Adults with Chronic Conditions

California vs. United States, 2013



*California was tied with one other state for the rank.

Notes: These conditions were selected because they are common chronic conditions for which good incidence data exist. Adults with a BMI of 30 or higher were classified as obese. Rank is out of the 50 states and the District of Columbia.

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System Survey Data, accessed October 17, 2014.

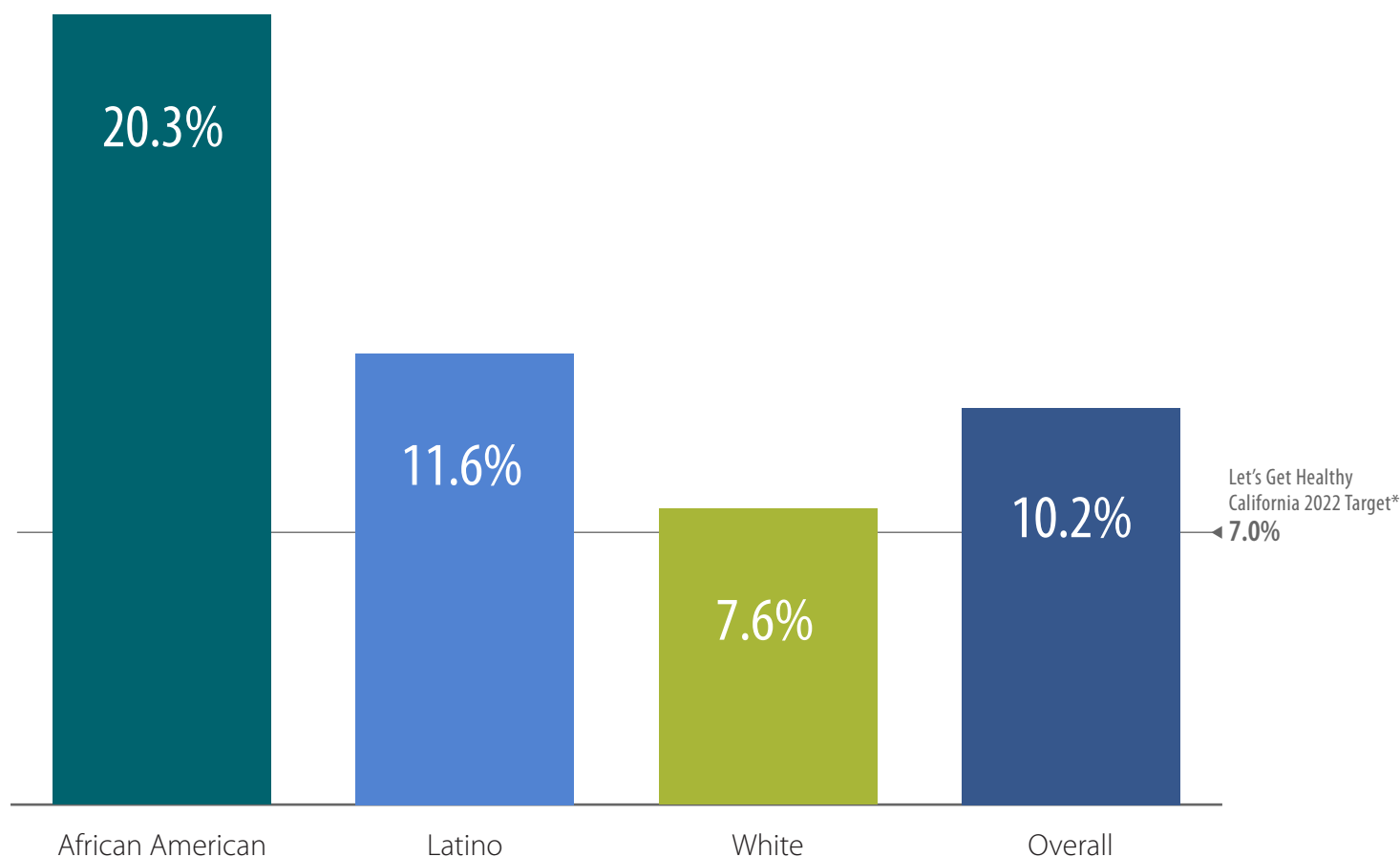
Quality of Care

Chronic Conditions

A smaller percentage of Californians were obese compared to the national average in 2013. California also had a lower prevalence of some chronic conditions such as arthritis, COPD, and coronary heart disease. However, California and the US had similar rates of adults with asthma or diabetes.

Adults with Diagnosed Diabetes, by Race/Ethnicity

California, 2013



*Established by Governor Brown, the Let's Get Healthy California task force developed a blueprint to achieve the triple aim of better health, better care, and lower costs. The task force established 10-year improvement targets for 39 health care indicators.

Notes: Percentages are weighted to population characteristics. The confidence interval (15.1-25.5) for African Americans was much wider than other groups. Multiracial category is not included due to small sample size.

Sources: Centers for Disease Control and Prevention, BRFSS, accessed October 17, 2014, apps.nccd.cdc.gov/brfss. *Let's Get Healthy California Task Force Report*, www.chhs.ca.gov.

Quality of Care

Diabetes

In 2013, one in 10 California adults had diabetes. One in five African Americans had diabetes, higher than any other racial or ethnic group.

Management of Diabetes, HMOs vs. PPOs

California vs. United States, 2013

PERCENTAGE OF DIABETES PATIENTS...

	HMO		PPO	
	CA	US	CA	US
Getting Eye Exam	50%	56%	40%	47%
Testing Blood Sugar	89%	90%	84%	87%
Controlling Blood Sugar*	60%	59%	54%	53%
Testing Cholesterol	86%	85%	81%	81%
Controlling Cholesterol [†]	46%	47%	42%	41%
Testing Kidney Function	86%	84%	78%	79%
Controlling Blood Pressure [‡]	64%	65%	51%	58%

*Based on plan members with diabetes whose blood sugar levels were controlled with an A1c level of less than 8%.

†Based on plan members with diabetes whose LDL cholesterol level is less than 100.

‡Based on plan members with diabetes whose blood pressure levels were below 140/90.

Note: Data include the 10 largest HMOs and the 6 largest PPOs in the state.

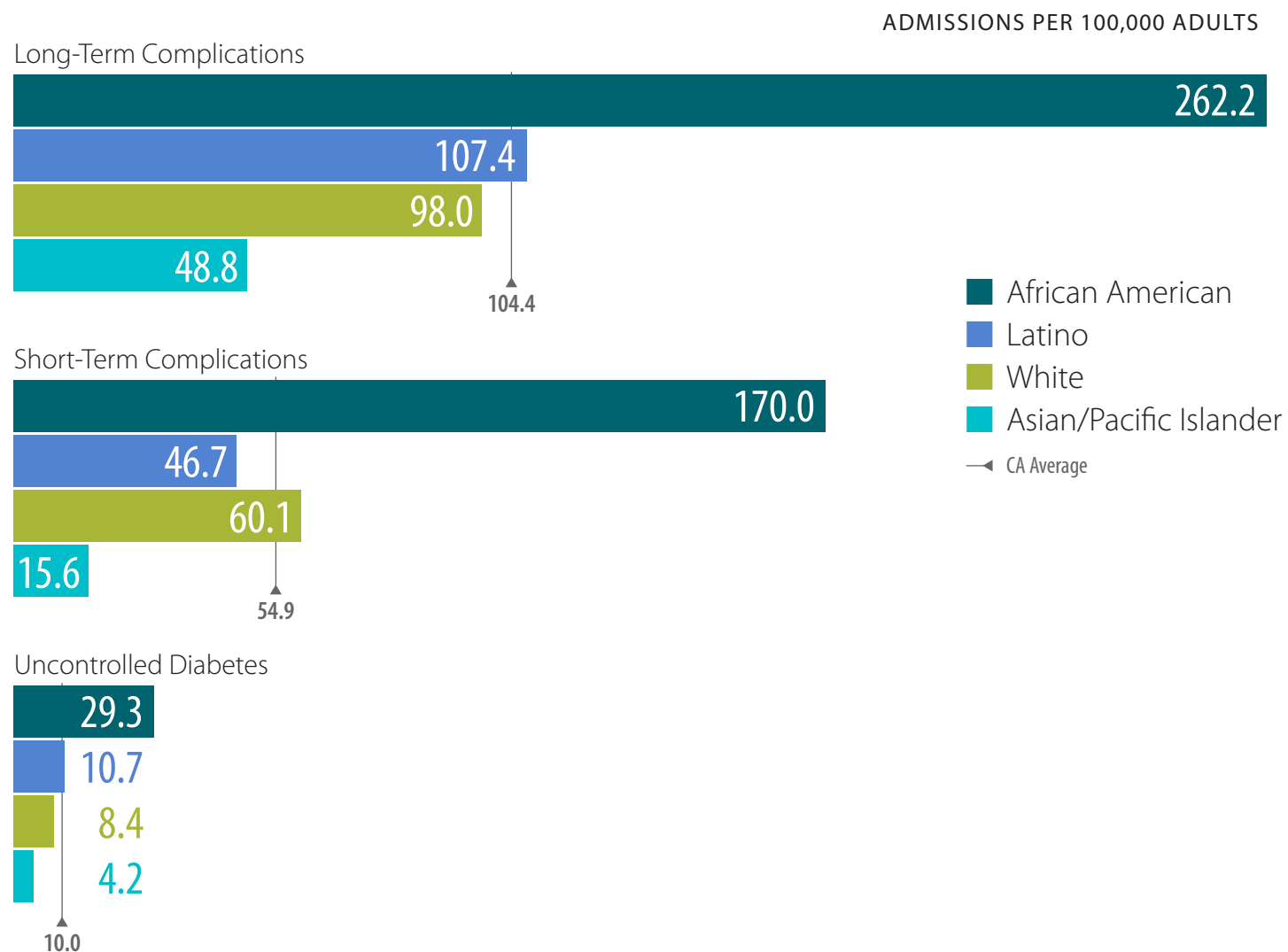
Quality of Care

Diabetes

On average, HMOs in California and the US performed better than PPOs on all diabetes management measures.

Diabetes Admission Rates, by Race/Ethnicity

California, 2012



Note: Rates are observed and are for adults age 18 and older.

Source: State of California, Office of Statewide Health Planning and Development, special data request, May 13, 2014.

Quality of Care

Diabetes

Significant racial and ethnic disparities existed for three measures of preventable hospitalizations for diabetes patients in California. For all three measures, African Americans were admitted to the hospital at much higher rates than all other races and ethnicities in 2012.

Cancer Screening Tests

California vs. United States, 2012

Cervical: Pap Smear in Past 3 Years (women age 18+)



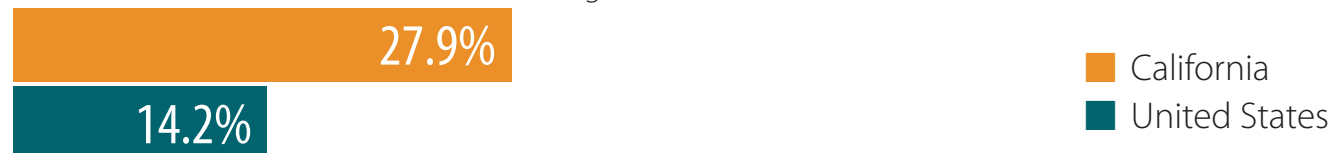
Breast: Mammogram in Past 2 Years (women age 40+)



Colorectal: Sigmoidoscopy or Colonoscopy Ever (age 50+)



Colorectal: Blood Stool Test in Past 2 Years (age 50+)



California
United States

Quality of Care

Cancer

California performed as well as or better than the nation on the percentage of women being screened for cervical and breast cancer. A higher percentage of Californians received blood stool tests than their national counterparts, although a lower percentage received a colonoscopy. Both the blood stool test and sigmoidoscopy or colonoscopy are accepted screening tools for colorectal cancer.

Note: United States data reflect median rate for 50 states and the District of Columbia.

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System Survey Data, accessed August 5, 2013.

Selected Cancer Incidence and Mortality Rates

California vs. United States, 2011

RATE PER 100,000 POPULATION

	CANCER INCIDENCE		CANCER MORTALITY	
	CA	US	CA	US
All Cancer Sites	419.1	450.6	151.8	168.7
Prostate (males)	124.5	128.3	20.6	20.8
Breast (females)	121.6	122.0	20.6	21.5
Lung	44.7	61.0	34.9	46.0
Colorectal	37.8	39.9	14.1	15.1
Cervical (females)	7.2	7.5	2.2	2.3

Notes: Rates are age-adjusted. Incidence rates exclude *in situ* cancers, except bladder.

Quality of Care

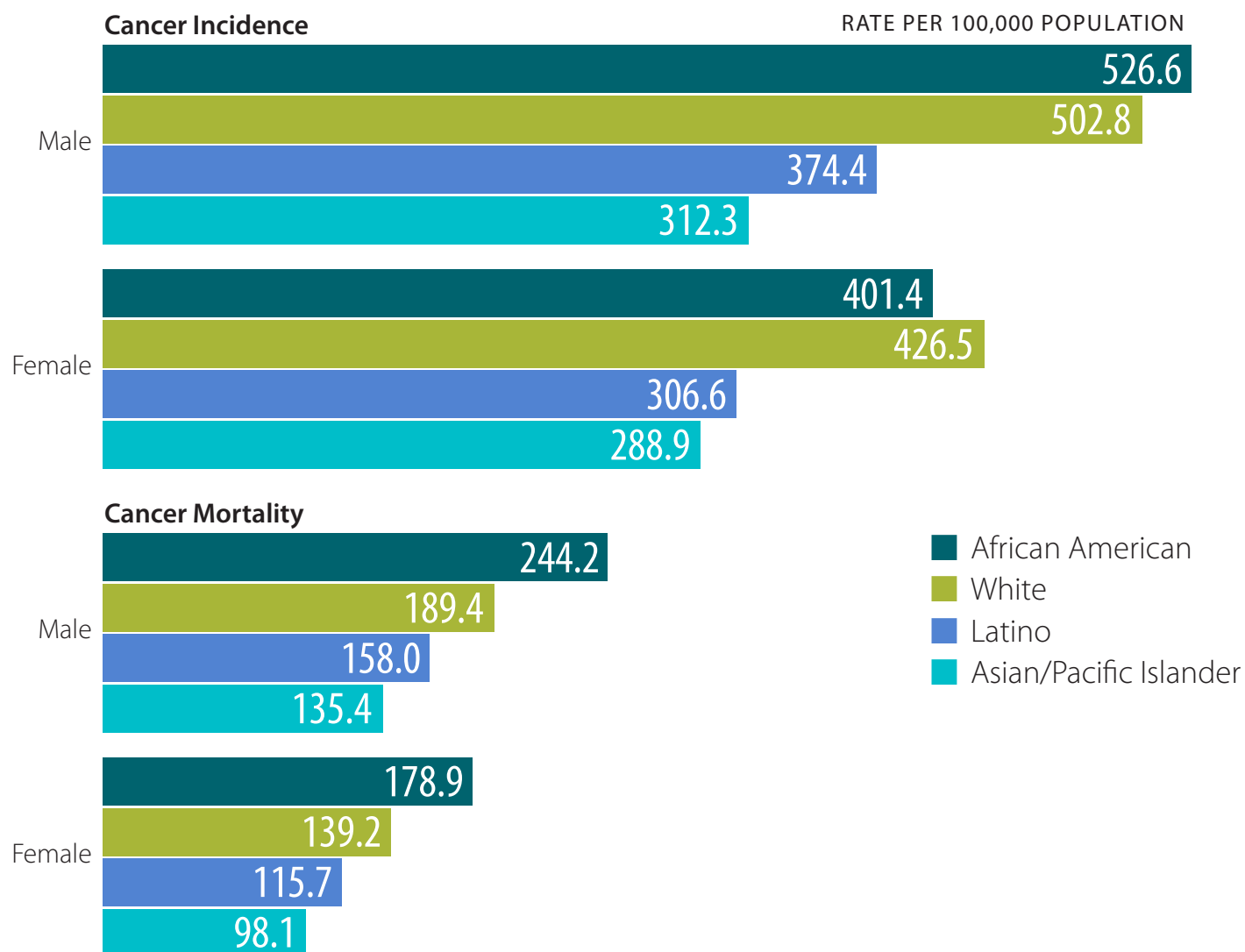
Cancer

In 2011, California had a lower overall incidence of cancer than the US. Other than lung cancer, the incidence of the most prevalent cancers was similar in California and the US. California also had a lower overall cancer mortality rate than the US in 2011, as well as a lower mortality rate for lung cancer.

Source: Centers for Disease Control and Prevention and National Cancer Institute, *United States Cancer Statistics: 1999-2011 Incidence and Mortality Web-Based Report*, accessed September 4, 2014, www.cdc.gov/uscs.

Cancer Incidence and Mortality, by Race/Ethnicity, Gender

California, 2011



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, *California Cancer Facts and Figures 2014*.

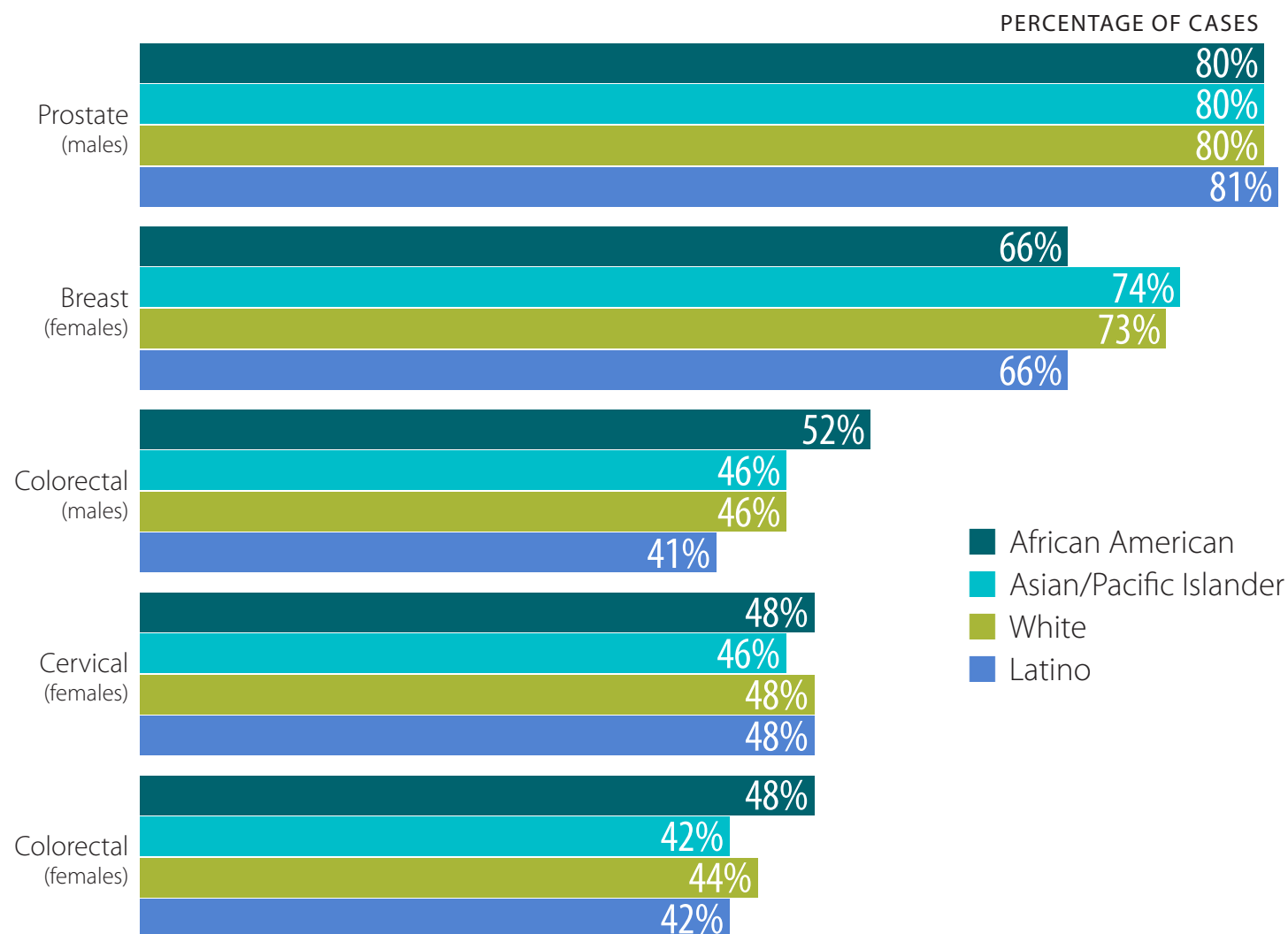
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Cancer

Cancer incidence and mortality rates varied across racial and ethnic groups in California. While White women had the highest overall cancer incidence rate in 2011, African American women had the highest mortality rate. Among men, African Americans had the highest incidence and mortality rates. Asians/Pacific Islanders had the lowest incidence and mortality rates for both men and women.

Cancer Diagnosed at Early Stage, by Race/Ethnicity

California, 2011



Note: Early stage includes cancers that are *in situ* (tumor is at earliest stage and has not spread or extended through the first layer of cells in the area in which it is growing) or localized (tumor has broken through the first layer of cells but is still confined to the organ in which it is growing).

Source: California Cancer Registry, *California Cancer Facts and Figures 2014*.

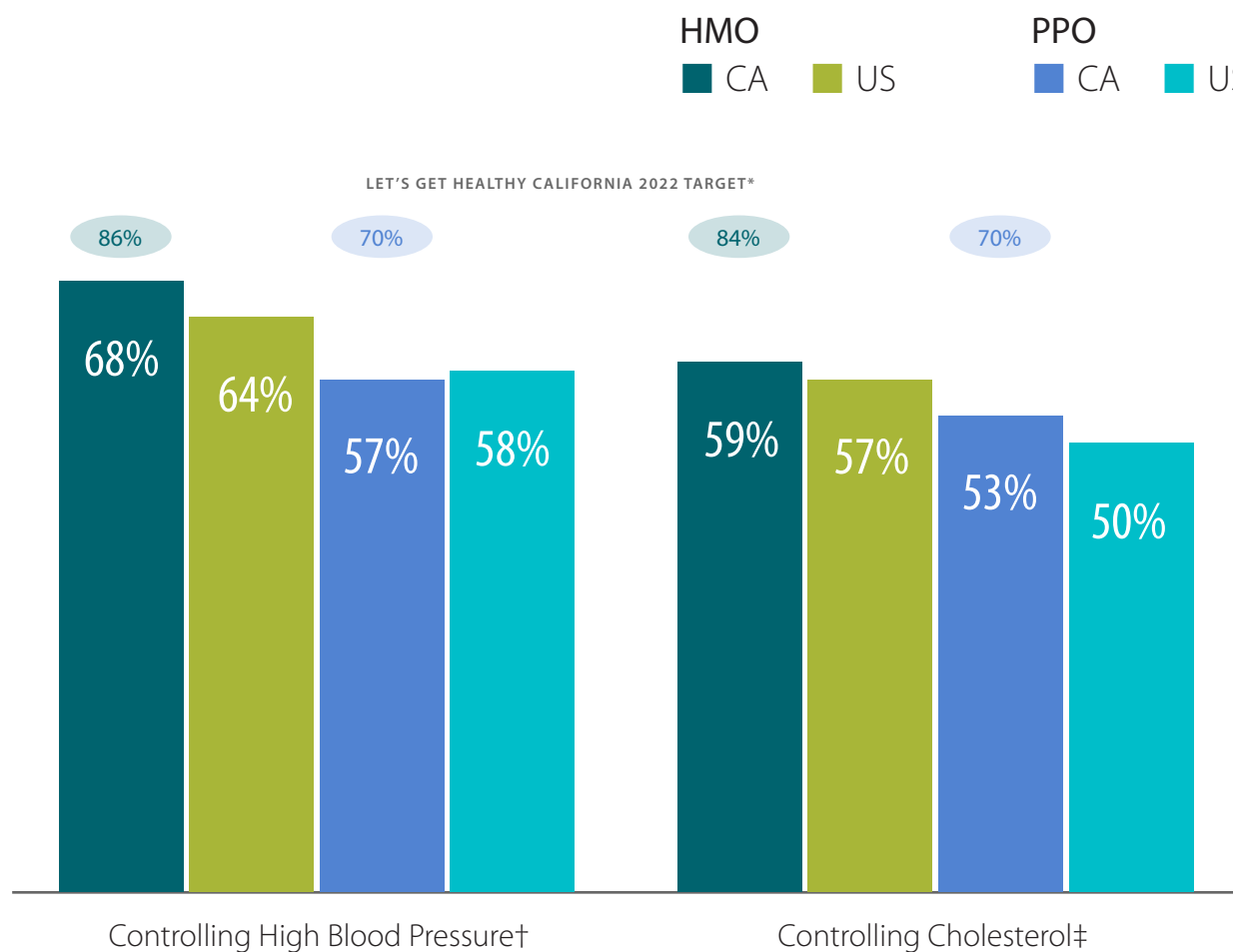
Quality of Care

Cancer

In 2011, four out of five California men across all the major racial and ethnic groups who were diagnosed with prostate cancer were diagnosed at an early stage. In contrast, among women diagnosed with breast cancer, there were significant racial/ethnic disparities in the proportion of cases diagnosed at an early stage.

Management of Heart Conditions, by Health Plan Type

California vs. United States, 2013



Quality of Care

Heart Health and Stroke

On average, California HMOs did a slightly better job of managing their enrollees' blood pressure and cholesterol levels than health plans nationwide. However, California health plan performance was far below the state's Let's Get Healthy California targets for 2022.

*Established by Governor Brown, the Let's Get Healthy California task force developed a blueprint to achieve the triple aim of better health, better care, and lower costs.

The task force established 10-year improvement targets for 39 health care indicators.

†Based on plan members with high blood pressure whose blood pressure is brought below 140/90.

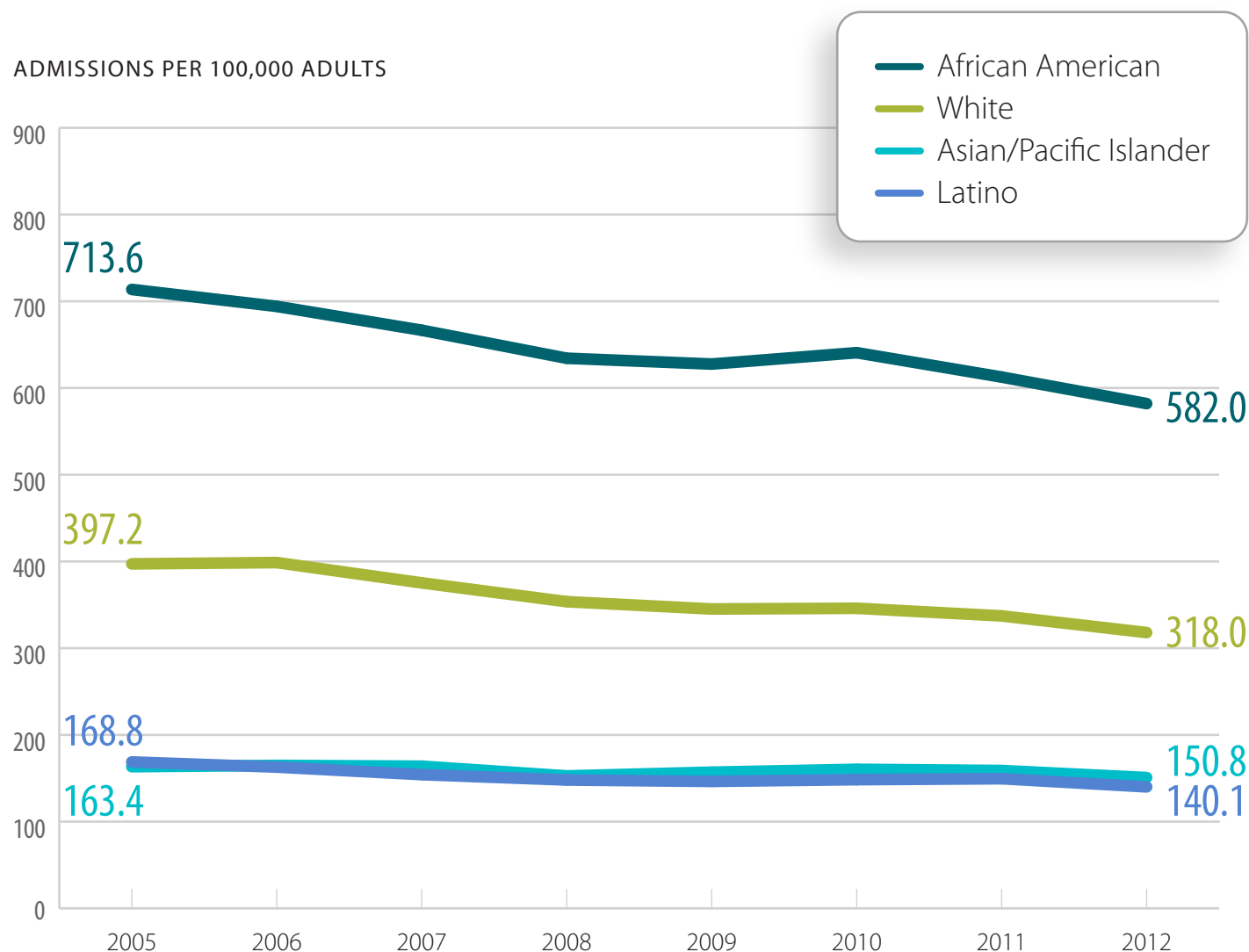
‡Based on plan members with heart disease whose LDL cholesterol level is less than 100.

Note: Data include the 10 largest HMOs and the 6 largest PPOs in the state.

Sources: State of California Office of the Patient Advocate, OPA Report Cards, accessed October 17, 2014; *Let's Get Healthy California Task Force Final Report*, www.chhs.ca.gov.

Heart Failure Admission Rate, by Race/Ethnicity

California, 2005 to 2012



Note: Rates are observed and are for adults age 18 and older.

Source: State of California, Office of Statewide Health Planning and Development, special data request, May 13, 2014.

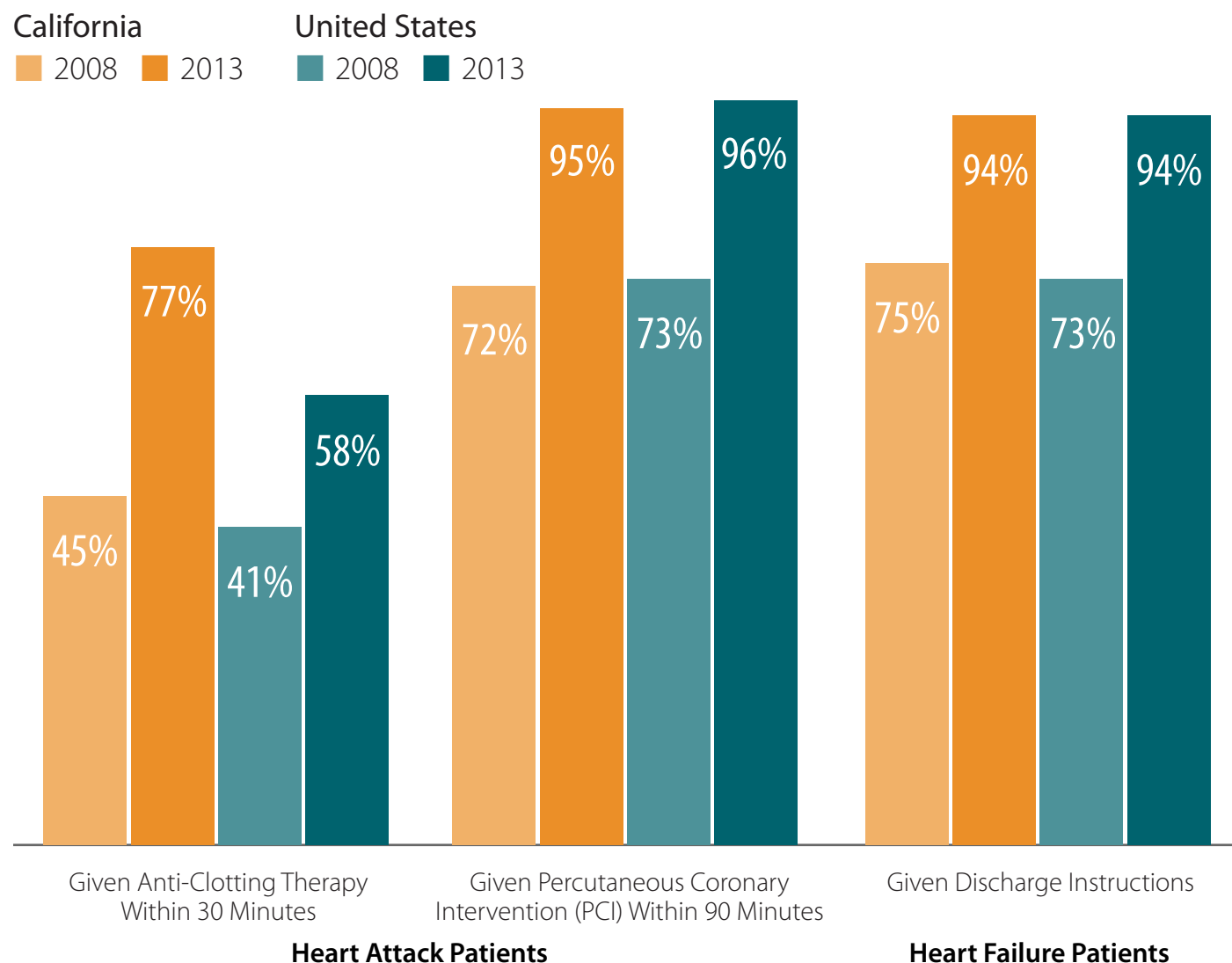
Quality of Care

Heart Health and Stroke

The admission rate for heart failure varied widely by race/ethnicity from 2005 to 2012, with African American admissions nearly two times higher than any other group. Heart failure admissions declined for the major racial/ethnic groups, with double-digit declines for Whites, African Americans, and Latinos.

Timely and Effective Care Measures, Heart Patients

California vs. United States, 2008 and 2013



Quality of Care

Heart Health and Stroke

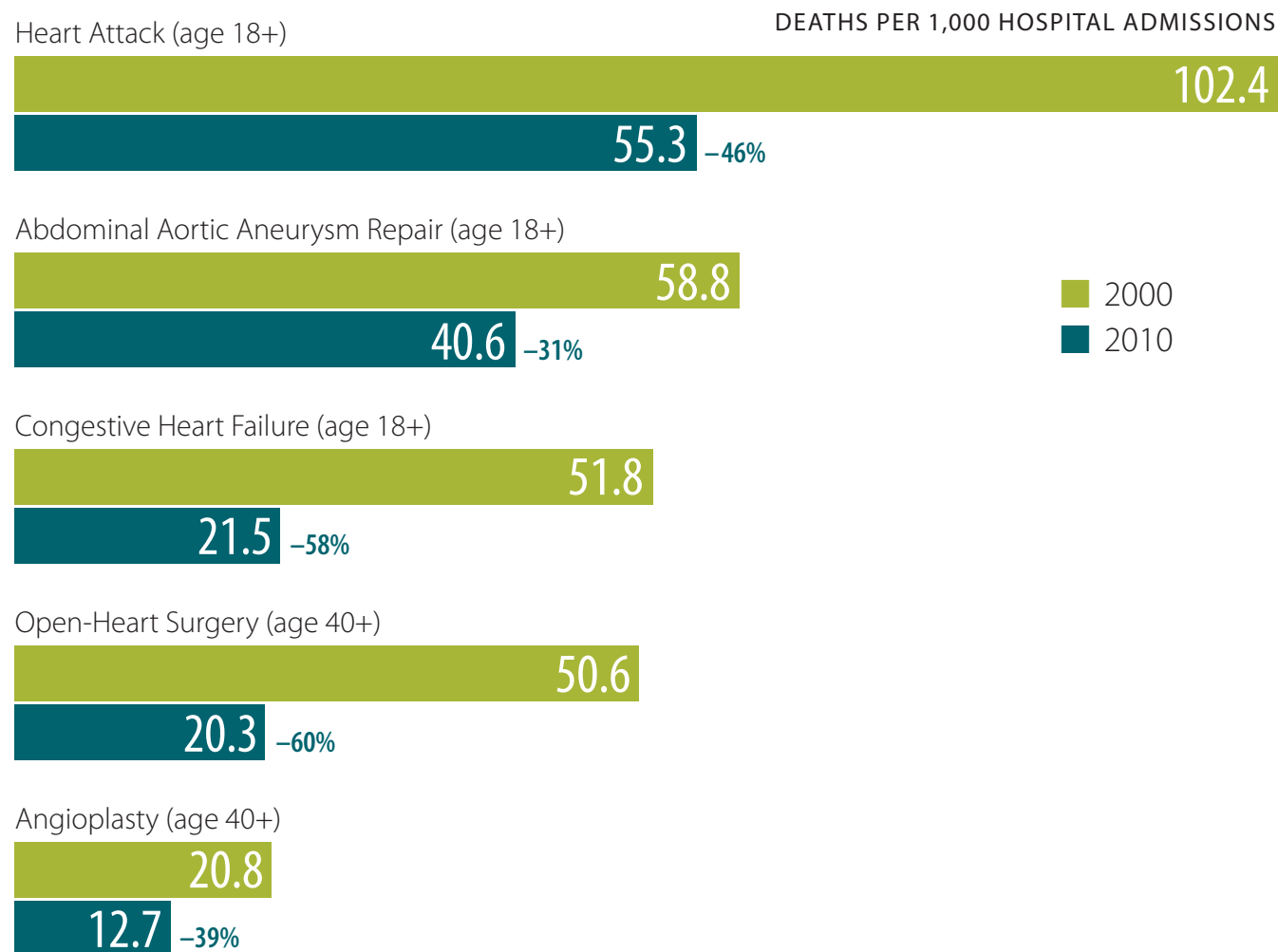
In 2013, California hospitals performed better than or similar to the national average on the three clinical process-of-care measures related to heart attack and heart failure patients used by Medicare to adjust payments. The state has shown significant improvement on these measures since 2008.

Notes: Data are from July of previous year through June of stated year. See Appendix B for all heart attack and heart failure measures.

Source: Centers for Medicare & Medicaid Services, Hospital Compare data, accessed April 24, 2014, data.medicare.gov/data/hospital-compare.

Hospital Deaths from Heart Conditions and Procedures

California, 2000 and 2010



Notes: Rates are adjusted by age, gender, age-gender interactions, Major Diagnostic Category (MDC), All Patient Refined-Diagnosis Related Group (APR-DRG) risk of mortality score, and transfers into the hospitals, except for heart attack, which is not adjusted by gender. Excludes obstetric admissions and transfers to another hospital. Common names have been substituted for technical names as follows: heart attack for acute myocardial infarction, angioplasty for percutaneous transluminal coronary angioplasty, and open-heart surgery for coronary artery bypass graft.

Source: Agency for Healthcare Research and Quality (AHRQ), *National Healthcare Quality Report, 2013*, Data Tables Appendix (not yet published).

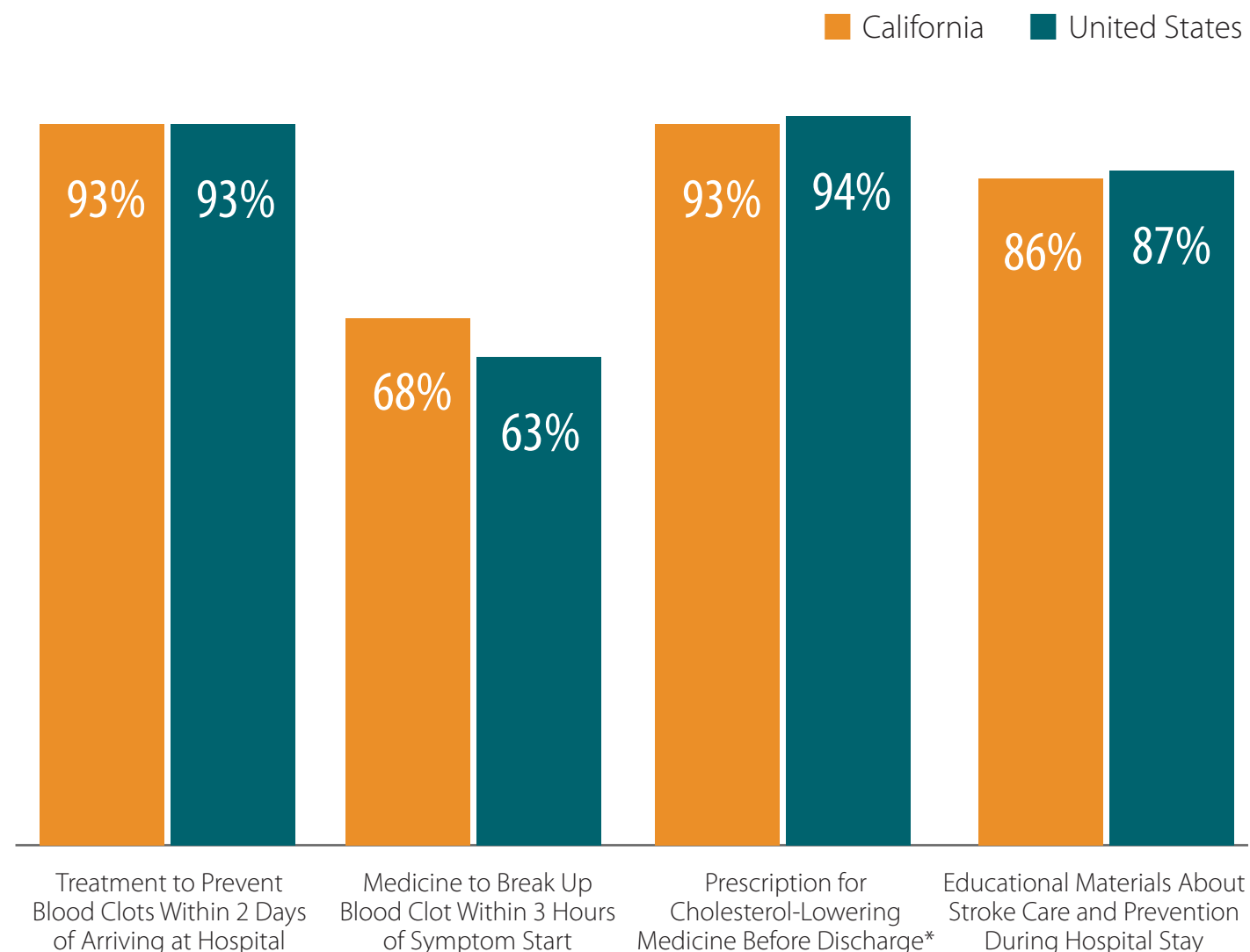
Quality of Care

Heart Health and Stroke

Hospital mortality rates for five common heart conditions and procedures declined in California from 2000 to 2010. Notably, mortality rates for congestive heart failure and open heart surgery patients were halved over this period. The California trend was similar to the national trend over this period (not shown).

Timely and Effective Care Measures, Stroke Patients

California vs. United States, 2013



*Of patients needing medicine to lower cholesterol.

Notes: Data includes ischemic or hemorrhagic stroke patients, and are from January through June 2013. See Appendix C for all stroke measures.

Source: Centers for Medicare & Medicaid Services, Hospital Compare data, accessed April 24, 2014, data.medicare.gov/data/hospital-compare.

Quality of Care

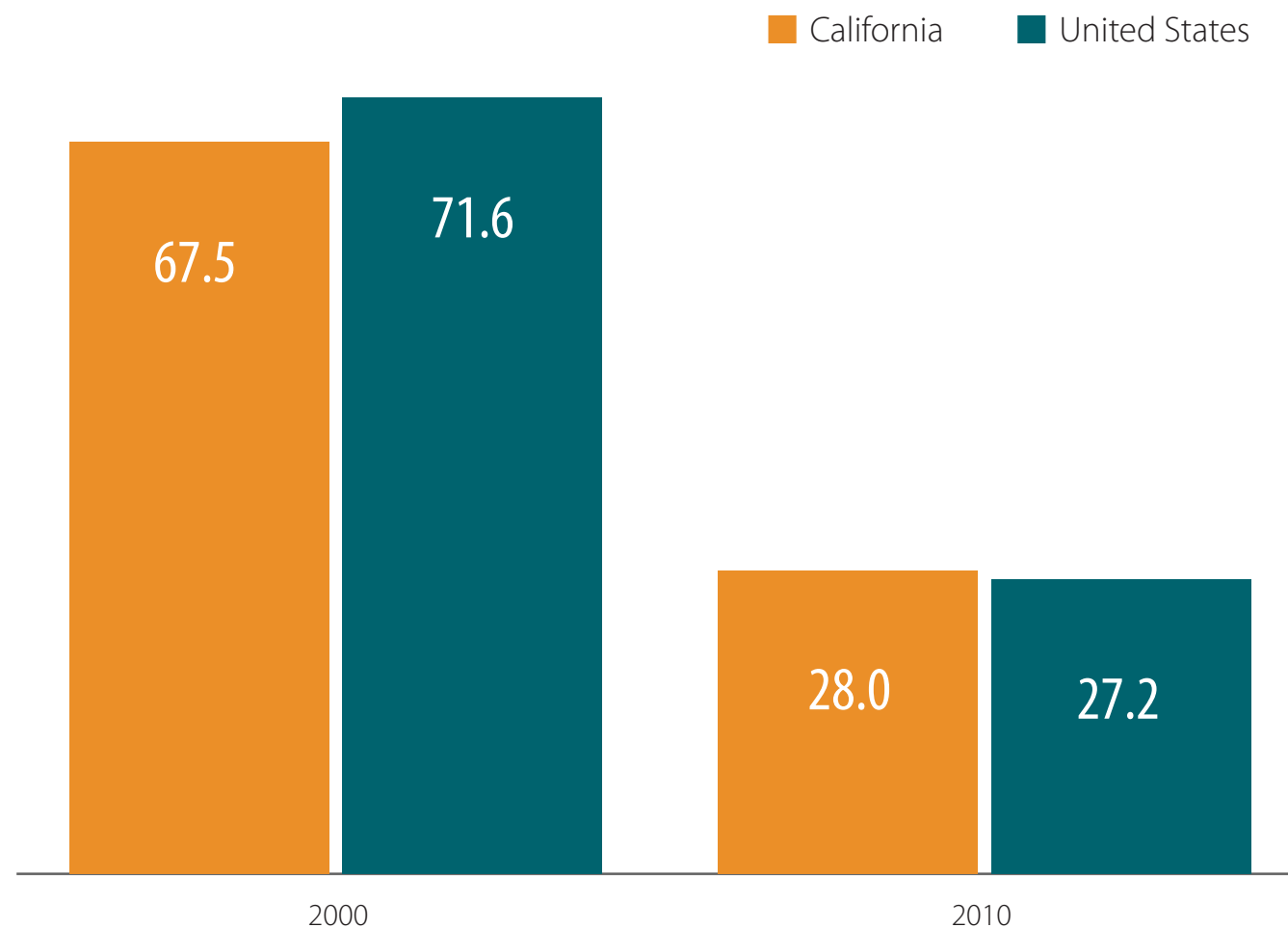
Heart Health and Stroke

In 2014, the federal government began publicly posting recommended care measures for stroke patients treated in hospitals. California performed better than the nation in 2013 on the percentage of stroke patients who received medicine to break up clots within three hours of symptoms. California and the nation achieved similar compliance with the remaining seven measures, including 95% compliance with four measures not shown here.

Hospital Deaths from Pneumonia

California vs. United States, 2000 and 2010

DEATHS PER 1,000 HOSPITAL ADMISSIONS



Notes: Rates are adjusted by age, gender, age-gender interactions, major diagnostic category (MDC), All Patient Refined-Diagnosis Related Group (APR-DRG) risk of mortality score, and transfers into the hospital.

Source: Agency for Healthcare Research and Quality (AHRQ), *National Healthcare Quality Report, 2013*, Data Tables Appendix (not yet published).

Quality of Care

Respiratory Health

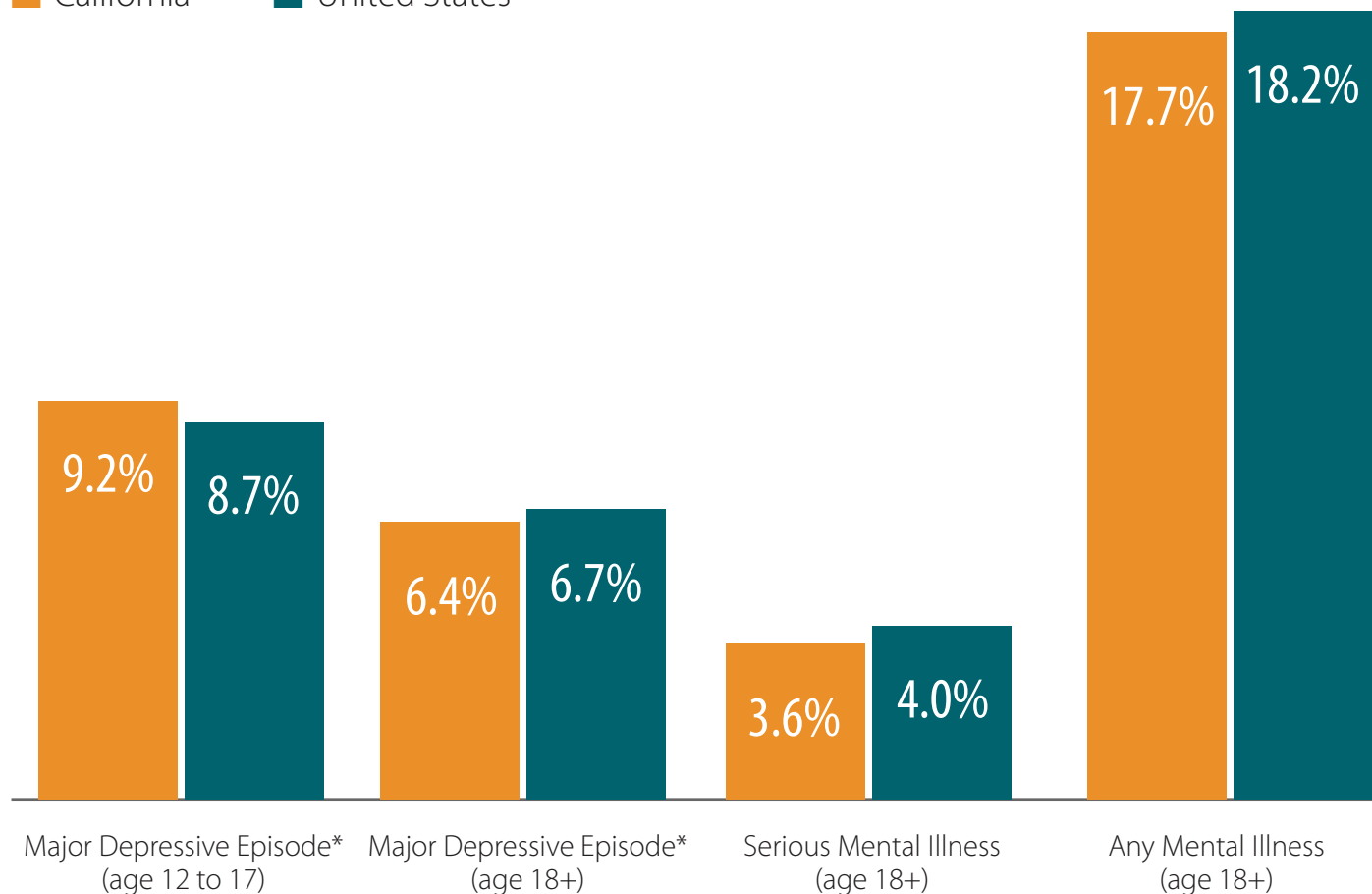
Hospitals in California and the United States decreased their pneumonia mortality rates by more than half from 2000 to 2010.

Prevalence of Select Mental Health Conditions

California vs. United States, 2011 and 2012 combined

California

United States



*In the past year. A Major Depressive Episode is a period of at least two weeks when a person has experienced a depressed mood or lost interest or pleasure in daily activities and had a majority of specified depression symptoms.

Notes: Data are estimated based on the combined 2011 and 2012 National Surveys on Drug Use and Health. Serious Mental Illness is any mental illness that results in substantial impairment carrying out major life activities. Any Mental Illness is the presence of any mental, behavioral, or emotional disorder in the past year that met DSM-IV criteria.

Source: Substance Abuse and Mental Health Services Administration (SAMHSA), "2011-12 NSDUH State Estimates of Substance Use and Mental Disorders," accessed June 6, 2014, www.samhsa.gov.

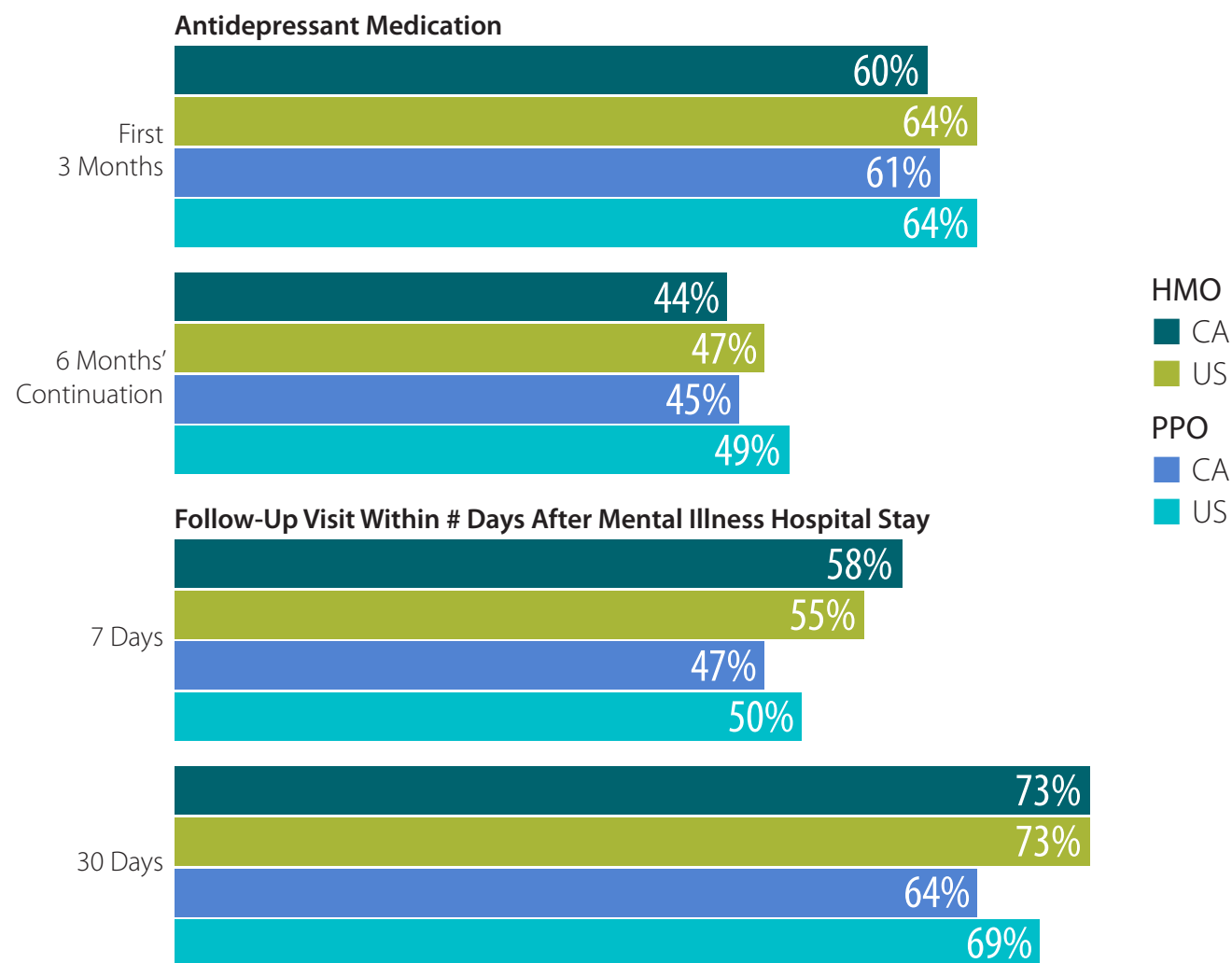
Quality of Care

Mental Health

In 2011-2012, California and the nation had similar levels of reported mental health conditions in adults and adolescents. For those with Major Depressive Episodes, California's rates exceeded the state's Let's Get Healthy California targets for 2022: 7% for age 12 to 17, and 5% for age 18 and up.

Treatment of Mental Health Conditions, by Plan Type

California vs. United States, 2013



Notes: Antidepressant medication measures reflect the percentage of patients who were diagnosed with a new episode of major depression and treated with antidepressant medication and who remained on an antidepressant medication treatment for the time period. Follow-up visit measures reflect the percentage of patients age 6 and older who were hospitalized for mental illness who had an outpatient visit with a mental health provider within the specified timeframe.

Source: State of California Office of the Patient Advocate, OPA Report Cards, accessed October 17, 2014.

Quality of Care

Mental Health

California and US HMOs and PPOs struggled to provide appropriate follow-up care to patients with mental health conditions. In 2013, 58% of California HMO patients and fewer than half of the PPO patients had a follow-up visit within the recommended seven days after a mental illness hospitalization.

Inpatient Care, Psychiatric Hospitals

California vs. United States, 2013

	CALIFORNIA	UNITED STATES
Hours of Physical Restraint Use*	0.23	0.39
Hours of Seclusion Use*	0.22	0.20
Post-Discharge Continuing Care Plan Created	80.4%	73.5%
Post-Discharge Care Plan Provided to Next Level of Care Provider Upon Discharge	66.1%	62.7%

*Total hours over number of psychiatric inpatient days per 1,000 hours.

Note: Data from October 1, 2012, through March 31, 2013.

Quality of Care

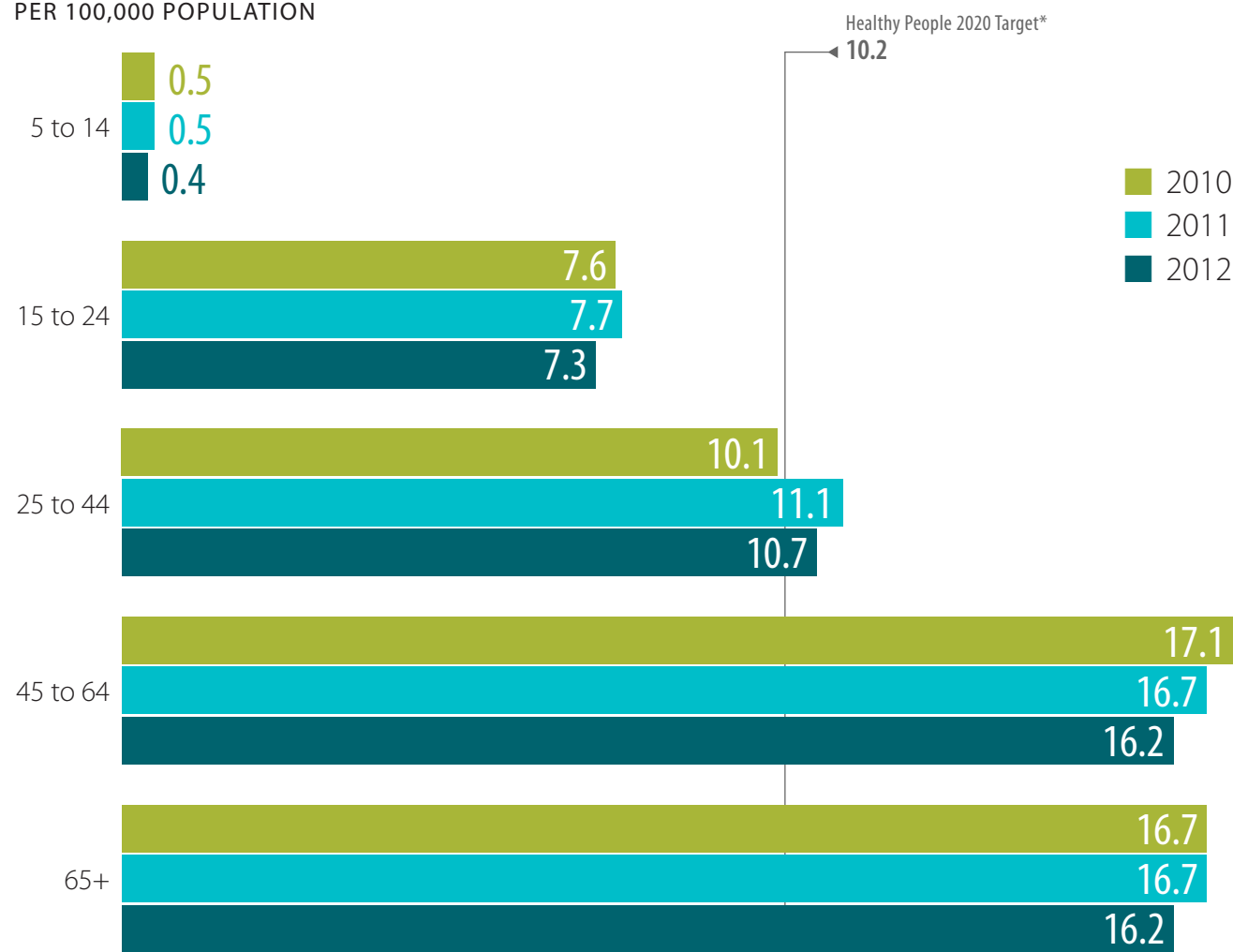
Mental Health

As a whole, California psychiatric hospitals performed better than the nation on post-discharge care plans and also used fewer hours of physical restraints compared to the US in 2013.

Suicide Rates, by Age Group

California, 2010 to 2012

PER 100,000 POPULATION



*The US government's Healthy People 2020 establishes science-based 10-year national objectives for improving the health of all Americans, www.healthypeople.gov.

Note: Rates are not age-adjusted.

Sources: Author calculation based on California Department of Public Health's California Injury Data Online, accessed May 01, 2014, epicenter.cdph.ca.gov; US Census Bureau's American Community Survey, Demographic and Housing Estimates, 2010, 2011, and 2012.

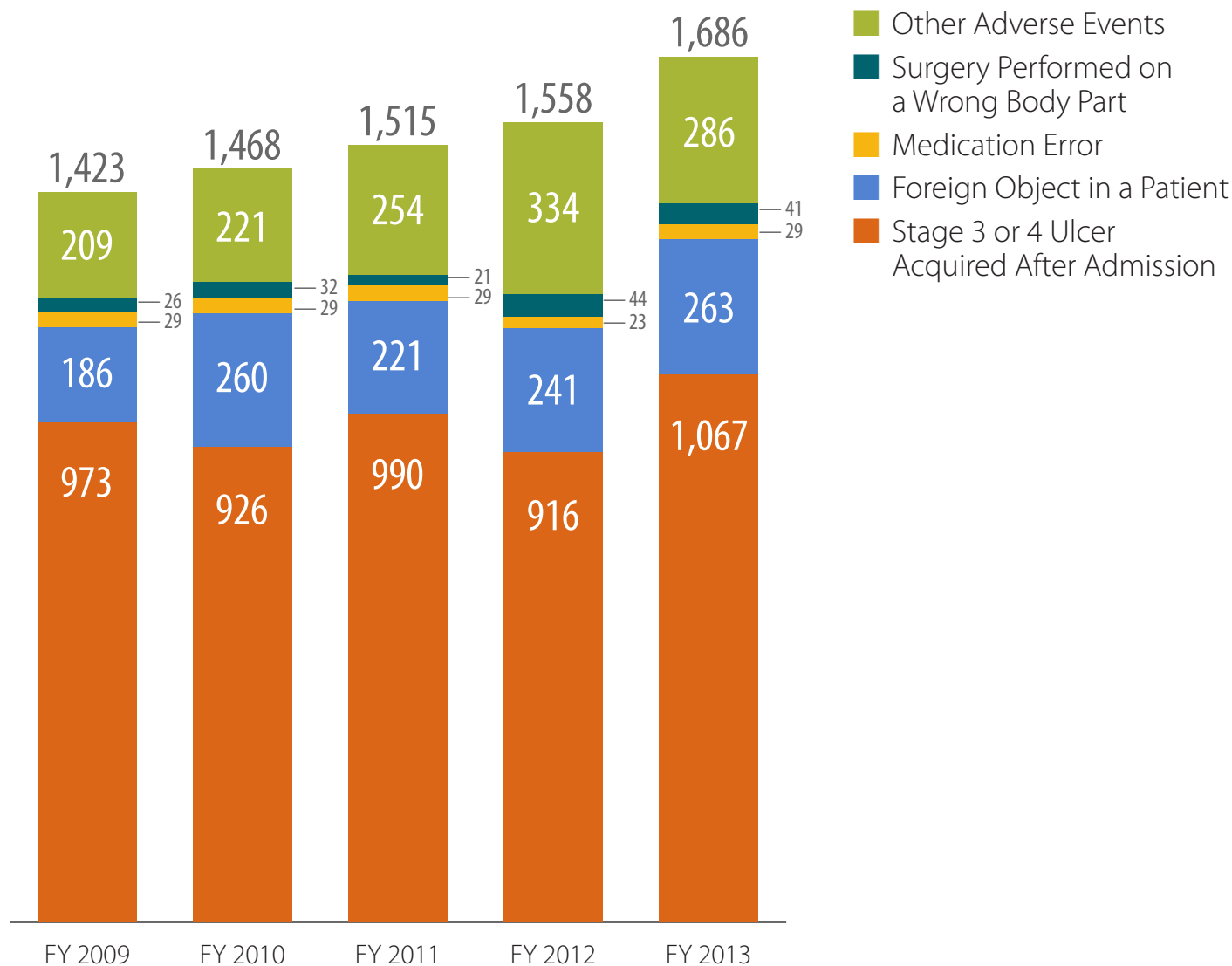
Quality of Care

Mental Health

Suicide rates in California varied by age from 2010 to 2012, with the highest rates of suicide in the 45 to 54 and 65+ populations.

Preventable Adverse Events at Hospitals

California, 2009 to 2013



Note: California fiscal year runs from July 1 to June 30.

Source: California Department of Public Health's Center for Health Care Quality, Licensing and Certification Program, *Annual Fee Report for Fiscal Year 2014-2015*, accessed May 15, 2014, www.cdph.ca.gov.

Quality of Care

Patient Safety

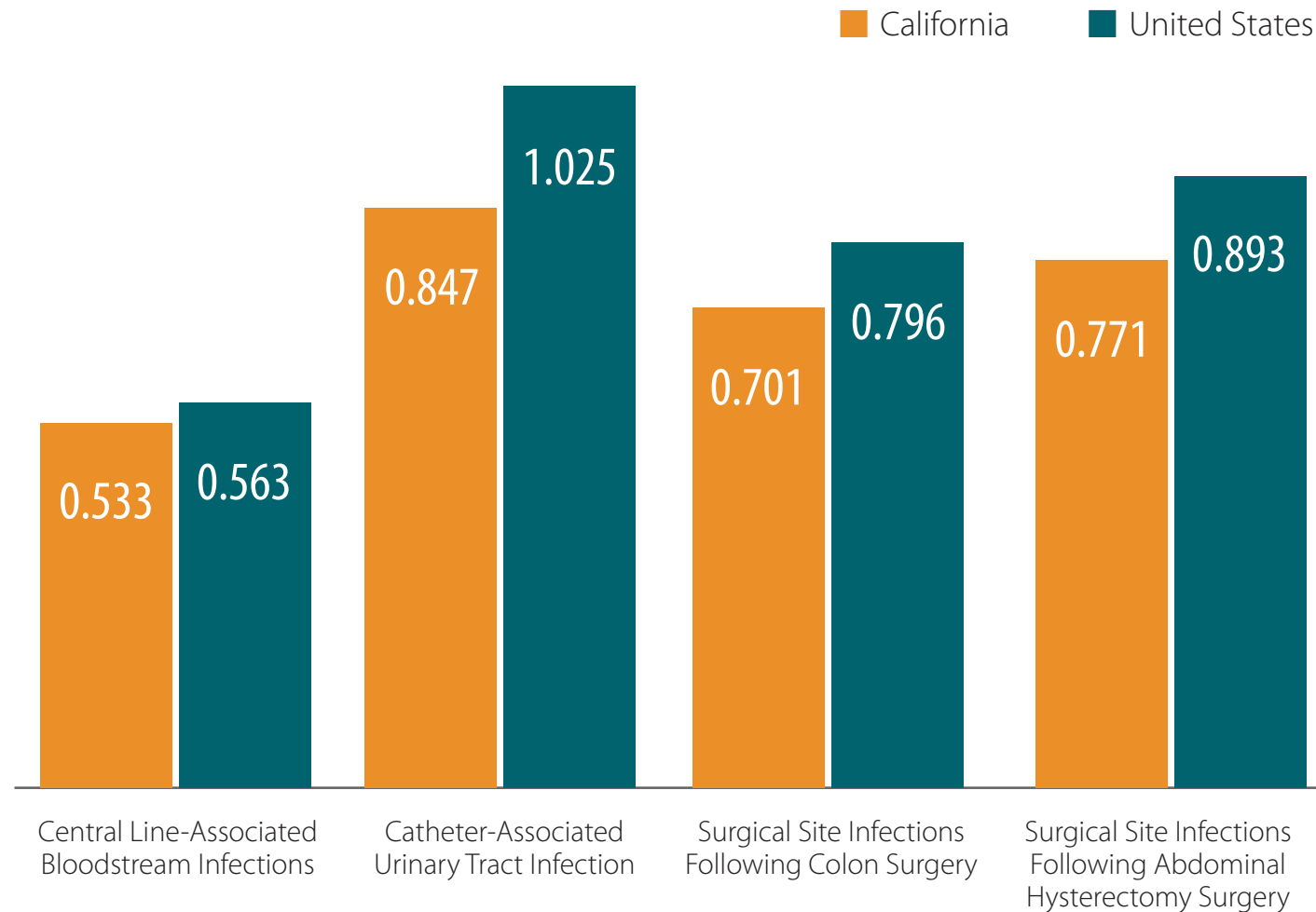
Preventable adverse events reported at California hospitals increased each year from 2009 to 2013.

Pressure ulcers were the most common adverse event reported each year, accounting for over half of all events.

Health Care-Associated Infections

California vs. United States, 2012

STANDARDIZED INFECTION RATIO (SIR)



Note: The SIR is a measure that compares the actual number of health care-associated infections with the predicted number based on the baseline US experience, adjusting for several risk factors that are most closely associated with differences in infection rates. An SIR of 1 indicates that the number of observed infections is no different from the predicted number of infections. Lower numbers are better.

Source: US Centers for Disease Control and Prevention, *National and State Healthcare-Associated Infections Progress Report*, March 2014, www.cdc.gov/hai/progress-report.

Quality of Care

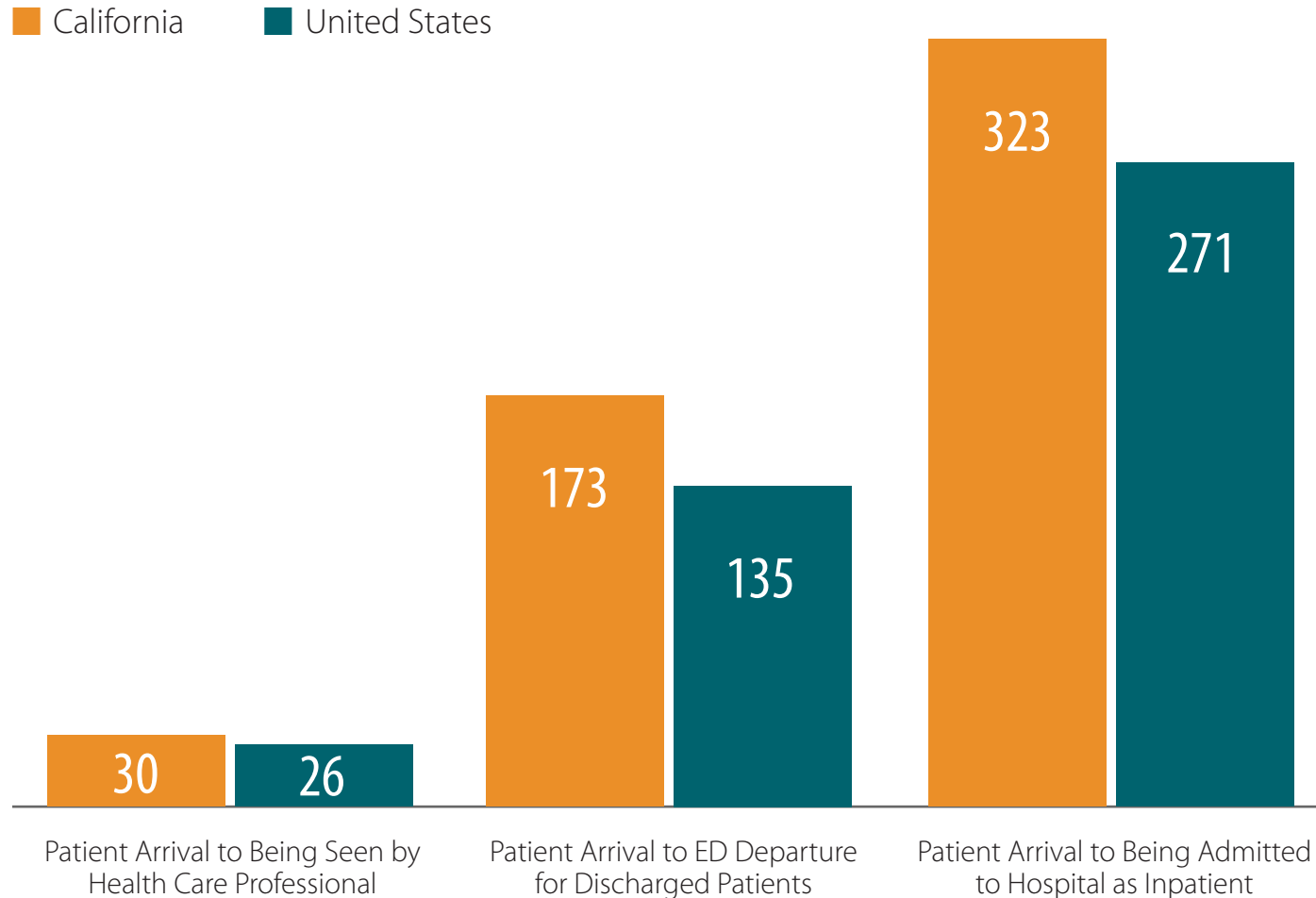
Patient Safety

Health care-associated infections (HAIs) are serious patient safety problems that are often preventable. In 2012, California performed better than the nation on four HAIs. California's performance on central line-associated bloodstream infections, one of the most severe HAIs, has improved since the CDC started publicly reporting these data in 2010.

Emergency Department Timeliness of Care

California vs. United States, 2013

AVERAGE TIME, IN MINUTES



Note: Data are from July through June of stated year.

Source: Centers for Medicare & Medicaid Services, Hospital Compare data, accessed April 24, 2014, data.medicare.gov/data/hospital-compare.

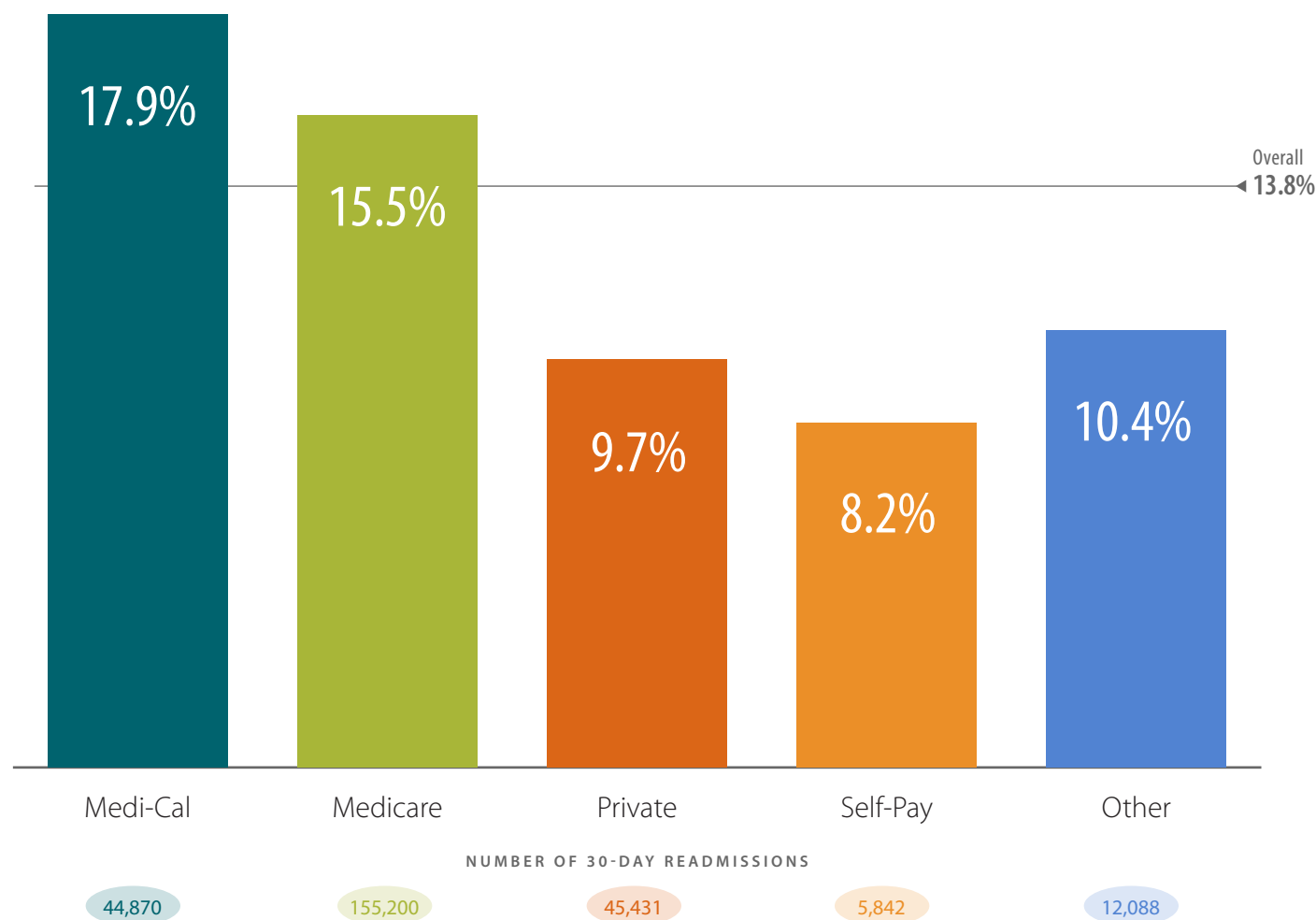
Quality of Care

Patient Safety

Timely care in the emergency department (ED) is an important measure of quality, as delays can increase risks for patients with serious illness or injuries. Though time between arrival in the ED to time being seen was comparable in California and the US in 2013, overall treatment times, whether the patient was admitted, or discharged directly from the ED, were much longer in California.

Hospital 30-Day Readmission Rate

by Payer, California, 2012



Notes: Rate is unadjusted all-cause unplanned 30-day readmission rate and excludes patients with hospital-to-hospital transfers. Payer is expected payer. Other includes: worker's compensation, county indigent, other government indigent, and sources not reported.

Source: State of California, Office of Statewide Health Planning and Development, special data request, May 9, 2014.

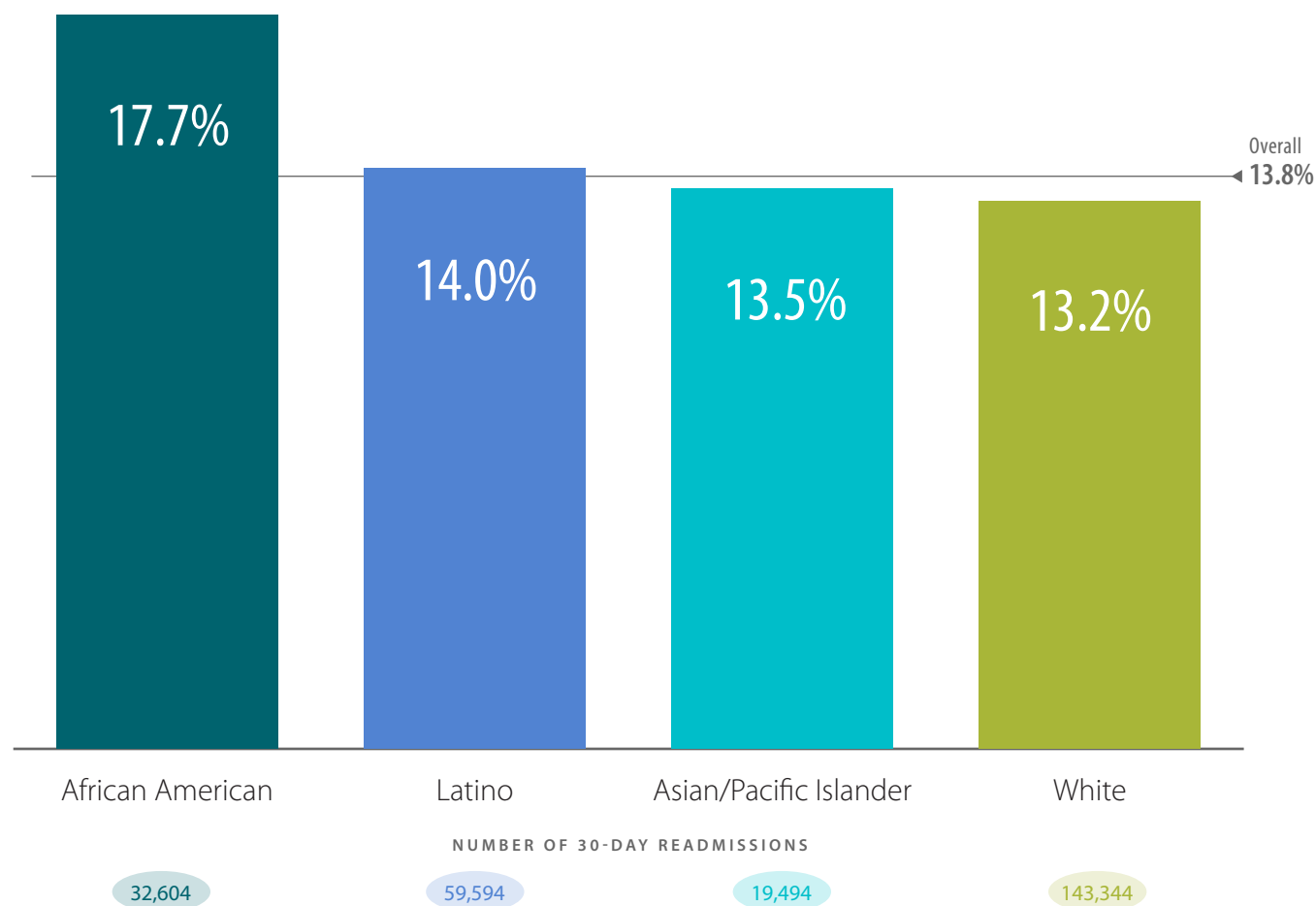
Quality of Care

Patient Safety

In California, all-cause hospital readmission rates varied by payer. Medi-Cal had the highest 30-day readmission rate at nearly 18% in 2012, while the readmission rate for self-pay patients was half as high, at 8%. Some portion of hospital readmissions may be prevented by better discharge planning and coordination of care.

Hospital Readmission Rate, by Race/Ethnicity

California, 2012



Quality of Care

Patient Safety

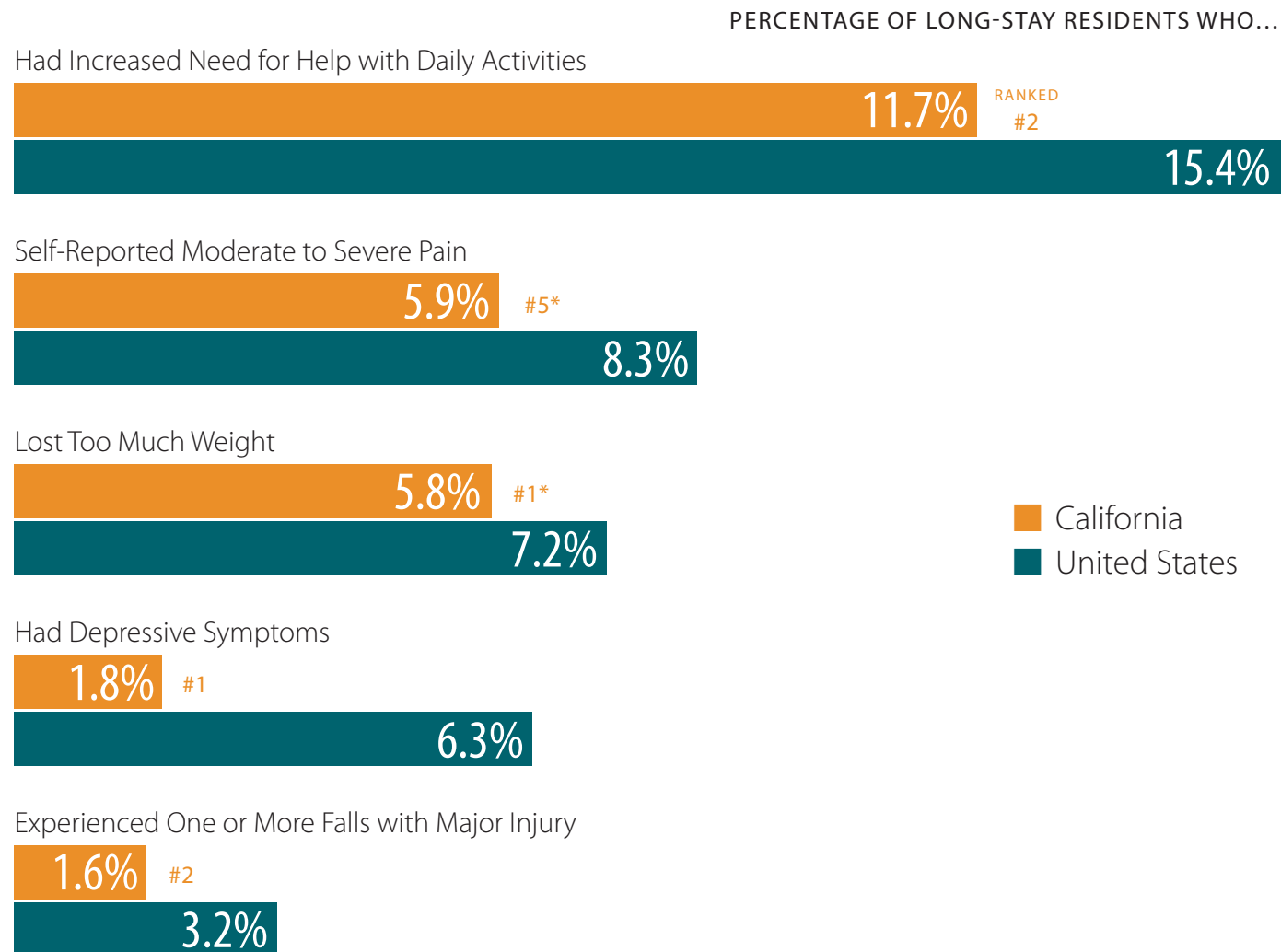
Hospital readmission rates for 2012 varied by the race/ethnicity of patients, from a high of nearly 18% for African American patients to a low of 13% for White patients.

Note: Rate is unadjusted all-cause unplanned 30-day readmission rate and excludes patients with hospital-to-hospital transfers.

Source: State of California's Office of Statewide Health Planning and Development, special data request, May 9, 2014.

Nursing Home Quality Measures with Good Performance

California vs. United States, 2013



*California was tied with one or more states for the rank.

Notes: Data from April through December 2013. Rank is out of 50 states and the District of Columbia.

Source: Centers for Medicare & Medicaid Services, Nursing Home Compare, accessed April 25, 2014, data.medicare.gov/nursing-home-compare.

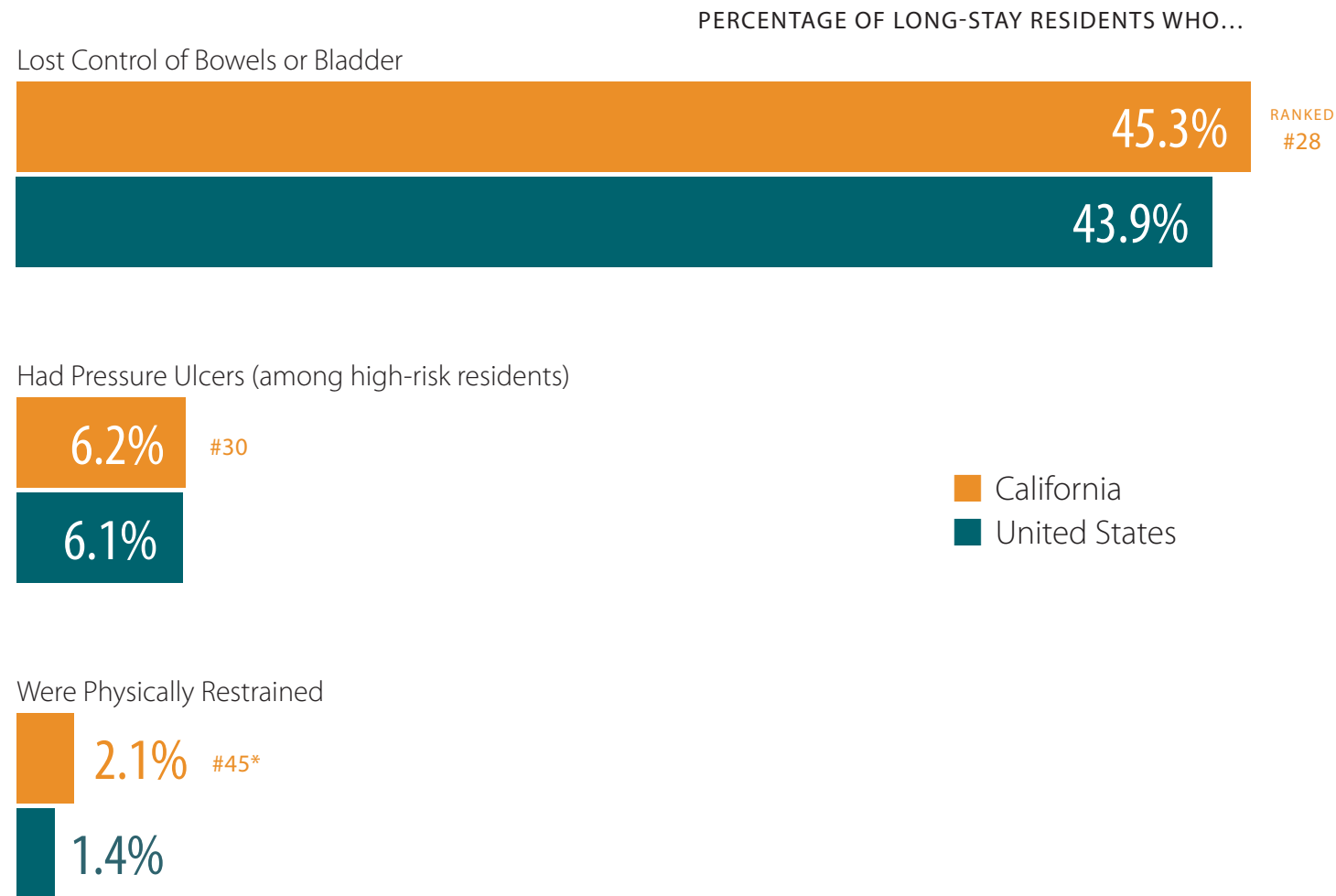
Quality of Care

Nursing Homes

California nursing homes compared well to the nation on a number of measures for which a lower percentage indicates better quality. In 2013, California ranked first in the nation with the lowest percentages of nursing home residents who had depressive symptoms or who lost too much weight.

Nursing Home Quality Measures with Poor Performance

California vs. United States, 2013



Quality of Care

Nursing Homes

California nursing homes performed among the worst of all states on the percentage of patients who were physically restrained in 2013. The use of physical restraints can cause significant medical issues in nursing home patients, including pressure sores, weakness, and the inability to use the bathroom independently.

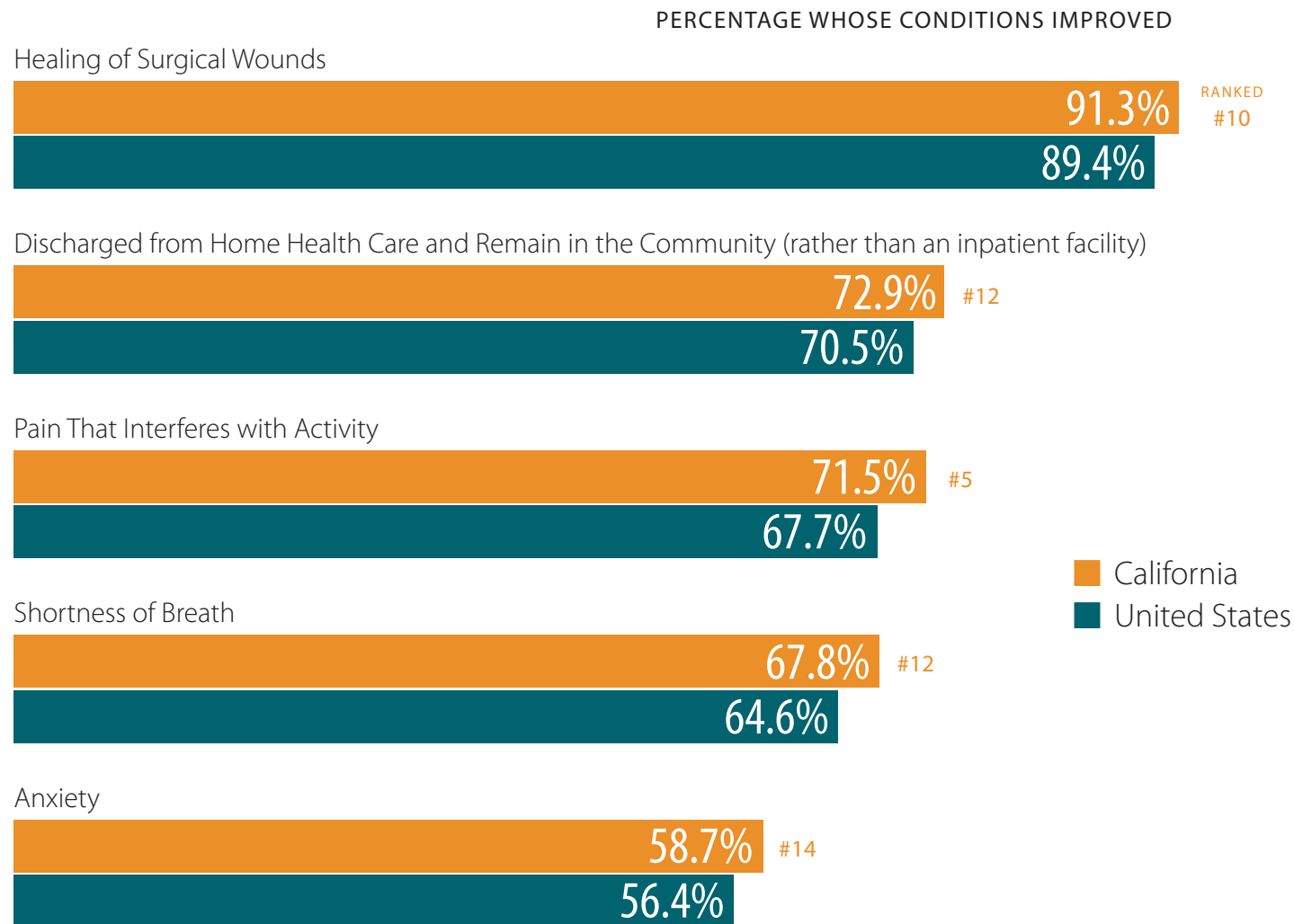
*California was tied with one other state for the rank.

Notes: Data from April through December 2013. Rank is out of 50 states and the District of Columbia.

Source: Centers for Medicare & Medicaid Services, Nursing Home Compare, accessed April 25, 2014, data.medicare.gov/nursing-home-compare.

Home Health Measures with Good Performance

California vs. United States, 2013



Quality of Care

Home Health

California home health agencies performed better than the nation on a variety of measures related to improvements in physical and mental health status. A majority of patients showed improvement in surgical wound healing, pain that interferes with activity, shortness of breath, and anxiety. In addition, California did a better job of discharging patients to the community.

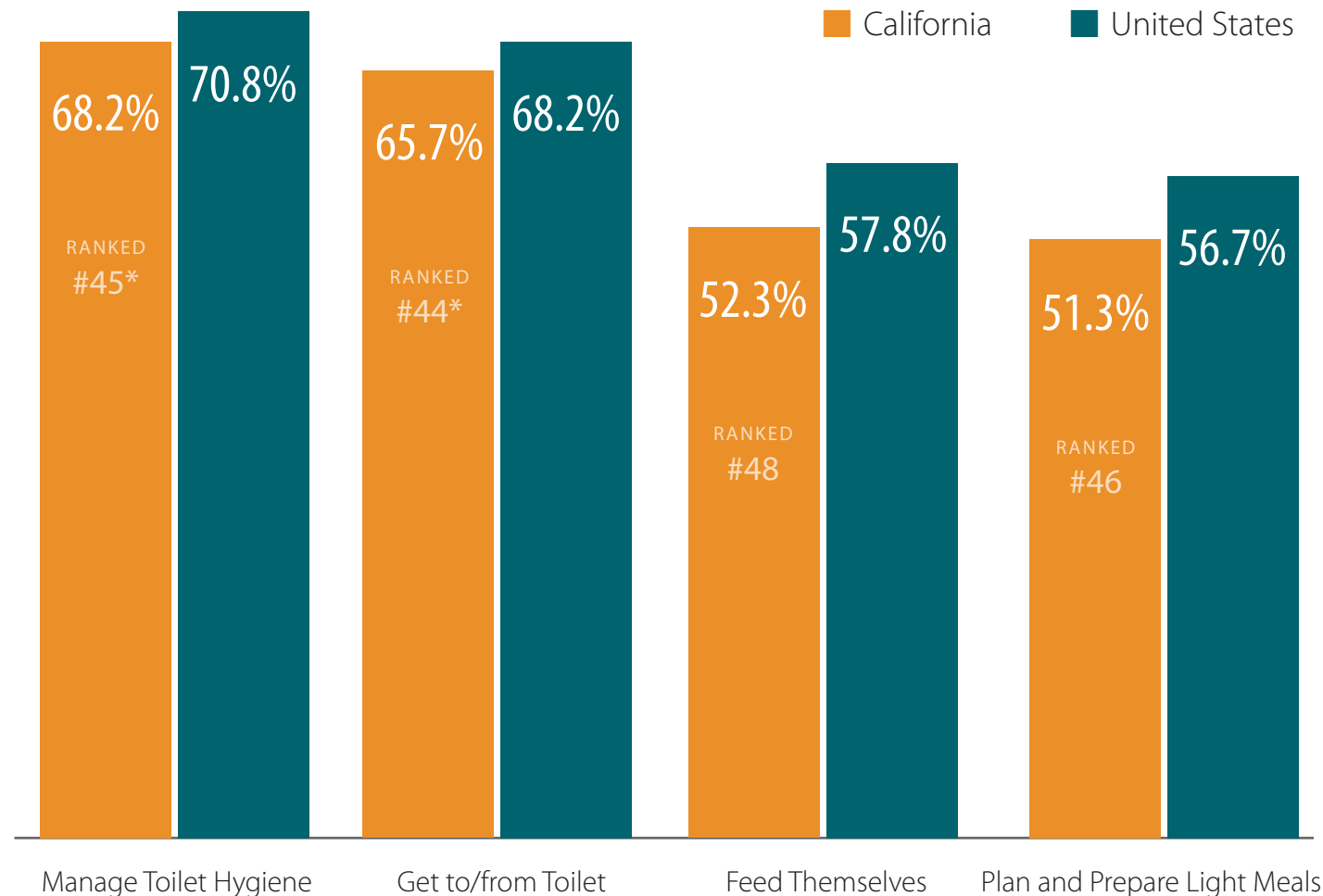
Notes: Data from calendar year 2013. Rank is out of 50 states and the District of Columbia.

Source: Centers for Medicare & Medicaid Services, "Oasis C Based Home Health Agency Patient Outcome, Process, and Potentially Avoidable Event Reports," accessed May 21, 2014, www.cms.gov.

Home Health Measures with Poor Performance

California vs. United States, 2013

PERCENTAGE WITH IMPROVED ABILITY TO...



*California was tied with another state for the rank.

Notes: Data from calendar year 2013. Rank is out of 50 states and the District of Columbia.

Source: Centers for Medicare & Medicaid Services, "Oasis C Based Home Health Agency Patient Outcome, Process, and Potentially Avoidable Event Reports," accessed May 21, 2014, www.cms.gov.

Quality of Care

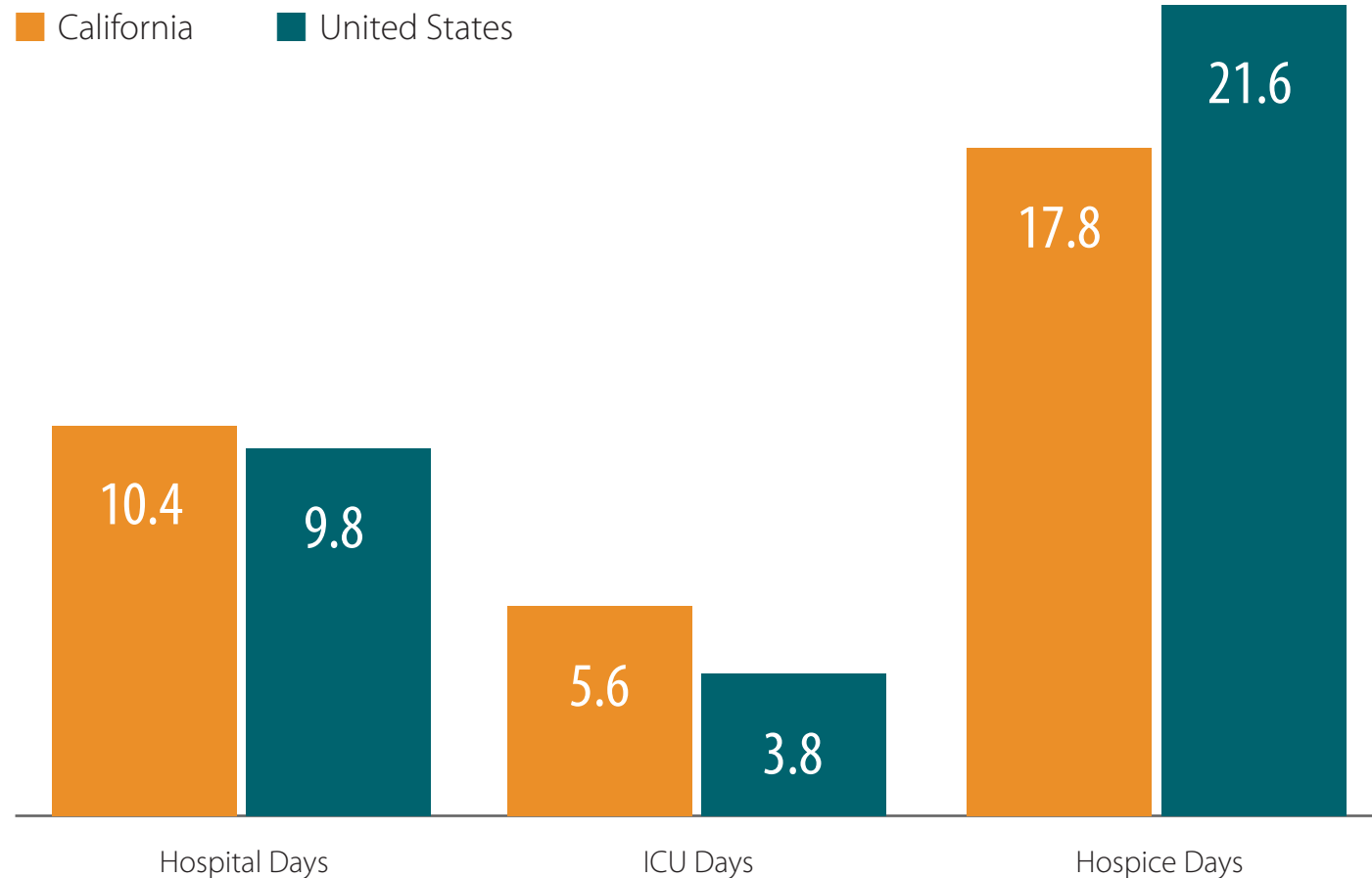
Home Health

In 2013, California home health agencies performed among the worst of all states on four measures addressing improvements in activities of daily living, including the patients' ability to feed themselves, prepare light meals, and manage toilet hygiene.

End-of-Life Care, Chronically Ill Medicare Patients

California vs. United States, 2011

DAYS PER DECEDENT DURING LAST SIX MONTHS OF LIFE



Notes: Data include Medicare beneficiaries with one of nine chronic conditions who died during the measurement year. Population is restricted to those whose age at death was 67 to 99 and to those with full Part A and Part B entitlement and no HMO enrollment during the measurement period. Rates adjusted for age, sex, race, primary chronic condition, and the presence of more than one chronic condition. California tied with other states for hospital days.

Sources: California HealthCare Foundation, *End-of-Life Care in California: You Don't Always Get What You Want*, April 2013, www.chcf.org; The Dartmouth Atlas of Health Care, special data request, July 9, 2014.

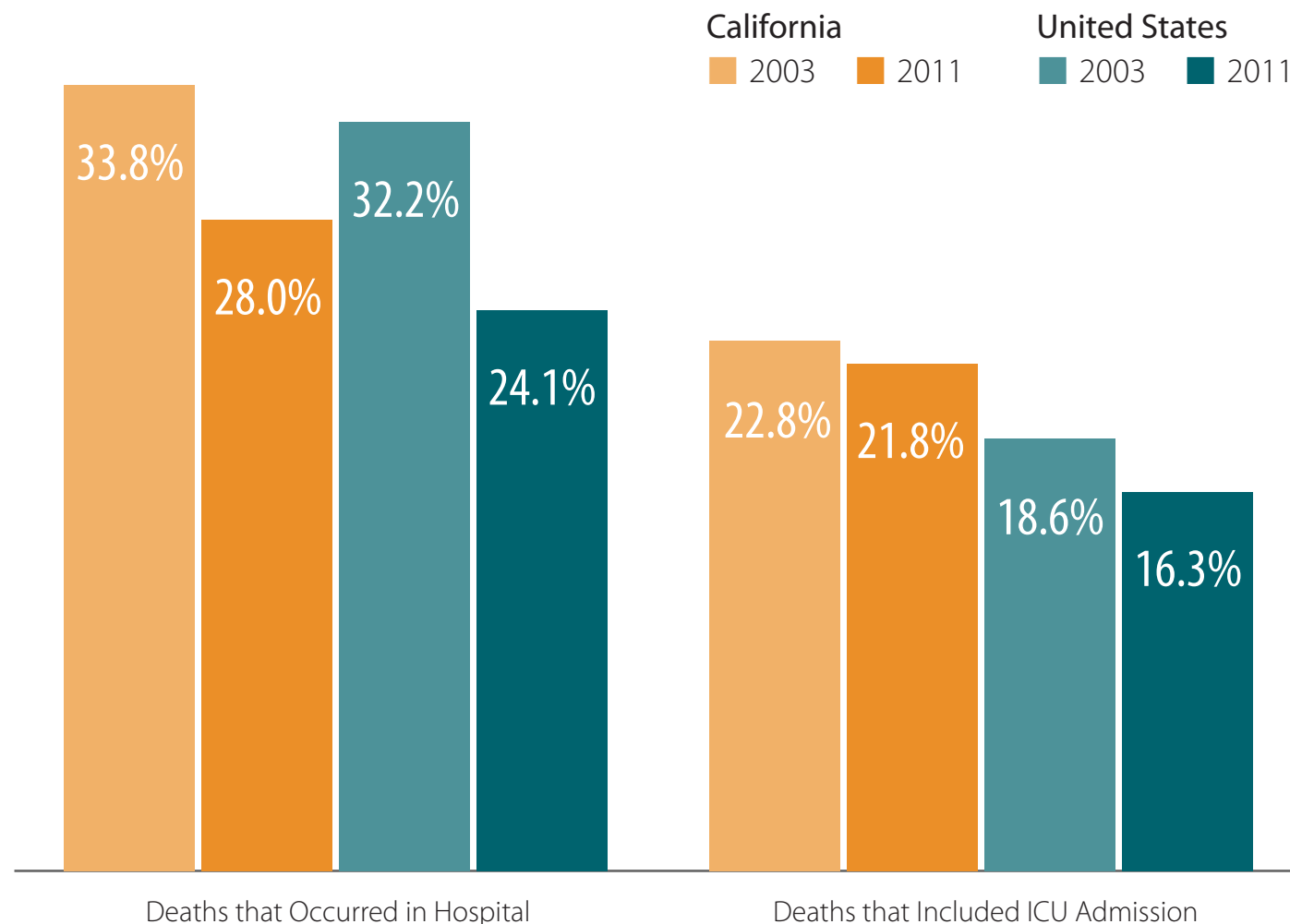
Quality of Care

End of Life

Compared to the nation, California provided relatively intensive care to chronically ill Medicare patients at the end of life. In 2011, California patients spent nearly two days longer in the ICU than patients nationally. At the same time, California patients spent nearly four fewer days in hospice than their national counterparts. Research indicates that a majority of patients would prefer low-intensity care at the end of life.

Deaths Occurring in Hospital, Medicare Patients

California vs. United States, 2003 and 2011



Notes: Data includes Medicare beneficiaries with one of nine chronic conditions who died during the measurement year. Population is restricted to those whose age at death was 67 to 99 and to those with full Part A and Part B entitlement and no HMO enrollment during the measurement period. Rates adjusted for age, sex, race, primary chronic condition, and the presence of more than one chronic condition.

Sources: California HealthCare Foundation, *End-of-Life Care in California: You Don't Always Get What You Want*, April 2013, www.chcf.org; The Dartmouth Atlas of Health Care, special data request, July 9, 2014.

Quality of Care

End of Life

In 2011, 28% of California's Medicare beneficiaries with chronic conditions died in the hospital compared to 24% for the US.

The difference between the intensity of care at the end of life in California and the US was even more striking in the case of Medicare beneficiaries who died in the hospital during a stay that included an ICU admission. California's rate of nearly 22% was far above the Let's Get Healthy California 2022 target of 17%.*

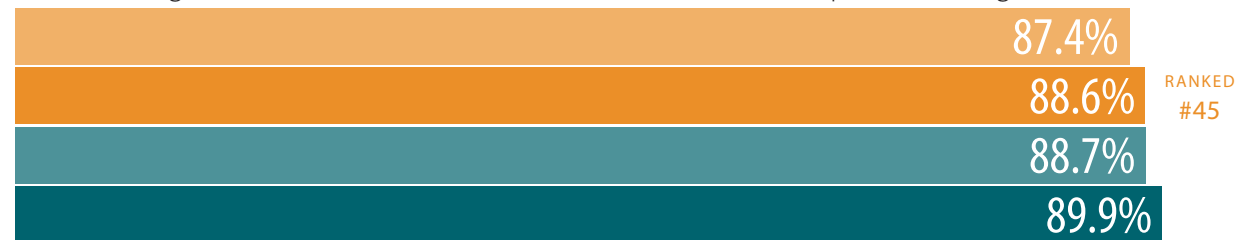
*Established by Governor Brown, the Let's Get Healthy California task force developed a blueprint to achieve the triple aim of better health, better care, and lower costs. The task force established 10-year improvement targets for 39 health care indicators.

Provision of Hospice Care

California vs. United States, 2007 and 2012

PERCENTAGE OF HOSPICE PATIENTS...

Whose Caregiver Perceived That the Patient Was Referred to Hospice at the Right Time



Who Received the Right Amount of Medicine for Pain Management



Who Received Care Consistent with Stated End-of-Life Wishes



*California was tied with other states for the rank.

Notes: Data are based on an annual post-death survey of family caregivers concerning hospice care quality. Rank is out of 50 states and the District of Columbia.

Source: Agency for Healthcare Research and Quality (AHRQ), *National Healthcare Quality Report, 2013*, Data Tables Appendix (not yet published).

Quality of Care

End of Life

According to family caregivers, California hospices performed worse in 2012 than their national peers on three measures related to hospice care quality. California ranked among the bottom 10 states on patients who were referred to hospice at the right time and on patients who received the right amount of medicine for pain management.

Data Resources

Agency for Healthcare Research and Quality

National Healthcare Quality and Disparities Reports, 2013

www.ahrq.gov

Annual report published by federal government with data on large selection of quality metrics; associated state profiles provide data for each state.

California Department of Public Health Maternal, Child, and Adolescent Health Program

www.cdph.ca.gov/programs/MCAH

Data and reports on maternal mortality, infant mortality, and other childbirth-related quality indicators.

California Office of Statewide Health Planning and Development (OSHPD)

www.oshpd.ca.gov

Publishes data on various quality indicators for California hospitals.

Centers for Disease Control and Prevention (CDC)

Behavioral Risk Factor Surveillance System Survey Data

apps.nccd.cdc.gov/brfss

National Center for Health Statistics

www.cdc.gov/nchs

Publishes annual reports on births and deaths, as well as other data-based reports.

National Center for Health Statistics: VitalStats

www.cdc.gov/nchs/vitalstats.htm

National Immunization Survey

www.cdc.gov/vaccines/imz-managers/coverage/nis/child

Publishes data on child immunization rates, updated quarterly.

United States Cancer Statistics

apps.nccd.cdc.gov/uscs

Publishes data on cancer incidence and mortality at state and national level.

Centers for Medicare & Medicaid Services

Medicare Data

data.medicare.gov

Hospital Compare

www.medicare.gov/hospitalcompare

Nursing Home Compare

www.medicare.gov/nursinghomecompare

OASIS C Based Home Health Agency Patient Outcome and Case Mix Reports

www.cms.gov

Set of data providing 60 measures of home health quality with state and national averages, updated quarterly. Data are from calendar year 2013.

The Dartmouth Atlas of Health Care

www.dartmouthatlas.org

Publishes data on end-of-life care for Medicare beneficiaries.

Department of Health and Human Services Centers for Disease Control and Prevention

United States Cancer Statistics

apps.nccd.cdc.gov/uscs

Publishes data on cancer incidence and mortality at state and national level.

UCLA Center for Health Policy Center

California Health Interview Survey

www.healthpolicy.ucla.edu/chis

Health survey of Californians conducted every two years.

Quality of Care

Data Resources

ABOUT THIS SERIES

The California Health Care Almanac is an online clearinghouse for data and analysis examining the state's health care system. It focuses on issues of quality, affordability, insurance coverage and the uninsured, and the financial health of the system with the goal of supporting thoughtful planning and effective decisionmaking. Learn more at www.chcf.org/almanac.

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Appendix A: Timely and Effective Care Measures for Surgical Patients California vs. United States, 2008 and 2013

	CALIFORNIA		UNITED STATES	
	2008	2013	2008	2013
Percentage of Outpatient Surgery Patients				
Received antibiotic at right time (within one hour before surgery)	n/a	97%	n/a	98%
Given right kind of antibiotic	n/a	97%	n/a	98%
Percentage of Inpatient Surgery Patients				
Kept on beta blockers before and after surgery (of patients on beta blockers)	n/a	97%	n/a	98%
Received antibiotic at right time (within one hour before surgery)	86%	99%	86%	99%
Given right kind of antibiotic	93%	99%	92%	99%
Antibiotics stopped within 24 hours*	82%	97%	84%	98%
Blood glucose kept under good control after surgery [†]	86%	96%	85%	97%
Urinary catheters removed on first or second day after surgery	n/a	97%	n/a	97%
Actively warmed in the operating room or body temperature was near normal by the end of surgery	n/a	100%	n/a	100%
Received treatment at right time (within 24 hours before or after surgery) to help prevent blood clots	76%	98%	85%	98%

*Taking preventive antibiotics for more than 24 hours after routine surgery is usually unnecessary.

[†]Heart surgery patients only.

Note: Data are from July of previous year through June of stated year.

Source: Centers for Medicare & Medicaid Services, Hospital Compare data, accessed April 24, 2014, data.medicare.gov/data/hospital-compare.

Appendix B: Timely and Effective Care Measures for Heart Patients California vs. United States, 2005 and 2013

	CALIFORNIA		UNITED STATES	
	2005	2013	2005	2013
Outpatients with Chest Pain or Possible Heart Attack				
Average time before patient needing specialized care was transferred	n/a	62 minutes	n/a	59 minutes
Average time before patient received electrocardiogram (ECG)	n/a	9 minutes	n/a	7 minutes
Percentage who got drugs to break up blood clots within 30 minutes of arrival	n/a	58%	n/a	57%
Percentage who got aspirin within 24 hours of arrival	n/a	97%	n/a	96%
Percentage of Heart Attack Inpatients				
Prescribed aspirin at discharge	89%	99%	88%	99%
Given percutaneous coronary intervention (PCI) Within 90 minutes*	58%	95%	62%	96%
Given anti-clotting therapy within 30 minutes†	32%	77%	30%	58%
Given prescription for a statin at discharge	n/a	98%	n/a	98%
Percentage of Heart Failure Inpatients				
Prescribed an ACE inhibitor or angiotensin receptor blocker at discharge	81%	97%	80%	97%
Evaluation of left ventricular systolic (LVS) function	82%	99%	80%	99%
Given discharge instructions	45%	94%	50%	94%

*2005 figures reflect percentage of patients given PCI within 120 minutes.

†2005 figures reflect percentage of patients given thrombolytic medication.

Notes: Data are from July of previous year through June of stated year. ACE is angiotensin converting enzyme; PCI is commonly known as angioplasty.

Source: Centers for Medicare & Medicaid Services, Hospital Compare data, accessed April 24, 2014, data.medicare.gov/data/hospital-compare.

Appendix C: Timely and Effective Care Measures for Stroke Patients California vs. United States, 2013

	CALIFORNIA	UNITED STATES
Percentage of Stroke Patients		
Received prescription for medicine known to prevent complications caused by blood clots before discharge	98%	99%
Received medicine known to prevent complications caused by blood clots within two days of arriving at hospital	98%	98%
Evaluated for rehabilitation services*	97%	97%
Given prescription for blood thinner at discharge (for patients with a type of irregular heartbeat)	95%	95%
Received prescription for cholesterol-lowering medicine before discharge†	93%	94%
Received treatment to prevent blood clots within two days of arriving at hospital*	93%	93%
Received educational materials about stroke care and prevention during hospital stay*	86%	87%
Received medicine to break up blood clot within three hours of symptom start	68%	63%

*Includes hemorrhagic stroke patients.

†Of patients needing medicine to lower cholesterol.

Note: Data are from July of previous year through June of stated year.

Source: Centers for Medicare & Medicaid Services, Hospital Compare data, accessed April 24, 2014, data.medicare.gov/data/hospital-compare.

Appendix D: Timely and Effective Care Measures for Respiratory Care Patients California vs. United States, 2005 and 2013

	CALIFORNIA		UNITED STATES	
	2005	2013	2005	2013
Percentage of Pneumonia Inpatients				
Had blood cultures run before given antibiotics	82%	97%	82%	98%
Given most appropriate antibiotic	76%	96%	77%	95%
Percentage of Inpatients				
Assessed and given pneumonia vaccination	n/a	90%	n/a	91%
Assessed and given flu vaccination	n/a	89%	n/a	90%

Note: Data are from July of previous year through June of stated year.

Source: Centers for Medicare & Medicaid Services, Hospital Compare data, accessed April 24, 2014, data.medicare.gov/data/hospital-compare.