CALIFORNIA
HEALTH CARE ALMANAC

California Emergency Departments: Use Grows as Coverage Expands

AUGUST 2018

Executive Summary

California's emergency departments (EDs) provide a critical source of health care to people experiencing acute medical conditions or suffering from trauma and injury, and are expected to treat all patients regardless of their ability to pay. They also provide an important entry point for inpatient hospital care. In 2016, 334 acute care hospitals in California operated EDs. The number of EDs has remained relatively stable since 2006, while the number of individual treatment stations within them has grown by 1,802 to reach 7,889 in 2016. California's EDs handled 14.6 million visits in 2016, an increase of 44% since 2006.

California's Emergency Departments: Use Grows as Coverage Expands looks at the most recent data on supply, patient visits, and the quality of emergency departments in California, as well as trends from 2006 to 2016. Long ED stays may be a sign that the ED is overcrowded or understaffed, or that there is a lack of available inpatient beds.

KEY FINDINGS INCLUDE:

- The supply of ED treatment stations increased in regions throughout the state, even those that experienced a decrease in emergency departments. Use of EDs varied widely across California, from a low of 311 visits per 1,000 residents in Orange County to a high of 516 in Northern and Sierra Counties.
- Medi-Cal was the expected payer for 43% of all ED visits in 2016, compared to 26% for private payers and 21% for Medicare.
- Approximately one in every eight ED visits resulted in a hospital admission. Still, there were many serious conditions among patients who were not admitted, including one in ten visits classified as severe and posing immediate threat to life or physical function.
- California ED patients who were sent home spent nearly three hours in the ED, 24 minutes longer than the median stay nationwide. California ED patients who were admitted spent over five and a half hours in the ED, an hour longer than the national median.

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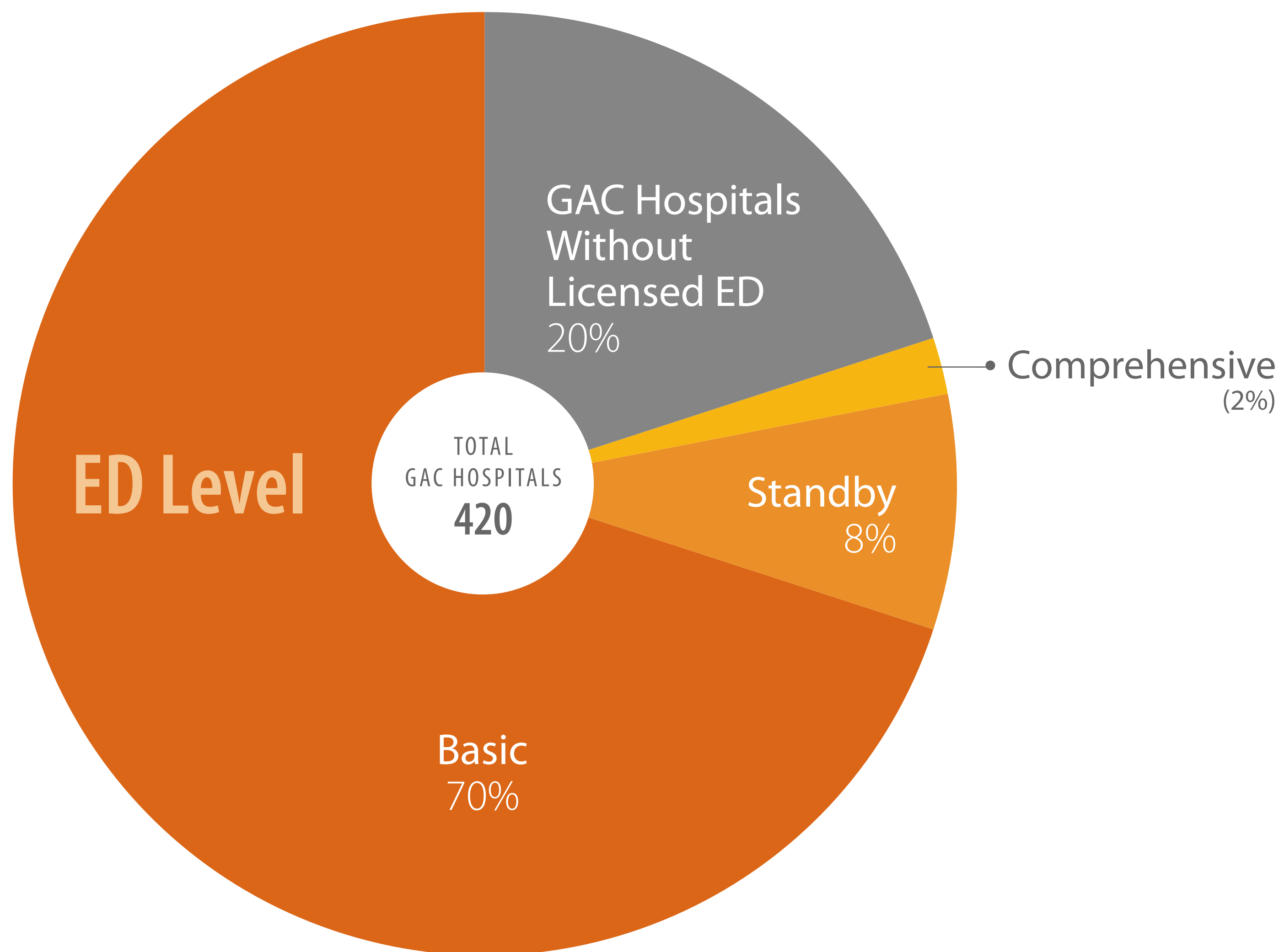
General Acute Care Hospitals, by ED Level
California, 2016



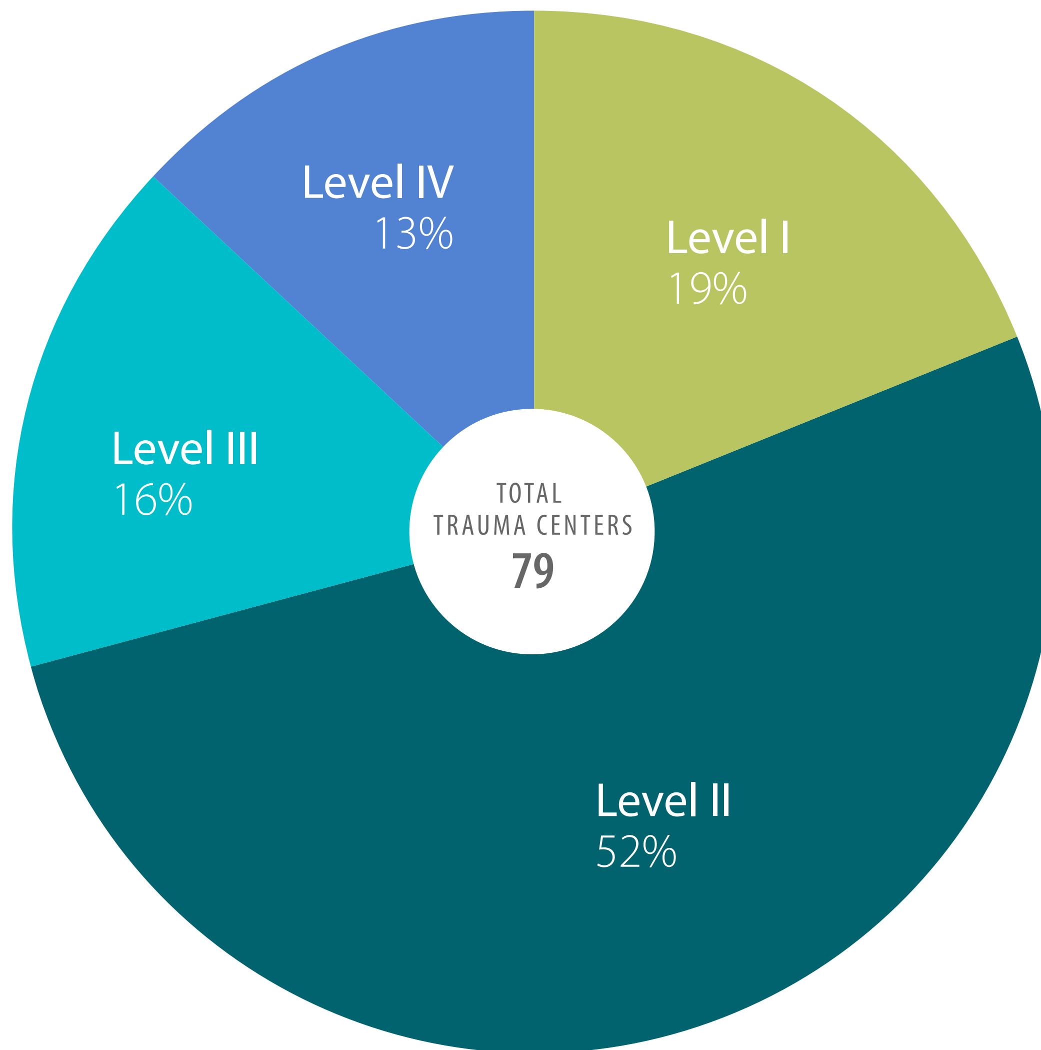
In 2016, 80% of California's general acute care (GAC) hospitals operated a licensed emergency department (ED). EDs provide different levels of service. The majority are licensed at the basic level.

Notes: *Basic* level emergency departments (EDs) have an ED physician on staff 24 hours a day, year-round. *Comprehensive* level EDs have an ED physician on staff 24 hours a day year-round, as well as other physician specialties (including, but not limited to, thoracic surgeons, neurosurgeons, orthopedic surgeons, and pediatricians) 24 hours a day year-round. The hospital must also provide burn, acute dialysis, and cardiovascular surgery services. *Standby* level EDs have an ED physician, at minimum, on call.

Source: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2016.

Trauma Centers, by Level

California, 2016



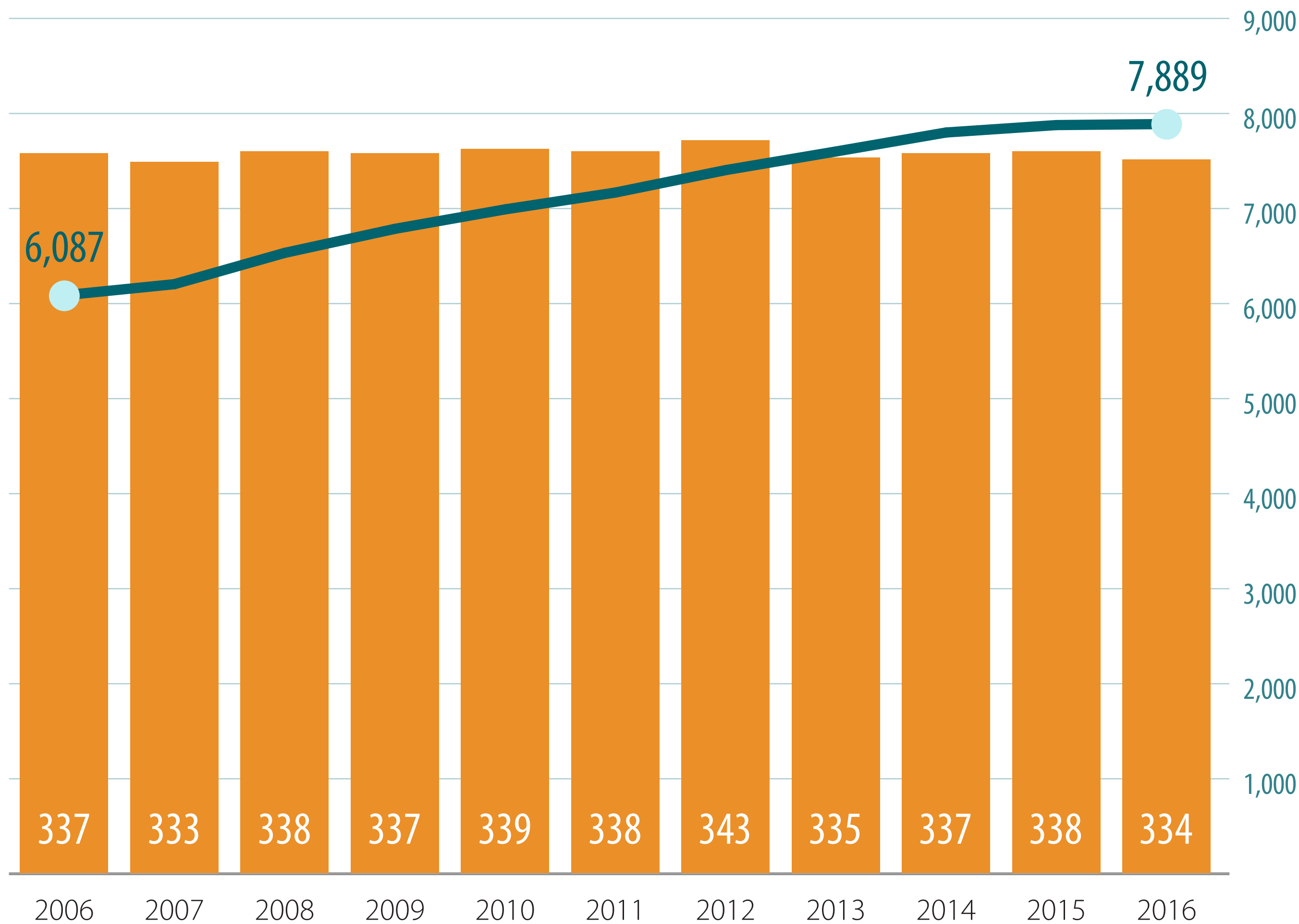
Trauma centers are an important subset of emergency departments; they treat patients with traumatic injury. Local Emergency Medical Services Agencies designate trauma centers according to level, based on the equipment and resources available. Level 1 is the highest. In 2016, California had 79 trauma centers, 15 of which were Level 1.

Notes: *Trauma centers* are designated by a local Emergency Medical Services Agency (EMSA) and include personnel, services, and equipment necessary for the care of trauma patients. General requirements include a trauma program medical director, a trauma nurse coordinator, a basic emergency department (minimum), a multidisciplinary trauma team, and specified service capabilities. EMSA has established four trauma center designations, with Level 1 being the highest.

Sources: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2016; California Emergency Medical Services Authority, emsa.ca.gov.

Emergency Departments and Treatment Stations

California, 2006 to 2016



Note: A *treatment station* is a specific place within the emergency department adequate to treat one patient at a time.

Source: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2006–2016.

While the number of emergency departments has remained relatively stable over the past 10 years, the number of treatment stations has increased by 30%.

Emergency Departments and Treatment Stations
by Region, California, 2006 vs. 2016

	EMERGENCY DEPARTMENTS			TREATMENT STATIONS		
	2006	2016	CHANGE	2006	2016	CHANGE
Central Coast	24	24	0%	320	416	23%
Greater Bay Area	64	65	2%	1,240	1,545	20%
Inland Empire	32	35	9%	634	820	23%
Los Angeles County	76	75	–1%	1,544	1,960	21%
Northern and Sierra	40	38	–5%	344	425	19%
Orange County	26	26	0%	518	646	20%
Sacramento Area	16	15	–6%	352	473	26%
San Diego Area	20	20	0%	476	733	35%
San Joaquin Valley	39	36	–8%	659	871	24%
California	**337**	**334**	**–1%**	**6,087**	**7,889**	**23%**

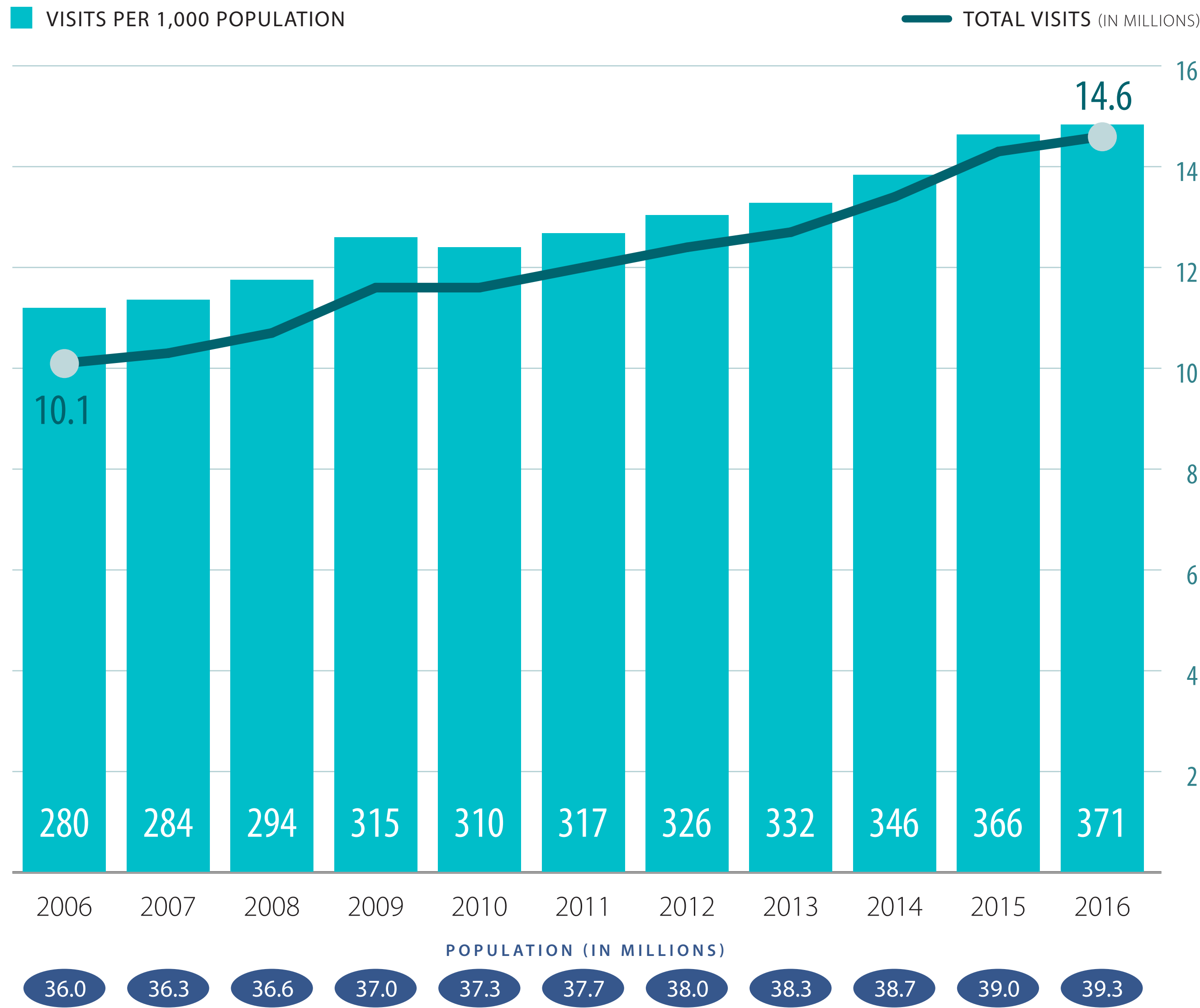
The number of treatment stations increased even in regions that experienced a decrease in the number of emergency departments. For example, San Joaquin Valley experienced a decline in the number of emergency departments, but added more than 200 new treatment stations.

Notes: See the appendix for a map of counties in each region. A *treatment station* is a specific place within the emergency department adequate to treat one patient at a time.

Source: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2006–2016.

Emergency Department Visits

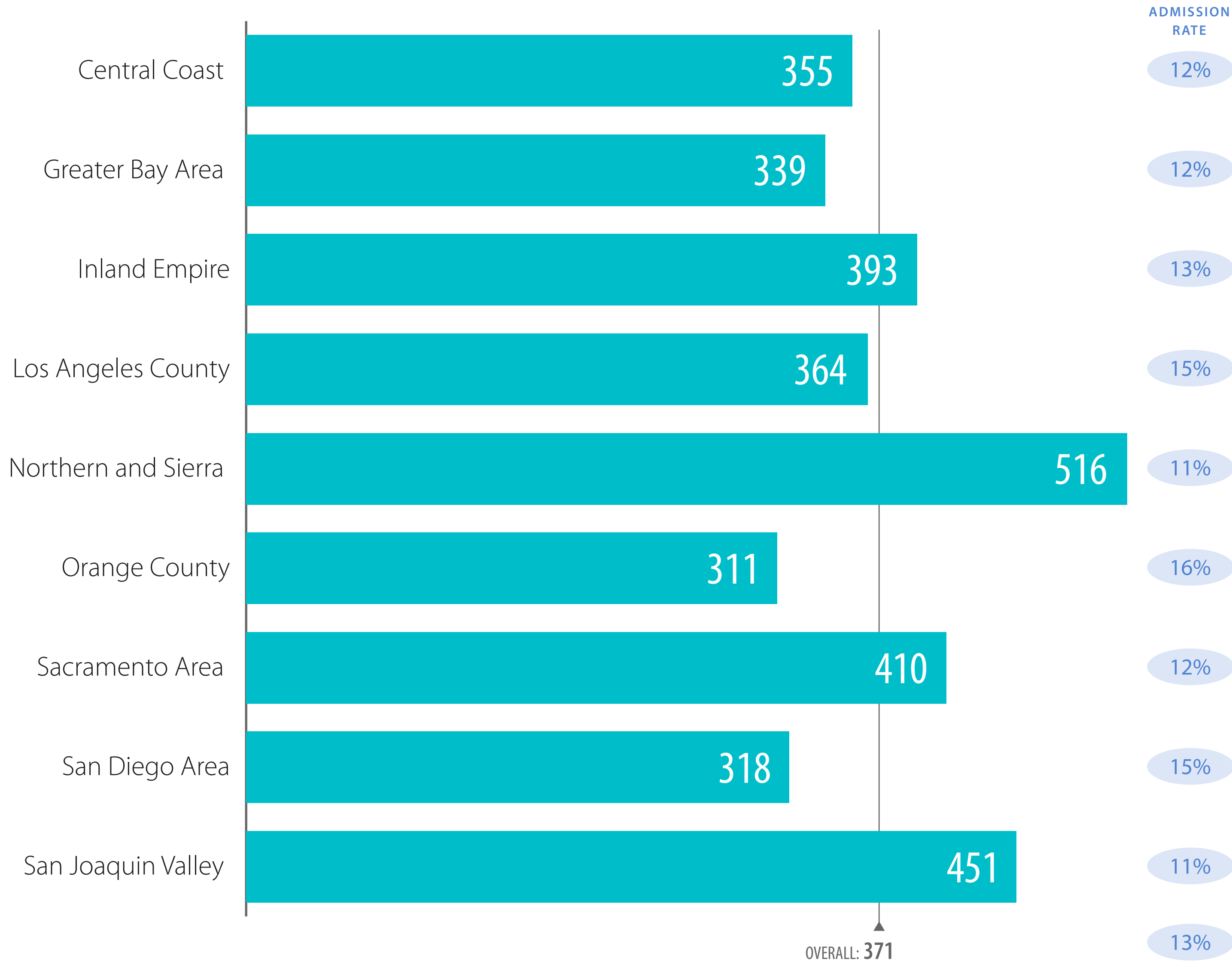
per 1,000 Population and Total, California, 2006 to 2016



Sources: Author calculations based on Office of Statewide Health Planning and Development, Emergency Department Data and Patient Discharge Data, 2006–2016; United States Census Bureau, Intercensal Estimates of the Residential Population for Counties of California: April 1, 2000 to July 1, 2010, and Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2016.

Between 2006 and 2016, the number of emergency department visits increased by 44%, while the state's overall population increased by 9%. The number of visits per 1,000 residents increased by 33%.

Emergency Department Visits per 1,000 Population
by Region, California, 2016



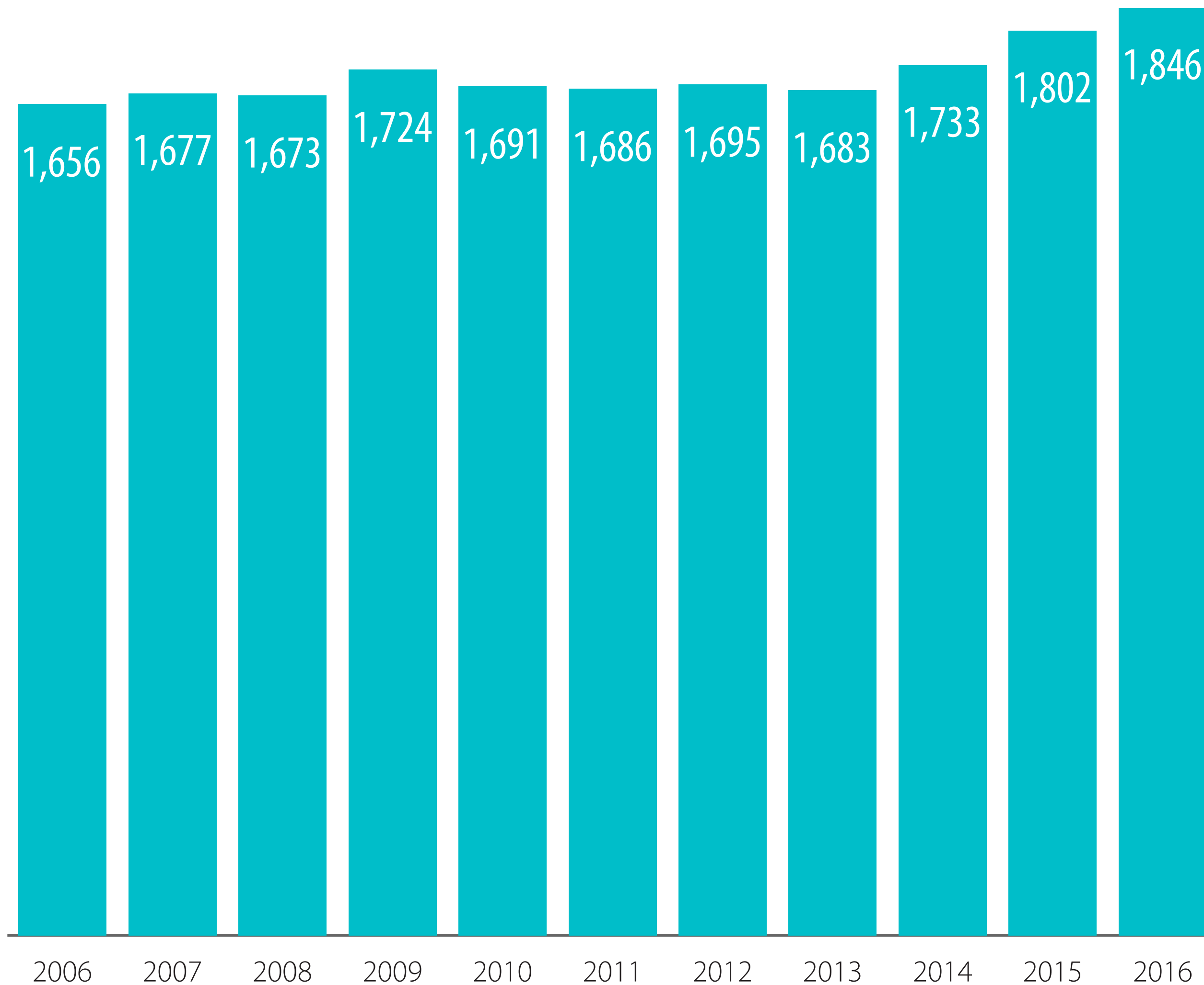
Emergency department (ED) visits per 1,000 residents varied widely across the state, from a low of 311 in Orange County to a high of 516 in the Northern and Sierra region. Despite a wide range in ED visits per 1,000 residents across regions, the percentage of ED patients admitted to the hospital was fairly consistent.

Note: See the appendix for a map of counties in each region.

Sources: Author calculations based on Office of Statewide Health Planning and Development, Emergency Department Data and Patient Discharge Data, 2016; United States Census Bureau, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2016.

Emergency Department Visits per Treatment Station

California, 2006 to 2016

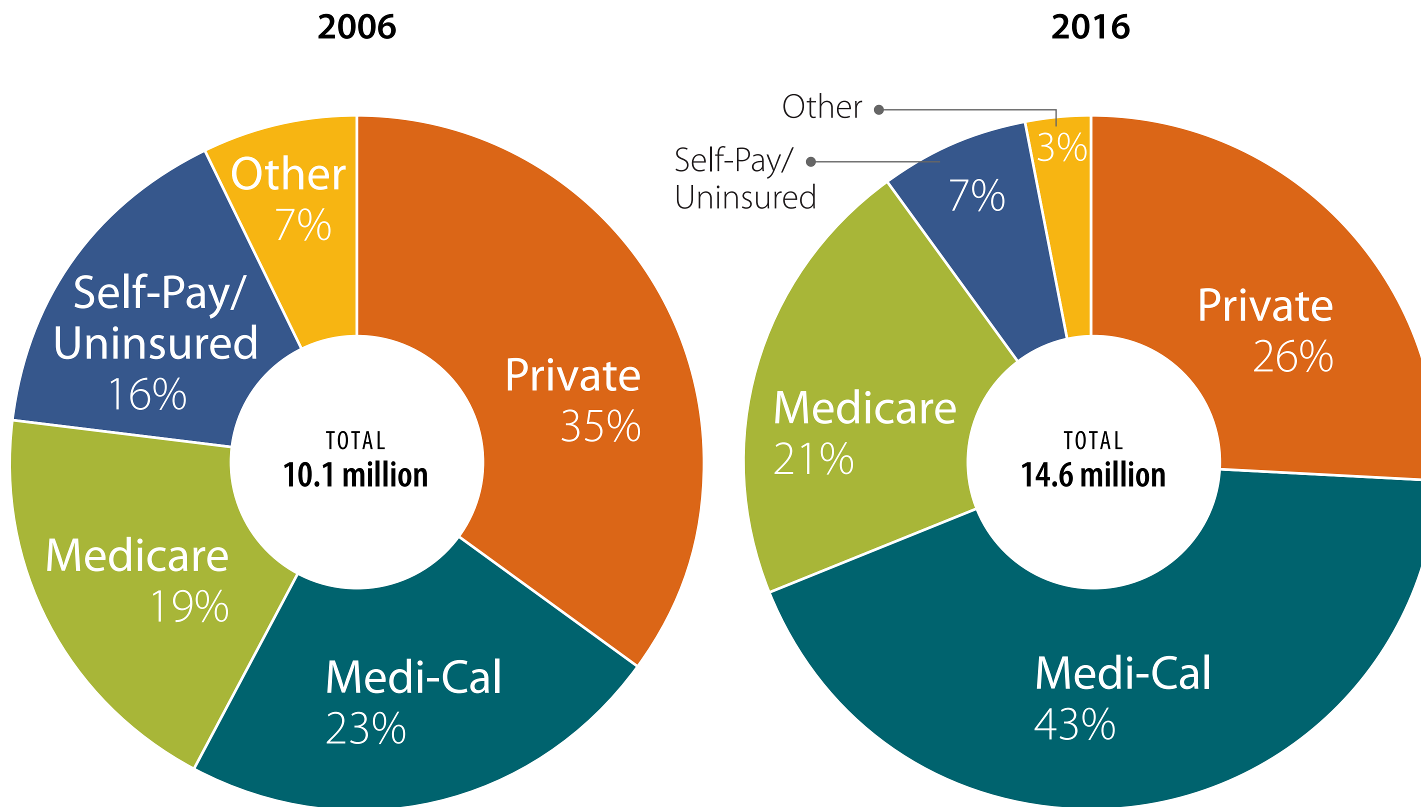


Source: Author calculations based on Office of Statewide Health Planning and Development, Utilization Data, 2006–2016.

In 2016, the average California emergency department treatment station handled over 1,800 visits, or approximately five visits per day.

Emergency Department Visits, by Expected Payer

California, 2006 and 2016



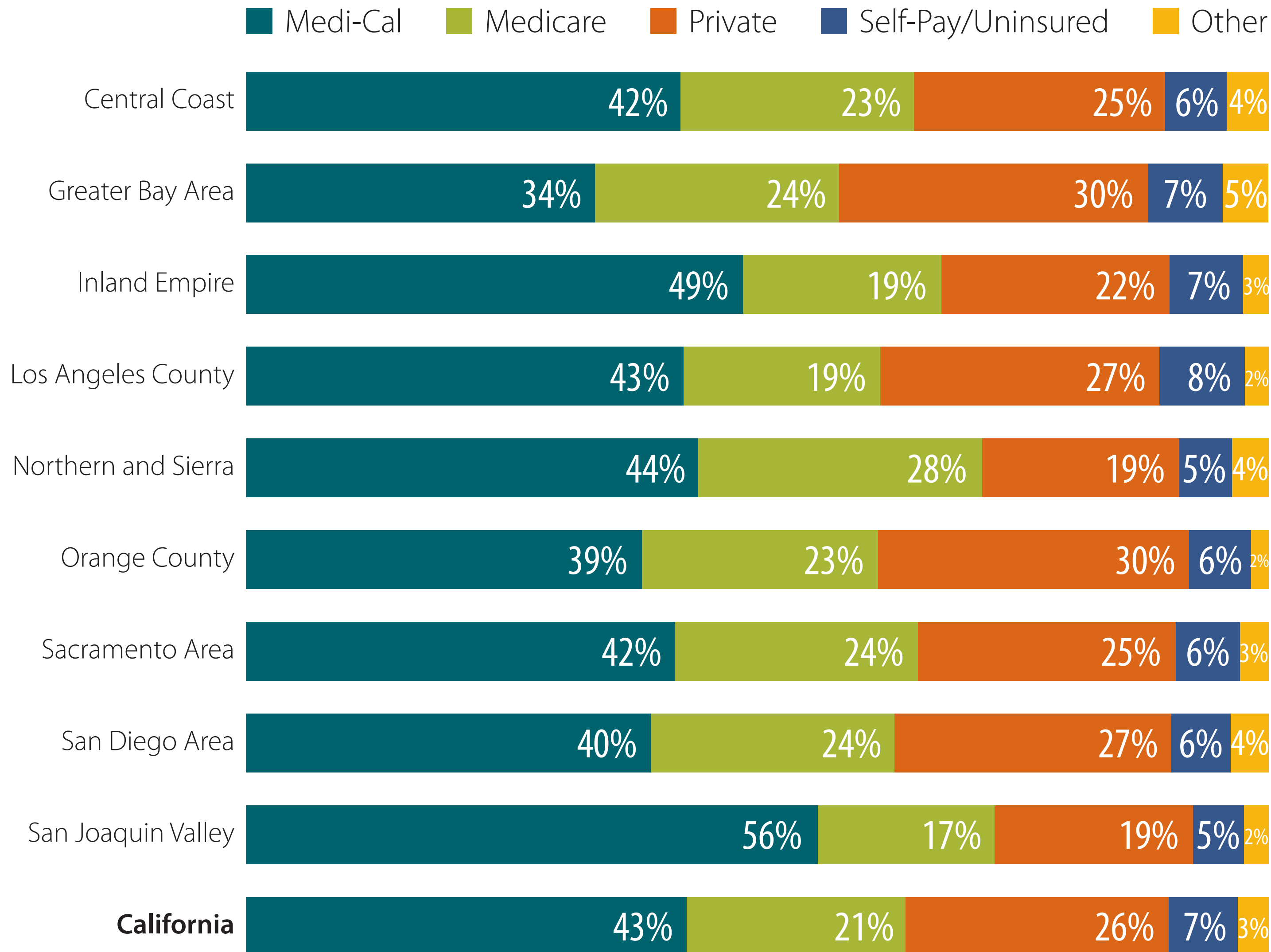
Notes: *Self-pay/uninsured* includes county indigent and other indigent programs. *Other* includes disability, Veterans Affairs, Workers' Compensation, and other federal/non-federal programs.

Source: Author calculations based on Office of Statewide Health Planning and Development, Emergency Department Data and Patient Discharge Data, 2006 and 2016.

The number of Medi-Cal emergency department (ED) visits almost doubled between 2006 and 2016, while self-pay/uninsured visits declined. In 2016, Medi-Cal was the expected payer (i.e., the entity that the hospital expected to pay for the visit) for 43% of ED visits, compared with 23% in 2006. Under the ACA, which went into full effect in 2014, California expanded Medi-Cal to all low-income adults. Between 2006 and 2016, the number of Medi-Cal enrollees doubled.

ED Visits, by Expected Payer and Region

California, 2016



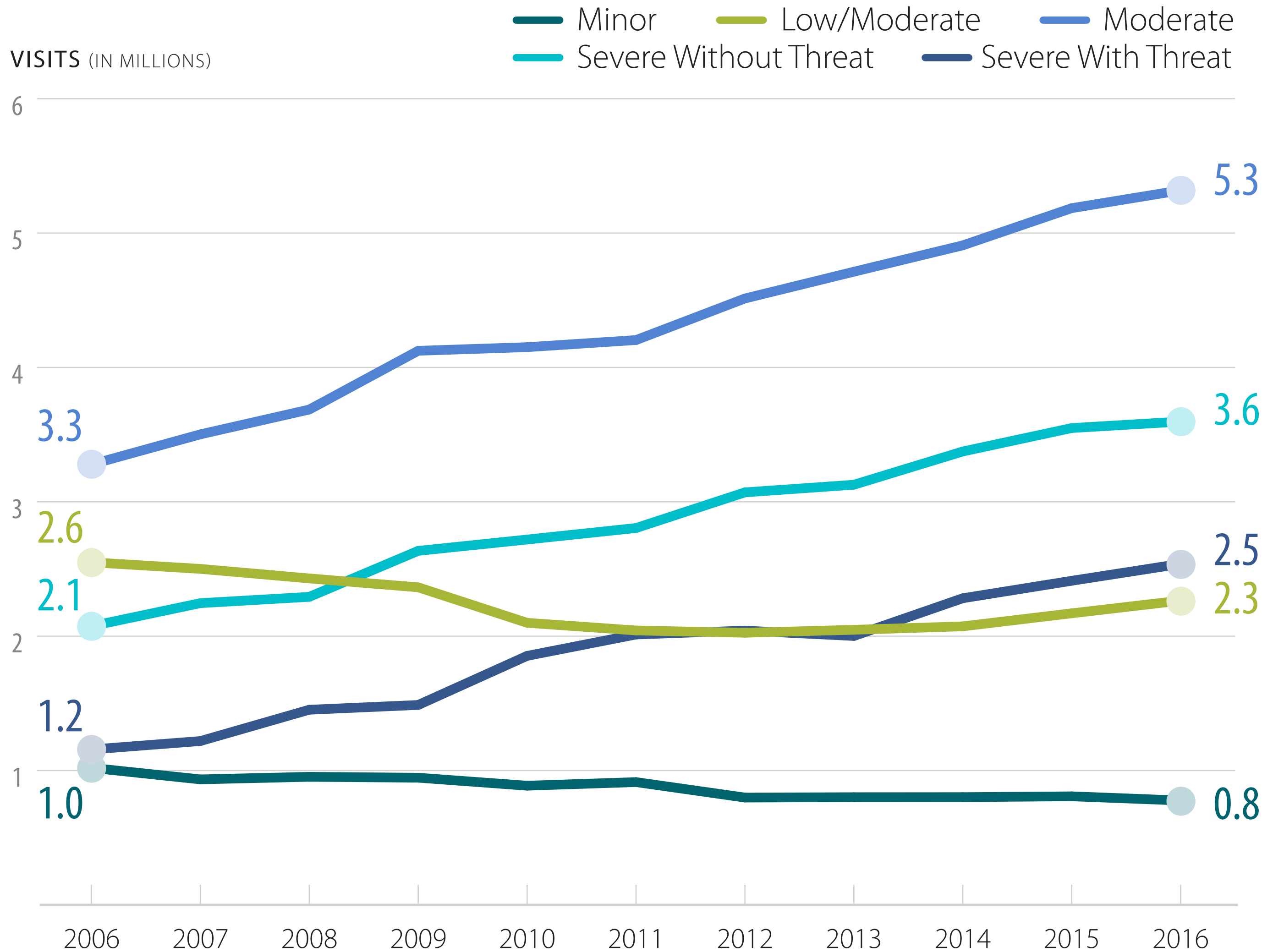
Notes: *Other* includes disability, Veterans Affairs, Workers' Compensation, and other federal/non-federal programs. Segments may not sum to 100% due to rounding.

Source: Office of Statewide Health Planning and Development, Emergency Department Outpatient and Inpatient Data, 2016.

The payer mix of emergency department (ED) visits varied by region. In Orange County and the Greater Bay Area, private insurance coverage was the expected payer for 30% of visits. In San Joaquin Valley, Medi-Cal was expected to pay for over half of ED visits.

Emergency Department Visits, by Acuity Level

California, 2006 to 2016

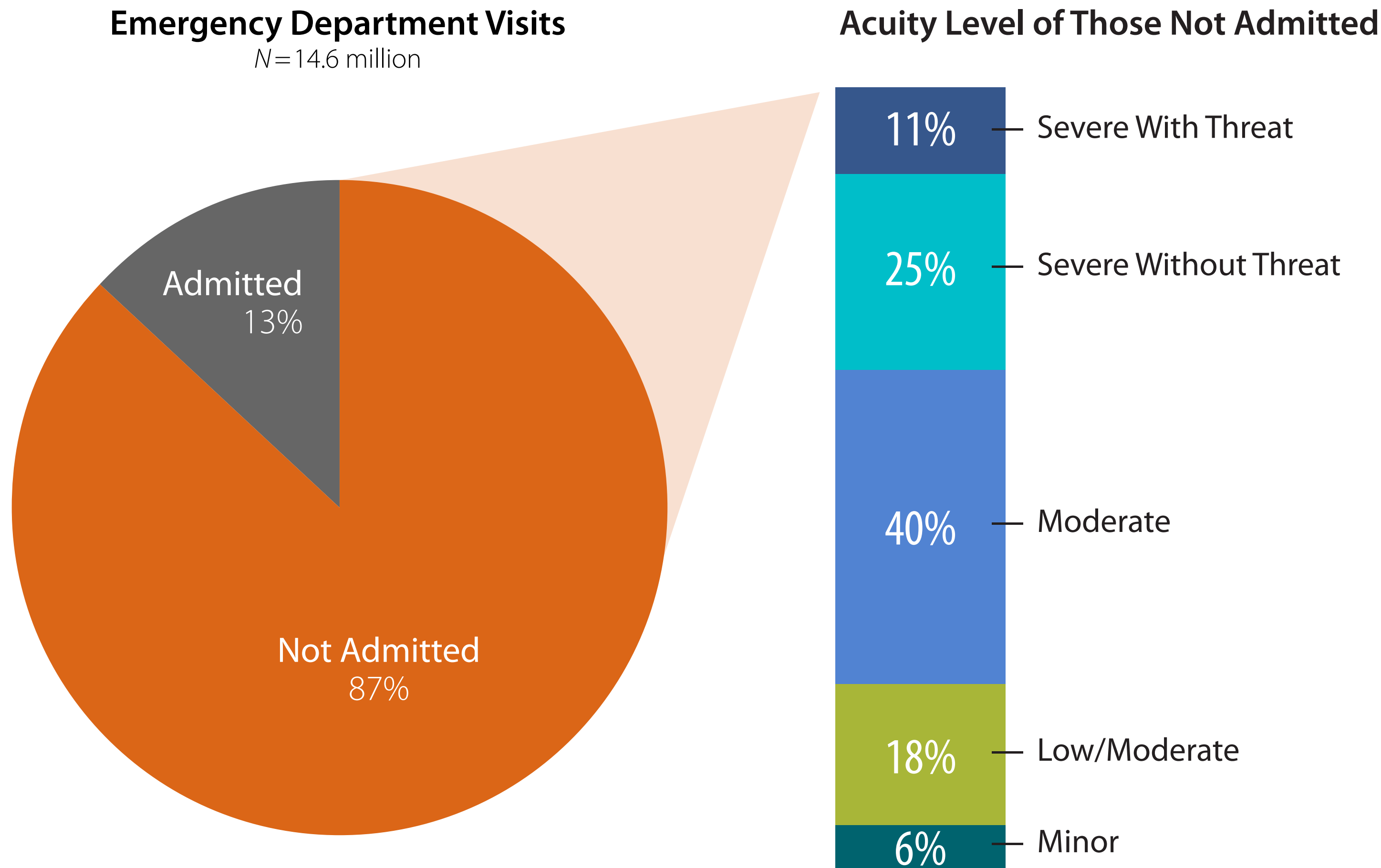


Notes: Emergency department visits are categorized based on type of history/examination and medical decisionmaking required. A *minor* visit requires a problem-focused history/examination and straightforward medical decisionmaking. A *low/moderate* visit requires expanded problem-focused history/examination and medical decisionmaking of low complexity. A *moderate* visit requires expanded problem-focused history/examination and medical decisionmaking of moderate complexity. A *severe without threat* visit requires a detailed history/examination and medical decisionmaking of moderate complexity. A *severe with threat* visit requires a comprehensive history/examination and medical decisionmaking of high complexity. Excludes visits with unknown/unreported severity.

Source: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2006–2016.

All emergency department visits are classified by acuity level, from minor to "severe with threat," which means the patient's life could be in danger. While visits classified as moderate represented the largest proportion of visits, the percentage of severe visits (with and without threat) increased from 32% in 2006 to 42% in 2016.

Emergency Department Visits
by Acuity Level of Those Not Admitted, California, 2016

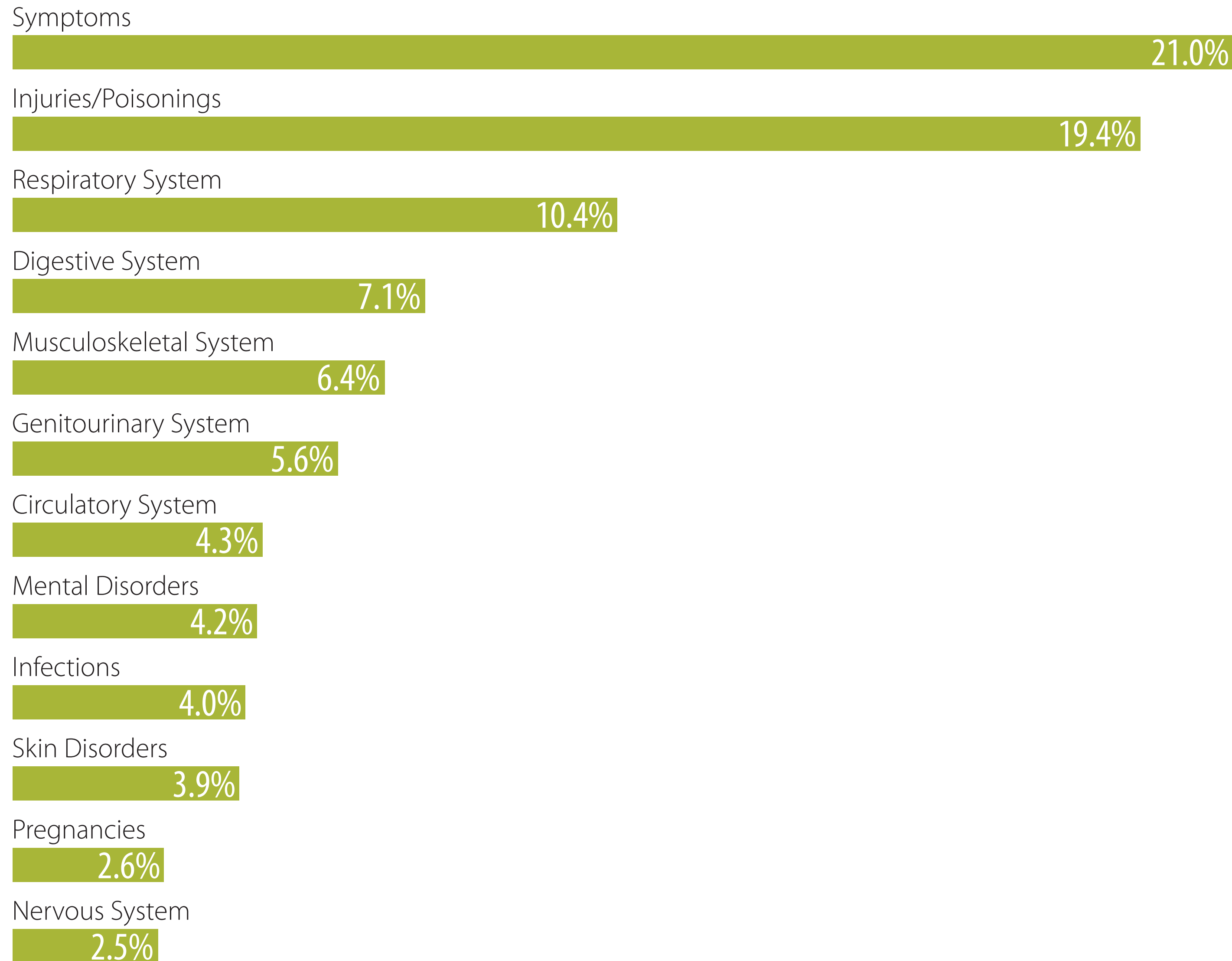


The majority of emergency department visits did not result in a hospital admission. One in ten visits for patients not admitted were for conditions severe enough to be life-threatening, and an additional one in four visits were for severe conditions without threat (e.g., an elderly patient who fell and was unable to walk).

Notes: Emergency department visits are categorized based on type of history/examination and medical decisionmaking required. A *minor* visit requires a problem-focused history/examination and straightforward medical decisionmaking. A *low/moderate* visit requires expanded problem-focused history/examination and medical decisionmaking of low complexity. A *moderate* visit requires expanded problem-focused history/examination and medical decisionmaking of moderate complexity. A *severe without threat* visit requires a detailed history/examination and medical decisionmaking of moderate complexity. A *severe with threat* visit requires a comprehensive history/examination and medical decisionmaking of high complexity. Excludes visits with unknown/unreported severity.

Source: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2016.

Emergency Department Visits, by Diagnosis
California, 2016



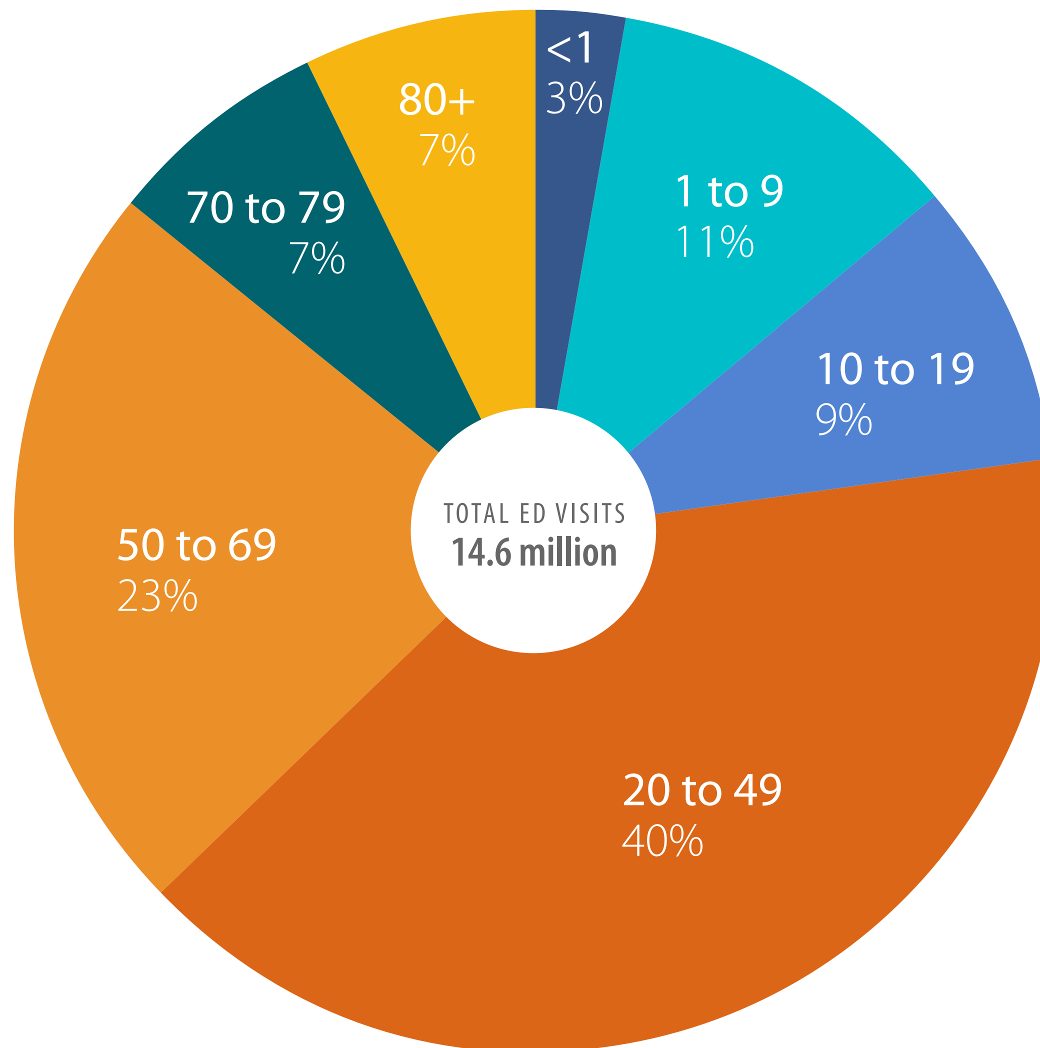
Not shown: other (2.6%), ear disorders (2.0%), endocrine diseases (1.9%), eye disorders (1.0%), blood disorders (0.5%), cancer (0.5%), perinatal disorders (0.1%), birth defects/births (0.0%).

Source: Office of Statewide Health Planning and Development, Emergency Department Outpatient and Inpatient Data, 2016.

Injuries and poisonings were among the most common reasons for visiting the emergency department, accounting for one in five visits in 2016.

Emergency Department Visits, by Age

California, 2016



Adults age 20 to 49 accounted for four in ten emergency department encounters, and adults age 50 to 69 accounted for almost one in four visits.

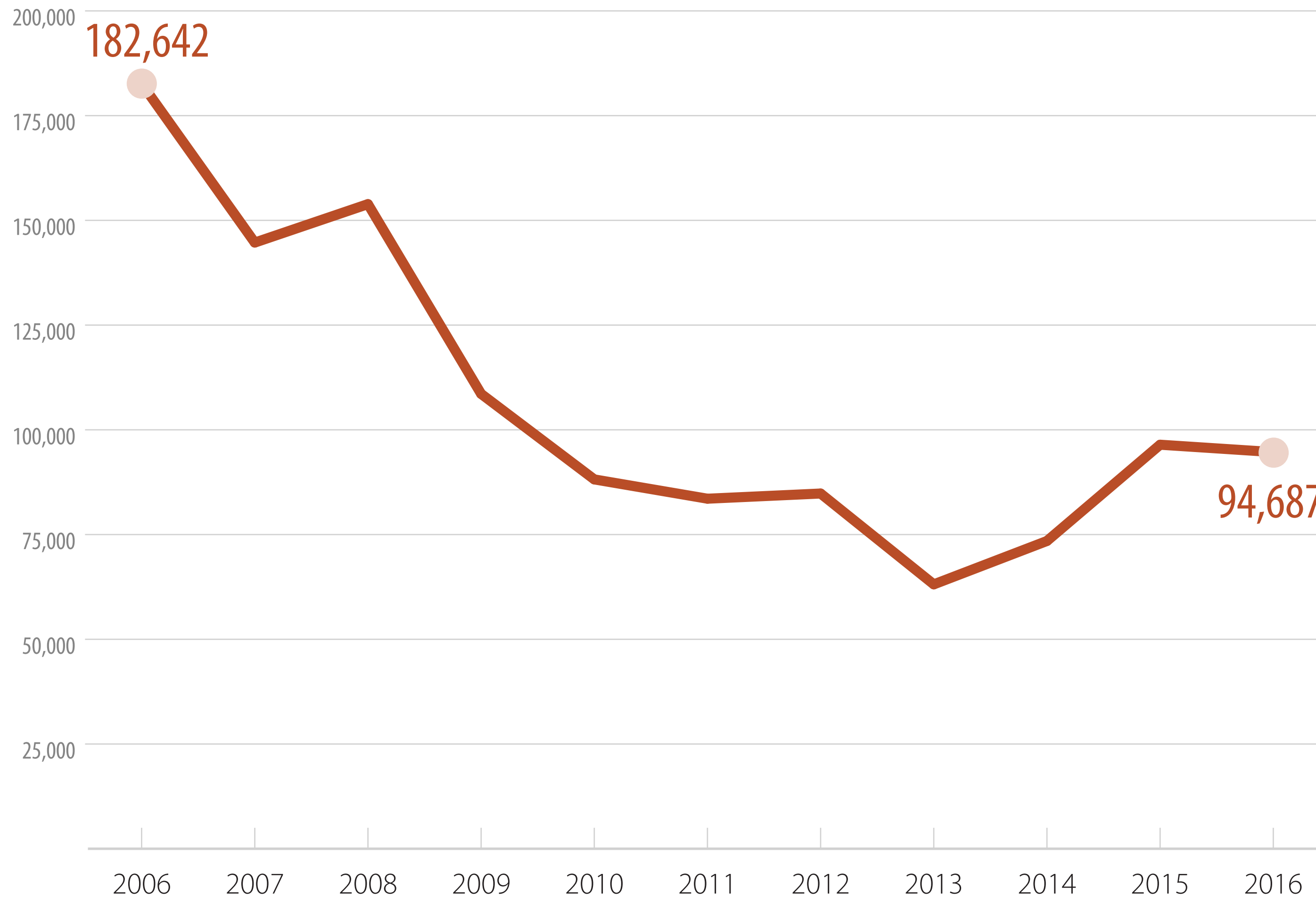
Note: Segments don't sum to 100% due to rounding.

Source: Office of Statewide Health Planning and Development, Emergency Department Outpatient and Inpatient Data, 2016.

Ambulance Diversion Hours

California, 2006 to 2016

TOTAL NUMBER OF HOURS EDs CLOSED TO AMBULANCES



Ambulance diversion occurs when a hospital redirects ambulances to nearby hospitals. Overcrowding in the emergency department (ED) is the most common reason an ambulance is diverted. Ambulance diversion can have many negative consequences, from increasing ambulance turnaround time, to reducing patient quality of care, to negatively impacting ED capacity at nearby hospitals. Diversion hours in California decreased by 48% between 2006 and 2016.

Sources: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2006–2016; "Health Policy Brief: Ambulance Diversion," *Health Affairs,* June 2, 2016, www.healthaffairs.org.

Ambulance Diversion Hours, by Region

California, 2006 vs. 2016

TOTAL NUMBER OF HOURS EMERGENCY DEPARTMENTS CLOSED TO AMBULANCES

	2006	2016	CHANGE
Central Coast	13,327	2,754	–79%
Greater Bay Area	10,560	13,392	27%
Inland Empire	18,895	1,507	–92%
Los Angeles County	102,551	60,234	–41%
Northern and Sierra	904	1,440	59%
Orange County	11,340	6,751	–40%
Sacramento Area	8,029	131	–98%
San Diego Area	15,973	8,472	–47%
San Joaquin Valley	1,063	6	–99%
California	**182,642**	**94,687**	**–48%**

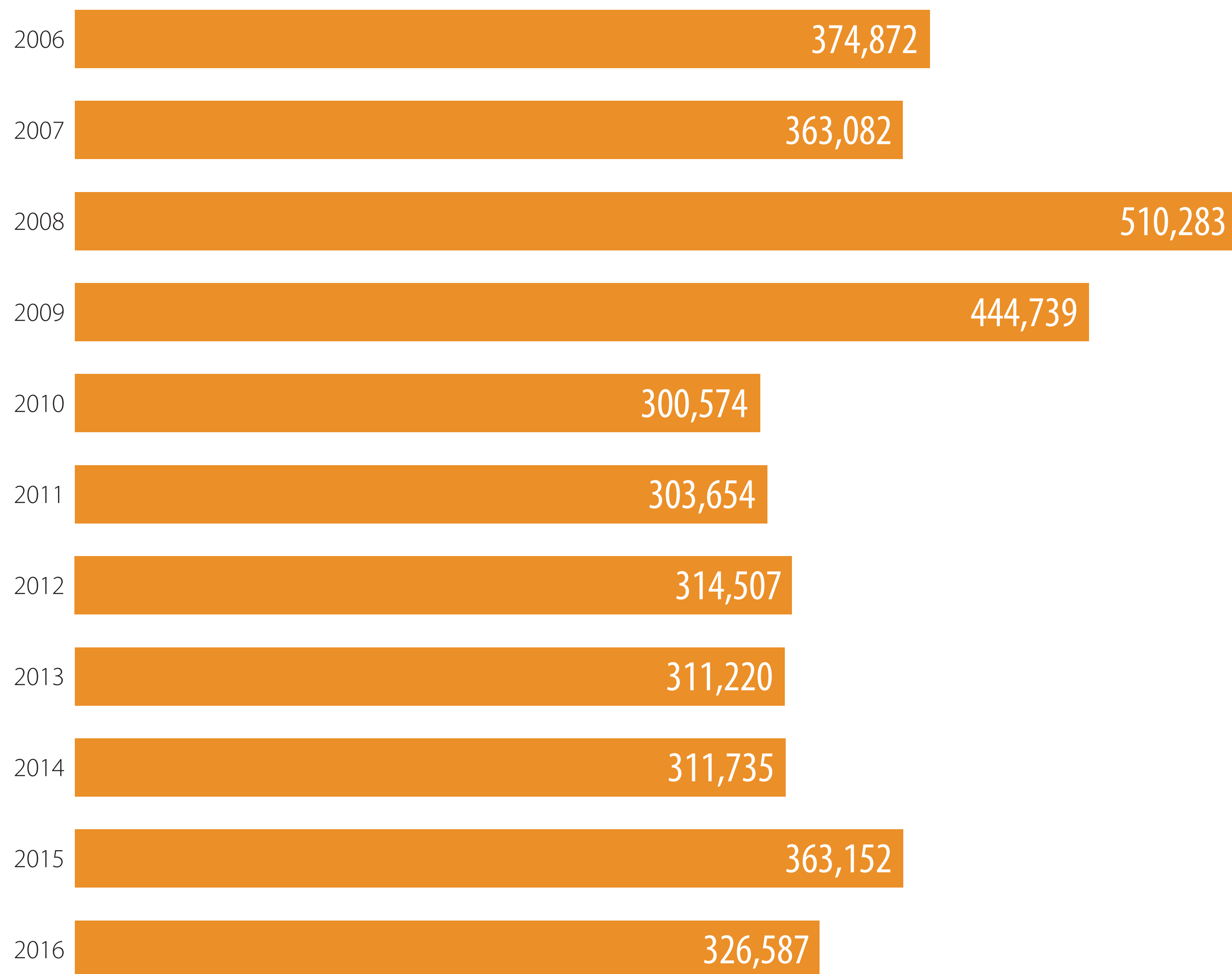
Source: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2006 and 2016.

Most regions saw a decline in the number of diversion hours, or hours when emergency departments did not accept ambulances. The Greater Bay Area and Northern and Sierra were the only regions to experience an increase in diversion hours. The San Joaquin Valley only had six ambulance diversion hours in 2016, a significant decrease from 1,063 hours in 2006. Regional policies on diversion evolved between 2006 and 2016, with some Local Emergency Medical Services Agencies (LEMSAs) restricting the practice.

Source: "Local EMS Agency Ambulance Diversion Policies," California Emergency Medical Services Authority, emsa.ca.gov.

ED Visits from Patients Who Left Without Being Seen

California, 2006 to 2016

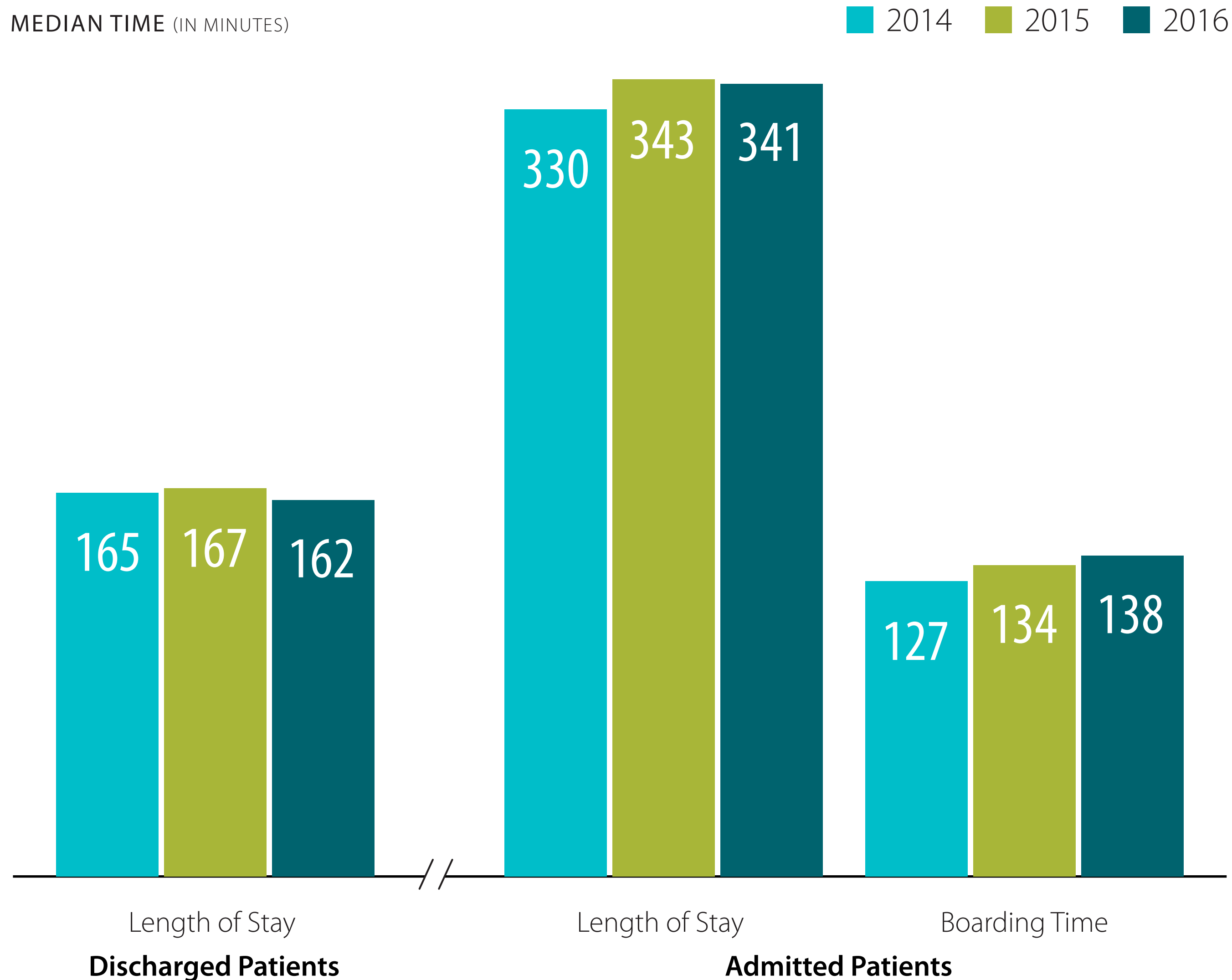


Source: Office of Statewide Health Planning and Development, Hospital Annual Utilization Data, 2006–2016.

In 2016, 326,587 patients registered in the emergency department (ED) but left before being treated by an emergency physician.

Emergency Department Wait Times

California, 2014 to 2016

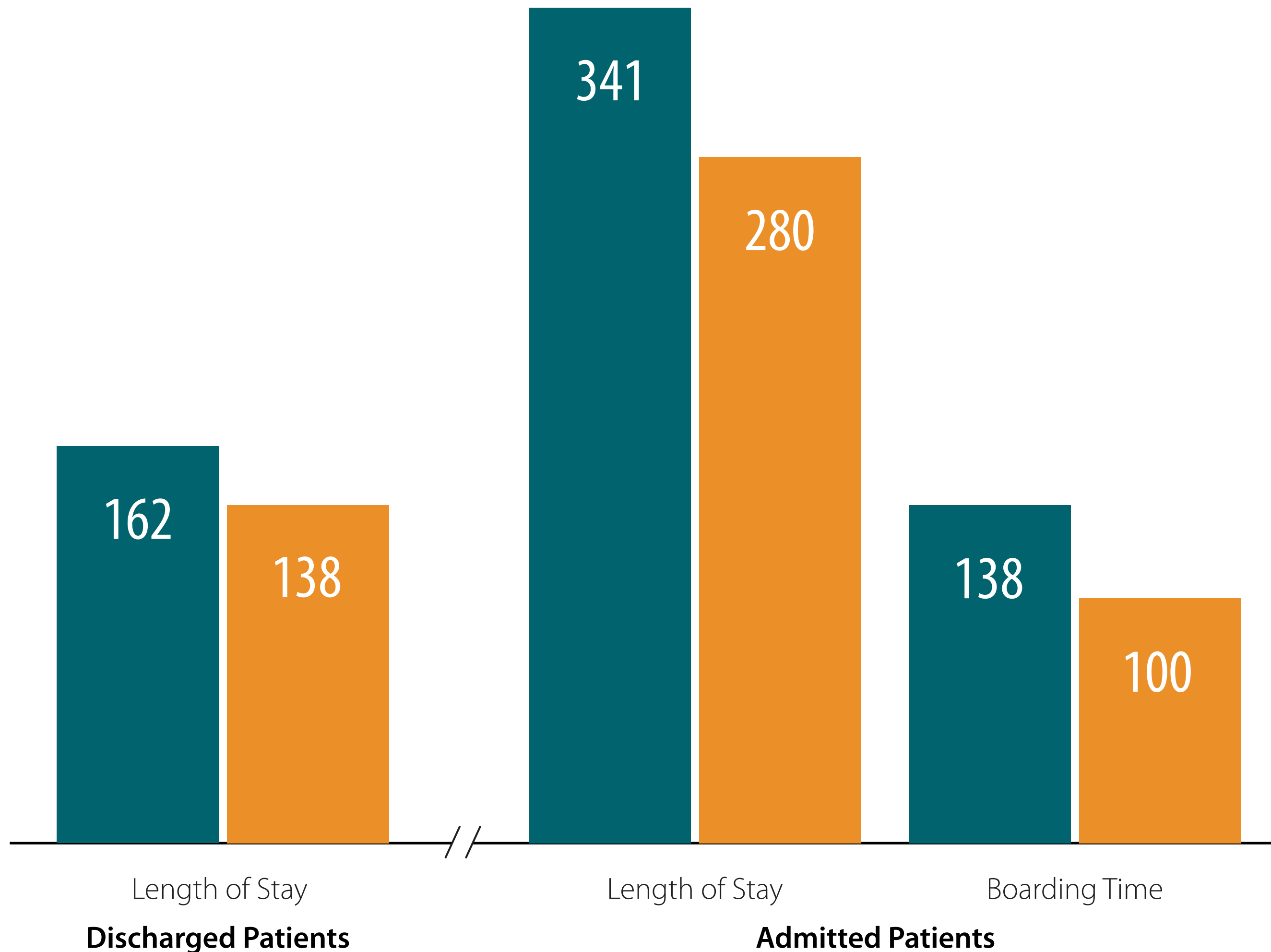


Note: *Boarding time* is the amount of time patients spent in the emergency department (ED) after the doctor decided to admit them as an inpatient before leaving the ED for their room.

Source: US Centers for Medicare & Medicaid Services, Hospital Compare, data.medicare.gov/data/hospital-compare.

Long stays in an emergency department (ED) may be a sign that the ED is overcrowded or understaffed, or that there is a lack of available inpatient beds. In 2016, the median stay for patients who were sent home was nearly three hours. Those being admitted stayed in the ED for over five hours on average, with two of those hours occuring after the doctor decided to admit them.

Emergency Department Wait Times
California vs. United States, 2016

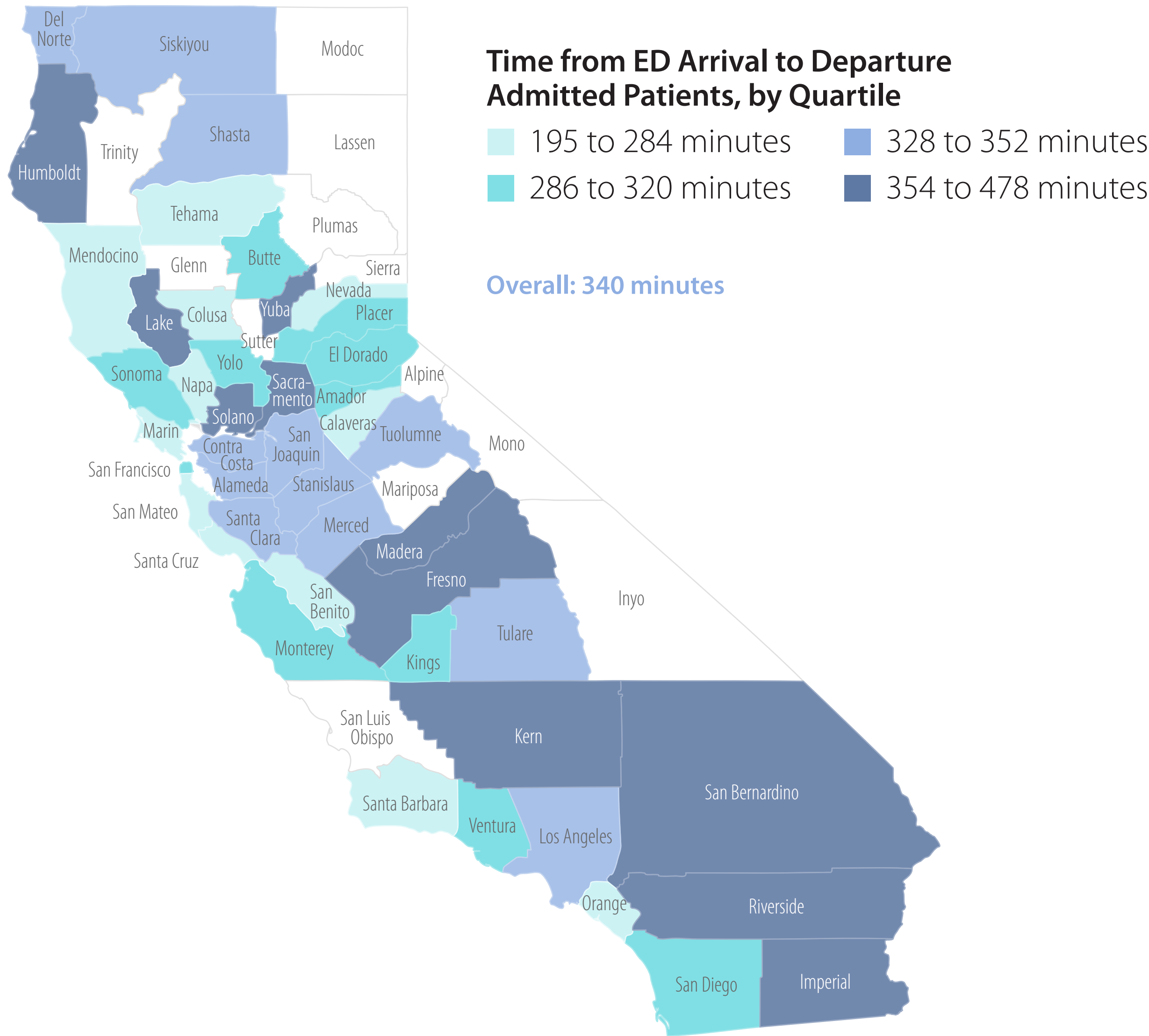


In 2016, the median stay for California emergency department patients who were sent home was nearly three hours. That is 24 minutes longer than the median stay nationwide.

Note: *Boarding time* is the amount of time patients spent in the emergency department (ED) after the doctor decided to admit them as an inpatient before leaving the ED for their room.
Source: US Centers for Medicare & Medicaid Services, Hospital Compare, data.medicare.gov.

Length of ED Stay for Admitted Patients, by County

California, 2013 to 2014



Notes: *ED* is emergency department. Data covers Q2 2013 to Q1 2014.
No data are available for counties without color. Does not necessarily include general acute care hospitals exclusively.

Source: "Hospital Report," IPRO, accessed May 26, 2015, www.whynotthebest.org.

The amount of time patients spent in the emergency department before being admitted varied by county. Patients in Madera County had the longest wait time (nearly eight hours) while patients in Colusa County had the shortest (under four hours).

Methodology

This analysis relies primarily on data obtained from reports submitted by licensed hospitals to California's Office of Statewide Health Planning and Development (OSHPD), which conducts an annual standardized survey required from all hospitals in California. These include private Patient Discharge Data, Emergency Department Data, and Hospital Annual Utilization Data. Data were used to evaluate emergency department (ED) capacity and utilization trends in California hospitals from 2006 to 2016. All general acute care hospitals with an ED (standby, basic, and comprehensive) that was open at any time in the year during the study period were included.

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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FOR MORE INFORMATION

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Appendix: California Counties Included in Regions

REGION	COUNTIES
Central Coast	Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Ventura
Greater Bay Area	Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma
Inland Empire	Riverside, San Bernardino
Los Angeles County	Los Angeles
Northern and Sierra	Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, Glenn, Humboldt, Inyo, Lake, Lassen, Mariposa, Mendocino, Modoc, Mono, Nevada, Plumas, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, Tuolumne, Yuba
Orange County	Orange
Sacramento Area	El Dorado, Placer, Sacramento, Yolo
San Diego Area	Imperial, San Diego
San Joaquin Valley	Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare