California HealthCare Foundation

End-of-Life Care in California:
You Don't Always Get What You Want

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About the Foundation

The **California HealthCare Foundation** works as a catalyst to fulfill the promise of better health care for all Californians. We support ideas and innovations that improve quality, increase efficiency, and lower the costs of care. For more information, visit us online at www.chcf.org.

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I. Introduction

Californians frequently do not get the kind of care that they want at the end of their lives. This report documents research on end-of-life care for Medicare beneficiaries, and analyses it in light of what is known about Californians' preferences for care as they approach death.[1] The research found sharp variation in care from region to region and from hospital to hospital.[2] Importantly, the wide variation cannot be explained by differences among patients in terms of age, sex, race, or preferences for care. The report also shows trends in end-of-life care from 2003 to 2010.

The research revealed some improvement in matching care to what most Californians would prefer, as measured in research published in 2012 (see box). For example, on average, dying patients spent fewer days in the hospital in 2010 than they did in 2003. Also, they were less likely to die in a hospital and more likely to receive hospice care. These findings are in keeping with patient preferences, although the pace of change varied widely across the state.

The research also revealed the extent to which patient preferences did not match the care received. The overall intensity of the care rose; dying patients in the hospital had many more physician visits on average, and they spent more days in an intensive care unit (ICU). The geographic variation in care is striking. In some regions of California, Medicare beneficiaries spent twice as many days in the hospital in their last six months of life compared to those living in other parts of the state, and patients spent more than three times as many days in an ICU. Such aggressive care of the dying has not been found to benefit patients medically, and is known to be at odds with Californians' desires about end-of-life care.

What Californians Want at the End of Life

Most Californians prefer less as opposed to more medical intervention as they approach the end of life, according to research published in 2012. Among the 1,669 Californians surveyed:

- **67%** said they preferred a natural death should they become seriously ill, while only 7% say they would like all possible care to prolong life.
- **66%** said it was extremely important to them to avoid pain and be comfortable as they approach death.
- **67%** said it is extremely important that their families are not burdened financially by the costs of care.
- **70%** said they would prefer to die at home rather than in the hospital or a nursing home.

Source: California HealthCare Foundation, *Final Chapter: Californians' Attitudes and Experiences with Death and Dying,* 2012, www.chcf.org.

Following are some of the major findings of this research:

- **Deaths in hospitals.** From 2003 to 2010, the percentage of chronically ill patients dying in hospitals declined in every region in the state. However, the percentage of patients who spent time in the ICU just before they died increased in slightly over half of the regions.
- **Intensity of care.** Over the same period, other indicators of the intensity of care increased, including a rise in the average number of ICU days in the last six months of life and the number of physician visits.
- **California vs. US.** Compared to the country as a whole, California had a higher percentage of patients dying in the hospital, more ICU days, and a higher percentage of deaths that included a stay in the ICU. In three-quarters of California regions, dying patients spent more time in the hospital on average than in the rest of the country.
- **Variation.** There were wide variations in end-of-life care from 2003 to 2010 across regions and hospitals. For example, some regions saw rapid increases in the average number of ICU days for patients at the end of life, while others saw no change or significant decreases.
- **Hospice use.** The use of hospice care for dying patients increased from 2003 to 2010 across the state and at most hospitals, part of a long-term national trend. However, only about one-third of the hospitals in this study increased hospice use faster than the national average. California added fewer hospice days from 2003 to 2010 than the nation as a whole. The 2010 level of hospice use in California remained below the average for the rest of the country.

II. Patients' Wishes and the Reality

The gap between what patients say they want and the care they actually receive is a problem that has been recognized for many years. In the 1990s, the Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatment (SUPPORT) revealed that clinicians routinely failed to follow patient preferences for end-of-life care.[3] Doctors rarely talked to patients about their preferences for end-of-life care, and less than half of physicians knew which patients preferred to avoid cardiopulmonary resuscitation. A follow-up study using SUPPORT data showed that among a sample of 479 patients, 391 expressed a preference to die at home rather than in a hospital; nonetheless, more than half (216) died in a hospital.[4]

In 1997, the Institute of Medicine summarized some of the shortcomings of end-of-life care in its report "Approaching Death: Improving Care at the End of Life."[5] The report recommended increasing access to palliative care, which focuses on ensuring that all patients with serious illness (but not necessarily near death) are comfortable, as free from pain as possible, and understand their options for treatment. The IOM also recommended greater access to hospice care, which is provided to patients who are in the terminal stages of disease. The IOM encouraged physicians to talk to patients more openly about the care they preferred.

In the years since, the use of palliative and hospice care has increased across the country, and research suggests that patient preferences for end-of-life are now being followed more closely, at least among some patient groups.[6,7] In California and elsewhere, the POLST form (Physician Order for Life Sustaining Treatment) is gaining traction. POLST allows patients to indicate the intensity of care they prefer in the event of serious illness. In California, conversations between physicians and patients can be documented on a POLST form that is honored across settings of care. After two years of implementation in California, 93% of nursing homes had at least one resident with a POLST, and 62% of nursing homes reported that at least half of their residents had one. Over 80% of California hospitals also reported familiarity with and use of POLST in their facilities.

Despite the progress, problems remain in making sure that treatment at the end of life is aligned with patient wishes. Factors such as age, race, and level of education can affect the likelihood that patients' treatment will follow their preferences.[8–10] There are still barriers to conversations about end-of-life care between clinicians, patients, and families; these include poor training for physicians and other caregivers and lack of payment for physicians to spend time in such discussions.

Medical culture from region to region and hospital to hospital may also be an important factor in determining what type and intensity of care will be delivered. Regional and hospital-specific patterns of care for patients with serious chronic illness are closely associated with the patterns observed for Medicare beneficiaries with other chronic conditions. For example, compared with regions and hospitals that tend to deliver less aggressive care to patients with chronic illness, regions and hospitals that tend to deliver more aggressive care also tend to hospitalize heart attack patients more often in their first year after their heart attack.[11–13] More aggressive care for patients with serious chronic illnesses is also

associated with more aggressive care for patients with advanced cancer who are near the end of life, and with higher readmission and hospitalization rates for potentially avoidable causes of hospitalization.[14–16]

Another factor that appears to play a role in physician choices is "supply-sensitive care." The Dartmouth Atlas Project has shown that the local supply of medical resources plays a significant role in determining the amount of care delivered in a region.[17] Patients in regions with more hospital beds and more specialists, for example, tend to be admitted to the hospital more often and see more specialists than similarly ill patients in regions with a lower supply of these resources. Research has also shown that when ICU beds are readily available, more patients who are less severely ill are admitted to the ICU and stay longer than they might have in a hospital with fewer ICU beds.[18]

Some hospitals have increased their investment in ICU and other beds and in physician labor. These resources may have led to increased aggressiveness of care. These changes will likely be reflected in future reports on end-of-life care.

Misalignment between patient preferences and actual treatment can have serious consequences for patients' quality of life. Greater use of the hospital or ICU as a site of care does not necessarily lead to better outcomes.[19] Some patients fail to receive desired treatment, while many others receive unnecessary or unwanted procedures. This puts them at risk for infection, pain, and time away from loved ones in their final weeks and days.[20–23] Additional treatments and hospitalizations also represent a significant financial burden, both for individual patients and families, and for society. About one-fourth of all Medicare spending goes to pay for the care of beneficiaries in their last year of life, and much of the growth in Medicare spending in recent decades is the result of the high cost of treating chronic disease.[24,25] Most Medicare beneficiaries die of one or more chronic conditions.

III. Trends and Variation

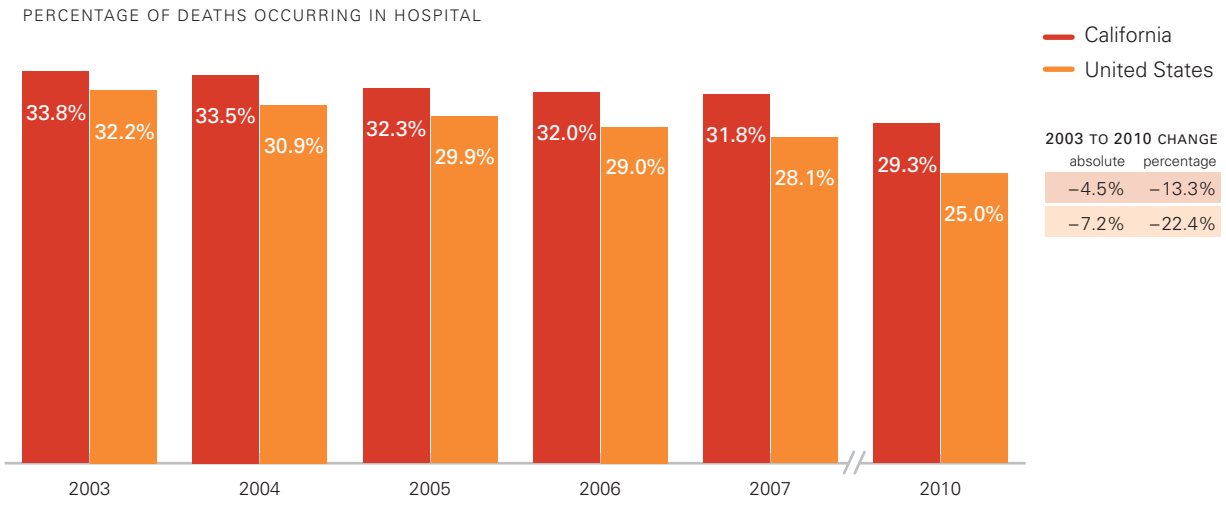
Following are highlights of the data illuminating regional and hospital-specific patterns of care for patients with chronic illnesses and those who are approaching death. The data are based on California Medicare beneficiaries with severe chronic illness among hospital referral regions (HRRs).

Deaths in Hospital

From 2003 to 2010, the likelihood that a chronically ill California Medicare beneficiary died in a hospital declined slightly. In 2003, 33.8% of such patients died in a hospital; by 2007 the rate dropped to 31.8%, and in 2010 it dropped further, to 29.3%. However, the rate of deaths in the hospital in California remained significantly higher than the US average of 25.0% (Figure 1). Most California HRRs saw a drop in the percentage of patients dying in the hospital from 2003 to 2010, although four had an increase, and one was unchanged from 2007 to 2010.[26] The largest decrease occurred in Redding, where the rate fell more than 10 percentage points, from 32.9% to 22.4%. Santa Rosa saw the smallest decrease — only one-tenth of a percentage point.

In 2010, the highest rates of death in hospitals were in Los Angeles and San Francisco (both 33.9%), which were nearly matched by Stockton and San Jose (both 33.0%). Chronically ill Medicare beneficiaries in Los Angeles and San Francisco were far more likely to die in a hospital than those in Santa Cruz, where only 20.4% of patients died in a hospital. Redding (22.4%) and Palm Springs/Rancho Mirage (23.4%) were also among the regions with the lowest rates (Map 1).

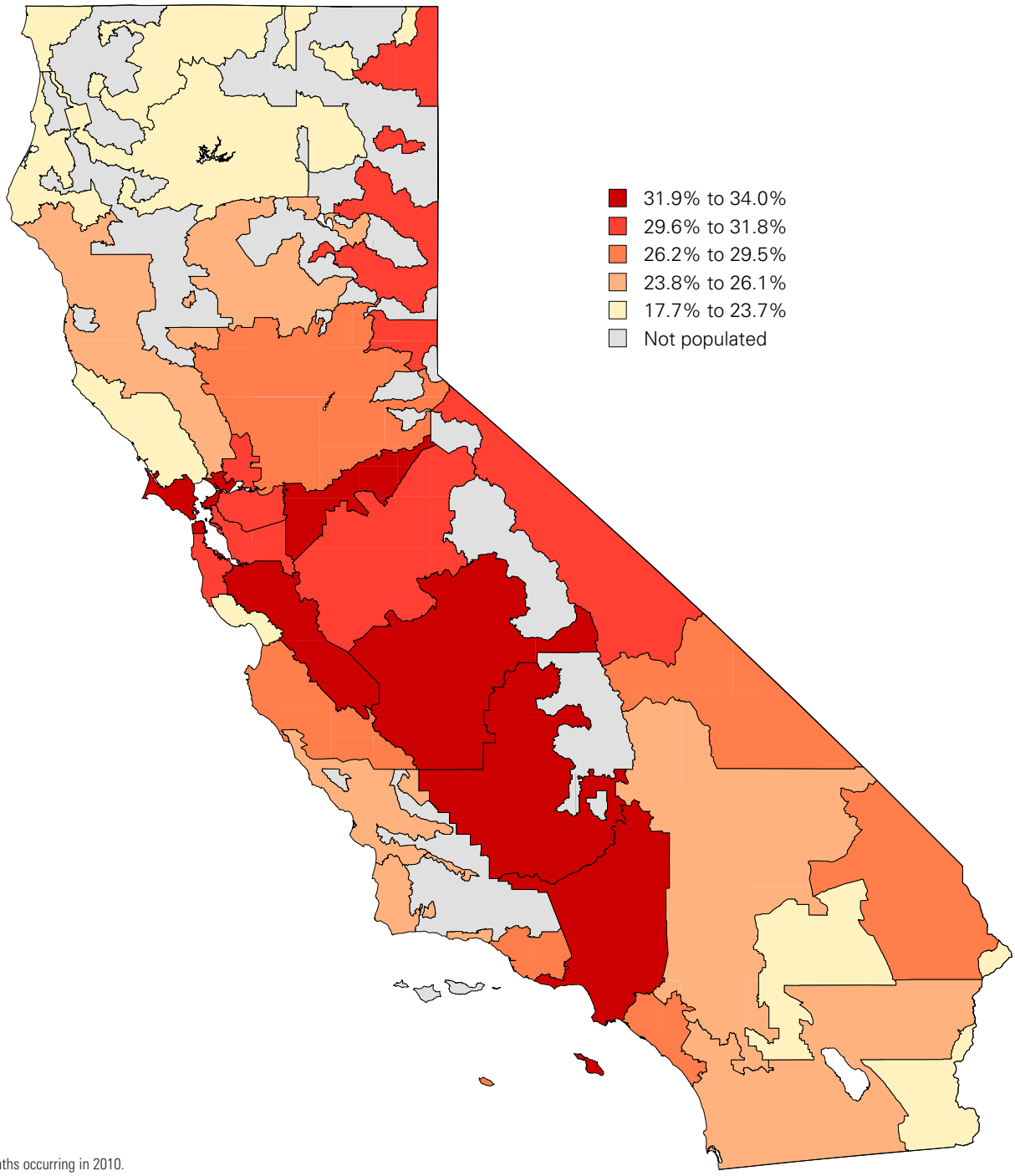
Figure 1. Chronically Ill Medicare Patients Dying in Hospital, California vs. US, 2003 to 2010



Notes: Average rates, all chronically ill patients regardless of hospitalization. Data for years 2008 and 2009 were not available.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Map 1. Chronically Ill Medicare Patients Dying in Hospital, by California HRR, 2010*



*Deaths occurring in 2010.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Deaths Associated with Admission to Intensive Care

When given a choice, most elderly patients desire to avoid aggressive care at the end of life and, increasingly, those wishes are honored in much of the country.[27] From 2003 to 2010, the chances that a chronically ill Medicare beneficiary died in a hospital during a stay that included an admission to an ICU declined from 18.6% to 16.7% (Figure 2). However, during that period, California's rate was consistently above the national one, and changed little between 2003 (22.8%) and 2007 (22.6%). A very slow decline continued from 2007 to 2010, putting the California rate in 2010 at 22.4%, still well above the national average.

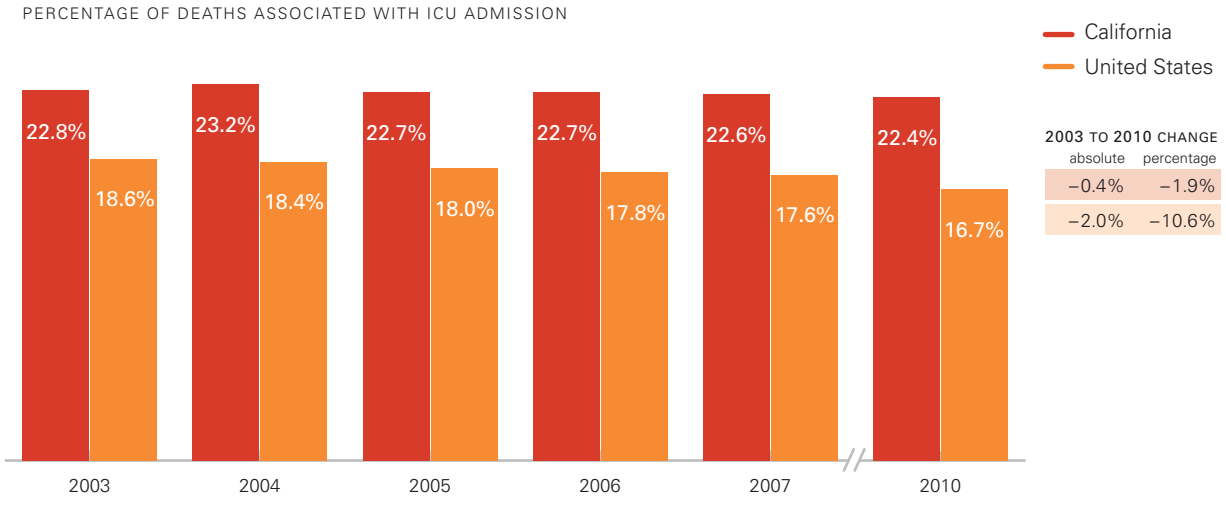
Likewise, many individual regions saw little change from 2003 to 2010 — more than half of HRRs were within 2% of their 2003 rate in 2010 — although some showed large decreases or increases. The largest decrease occurred in Redding, where the rate dropped 4.4 percentage points, from 18.9% to 14.5%, one of the largest decreases in the rate of death associated with a stay in the ICU in any HRR in the country. The largest increase in California occurred in Contra Costa County, where the rate rose from 18.1% to 23.6%.

Rates of ICU admission-associated hospital deaths varied widely in 2010, with the highest rates in Los Angeles (28.7%), San Francisco (25.8%), and Stockton (24.6%). The rate of these deaths in Los Angeles was far greater than that in Redding (14.5%). Santa Cruz (14.8%) and Napa (15.5%) also saw considerably lower rates in 2010 (Map 2).

The variation in end-of-life utilization was so extreme that dying patients in Los Angeles were more likely to be admitted to an ICU than patients in low-hospital-use areas like Redding and Santa Cruz were to die in the hospital at all.

Given the disconnect between "high tech" deaths and the expressed wishes of Californians about end-of-life care, a task force, Let's Get Healthy California, selected this trend to monitor and reduce

Figure 2. Chronically Ill Medicare Patient Deaths Associated with ICU Admission, California vs. US, 2003 to 2010



Notes: Average rates, all chronically ill patients regardless of hospitalization. Data for years 2008 and 2009 were not available.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

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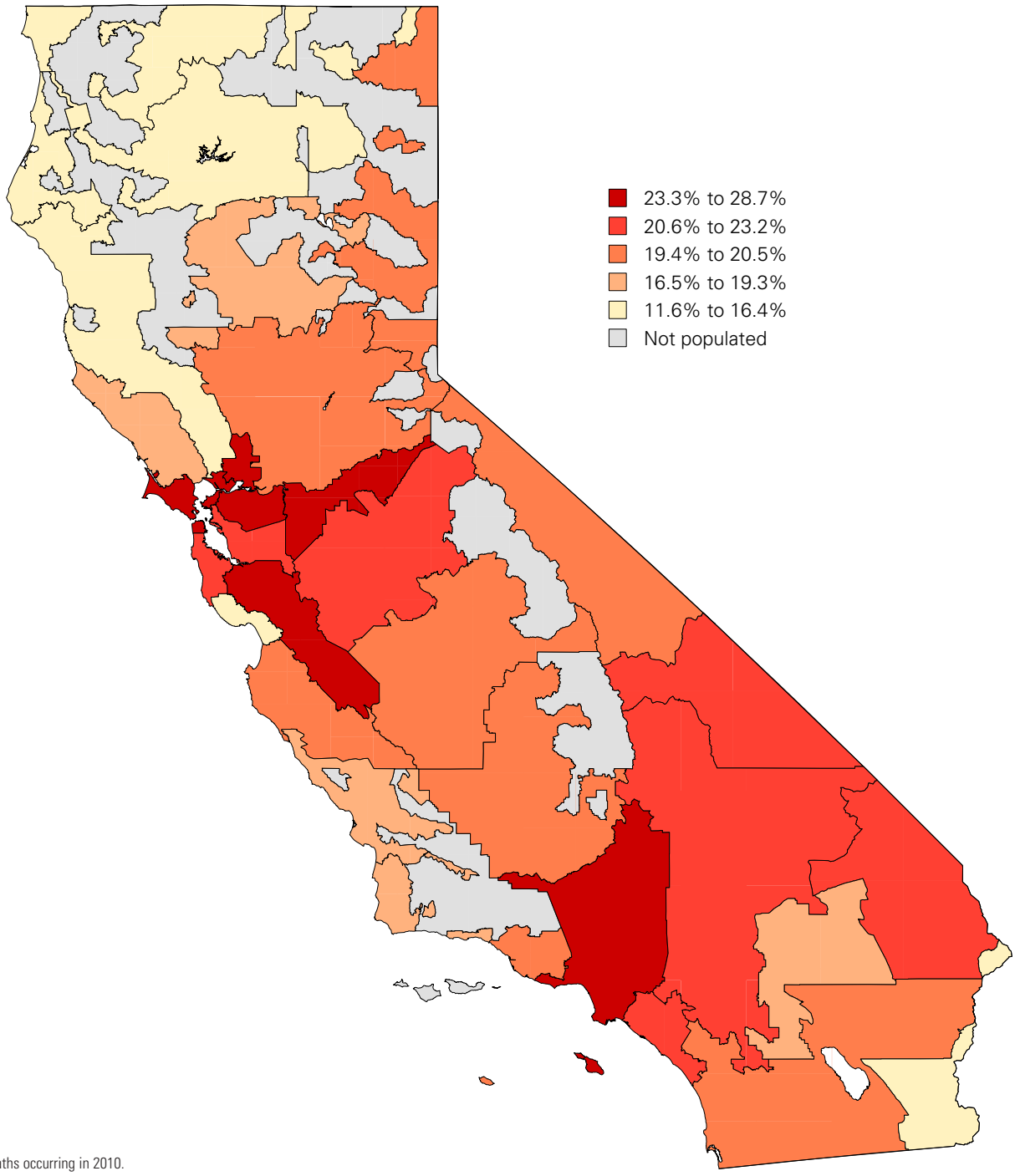


*Deaths occurring in 2010.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

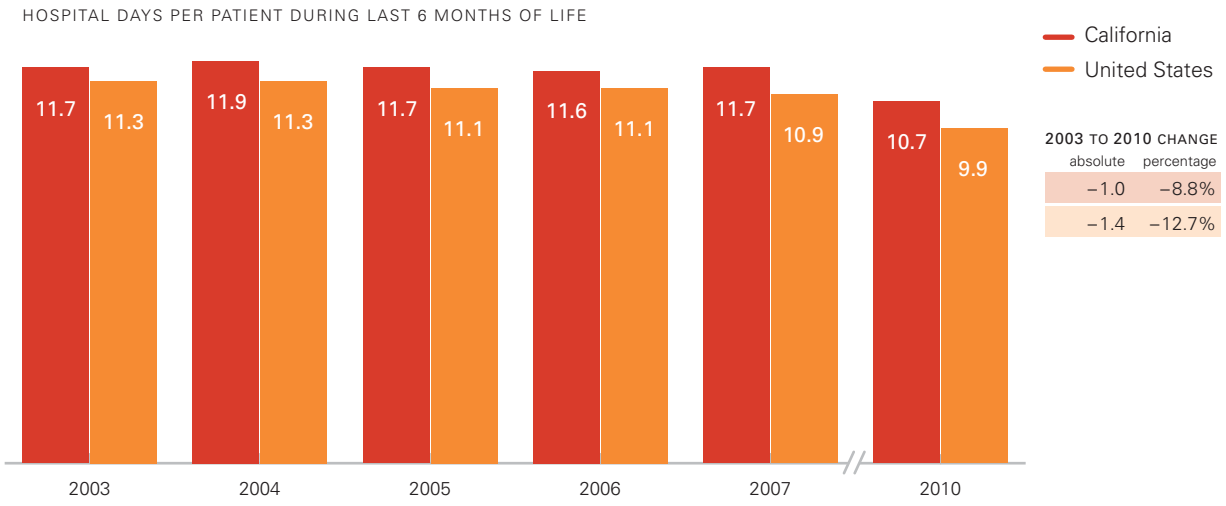
over 10 years as part of a series of metrics selected to improve the overall health and well-being of Californians.

Hospital Days During the Last Six Months of Life

Across the nation, chronically ill Medicare patients spent on average slightly fewer days in the hospital during the last six months of life in 2010 than in 2003, while the national rate dropped from 11.3 to 9.9 hospital days per patient (Figure 3). California's rate hovered around 11.7 days from 2003 to 2007, then dropped to 10.7 by 2010, although a few regions reported increases. The largest decrease in the state, 2.9 days or 23.3%, was in the Palm Springs/ Rancho Mirage region. Notably, the largest increases in some California regions were also some of the highest increases in the country. From 2003 to 2007, San Mateo County experienced a 28.2% increase, from 9.1 to 11.7 days; however, that trend then reversed, and San Mateo County had an average of 9.6 days in 2010. Santa Cruz saw an increase of 1.7 days, or 20% more hospital days (from 8.4 to 10.1) from 2003 to 2007, but then dropped to 7.4 days by 2010.

In 2010, patients in Los Angeles spent an average of two weeks in the hospital during their last six months of life, over twice as many days as patients in the Redding area, where the average was 6.6 days. Bakersfield (12.0 days), Ventura (11.9 days), and Alameda County (11.3 days) also recorded high averages for days in a hospital in the last six months of life. Patients in Santa Rosa (6.8 days), Santa Barbara (7.4 days), and Santa Cruz (7.4 days) spent considerably less time in the hospital than other California patients (Map 3).

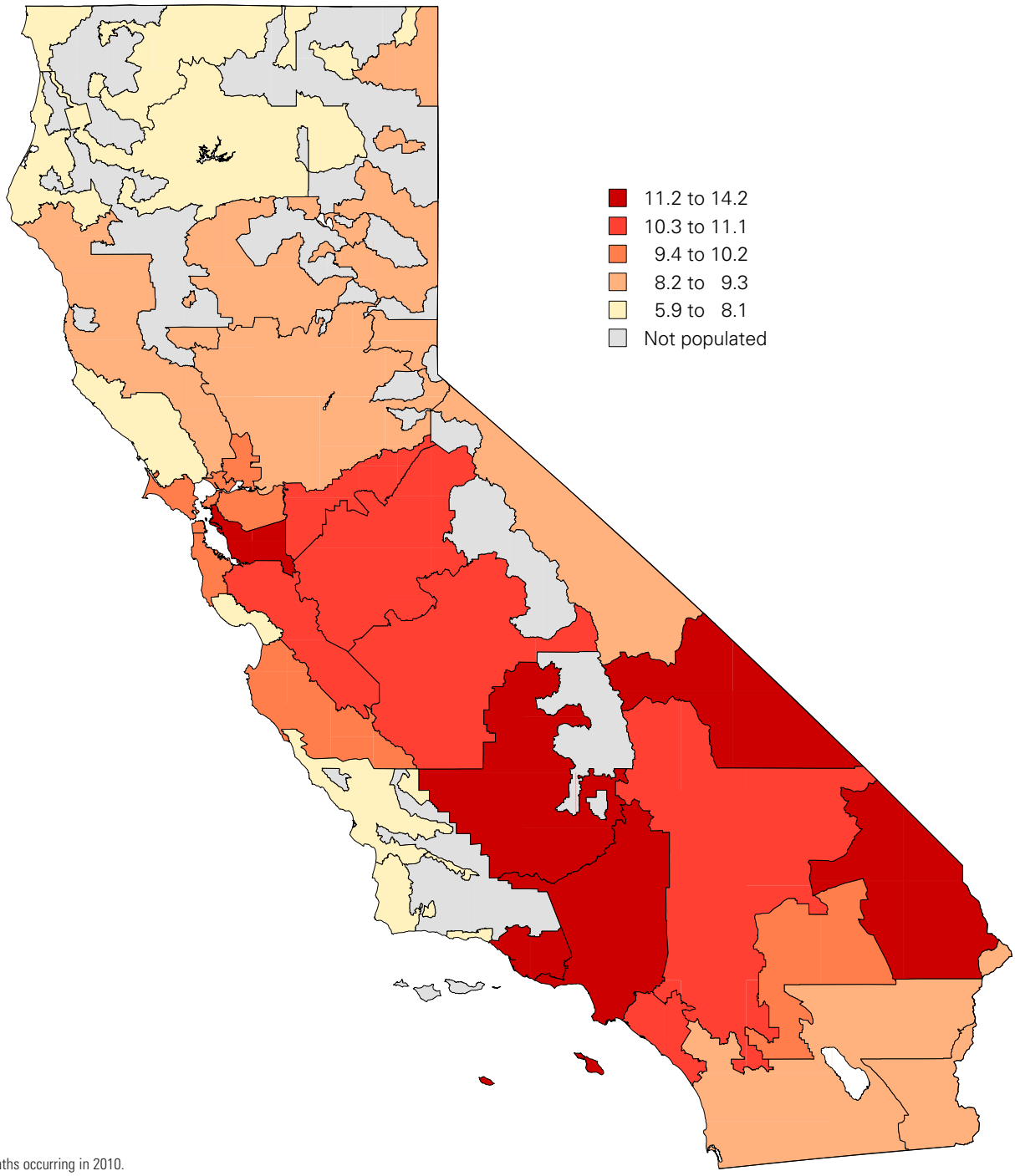
Figure 3. Hospital Days per Chronically Ill Medicare Patient During Last Six Months of Life California vs. US, 2003 to 2010



Notes: Average rates, all chronically ill patients regardless of hospitalization. Data for years 2008 and 2009 were not available.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Map 3. Hospital Days per Chronically Ill Medicare Patient During Last Six Months of Life, by California HRR, 2010*



*Deaths occurring in 2010.

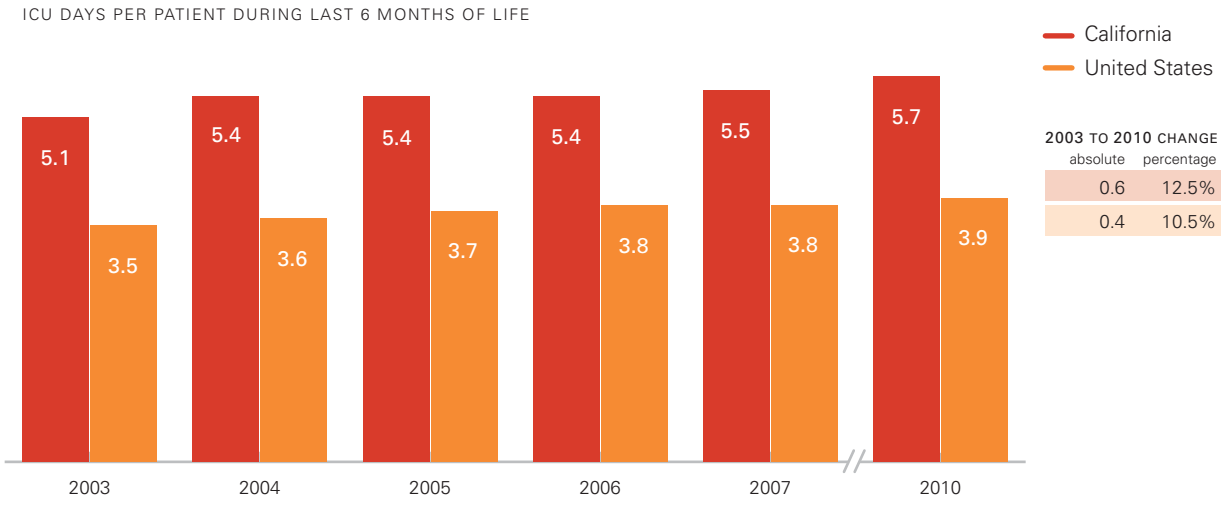
Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Intensive Care Days During the Last Six Months of Life

While chronically ill patients spent slightly less time, on average, in the hospital during their last six months of life in 2010 than in 2003, they spent more time in intensive care units (including both high- and intermediate-intensity beds), as the average number of intensive care days increased from 3.5 to 3.9. California's average again surpassed the national figures, rising from 5.1 days in 2003 to 5.7 days in 2010, even though there were decreases in some HRRs (Figure 4). The largest decrease was in the Palm Springs/Rancho Mirage region, where the average time spent in the ICU dropped 1.1 day, from 6.4 to 5.3 days, or 17.8%. Stockton saw the largest increase in ICU time, at 2.7 days, or 76.6%, from 3.5 to 6.2 days on average. It was closely followed by Ventura (up 1.4 days to 5.7 days), San Jose (up 1.4 days to 5.4 days), Contra Costa County (up 1.4 days to 5.1 days), and Alameda County (up 1.4 days to 4.8 days) (Map 4).

In 2010, time spent in the ICU varied widely for California patients at the end of life, from a high of 8.5 days in Los Angeles — which put the region on par with some of the highest-intensity regions in the country — to a low of just 2.8 days in Santa Rosa. On average, patients also had more ICU care in Stockton (6.2 days), Orange County (6.1 days), and San Bernardino (6.0 days) than patients in Redding (3.0 days), Chico (3.1 days), and Santa Barbara (3.4 days).

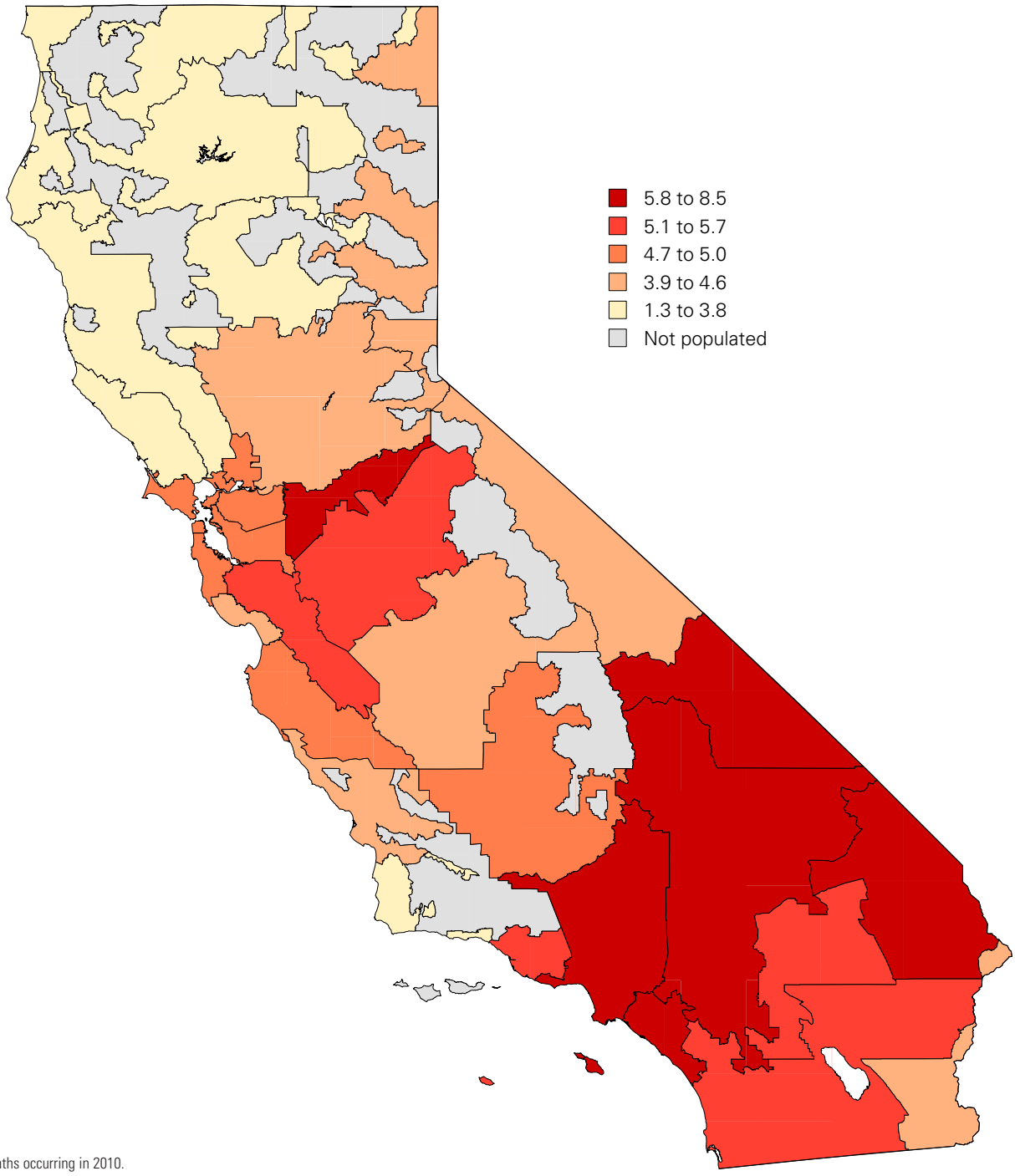
Figure 4. ICU Days per Chronically Ill Medicare Patient During Last Six Months of Life
California vs. US, 2003 to 2010



Notes: Average rates, all chronically ill patients regardless of hospitalization. Data for years 2008 and 2009 were not available.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Map 4. ICU Days per Chronically Ill Medicare Patient During Last Six Months of Life, by California HRR, 2010*



*Deaths occurring in 2010.

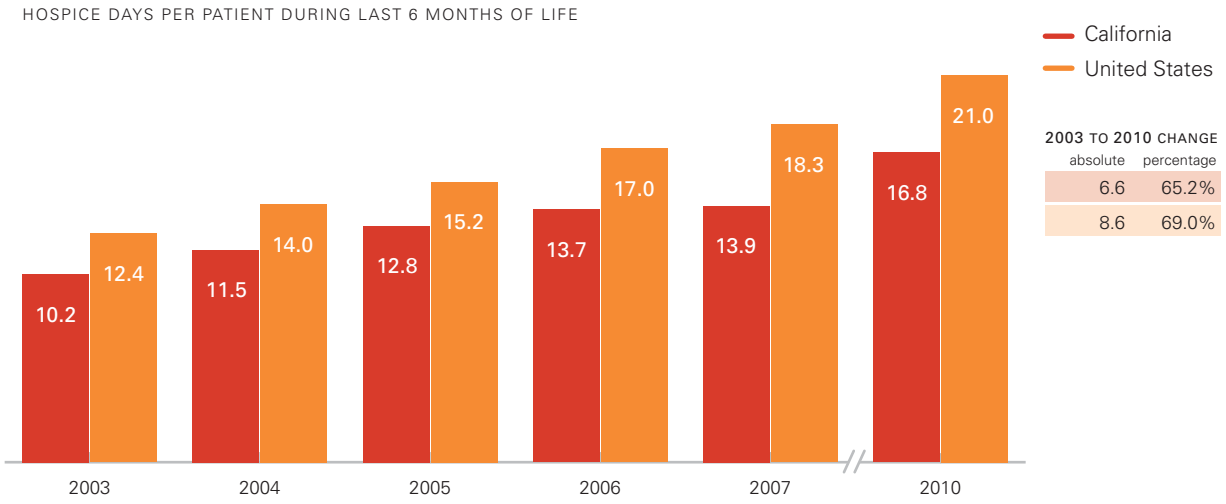
Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Hospice Days During the Last Six Months of Life

One important change in end-of-life care in recent decades has been the growing use of hospice care, which is intended to improve the quality of life for patients and provide support to their families. Nationwide, the average number of hospice days per patient in the last six months of life increased substantially between 2003 and 2010, from 12.4 days to 21.0 days. California's rate lagged behind the rest of the country, but still increased from 10.2 days to 16.8 days (Figure 5). Reflecting this trend, all California HRRs recorded increases of at least one day. The Santa Cruz area saw the largest increase, with hospice days per patient increasing by over two weeks (14.2 days, an increase of 153.6%) to 23.4 days. Several other regions more than doubled their hospice use, as well: Fresno increased use 8.4 days to 13.2 days; Redding increased hospice use 9.3 days to an average of 15.8 days; Bakersfield added 8.3 days to reach 16.0 days in 2010; and San Jose increased use by just over 100%, adding 8.3 days for a 2010 average of 16.5 days per patient.

Despite these gains, in 2010 California Medicare beneficiaries still experienced wide regional variation in the duration of hospice care they received. San Diego (24.4 days), Santa Cruz (23.4 days), and Palm Springs/Rancho Mirage (22.3 days) delivered the most days of hospice per patient, while Stockton (8.7 days), Modesto (12.4 days), and Fresno (13.2 days) delivered the fewest (Map 5).

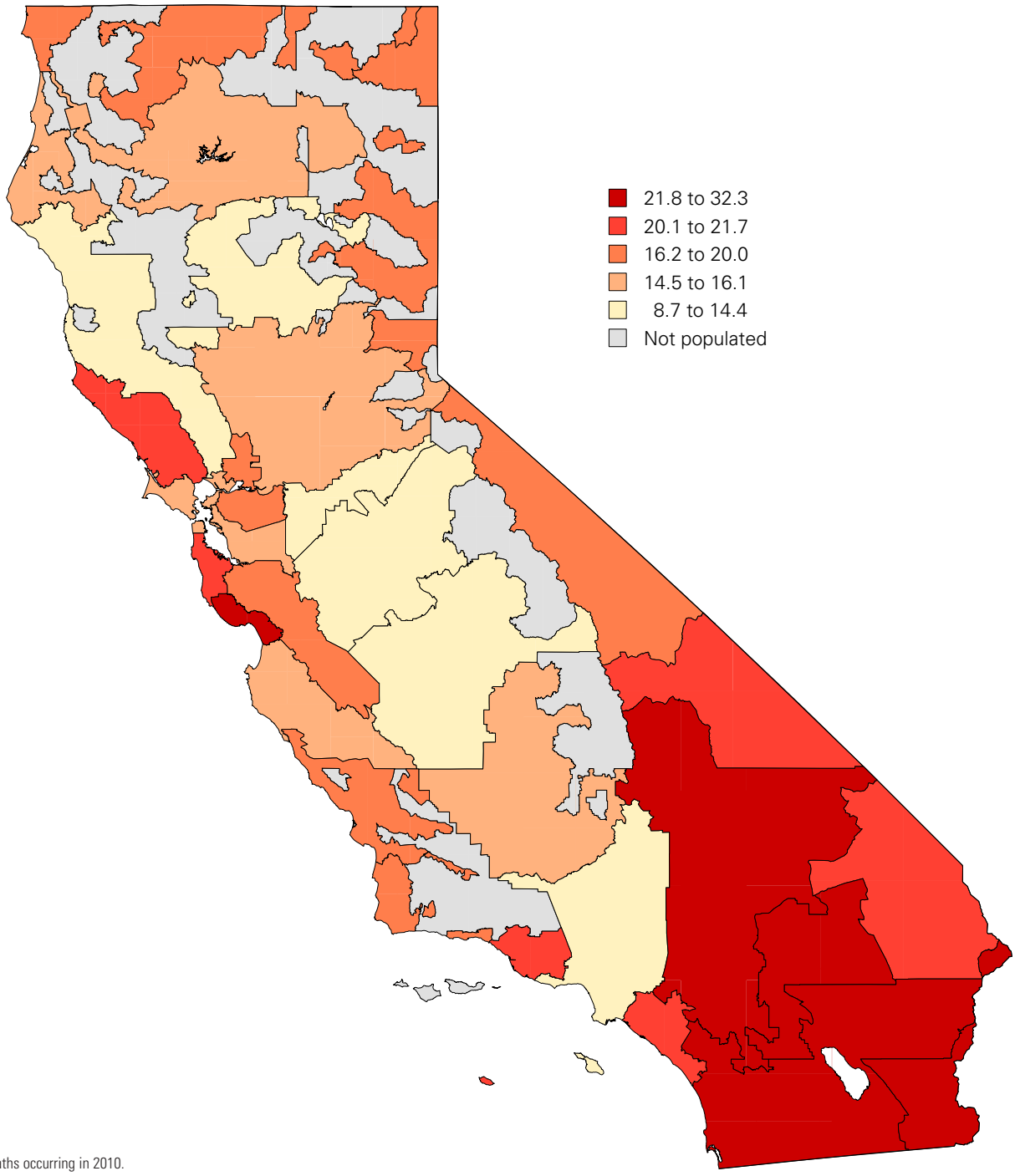
Figure 5. Hospice Days per Chronically Ill Medicare Patient During Last Six Months of Life California vs. US, 2003 to 2010



Notes: Average rates, all chronically ill patients regardless of hospitalization. Data for years 2008 and 2009 were not available.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Map 5. Hospice Days per Chronically Ill Medicare Patient During Last Six Months of Life, by California HRR, 2010*



*Deaths occurring in 2010.

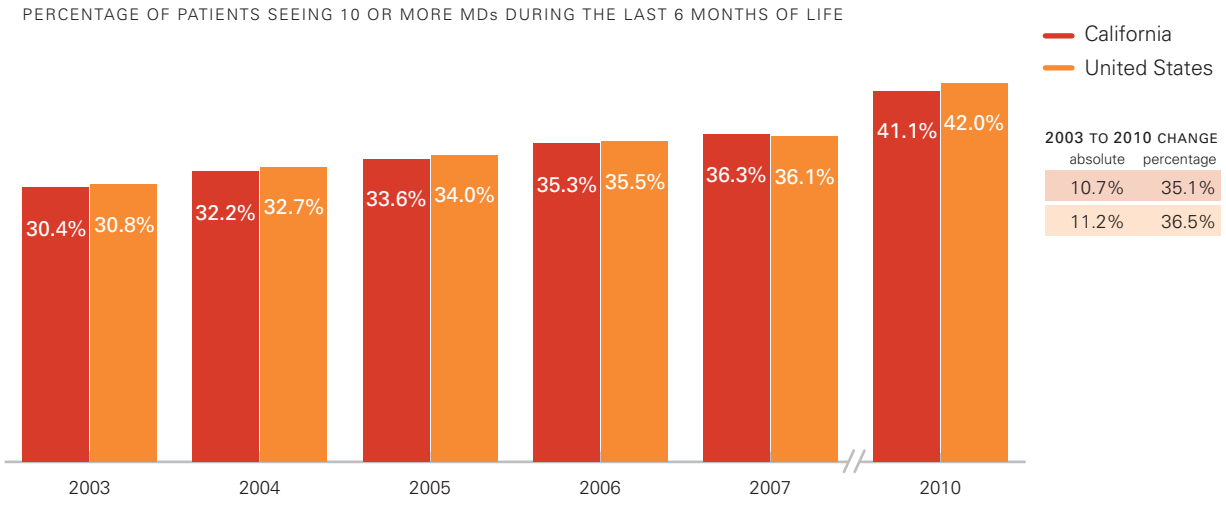
Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Patients Seeing 10 or More Doctors During the Last Six Months of Life

One measure of the intensity of care of dying patients is the number of different physicians they see during the last six months of life and the number of physician visits they have, most of which occur during hospitalizations. The percentage of California patients seeing 10 or more physicians increased on average between 2003 and 2010, but varied considerably from region to region. Across the country, Medicare beneficiaries with chronic disease were significantly more likely to be treated by 10 or more doctors in the last six months of life in 2010 than they were in 2003, as the national rate increased from 30.8% to 42%. California's rate closely followed this national trend, rising from 30.4% to 41.1% (Figure 6). Every HRR in the state saw at least a slight increase in the percentage of patients seeing many physicians, although Santa Cruz and San Mateo counties had slight decreases from 2007 to 2010 (down 2.8% and 0.2%, respectively). Stockton saw the highest increase in the state: The percentage of patients seeing 10 or more physicians more than doubled, from 16.5% in 2003 to 35.1% in 2010.

As of 2010, depending on where they lived, anywhere from just under one in four to more than one in two California Medicare beneficiaries saw 10 or more doctors in the last six months of life. Los Angeles (51.8%), Orange County (48.9%), and Contra Costa County (44.9%) patients had the highest chances of being treated by 10 or more doctors, while Redding (24.4%), Santa Rosa (27.4%), and Santa Cruz (28.9%) patients had the lowest chances (Map 6).

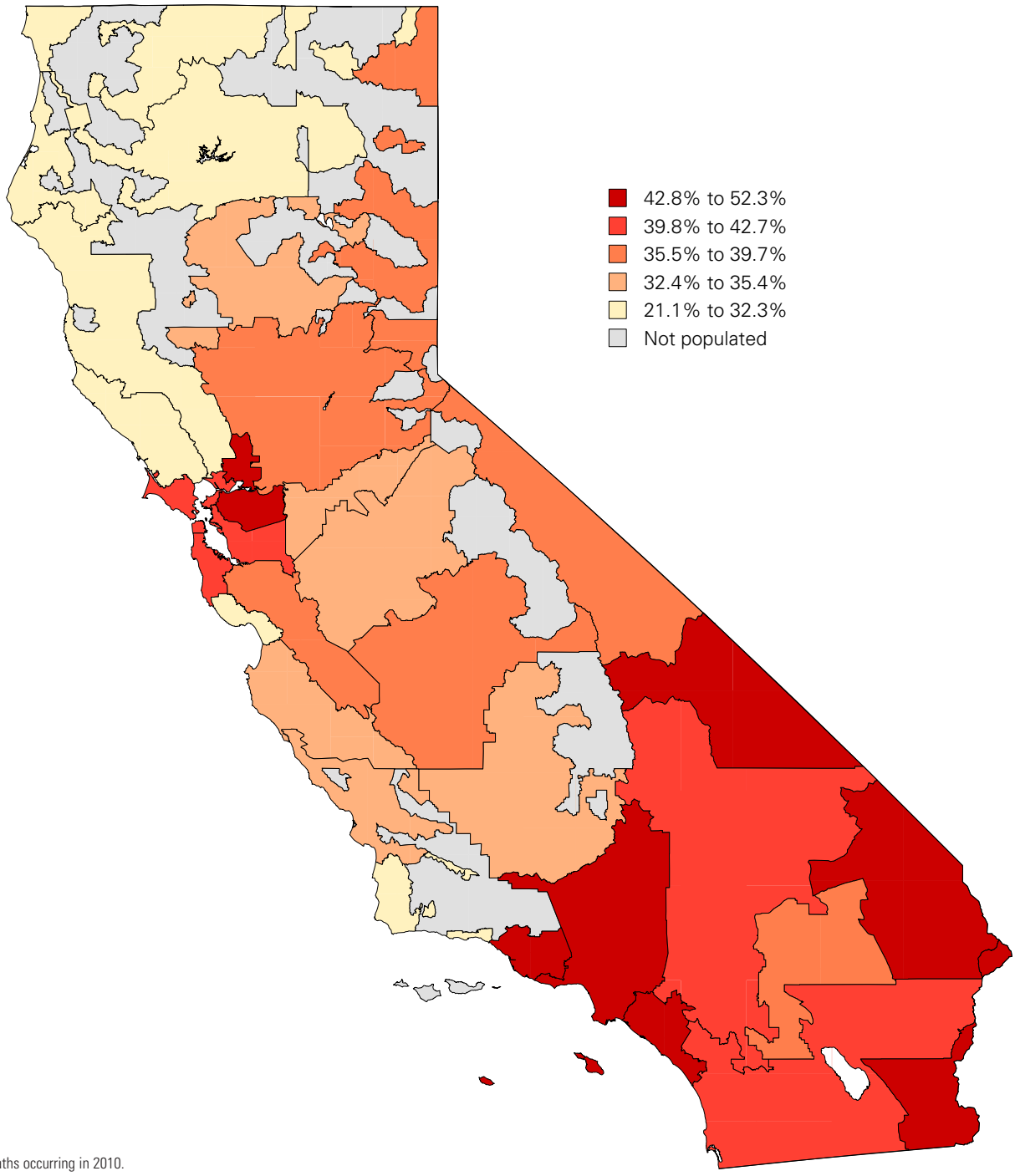
Figure 6. Chronically Ill Medicare Patients Seeing 10 or More Doctors During Last Six Months of Life California vs. US, 2003 to 2010



Notes: Average rates, all chronically ill patients regardless of hospitalization. Data for years 2008 and 2009 were not available.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

Map 6. Chronically Ill Medicare Patients Seeing 10 or More Doctors During Last Six Months of Life by California HRR, 2010*



*Deaths occurring in 2010.

Source: "The Dartmouth Atlas of Health Care," www.dartmouthatlas.org.

IV. Variation Among California Hospitals

In addition to varying by region, the kind and quantity of care Californians received as they approached the end of life also varied from hospital to hospital between 2003 and 2010. For this research, data on end-of-life care were collected at 75 of California's largest hospitals. To be selected, the hospitals had to have had at least 250 deaths per year among chronically ill patients between 2003 and 2010; however, in order to include all seven California academic medical centers, statistics from the University of California, Davis, and the University of California, San Diego, were included, even though they did not have 250 deaths.

Many of the 75 hospitals profiled here changed substantially in terms of the intensity of the end-of-life care they provided from 2003 to 2010, but not all in the same direction. The care became more aggressive at some hospitals, and more conservative in others.

Deaths in a Hospital

Between 2003 and 2010, more than three-quarters of these 75 hospitals saw a decline in the percentage of chronically ill Medicare beneficiaries who died in the hospital. Memorial Medical Center in Modesto had the largest drop (16.9%). Large decreases were also seen at Desert Regional Medical Center in Palm Springs (13.6%) and St. Joseph Hospital in Orange (13.0%). The largest increase (9.6%) was found at Adventist Medical Center in Hanford. Two California academic medical centers also had increases: UCLA Medical Center in Los Angeles (5.1%) and UC Davis Medical Center (1.6%).

On average, California hospitals started higher than the national average in 2003, and many of those that were below the national average in 2003 have since increased the percentage of deaths in the hospital and surpassed the national average in 2010. Among the few exceptions were UC San Diego Medical Center, which fell from 31.3% in 2003 to 23.7% in 2010, and St. Joseph Hospital in Eureka, which went from 33.0% in 2003 to 25.0% in 2010 (Appendix A).

Deaths Associated with Admission to Intensive Care

The changes from 2003 to 2010 in the rates of death associated with admission to intensive care differed widely among California hospitals. About half saw at least a small decrease. Among those hospitals with the largest decreases were San Antonio Community Hospital and West Hills Hospital and Medical Center, both in Southern California, which saw drops of 8.2% and 7.8%, respectively. Los Robles Hospital and Medical Center, east of Los Angeles, had a decrease of 7.4%, and Peninsula Medical Center in Burlingame saw a drop of 6.8%.

Several hospitals that had high rates of deaths in the hospital that included a stay in the ICU in 2003 rose even higher by 2010. UCLA Medical Center, which at 35.4% was the third-highest among these hospitals in 2003, increased 5.2 percentage points to 40.6%, making it the highest of the hospitals profiled in 2010. Glendale Adventist Medical Center, also high in 2003, went up 6.1 percentage points, from 33.4% in 2003 to 39.5% in 2007, and was second-highest in 2010. Notably, Antelope Valley Hospital Medical Center in Lancaster jumped 10.8 percentage points from 2003 to 2010, making it the fifth-highest of the hospitals profiled. St. Joseph's Medical Center

in Stockton had the largest increase, 17.3 percentage points, bringing its rate to 32.2% (Appendix B).

The experiences of patients who used Los Angeles hospitals demonstrate one of the striking differences between many Southern California hospitals and the rest of the nation. For example, Cedars-Sinai Medical Center patients were less likely (by 1.9 percentage points) in 2010 to be admitted to intensive care during their final hospital stay than they would have been in 2003; nevertheless, 38.2% of them still would be — far more than at the vast majority of hospitals in the rest of the country.

Hospital Days During the Last Six Months of Life

About two-thirds of the hospitals decreased the time their patients spent in the hospital at the end of life, some by quite a few days. St. John's Health Center in Santa Monica cut time in the hospital by over a week, from 20.7 days in 2003 to 13.5 days in 2010. Centinela Hospital Medical Center in Inglewood and San Antonio Community Hospital both reduced time by over five days.

Conversely, UC Irvine led the growth in hospital use — its patients experienced 4.9 more hospital days over the last six months of life in 2010 than they did in 2003, as the rate climbed from 11.1 days to 16.0. Glendale Adventist had the highest growth in use, from 18.0 days in 2003 to 21.7 in 2010 (Appendix C).

Intensive Care Days During the Last Six Months of Life

In most of the US, the average number of both high- and intermediate-intensity ICU days in the last six months of life changed only moderately. But among the 75 California hospitals profiled here, about two-thirds increased the average number of days such patients spent in the ICU. Some of the changes were large: Antelope Valley Hospital Medical Center, a district hospital, nearly tripled its ICU use for these patients, from an average of 4.8 days in 2003 to 12.9 days in 2010. In 2003, Antelope Valley had average ICU use; by 2010, it was second only to Methodist Hospital in Arcadia, which increased ICU use from 9.9 days in 2003 to 13.1 in 2010.

Centinela Hospital Medical Center in Inglewood had the largest decrease in intensive care days per patient, dropping from 12.6 days in 2003 to 8.7 in 2010. Fountain Valley Regional Hospital, in Southern California, had the second-largest decrease, going from 8.8 days in 2003 to 5.2 in 2010. Only one other hospital, St. John's in Santa Monica, had a decrease of more than two days, moving from 8.1 to 5.9 days (Appendix D).

Hospice Days During the Last Six Months of Life

All but one of the profiled hospitals increased their provision of hospice care to dying patients. Dominican Hospital, in Santa Cruz, led this trend with an increase of 112%, from 11.4 to 24.4 days per patient (an increase of 12.8 days). Dominican was followed by Peninsula Medical Center (up 12.3 days), UC Irvine Medical Center (up 12.2 days), and St. Joseph-Eureka and St. Joseph-Orange, both up 12.1 days. The only hospital to provide less hospice care in 2010 than in 2003 was Twin Cities Community Hospital, in Templeton, CA, where hospice days fell from 9.4 in 2003 to 8.9 in 2010.

Overall, Scripps Memorial in La Jolla led the state in the provision of hospice care in 2010, with 26.4 days per patient, followed by Palomar Medical Center (25.3 days), UC Irvine Medical Center (25.0 days), and Southwest Healthcare System, in Murrieta (24.9 days). Sierra View District Hospital, in Porterville, and Centinela Hospital Medical Center, in Inglewood, provided the fewest hospice

days per patient in the group, reporting just 6.5 days. Adventist Medical Center in Hanford (6.6 days) and Lodi Memorial Hospital (6.9 days) were also at the low end of the spectrum. Lodi is notable, however, because it nearly tripled its use from 2003 to 2010; it went from 2.4 hospice days per patient in 2003 to 6.9 in 2010, an increase of 4.5 days or 189%. Adventist, in contrast, increased use by only 0.4 days, or 7.3% (Appendix E).

Patients Seeing 10 or More Doctors During the Last Six Months of Life

Data on high numbers of physician encounters in 2003 and 2010 are available for 25 California hospitals. Only one of these hospitals reported a decrease in the percentage of patients seeing 10 or more doctors in the last six months of life between 2003 and 2010, while the rest increased this rate. Salinas Valley Memorial Hospital had the only decrease, falling 7.9 percentage points from 49.5% of patients to 41.6% of patients seeing 10 or more physicians in the last six months of life. The increases varied across the other facilities, from a small increase of 1.3% at Methodist Hospital of Southern California in Arcadia, to a large jump of 31.4 percentage points, from 22.5% to 53.9% of patients at Community Regional Medical Center in Fresno.

In 2010, several Los Angeles-area hospitals led the group in the rate of patients near the end of life who saw 10 or more physicians. An unusually large percentage — 67.9% — of patients experienced this intense level of care at Glendale Adventist Medical Center, as did 65.3% at Cedars-Sinai Medical Center, 65.2% at Hoag Memorial Hospital Presbyterian in Orange County, and 62.9% at UCLA Medical Center. On the opposite end of the spectrum, Sierra View District Hospital had the fewest patients seeing 10 or more doctors (22.6%). Sierra Nevada Memorial Hospital (28.3%) and Mercy Medical Center Redding (32.2%) were also low.

V. Conclusion

THE RESEARCH REVEALED WIDE VARIATION across California regions and hospitals in caring for patients at the end of life between 2003 and 2010. Most striking is the increase in intensity of care in some regions and hospitals but not others. The disparate findings point to the important role of the local delivery system in determining the care patients receive.

The growing use of hospice care in recent years reflects one effort to meet the challenge of providing higher quality care to dying patients. Declines in the rates of death in hospital and of death associated with admission to intensive care may also be evidence of attempts to provide care that aligns more closely with many patients' preferences. But not all hospitals changed at the same pace, and in some regions and some medical centers, patients were more likely to spend their last days of life in the hospital. Furthermore, the number of ICU days in the last six months of life increased both nationally and in most California hospitals and regions, as did the percentage of dying patients seeing 10 or more physicians.

Although it is possible that some of the differences in the care delivered to dying patients at different hospitals may be explained by differences in patients' preferences for care, studies show that variation in patient preferences explains only a little of the variation in the intensity of end-of-life care.[28] Differences in patient populations themselves also explain only some of the variation in care. By adjusting for differences in age, sex, race and illness — as the data in this report have been adjusted — it is possible to account for most of the variation in patient populations. (Insurance is not a factor because all of the studied patients have Medicare.) Therefore, whatever variation remains in the care that is delivered is caused by other factors, such as the availability of medical resources and the practice styles of health systems and clinicians. As this research shows, the remaining variation is substantial, both in the use of medical care in 2010 and in trends in end-of-life care.

This research has important implications for clinicians, hospitals, policymakers, and patients in California. Providers can see how their organizations and regions compare with others, and consider ways to provide less-costly care that is more closely aligned with patient wishes.[29,30] Policymakers can identify regions and hospitals that are using promising approaches — as well as those that may benefit from more support in improving the care of patients with serious chronic illness. Finally, patients can exert their influence through their choice of caregivers and by making their specific wishes known to their doctors.

Endnotes

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Appendix A: Deaths Occurring in Hospital by Hospital, 2003 to 2010

Hospital Name	2003	2010	ABSOLUTE CHANGE
San Francisco General Hospital Medical Center	44.6	49.5	4.9
Glendale Adventist Medical Center	40.7	46.7	5.9
UCLA Medical Center	39.1	44.1	5.1
Cedars-Sinai Medical Center	52.9	42.1	-10.8
Providence Saint Joseph Medical Center	41.1	41.7	0.7
Providence Tarzana Medical Center	48.0	40.8	-7.2
Torrance Memorial Medical Center	44.2	40.6	-3.6
Good Samaritan Hospital	36.7	40.5	3.8
Kaweah Delta Medical Center	45.7	40.0	-5.7
St. Joseph's Medical Center of Stockton	34.7	40.0	5.2
Methodist Hospital of Southern CA	42.8	39.9	-2.9
Mercy Medical Center Merced	43.9	39.6	-4.2
Seton Medical Center	43.5	39.3	-4.2
Antelope Valley Hospital Medical Center	39.5	39.0	-0.5
Washington Hospital	49.4	38.8	-10.6
Regional Medical Center of San Jose	59.7	38.8	-20.9
California Pacific Medical Center	39.4	38.6	-0.8
Mercy San Juan Medical Center	35.6	38.6	2.9
St. John's Regional Medical Center	39.7	38.1	-1.6
Centinela Hospital Medical Center	44.0	38.1	-5.9
Stanford Hospital and Clinics	40.8	38.0	-2.7
UCSF Medical Center	41.3	37.8	-3.5
Community Regional Medical Center	49.4	36.9	-12.5
Grossmont Hospital	34.9	36.8	2.0
Community Hospital of the Monterey Peninsula	29.9	36.6	6.6
Santa Monica - UCLA Medical Center & Ortho	38.5	36.4	-2.1
Sharp Memorial Hospital	39.6	36.3	-3.3
Lodi Memorial Hospital	39.8	36.2	-3.6
El Camino Hospital	42.0	35.7	-6.3
O'Connor Hospital	39.3	35.7	-3.6
Mission Hospital Regional Medical Center	37.0	35.4	-1.6
Loma Linda University Medical Center	37.3	35.3	-2.0
Long Beach Memorial Medical Center	44.6	35.0	-9.6
Saint Agnes Medical Center	46.4	34.8	-11.6
Huntington Memorial Hospital	42.2	34.3	-7.9
Santa Barbara Cottage Hospital	35.4	34.3	-1.1
Salinas Valley Memorial Hospital	35.4	33.8	-1.6
Saint John's Health Center	44.3	33.8	-10.5
Riverside Community Hospital	42.7	33.6	-9.1
UC Davis Medical Center	31.9	33.6	1.6
John Muir Medical Center - Walnut Creek	40.4	33.5	-6.8
Citrus Valley Medical Center-IC Campus	27.8	33.5	5.7
Marian Medical Center	35.2	33.4	-1.8
Los Robles Hospital & Medical Center	41.1	33.4	-7.7
Enloe Medical Center	33.6	32.9	-0.7
Marin General Hospital	32.8	32.7	-0.1
UC Irvine Medical Center	36.3	32.4	-3.9
Alta Bates Summit Medical Center	35.9	32.4	-3.5
Sutter General Hospital	41.5	32.3	-9.2
Sierra Nevada Memorial Hospital	31.1	32.1	1.1
Memorial Medical Center	48.5	31.6	-16.9
West Hills Hospital & Medical Center	41.4	31.6	-9.8
Santa Rosa Memorial Hospital	36.8	31.1	-5.7
Twin Cities Community Hospital	29.2	31.0	1.8
Providence Little Company of Mary	36.3	30.9	-5.3
Sutter Roseville Medical Center	42.1	30.9	-11.2

			ABSOLUTE CHANGE
St. Jude Medical Center	30.8	30.4	-0.5
Peninsula Medical Center	39.0	30.3	-8.7
Mercy Medical Center Redding	38.4	30.0	-8.4
Rideout Memorial Hospital	37.9	29.9	-8.0
Scripps Memorial Hospital La Jolla	31.3	29.2	-2.1
Hoag Memorial Hospital Presbyterian	37.8	28.3	-9.5
Scripps Mercy Hospital	33.0	28.3	-4.8
Queen of the Valley Medical Center	31.1	27.9	-3.2
Southwest Healthcare System	29.4	27.8	-1.6
Shasta Regional Medical Center	34.8	27.8	-7.1
Saddleback Memorial Medical Center	31.4	27.4	-4.1
Presbyterian Intercommunity Hospital	33.0	25.5	-7.6
San Antonio Community Hospital	34.8	25.4	-9.4
Eisenhower Medical Center	33.2	25.3	-8.0
Dominican Hospital	34.0	25.0	-9.0
Scripps Memorial Hospital - Encinitas	24.9	24.1	-0.8
UC San Diego Medical Center	31.3	23.7	-7.6
Hemet Valley Medical Center	35.1	22.9	-12.1
St. Joseph Hospital	35.5	22.5	-13.0
Palomar Medical Center	25.1	20.5	-4.7
Tri-City Medical Center	23.0	19.7	-3.3

Appendix B: Deaths Associated with ICU Admission by Hospital, 2003 to 2010

Hospital Name	2003	2010	ABSOLUTE CHANGE
UCLA Medical Center	35.4	40.6	5.1
Glendale Adventist Medical Center	33.4	39.5	6.1
Cedars-Sinai Medical Center	40.0	38.2	-1.9
Methodist Hospital of Southern CA	31.8	37.5	5.7
Antelope Valley Hospital Medical Center	23.8	34.5	10.8
Providence Saint Joseph Medical Center	30.2	33.9	3.7
Stanford Hospital and Clinics	29.4	33.1	3.7
Mercy San Juan Medical Center	22.9	32.7	9.8
Santa Monica - UCLA Medical Center & Ortho	34.8	32.6	-2.3
Mission Hospital Regional Medical Center	32.7	32.4	-0.2
St. Joseph's Medical Center of Stockton	14.9	32.2	17.3
Centinela Hospital Medical Center	37.6	31.9	-5.7
San Francisco General Hospital Medical Center	23.5	31.4	7.9
Loma Linda University Medical Center	34.1	30.8	-3.3
Citrus Valley Medical Center-IC Campus	22.9	30.7	7.8
Regional Medical Center of San Jose	47.7	30.6	-17.1
Torrance Memorial Medical Center	33.7	30.3	-3.3
Sharp Memorial Hospital	29.4	30.3	0.9
Grossmont Hospital	24.2	29.9	5.7
Long Beach Memorial	34.9	29.8	-5.1
Providence Tarzana Medical Center	36.8	29.5	-7.3
Mercy Medical Center Merced	25.1	29.5	4.4
Seton Medical Center	31.2	29.2	-2.0
UC Davis Medical Center	26.4	28.7	2.3
Huntington Memorial Hospital	25.5	28.5	3.0
California Pacific Medical Center	27.1	28.3	1.1
St. John's Regional Medical Center	25.4	28.1	2.7
O'Connor Hospital	27.5	28.0	0.5
UC Irvine Medical Center	29.6	27.7	-1.9
Community Regional Medical Center	26.7	27.3	0.5
Saint John's Health Center	30.8	27.2	-3.6
St. Jude Medical Center	21.5	27.2	5.6
Sutter General Hospital	27.6	26.8	-0.7
Providence Little Company of Mary	29.5	26.7	-2.8
El Camino Hospital	30.1	26.6	-3.6
Marin General Hospital	20.5	26.4	5.9
Salinas Valley Memorial Hospital	29.0	26.3	-2.7
Southwest Healthcare System	25.2	25.5	0.3
John Muir Medical Center - Walnut Creek	21.5	25.4	4.0
Scripps Memorial Hospital La Jolla	21.4	24.7	3.2
West Hills Hospital & Medical Center	32.1	24.3	-7.8
Saddleback Memorial Medical Center	23.8	24.0	0.2
Washington Hospital	28.3	23.7	-4.6
Alta Bates Summit Medical Center	22.1	23.6	1.6
Memorial Medical Center	29.2	23.5	-5.8
Marian Medical Center	21.2	23.2	1.9
Riverside Community Hospital	28.2	23.0	-5.2
Saint Agnes Medical Center	23.1	22.9	-0.2
Scripps Mercy Hospital	26.0	22.8	-3.2
UCSF Medical Center	20.3	22.7	2.4
Good Samaritan Hospital	20.9	22.5	1.6
Santa Barbara Cottage Hospital	17.9	22.0	4.2
Sutter Roseville Medical Center	28.4	22.0	-6.4
Los Robles Hospital & Medical Center	28.8	21.4	-7.4
Santa Rosa Memorial Hospital	19.1	21.2	2.1
Enloe Medical Center	21.7	21.1	-0.6

			ABSOLUTE CHANGE
Hemet Valley Medical Center	25.0	21.0	-4.0
San Antonio Community Hospital	28.6	20.5	-8.2
Eisenhower Medical Center	24.9	20.3	-4.6
Hoag Memorial Hospital Presbyterian	20.6	20.3	-0.3
Peninsula Medical Center	27.0	20.3	-6.8
Presbyterian Intercommunity Hospital	20.0	20.2	0.2
Mercy Medical Center Redding	25.8	20.1	-5.7
Queen of the Valley Medical Center	17.8	20.0	2.2
Community Hospital of the Monterey Peninsula	18.3	19.9	1.7
Shasta Regional Medical Center	20.5	19.3	-1.2
St. Joseph Hospital	25.0	18.7	-6.3
UC San Diego Medical Center	23.7	17.8	-5.8
Tri-City Medical Center	19.2	17.8	-1.4
Dominican Hospital	18.0	17.7	-0.3
Rideout Memorial Hospital	22.1	17.5	-4.5
Kaweah Delta Medical Center	23.0	17.4	-5.6
Twin Cities Community Hospital	14.5	17.0	2.5
Palomar Medical Center	19.0	15.4	-3.5
Lodi Memorial Hospital	16.2	14.2	-2.0
Scripps Memorial Hospital - Encinitas	9.4	13.4	4.1
Sierra Nevada Memorial Hospital	9.2	8.1	-1.2

Appendix C: Hospital Days per Patient During Last Six Months of Life by Hospital, 2003 to 2010

Hospital Name	2003	2010	ABSOLUTE CHANGE
Glendale Adventist Medical Center	18.6	21.7	3.1
Cedars-Sinai Medical Center	22.9	19.0	-3.9
Providence Saint Joseph Medical Center	16.5	18.8	2.3
Los Robles Hospital & Medical Center	17.3	18.6	1.3
Providence Tarzana Medical Center	19.5	18.4	-1.2
West Hills Hospital & Medical Center	19.3	18.2	-1.1
Washington Hospital	16.2	18.1	1.9
Methodist Hospital of Southern CA	16.6	17.9	1.3
Antelope Valley Hospital Medical Center	18.8	17.8	-1.0
UCLA Medical Center	16.2	16.8	0.7
Citrus Valley Medical Center-IC Campus	14.7	16.7	1.9
Riverside Community Hospital	14.3	16.3	1.9
Seton Medical Center	17.7	16.2	-1.5
Santa Monica - UCLA Medical Center & Ortho	16.4	16.2	-0.2
UC Irvine Medical Center	11.1	16.0	4.9
Regional Medical Center of San Jose	18.2	15.9	-2.3
Kaweah Delta Medical Center	14.2	15.1	0.8
Huntington Memorial Hospital	17.2	14.5	-2.7
St. John's Regional Medical Center	14.0	14.1	0.1
Mercy Medical Center Merced	13.1	13.9	0.8
Torrance Memorial Medical Center	12.6	13.8	1.2
Community Regional Medical Center	13.2	13.6	0.3
Good Samaritan Hospital	10.6	13.5	3.0
Saint John's Health Center	20.7	13.5	-7.2
Centinela Hospital Medical Center	18.9	13.5	-5.4
San Francisco General Hospital Medical Center	10.9	13.4	2.5
Memorial Medical Center	15.8	13.4	-2.4
Long Beach Memorial Medical Center	14.7	13.4	-1.3
Alta Bates Summit Medical Center	13.9	13.4	-0.5
Hoag Memorial Hospital Presbyterian	14.1	13.3	-0.8
UCSF Medical Center	13.7	13.2	-0.5
Providence Little Company of Mary	14.9	13.0	-1.8
O'Connor Hospital	14.9	13.0	-1.9
Hemet Valley Medical Center	13.1	12.9	-0.1
St. Joseph's Medical Center of Stockton	11.1	12.6	1.4
Mission Hospital Regional Medical Center	14.2	12.5	-1.7
Lodi Memorial Hospital	10.3	12.5	2.2
El Camino Hospital	10.8	12.3	1.5
Eisenhower Medical Center	13.1	12.0	-1.1
Scripps Mercy Hospital	13.3	12.0	-1.2
Saint Agnes Medical Center	13.4	12.0	-1.4
Loma Linda University Medical Center	13.9	12.0	-1.9
UC Davis Medical Center	9.9	11.8	1.9
John Muir Medical Center - Walnut Creek	13.4	11.8	-1.6
Salinas Valley Memorial Hospital	13.2	11.8	-1.5
Community Hospital of the Monterey Peninsula	11.6	11.5	-0.1
Marin General Hospital	9.3	11.5	2.2
Queen of the Valley Medical Center	12.6	11.5	-1.1
Presbyterian Intercommunity Hospital	12.9	11.4	-1.5
St. Jude Medical Center	13.7	11.4	-2.3
Stanford Hospital and Clinics	12.3	11.4	-0.9
Twin Cities Community Hospital	10.8	11.3	0.5
Rideout Memorial Hospital	12.8	11.2	-1.6
Saddleback Memorial Medical Center	10.3	11.2	0.9
Southwest Healthcare System	11.6	11.1	-0.5
Enloe Medical Center	12.3	11.1	-1.1

			ABSOLUTE CHANGE
Sharp Memorial Hospital	12.6	11.1	-1.5
Scripps Memorial Hospital La Jolla	13.0	11.1	-1.9
UC San Diego Medical Center	10.4	10.7	0.4
Mercy San Juan Medical Center	10.4	10.7	0.3
California Pacific Medical Center	11.7	10.5	-1.2
Grossmont Hospital	9.6	10.3	0.8
Peninsula Medical Center	10.4	9.9	-0.5
Sutter General Hospital	11.1	9.8	-1.3
San Antonio Community Hospital	14.7	9.6	-5.1
Shasta Regional Medical Center	12.2	9.6	-2.6
St. Joseph Hospital	12.2	9.5	-2.7
Scripps Memorial Hospital - Encinitas	13.1	9.3	-3.8
Santa Barbara Cottage Hospital	11.6	9.2	-2.4
Tri-City Medical Center	8.6	9.2	0.5
Santa Rosa Memorial Hospital	10.4	9.2	-1.2
Marian Medical Center	9.9	8.7	-1.1
Mercy Medical Center Redding	11.3	8.7	-2.6
Palomar Medical Center	10.5	8.7	-1.8
Sierra Nevada Memorial Hospital	9.7	8.2	-1.5
Dominican Hospital	9.5	8.1	-1.4
Sutter Roseville Medical Center	10.5	8.1	-2.4

Appendix D: ICU Days per Patient During Last Six Months of Life by Hospital, 2003 to 2010

Hospital Name	2003	2010	ABSOLUTE CHANGE
Methodist Hospital of Southern CA	9.9	13.1	3.2
Antelope Valley Hospital Medical Center	4.8	12.9	8.1
UCLA Medical Center	10.2	12.4	2.2
Glendale Adventist Medical Center	9.1	12.1	3.0
Cedars-Sinai Medical Center	9.2	12.0	2.8
Santa Monica - UCLA Medical Center & Ortho	8.8	11.6	2.8
UC Irvine Medical Center	6.8	11.0	4.2
Providence Tarzana Medical Center	10.1	10.4	0.3
Citrus Valley Medical Center-IC Campus	7.7	10.0	2.3
West Hills Hospital & Medical Center	11.6	9.8	-1.8
Mission Hospital Regional Medical Center	10.4	9.7	-0.7
Huntington Memorial Hospital	7.8	9.6	1.8
Providence Saint Joseph Medical Center	7.3	9.4	2.1
Southwest Healthcare System	7.1	9.1	1.9
Providence Little Company of Mary	9.3	8.9	-0.5
St. John's Regional Medical Center	7.1	8.8	1.7
Centinela Hospital Medical Center	12.6	8.7	-3.9
Riverside Community Hospital	5.7	8.7	3.0
St. Jude Medical Center	8.4	8.5	0.2
Long Beach Memorial Medical Center	7.8	8.5	0.7
Hemet Valley Medical Center	6.9	8.4	1.5
Regional Medical Center of San Jose	9.2	8.4	-0.8
Stanford Hospital and Clinics	4.5	8.1	3.6
St. Joseph's Medical Center of Stockton	2.5	7.9	5.4
O'Connor Hospital	7.7	7.8	0.2
Sharp Memorial Hospital	6.5	7.8	1.3
Community Regional Medical Center	4.7	7.8	3.1
Marin General Hospital	4.0	7.7	3.8
Grossmont Hospital	5.7	7.4	1.7
Memorial Medical Center	6.3	7.3	1.1
Torrance Memorial Medical Center	7.0	7.3	0.3
Seton Medical Center	8.3	7.2	-1.1
Saddleback Memorial Medical Center	4.6	6.9	2.4
El Camino Hospital	4.9	6.8	1.9
Salinas Valley Memorial Hospital	6.8	6.7	-0.1
UC Davis Medical Center	6.4	6.7	0.3
Loma Linda University Medical Center	7.9	6.7	-1.2
UC San Diego Medical Center	6.8	6.6	-0.2
Scripps Memorial Hospital La Jolla	7.5	6.6	-0.9
St. Joseph Hospital	6.5	6.4	-0.1
Mercy San Juan Medical Center	4.9	6.3	1.5
Scripps Mercy Hospital	6.2	6.3	0.0
Mercy Medical Center Merced	3.9	6.2	2.4
Eisenhower Medical Center	6.8	6.1	-0.7
Alta Bates Summit Medical Center	4.8	6.1	1.3
San Antonio Community Hospital	7.7	6.0	-1.7
Presbyterian Intercommunity Hospital	4.5	6.0	1.5
Saint John's Health Center	8.1	5.9	-2.1
Sutter General Hospital	5.7	5.7	0.0
Los Robles Hospital & Medical Center	6.2	5.7	-0.5
Community Hospital of the Monterey Peninsula	4.4	5.5	1.1
Tri-City Medical Center	4.1	5.5	1.4
Saint Agnes Medical Center	4.5	5.4	0.9
Queen of the Valley Medical Center	2.5	5.2	2.6
California Pacific Medical Center	4.2	5.1	0.9
John Muir Medical Center - Walnut Creek	4.7	5.1	0.4

			ABSOLUTE CHANGE
Sutter Roseville Medical Center	5.0	4.9	-0.1
Mercy Medical Center Redding	6.2	4.9	-1.3
Palomar Medical Center	5.1	4.8	-0.3
Hoag Memorial Hospital Presbyterian	3.2	4.5	1.3
Santa Barbara Cottage Hospital	3.9	4.3	0.3
Marian Medical Center	4.0	4.3	0.3
Rideout Memorial Hospital	4.0	4.2	0.2
Shasta Regional Medical Center	4.6	4.1	-0.5
Dominican Hospital	3.1	4.0	0.8
Washington Hospital	4.2	3.8	-0.4
Good Samaritan Hospital	2.2	3.6	1.4
UCSF Medical Center	3.4	3.6	0.2
Kaweah Delta Medical Center	4.1	3.6	-0.5
Peninsula Medical Center	4.4	3.6	-0.8
San Francisco General Hospital Medical Center	2.7	3.5	0.8
Santa Rosa Memorial Hospital	3.0	3.5	0.5
Enloe Medical Center	4.6	3.5	-1.1
Twin Cities Community Hospital	4.0	3.4	-0.6
Scripps Memorial Hospital - Encinitas	2.9	2.4	-0.5
Lodi Memorial Hospital	1.7	1.7	0.0
Sierra Nevada Memorial Hospital	1.0	1.1	0.1

Appendix E: Hospice Days per Patient During Last Six Months of Life by Hospital, 2003 to 2010

Hospital Name	2003	2010	ABSOLUTE CHANGE
Scripps Memorial Hospital - Encinitas	24.0	30.5	6.6
Scripps Memorial Hospital La Jolla	15.7	26.4	10.6
Palomar Medical Center	16.5	25.3	8.8
UC Irvine Medical Center	12.8	25.0	12.2
Southwest Healthcare System	15.2	24.9	9.7
Dominican Hospital	11.4	24.2	12.8
UC San Diego Medical Center	15.5	24.2	8.7
Hemet Valley Medical Center	13.8	23.7	9.9
Tri-City Medical Center	21.5	23.0	1.5
Peninsula Medical Center	10.0	22.4	12.3
St. Joseph Hospital	10.1	22.2	12.1
Sharp Memorial Hospital	15.2	21.3	6.1
Saddleback Memorial Medical Center	14.1	21.1	7.0
St. John's Regional Medical Center	8.9	19.9	11.0
Mission Hospital Regional Medical Center	14.0	19.8	5.7
Santa Rosa Memorial Hospital	12.6	19.3	6.7
Loma Linda University Medical Center	15.6	19.2	3.6
Grossmont Hospital	14.4	19.1	4.6
Queen of the Valley Medical Center	16.0	19.0	3.0
Scripps Mercy Hospital	15.0	18.5	3.5
Hoag Memorial Hospital Presbyterian	10.9	18.5	7.5
John Muir Medical Center - Walnut Creek	9.4	18.3	8.8
Sierra Nevada Memorial Hospital	12.1	18.0	5.9
Eisenhower Medical Center	15.1	17.7	2.6
Los Robles Hospital & Medical Center	10.5	17.6	7.1
St. Jude Medical Center	9.2	17.5	8.3
Marin General Hospital	12.9	17.4	4.5
Huntington Memorial Hospital	7.9	16.9	9.0
Community Hospital of the Monterey Peninsula	12.6	16.9	4.2
Providence Tarzana Medical Center	6.1	16.6	10.5
Riverside Community Hospital	12.2	16.6	4.4
San Antonio Community Hospital	12.5	16.2	3.8
Memorial Medical Center	7.5	15.9	8.5
Santa Monica - UCLA Medical Center & Ortho	11.3	15.7	4.4
Stanford Hospital and Clinics	6.4	15.7	9.3
Sutter General Hospital	5.8	15.4	9.7
Santa Barbara Cottage Hospital	11.8	15.4	3.6
UCSF Medical Center	7.3	15.2	7.8
Enloe Medical Center	10.1	14.7	4.6
Providence Little Company of Mary	10.5	14.7	4.1
Torrance Memorial Medical Center	11.5	14.6	3.1
El Camino Hospital	9.1	14.4	5.3
California Pacific Medical Center	6.0	13.6	7.6
Good Samaritan Hospital	11.8	13.6	1.8
Long Beach Memorial Medical Center	9.0	13.6	4.6
O'Connor Hospital	7.3	13.6	6.3
Antelope Valley Hospital Medical Center	7.1	13.5	6.4
Sutter Roseville Medical Center	8.9	13.5	4.5
Regional Medical Center of San Jose	4.7	13.5	8.8
Washington Hospital	3.4	13.3	9.9
Saint Agnes Medical Center	6.9	13.2	6.3
West Hills Hospital & Medical Center	5.9	13.2	7.3
Kaweah Delta Medical Center	6.7	12.7	6.0
Saint John's Health Center	7.2	12.6	5.4
Shasta Regional Medical Center	6.7	12.6	5.9
Mercy San Juan Medical Center	4.4	12.2	7.8

			ABSOLUTE CHANGE
Glendale Adventist Medical Center	6.2	12.1	5.9
Rideout Memorial Hospital	7.3	12.0	4.8
UC Davis Medical Center	11.0	12.0	1.0
Alta Bates Summit Medical Center	8.8	11.9	3.1
Marian Medical Center	5.2	11.5	6.3
Seton Medical Center	4.9	11.4	6.5
Community Regional Medical Center	2.8	11.4	8.6
Mercy Medical Center Redding	7.7	11.2	3.5
Providence Saint Joseph Medical Center	7.2	10.9	3.7
Presbyterian Intercommunity Hospital	10.2	10.8	0.6
UCLA Medical Center	9.2	10.6	1.3
Salinas Valley Memorial Hospital	8.3	10.0	1.7
Methodist Hospital of Southern CA	8.1	9.7	1.6
Citrus Valley Medical Center-IC Campus	7.1	9.6	2.5
Cedars-Sinai Medical Center	5.5	9.4	4.0
Twin Cities Community Hospital	9.4	8.9	-0.5
San Francisco General Hospital Medical Center	5.1	8.8	3.7
Mercy Medical Center Merced	7.6	8.8	1.2
St. Joseph's Medical Center of Stockton	3.3	7.0	3.6
Lodi Memorial Hospital	2.4	6.9	4.5
Centinela Hospital Medical Center	5.1	6.5	1.4

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