

EXECUTIVE SUMMARY

The *California Report on Coronary Artery Bypass Graft Surgery, 2003-2004, Hospital and Surgeon Data* presents findings from analyses of data collected from California's 121 state-licensed hospitals where 302 surgeons performed adult isolated coronary artery bypass graft (CABG) surgery¹ during 2003 and 2004.

The report uses risk-adjusted operative mortality to evaluate hospital and surgeon performance. Risk adjustment is a statistical technique that allows for fair comparison of healthcare provider operative mortality rates even though some have sicker or healthier patients than average. Operative mortality includes: 1) all deaths during the hospitalization at the hospital where the operation was performed, regardless of length of stay, and 2) deaths occurring anywhere within 30 days after the operation.

This report also provides hospital-level information on internal mammary artery (IMA)² usage (a process measure of surgery quality) and examines the relationship between the number of surgeries that hospitals and surgeons perform and their mortality rates. There were 40,377 isolated CABG surgeries reported in 2003-2004, making the California CABG Outcomes Reporting Program (CCORP) the largest public reporting program on CABG surgery outcomes in the United States.

Key findings from this report are:

- The operative mortality rate for isolated CABG surgery in California was 3.08% for 2003-2004 (2.91% for 2003 and 3.29% for 2004). Nationally, the Society of Thoracic Surgeons (STS) reported 2.4%³ for the same time period. However, STS does not verify hospital reporting of deaths by linking with the state's vital statistics death file as CCORP does.
- The risk-adjusted operative mortality rate for California hospitals ranged from 0% to 7.83%, revealing wide variation in CABG surgery outcomes after adjusting for patients' pre-operative health conditions. However, 111 of 121 hospitals (91.7%) performed within their expected range compared to the state's overall mortality rate.

¹ Isolated CABG surgery refers to a CABG surgery without other major heart-related surgery, such as heart or lung transplantation, valve repair, etc., during the same admission. See Appendix A for a detailed clinical definition of isolated CABG.

² The internal mammary artery (IMA) is an artery that supplies blood to the front chest wall and the breasts. It is a paired artery, with one running on each side of the body. Evidence shows that the IMA, when grafted to a coronary artery, is less susceptible to obstruction over time and remains fully open longer than vein grafts.

³ Society of Thoracic Surgeons: *Spring 2005 Report - Adult Cardiac Database Executive Summary*, 24 October 2005.

- Four of the 121 hospitals performed significantly **“Better”** than the state average, and six hospitals performed **“Worse”** than the state average. These hospitals are presented below in alphabetical order:

Hospitals with "Better" Performance Ratings, 2003-2004	
Hospital	Region
Fountain Valley Regional Hospital and Medical Center - Euclid	Orange County
Mercy General Hospital	Sacramento Valley and Northern California
Mercy Medical Center - Redding	Sacramento Valley and Northern California
St. John's Regional Medical Center (Oxnard)	San Fernando Valley, Antelope Valley, Ventura and Santa Barbara
Hospitals with “Worse” Performance Ratings, 2003-2004	
Hospital	Region
Bakersfield Memorial Hospital	Central California
Beverly Hospital	Greater Los Angeles
Doctors Medical Center - Modesto Campus	Central California
Lakewood Regional Medical Center	Greater Los Angeles
Santa Rosa Memorial Hospital - Montgomery	San Francisco Bay Area and San Jose
UCSF Medical Center	San Francisco Bay Area and San Jose

- Hospital ratings based on 2004 data were also produced to provide an indication of more recent performance. These results are presented in Table 4 of the main document. The 2003 hospital performance ratings were published in February 2006.
- The risk-adjusted operative mortality rate for surgeons overall (i.e., combined across all facilities where they operate) ranged from 0% to 32.96%, revealing wide variation among surgeons in their CABG surgery outcomes after adjusting for patients' pre-operative health conditions. However, 286 of the 302 surgeons (94.7%) performed within the expected range compared to the state's average mortality rate.

- Four surgeons' overall performance was significantly **“Better”** than the state average, and twelve surgeons' overall performance was **“Worse”** than the state average. These surgeons are presented below in alphabetical order:

Surgeons with “ Better” Performance Ratings Overall, 2003-2004	
Surgeon	Region
Declusin, Richard J.	San Fernando Valley, Antelope Valley, Ventura & Santa Barbara
Giritsky, Alexander	Greater San Diego
Wang, Nan	Inland Empire, Riverside & San Bernardino
Yap, Alexander G.	San Francisco Bay Area & San Jose
Surgeons with “Worse” Performance Ratings Overall, 2003-2004	
Surgeon	Region
Aharon, Alon S.	Inland Empire, Riverside & San Bernardino
Edwards, Phyllis A.	Central California
Hoopes, Charles W.	San Francisco Bay Area & San Jose
Housman, Leland B.	Greater San Diego
Kincade, Robert C.	Sacramento Valley & Northern California Region
Marchbanks, Marshall V.	San Francisco Bay Area & San Jose
Nuno, Ismael N.	Greater Los Angeles
Rosenburg, Jeffrey M.	Greater San Diego
Schwartz, Steven M.	San Francisco Bay Area & San Jose
Sweezer, William P.	San Francisco Bay Area & San Jose
Tzeng, Thomas S.	Orange County and Greater Los Angeles
Vunnamadala, Syam P.	Orange County

- Surgeon ratings were also provided separately for each hospital where they operated. These ratings, which take into consideration both surgeon and hospital-specific factors, are presented in Table 5 of the main document.

Other major findings in this report include:

- Hospital rates for Internal Mammary Artery (IMA) usage, a process indicator of heart bypass surgery quality, are presented in this report for the first time. Use of the IMA in CABG surgery is a nationally endorsed measure of quality and very low rates are associated with poorer care. Results show that in 2003-2004, California hospitals had an average IMA usage rate of 89.6%, with a range from 57% to 100%. The IMA rate for 113 hospitals was deemed acceptable (71% or more), but eight hospitals had significantly lower IMA rates, which may be cause for concern. These ratings are presented in Table 6 of the main document.
- Utilization of Percutaneous Coronary Interventions (PCIs), such as angioplasty with stent insertion, in California has increased from 44,297 procedures in 1997 to 59,786 procedures in 2005—an increase of nearly 35%. Meanwhile, the number of isolated CABG surgeries has dropped from 28,175 to 17,166—a decrease of approximately 39% during the same period. A more comprehensive approach to examining the quality of revascularization procedures in California would include review of the outcomes of PCI providers. More information is included in Section VII.
- No significant association was found between the number of CABG surgeries that hospitals perform annually and their risk-adjusted mortality rates. At the surgeon level, no significant association was found between the number of isolated CABG surgeries performed and surgeons' risk-adjusted mortality rates. However, limited evidence suggests that surgeons who perform more than 100 CABG surgeries per year (isolated and non-isolated combined) have modestly lower isolated CABG surgery mortality rates. These results are presented in Section VII.