EXECUTIVE SUMMARY

The *California Report on Coronary Artery Bypass Graft Surgery, 2005 Hospital Data* presents findings from analyses of data collected from California's 120 state-licensed hospitals that performed adult isolated coronary artery bypass graft (CABG) surgery[1] during 2005.

The report uses risk-adjusted operative mortality to evaluate hospital performance. Risk adjustment is a statistical technique that allows for fair comparison of hospital outcomes even though some hospitals have sicker or healthier patients than average. Operative mortality includes all deaths that occur during the hospitalization in which the CABG surgery was performed along with any deaths within 30 days after the surgery, no matter where they occur.

This report also provides hospital-level information on internal mammary artery (IMA)[2] usage, an additional measure of surgical quality, and examines the relationship between the number of surgeries that hospitals perform and their mortality rates. New to this report are charts that show hospital trends in risk-adjusted mortality rates and IMA usage from 2003-2005. There were 16,939 isolated CABG surgeries reported in 2005, 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:

- There were 522 operative deaths among 16,939 isolated CABG surgeries in 2005. The operative mortality rate for isolated CABG surgery in California was 3.08% for 2005, compared to 2.91% for 2003 and 3.29% for 2004. Nationally, the Society of Thoracic Surgeons (STS) reported 2.3%[3] for the same time period. However, participation in STS is voluntary and STS does not verify hospital reported deaths by linking with state vital statistics death files as CCORP does.

- The risk-adjusted operative mortality rate for California hospitals ranged from 0% to 11.49%, revealing wide variation in CABG surgery outcomes after adjusting for patients' pre-operative health conditions. However, 114 of 120 hospitals (95%) performed within their expected range compared to the state's overall mortality rate.

[1] Isolated CABG surgery refers to heart bypass surgery without other major surgery, such as heart or lung transplantation, valve repair, etc., performed concurrently with the bypass procedure. 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 2007 Report - Adult Cardiac Database Executive Summary*, September 27, 2007. (http://www.sts.org/sections/stsnationaldatabase/publications/executive/article.html)

- Three of the 120 hospitals performed significantly **"Better"** than the state average, and three hospitals performed **"Worse"** than the state average. These hospitals are presented below in alphabetical order:

Hospitals with "Better" Performance Ratings, 2005

Hospital	Region
Alta Bates Summit Medical Center - Summit Campus	San Francisco Bay Area and San Jose
Lakewood Regional Medical Center	Greater Los Angeles
Mercy Medical Center - Redding	Sacramento Valley and Northern California

Hospitals with "Worse" Performance Ratings, 2005

Hospital	Region
Citrus Valley Medical Center – IC Campus	Greater Los Angeles
Los Angeles Co USC Medical Center	Greater Los Angeles
Torrance Memorial Medical Center	Greater Los Angeles

Other major findings in this report include:

- Internal Mammary Artery (IMA) usage is a nationally-endorsed measure of quality for heart bypass surgery. Most patients are able to receive an IMA bypass and very low hospital usage rates are associated with poorer care. Clinical research shows that use of the IMA graft in CABG surgery promotes long-term graft patency and patient survival. In 2005 California hospitals had an average IMA usage rate of 92%, with a range from 60% to 100%. The IMA rate for 113 hospitals was deemed acceptable (within 2 standard deviations of the statewide average), but seven hospitals had statistically significantly lower IMA usage rates. These hospitals are presented below in alphabetical order:

Hospitals with "Low" IMA Performance Ratings, 2005

Hospital	Region
Anaheim Memorial Medical Center	Orange County
Downey Regional Medical Center	Greater Los Angeles
Lancaster Community Hospital	San Fernando Valley, Antelope Valley, Ventura & Santa Barbara
Los Angeles Co USC Medical Center	Greater Los Angeles
Presbyterian Intercommunity Hospital	Greater Los Angeles
Sutter Medical Center of Santa Rosa	San Francisco Bay Area and San Jose
USC University Hospital	Greater Los Angeles

- In California, utilization of percutaneous coronary interventions (PCIs), such as angioplasty with stent insertion, has increased by 36% from 1997 to 2006. Meanwhile, the number of isolated CABG surgeries has dropped by 43% during the same period. 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. This finding is consistent with analyses presented in the last two public reports, in which no significant relationship between hospital patient volume and outcomes was detected. These analyses are presented in Section VII.