California Coronary Artery Bypass Graft (CABG)
Outcomes Reporting Program (CCORP)
Clinical Advisory Panel
Minutes of April 15, 2025 Meeting

Meeting location (with a virtual option):
Department of Health Care Access and Information
May Lee State Office Complex, 651 Bannon St.
Room 235
Sacramento, CA 95811

Ronald Reagan UCLA Medical Center, Center for Health Sciences
200 UCLA Medical Plaza Roon 347
Los Angeles, CA 90095

Clinical Advisory Panel Members present:

Ralph Brindis, M.D., MPH, FACC, Chair	Cheryl Damberg, Ph.D.
Vincent DeFilippi, M.D.	Gordon Fung, M.D.
Mamoo Nakamura, M.D.	Rita F. Redberg, M.D.
Maribeth Shannon, M.S.	Richard Shemin, M.D.

HCAI Staff and Others present:

Scott Christman, HCAI Chief Deputy Director	Chris Krawczyk, Ph.D., Healthcare Analytics Branch Manager
Lemeneh Tefera, M.D. Chief Medical Officer	Holly Hoegh, Ph.D., Healthcare Analytics Branch
Camille Dixon, Staff Counsel	Limin Wang, M.D., Ph.D., Healthcare Analytics Branch

1. Call to Order, Welcome and Meeting Minutes

Ralph Brindis, M.D., Chairperson, called the meeting to order at 9:15 a.m. Panel members introduced themselves. A quorum was present to conduct business.

Action: The Clinical Advisory Panel unanimously approved the minutes from the October 8, 2024 meeting.

2. HCAI Director's Office Report – Scott Christman, Chief Deputy Director, Department of Health Care Access and Information

Chief Deputy Director Christman thanked and welcomed everyone. The Governor released the state budget in January while on the ground responding to the Los Angeles wildfires. The state and HCAI look to support that region through a devastating

recovery, however possible. The budget had no proposed cuts, although concerns remain due to California's uncertain fiscal outlook, including Medi-Cal shortfalls and potential federal funding reductions. The Health Care Payments Database (HPD) requested a $22 million per year budget and 47 staff positions due to one-time appropriation funds from 2018 running out.

The Chief Deputy Director discussed the hospital seismic safety and clinic building standards. A bill was signed allowing some hospitals extensions to comply, with an approved compliance plan. The budget requests additional staff positions related to these changes. The budget also calls for HCAI to administer a diaper initiative to help all California families improve maternal and newborn health outcomes. The May revision will include updated revenue projections and reflect federal developments.

Madera Community Hospital has reopened after a two-year closure, supported by $57 million from the Distressed Hospital Loan Program. This was a result of broad efforts across the administration, the legislature and the Madera community. HCAI teams and the California Department of Public Health worked to ensure funding oversight, facility readiness, legislative updates and licensing.

The Chief Deputy Director updated the Panel of the work of the Office of Health Care Affordability (OCHA). Last year, in response to hospital cost variability and stakeholder concerns, the Board set an initial target for the industry again to slow the growth of spending year over year. In January, the Board voted to adopt a new hospital sector and at a future meeting will be setting a target for some or all hospitals that is different from the statewide target. OHCA proposed that the Board set a spending target on high-cost hospitals that is half of the statewide target aiming to reduce cost disparities.

Panel member Shemin asked about projections for budget cuts, priority listings to protect, and accounting for regionality when benchmarking growth rate and hospital costs. The Chief Deputy Director explained that the Medicaid program is the most at risk and is a top priority for protection. He also responded that benchmarking year to year growth is measured against the individual healthcare organization, not a region. He added that spending growth should not be tied to the teams providing critical care. HCAI will be measuring the concept of workforce stability for that purpose.

3. HCAI Office of Information Services Update – Christopher Krawczyk, Ph.D., Chief Analytics Officer

Dr. Krawczyk provided a summary of key work in the Office of Information Services (OIS) and the Healthcare Analytics Branch (HAB). The HPD program has released a number of first-time products, including a snapshot, measures, and prescription costs in the retail market (which will be updated and expanded to include Medi-Cal and Medicare). The data release program, which allows others to request access to the data was launched in December 2024. The first requests for data will go to the data release committee this spring.

OIS has been working on the regulations package for the Hospital Equity Measure (HEM) program, hoping to file with the Office of Administrative Law soon. Once regulations are approved, OIS will begin providing technical assistance to hospitals as part of the program. HCAI has been fortunate to have a number of partner organizations supporting this effort.

In 2023 and 2024 HAB released 173 unique data files to the agency Open Data Portal and 131 interactive data visualizations. The team also responded to 302 requests for confidential data and 131 custom data requests for a total of 737 data products. Recently released products include the AHRQ inpatient mortality indicators, the 2023 TAVR report, and the 2022 CABG readmissions related to complications visualization. This summer HCAI will conduct the seventh cohort for outreach and engagement.

The Panel asked for more information about the data release program for the HPD and Dr. Krawczyk provided details about what data is available, the data request process, who is requesting the data, and the FAQs page. Dr. Krawczyk and the Panel acknowledged Holly Hoegh upon her retirement for her efforts and commitments to the CCORP program.

4. Quality and Performance Section Update – Holly Hoegh, Ph.D.

Dr. Hoegh reminded everyone of the role of the Panel that includes:

- Recommend interventional cardiovascular procedures for public reporting
- Consult on report materials
- Recommend data elements
- Review and approve development of the risk-adjustment model to be used in preparation of the outcome report
- Review physician statements

Dr. Hoegh provided a CCORP update. The 2023 CABG data audits were successfully completed in November and 2024 CABG data collection is underway. The 2023 TAVR Outcomes Report on 85 hospitals was released in late January. There were two outlier hospitals and three noted as non-compliant. The 2023 Elective PCI Report will be released soon and will include 23 hospitals. The bi-monthly calls with CABG/TAVR hospitals and CCQC (California Cardiovascular Quality Collaborative) calls continue.

Dr. Hoegh presented slides on CABG hospital and surgeon volume as well as trendlines for cardiovascular procedures. Panel member DeFilippi commented on low volume surgeons, noting that more and more surgeons are focusing on particular procedures like valves. Panel member Shemin agreed adding that surgeons typically still perform cardiac surgeries and therefore should still be competent to perform CABG surgeries. He further noted the cardiovascular procedures trendlines and asked that future work evaluate volumes by population. Dr. Hoegh mentioned that HCAI releases a per capita CABG report every few years. Panel member Damberg commented on volume and appropriateness of use. Chairperson Brindis requested the charts be age-adjusted.

5. Chair's Report, Ralph Brindis, M.D., M.P.H., F.A.C.C.

Chairperson Brindis acknowledged HCAI's timely release of the 2023 TAVR Outcomes Report. He next shared STS/ACC TVT Registry data related to TAVR procedures, noting there are now over 850 sites performing TAVR in the United States and 89 in California. He highlighted in-hospital, 30-day, and one year mortality rates for low-, intermediate-, and high-risk groups, noting 65% of high-risk deaths within one year post TAVR are non-cardiac related. The Panel discussed differences related to payor status, the possibility of adding additional outcomes to the HCAI reports, and recognition of the effects of aortic stenosis. Panel member Damberg requested that TAVR mortality be presented by payer.

6. Results of the 2023 CCORP Audit, Holly Hoegh, Ph.D., HCAI

Dr. Hoegh shared the results of the 2023 CCORP audit. The goals of the audit were to determine the quality of risk factors and outcomes captured by CCORP, evaluate whether over- or under-coding of risk factors changes hospital outlier status, and verify data quality in hospitals with poor response to HCAI's quality reports. A total of 27 hospitals were audited, with 8 on-site and 19 remote audits. Moving forward, less audits will be conducted due to the decrease in volume of CABG procedures.

Hospitals for audit were selected based on preliminary outlier or near outlier status for outcomes of mortality/stroke. A few hospitals were selected based on suspected coding problems and the remaining hospitals were randomly selected. For each hospital, primary cases were selected proportional to isolated CABG volume, with an effort to include at least 20% of the non-isolated cases at each hospital. Cases selected for audit included all in-hospital deaths and post-operative strokes. Other cases were selected proportionate to predicted death or post-op stroke risk. The audit found several discrepancies on the coding of isolated verses non-isolated cases.

Previous interventions, CVA, CVA timing, diabetes, cardiac arrhythmia, incidence, IMA use, and post-op stroke were in good agreement with the audited values. Chronic lung disease continues to be one of the most challenging risk factors to capture, though there has been improvement in the last three years.

The pre/post audit outcome results showed four hospitals classified as "No Different" for mortality and re-classified as "Worse" post-audit. For stroke, one hospital was classified as "Worse" and re-classified as "No Different" post-audit.

The Panel briefly discussed the results and the overall benefits of continuing the audit process. Panel member Shemin asked a question regarding the accuracy of hospitals outsourcing data collection compared to hospitals submitting independently.

Dr. Hoegh noted an increase in hospitals outsourcing, and suggested hospitals will be surveyed on this in the future. Panel member Shemin suggested implementing AI use to

simplify audit procedures and lower costs. Dr. Hoegh replied that there has not been discussion regarding AI use for audits, however with the reduction in the number of audits being performed in the future the cost will decrease. Dr. Krawczyk followed up by explaining that AI use could lead to potential risks to patient privacy and confidentiality, however, is it something to consider in the future.

The Panel shared their appreciation for the value and credibility of audits, noting the visible improvements hospitals have made in coding practices over time.

7. Mortality as a Risk-Adjusted Outcome for Isolated CABG Surgery – Limin Wang, M.D., Ph.D., HCAI (Action Item)

Dr. Wang first presented summary statistics for all CABGs and outcomes from 2016-2023. She noted that isolated CABG volume has steadily increased, resembling pre-COVID-19 numbers. She also noted the operative mortality rate of 2.03%, which is the lowest since 2016. She briefly discussed COVID-19 and its effect on analysis, noting these patients are no longer excluded from the public report. Next, she walked through the methods used to develop the CABG risk-adjusted models including:

- Bivariate analysis
- Stepwise logistic regression
- Model review
- Logistic regression model calculation
- Model fitting and evaluation, including discrimination and calibration
- Compares model with previous models, adjustments if necessary

Dr. Wang next presented the model for isolated CABG surgery for 2023. The operative mortality rate was 2.03%. The model included 23 risk factors of which 17 were significant and the c-statistic was 0.825. The Panel reviewed the model and there was some discussion about how COVID-19 data was collected. There was discussion about patients with COVID-19 being denied CABG and undergo PCI instead, and its potential impact.

Action: The Clinical Advisory Panel unanimously approved the mortality model for isolated CABG surgery.

8. Mortality as a Risk-Adjusted Outcome for CABG + Valve Surgery – Limin Wang, M.D., Ph.D., HCAI (Action Item)

Dr. Wang first presented volume and mortality rates for the different types of CABG + Valve surgeries, noting the higher mortality rates for certain CABG + Valve types. For the 2022-2023 data the operative mortality rate for CABG + Valve (aortic and/or mitral) was 5.35%. The model included 21 risk factors including 9 that were significant. The c-statistic was 0.804. Panel member DeFilippi shared his concerns about cardiogenic shock. The Panel discussed possible overlap of risk factors and potentially a data quality problem. They thoroughly discussed the use of cardiogenic shock in the risk

models and suggested evaluating a comparison of categories between emergent patients and those with cardiogenic shock.

Action: The Clinical Advisory Panel unanimously approved the mortality model for CABG + Valve surgery.

9. Post-operative Inpatient Stroke as a Risk-Adjusted Outcome for Isolated CABG Surgery– Limin Wang, M.D., Ph.D., HCAI (Action Item)

Dr. Wang presented the 2022-2023 risk-adjusted inpatient post-operative stroke model for isolated CABG surgery. The post-operative stroke rate was 1.38%, the lowest since 2015-2016. The model included 19 risk factors including 8 that were significant and had a c-statistic of 0.711. Dr. Wang pointed out that patients younger that 55 years old had a slightly higher stroke rate than all other age groups. The panel offered reasons why this might occur and briefly discussed keeping age as a continuous variable.

Action: The Clinical Advisory Panel unanimously approved the post-operative inpatient stroke model for isolated CABG surgery.

10. Hospital Readmission as a Risk-Adjusted Outcome for Isolated CABG Surgery – Limin Wang, M.D., Ph.D., HCAI (Action Item)

Dr. Wang presented the risk-adjusted 30-day hospital readmission models for isolated CABG surgery using data from 2022 and 2023. The readmission rate was 11.16%. The final model included 26 risk factors (18 were significant) and had a c-statistic of 0.663. The panel discussed the impact of dual payor in the model

Action: The Clinical Advisory Panel unanimously approved the hospital 30-day hospital readmission model for isolated CABG surgery.

11. Upcoming CCORP Hospital-Level Report – Holly Hoegh, Ph.D. (Action Item)

Dr. Hoegh shared the proposed contents for the 2022-2023 public report:

- 2022 risk-adjusted isolated CABG mortality rates for hospitals
- 2022-2023 risk-adjusted CABG + Valve mortality rates for hospitals
- 2022-2023 risk-adjusted isolated CABG post-operative inpatient stroke rates for hospitals
- 2022-2023 risk-adjusted isolated CABG 30-day all cause readmission rates for hospitals
- 2023 internal mammary artery usage rates for hospitals

Action: The Clinical Advisory Panel unanimously approved the contents of the 2022-2023 public report.

12. Exclusions to Isolated CABG + Valve cases – Holly Hoegh, Ph.D.

Dr. Hoegh discussed current guidelines regarding the exclusions to isolated CABG and CABG + Valve for a full open maze. Program saw an increase in intra-atrial Encompass mazes during the recent audit. Confusion has arisen when the Encompass is used to make lesions on the right and left side, with the right atrium opened but not the left. Panel members DeFilippi and Shemin agree that there might be confusion with the language around Encompass maze/clamp but agree even if the right side is opened to do extra lesions, in addition to the Encompass clamp, it should not be an exclusion.

13. Discussion and Recommendations for HCAI Public Reporting– Chris Krawczyk, Ph.D.

Dr. Krawczyk welcomed discussion and recommendations for HCAI's future public reporting of cardiovascular outcomes measures. He reminded the panel of all current measures that HCAI reports on for CABG, TAVR, and PCI and explained options for future CCORP reporting. One option adds risk-adjusted outcomes reporting for isolated valve reporting. Data would be collected as part of the current CABG data collection process through the CORC system. Another option adds risk-adjusted outcomes reporting for all PCIs. Data would be from the NCDR Cath-PCI Registry with all PCI hospital participation. A final option would be to not add a procedure at this time noting that budget neutrality is a priority.

Dr. Krawczyk discussed the pros and cons of these options, focusing on feasibility, cost, and potential push back. The Panel discussed cost benefits for each option, and considered the possibility of discontinuing outcomes reporting for CABG given the significant improvements since the implementation and requested more background and information on how appropriateness would be measured. Dr. Krawczyk suggested a sub-committee meeting to further discuss this topic.

14. Public Comment

There was no public comment.

15. Adjourn

Dr. Brindis thanked everyone and adjourned the meeting at 1:30 p.m.