California Cardiovascular Outcomes Reporting Program (CCORP)
Clinical Advisory Panel (CAP)
Minutes of August 13, 2025, Subcommittee Meeting

Locations:
Department of Health Care Access and Information (HCAI)
2020 West El Camino Ave, Conference Room 1238, Sacramento, CA 95833

Ronald Reagan UCLA Medical Center
200 UCLA Medical Plaza, Conference Room 447, Los Angeles, CA 90095

Panel Members Present: *Attended Virtually

Ralph G. Brindis, M.D., *M.P.H.,* Chair*	Richard J. Shemin, M.D.
Cheryl Damberg, Ph.D.	Maribeth Shannon, M.S.*
Andrew Rassi, M.D.*	

HCAI Staff present:

Lemeneh Tefera, M.D. M.Sc. Chief Medical Officer	Shannon Conroy, PhD, MPH, CCORP Manager
Christopher Krawczyk, PhD Chief Analytics Officer	Geoff Trautman, J.D. Staff Counsel

Item #1: Call to Order and Welcome – Roll call and goals for CAP subcommittee meeting. Ralph Brindis, M.D., M.P.H., F.A.C.C., CAP Chair

Ralph Brindis, M.D., Chairperson, called the meeting to order and conducted roll call. He thanked the Panel for their participation and acknowledged that the subcommittee includes members who reflect, as much as possible, the broad constituency of the CAP. Chairperson Brindis emphasized that this is an important time for the CAP to provide recommendations to the State, HCAI, and CCORP in shaping the future direction of public reporting in cardiovascular disease. Any recommendations developed during this meeting will be brought forward to the full CAP in November for further discussion and consideration.

Chris Krawczyk, Ph.D., Chief Analytics Officer, clarified that the meeting was being conducted under the Bagley-Keene Open Meeting Act, and all associated rules would be followed. He noted that public comment would be taken after each individual agenda item and again at the end of the meeting.

Item #2: HCAI Overview and Considerations for Expanding Cardiovascular Outcomes Reporting – Key considerations for additional interventional cardiovascular procedures. Christopher Krawczyk, Ph.D., Chief Analytics Officer, HCAI

Dr. Krawczyk provided an overview to frame the discussion on the potential expansion of cardiovascular outcomes reporting. Under current statute, HCAI is authorized to add additional interventional cardiovascular procedure for public reporting, based on recommendations from the CAP, with a limit of one new procedure every three years. Transcatheter Aortic Valve Replacement (TAVR) was the last procedure added for public reporting. CAP is considering adding a measure at the end of this three-year cycle. Another option is to not add a procedure at this time. Dr. Krawczyk provided a summary of the previous "Blue Sky" discussions that were presented at the April 2025 CAP meeting.

Additional context was provided for current risk-adjusted outcome reports.

Coronary Artery Bypass Grafting (CABG) Outcome Reports**:**
Performance outcome measures for hospitals include Isolated CABG operative mortality, CABG+Valve operative mortality, Isolated CABG post-operative stroke, and Isolated CABG 30-day hospital readmission. HCAI collects clinical data from hospitals and conducts audits. Clinical data specifications are based on the Society of Thoracic Surgeons (STS) Adult Cardiac Surgery Database.

TAVR Outcome Reports**:**
Performance outcome measures for hospitals include in-hospital/30-day mortality and in-hospital/30-day stroke. HCAI holds a Data Sharing License Agreement for clinical cardiovascular data collected through the STS/ACC Transcatheter Valve Therapies (TVT) Registry. HCAI is not directly involved in auditing TAVR data.

Percutaneous Coronary Intervention (PCI) Reports:
Performance outcome measures for hospitals certified by California Department of Public Health to perform elective PCIs without onsite cardiac surgery include in-hospital mortality and in-hospital stroke. Clinical data for certified hospitals (n=23 for 2023 report) are from the National Cardiovascular Data Registry (NCDR) Cath-PCI Registry. HCAI receives patient-level data for those certified hospitals only. Data from non-certified hospitals are blinded, and individual hospitals cannot be identified.

All PCI outcomes reports use administrative in-patient data and Agency for Healthcare Research and Quality Inpatient Mortality Indicators.

Item #3: Appropriate Use and Challenges for Data Collection and Analysis – Insight and challenges for measuring appropriateness of cardiac procedures. Ralph Brindis, M.D., M.P.H., F.A.C.C., CAP Chair

Ralph Brindis, M.D., Chairperson, delivered a presentation focused on the Appropriate Use Criteria (AUC) for PCI. Chairperson Brindis explained that the value equation for cardiovascular procedures is based on the question: *Was the right procedure done in the right way, with the right outcome, in a timely fashion?* He described the RAND Modified Delphi Methodology as a structured, evidence-informed process used to develop AUC. This methodology combines scientific evidence with expert clinical judgment to assess the appropriateness of medical interventions across a wide range of detailed clinical scenarios. Clinical scenarios are evaluated and rated as **appropriate**, **may be appropriate**, or **rarely appropriate**, based on key clinical framework that includes patient stability, symptom severity, degree of ischemia, use of medical therapy, and patient autonomy. Chairperson Brindis highlighted that the American College of Cardiology (ACC) revised the terminology from “inappropriate” to “rarely appropriate” to better reflect the complexity of clinical decision-making, acknowledging that some procedures previously labeled “inappropriate” may be reasonable under specific clinical circumstances.

The AUC for coronary revascularization were assessed by a technical panel using the following definition of appropriate use: *“Coronary revascularization is appropriate when the expected benefits, in terms of survival or health outcomes (symptoms, functional status, and/or quality of life), exceed the expected negative consequences of the procedure.”* The CathPCI Registry uses the AUC framework developed through the RAND methodology to classify PCI procedures as appropriate, may be appropriate, or rarely appropriate, based on key clinical characteristics. Specifically, six clinical elements are used to evaluate the appropriateness of PCI: (1) history of coronary artery bypass grafting (CABG), (2) presentation with acute coronary syndrome (ACS) versus non-ACS, (3) degree of ischemia identified on stress testing, (4) use and intensity of anti-anginal medications, (5) severity of angina symptoms, classified by the Canadian Cardiovascular Society (CCS) grading system, and (6) presence of a proximal lesion in the left anterior descending (LAD) artery.

Evaluation of appropriateness for PCI in clinical practice and within the CathPCI Registry presents several challenges**.** First, the AUC framework cannot fully capture the complexity of real-world clinical scenarios, and mapping all possible cases would place a significant data collection and reporting burden on hospitals. As a result, approximately 10 to 15 percent of PCI cases remain unmappable. Second, there is a significant time lag between the emergence of new clinical evidence and its incorporation into AUC and registry data elements, resulting in outdated criteria that

may not reflect current best practices. Finally, the structure of AUC can unintentionally incentivize clinicians to document cases in ways that meet appropriateness criteria thresholds. Detecting such gaming would require comprehensive and costly audits.

Chairperson Brindis presented patient-level trends in the appropriateness of non-acute PCI, highlighting a 50% relative reduction in procedures classified as rarely appropriate between 2009 and 2014, based on data from the CathPCI Registry (JAMA, 2015). Panel member Rassi noted that some rarely appropriate cases may, in fact, be clinically justified depending on individual patient scenarios. While overall trends suggest meaningful improvement, part of this shift may be attributed to enhanced documentation or coding practices. Despite concerns about potential gaming, the field of cardiology remains committed to improving patient outcomes.

Item #4: Workgroup Discussion and Identifying Recommendations for Consideration by CAP – Solicit candidate cardiac procedures while considering feasibility, impact, and overall direction of CCORP. Christopher Krawczyk, Ph.D., Chief Analytics Officer, HCAI; Ralph Brindis, M.D., M.P.H., F.A.C.C., CAP Chair

The Panel discussed the possibility of adding new procedures for performance reporting. Panel members emphasized the importance of key considerations including feasibility and ease of data collection, cost and data quality (including auditing requirements), and the relevance and potential impact of reporting on public health and clinical outcomes. An important question is whether there is significant procedure volume to make a meaningful impact for cardiac care. Panel members also noted the value of identifying new and impactful areas of focus that can guide future evaluation efforts. Simply measuring performance at the individual hospital level may not be enough, as most providers tend to cluster within a similar range of good quality, making it difficult to distinguish outlier performers.

The Panel discussed a broad range of cardiovascular procedures for potential inclusion in future performance reporting. These included atrial fibrillation (A-Fib) ablation, all PCI, surgical aortic valve replacement (SAVR), carotid revascularization procedures (carotid endarterectomy and carotid artery stenting), electrophysiology procedures, thoracic aortic procedures, and implantable cardioverter defibrillators (ICDs).

Additional topics of interest included the potential addition of one-year mortality as an outcome, the evaluation of procedure combinations over time (such as PCI and CABG, or TAVR and SAVR) and their impact on survivability, and the value equation of quality measures relative to population-level cost. Panel member Damberg raised concerns about potential data gaming, particularly around 30-day mortality outcomes. Panel member Rassi noted that the growing trend of performing higher-risk PCI procedures at sites without on-site cardiac surgical backup is a reason to consider monitoring all PCI

procedures more closely. Finally, members expressed interest in assessing the appropriate use of TAVR; however, they noted that a formal definition for AUC has not yet been established.

Other considerations were conducting additional analysis of existing procedures. Dr. Krawczyk presented potential opportunities for additional analysis of existing procedures, such as examining trends by patient demographics (e.g., age) to better understand utilization patterns; exploring variation in procedure volume relative to underlying population density and/or outcomes; and assessing clinical indicators to gain deeper insight into observed trends and outcomes, particularly in the context of TAVR.

The Panel began formative discussions of opportunities to use available diagnostic and procedural data from HCAI's patient administrative data to better understand raising TAVR volumes, despite the lack of clinical data. They also explored how the Healthcare Payments Database (HPD), which includes claims and encounter data across care settings, could be used to inform quality to cost value analysis. One suggestion was linkage of CABG clinical data with HPD, once the database matures.

Summary and Next steps: The Panel agreed that it would be premature to recommend adding a new cardiovascular procedure for performance reporting and emphasized the importance of taking more time to evaluate options. Atrial fibrillation ablation and carotid revascularization procedures (carotid endarterectomy and carotid artery stenting) were highlighted as procedures warranting further investigation, although the latter concerns were raised regarding small volume of procedures. One option is to invite guest speakers with in-depth clinical expertise to present at future CAP meetings. Panel members emphasized the importance of fully exploring the opportunities for additional analysis of existing procedures.

The Panel would like further information on potential opportunities for further analyses of TAVR data and HCAI data assets. Specific questions/comments for further investigation include:

- What is currently permissible under the current TVT data agreement?
- What is possible with amendment of the agreement, particularly regarding clinical indicators and longitudinal data?
- What are opportunities for leveraging other HCAI data assets, such as HPD? One suggestion was linking CABG to HPD.

HCAI will need to consider statutory and regulatory requirements, as well as institutional processes such as Institutional Review Board approvals. The fall CAP agenda will include a summary of these discussions and next steps for leveraging existing data assets.