

**California CABG Outcomes Reporting Program (CCORP)
Clinical Advisory Panel
Minutes of February 3, 2015**

The meeting was held at the Office of Statewide Health Planning and Development,
400 R Street, Sacramento, CA 95811

Clinical Advisory Panel Members present:

Ralph Brindis, M.D., FACC	James MacMillan, M.D.
Gordon L. Fung, M.D., MPH, Ph.D.	J. Nilas Young, M.D.
Hon S. Lee, M.D.	Richard Shemin, M.D.
Cheryl Damberg, Ph.D.	Andrew Bindman, M.D.

Clinical Advisory Panel Members absent:

Rita F. Redberg, M.D.	
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OSHPD Staff and Consultants present:

Robert David, OSHPD Director	Ron Spingarn, Deputy Director, OSHPD HID
Joseph Parker, Ph.D., HOC	Elizabeth Wied, Chief Counsel
Holly Hoegh, Ph.D., HOC	Ryan Buckley, Staff Counsel
Zhongmin Li, Ph.D., UCD Contractor	Eric Reslock, Assistant Director, OLPA
Robert Springborn, Ph.D., HOC	Ricardo Jaime, ITSD
Beate Danielsen, Ph.D., UCD Contractor	Merry Holliday-Hanson, Ph.D., HOC
Dominique Ritley, MPH, UCD Contractor	Denise Stanton, Data Manager, HOC
Sarah Park, MPH, HOC	Lisa Christensen, Contract Manager, HOC
TaNisha Roby, MPH, HOC	Alysha Lal, HOC
Ying Yang, HOC	Mia DeSoto, HOC
Phillip Morris, HOC	Mariah Baker, HOC
Ed Mendoza, HID	Patrick Romano, M.D., UCD Contractor

Others present:

Stephen J. Rossiter, MD, Mercy General	Banafsheh Sadeghi, M.D., Ph.D.
Joseph Carey, M.D.	Juli Weaver, Professional Health Consulting Services

1. Call to Order Introductions

Ralph Brindis, M.D., Chairperson, called the meeting to order at 10 a.m. A quorum was present to conduct business.

2. Welcome and Introductions

People in attendance introduced themselves.

3. Approval of Minutes of July 22, 2014 Meeting

The minutes were approved unanimously.

4. Director's Report – Robert David, Director, Office of Statewide Health Planning and Development

Robert David reported that Governor Brown unveiled his proposed budget in January. Included are a few large initiatives related to infrastructure funding. Consistent with previous budgets, the Governor is committed to maintaining fiscal stability. One of the future budget obligations is the huge growth in Medi-Cal due to the implementation of the Affordable Care Act, Medi-Cal now covers about one-third of all Californians.

The expansion will have a significant impact on the healthcare workforce and on patient access. OSHPD has a robust healthcare workforce program, but will need assistance to meet the new demand. The Governor recognizes this need and OSHPD will receive additional resources to focus on increasing primary care resources in underserved communities.

The Director called attention to a number of changes in the composition of the newly elected Legislature. There is a new Speaker of the Assembly, Senate pro-tem, thirty-seven new members, and thirty-eight new chairs. OSHPD has been reaching out to these new members to familiarize them with our programs. Assembly member Shirley Webber was promoted to Chair of the Assembly Budget Committee and she has a particular interest in some of the workforce programs.

The Director reported that OSHPD's main budget issue was the Budget Change Proposal to implement SB906, which establishes the annual Percutaneous Coronary Intervention Outcomes public report. The first budget hearing is in early March in the Senate (and subsequently to be heard in the Assembly). Health care costs, quality, and price transparency continue to be major policy issues. OSHPD is currently tracking seventy bills. The bill introduction deadline is approaching and Director David will provide an update at the next CAP meeting.

5. CCORP Program Update – Holly Hoegh, Ph.D., CCORP

Dr. Hoegh introduced staff and reviewed the statutory role of the Clinical Advisory Panel (CAP). She presented slides comparing the volume and mortality rates for isolated and non-isolated CABG, PCI, and

Valve surgery for the last 17 years. In 2013, there were slight increases in the volume of isolated and non-isolated CABGs. Valve-only surgery volume continued to climb while PCI volume continued a slow decline. Overall, mortality rates were mixed: isolated CABG and PCI mortality increased slightly and non-isolated and valve-only rates declined.

Dr. Danielsen asked if the slide for PCI included outpatient data (those performed in an ambulatory surgery setting). NCDR reports a higher volume than OSHPD for PCI. The current OSHPD report only includes in-patient PCI data. In addition, because of certain coding practices of hospitals, not all PCIs have been reported. The CAP agreed that outpatient PCI cases should be added and included in the public report. Once SB 906 is implemented and OSHPD obtains PCI data from NCDR, we will be able to more accurately assess OSHPD's ability to capture the volume and outcomes of this procedure.

The 2013 Medical Chart Audit was completed in December 2014. There were a total of 18 hospitals audited. Data collection for 2014 is expected to start soon and this set will include the changes in the data element definitions in accordance with recent STS revisions.

Dr. Hoegh stated that the CCORP 2012 public report was pending release. She presented the timeline for the 2013 report noting that the preliminary results will be sent to hospitals for their 60 day review in April. Dr. Brindis feels that the public report needs to be actionable and timely. He asked if the timeline could be compressed so the report could be released earlier. Dr. Hoegh explained that using the online data collection system might be modified to shorten the timeframe somewhat. However, other factors, including receipt of the state death file and the hospital data audits, limit CCORP's flexibility in changing the timeline significantly.

The group discussed the viability of conducting the hospital data audits sooner or changing the audit to every other year. It was pointed out by Juli Weaver that the hospitals find the audit very useful and it contributes to the data quality OSHPD reports.

6. Chair's Report – Ralph Brindis, M.D., Chair

Due to the number of action items needing to be addressed, Dr. Brindis handed the floor to Dr. Danielsen.

7. Results of the 2013 CCORP Audit – Beate Danielsen, Ph.D.

Dr. Danielsen explained that the goals of the 2013 Data Audit were to:

1. determine the quality of risk factors and outcomes captured by CCORP;
2. ascertain that over- or under-coding of risk factors does not lead to hospital/surgeon outlier status; and
3. verify data quality in hospitals with poor response to OSHPD's data discrepancy and risk factor coding reports.

CCORP processed 15,546 CABGs for 124 hospitals in 2013, of which approximately 75% were isolated. Eighteen hospitals were selected for audit based on mortality/stroke outlier or near outlier status, coding issues, and hospitals not previously audited. For each of these hospitals, primary cases were selected proportional to isolated CABG volume for a minimum of 60 cases and a maximum of 140 isolated CABG cases, as well as a minimum of three non-isolated cases per hospital. All in-hospital

deaths and post-operative stroke cases were selected. Cases were also selected proportionate to predicted death or post-op stroke risk. In total 1,128 cases or about 9% of isolated CABGs were selected.

Dr. Danielsen summarized the audit findings including the missing values and stated that she has seen tremendous improvement in this area. Ejection Fraction was missing for 3% of CABGs. All other variables used to develop the risk adjustment model were missing for less than 1% of isolated CABGs. Mortality was always coded correctly for both isolated and non-isolated CABGs.

An important component of the risk model is distinguishing urgent cases from other groups. While there has been some improvement with how hospitals code this element, there is room for continued improvement. Dr. Hoegh noted that Dr. Steimle covers this data element extensively in his annual auditor training, which includes sample cases for the auditors to resolve.

Dr. Danielsen presented:

1. metrics used to compare CCORP and audited data
2. key audit findings for risk factor coding
Pre-audit data showed one hospital as a “worse” outlier; post-audit, there were no outliers. Chronic lung disease and mitral insufficiency continue to be among the most problematic risk factors to capture; this can be addressed somewhat through re-coding especially in relation to mitral insufficiency
3. coding of new variables
4. coding of complications and process measures

8. Definition of Operative Mortality – Joseph Parker, Ph.D.

Dr. Parker engaged the CAP in a discussion about the Society of Thoracic Surgeons (STS) operative mortality definition change (version 2.81) and the impact to CCORP. The new definition became effective July 1, 2014 and it is CCORP’s intent to implement the new definition with 2015 calendar year data. He provided an over view of the current CCORP definition and how inpatient and post-discharge deaths are determined.

Dr. Parker explained that the new STS definition of operative mortality includes 1) all deaths, “regardless of cause”, occurring during the hospitalization in which the operation was performed, even if after 30 days (including patients transferred to other acute care facilities); and 2) all deaths, “regardless of cause”, occurring after discharge from the hospital, but before the end of the thirtieth post-operative day.

Dr. Parker asked the CAP to consider how many patient transfers to include and how long the transfer follow-up period should be when revising the CCORP operative mortality definition. He presented 3 options for the CAP to discuss and make recommendations. The CAP discussed the pros and cons for each of the options.

Based on the discussion, OSHPD offered to perform additional analyses on transfer cases in a revised definition of operative mortality. The CAP asked CCORP to include patients transferred to acute inpatient facilities and multiple transfer patients using ninety days post-surgery data for inpatient deaths and transfer deaths. CCORP will compare the results to what we currently do now and within 6 months

of surgery and present this to the CAP at a later date. The analysis will also include a review of the principal diagnosis of patients who were readmitted and try to capture the cause of death in an effort to understand how inpatient deaths may differ from acute transfer deaths.

Action Item: Provide CAP with these analyses.

9. Definition of Isolated Valve + CABG – Joseph Parker, Ph.D.

Dr. Parker reiterated that, at the last meeting, the CAP approved a few changes around the definition of isolated valve + CABG cohort. He explained that the cohort would be identified using ICD-9 codes contained in the OSHPD Patient Discharge Data (PDD) since there is no STS data element. Once this information was linked, OSHPD would provide hospitals with their cohort's patient-level data and asked to verify cases.

Dr. Hoegh confirmed the use of 2011-2012 PDD and verified that all cohort cases were reviewed for unusual procedures that might warrant exclusion. CCORP provided six volunteer hospitals with their isolated valve + CABG cohorts and asked for feedback. OSHPDs preliminary findings indicated that there are three possible exclusions: 1) Endovascular implantation of other graft in abdominal aorta; 2) Endovascular implantation of other graft in thoracic aorta; and 3) other endovascular repair on other vessels.

Action: The Clinical Advisory Panel approved excluding endovascular procedures from isolated valve + CABG

The hospital findings revealed that while the PDD-based definition excludes cases with procedure code 35.7 "other and unspecified repair of atrial and ventricular septa" it includes Patent Foramen Ovale (PFO-isolated) and Atrial Septal Defect (ASD-non-isolated). Dr. Parker recommended excluding ASDs from the PDD which is an internal process. The CAP agreed.

Based on the new findings and decision, the CAP discussed their previous decision to exclude atrial MAZEs from isolated valve + CABG. The group discussed their experiences with various valve procedures, especially mitral valve and double valve replacement and what should and should not be included in the data.

Action: The Clinical Advisory Panel approved the following inclusions and exclusion: Include epicardial MAZE; include MAZE with mitral valve replacement and double valves associated with CABG; exclude open left atrial MAZE for aortic valve procedures.

Commented [HH1]: The atrial is correct here, remove aortic, or since Dr. Shemin did not comment on this topic we could leave it as is

Commented [HH2]: This was Dr. Shemin's request

10. Mortality as a Risk-adjusted Outcome for Isolated CABG Surgery – Zhongmin Li, PhD. (Action Item)

Dr. Li presented basic statistics to show non-adjusted, observed volume and outcomes for isolated CABG cases, in-hospital mortality, operative mortality, 30-day readmission, and post-operative stroke (agenda items 10, 11, 12, 13). He reviewed the methods for developing the risk models including bivariate analysis. He selected the refined models for 2013 then validated with 100-Bootstrapping samples. Finally, he applied the refined models to 2013 and 2012-2013 data with missing values imputed.

The isolated CABG operative mortality risk-adjustment model includes 25 risk factors (12 were significant), and had a c-statistic of 0.796.

Action: The Clinical Advisory Panel approved the mortality model.

11. Mortality as a Risk-adjusted Outcome for Isolated Valve + CABG Surgery – Zhongmin Li, Ph.D. (Action Item)

Dr. Li explained that this model combines three types of valve surgeries into a composite model. The isolated valve + CABG mortality risk-adjustment model includes 27 risk factors (12 were significant), and had a c-statistic of 0.757.

The CAP discussed developing two separate models because of concerns about lumping together valve replacement and valve repair. Consensus was that an evaluation of interaction terms, notably cardiogenic shock, should be conducted on the current model before developing two models.

Action: The Clinical Advisory Panel approved the model but prior to its application, OSHPD will test the interaction of cardiogenic shock in aortic versus mitral valve replacement; if the interaction is not significant the model is approved, if significant the interaction term should be incorporated into the model.

Commented [HH3]: correct

12. Post-operative Inpatient Stroke as a Risk-adjusted Outcome for Isolated CABG Surgery – Zhongmin Li, Ph.D. (Action Item)

This model differs from the previous model because it includes the MELD score and a new variable, diabetes control. Two years of data (2012-2013) were combined for greater statistical significance, and the model performed well.

The post-operative stroke risk-adjustment model includes 23 risk factors (9 were significant), and had a c-statistic of 0.725.

Action: The Clinical Advisory Panel approved the mortality model.

13. Hospital Readmission as a Risk-adjusted Outcome for Isolated CABG Surgery – Zhongmin Li, Ph.D. (Action Item)

The 2013 readmission model is similar to last year's model which included MELD scores. The readmissions risk-adjustment model includes 19 risk factors (11 were significant), and had a c-statistic of 0.660. It is important to remember that the c-statistic is lower for this model because it is based on discharge date which is a moving target and is unique to each patient

Action: The Clinical Advisory Panel approved the readmission model

14. Upcoming CCORP Hospital-level Report – Holly Hoegh, Ph.D.

Dr. Hoegh explained that the contents of the next public report will contain all the risk models approved during the meeting. Dr. Hoegh asked the panel to approve reporting internal mammary artery utilization in the next public report.

Action: The Clinical Advisory Panel approved internal mammary artery utilization.

15. Discussion of Potential Agenda Topics for Next Meeting – Joseph Parker, Ph.D.

Dr. Parker explained to the panel that he had not had an opportunity to put together a presentation on palliative care-end of life care, noting that this is a follow-up item from the last meeting. He will give more thought about how to use OSHPD or other data and wants to explore the idea of elective surgical care and its interaction with palliative care. He committed to provide more information for discussion at the September 2015 CAP meeting.

The CAP suggested that OSHPD facilitate a meeting that includes DHCS, Covered California, CalPERS, PBGH and other data users to discuss ways to use OSHPD data for potential quality measurement. Ron Spingarn suggested that the Chief Medical Officers from these agencies be included since some are directly involved in managing Federal quality programs. Dr. Parker will begin researching this area and report back at the next CAP meeting.

16. Public Comment

There was no public comment.

17. Adjourn

Dr. Brindis adjourned the meeting at 2:50 p.m.