

**California CABG Outcomes Reporting Program (CCORP)
Clinical Advisory Panel
Minutes of May 24, 2011**

The meeting was held at OSHPD Headquarters, 400 R Street, Sacramento, California

Clinical Advisory Panel Members in attendance:

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| Robert Brook, M.D., Sc.D, Chair | Cheryl Damberg, Ph.D. |
| Fredrick Grover, M.D | Coyness Ennix, Jr., M.D. |
| Keith Flachsbart, M.D. | Andrew Bindman, M.D |
| Ralph Brindis, M.D., FACC | |

Clinical Advisory Panel Members absent:

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| Timothy Denton, M.D. FACC | James MacMillan, M.D |
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OSHPD Staff/Consultants in attendance:

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| Stephanie Clendenin, Acting Chief Deputy Director | Ron Spingarn, Deputy Director, OSHPD Healthcare Information Division |
| Joseph Parker, Ph.D., Healthcare Outcomes Center Manager | Holly Hoegh, Ph.D., Healthcare Outcomes Center |
| Mary Moseley, M.A., Healthcare Outcomes Center | Denise O’Neill, Healthcare Outcomes Center |
| Robert Springborn, Ph.D., Healthcare Outcomes Center | Beate Danielsen, Ph.D., UCD Contractor |
| Niya Fong, Healthcare Outcomes Center | Richard White, M.D., UCD Consultant |
| Anna Le, Healthcare Outcomes Center Student Assistant | Daniel Kassis, Healthcare Outcomes Center Student Assistant |
| Beth Herse, OSHPD Sr. Legal Counsel | Ezra Amsterdam, UCD Consultant |
| Zhongmin Li, Ph.D., UCD, Healthcare Outcomes Center Contractor | James Marcin, M.D., UCD Consultant Patrick Romano, M.D., UCD Consultant |
| Dominique Ritley, MPH, UCD, Healthcare Outcomes Center Contractor | Anthony Steimle, M.D., Healthcare Outcomes Center Cardiology Consultant |
| Geeta Mahendra, MS, UCD Healthcare Outcomes Center Contractor | |

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| Approximately 15 Members of the Public were present for all or part of the meeting. |
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1. Call to Order and Introductions

Robert Brook, M.D., Chairperson, called the meeting to order at 9:15 a.m. when a quorum of members was present. Introductions were made.

2. Approval of Minutes of October 1, 2010 Meeting

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The minutes of the October 2010 meeting were approved unanimously.

3. Director's Report – David Carlisle, M.D., Ph.D., OSHPD Director

The report was provided by Stephanie Clendenin, Acting Chief Deputy Director. Dr. Carlisle could not be present.

Ms. Clendenin reported that State government continues to focus on the budget, especially closing the structural deficit. The Governor's May Revise proposed to realign Mental Health as well as Alcohol and Drug Programs to the Counties. The Governor also proposed to streamline operations by reducing boards and commissions, including three OSHPD boards. The proposals are subject to legislative approval. She clarified that the CAP is not slated for elimination.

4. CCORP Program Update – Holly Hoegh, Ph.D., CCORP Manager

Dr. Hoegh reviewed the statutory role of the CAP: recommend data elements, review and approve risk adjustment models, review physician statements, and consult with OSHPD on report materials.

She presented several graphs of the volume decrease for isolated CABG and PCI. Isolated CABG volume and mortality rates have declined in other states as well. The number of non-isolated CABG remained steady.

Discussion: The panel members discussed their interest in determining under-use of CABG surgery by people who need it and don't receive it, which usually results in death. Panel members and CCORP staff noted that this is primarily an issue of appropriate diagnosis at appropriate times in a variety of settings, which presents a much larger challenge to capture data statewide; however, the question of underuse is important.

Dr. Hoegh also announced that the 2007-2008 hospital and surgeon report will be out soon. The 2009 data has been collected and audited. The meeting today will focus on approving topics for the 2009 report, discussing possible new risk-adjusted outcomes for the report and approving the risk models for these outcomes.

5. Results of the 2009 CCORP Audit – Beate Danielsen, Ph.D., UCD consultant to OSHPD.

Dr. Danielsen explained the goals of the audit: to help assure that possible data quality problems could be corrected so that they did not affect hospital ratings; verify data quality in hospitals that had poor response to data discrepancy and risk factor coding inquiries; identify CCORP data quality with emphasis on risk factors in the model and post-op complication outcomes; and identify data quality for non-isolated CABG.

The 2009 audit sample was taken from the 17,215 CABG surgeries for 119 hospitals and 259 surgeons. Hospitals were selected according to the audit goals and one hospital was selected at random to achieve 18 hospitals audited. At each hospital, cases were selected

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proportional to isolated CABG volume -- a minimum of 60 and maximum 140 primary isolated CABG cases and up to 10% non-isolated CABG. In addition, all in-hospital deaths and post-op stroke cases were selected, accounting for 26% of all death/post-op stroke cases in California for 2009, an oversampling. A set of secondary records were selected for use should primary cases be found non-isolated by the auditors. In all, 1,165 isolated and 122 non-isolated CABG surgeries were audited.

In the audit findings, 5 reported isolated CABG surgeries were found to be non-isolated and 6 non-isolated CABG were considered isolated. Four cases were determined valve-only without CABG. Disposition at discharge was always coded correctly. In the 2009 CCORP data, missing values were rare. The audit also found that the higher-than-expected outliers and the lower-than-expected outliers were confirmed for operative mortality ratings. For hospital stroke ratings, the audit confirmed 4 pre-audit higher-than-expected and 3 lower-than-expected; required changing one pre-audit no-different to higher-than-expected; and changing 2 pre-audit higher-than-expected to no-different.

Audit findings for coding of risk factors indicated that timing of MI improved; mitral insufficiency and chronic lung disease continued to be difficult to collect; and status of procedure is problematic, even among auditors. Audit findings for process measures and complications indicated that complication coding for stroke, prolonged ventilation, and re-operation for bleeding is good; coding for renal failure and post-op dialysis has improved; and coma, re-operation graft/occlusion, infection, and post-op Afib/Aflutter are not captured well.

Discussion: Discussion by the CAP and comments by the public covered a wide range of topics related to future direction. One area of discussion included better education and communication with hospitals: CEO's should receive a corrective action plan, hospitals should be notified of problems early, and clarification information should be sent frequently as problems emerge with data element coding. CCORP offered to create an action plan for working with hospitals on these issues. Some of these suggestions have already been implemented but may be improved upon.

The future of CCORP in relationship to the expanding nature of cardiac care was discussed. The panel is an advisory group; but, in an advisory capacity, may choose to advise OSHPD at the next meeting to expand or reduce the scope of the current program. Such a discussion and potential action requires adequate notice to the public in accordance with open meeting laws.

A member of the public, a hospital data manager, spoke in agreement with a few panel members that data registries increase validity of the data collected. She also expressed her opinion that CCORP may become the only viable reporting source in the near future, since hospitals may stop reporting most data elements to STS. Effective July 1, the STS group adds many new data elements which she felt were unrealistic for hospitals to collect.

Although CCORP lacks a statutory mandate to collect and report the data on many of the topics suggested by the CAP, the program may still capture and report additional risk-

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adjusted outcomes to be presented later on the agenda. In regards to capturing longer term mortality data, Dr. Parker stated that CCORP could bring back to the CAP a study of CABG deaths at 30, 90, 180, and 365 days after surgery.

6. Discussion and recommendations regarding changes to CCORP clinical data elements submitted by hospitals – Holly Hoegh, Ph.D., and UCD consultant to OSHPD, Richard White, M.D.

The Society for Thoracic Surgeons (STS) recently issued version 2.73 of the Adult Cardiac Database. The changes will be effective on July 1, 2011. Dr. Hoegh reviewed the STS-driven proposed data changes to CCORP. Dr. White reviewed proposed new STS data elements and one proposed new CCORP data element regarding Warfarin use up to 5 days before surgery. Changes to the data elements should improve the risk adjustment models for outcomes.

Discussion: For a variety reasons, some of the data elements are problematic to collect adequately. Through training, CCORP will help data managers clarify responses to these ambiguous elements.

Action: The CAP approved all data element changes driven by the STS version change. They also approved the addition of the CCORP data element on Warfarin use up to 5 days before surgery.

7. Mortality as a risk-adjusted outcome for CABG+Valve surgery – Zhongmin Li, Ph.D., UCD consultant to OSHPD

Dr. Li presented a preliminary risk model for public reporting of valve+CABG mortality outcomes. At a previous CAP meeting, the panel wanted CCORP to evaluate multiple years of data, select a homogeneous cohort, and exclude cases with pulmonic and tricuspid valves. To achieve a large enough number of cases, Dr. Li combined several types of valve surgery performed with CABG surgery in the 2008 and 2009 data. The risk model performs well.

Discussion: The panel discussed problems with combining unlike valve+CABG procedures to achieve significant numbers. Their opinion was that the combinations don't work well together. Also, the numbers appear to be too low to make public reporting worthwhile.

Action: The CAP decided to direct staff not to pursue public reporting for valve+CABG surgery because the information at this time is inconclusive and inadequately definitive.

8. Post-operative dialysis requirement as a risk-adjusted outcome for isolated CABG Surgery – Zhongmin Li, Ph.D., UCD

Dr. Li reminded the panel that a year ago they requested separate risk models for individual post-operative complications before considering a composite measure. This analysis is part

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of that request. He presented a preliminary risk model for post-op dialysis. Mortality, stroke, and post-op dialysis would be separate measures if reported using 2008-2009 data.

Discussion: The group discussed the small numbers and the need for more long term data, such as permanent dialysis after CABG surgery. OSHPD only has access to long term data with ED and hospital readmission and does not collect outpatient data, where much of the dialysis would occur. As part of a composite measure or linked to outside data sets, this data might be useful but not for reporting as a separate measure.

Action: The panel advised CCORP not to pursue post-op dialysis for public outcomes reporting.

9. Hospital readmission as a risk-adjusted outcome for isolated CABG – Beate Danielsen, Ph.D., UCD

Dr. Danielsen looked at 7-day, 15-day, and 30-day readmissions after isolated CABG surgery. Using 2007 data, the most recent available for this analysis, at 7-days, 6.6% of CABG surgeries are readmitted; at 15-days, 10.7% of surgeries; and at 30-days, 14.7% of surgeries. Most reasons for readmission seem related to complications of the isolated CABG surgeries, including diseases of the circulatory system, diseases of the heart, and congestive heart failure as the top categories, so the causes of re-admission support re-admission outcomes. Calculating re-admissions outcomes is dependent on successful linkage with PDD.

Discussion: The panel discussed challenges with this measure, including all-cause readmission, the difficulty getting social security numbers, and the relative lack of precision when compared to the other two outcomes measures --- mortality and stroke. Ultimately the panel decided that this is a coordination of care measure that will be sought in health care reform and should be pursued.

Action: The panel approved hospital readmission as a risk-adjusted outcome measure for public reporting.

10. Mortality as a risk-adjusted outcome for isolated CABG surgery – Zhongmin Li, Ph.D., UCD

Dr. Li presented the risk model and methods for developing the outcome measure for the next public report. The model is very similar to the 2007-2008 model.

Action: The panel approved Dr. Li's risk-adjustment model for operative mortality.

11. Post-operative stroke as a risk-adjusted outcome for isolated CABG surgery – Zhongmin Li, Ph.D., UCD

Dr. Li presented the risk model and methods for developing the outcome measure for the next public report.

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Action: The panel approved the model for post-operative stroke for the 2009 report.

12. Upcoming CCORP Hospital-Level Report – Holly Hoegh, Ph.D.

Dr. Hoegh briefly reviewed the decisions made at this meeting regarding the 2009 report. Two items remained for decision or recommendations from the CAP.

Action: The panel approved internal mammary artery usage as an outcomes measure for 2009. The panel also agreed with OSHPD not to include a volume/outcomes analysis for the 2009 report.

13. Definition of Isolated CABG – Specific Case Discussion

Dr. Steimle, M.D., consultant to OSHPD, brought a case of a patient with pleural effusion who underwent extensive decortication at the time of surgery. Dr. Steimle thought this particular case should be excluded from public reporting, but asked for consultation from the cardiac surgeon on the CAP regarding whether to include this exclusion from the definition of isolated CABG.

Action: The panel voted that pre-planned extensive decortication should be excluded from the definition of isolated CABG.

The panel did note that some cases may be a judgment call.

14. Public Comment

Public comments were allowed throughout the meeting. The one comment at the end of the meeting regarded funding for CCORP. The line item in the Governor's budget is about a million dollars and has been funded at the same level since CCORP's inception. Dr. Li announced Dr. Amsterdam's 75th birthday and 50 years of service/practice in the Cardiology Department at UC Davis.

15. Adjournment

Dr. Brook, M.D., Chairperson, adjourned the meeting at 2:05 p.m.