

*California Health Policy and Data Advisory Commission*

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Minutes  
AB 524 Technical Advisory Committee  
April 1, 2008

The meeting was called to order by Chairperson Jerry Royer at 9:13 a.m., at 400 R Street, Suite 317, Sacramento, California.

**Present:**

Jerry Royer, MD, MBA, Chair  
Douglas Bagley  
Laurie Sobel, JD  
Kathy McCaffrey  
Elizabeth Carolyn Abbott  
Robert Brook, MD, ScD

**Absent:**

Marilyn Chow, RN, DNSc  
Nancy Donaldson, RN, DNSc  
William Weil, MD  
Mark Hlatky, MD  
Laura Gardner, MD, MPH

**OSHPD Staff:** David M. Carlisle, MD, PhD, Director; Elizabeth Wied, Chief Counsel; Beth Herse, Sr. Staff Counsel; Michael Rodrian, Deputy Director, Healthcare Information Division; Joseph Parker, PhD, Director, Health Quality and Analysis Division; Holly Hoegh, Manager, Clinical Data Program; Candace Diamond, Manager, Patient Discharge Data Section; Brian Paciotti, PhD, Research Program Specialist II; Starla Ledbetter, Healthcare Information Division; Eric De La Cruz, Health Information, Patient Data Section; Mallika Rajapaksa, PhD, Research Scientist II; Robert Springborn, PhD, Research Scientist II, CABG Program; Deborah Holstien, Data Product Manager, HID

**CHPDAC Staff:** Kathleen Maestas, Acting Executive Director; Terrence Nolan, Office Manager

**Others Present:** Vito Genna, CHPDAC Chair; Liz Goldman, MD, MCR, University of California, San Francisco; Ronald Kaufman, Chief Medical Officer, Tenet Healthcare Corporation; Tom Moore, California Healthcare Coalition; Vickie Bermudez, RN, Kaiser Permanente; Catherine Kennedy, RN, Kaiser Permanente



**Approval of Minutes:** Committee Member Bagley made a motion to approve the November 9, 2007 Minutes. Committee Member McCaffrey seconded. The minutes were unanimously approved by the Committee.

**OSHPD Director's Report:** Director Carlisle reported that the biggest development since the last TAC meeting is the failure of the Governor's healthcare reform proposal to leave the Senate Health Committee. It failed by a 7 to 1 vote.

The Governor remains committed to pursuing a healthcare reform agenda. At this point the focus has shifted to moving forward legislation which would capture the quality and transparency elements of the Governor's healthcare reform proposal. AB 2967 has been introduced by Assembly Member Lieber with the aim of expanding the government's role and breadth of activities in looking at quality, cost and transparency for healthcare in California. This is an active bill and is currently in the cycle where input and changes can be made to the legislation.

The California budget crisis has been discussed at previous meetings and continues to be dire. There is a \$14 billion deficit which may currently be reduced to \$7 billion, but this is still a substantial gap that the Governor and Legislature are called upon to close. Departments are trying to either reduce General Fund expenditures or shift them around to be most effective. Recognizing that in areas where General Fund savings occur, this can translate to a direct impact on services provided to the State of California, the Governor remains keenly aware of this impact on the population.

The Community-Acquired Pneumonia Report is currently under review and the Office is looking forward to the release of our next Coronary Artery Bypass Graft Report towards the end of this calendar year.

Lupe Alonso-Diaz has joined the Office as Executive Director of the Health Professions Education Foundation.

**Healthcare Outcomes Center Report: Joseph Parker, PhD, Director**

Dr. Parker reported that staff is currently constructing the 2004/2006 cohort for the Maternal Outcomes Report. The public report using 1999-2001 data has been received from the contractor. With regard to the Maternal Outcomes Report, there are two outcomes being examined: unplanned readmissions and 3<sup>rd</sup> or 4<sup>th</sup> degree perineal lacerations. A clinician will be consulted to review the readmissions to ascertain whether they were related to the maternal admission.

Staff is constructing a similar cohort for the updated Heart Attack Risk Model using patient discharge data and the public death file. However, in order to do this in the best manner possible, staff is waiting for the results of the patient discharge data validation study. In this study, medical records were reabstracted to determine whether the coders were doing a good job coding the

diagnosis and the present on admission (POA) indicator. In order to finalize the risk model, staff would like to know how well the risk factors are being coded and this information will be incorporated into final decisions regarding the risk model.

At the August 3, 2007 TAC meeting, Committee members requested analysis of the volume outcome relationship for the proposed abdominal aortic aneurysm (AAA) repair study. That has been completed. The risk model has also been revised and the two prior risk models (open procedures and endovascular procedures) have been combined into a single risk model. Staff will present the risk model for AAA repair to the Committee at the August 7<sup>th</sup> TAC meeting.

**Report on California Coronary Artery Bypass Graft Surgery Outcomes Program (CCORP) reporting activities: Holly Hoegh, PhD, Manager, Clinical Data Program**

Dr. Hoegh reported that the January release of the 2005 hospital-level Coronary Artery Bypass Graft Surgery Report received good media attention. There was one comment letter included in the report which commented on the internal mammary artery (IMA) usage.

The next report is the 2005/2006 combined report, which will include surgeon-level results and be completed before the end of this year. Staff is currently waiting on the death file from the California Department of Public Health to complete the provider ratings. Staff plans to get the preliminary report results out to hospitals and surgeons in late spring or early summer for the 60-day review period. Surgeons have the opportunity to submit a statement if they do not agree with our results.

Committee Member Sobel asked if there was anything that the Committee could do to help the process of getting the report out faster. "Because by the time consumers get this information...it's 2009, so the data is four years old, so I am not sure how relevant it is to the consumer at that point."

Dr. Hoegh stated that "the one piece that we wait on, because we measure 30-day or operative mortality, is the State death file. We usually get it any time from January into the summer."

Deputy Director Rodrian stated that the information used to come out around October 31<sup>st</sup>. Much of the delay has been due to staffing and budgetary problems. They have a new electronic system that is in almost all counties. It looks as though they will be much earlier by next year.

Dr. Hoegh outlined upcoming benchmarks for 2007, 2008 and 2009 data, adding that at some point in the future staff hopes to be reporting on outcomes other than mortality.

Committee Member Brook stated that, "I think this Committee should know two things about coronary artery bypass surgery which are critical issues, that we are not addressing. One is appropriateness of care, which we have real serious clinically-based efforts to address. The other is that the major determiner of whether you get a bypass surgery is based on coronary angiography reading. And the reliability of those readings is circumspect at best."

### **Report on 2003-2005 Community-Acquired Pneumonia Report: Mallika Rajapaksa, PhD**

The third hospital outcome report on Community-Acquired Pneumonia (CAP) is currently under administrative review. In previous CAP reports a hospital was rated as "better than expected" or "worse than expected" based on two risk-adjustment models, one including and one excluding do not resuscitate (DNR). In the current report, DNR is not used as a risk factor in the model. Hospitals are rated as "better than expected" or "worse than expected" based on the results of a single model that does not include the DNR variable. Since the model without DNR was less restrictive this resulted in twice as many hospitals being rated "better than expected" and "worse than expected" than in previous reports.

Ways to improve hospital POA coding for CAP patients:

- Developing stricter criteria before allowing hospitals to take credit for acute risk factors in model
- Letters will be sent to hospitals with poor POA coding for three acute risk factors (congestive heart failure, septicemia, and respiratory failure)

Committee Member Bagley stated that he had missed the meeting where dropping DNR was discussed and asked for an explanation of the rationale behind excluding DNR.

Dr. Parker explained that while DNR overall is predictive of mortality and it has a fairly large odds ratio in the model, "we found that hospitals are coding DNR systematically. That is, some hospitals and hospital systems have a policy of getting DNR coded on a lot of their patients, up to 50 percent for some facilities. At other facilities it is a small percentage. The analysis we did showed that at hospitals where there is very little DNR coding, those patients are severely ill. But in hospitals where they are coding a lot of DNR, those patients are relatively less sick. But because DNR overall is a pretty good predictor, the hospitals that are doing a lot of DNR coding are getting a bump in the risk model because they are coding it for relatively less sick individuals."

"In further discussions we thought that maybe a marker for palliative care or comfort care only would be of more use in the outcomes reports. But unfortunately there is no national standard for that yet."

Committee Member Bagley stated that “it seems to me the right answer would be getting the coding right in the first place.”

Committee Member Brook answered that it is not a coding problem. “It is that DNR has no relevance for Community-Acquired Pneumonia. DNR is the wrong variable. We really need a variable that says that this hospitalization is mainly for pain control and comfort care.”

**Possible additions to the Patient-Level Data Set: Starla Ledbetter, Data Projects Manager, Healthcare Information Division**

Status—Completed Tasks:

- Met with the California Department of Public Health (CDPH) staff on lab standards
- Obtained information on CALINX and ELINCS lab standards
- Completed five hospital site visits
- Obtained clinical data elements definitions from Cardinal Health (as used by Pennsylvania)
- Held meeting with CMS because of their interest in the collection of lab values for quality studies

Staff is currently working on finalizing the business case using information from Dr. Michael Pine’s report and Dr. Andrew Bindman’s report, as well as looking at what other states are doing and an extensive literature review. The draft business case should be completed this month and this information will in turn be used to develop a regulation package.

Staff has prepared a comprehensive hospital survey which will be released to all California hospitals through their contact person designated to work with patient-level data via the MIRCal system around April 16<sup>th</sup>. The survey contains a wide range of questions including questions regarding lab values and vital signs; how they are collected, what systems are in place, whether they are collected in conventional units or international units.

Manager Ledbetter presented the Committee with a handout covering the draft version of the “Data Element Definitions Document.” Manager Ledbetter stated that at the beginning of the document there is a section called “General Definitions” which are definitions that apply to all the data elements being considered. For example, “Admission,” where “we are talking about time of collection of lab values, you have to define time of admission to determine time of collection.” Next in the document are sections entitled “Laboratory Tests (Inpatient),” “Vital Signs (Inpatient),” and “Other Data Elements.” Under “Other Data Elements,” the Operating Physician and Patient Address are being considered for all three data types: the inpatient, emergency department and ambulatory surgery. Also, Physician ID and Patient Address are in the national standard now and do not count against the 15 new data element limit.

On the draft document all areas are open to comment or suggestion but areas that are italicized are specifically designated as open for comment or suggestion. For example, AST, SGOT, in the "Time of Collection" column, "*first lab test within 24 hours of admission*" as well as, in the "Location" column, "*all inpatients.*" Manager Ledbetter continued with the "Location" column and stated that with "*all inpatients*" OSHPD has to decide whether that means all inpatients or limit it to general acute care. From preliminary discussions with hospitals it has been suggested that it would be easier to report on all inpatients as opposed to picking certain groups or excluding certain groups. This is another area for which staff requests further input.

For the "Units of Measures" column, staff have discovered that conventional units are used more often than international units and staff is currently in the process of identifying which particular measures are used for each of the data elements.

Manager Ledbetter stated that with regard to Prothrombin Time and International Normalized Ratio, staff are looking into which would be the better test measure to capture. The International Normalized Ratio is the standardized variable across the globe, therefore that might be the easier test measure to go with. But this is still being looked at by staff.

Another decision staff is investigating is whether to use hemoglobin or hematocrit; should they both be captured or is one better than the other. Some hospitals use Fahrenheit and some use Celsius when reporting temperature. Staff are considering accepting either one, with the indication of which unit of measure was used. Staff would entertain any feedback on either of these issues.

Finally, on the last page of the draft document, "Operating Physician" is being considered by staff to ascertain which procedures OSHPD would want to capture the Physician ID. For example, specific procedures or only principal procedures, and how staff would identify the physician: using the National Provider ID; the License number assigned by the Medical Board of California of the Department of Consumer Affairs; first name, middle initial, and last name or a combination of those.

Committee Member Sobel inquired as to the current status of primary language spoken.

Manager Diamond stated that the package that would define principal language spoken, as well as make some other changes to reporting requirements, is currently with the Agency for Health and Human Services after which it will go to the Office of Administrative Law for the public comment period. Information on Principal language spoken will be collected starting January 2009.

Committee Member Sobel asked why, since the legislation related to Principal Language was passed in 2002, it has taken 7 years to get to the point of collecting this information.

Manager Ledbetter explained that since SB 1973 passed in 1998, that OSHPD has been trying to align itself with national standards. Principal Language spoken was not in the Health Care Services Data Reporting Guide which is what OSHPD uses to collect patient-level data. OSHPD went to the national bodies through X12 and got principal language added in early 2007.

Committee Member Sobel commented that, “It just seems like an inordinate amount of time to me for something that in as diverse a state as we are, and how important it is that you can communicate when you’re going to need medical care—I understand that you wanted to be aligned, but is there a way in the future if we happen to move forward without being in sync with federal and then let them catch up?”

Committee Member Abbott added that taking into account the great diversity in California, “I understand about aligning oneself with federal initiatives, but this is really a California issue. One of the ongoing criticisms of OSHPD is it takes too long to get something accomplished. Even with respect to the death match records, OSHPD gets blamed for something relating to another sister agency. I think OSHPD needs to break out of that, and this would be a perfect one to be really fast and excellent, because it is really a California issue more than any other state.”

Deputy Director Rodrian stated that at this point the regulatory process has started and that is strictly controlled by law. After the Agency, the regulatory package will go to the Office of Administrative Law and then there are time frames laid out for public hearings and this all takes time.

Director Carlisle added that these are all points well taken. The Office is very concerned about the time issue. As Michael Rodrian has stated previously, the Office is committed to producing reports in an accurate and timely manner. “I am also cognizant of the goal of the advisory committees in pushing the Department along. And I think we benefit from that push as much as anyone. We certainly appreciate it. And I think that applies to all our committees, the TAC and CHPDAC.”

**Discussion of Percutaneous Coronary Interventions in California pursuant to CHPDAC request that the Office consider studying PCI outcomes: Joseph Parker, PhD, Director of Healthcare Outcomes Center**

Dr. Parker presented a series of slides using OSHPD administrative data comparing CABG patients to PCI patients which ended with the following summary:

- PCI annual volume is now 4 times that of isolated CABG
- In-hospital mortality rate for CABG declining in most recent years & approaching PCI mortality rate
- In-hospital mortality rate for PCI constant across recent years

- PCI patients experience some negative outcomes more frequently than CABG patients (post-op MI & readmission for CABG)
- Appropriateness of CABG vs. PCI for a growing number of patients seems less certain than in the past

Dr. Parker asked the Committee for feedback as to whether OSHPD should report publicly on PCI outcomes at the physician level for California. And if so, what type of data should be used?

Director Carlisle stated that the CHPDAC had recommended that Office move forward with an effort to look at the methodology that might be used to initiate PCI reporting, recognizing that would be an early first step on a very long pathline.

Committee Member Brook suggested that OSHPD not engage in another mortality study but rather consider looking at the appropriateness of procedure with respect to PCIs and bypass surgery.

Tom Moore of the California Healthcare Coalition added that he strongly endorsed Committee Member Brook's suggestion adding, "The variations in PCIs are absolutely dazzling. There is no rhyme or reason to the variations that we can see which to us raises the question of appropriateness. You can't see populations with these variations taking place and assume that it's driven by medical need. There is something else happening."

Committee Member Brook stated that for California, a sample size of 500 would be sufficient, and the OSHPD data set could produce this sample virtually immediately. "The criteria need to be updated which is the one challenge and one expense, but developing an abstraction form and doing all this is a doable project."

Dr. Parker stated that OSHPD's mandate is to produce outcomes reports and the legal aspects of producing a different kind of report would have to be examined. "But certainly the Committee is able to recommend as they will."

Chairperson Royer stated that judging from the Committee's discussion he felt there was a consensus for OSHPD to move ahead with looking at the possibility of an appropriateness study being conducted subject to legal review. The Committee indicated their agreement with that statement.

### **Congestive Heart Failure (CHF): Brian Paciotti, PhD; Joseph Parker, PhD, Director of Healthcare Outcomes Center**

At the November TAC meeting the prospective study on CHF was presented to the Committee and staff received a number of suggestions for revision which have been incorporated into the current presentation.

Dr. Parker outlined the rationale for doing a report on CHF:

- Congestive heart failure costly and serious
  - Leading cause of U.S. hospitalizations in persons > 65 yrs.
  - \$26.8 billion in US for direct healthcare costs
  - #2 cause of non-maternal hospitalization in California
- National quality measures exist
  - AHRQ CHF Inpatient Mortality Indicator
  - CMS 30-day heart failure mortality (NQF-endorsed)
- Better medical care can lead to better outcomes
- Hospital 30-day risk-adjusted mortality rates in California vary widely
  - From 3.3% to 28.0% (volume > 29; N=348)

Committee Member Brook inquired as to why, if CMS is producing a 30-day heart failure mortality report, OSHPD is considering producing a similar report. Dr. Parker explained that in producing their report, CMS used a hierarchical linear modeling system, which in the first year of reporting produced no performance outliers for the State of California, and did not use POA. Staff has looked at the CMS report with the goal in mind of improving on the existing report.

Director Carlisle added that the TAC had previously recommended that we move forward with this report. This would be a benchmark report which would not require the same kind of intensive chart auditing that accompanies OSHPD's outcome reports.

Dr. Parker enumerated the TAC's previous recommendations regarding the CHF Cohort/Model which included adopting a 30-day mortality as outcome, using confidence intervals (CI) to identify performance instead of quintiles, providing more information on same-day transfers and multiple admissions and doing analysis of emergency departments 'transfers'.

These recommendations lead to OSHPD making the following revisions to the CHF Cohort/Model:

- Adopted 30-day mortality outcome
- Use 98% CI to identify outliers (per other OSHPD reports)
- Adopted cohort selection criteria from CMS' CHF report (Krumholz et al.)
- Exclude acute risk factors as POA if hospital has bad POA coding
- Present only one risk model

Dr. Paciotti explained the methods used for selecting patients for the CHF cohort. First, patient records that met the AHRQ CHF cohort definition with principal diagnosis of CHF or secondary diagnosis of CHF with principal diagnosis of fluid overload were selected from January 2003 through December 2005. After selecting CHF patients, staff excluded records of patients who were admitted for non-acute treatment, where sex unknown, with age less than 18, with diagnosis related to trauma, who were not California residents or had invalid social security numbers. Patients with multiple CHF admissions were

linked, flagged and records of those patients seen at different hospitals on the same or following day were excluded. Single admissions and multiple admissions (figure derived by randomly selecting one admission per patient with multiple admissions) were combined and matched with the death certificate files to arrive at the final cohort.

The characteristics of the CHF cohort:

- Total patient records—174,418
- In-hospital mortality rate—4.60%
- 30-day mortality rate—9.88%
- Mean Age—73 years
- Mean length of stay—5.1 days
- Females—52%
- Mean charges—\$40,427
- Medicare—72%

OSHPD consultants conducted a literature review of the CHF published literature to select candidates to recommend as risk factors for the model. Next, staff conducted an empirical analysis in which Clinical Classification Software was used to group all of the ICD-9 codes into 259 categories. Staff selected CCS groups with a prevalence of greater than .3 percent and then created Spearman correlations with 30-day mortality. Consultants carefully looked at all CCS groups in which correlation with mortality has an  $r > .02$ , and due to the large sample most of these correlations were statistically significant with a  $p < .001$ .

After consultants evaluated the risk factors, staff used logistic regression models based on a 30-day outcome of mortality. Alternative risk factors were tested using fully fit models and step-wise techniques.

Committee Member Brook observed that the report would be very sensitive to the mortality date chosen. “Because unlike CABG when only a small percentage of deaths occur out of the hospital, with congestive heart failure, half the deaths are occurring between hospital discharge and 30 days. I don’t know whether you get another 4 percentage more deaths if you waited for 2 months. This is not the same as a surgery procedure or pneumonia. Let’s say a hospital is labeled an outlier by a 30-day mortality, if you shifted it 2 months, it would not be labeled an outlier because the death distribution has changed.”

Dr. Parker noted that at the August 2007 meeting the TAC was presented with two options for use by staff in the CHF report: inpatient mortality or 30-day mortality. The TAC suggested that staff move to 30-day mortality which is the standard OSHPD uses in other reports. No other options were presented at that time.

Committee Member Brook suggested that based on Joanne Lynn’s work on heart failure, “A person comes in with some functioning. And then if they get

hospitalized, their functioning goes down dramatically. The elderly cohort will never get back to their previous level of function,” and subsequent readmissions see further loss of function. “I would like to know what is the death rate of one year if you have it from the cohort you originally selected for your model.”

Committee Member Abbott agreed that from a consumer’s perspective it would seem worthwhile. At the August 2007 TAC meeting “we did not consider looking longer longitudinally” to see if some of the differences that appear in a 30-day mortality would disappear after six months.

Dr. Paciotti stated that staff could look at the death rates out to one year and report on the finding.

CHF Model Performance:

- Model is robust
  - Same performance in development and validation samples
- C-Statistic indicates good discrimination
  - OSHPD Final model C = 75.3
  - Krumholz et al. CHF 30-day mortality C = 70.0

Hospitals with poor POA coding were not given full risk-adjustment:

- In past reports, OSHPD flagged hospitals that coded 100% or 0% of secondary diagnoses for the specific cohort as POA
- Empirical analyses suggests additional poor hospital POA coding not being identified
- Staff used metrics developed by 3-M (Hughes et al.) to better assess quality of hospital POA coding
  - Postoperative complications are POA < 50%
  - Acute medical complications are POA < 69%
  - Hospitals meeting both criteria not given credit for acute risk factors
- 40 hospitals not given full risk-adjustment (Acute Risk Factors)
- 5 additional hospitals denied full risk-adjustment due to self-reported coding errors reported to OSHPD patient data section

To report the study’s findings, instead of using the quintile method as presented at the August 2007 TAC meeting, OSHPD staff has chosen to use a 98 percent confidence interval. Hospitals with 30 patients or less and San Diego Hospice Palliative Care were excluded from the report. Using this method of reporting with respect to the 348 hospitals in the study, 36 hospitals performed better than expected and 43 performed worse than expected.

Dr. Parker asked the Committee to consider a formal endorsement of CHF as a new risk-adjusted outcomes report.

Committee Member Brook asked if the OSHPD report would reference the CMS report with a discussion of their similarities and differences.

Director Carlisle stated that “there are efforts to try to aggregate the reports in a variety of ways. I think we probably should include some discussion about the context of this report in the face of multiple other perspectives.”

Committee Member Brook moved that OSHPD go forward with CHF as an outcome report and Committee Member McCaffrey seconded. The motion passed unanimously.

Committee Member Brook requested “before staff release this report that there be an understanding about whether this is short-term or long-term mortality that is being affected. “I would like to see at least 6 months out, if they have the data done and see if the results hold.” Also, staff should look at the distribution of deaths because heart failure is a disease that’s caused by multiple medical processes. Are these cases of heart failure in older patients, or heroin overdose or other factors? Lastly, to prevent directing patients to hospitals that are overcoding, a sensitivity analysis should be done to see if the risk-adjustment scores for the hospitals as a group that are better than average versus average to see if the risk-adjustment coding is approximately the same. If it is higher, staff should examine whether that may be due to the codes that are more likely to be overcoded.

Committee Member Abbott added that OSHPD should “have a more media oriented strategy on the release of its reports,” as it is very easy for reports to be lost. “I don’t think they get the play proportionate to the conclusions that could be drawn from purchasers, consumers, and cooperatives.

### **Patient Discharge Data (PDD) Validation Study Preliminary Findings: Liz Goldman, MD, MCR, (UCSF)**

The project aim is to assess the reliability and validity of hospitals’ coding of condition present at admission (CPAA), do not resuscitate (DNR), external cause of injury codes (E-codes) and reabstract all data elements in the OSHPD patient discharge dataset (PDD).

A reliability analysis was conducted consisting of a blind review of the medical record by health information technicians (HIT) which was intended to mimic the process conducted by the hospitals at their own facilities. Then using registered nurses, who come with clinical expertise, a blind evaluation of the CPAA coding after confirming the diagnoses was conducted for the validity analysis.

#### Overview of Methodology:

- Probability sampling of medical records from year 2005 from acute care hospitals in CA
- Abstractors participated in training and pilot test
- Each record reviewed by HIT and RN
- 250 records double reviewed for inter-rater reliability

- Data collection: June-October, 2007

Four umbrella conditions were selected for sampling because they are common causes of hospitalization, and they are targets of public reporting. Then they were paired with associated risk factors with high mortality, high incidence and with the ability to be either a preexisting condition or a complication of care. The definitions of umbrella conditions and risk factors were taken from the ICD-9 codes from the OSHPD model for AMI and CAP, and from the AHRQ Inpatient Quality Indicators for CHF and PTCA.

The following umbrella condition/risk-factor combinations were chosen:

- AMI +pulmonary edema
- AMI +shock
- CAP +respiratory failure
- CAP +septicemia
- CHF +AMI
- CHF +acute renal failure
- PTCA +AMI
- PTCA +acute renal failure

A complex sampling design was developed with the goal of creating a sample that could be generalized to the rest of California hospitals. From randomly selected hospitals, a random sample of charts with the umbrella condition and risk factor combinations were taken, from which 10 charts within each combination were reviewed so as not to weigh one hospital more than any other hospital.

Preliminary Findings:

Reliability of CPAA for Selected Risk Factors:

- Difficult to match on Blind reabstraction—hospitals and HITs agreed on coding of umbrella condition and risk factor in 70.9 % of records
- Hospitals and HITs agreed on CPAA coding in 70.6% of matched records
- No difference between how often hospitals and HITs coded CPAA as “yes” (65.5% vs. 67.8%)

Reliability of CPAA for CCS Diagnosis Groups:

- Hospitals coded more secondary diagnosis than HITs (mean 13.3 vs. 10.7)
- Minimal difference in HIT coding of CPAA than the hospital (87.2% vs. 85.3%)

Validity of CPAA for Selected Risk Factors:

- Hospitals and RNs agreed on CPAA coding in 73.3% of records

- Minimal difference between how often hospitals and RNs coded CPAA as “yes” (67.2% vs. 69.7%)

#### Validity of CPAA for CCS Diagnosis Groups:

- RNs confirmed on average 13.3 of 13.9 secondary conditions
- Minimal difference in hospital’s coding of CPAA as “yes” than the RNs (85.5% vs 84.5%)

#### High DNR Coding Reliability, Though Hospitals More Likely to Code Patients as DNR:

- 81.1% agreement between hospitals and HITs on DNR coding
- Hospitals coded patients as DNR more often than HITs (30.9% vs. 25.0%)
- 84.1% agreement in inter-rater reliability analysis (N=214 records)

#### Similar Results for Validity of DNR Coding:

- 84.1% agreement between hospitals and RNs on DNR coding
- Hospitals coded patients as DNR more often than RNs (32.5% vs 23.0%)
- 96.2% agreement in inter-rater reliability analysis (N=342 records)

#### E-Codes:

- HITs found a place of occurrence of injury in 56.1% (151) of the 269 cases where hospitals did not assign one
- Most of the time (79.9%) HITs found the place of occurrence in the physician notes

#### Summary Conclusions:

- CPAA
  - Greater differences in the coding of a diagnosis than coding of CPAA
  - No demonstrated directional bias in hospital reporting of CPAA
- DNR
  - Hospitals more likely to code patients as DNR
  - Recommend clarification of DNR coding rules for hospitals and further evaluation as to the underlying reasons for found differences
- E-Codes
  - Place of occurrence of injury can be assigned in more than half of charts where it was coded as unknown
  - Physician notes are the most frequent source of information

#### Further Analyses:

- Conduct HIT and RN IRR
  - Matching on UC + RF for HIT

- Analysis of CPAA and DNR stratified by hospital characteristics
- Hospital ownership (investor vs. non-profit), teaching, bed size
- Gold Standard
  - Multiple abstractions of the same chart provides opportunity to devise a gold standard CPAA evaluation
  - If resources permit, physicians will adjudicate approximately 330 records where there was disagreement between HITs and RNs on CPAA
  - Goal is to calculate sensitivity and specificity of CPAA

**Agency for Healthcare Research on Quality (AHRQ) Patient Safety Indicators (PSIs): Brian Paciotte, PhD; Joseph Parker, PhD, Director of Healthcare Outcomes Center**

Patient Safety Indicators (PSIs) were developed by the Agency for Healthcare Research on Quality (AHRQ) to be useful low-cost screening tools and were not intended to be definitive quality measures for use in public reporting although several states are now using them in public reporting.

There are 25 provider-level indicators that have been developed as rates with the numerator as the event, the denominator the number of patients at risk for that event. The events are generally rare events; therefore they are expressed as events per 1,000 patients. Higher rates mean lower quality.

Purpose of OSHPD Analyses:

- Explore the internal ‘validity’ of PSIs for reporting as hospital-level quality metrics
  - Focus on differences in reported PSI rates by hospital types
  - Show how POA coding and POA coding quality may affect rates
- Inform and generate discussion
- The predominant issue is underreporting, both underreporting of actual PSI events and underreporting of present on admission = ‘No’, both of which lead to artificially low PSI rates

The National Quality Forum is reviewing 7 of the PSIs for possible endorsement. CHART is also reviewing these for possible public reporting and OSHPD is considering nationally endorsed quality indicators for public reporting, especially those that use administrative data.

How Are AHRQ Patient Safety Indicators Calculated?

- PSIs identified in OSHPD patient discharge data (PDD) using AHRQ software
  - Many use ICD-9 codes in 99x series (Complications of Surgical & Medical Care)
  - Four use E-codes (External Causes of Injury and Poisoning)

- Patient exclusions applied for each PSI
- Risk-adjustment for most (age, sex, DRG, pre-existing illness severity using Elixhauser et al. risk factors)
- POA data field used to exclude PSI events that are present on admission

#### Basic Approach to Exploring Internal 'Validity':

- Hospitals were grouped into 5 mutually exclusive hospital types which include Government, Investor, Non-profit, Teaching (Non-profit), and Teaching (Government)
  - Literature suggests that reporting of complications varies by type of institution
  - Hospital types based on OSHPD hospital financial data reporting categories
  - Excluded hospice (N=8) and children's (N=8)
- Developed POA coding quality metrics
  - POA coding has large effect on about half the PSIs
  - Adapted a metric of POA coding quality developed by Hughes et al. (3M) to identify poor POA coding hospitals
  - Calculated crude % of all secondary diagnoses coded as POA=yes

The 2003-2006 PSI rates were calculated and the highest 5 percentile hospitals (worse) were identified and all 0 percentile hospitals or lowest 5 percentile (best) were identified. Then the representation of the hospital type in the sample was compared to their representation in the high and low categories.

#### Findings:

- Teaching hospitals were over-represented in the highest 5 percentile (worse) of performance—as much as 6-8 times for some indicators (e.g. PSI #7 and #12)
- Government hospitals were over-represented in the lowest rate group (best) often by a power of 2 or more (e.g., PSI #11 and #15)
- Investor hospitals were also somewhat over-represented in the lowest rate group (best)

#### What These Analyses Show:

- No strong consistent trends in PSI rates for investor-owned and non-profit (non-teaching)
- Teaching hospitals have consistently higher rates for 12 of 15 PSIs
- Government hospitals have consistently lower rates for 10 to 15 PSIs
- Using these indicators, teaching hospitals appear to be providing lowest quality care and government hospitals appear to be providing highest quality care
- Underreporting of patient safety events may explain (in part or fully) these results

Underlying Issues and Remaining Concerns:

- POA coding problems (bias by hospital type) may be ameliorated by selecting only PSIs where POA has little impact
- Independent of POA coding, the problem of underreporting PSI events may remain
- Understanding the impact of underreporting events may require chart reabstraction, though probable underreporting may be identified at high-volume institutions

The meeting adjourned at 2:26 p.m.

The next AB 524 TAC meeting is August 7, 2008 in Sacramento.

Pending:

1. Staff will present the risk model for AAA repair to the Committee at the August 7<sup>th</sup> TAC meeting.
2. Committee Member Brook requested that before staff release the CHF report there be an understanding about whether this is short-term or long-term mortality that is being affected. Committee Member Brook would like to see at least 6 months out. Also, staff should look at the distribution of deaths and a sensitivity analysis should be done to see if the risk-adjustment scores for the hospitals as a group that are better than average versus average to see if the risk-adjustment coding is approximately the same.