California
Hospital Outcomes Project

Heart Attack Outcomes

1996 -1998

Volume 4: Hospital Comment Letters

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State of California

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2002

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Report on Heart Attack Outcomes in California, 1996-1998

Office of Statewide Health Planning and Development

California Hospital Outcomes Project

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Acknowledgments

This volume represents the Office of Statewide Health Planning and Development's first hospital outcomes report produced by an in-house team. It draws upon the expertise of four new staff members, Steven Lubeck, Ph.D., Victor Simon, Yuan Qing (Cliff) Li, M.P.H., and Louise Hand, and benefits from Andra Zach's and Mary MacDonald's prior collaboration with university-based researchers on earlier reports.

The Office owes a substantial debt to Harold Luft, Ph.D., and Patrick Romano, M.D., M.P.H., who developed the original risk-adjustment models described in this report. We are also indebted to the programming staffs at U.C. San Francisco, U.C. Davis and U.C.L.A. who developed the computer programs used in earlier AMI reports. This volume profited from the considerable prior efforts of previous project teams.

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Overview

Report on Heart Attack Outcomes in California: 1996-1998

The California Hospital Outcomes Project is an initiative mandated by the State of California, and conducted by the Office of Statewide Health Planning and Development (OSHPD), to develop public reports comparing hospital outcomes for selected conditions treated in hospitals throughout the state.

The Report on Heart Attack Outcomes is intended to encourage all California hospitals to improve their care and give credit to the hospitals that are the leaders. It can also help insurers, employers, and consumers to select hospitals based on quality of care.

The California Hospital Outcomes Project

Heart attack (acute myocardial infarction or AMI) was chosen as one of the first conditions to be reported upon by the California Hospital Outcomes Project because they are important, common, and deadly. Every year approximately 40,000 heart attack patients are admitted to 400 California hospitals. More than 5,000 of these persons die.

The mortality rates published in previous heart attack reports have been used in many ways. Hospitals have used their results to evaluate and improve their quality of care. Payers and providers have used the reports to contract with the best hospitals. Consumers have used the reports to inform their decisions.

The results published in this report are useful because:

- **They have been risk-adjusted.** Patient age, sex, type of heart attack, and chronic diseases were used to adjust for differences in patient risk when calculating hospital mortality rates.
- **They have been validated.** A major validation study involving nearly 1,000 heart attacks at 30 hospitals showed that variations in how hospitals report their data to OSHPD do not significantly affect their risk-adjusted death rates. In general, low-mortality hospitals treat heart attacks more aggressively than high-mortality hospitals.

Content of the Report on Heart Attack Outcomes

This is the most recent in a series that began in 1993. This report includes heart attack cases from 1996 through 1998. It incorporates improvements in the risk-adjustment methodology introduced in earlier reports, including:

- Linking with Vital Statistics records to identify deaths occurring outside the hospital;
- Refining patient risk factor definitions based on the findings of the validation study published 1996; and
- Using six months of pre-heart attack hospital records to more completely describe patient risk factors.

This report consists of four volumes:

The **User's Guide** (Volume 1) is intended for everyone interested in hospital performance, including hospital staff, employers, government agencies, health plans, insurance companies, and individual consumers. This volume provides a brief description of the study background and methods. It also contains two tables that display the results for individual hospitals based on heart attacks that occurred between 1996 and 1998.

The **Technical Guide** (Volume 2) is intended for health services researchers, health care providers, and others interested in the statistical methods used to calculate risk-adjusted death rates.

The **Detailed Statistical Results** (Volume 3) contains the numerical results for individual hospitals upon which the classifications in the *User's Guide* are based. In addition, there are tables that aggregate the results to the county level. It also contains a graphical representation of both individual hospital and county-wide results, which can be used to examine annual trends.

The **Hospital Comment Letters** (Volume 4) is intended to give readers of the *Report on Heart Attack* an appreciation of its strengths and weaknesses from the hospitals' perspectives.

To obtain these volumes of the report contact:

Office of Statewide Health Planning and Development
Healthcare Information Resource Center
818 K Street, Room 500
Sacramento, CA 95814
(916) 326-3802

The report volumes are also available on the internet at
http:\\www.oshpd.state.ca.us

Hospitals were provided with a *Hospital Guide to Using the Report Data* several weeks before the *Report on Heart Attack Outcomes* was published. This document accompanied each hospital's patient-specific data. Hospitals used this document to access and use their patient-specific data and to prepare their comment letters, provided in Volume 4. More importantly, hospitals and their physicians can use this information to target areas where heart attack care might be improved.

Section 1

Summary of Hospital Letters

The major issues raised by hospitals in these letters are summarized in this section, with the most frequently cited concerns listed first. In general, the concerns cited by hospitals in response to this report are the same concerns raised in response to the report covering 1991-1993 (published in 1997), and the report covering 1994-1996 (posted on OSHPD's web site in September 2001.) Both of these previous reports may be viewed on OSHPD's web site at ***http:\\www.oshpd.state.ca.us.*** *Many responses to hospital comments remain unchanged since the previous reports. The responses herein both acknowledge the limitations of the present report and reiterate its strengths, where appropriate. They also report on progress that the Office of Statewide Health Planning and Development (OSHPD) has made in addressing several of these concerns.*

This report is one of many steps in a long and important process. OSHPD looks forward to continue working closely with hospitals to improve the quality of the data and the scope of the medical conditions included in the studies.

Patients Who Requested "Do Not Resuscitate" Orders Should Not be Included

Hospital Comments: Many of the comments noted that patients with "Do Not Resuscitate" (DNR) orders are inherently at higher risk of dying than other patients and therefore should not be included in the study. Patients with severe medical problems frequently ask their doctors not to resuscitate them if their heart or lungs stop working. This decision is recorded in the medical record as a "do not resuscitate" (DNR) order. Patients with DNR orders have a high risk of death, both because of their underlying medical problems and because they are not candidates for life-prolonging interventions. If a hospital has a disproportionate number of DNR patients, this would make their death rate appear artificially high.

Response: In response to hospitals' comments on the prior versions of this report, OSHPD recognized the importance of being able to adjust for DNR status as well as other unmeasured risk factors. A change in California's Health and Safety Code in 1994 authorized OSHPD to collect DNR information on discharges occurring on or after January 1, 1999. Beginning with the period covering 1999-2001, heart attack outcomes reports will examine a patient's DNR status at admission as a possible risk factor associated with mortality.

In the meantime, it is not appropriate for hospitals to recalculate their death rates after excluding DNR patients because: (1) DNR patients are not pre-destined to die, but simply choose not to receive certain therapies; and (2) DNR orders may be written or discontinued at any time, even after patients experience complications, so they may reflect previous errors in the process of care. The AMI Validation Study showed that only 40 percent of DNR

orders among AMI patients were written on or before the date of admission. Among the patients whose DNR orders were written at least one day after admission, 11 percent received thrombolytics and 15 percent underwent either angioplasty or coronary bypass graft surgery during the AMI hospitalization.

Additional Risk Factors Should Have Been Included in the Models

Hospital Comments: Some hospitals noted that the risk-adjustment models did not include important predictors of mortality. Missing risk factors might have explained some of the observed variation in mortality across hospitals. Unmeasured risk factors mentioned in the hospitals' comments include Anoxic Brain Syndrome, Brain Stem Stroke, Hypertension with Congestive Heart Failure, and Subendocardial Myocardial Infarction.

Response: Before producing the next heart attack report (covering 1999-2001), OSHPD will assess the need to redevelop the risk–adjustment models that were used in the present report. Models A and B were originally developed and validated, under the guidance of a clinical advisory panel, using patient discharge data reported between August 1990 and May 1992. The models used to produce the present report may be deemed in need of updating to reflect advances in medical care, as well as demographic patterns that have changed over the past decade. Thus, future heart attack reports may add new risk factors or omit selected risk factors in the present report.

Apart from the risk factors mentioned by hospitals in the present report (see above), the AMI Validation Study published in 1996 identified four clinical risk factors that are not available from discharge abstracts but that would significantly improve the risk-adjustment models used in this report. They are heart rate, systolic blood pressure at presentation, cardiac arrest within 24 hours before presentation, and clinical evidence of shock at presentation. These results have been presented to the California Health Information Committee and may lead to future regulatory changes to the Patient Discharge Data Set.

Of course, unmeasured risk factors bias the results in this report only if they are distributed unevenly across hospitals. In fact, the AMI Validation Study found no evidence that patients at high-mortality hospitals are significantly higher risk, based on physiologic factors, than patients at low mortality hospitals. Unmeasured risk factors explain less than 10 per cent of the difference in risk-adjusted death rates between these sets of hospitals.

The Study is Based on Old Data (1996-1998) that Do Not Reflect Current Practices

Hospital Comments: A number of hospitals observed that significant advances in medical care have taken place since the 1994-1996 period, most notably in the development of new thrombolytic drugs. In addition, some

hospitals described recent improvements in how they treat AMI patients.

Response: Recent data are clearly more useful than older data in comparing hospital outcomes. However, there are two limiting factors. First, it presently takes 12 to 18 months for hospitals to submit, and for OSHPD to edit and compile, patient discharge abstracts. Another year is needed to develop risk-adjustment models and calculate outcome rates, followed by six months to solicit comments from hospitals and to prepare, print, and disseminate the official report. Therefore, data after December 31, 1998 could not be used in this year's report. However, OSHPD has adopted procedures to accelerate the process, which should result in more timely publication of future reports. Second, most hospitals have too few cases in one year to provide meaningful results. When a hospital has very few cases in a given period, one has little confidence in its outcome statistics because chance variation is so important. By combining several years of data, hospital outcome statistics become more reliable and more useful.

Hospitals Should Not be Charged with Deaths that Occur After Discharge

Hospital Comments: Some hospitals expressed concern that when a patient died after being transferred from one hospital to another, the case was counted only once and the death was attributed to the first hospital. This approach was considered unfair to hospitals that do not perform specialized procedures. Several hospitals were concerned that all deaths occurring within 30 days of admission were counted, regardless of the immediate cause or location. Some of these deaths may not have been related to the patients' AMI, or to the quality of care during the AMI hospitalization. Extraneous factors, such as adherence to therapy and outpatient follow-up, may confound comparisons of total 30-day mortality.

Response: Rather than being a source of bias, the linkage of serial hospitalizations and the attribution of outcomes to primary facilities is a strength of this study. If this had not been done, the analysis would have been severely biased against hospitals that have open-heart surgery facilities. Referral centers would have shown high risk-adjusted mortality rates because all of their patient deaths would have been attributed to their facilities. Conversely, small hospitals would have shown very low risk-adjusted mortality rates because many of their patients who died would have died elsewhere. Linking serial hospitalizations created a "level playing field" so that small hospitals and referral centers could be directly compared. In addition, the hospital that initially receives an AMI patient decides when, where, and how to transfer that patient. These community hospitals should share the responsibility for the ultimate outcomes of their patients.

Deaths among AMI patients for unrelated reasons cannot be excluded, for three reasons: (1) without detailed information about the date, severity, and treatment of each diagnosis, we cannot identify which diagnosis led to death; (2) the true cause of death can often be established only by autopsy, yet

relatively few AMI fatalities are autopsied; and (3) the AMI is probably a contributing cause, even if it is not the underlying cause, of a substantial majority of these deaths. Previous studies have shown substantial error in the attribution of "cause of death" on death certificates, especially among patients with multiple contributing factors.

Differences in Coding Practices May Affect the Validity of the Results

Hospital Comments: Some hospitals noted that coding practices are quite variable across hospitals. Part of this variation relates to differences in the availability of important information in the medical record. The *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM), was never intended to be used for comparing hospital outcomes, so coding guidelines are often vague and allow physicians considerable discretion in diagnosing complications. In the absence of standard definitions, different coders may interpret ICD-9-CM in different ways.

Response: These concerns are well founded. Coding guidelines are vague in some areas, and therefore subject to interpretation. This problem was addressed by appointing a coding expert to the advisory panel and by carefully reviewing professional coding publications. In addition, OSHPD staff have worked very closely with hospitals, both directly and through the California Health Information Association, to improve the uniformity and validity of hospital discharge data. The AMI Validation Study showed that variations in reporting risk factors explain at most one-quarter of the difference in risk-adjusted death rates between high-mortality and low-mortality hospitals.

Clinical Risk Factors (Comorbidities) were Underreported

Hospital Comments: Several hospitals linked data from this project with their own medical record systems, so that they could review individual medical records. Several facilities acknowledged that they had failed to code some clinical risk factors, because these diagnoses either did not affect reimbursement or seemed unimportant.

Response: Many hospitals have improved their coding practices since the first report of the California Hospital Outcomes Project was published in 1993. By law, hospitals must report to OSHPD all diagnoses that "affect the treatment received and/or the length of stay."[1] Specifically, reportable diagnoses include "conditions that affect patient care in terms of requiring: clinical evaluation... therapeutic treatment... diagnostic procedures... extended length of hospital stay... increased nursing care and/or monitoring."[2]

[1]. *The California Hospital Discharge Data Reporting Manual,* January 1985. Title 22, California Code of Regulations, Division 7, Chapter 10, §97212(e)(11)

[2]. *Coding Clinic*, Second Quarter 1990, 12-13; *ICD-9-CM Coding Handbook*, 1991 Revised Edition, 24.

According to these guidelines, conditions that require inpatient evaluation or treatment (e.g., laboratory tests, medications) should **always** be reported. Hypertension, shock, diabetes, and congestive heart failure are clear examples of such conditions. Hospital coders should consult with their medical staffs to confirm that the risk factors in these models indeed affect the care of their patients.

Hospitals without Catheterization Laboratories are Unfairly Penalized for Admitting only the Sickest Patients

Hospital comments: Some hospitals without catheterization laboratories argue that they refer all AMI patients who are candidates for urgent catheterization directly from their emergency rooms (without admitting them first). As a result, the AMI patients that remain tend to be too ill to transfer. This report is based entirely on inpatient data, and may therefore be biased.

Response: Since OSHPD did not collect emergency room data during 1996-1998, there is no evidence to support or refute this argument. Ideally, the risk-adjustment models used in this report would fully account for the clinical differences between patients who are stable for transfer and those who are not. Continued attention will be directed to improving the risk-adjustment models, and using emergency room data that will be available beginning in 2003.

Process-of-Care Data Should be Used in Addition to Mortality Data

Hospital Comments: Some of the hospitals submitting letters in response to this report noted that they have initiated quality improvement efforts specifically focused on the care of AMI patients since the 1994-1996 time period covered by the prior 2001 report. These include the establishment of multidisciplinary performance improvement teams to examine the process of care for AMI, and the implimentation of clinical guidelines for AMI. At least three hospitals participated in the National Registry of Myocardial Infarction (NRMI) (sponsored by Genentech), which provides quarterly data on outcomes as well as on process of care indicators that have been shown to improve outcomes, such as time to administration of thrombolytic drugs or angioplasty, and use of aspirin, beta-blockers and ACE inhibitors, or the Health Care Financing Administration's (HCFA's) Cooperative Cardiovascular Project. These process data were widely felt to be important indicators of quality of care.

Response: OSHPD is pleased that the publication of earlier versions of this report helped stimulate hospitals to focus on the quality of care provided to AMI patients in California. Clinically based registry programs and other sources of comparative data are important tools for hospital quality improvement efforts. Neither risk-adjusted outcome studies nor process-of-care studies tell a complete story. Risk-adjusted outcome studies, such as the California Hospital Outcomes Project, help to identify health care providers with best practices as well as providers that deserve special

attention. They provide a "bottom line" view of the effectiveness of health care, similar to the financial statement of a business or the transcript of a college graduate. They can be difficult for hospitals and physicians to interpret, however, because they do not tell hospitals why their outcomes may be better or worse than expected. Therefore, hospitals should undertake process-of-care studies, alone or in collaboration with other institutions, to determine the reasons for better or worse outcomes. Nevertheless, process-of-care studies should not be used in isolation, because good processes do not always lead to good outcomes. Many of the factors that influence AMI outcomes are still poorly understood.

The AMI Validation Study found that low-mortality hospitals (identified in a previous edition of this report) started aspirin with 6 hours of presentation more often than intermediate and high-mortality hospitals (35 percent versus 25 percent and 26 percent, respectively). Low-mortality hospitals used heparin more often than other hospitals, among eligible patients (79 percent versus 60 percent and 70 percent, respectively). Finally, low-mortality hospitals performed or referred patients for early revascularization more often than other hospitals (9 percent versus 4 percent). Other studies have also confirmed the link between outcomes and processes of care for AMI patients. OSHPD strongly encourages hospitals to collect and disseminate process-of-care information, but its statutory mandate is to study risk-adjusted outcomes, which are easier for consumers, purchasers, and payers to understand.

Section 2

Hospital Letters

The Law that created the *California Hospital Outcomes* project specified that hospitals and their medical staff be given 60 days to review a draft of this report, along with the patient data on which it is based. Hospitals and their chiefs of staff were encouraged, but not required, to submit written comments. These comments have been published as part of this report, so that readers can better appreciate this report's strengths and limitations. Enclosed are all letters received in response to this report.

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CALIFORNIA PACIFIC
MEDICAL CENTER

Date: May 14, 2001

To: Andra Zach, R.H.I.A.,M.P.A.
Acting Deputy Director, Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K Street, Room 200
Sacramento, Ca. 95814

From: Jordan Horowitz, MD
Chief of Staff
California Pacific Medical Center

Richard Francoz, MD
Chief of Cardiology
California Pacific Medical Center
P.O. Box 7999
San Francisco, California 94120

Subject: OSHPD Report on Acute Myocardial Infarction

We, at California Pacific Medical Center, appreciate the opportunity to respond to the 1996 – 1998 OSHPD outcome report on 30-day mortality for acute myocardial infarction (AMI). The preliminary report rates California Pacific Medical Center – Pacific Campus significantly better than expected in both Model A and Model B. Our care of the acute myocardial infarction patient is based on best practice guidelines and aggressive management of AMI patients with therapies such as: thrombolytics, glycoprotein IIbIIIa inhibitors and percutaneous coronary intervention (PCI).

The OSHPD data that is reported as California Pacific Medical Center – Pacific Campus includes AMI patients discharged from the Davies Campus (formerly Davies Medical Center, San Francisco).

COMMUNITY
MEDICAL CENTERS

May 24, 2001

To: Andra Zach, R.H.I.A., M.P.A., Acting Deputy Director
Health Policy and Planning Division
Office of Statewide Health Planning and Development
8181 K Street, Room 200
Sacramento, CA 95814

Thank you for the opportunity to respond to the data reported in your AMI Project. While we appreciate OSHPD's efforts to provide an outcome-based data collection, we have significant concerns regarding how some of the information is aggregated. Some of these concerns are with the actual OSHPD study design, and some with our internal practice that likely influenced the information submitted to OSHPD for this report.

After reviewing the disc containing the Community Medical Centers-Clovis (CMC-Clovis) data, we identified the following:

In the risk-adjustment models utilized for the study, there is no consideration for patients who have requested a do not resuscitate (DNR) status on or before admission or cardiac arrest within the previous 24 hours. Close to 45% (7 out of 16 for 1998) of the sample of patient records that we reviewed from this study were found to either include advanced directives with DNR requests or cardiac arrest within that time frame. If these variables were included within the selected risk adjustment models, this would very likely have significantly influenced our calculated mortality prediction.

The second issue we discovered is with our own documentation and coding practices. In our review of the patient records, we validated the fact that there were a number of clinical co-morbid factors that were found present in the charts, though not within the OSHPD report. Recognizing this shortcoming has driven some initial planning for education regarding appropriate documentation by the medical staff, as well as education related to our internal coding practices to enhance awareness of relevant clinical data that supports quality outcomes.

Despite our concerns with how CMC-Clovis is represented in the report and regardless of the fact that our own internal performance indicators (e.g. ORYX) have shown us to be performing well, we will continue to make performance improvement of the AMI patients in our facility a high priority.

Several changes have happened since the time that this data collection was initiated. In September 1997 we opened a Cardiac Cath Lab. This will allow us to provide

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angioplasty to patients on an emergent basis and alleviate the need to transport patients to another facility. In September 1998 a dedicated Telemetry unit was opened to provide more specialized care of the cardiac patients. As mentioned earlier we have recently looked at our coding process internally and we expect to see some changes in how our facility specific data is represented.

Lastly, we established a performance improvement team to examine the processes around the care of the AMI patient. This multi-disciplinary team, known as the "Road to Reperfusion" team, is concentrating on the amount of time it takes to care for the AMI patient from the field, through the Emergency Department, and into the Cath Lab.

We look forward to opportunities to participate in improving the OSHPD AMI outcomes project as well as continuing with other benchmark efforts such as the American College of Cardiology and Society of Thoracic Surgeons.

Respectfully,

Eric L. Faller, RN, Director of Clinical and Support Services
Community Medical Centers – Clovis

cc: Michael McGinnis, COO, CMC-Clovis
Lori Ruffner, RN, DNE, Director of Clinical and Support Services, CMC-Clovis

Truman L. Gates
Chief Executive Officer
Tenet HealthSystem

Desert Regional Medical Center
1150 N. Indian Canyon Dr.
Palm Springs, CA 92262

April 23, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Office of Statewide Health Planning
and Development
Health Policy and Planning Division
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach:

This is to inform you that Desert Regional Medical Center takes no exception to the data provided on the care of acute myocardial infarction. However, we are disappointed in the age of the data as having no value or ability to allow hospitals to react, and gives us nothing but history. In fact, it is difficult with our statistical and clinical systems to trace data back more than three years.

Hopefully, you and the department can create a more timely report so as to be of real assistance to California hospitals.

Sincerely,

Truman L. Gates
Chief Executive Officer

ds

THE
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May 24, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director, Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K Street, Suite 200
Sacramento, Ca 95814

Dear Ms. Zach,

Thank you for the opportunity to review and comment on the draft of the OSHPD Acute MI data for 1996-98. The draft has been reviewed by members of our medical staff, risk management, nursing and administrative staff. I have summarized our comments for publication with the data for Rideout Memorial Hospital (Yuba County) and Fremont Medical Center (Sutter County).

Rideout Memorial Hospital and Fremont Medical Center are each acute care facilities that provide care for patients with acute MIs, although there are only a small number of AMI patients treated at Fremont Medical center on an annual basis. Care of the AMI patient has been an on-going performance improvement initiative for our hospitals for over a decade. We have participated in the National Registry for Myocardial Infarction for over 10 years. This multi-center observational study provides us with current hospital data in comparison with similar hospitals (size and service capabilities) as well as statewide and national data on all aspects of care of the AMI patient. This analysis of both the processes and the outcomes of care, along with the opportunity to continuously benchmark our performance against that of other facilities has been extremely valuable. We have a multi-disciplinary team (physicians, nurses, a pharmacist and ER staff) who meet regularly to review the data, develop, and implement strategies for improvement. We are proud of the outcomes we have achieved.

We appreciate the magnitude and the scope of compiling, analyzing and publishing this data. However, we are concerned that consumers and other users of this report will view this data as the current state of quality in California hospitals, when in fact, the data is 3-5 years old. Hospitals strive to improve the quality of the care they provide continuously. Data that is 3-5 years old does not reflect the positive effects of these efforts.

We agree with most aspects of the risk adjustment methodology utilized. We recognize that death within 30 days of admission is an important data point; however, we have significant concerns that a death from any cause is linked to the *initial hospitalization*. Both Rideout Memorial Hospital and Fremont Medical Center transfer all AMI patients who require cardiac intervention (catheter based or surgical) as these services are not currently available in this community. These invasive procedures performed to treat AMI patients all carry a degree of mortality risk associated with the procedure itself. We believe that attributing all deaths within 30 days of admission (regardless of cause) has an adverse effect on the mortality rate of hospitals, like ours, that do not provide these services. In our facilities, all mortalities are reviewed on a case by case basis and trended over time. The medical Staff reviews this data on an on-going basis and has not found any adverse trends related to AMI mortality.

Again, thank you for the opportunity to submit these comments for publication with a final draft of the 1996-98 "Report on Heart Attack Outcomes in California Hospitals".

Sincerely,

Thomas P. Hayes
Chief Executive Officer

TPH/db

GRANADA HILLS
COMMUNITY HOSPITAL

May 30, 2001

Andra Zach, RHIA, MPA
Acting Deputy Director
Office of Statewide Health Planning and Development
Health Policy & Planning Division
818 K Street, Room 200
Sacramento, CA 95814

Dear Acting Deputy Director Zach:

We are pleased to have an opportunity to preview the results of the California Hospital Outcomes Project 1996-1998 Report on Heart Attack. We have reviewed the data and offer the following observations.

With the focus on Advance Directives a mandated requirement, patients and their families are making informed decisions related to resuscitation status prior to arrival to a healthcare facility. Our data reflects 82% of the reported acute myocardial death patients had "Do Not Resuscitate" directives.

Equally of note, is public education in activation of the Emergency Medical System. Granada Hills Community Hospital provides its community with ongoing education in accessing paramedic support during emergencies. In reviewing the data submitted, 52% of the AMI deaths had pre-hospital CPR.

It does seem notable that community education regarding advance directives, activation of EMS, and requirements for hospitals to ascertain and respect patients' wishes concerning resuscitation have impacted these statistics related to Acute Myocardial Infarction.

Therefore, it is our belief that these types of cases should be eliminated from the database not only for this hospital, but statewide. Removing 19 cases from Granada Hills Community Hospital's database would bring the mortality rate down to 12.8%.

Thank you for providing us with the opportunity to respond to the Outcomes Report.

Sincerely,

Thomas M. Wallace
President, Chief Executive Officer

10445 Balboa Boulevard • Granada Hills, California 91394-9400 • Telephone (818) 360-1021

Huntington Hospital
An affiliate of Southern California Healthcare Systems

Huntington Memorial Hospital
100 W. California Boulevard
P.O. Box 7013
Pasadena, California 91109-7013
(626) 397-5555 FAX (626) 397-2995

Stephen A. Ralph
President
Chief Executive Officer

June 1, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Health Policy and Planning Division
Office of the Statewide Health Planning and Development
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach:

Huntington Memorial Hospital is committed to deliver high quality healthcare throughout the San Gabriel Valley. Our patients have very high expectations and we strive to exceed them.

Our results on OSHPD's Report on Heart Attack Outcomes in California fell within the middle range. Some of the data, however, may be affected by our commitment to honor our patients' wishes. At Huntington, patients are actively involved and have the final say in their treatment decisions. This is evidenced by the recent Patients Evaluation of Performance-California (PEP-C) survey in which Huntington scored significantly higher than many California hospitals on Respect for Patient Preferences.

Huntington Cardiovascular physicians and surgeons are trained in state of the art treatment. Any death or complications resulting from heart attacks are carefully reviewed in depth by the medical team. Patients can be assured that each case is studied or reviewed individually and that Huntington physicians strive for the highest quality outcomes while improving quality of care.

Huntington appreciates the contributions made by the OSPHD study. The Report on Heart Attack Outcomes in California gives us an opportunity to reevaluate and improve our cardiology protocols, in turn, helping us to better serve our patients.

Sincerely,

Stephen A. Ralph
President and CEO

KAISER PERMANENTE
San Francisco Medical Center

May 14, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K Street Room 200
Sacramento, CA 95814

Dear Ms. Zach,

Thank you for the opportunity to review the California Hospital Outcomes Report on Acute Myocardial Infarction 1996-1998 data for the Kaiser Permanente Medical Center in San Francisco. We have also reviewed data from the National Registry for Myocardial Infarction (NRMI) Reports from Kaiser San Francisco Medical Center for 1997-1999. We believe that the significantly lower than expected mortality rate from acute myocardial infarction (AMI) at our medical center is the result of integration of health care for AMI patients throughout the Kaiser Foundation Health Plan, Inc. programs. The following are keys to our success:

- "Clinical Guidelines for Acute Myocardial Infarction" have been implemented in the Emergency Department and Coronary Care Unit with staff education and preprinted orders for AMI care including thrombolytic drugs, aspirin, nitrates, beta blockers, angiotensin converting enzyme inhibitors, cholesterol management, and cardiac rehabilitation.
- A designated cardiologist is available 24 hours a day, 365 days a year to provide for consultation, emergency cardiac catheterization, and percutaneous coronary intervention if patients are not suitable for treatment with IV thrombolytic drugs. AMI patients are seen by a consulting cardiologist within 24 hours of admission
- "Clinical Guidelines for Chest Pain in the Emergency Room" and "Clinical Guidelines for Acute Coronary Syndromes" have been implemented with staff education and preprinted orders for aspirin, beta blockers, nitrates, glycoprotein IIB-IIIA inhibitors, angiotensin converting enzyme inhibitors, cholesterol management, and smoking cessation.
- 90%-100% of AMI patients eligible either for thrombolytic therapy <u>or</u> for percutaneous coronary intervention (PCI/PTCA/stent) receive appropriate therapy on arrival (74% in all US hospitals)
- 91-98% of eligible AMI patients received aspirin within 24 hours of admission (84% in US hospitals)
- 80%-100% of eligible AMI patients received beta-blocker therapy within 24 hrs of admission (57% in US)
- Compared to hospitals with Cardiac Catheterization Laboratories and Cardiovascular Surgery departments, AMI patients at Kaiser San Francisco had <u>fewer</u> invasive procedures: 28% undergoing coronary angiography (41% at similar centers), 1% PTCA (4% at similar centers), and 10% stent/PTCA (19% similar centers). More AMI patients at Kaiser San Francisco had coronary artery bypass surgery: 15% (12% at similar centers).
- The NRMI data showed lower AMI mortality rates at Kaiser San Francisco for all types of heart attacks including all ST elevation infarctions, the subset of low-risk ST elevation infarctions, and the subset of high-risk ST elevation infarctions.
- AMI patients are referred from 10 other Northern California Kaiser Permanente Medical Centers to our Cardiac Catheterization Laboratory and Cardiovascular Surgery program. 6 of these Medical Centers have better than expected outcomes for AMI in the California Hospital Outcomes Report. On-site Cardiac Catheterization and Cardiovascular Surgery may not be necessary for excellence in the care of AMI patients when prompt tertiary care referral for catheterization and bypass surgery is available 24 hours a day.

Sincerely,

Bruce Blumberg, MD
Physician in Chief
The Permanente Medical Group, Inc

Julie A. Petrini, RN, MPA
Sr. Vice President/Area Manager
Golden Gate Service Area

Kaweah Delta
Health Care District

May 23, 2001

Andra Zach, R.H.I.A., M.P.A. Acting Deputy Director
Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach:

KDDH has observed a generally declining myocardial infarction mortality rate from 1994 through 1998. The last annual 30 day MI mortality rate reported for KDDH for 1998 is 10.7%. For the years 1996 through 1998 it is 13.1%. This compares favorably to the statewide death rate of approximately 12.1% for the same time period. These statistics are summarized in the table below.

	State Death Rate, Observed	KDDH Death Rate, Observed	KDDH Death Rate, ModelA,Expected	KDDH (O-E)
1994	13.0	18.7	13.7	5.0
1995	12.8	15.3	11.0	4.3
1996	12.4	13.2	11.5	1.7
1997	12.0	15.2	11.2	4.0
1998	12.1	10.7	11.1	-1.1
1996-1998	12.1	13.1	11.2	1.9

Similarly, the KDDH observed vs risk adjusted (expected) mortality rates shows improvement for the most recent time interval. This would be even more apparent if the 1997 cohort were excluded. We believe that the reported mortality rate for that year, 15.2%, is erroneous. Our internal statistics for 1997 identify only 185 patients meeting the appropriate inclusion criteria for myocardial infarction and 22 deaths yielding a mortality rate of 11.9%. OSHPUD statistics identify 197 patients and 30 deaths yielding a mortality rate of 15.2%. In addition, a review of the OSPHUD generated patient record details yields a count of only 25 deaths. This matter is being reviewed.

Improved myocardial infarction mortality at KDDH has resulted from performance improvement activities associated with the diagnosis and management of these patients. These include steps to improve the processing of ED patients with chest pain, an annual review of EKG's with the ED, and continuous monitoring of drug therapy for patients with MI to assure that compliance with treatment guidelines occurs. In addition, since 1999 all patients with ST elevation infarctions are now considered candidates for primary angioplasty as an alternative to thrombolysis.

Sincerely,

Stephen Smith, MD
Chief of Staff
Kaweah Delta Health Care District

400 West Mineral King • Visalia, CA 93291-6263 • 559 624-2000 • FAX 559 635-4021

LOMPOC
HEALTHCARE DISTRICT
Lompoc District Hospital

Serving the Lompoc Valley since 1943

June 5, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K Street, Room 200
Sacramento, CA 95814

RE: California Hospital AMI Outcomes Report

Dear Ms. Zach:

We have received and reviewed the draft report of Outcome Studies for Care of Acute Myocardial Infarction (AMI) in California Hospitals for 1996 through 1998.

We believe the data is discriminatory to small, rural hospitals, as it does not include patients who were stabilized in our emergency department and then transferred to a tertiary care center for interventions (angioplasty, stent, or coronary artery bypass surgery) that are not available at Lompoc Healthcare District (LHD). A significant number of patients arrive at LHD and are admitted under observation status prior to transport to a tertiary care center. This patient population is not included in your statistical analysis, thereby excluding approximately thirty to fifty percent of our AMI patients.

Your study included patients with "Do Not Resuscitate" (DNR) orders. These DNR decisions were precipitated by co-morbid conditions such as cancer, COPD, etc. When our AMI patients have additional disease states that contraindicate aggressive treatment, they are admitted as inpatients to our facility. This automatically skews our mortality rate because many of our AMI patients have progressed to a state where aggressive treatment is no longer an option as they are end-stage.

We regret that you continue to publish data that has such limitations. Publishing this data gives the public misinformation and undermines the state mandate of reporting accurate patient outcomes.

Sincerely,

Jim Raggio
Administrator/CEO

Barry Coughlin, M.D., F.A.C.C.
Chief of Cardiology

Wallace Marsh, M.D.
Chief of Medical Staff

cc: Lompoc Healthcare District Medicine Subcommittee

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Catholic Healthcare West
CHW

Mercy Healthcare Sacramento
10540 White Rock Road
Rancho Cordova, CA 95670
Telephone (916) 851-2000

April 11, 2001

Andra Zach, RHIA, MPA
Acting Deputy Director
Office of Statewide Health Planning and Development
Health Policy and Planning Division
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach:

I am in receipt of the Report on Heart Attack Outcomes in California 1996-1998. The report and the results for Mercy San Juan Medical Center have been reviewed. At this time I have no concerns relative to the data or study design.

Thank you for your time and attention.

Sincerely,

Michael J. Uroldi
Hospital President
Mercy San Juan Medical Center
6501 Coyle Avenue
Carmichael, CA 95608

Mercy American River/
Mercy San Juan Hospital

Mercy General Hospital

Mercy Hospital
of Folsom

Methodist Hospital
of Sacramento

Sierra Nevada
Memorial Hospital

Woodland Healthcare

A Member of Catholic Healthcare West

MISSION COMMUNITY HOSPITAL

May 14, 2001

Health Policy and Planning Division
Office of Statewide Planning and Development
818 K Street, Room 200
Sacramento, CA 95814

Dear Sirs,

Mission Community Hospital is in receipt of the California Hospital Outcomes report released to us in April, 2001. We have reviewed the hospital specific measures of outcome for our facility. We are pleased with the outcomes reported for our patient population of heart attacks/mortality rates.

We concur with the sample interpretation guidelines that our risk adjusted data fell within the statewide ranges without significant variance from the expected outcome rate of mortality from AMI. We are very conscientious about reviewing 100% of medical deaths through our medical staff peer review process. In the vast majority of cases, patient care intervention was consistent and appropriate for this category of patients.

We thank you for the opportunity to respond to the study results and future publications of this data.

Sincerely

Bonnie Siler

Bonnie Siler, Chief Operating Officer
Mission Community Hospital
14850 Roscoe Blvd.
Panorama City, CA 91402

MT. DIABLO MEDICAL CENTER
John Muir/Mt. Diablo Health System

2540 East Street
P.O. Box 4110
Concord, CA 94524-4110
Tel: (925) 682-8200

May 25, 2001

Ms. Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director, Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K Street, Room 200
Sacramento, CA 95814

Subject: California Hospital Outcomes Reports
1996-98 Mt. Diablo Medical Center AMI Results

Dear Ms. Zach:

Pursuant to your correspondence of March 27, 2001, we wish to provide comments related to the preliminary draft prior its being finalized and released to the public. We have diligently dissected our data and discovered errors impacting your results. It is our request that you carefully review this document and modify the results attributed to Mt. Diablo Medical Center (MDMC) prior to publication .

In reviewing the 1996-98 detailed statistical results that you provided regarding (MDMC) yearly risk adjusted death rates, we have several concerns:

1. **The 1997 data appears significantly different than that reported for 1996 and 1998 due to a much lower "expected death rate" due to under coded risk factors reported for that year. Clearly, our expected mortality rate would have been significantly higher if under coded risk factors had been included**

   In 1997, our expected death rate was artificially low due to our failure to code certain critical risk factors. Therefore, our patients appeared to be at a lower risk level than they actually were. A review of the medical records of the patients who expired in 1997 validated that such risk factors were indeed under coded. We have identified eight patients who expired (and who had been identified in the study as having a low probability of death) where the documentation supports additional risk factors including: shock, second MI site, respiratory failure, acute renal failure, coma, CHF, cerebral hemorrhage, and hypothyroidism.

   We also identified nine patients who expired with "Do Not Resuscitate" orders which suggests that the patients either did not respond to treatment, or treatment was withdrawn at patient/family request resulting in the death of these nine patients

2. **The exclusion of acute care and skilled nursing facility (SNF) transfers to MDMC significantly elevated our mortality statistics for 1997 (12.8% OSHPD study observed death rate versus 8.9% total observed death rate).**

   As a tertiary center for percutaneous coronary interventions and cardiovascular surgery, we receive a high volume of patients from five other acute care hospitals. Many of these patients are transferred to us for life-sustaining treatment when their initial facility can no longer meet their needs. Because this study excluded acute care and SNF transfers from our database, our mortality statistics are (falsely) elevated. Below is a comparison of the OSHPD mortality rate as contrasted to MDMC's statistics that includes patients transferred to MDMC from acute care hospitals and SNF's for AMI treatment:

	OSHPD Study AMI Deaths/Study AMI Cases Observed Death Rate	MDMC Total AMI Deaths/Total AMI Cases Total Observed Death Rate	MDMC # Acute Care and SNF Transfers
1997	29/227 12.8%	37/414 8.9%	187

3. **The inclusion of four transfers from MDMC to another acute care facility adversely impacted our 1997 mortality rate.** These four patients who expired were treated as inpatients at our facility for the initial management of the infarction. Once stabilized, the patients were transferred to another acute care facility where they subsequently expired. Although the care for these patients was assumed by another acute care hospital, these deaths were inappropriately attributed to our facility. MDMC performed appropriate intervention and then relinquished further care to another acute care hospital. In these particular cases, it does not seem appropriate to attribute these deaths to MDMC.

4. **However, since your study criteria excludes transfers from acute care and skilled nursing facilities, we must note that one SNF patient death was erroneously attributed to our 1997 mortality rate statistic which artificially increased our mortality rate. In accordance with your study criteria, we expect that you will exclude this patient which reduces our observed death rate for 1997 from 12.8% to 12.3%.**

Summary

We are very proud of the care that we deliver at MDMC. Our statistics have historically demonstrated that we surpass local and national benchmarks for providing excellent cardiac care. In 1998, MDMC was recognized by HCIA as one of theTop100 Hospitals for Interventional Cardiology and Cardiac Surgery. Only five hospitals in California were given this designation for cardiac surgery. MDMC was the only hospital in California that was included in the Top 100 listing for both categories.

We very much appreciate your interest in our comments regarding this study. We recommend that any future studies give consideration to the methodology of cases selected for risk adjustment, specifically:

- Facility transfers between two acute care hospitals.
- Facility transfers from emergency departments to acute care hospitals.
- "Do Not Resuscitate" DNR cases.

We thank you for the opportunity to participate in this study. This experience has prompted us to improve our internal systems which will assure capture of all appropriate risk factors on an ongoing basis.

Sincerely,

Thomas M. Harlan
President and Chief Administrative Officer

Richard S. Kops, M.D.
Chief of Staff

TMH:sf

cc: J. Kendall Anderson
Roy Kaplan, MD
Pat Kavanaugh, MD
Linda English
Patti Pelosi

NORTHBAY HEALTHCARE
A Non-Profit NorthBay Healthcare System Affiliate

June 1, 2001

Andra Zach, RHIA, MPA, Acting Deputy Director
Office of Statewide Health Planning and Development
Health Policy and Planning Division
818 K Street, Room 200
Sacramento, California 95814

Dear Ms. Zach:

NorthBay Healthcare Group Hospitals (NorthBay Medical Center and VacaValley Hospital) have reviewed our hospital specific data for AMI Mortality. We appreciate the opportunity to respond to the Report on Heart Attack Outcomes in California 1996-1998 published by your department. We were concerned with NorthBay Medical Center's results, which demonstrated an unacceptable rating for one of the two risk adjusted mortality models. Consequently, we have conducted a thorough review of the medical records for the years of this report for both NorthBay Medical Center and VacaValley Hospital.

The results of this review demonstrated the following:

- Physician documentation which resulted in an under reporting of co-morbidities thus affecting the risk adjustment process.
- Twenty-six percent of the patients at NorthBay Medical Center and 14% of the patients at VacaValley Hospital suffered full cardiopulmonary arrest in the field prior to admission, resulting in anoxic brain syndrome. Anoxic brain syndrome (code 348.1) is not considered a risk factor in either risk adjustment model. Both risk adjustment models utilize coma (780), which is a less specific code. We would recommend that this be evaluated in your risk adjustment models for future studies.

Our organization is dedicated to improving the quality of care provided to acute myocardial infarction patients, and we have been an active participant in the National Registry of Myocardial Infarctions (NRMI) since 1990. The Registry provides us with both process and outcome based measures. The NRMI data shows consistent improvement in our hospitals' combined mortality rate with the latest report (July 1, 2000 to December 31, 2000) demonstrating a 6% in-hospital mortality rate compared to a 10% California and 10% national mortality rate. Our hospitals are very proud of our "door to drug" time that is consistently better than both the California and national average times.

As we have requested in responses to previous data, we continue to ask for more timely reporting. Practice patterns have changed since 1998 making it difficult to compare the results to current practice.

We look forward to participating in future outcome projects and other quality measurement efforts. Thank you for the opportunity to comment on these findings.

Sincerely,

Deborah Sugiyama
President
NorthBay Healthcare Group

Richard E. Bell, M.D.
Chief of Staff
NorthBay Healthcare Group

Helping People Be Healthy

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PALM DRIVE
HOSPITAL

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www.palmdrivehospital.com

June 7, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K Street, Room 200
Sacramento, CA 95814

Re: Outcome Report on the Care of Acute Myocardial Infarction (AMI) between 1996 and 1998 on California hospitals.

Dear Andra Zach:

Results of the preliminary draft of the most recent California Hospital Outcomes Report have been reviewed by Palm Drive Hospital's Medical Executive Committee. The observed and risk adjusted death rate did not differ significantly from the expected death rate. The risk adjusted death rate fell below the statewide death rate for all years in both Models A and B.

In response to the review of the report, the Medical Executive Committee decided that no further action need be taken. Thank you for the opportunity to respond.

Sincerely,

Robert Schapper
Chief Executive Officer

Allan Garfield, M.D.
Chief of Staff

Parkview Memorandum

May 24, 2001

Andra Zach, R.H.I.A., M.P.A., Acting Deputy Director
Health Policy & Planning Division,
Office of Statewide Planning & Development
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach:

Parkview Community Hospital Medical Center has reviewed the OSHPD Acute Myocardial Infarction Mortality Report for the years 1996, 1997, and 1998. Parkview falls within the expected range compared to the statewide observed rate in Model A, but falls below in Model B of the State's Risk Adjusted methodologies.

There are many risk adjustment systems. Parkview utilizes the Solucient/HCIA national database for reviewing the hospital's data compared to the national norm, California, and local market. Solucient / HCIA provided Parkview with results of the same years comparison utilizing the California OSHPD data tapes. HCIA normalizes the rate to 1.0, anything below 1.0 is "better than expected." Parkview's results were ***better than the expected*** for all three years.

The primary difference in the system used by the State of California is that it counts deaths after discharge up to 30 days against the first hospital to render care for the patient with an acute myocardial infarction. Parkview does not perform heart surgeries, therefore many patients are transferred to a tertiary care center. A large portion of deaths in this report did not occur at Parkview.

Parkview has a very aggressive performance improvement program. All deaths are reviewed through the PI Program.

We appreciate the opportunity to comment. We recognize the importance of a comparative database. All healthcare organizations are challenged to continuously review their processes based on outcome data. The mission statement for our organization is carried out through this process: "to provide comprehensive, high-quality, cost-effective health care services which are responsive to the needs of the community".

Norm Martin

Norm Martin, CEO

Dennis Hilliard

Dennis Hilliard, M.D., Chief of Staff

NM-DH/oab

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PRESBYTERIAN
INTERCOMMUNITY
HOSPITAL

12401 Washington Boulevard
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(562) 698-0811
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May 4, 2001

Andra Zach, RHIA, MPA
Acting Deputy Director
Office of Statewide Health Planning and Development
Health Policy and Planning Division
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach:

Subject: Presbyterian Intercommunity Hospital's California Hospital Outcomes Report for Acute Myocardial Infarction (AMI).

Thank you for the opportunity to respond to the release of data on our hospital's outcomes for acute myocardial infarction. Presbyterian Intercommunity Hospital (PIH) is a 339-bed, not-for-profit regional hospital and health center that serves a wide community in Southeastern Los Angeles County and portions of the San Gabriel Valley and Orange County. We are a full-service medical center offering care in the specialty areas of cancer, cardiovascular care, complex spine and scolosis treatment, maternal/child care, rehabilitation services, diabetes management, wound care, respiratory services, emergency and industrial medicine, behavioral health, as well as general medicine and surgery.

We at PIH are committed to analyzing our patterns of care and patient outcomes to provide the highest quality of care possible. One hundred percent of unexpected death cases are screened by the quality management department to ensure that they are not related to a quality of care issue. Cases with comorbidities, complications and other risk factors are also reviewed to ensure optimal medical management.

OSHPD's AMI data for 1996 - 1998 have been analyzed carefully by the hospital president, president of the medical staff, vice president of medical affairs, medical director of the cardiovascular program, administrative director of cardiology, director of the quality management and director of health information management.

Recognizing that PIH's observed mortality rate exceeded the expected mortality rate, the hospital began participating in the National Registry of Myocardial Infarction (NMRI) database in 1996 to identify areas where improvements could be made. Participation in the NMRI repository compares hospitals of like size and services. The NMRI database currently compares PIH's outcomes to 153 like hospitals nationwide. Outcome data is stratified by patient demographics, type of intervention, medications administered within 24 hours, and discharge medications. Length of stay and in-hospital mortality data is also provided. Each case is risk-adjusted using the Killip rating scale. All data received from NMRI is reviewed quarterly by a multidisciplinary team of physicians and hospital staff.

Presbyterian Intercommunity Hospital's NMRI data for 1997 through six months of 2000 are as follows:

Year	Total Number of AMI Cases Reported	Total Number of In-Hospital Mortalities	PIH Mortality Rate	Like Hospital's Mortality Rate Across the Nation
1997	187	15	8%	10.4%
1998	157	12	10.6	10.3
1999	180	16	8.9	10.5
2000 *	117	6	5.1%	9%

* denotes 6 months of data.

NMRI's data demonstrates that PIH's current mortality rate for AMI's is better than like hospitals nationwide. Additionally, current NMRI data shows that PIH has less than the 10% mortality rate experienced by participating California hospitals.

On behalf of the medical staff, administration, and staff of Presbyterian Intercommunity Hospital, thank you again for the opportunity to present this response. As always, PIH remains dedicated to providing the utmost in quality patient care to the communities we serve.

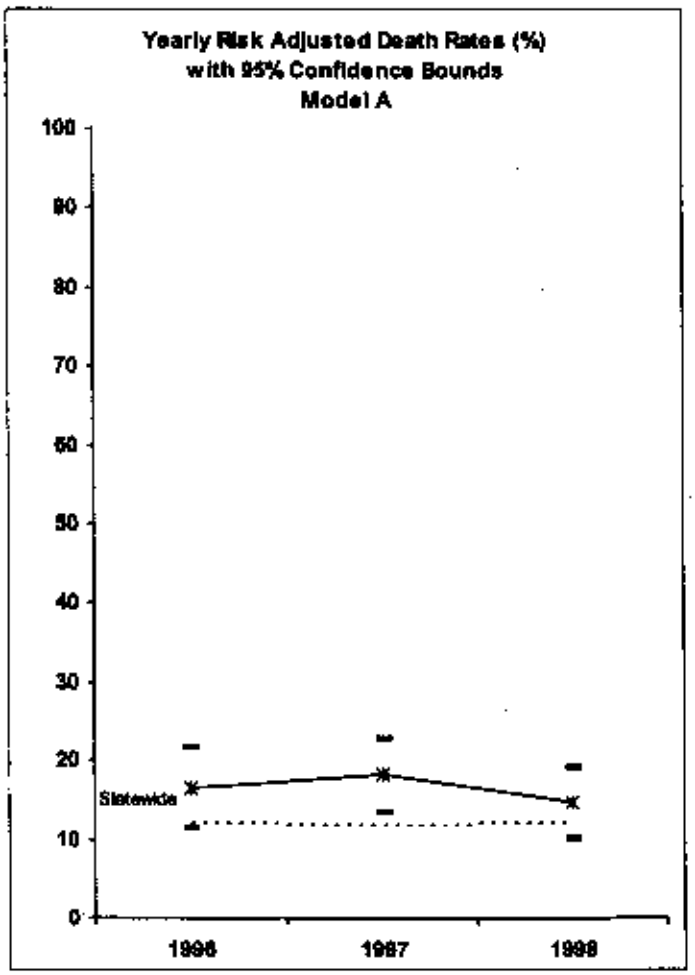
Sincerely,

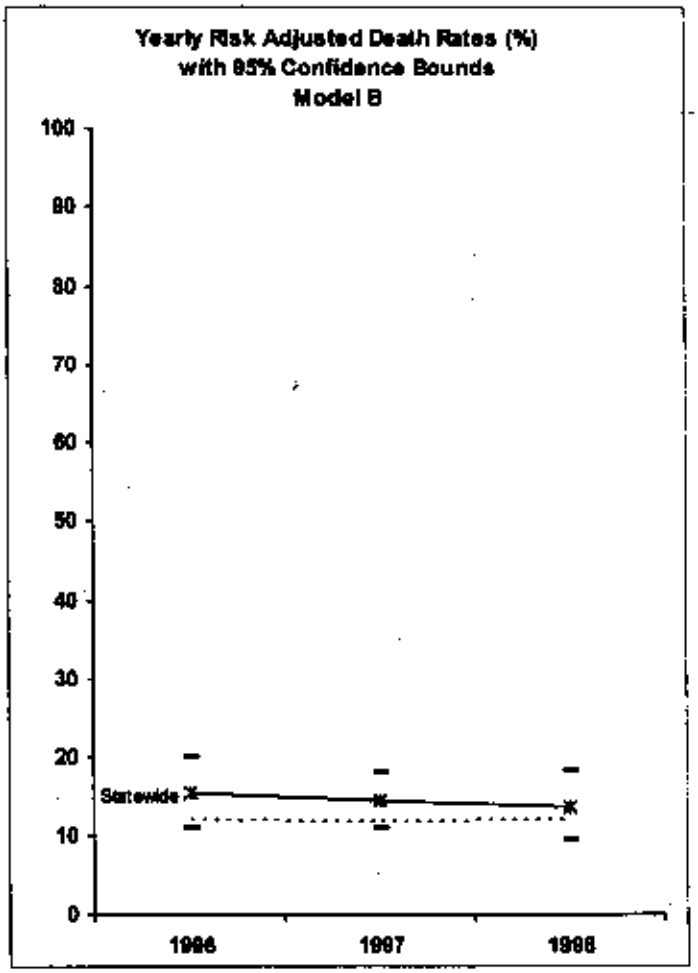
Daniel F. Adams
President and CEO

Detailed Statistical Results
for Acute Myocardial Infarction Mortality

Los Angeles County: 190631 Presbyterian Inter-Community Hospital

		Statewide Death Rate (%)	Number of Cases Included	Number of Observed Deaths	Number of Expected Deaths	Standard Deviation of Observed Deaths	Observed Death Rate (%)	Expected Death Rate (%)	Risk-Adjusted Death Rate (%)	Risk Adjusted Death Rate 95% Confidence Bounds		Probability This Rate Occurred by Chance
										Lower	Upper	
Model A	All Years	12.08912	549	80	58.7	6.9	14.6	10.7	16.5	13.7	19.2	0.002
	1996	12.17742	181	24	17.6	3.8	13.3	9.7	16.6	11.4	21.8	0.065
	1997	12.02517	194	30	19.9	4.0	15.5	10.2	18.2	13.4	22.9	0.011
	1998	12.06405	174	26	21.3	4.1	14.9	12.2	14.8	10.2	19.3	0.148
Model B	All Years	12.10683	515	74	61.2	6.2	14.4	11.9	14.6	12.2	17.0	0.025
	1996	12.18490	179	23	17.9	3.5	12.8	10.0	15.6	11.0	20.2	0.097
	1997	12.03332	194	30	24.8	3.8	15.5	12.8	14.5	11.0	18.1	0.108
	1998	12.10273	142	21	18.5	3.5	14.8	13.0	13.8	9.3	18.2	0.273





‡ Hospital sent comment letter

Office of Statewide Health Planning and Development
California Hospital Outcomes Project

15031 Rinaldi Street
Mission Hills, California
91345-1285

Tel. 818.365-8051

Andra Zach, R.H.I.A., M.P.A,
Acting Deputy Director,
Health Policy and Planning Division,
Office of Statewide Health Planning and Development,
818 K Street, Room 200,
Sacramento, California 95814
May 23, 2001

Dear Ms. Zach:

Thank you for providing Providence Holy Cross Medical Center with the opportunity to review the information drafted in the OSHPD Report on Heart Attack Outcomes in California 1996-1998. Our organization is committed to collaborative efforts, which can guide us toward improved patient care.

As our goal is to incorporate our core value of 'Excellence' into the care of all patients, we are pleased to see that the outcome evaluation showed mortality rates that were not significantly different than expected for Providence Holy Cross.

Issues we have identified based on the outcomes assessment are:

1. Some of our patients with hypertension did not have this included as a Risk Factor. On investigation, we realized that the designated clinical risk factor hypertension codes, 402.x0, 403.x0, 404.x0 exclude Hypertension with Congestive Heart Failure. We feel that this could impact accurate identification of the patient's risk level, and request OSHPD consider inclusion of these codes in the research design.

2. One of our mortalities was a patient who had a brain stem stroke along with an AMI & expired. Based on the OSHPD research design, this patient showed a low risk for mortality, not reflective of the stroke. On investigation, the code for this type of infarct (433.x1) was not included in the Carebrovascular Disease Risk Factors. We request that OSHPD consider inclusion of this and similar codes in the research design.

3. A number of patients who were admitted with advanced directives requesting no heroic measures and/or had Do Not Resuscitate orders expired. We request that OSHPD investigate incorporating this issue into the research design to more accurately assess the patient's risk.

We have also identified internal opportunities to improve the timeliness and completeness of our documentation and coding of the patient's clinical picture to more accurately capture the true severity of illness and risk of each patient.

Once again, we thank OSHPD for the opportunity to participate in this process.

Sincerely,

Kerry Cassidy
Operations Administrator,
Providence Holy Cross Medical Center

Redlands Community Hospital

350 Terracina Blvd.
P.O. Box 3391
Redlands, CA 92373-0742
909-335-5500
Fax 909-335-6497

May 9, 2001

Andra Zach, R.H.I.A, M. P.H.
Acting Deputy Director
Health Policy & Planning Division
Office of Statewide Health Planning & Development
818 K. Street, Room 200,
Sacramento, CA 95814

Dear Ms. Zach:

I wish to respond to the outcome report on the care of acute myocardial infarction cases from 1996 -1998. The Patient Care Committee at Redlands Community hospital has reviewed the findings of your report and has made the following observations and recommendations:

A statewide study regarding Leading Causes of Mortality in the state counties was conducted by the Department Health Services and published in our local news paper. Their conclusions were that San Bernardino County has the highest incidence of Coronary Heart Disease in the entire state. In fact, the incidence was 38% higher than the state average. I find no mention of county statistics regarding the incidence or mortality rate in AMI cases. It would certainly be beneficial to provide hospital, county and state data so that the users of this data have an appropriate context from which to evaluate the outcome findings. Just providing hospital compared to the state average does not give a complete or accurate picture.

Our hospital provides diagnostic cardiac services but many of our patients require cardiac surgery or invasive procedures. These patients are transferred to local tertiary care hospitals.
We have no control over the outcomes of those patients once they are transferred to other hospitals. Yet, your study debits the hospital that treated the patient within the first 24 hours with the mortality. It would seem more reasonable and equitable to debit the hospital/staff that performs the cardiac surgery or invasive therapeutic procedure on the patient for the mortality than the hospital that stabilized and transferred the patient following the AMI.

It was also noted that your statistical report did not take into account the patients with a *Do Not Resuscitate* (DNR) status on or before the day of admission. Obviously, if a patient has this status their physical condition is already substantially compromised and the potential for a favorable outcome is diminished since staff are limited as to how much they can do per the request of the patient. By grouping the DNR cases with the full code patients, you are not providing a true picture of a hospital's performance in the treatment of AMI patients and you are injecting a bias in the data against the hospitals with a high number of DNR cases.

Severity of illness was not considered part of your data collection. The patients that expired within 24 hours should not be measured in the same context with patients who have a mild AMI and go home after a few days in the hospital. Patients that expire of AMI within the first 24 hours may have had a substantial part of their care provided by Emergency Medical Technicians and not hospital staff. They may very well be unresponsive and in full arrest by the time ER staff can treat them. Separating AMI cases by severity would provide a more accurate picture to the public.

Thank you for your consideration of these changes to the AMI Outcomes Report.

Sincerely,

James Holmes
President

JH/bj

Saint Agnes Medical Center

May 21, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director, Health Policy and Planning Division,
Office of Statewide Health Planning and Development (OSHPD)
818 K. Street, Room 200
Sacramento, CA 93814

Dear Ms. Zach,

Thank you for the opportunity to comment on the preliminary draft of OSHPD's 1996-1998 Acute Myocardial Infarction (AMI) mortality outcomes report. Enhancing the level of cardiac care, particularly for AMI patients, remains a top priority at Saint Agnes Medical Center. We have participated in the NRMI (National Registry of Myocardial Infarction) database since 1995 and have demonstrated measurable improvements in all aspects of AMI care, including mortality outcomes.

Saint Agnes applauds your ongoing efforts to measure hospital quality. However, we have concerns about the validity of modeling mortality with administrative data:

- Medical care for AMIs has dramatically evolved since 1996. This latest report is too old to be directly useful for improving quality of care.

- Several factors included in the model are outside the Medical Center's control:
  - Severely ill patients who died as a result of other causes, such as renal failure, that are not directly related to the AMI.
  - Patient presentation delays that result in significant loss of myocardium prior to hospital arrival.
  - Deaths due to unrelated causes, occurring within 30 days of an initial hospitalization for an AMI.
  - Patients who arrive at the hospital with an Advance Directive or Do Not Resuscitate (DNR) order, preventing life-sustaining treatments.

- Higher coefficients for "unspecified MI" vs. "anterior infarct site," a heart attack location that can result in a higher death rates. Also, there is no coefficient for "subendocardial MI." These coefficients should be reassessed in subsequent models.

Regardless of these exceptions, Saint Agnes takes this data seriously and will continue its effort to provide cardiovascular care excellence.

Sincerely,

Kim Lewis
Administrator,
Heart & Vascular Center

Robert Bennett, MD
Cardiovascular Outcomes
Physician Leader

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A Member of the Holy Cross Health System

SAN CLEMENTE
HOSPITAL & MEDICAL CENTER

May 31, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Office of Statewide Health Planning & Development
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach:

We appreciate the comparison data on heart attack outcomes. We are pleased to see that we continue to be below the statewide average for overall risk adjusted mortality rates. We are also currently participating in the CMRI Acute Myocardial Infarction Study as part of our process improvement for the care of the cardiac patient.

We have no questions with your data collection and thank you again for the opportunity to participate in the study.

Sincerely,

Ronald K. McGee, MD
Chief of Staff

Pat Wolfram
Chief Executive Officer

654 Camino de los Mares San Clemente, California 92673 (949) 496-1122

San Joaquin General Hospital / A Division of San Joaquin County Health Care Services

May 23, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Office of Statewide Health Planning and Development
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach,

This letter is in response to your letter dated March 27, 2001, comparing outcomes of patients with acute myocardial infarctions. During 1998, 53 patients were identified with myocardial infarctions at San Joaquin General Hospital. Of the 53 patients, there were 7 patient deaths reported.

Based upon the study findings, San Joaquin General Hospital appears to have a very high mortality rate compared to other hospitals. Therefore, each of the mortality cases were reviewed by Ramesh Dharawat, M.D., Chief of Cardiology, and Nanette Clark, RN, BSN, Performance Improvement Coordinator. The results of the review are summarized below:

Patient 1: This patient suffered a subendocardial MI following a massive GI Bleed and was not a candidate for thrombolytic therapy. Co-morbidities included ESRD, CHF, Coagulopathy, HTN, and UGI bleeding. Additionally, the family refused interventions.

Patient 2: This patient's co-morbidities included laryngeal cancer, colon cancer with colostomy, and tracheostomy with bleeding from the tracheostomy tube. This high-risk patient was not a candidate for thrombolytic therapy or any interventions.

Patient 3: This patient had DNR status and refused all interventions. Co-morbidities included CVA and HTN.

Patient 4: This patient had DNR status. Death was due to intracerebral hemorrhage, a complication of treatment.

Patient 5: This was a Coroner's case. Autopsy report revealed death due to probable Acute GI hemorrhage, not MI.

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Patient 6: This patient had DNR status. Co-morbidities included renal failure, GI bleed, and severe anemia. He was not a candidate for thrombolytic therapy.

Patient 7: This patient had DNR status and was discharged home per family's request. She subsequently died at home

Conclusion:
Two of the patients' deaths are not attributable to myocardial infarction. Most of the patients had very significant co-morbidities, which precluded thrombolytic therapy. In addition, four of the patients had established DNR orders, which precluded heroic interventions.

In light of our review findings, the statistical results of the Acute Myocardial Infarction outcomes study does not adequately take into consideration co-morbid conditions or the presence of DNR orders guiding the care of the patients. Thank you for providing this opportunity to respond to the data.

Sincerely,

Steve Ebert /SN

Steve Ebert
Hospital Director
San Joaquin General Hospital

SE/NC:cje

San Leandro
HOSPITAL

May 23, 2001

Andra Zach, R.H.I.A, M.P.A.
Acting Deputy Director
Health Policy & Planning Division
Office of Statewide Health Planning and Development
818 K Street, Room 200
Sacramento, CA 95814

RE: SAN LEANDRO HOSPITAL RESPONSE TO THE OSHPD REPORT ON HEART ATTACK OUTCOMES IN CALIFORNIA 1996-1998

Dear Mr. Zach:

Introduction

We at San Leandro Hospital appreciate the opportunity to review the data provided by the OSHPD report on the care of acute myocardial infarction (AMI) between 1996 and 1998 in California hospitals and wish to respond. As the authors of the report have indicated, this outcomes data study is of limited value to the average consumer because their measured quality of medical care does not account for many of the factors which play a part in determining a patient's outcome. It does however, provide an opportunity to compare past care with present care, which can change significantly in four or five years.

San Leandro Hospital is a small hospital (122 beds) that provides service to a largely aging community. It is possible that we have a larger margin of chance occurrences of MI mortality than some of our sister hospitals in Alameda County.

San Leandro Hospital is part of TRIAD Hospitals, Inc. Our operations and quality improvement efforts are centralized in the corporate office in Dallas, Texas. As part of a national health care company, we participate in a variety of quality reviews, one of which is death from a heart attack (AMI mortality). We are compared to 1700 hospitals whose severity and risk factors are taken into account. We utilize the HCIA algorithm that has been approved by Dr. Lisa Iazzori of Harvard. We also perform extensive internal reviews of our patients with an AMI.

The review and root cause analysis of the indicator, Acute Myocardial Infarction mortalities, is included in our JCAHO Core Measures and ORYX data. The outcomes and analysis are taken not only to our Division and Corporate Board, but are also reviewed quarterly in our Resource Management Reviews.

Our current performance Index for AMI mortality is 0.62 for the last twelve months, compared with 0.92, the average Index for the 1700 hospitals. Our AMI complication Index for the last twelve months is 0.44 compared to the average Index of 0.71, again showing better than average results. We are anticipating continued improvement with the next OSHPD report.

13855 East 14th Street San Leandro, California 94578 Phone: (510) 357-6500

Action and Progress

Following the study that was reported in 1996, our Medical Staff directed a review of patients' medical records spanning nine months to evaluate their respective course of treatment and outcome.

The results of this study included a revision of our Myocardial Infarction Protocol (1996). Additionally, we entered into a joint study with CMRI regarding the management of patients with MI on discharge. This included monitoring for predefined Quality Indicators such as choice of medications, management of heart failure, and reduction of risk factors.

The results of the above studies were shared with our Medical Staff. Over the next 6 months changes in practice were evidenced through additional studies. We have established a team of cardiologists and Emergency Room physicians who regularly review our care of patients with an AMI to insure that we offer the most up to date care that can be provided.

We now review the care of all patients who suffered a cardiac arrest to determine if the event could have been prevented. We have established a new protocol for arrhythmias to improve earlier detection and notification before a major problem develops. A panel of physicians and nurses reviews all deaths from an AMI that occur in the Emergency Room. About 25% of these patients were found "down" for a long time before being brought to the Emergency Room. Another 25% had significant complicating problems, such as arteriosclerotic and cardiovascular disease.

San Leandro Hospital does not perform cardiac surgery and transfers appropriate patients to the nearest hospital that provide this specialty service. We have asked to be included in their reporting of subsequent mortalities of these transfers. This will help us ensure the best care before the transfer from our facility.

Conclusion

Our continued review and fine-tuning of related protocols has resulted in improved mortality outcomes as compared to other healthcare systems in the comparative database. We recognize studies such as this OSHPD report are opportunities for improving our practice and standards of care. We look forward to the next report.

Sincerely yours,

Deborah Brehe

Deborah Brehe
Chief Executive Officer

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Dedicated to the Health of the Whole Community

SANTA CLARA VALLEY MEDICAL CENTER

Santa Clara Valley Medical Center
751 South Bascom Avenue
San Jose, California 95128
Tel. (408) 885-5000

May 24, 2001

Andra Zach, R.H.I.A., M.P.A., Acting Deputy Director
Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K. Street, Room 200
Sacramento, Ca 95814

Dear Ms. Zach:

The following letter is written in response to The Office of Statewide Health Planning and Development's (OSHPD's) "Report on heart Attack Outcomes in California 1996-1998." The results of the study as relensed to us concluded that the death rate after acute myocardial infarction (MI) for patients treated at Santa Clara Valley Medical Center during this period was "significantly worse than expected." In response to that report we have performed a thorough review of forty-nine (49) patient medical records out of the total of fifty-three (53) patients included in this study by OSHPD. Based on that study and the specific data which we sight below, we are sure you will agree that the care provided and mortality rate for patients suffering acute myocardial infarction are "As Expected" or "Better Than Expected."

The 1996 AMI validation study by OSHPD found that there were five important missing variables in the risk-adjustment aspect of the study. These variables are 1) systolic blood pressure at presentation, 2) heart rate at presentation, 3) shock at presentation, 4) cardiac-arrest within the previous 24 hours, and 5) an advance directive with "do-not-resuscitate" order on or before the day of admission." Our review focused on these missing variables. The following information is presented as a result of our review of these charts, and is organized by year in which the death occurred.

During 1996 there were fifteen observed deaths after acute myocardial Infarction. Thirteen of the fifteen (87%) of the medical records were reviewed. The following co-morbidities were identified:

- 2 (13%) patients were listed as "do-not-resuscitate" (DNR) on admission to the hospital
- 2 (13%) patients were made DNR on hospital day #7 and # 9
- 1 (7%) patient was admitted in cardiogenic shock
- 4 (27%) patients had co-morbid conditions not included by our in-house coding department
    1. Diabetes Mellitus
    2. Mitral regurgitation, tricuspid regurgitation, history of Cerebral Vascular Accident (CVA) and hypertension
    3. Pulmonary edema
    4. Hypertension

During 1997 there were eighteen observed deaths after acute myocardial infarction. Seventeen of the eighteen (94%) of the medical records were reviewed with co-morbidities as follows:

- 5 (28%) patients were listed as DNR on admission to the hospital
- 1 (6%) patient was made DNR on hospital day # 7
- One patient's family withdrew support after patient was admitted for extensive CVA. Pt's prior admission was for MI.
- 1 (6%) patient admitted as a trauma secondary to fall with large cerebral bleed along with MI. Pt died shortly after surgery.
- 1 (6%) patient died after he was transferred to another hospital.

Valley Medical Center is a division of the Santa Clara Valley Health & Hospital System.
Owned and operated by the County of Santa Clara. Affiliated with Stanford University School of Medicine.

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- 1 (6%) patient was admitted in cardiogenic shock
- 1 (6%) patient was admitted status post cardiopulmonary arrest
- 3 (17%) patients had co-morbid conditions not included by our in-house coding department
    1. Severe aortic stenosis and moderate mitral stenosis
    2. CVA and hypertension
    3. Pericarditis

During 1998 there were twenty observed deaths after acute myocardial infarction. Nineteen (19) of the twenty (20), representing 95%, of the medical records were reviewed.

- 7 (35%) patients were listed as DNR on admission to the hospital
- 4 (20%) patients were made DNR within twenty-four hours after admission (two (2) of these were status post cardiopulmonary arrest at home)
- 3 (15%) patients were admitted in cardiogenic shock
- 4 (20%) patients had co-morbid conditions not included by our in-house coding department

    1. Cardiogenic shock with ventricular tachycardia and ventricular fibrillation
    2. Dilated cardiomyopathy with congested heart failure, history of CVA
    3. Anemia
    4. Hypertension and dyslipidemia

This additional information obtained by vigorous chart review of 49 of 53 patient charts included in this study by OSHPD (92% of charts) reveals significant co-morbidities and other missing variables that will **significantly influence the statistical analysis of the deaths that occurred at Santa Clara Valley Medical Center for patients suffering acute myocardial infarction.** As an example, 14 patients had advanced directives directing no resuscitation in the event of a cardiopulmonary arrest representing 26% of patients included in this study. That variable alone will substantially alter the study result.

Santa Clara Valley Medical Center provided excellent medical care to the patients treated in this institution. This includes patients treated for acute myocardial infarction. When appropriately analyzed including ALL co-morbidities, there is no doubt that the result will indicate that the care provided and mortality rate for patients suffering acute myocardial infarction are "As Expected" or "Better Than Expected."

Sincerely,

Susan Murphy Jr

Susan G. Murphy, Director,
Santa Clara Valley Medical Center

Ira Lubell M D

Ira Lubell, M.D., M.P.H., Medical Director
Santa Clara Valley Medical Center

Sierra View
DISTRICT HOSPITAL
465 West Putnam
Porterville • California 93257
(559) 784-1110

May 30, 2001

Office of Statewide Health Planning and Development
Health Policy and Planning Division
818 K Street, Room 200
Sacramento, California 95814

RE: California Hospital Outcomes Reports

Dear Ms Zach:

Sierra View District Hospital has received the information and the reports involving Myocardial Infarction (MI) patients treated in the years 1996-1998. We recognize the great effort and dedication it took to produce this report. We commend your office in attempting to establish statewide quality of care criteria that may provide more objective benchmarks which can be used to improve the quality of care of AMI patients.

We are very interested in the statistical data of our hospital since we are a rural community without acute interventional facilities available for emergent procedures. We have reviewed the individual cases, and thank you for the information you provided which allowed us to identify 47 of the deaths.

After review of all the cases for each of the three-year periods, we have found the following:

- 60% of the cases had "Do Not Resuscitate" orders
- Average age of those in this study was 73.2 years
- 58% were over 70 years, and 33% of the total sample was over 80 years of age
- 91% of the patients had a cardiac history with co-morbidities listed

Again, thank you for sharing the information with us.

Sincerely,

Kelly Morgan
President/CEO

SPECIALTY HOSPITAL OF SOUTHERN CALIFORNIA

May 23, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director,
Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 K. Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach,

Specialty Hospital of Southern California (SHSC) is a Long Term Acute Care hospital (LTAC) which provides specialized acute care for medically complex patients requiring hospitalization for greater than 25 days. These patients are critically ill, have multisystem complications and / or failures, and the patients are best served in a facility offering specialized treatment programs. The majority of our patients are admitted directly from a short-stay acute care hospital.

LTAC differs from Short Term acute care hospitals in that LTAC hospitals do not have emergency rooms, and, therefore, do not directly admit patients with emergent conditions (i.e., acute myocardial infarction, acute stroke, trauma, etc.) Patients are admitted to a LTAC facility after these emergent conditions are initially treated in a short-term acute facility and are complicated by medical issues that tend to increase the length of stay.

After review of our data systems and census records, we could not find any matches to the patients listed in this study for Specialty Hospital of Southern California (SHSC). SHSC opened in April, 1995 at the La Mirada facility. In November 1996, the Orange County Campus in Santa Ana opened and the San Gabriel Valley Campus in West Covina (formally Covina Valley Community Hospital) saw there first LTAC patient July 17, 1997. From reviewing the zip codes and dates, it appears the Covina Valley Community Hospital data from 1996 – 1997 flowed through to our facility. Specialty Hospital of Southern California is a separate licensed facility with its own provider number separate from Covina Valley Community Hospital.

We are requesting that the data be published under the Covina Valley Community Hospital name or deleted altogether from the published report due to the fact, that at no time was SHSC connected to the Covina Valley Community Hospital provider number. LTAC hospitals are usually exempt from these studies and from review of the study, no other LTAC hospital in California is represented within the study.

Please keep us appraised of the situation as we may need to seek legal guidance if this study is published under our name.

Sincerely,

Rich McCarthy

Richard McCarthy,
Chief Executive Officer

14900 EAST IMPERIAL HIGHWAY, LA MIRADA, CALIFORNIA 90638
TEL 562-944-1900 FAX 562-906-3455 WEB SITE: WWW.SPECIALTYHEALTHCARE.COM

St. Vincent Medical Center
CHW

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P.O. Box 57992
Los Angeles, CA 90057-0992
(213) 484-7111 Telephone

April 12, 2001

Andra Zach, R.H.I.A., M.P.A.
Office of Statewide Health and Planning Development
Health and Policy Planning Division
818 K Street, Room 200
Sacramento, CA 95814

Dear Ms. Zach:

We are in receipt of your packet regarding the California Hospital Outcome Report. We are responding to inform you that we agree with the accuracy of the data submitted.

Additionally, we would like to take this opportunity to inform you that since this data was collected we have initiated, in collaboration with CMRI and CHW, an in-house AMI team that is responsible for tracking, trending, and performance improvement oversight on this issue. We feel that our efforts have added to the positive results displayed within the report we received.

Thank you for the opportunity to be part of the published report.

Sincerely,

William D. Parente
President

Sutter Medical
Center, Sacramento

A Sutter Health Affiliate

5151 F Street
Sacramento, CA 95819
(916) 733-1038

May 9, 2001

Mr. Steven Lubek, Ph.D.
Research Scientist
Office of Statewide Planning and Development
Healthcare Information Resource Center
818-K Street, Room 500
Sacramento, CA 95814

Dear Mr. Lubek:

This letter is written in response to the *Report on Heart Attack Outcomes in California, 1996-1998*. Sutter Medical Center Sacramento is committed to quality patient care and appreciates the opportunity to respond to the findings of this report.

The report indicates that the outcomes at Sutter Memorial Hospital were not significantly different than expected, while Sutter General Hospital reflected outcomes that were significantly worse than expected ($p<0.01$). We have asked our consultant, Marc Schwartz, President of MedAnalytics, to review and evaluate the findings of the report. Our goal for this review is two-fold: (1) to provide guidance to our Acute MI Quality Team and Cardiovascular Department, and (2) assist us in providing appropriate feedback to the Office of Statewide Planning and Development.

Enclosed is a copy of Mr. Schwartz's correspondence in which he identifies several key findings regarding the report. He concurs with our sentiment that these findings are critical to the success of this project going forward. We would appreciate your reviewing this response and accepting it as Sutter Medical Center Sacramento's formal response to this particular OSHPD report.

Again, thank you for the opportunity to respond to this report. Please feel free to contact us at 916-733-1081 with any question or concerns regarding this documentation.

Sincerely,

Margaret Mette
Assistant Administrator
Sutter Medical Center Sacramento

Forrest Junod, M.D
Medical Director, Sutter Heart Institute
Sutter Medical Center Sacramento

MM:rdl

Enclosure

MedAnalytics™
Analytical Expertise. Medical Insight.

May 23, 2001

Forrest Junod, M.D.
Director of Cardiovascular Services
Sutter Medical Center
5151 F Street
Sacramento, California 95819-3295

Dear Dr. Junod,

Enclosed is a review by MedAnalytics of the proposed Acute MI (AMI) Report to be published by OSHPD this summer. The review identifies several specific issues that are of concern and should be highlighted in your communication to OSHPD in the formal response that they have solicited.

In summary the following issues comprise the key findings:

- The use of discharge coded billing data as the basis of this clinical report is fraught with problems, which include inter-hospital coding variability, economically driven incentives to code specific diagnoses that maximize reimbursement and the lack of temporal distinctions in diagnosis codes relative to the ability to clearly distinguish comorbidities from complications.

- This issue was significant enough to compel OSHPD to design an entire data acquisition infrastructure for the reporting of statewide CABG mortality based upon a purposefully designed clinical dataset, associated definitions and the coordinated training of data abstracters.

- As a result of the above issues, the authors were compelled to engage in both statistical and clinical inferential judgments that on face value may seem reasonable, but based upon the authors' own admissions in the report, may still result in errors. Therefore they cannot reduce the likelihood of error in the use of the data to a level that can be acceptable given the intended use of the report.

- Possibly as a result of the lack of a concrete foundation of data and the nature of the various record linkage mechanisms utilized by the authors, Sutter General's patient population as reported has decreased substantially from 83 in 1996 to 30 in 1998 and may result in the facility's outcome profile being improperly represented. This finding should be validated against the hospital's own data.

- The development of the logistic regression models, which are used to risk adjust the outcomes data in the report, has been meaningfully impacted by the nature of the data source. This has resulted in the use of multiple models by the authors to account for intrinsic problems in the variability of reporting of key diagnosis codes. In one set of models, the model fit statistics, which are used to assess the validity of the models, were poor enough that mathematical correction mechanisms were applied in order to force the models to work.

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Tel 952-926-0842 Toll-free 866-906-0842 Fax 952-934-9553 www.MedAnalytics.com

- To credit the study authors, they used a statistical threshold ($p \leq 0.01$) for the comparisons of the site specific observed versus expected mortality rates that should result in a reduction in the number of outlier hospitals in the report. However, the specific calculation of the p value using a one-tailed methodology is both inconsistent with this approach and is inappropriate given the a priori knowledge that would available prior to the development and application of the risk models to each hospital's data.

- A significant part of this report's justification is the assumption that the report as published can support quality improvement initiatives at the hospitals and enable both purchasers and consumers of healthcare services to make informed choices. However, specific concerns should be raised based upon this intent:
    - The data used is now three years old and may no longer reflect current practices relative to the treatment of AMI patients or the associated outcomes at the facilities being reported upon. If a key intent of this report is to facilitate internal quality review, how can a hospital reasonably engage in any review of process change, when it will be three years before they could assess the impact of the changes made today?
    - Changes in the definition of AMI in 2000 by the ACC/AHA and the variability in the use of new diagnostic technologies such as Troponin levels may result in substantive differences in diagnostic capabilities at the involved facilities and result in a bias in the population aggregated across the state moving forward.
    - Increasingly, studies are being published that support the use of primary angioplasty with or without thrombolytic therapy and stent implants for the treatment of AMI. Several recently published studies document clinically relevant differences in 30-day versus longer-term outcomes based upon the choice of intervention. The use of 30-day mortality in this report may compel hospitals to focus on short-term patient survival at the expense of longer-term outcome measures and patient quality of life in order to improve their standings in the report.

In summary and to quote the enclosed review, "While there may very well be real differences in the quality of care provided by the hospitals in the state of California, the use of this report cannot properly expose such differences nor can this report serve to support quality improvement initiatives."

MedAnalytics is pleased to have this opportunity to provide this review to the Administration of Sutter Medical Center and remains available to support your ongoing requirements.

Sincerely,

Marc Schwartz
President

Tulare District
HealthCare System

869 Cherry Street
Tulare, California 93274
(559) 688-0821

June 5, 2001

Robert M. Montion
Chief Executive Officer

Board Of Directors
Mark Fernandes
Parmod Kumar, M.D.
Deanne Martin-Soares
Patricia Ross
LeRoy Trippel

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Health Policy and Planning Division
Office of Statewide Health, Planning and Development

Dear Ms. Zach,

I realize that little we say or do will change the outcome of your report, but I am challenging the report in three areas that have flawed results.

1) "Linkage" to hospitals, which refer patients into existing cardiac programs, suffer all the negative impact and none of the benefits.
2) "Risk Adjustment" doesn't adequately take into account the co-morbidity of our patient population.
3) "Aggressive Treatment" isn't reflected in your expected outcomes.

Because of these flaws in your mathematical model, certain types and locations of hospitals are automatically discriminated against and have a much more difficult time obtaining favorable study results. Let me expand on these points one at a time.

Linkage: Doesn't it seem a little strange that all of the hospitals in our area which refer patients into a system that has a cardiac program scores "worse than expected", while the program which receives the patient scores "significantly better" or "not significantly different"? This is true if it were Lindsay Memorial or University Medical Center in Fresno. How can you have the referring hospital suffer the ill effects when the patient is stable at the time of transfer? Shouldn't the Cardiac Surgery unit shoulder some of the risk? Aren't there mortalities from surgery, post surgical periods and Heart Catherization procedures?

I know you think you have "factored this in", but I assure you your figures are wrong.

In our case the same Cardiologists work at both facilities and they initially treat the patient the same. How can we have a wide disparity with the receiving hospital if your equations are correct?

Of the 231 cases you reviewed most were sent for Cardiac Cath and of these 14 were deaths. If we were not held totally responsible for these 14, we would have not been scored "worse than expected". We have no control over interventions done at other hospitals.

Risk Adjustment: Please explain how the hospitals who can control the types of patients they admit score 81% of the "significantly better" scores. Can it be that private, HMO and in general "for profit" hospitals are that much "better" or is it that your calculations don't correctly reflect how important it is to be able to control the population you serve.

Let me be more specific: of the 28 deaths we had in 3 years that we did not transfer out for Cath Lab, they broke down as follows:

13 were No Code Blue on or before admission

5 who weren't No Code Blue were over 80

10 had serious co-morbidities, which did significantly alter clinical outcomes.

The 10 with co-morbidity were (I'm using only initials) individually as follows:

A.F.- Was a code blue in ER, went into cardiogenic shock and died in ICU. He was 73 and had a history of CHF and CAD.

M.T.- Had a history of previous cardiac arrest, diabetes, CHF and CAD.

D.S.- Presented in ER with a CVA, coma and died in ICU with cardiac arrest as a DNR.

D.M.- Drove his truck for 7 hours with chest pain before presenting in ER with AMI. The patient died in ICU with Myocardial Rupture.

E.S.- Had chest pain for 3 days, but refused his doctors advice to come to the ER. History of CHF and CAD.

C.S.- A diabetic with long standing CAD and hypertension was taken for PTCA, but was a poor candidate for surgery.

P.T.- Refused treatment for chest pain for 2 days. Long history of hypertension, CAD and CVA.

F.S.- Code blue in ER with a history of CHF, terminal CA and acute renal failure.

J.R.- Chronic alcoholic with end stage liver disease and encephalopathy.

E.V.- Code blue in ER with acute Renal Failure, CHF and CAD.

If your model took into account our patient population and the seriousness of their underlying illnesses, how could you count these against us?

45% of the deaths we didn't transfer were DNR's

35% of the deaths we didn't transfer had serious co-morbidity problems

17% of the deaths that weren't DNR's were over 80 years old

I say simply, that your risk adjustment is not accurate for hospitals in our position, because no matter what we do, we can't change the outcomes of the patients I have listed here.

Aggressive Treatment: You state that "the more aggressive the treatment the better the outcomes" and this is what this study shows. This simply is not true. What your study shows is that the hospitals with Cardiac Cath programs and open-heart programs will score better. The common thread between ourselves and UMC of Fresno for example is that we both transfer our patients out for Cardiac Caths. UMC is a very aggressive program. It is a teaching facility for the University of San Francisco medical program and uses all the new treatment. We are somewhat more conservative, yet we scored the same. We have the same cardiologists as does the area hospital with the Cath Lab, our cardiologists treat the patient the same, with same medications and order the same cath procedure. The patients all see the same Cardiac Surgeon, yet you give us different score. Are you saying that these Cardiologists treat our patient differently or worse than at the other facility?

When you use more accurate studies, one with a global view like NRMI you'll find we rate very well with hospitals across the county. Our door to drug times are excellent as is our use of ASA, IIB/IIIA's and thrombolytic strategies. We provide intensive medical management comparable to any institution.

In conclusion, I believe your study is tilted in favor of hospitals with on going cardiac programs and for-profit type facilities and against the facilities, which have no control over the patient population they must serve. Please check your figures again, because like my Grandmother always said "figures don't lie, but all liars figure."

Sincerely,

Robert Montion, CEO
Tulare District HealthCare Systems

COMMUNITY
MEDICAL CENTERS

May 24, 2001

Andra Zach, R.H.I.A., M.P.A.
Acting Deputy Director
Health Policy and Planning Division
Office of Statewide Health Planning and Development
818 "K" Street, Room 200
Sacramento, CA 95814

Dear Mr. Zach,

Thank you for the opportunity to respond to the information obtained within the Report on Heart Attack Outcomes in California. While we appreciate OSHPD's efforts to provide an outcome-based data collection, we have significant concerns regarding how some of the information is aggregated. Some of these concerns are with the actual OSHPD study design, and some with our internal practice that likely influenced the information submitted to OSHPD for this report.

After reviewing a sample of the University Medical Center (UMC) data, we identified or validated the following:

In the risk-adjustment models utilized for the study, there is no consideration for patients who have requested a "do not resuscitate" (DNR) status on or before admission or cardiac arrest within the previous 24 hours. Close to 50% (7 out of 13 for 1997) of the sample of patient records that we reviewed from this study were found to either include advanced directives with DNR requests or cardiac arrest within that time frame. If these variables were included within the selected risk adjustment models, this would very likely have significantly influenced our calculated mortality prediction.

Another area of concern is with our own documentation and coding practices. In our review of the patient records, we validated the fact that there were a number of clinical co-morbid factors that were found present in the charts, though not within the OSHPD report. Recognizing this shortcoming has driven some initial planning for education regarding appropriate documentation by the medical staff, as well as education related to our internal coding practices to enhance awareness of relevant clinical data that supports quality outcomes.

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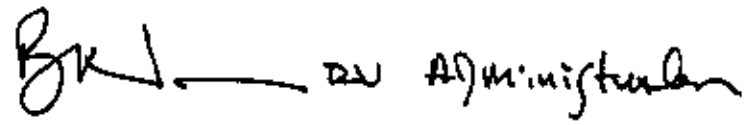
COMMUNITY HEALTH CENTER - SELMA • COMMUNITY LANE CENTER - FRESNO • COMMUNITY ALZHEIMER'S LANE CENTER • COMMUNITY LANE CENTER - ONCHURST • CALIFORNIA CANCER CENTER
COMMUNITY DENTAL CENTER - MADERA • COMMUNITY HEALTH CENTER - FRESNO • ADVANCED MEDICAL IMAGING • COMMUNITY MEDICAL FOUNDATION

Despite our concerns with how UMC is represented in the report and regardless of the fact that our own internal quality indicators have shown us to be performing well, we will continue to strive toward improvement of the care of AMI patients in our facility. Several changes have already occurred since the time that this particular data collection was initiated. There has been a change in the coding practitioners for our organization late 1999, and we expect to see some changes in how our facility specific data will be represented in the near future.

We have also established a performance improvement team in collaboration with both Community Medical Center – Fresno and Community Medical Center – Clovis with the intent to examine the processes around the care of the AMI patient. This multi-disciplinary team is focusing on expediting the time to diagnosis and treatment strategy for patients that present with acute chest pain, specifically improving time to reperfusion.

We look forward to additional opportunities to participate in OSHPD outcome studies as well as continuing other benchmark efforts associated with American College of Cardiology and Society of Thoracic Surgeons.

Sincerely,



Bruce Kinder, R.N.
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University Medical Center

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April 9, 2001

Andrea Zach, RHIA, MPA
Acting Deputy Director
Office of Statewide Health Planning and Development
Health Policy and Planning Division
818 K Street Room 200
Sacramento CA 95814

Dear Ms. Zach:

Western Medical Center Santa Ana appreciates the opportunity to respond to the Annual Report of the California Hospital Outcomes Project published by the Office of Statewide Health Planning and Development (OSHPD). We support the State's effort to better inform the public regarding the quality of health care being delivered in California hospitals. Unfortunately, the usefulness of the 1996-1998 Acute Myocardial Infarction Study is limited since the data reported primarily uses ICD-9-CM codes, a coding and classification system which does not recognize the severity of the patients' illness, has vague and consistently changing guidelines and is not uniformly reported by California hospitals and health care facilities. The severity of illness indexing or risk adjusting utilized in this study is dependent on coding of pre-admission diagnosis. Additionally, the statistical data that has been published has a very low probability of being related to the quality of care that a patient would receive at a given hospital.

Western Medical Center Santa Ana conducts extensive reviews of all mortalities and complications as a significant part of our Continuous Quality Improvement Program. The Medical Staff has taken opportunities to identify and improve patient outcomes. We believe our review processes provide continuous feedback that allows us to meet and exceed quality of care standards. Additionally, it should be mentioned that Western Medical Center Santa Ana has a comprehensive Cardiovascular program in order to better serve cardiac patients.

Thank you for the opportunity to respond to the California Hospital Outcomes Project Report prior to publication. We are aware OSHPD continues in their effort to improve the methodology of reporting.

If you have questions feel free to contact me at 714-953-3610.

Sincerely,

Daniel J. Brothman
Chief Executive Officer