

Clinical Quality Measurement and Evaluation Initiative Appendices

Clinical Quality Measurement and Evaluation Initiative Appendix 1 – August 20, 2007
Analysis of CDCR Death Reviews 2006

APPENDIX 1

Analysis of CDCR Death Reviews 2006

Public Version

August 20, 2007

Kent Imai, MD

Consultant, California Prison Health Care Receivership

BACKGROUND

The CDCR Death Review Committee (DRC) is a multidisciplinary committee chaired by the Statewide Medical Director and consisting of MDs, RNs, healthcare administrators, and correctional officers. The DRC meets 2-4 times monthly to discuss and analyze each death that occurs in the CDCR. Prior to the multidisciplinary reviews, an MD prepares a written report on each death. A subcommittee with representation from mental health, nursing, and custody reviews deaths from suicide. The main DRC reviews all other deaths.

The majority of the year 2006 death review reports were prepared by CDCR QMAT physicians. A minority of the reports were prepared by the Statewide Medical Director, by the Regional CMOs, or by the UCSD contract review physicians.

Each death review report was based on a reading of the patient's available medical record. The reviewer attempted to assess the patient's entire experience with medical care during his/her period of incarceration. The reports focused specifically on the cause of death and the quality of care provided to the patient. Upon identifying significant departures from the community standard of care and potentially problematic providers, the DRC referred cases to the Professional Practice Executive Committee (PPEC) for further evaluation of the provider's fitness for continued service in CDCR. The PPEC interpretation of community standard considers what a reasonable, similarly credentialed provider would do, given the situation in which the care in question was rendered.

The death reviews were valuable in identifying potentially unsafe practitioners. As one step in its practitioner assessments, PPEC conducted pattern of practice reviews for these individuals. Typically, the reviewer assessed a large sample of patient care interactions (usually 40-60 patient charts, including the index death case and any other deaths involving the clinician) for adherence to a community standard of care. After considering evidence from multiple sources, PPEC took one of several actions:

1. Temporary restriction from practice in the CDCR, pending a complete review of the clinician's pattern of practice.
2. A program of remediation, e.g., taking a course in an area of deficiency, followed by close monitoring
3. Suspension of privileges
4. No adverse action.

Sixty-two CDCR practitioners (56 MDs and DOs and 6 Nurse Practitioners) have had adverse action taken by the PPEC, from June 2005 to July 2007. Of these, 41 were initiated by the death reviews.

PURPOSE

Until now, the Death Review Committee and PPEC have been focused on identifying and sanctioning individual practitioners. There has been little or no emphasis on identifying systemic deficiencies of care and acting on them.

The purpose of this analysis is to categorize each of the 2006 deaths as non-preventable, preventable, or possibly preventable, to summarize the major lapses in care (both individual and systemic) contributing to the patient deaths, and to make recommendations for quality improvement.

LIMITATIONS

There were significant limitations in the ability of the reviewers to conduct meaningful death reviews.

A major limitation was the absence of a well-organized, easily navigated medical record. This same limitation plagues the CDCR providers themselves during care provision. The physician portion of the CDCR medical records includes hand-written progress notes suffering from brevity, poorly documented reasoning, and illegible handwriting. The medical records available to reviewers were often incomplete, making it difficult to determine an accurate chronology of events or to "tease out" critical pieces of clinical information. An important laboratory or x-ray result might be misfiled, or the record might be missing recommendations of consultants or records of emergency room visits and hospitalizations.

There was variation in the quality of the death review reports, in part because of the difficulties in the medical record, and in part because there was no template or form for guiding systematic death review. Some reports were quite brief and superficial. Others went into great detail and reflected great effort at reconstructing events and determining clinical reasoning. There was a spectrum of fault finding. Some reports concentrated only on proximate causes of death and did not address the possibility of an early opportunity to make a diagnosis that might have affected a patient's prognosis. Some

reviewers focused entirely on individual culpability and did not address possible systemic issues of care.

In early 2007 the DRC created a form for reports, leading to greater uniformity. The form prompts reviewers to address nursing issues, systemic issues of care, and preventability of death, in addition to individual practitioner lapses. Only the last 20 of the year 2006 reports used this template.

The majority of deaths did not trigger autopsies. This is usual in the non-CDCR world as well, but it makes complete clinical closure elusive, especially in the cases of sudden cardiac arrest.

There are also inherent limitations in conducting a retrospective, case-based analysis such as this one. There are no established criteria for attribution of “preventability.” Research in this area is primarily epidemiological, comparing actual versus expected deaths in large populations over time. A search of the medical literature revealed no case-based studies for preventable deaths in adult primary care. Such studies would be difficult precisely because creating rigorous criteria for preventability would be difficult. Another limitation of this analysis is that it depends wholly on the judgment of a single reviewer. For example, several of the sudden cardiac arrests were judged to be possibly preventable because of a failure of clinicians to evaluate symptoms of syncope or chest pain in the weeks or months prior to the patient’s death. Another reviewer might have judged these deaths to have been non-preventable, because there is no assurance that a proper evaluation of these red flag symptoms would in fact have prevented the patients’ deaths. Many patients who have complete cardiovascular evaluations, who receive appropriate medications and who have appropriate interventional procedures nevertheless succumb to their disease. And without an autopsy, there is less assurance that the patient had a preventable cardiovascular death. In short, there is no easy methodology that can reliably quantify preventable deaths.

Despite the limitations in the death review process, it has proven useful in identifying many egregious examples of individual errors in judgment and failures to perform commensurate with community standards. This analysis consolidates findings for the year 2006 deaths.

DEFINITIONS

Non-preventable: The health care system and individual providers probably would not have been able to prevent the patient’s death. (Homicides and drug overdoses fall here.)

Preventable: Better medical management or a better system of care would have prevented death.

Possibly preventable: Better medical management or a better system of care might have prevented death.

FINDINGS

Total year 2006 CDCR deaths	426
Suicides (not included in this analysis)	43
Execution (not included)	1
Death Reviews unavailable for this report	1
Death reviews in this analysis	381
Non-preventable deaths	315
Preventable deaths	18
Possibly preventable deaths	48

A. Non-Preventable Deaths

1. Causes of non-preventable death

105	Cancer
53	End-stage liver disease
28	Sudden cardiac arrest
17	AIDS
17	Drug overdose
16	Congestive heart failure
16	Homicide
14	Coronary artery disease (likely higher, because over 2/3 of cases of sudden cardiac arrest are attributable in autopsy studies to CAD)
11	COPD
10	End-stage renal disease
7	Stroke
6	Pneumonia
5	Upper GI hemorrhage
5	Coccidioidomycosis
3	Sepsis
2	Pulmonary embolism
4	1 each of diabetic ketoacidosis, neuroleptic malignant syndrome, encephalitis, and subarachnoid hemorrhage
319	Total (Of the 315 cases, several had more than one major cause of death)

2. *Lapses in care in cases of non preventable death*

Lapses were noted in over half of the cases of non-preventable death. In many cases, these lapses in care may have contributed to an earlier death or more suffering in patients who had fatal diagnoses such as cancer or end stage liver, heart, or kidney disease.

Cases	Lapses
66	Poor primary clinician management – includes instances of clinical inertia in response to abnormal labs or x-rays, not treating to established guidelines and targets (blood pressure, blood sugar, etc), cursory evaluation of signs and symptoms (weight loss, new dementia, syncope, “can’t walk”, new ascites, chest pain, abdominal pain), delayed referral to a higher level of care, illegible handwriting, poor documentation, and fragmented care
15	Poor management of terminal event, including failure to administer narcotic
13	System delays - medical records, delayed access to care, delayed response to 602 appeals, delays in obtaining tests, etc
13	Delays in diagnosis
9	Patient “refusal” of care/evaluation
9	Delays in obtaining specialty referral
6	Poor “handoffs” between clinicians, including coordination between inpatient and ambulatory, or at time of inmate transfers
5	Poor palliative care

B. Preventable Deaths

1. *Causes of preventable deaths*

6	Asthma
3	Sudden cardiac arrest
2	Congestive heart failure
1	Acute myocardial infarction
1	Duodenal ulcer, perforated
1	Hyperthermia [redacted]
1	Incarcerated hernia
1	Acute pancreatitis
1	Stroke (probable)
1	Testicular cancer
18	Total

2. *Lapses in care in cases of preventable death*

Asthma –failure of clinicians to follow published guidelines and standards of care in the evaluation and management of asthma, failure of RNs to appropriately triage sick asthmatics to an MD, failure to ensure timely follow-up after treatment of an acute exacerbation, failure to recognize the volatility of symptoms , failure to refer refractory asthma to a pulmonologist, and a botched handoff in which a steroid dependent asthmatic did not receive steroids for two days following transfer from a county prison to a CDCR facility.

Sudden death –failure by MDs and midlevels to adequately evaluate “red flag” symptoms such as exertional chest pain, chest pain associated with dizziness, and recurrent syncope occurring weeks to months prior to death in patients with cardiac risk factors.

Acute myocardial infarction – failure by MD to come in while on call to evaluate a pt with hypotension and tachycardia, failure to correctly interpret new edema and shortness of breath, and an 8 hour delay in access to MD evaluation while experiencing “constant and extreme” chest pain on the day of death.

Congestive heart failure – midlevel practicing beyond scope of practice in unsupervised or poorly supervised situations, botched handoff from acute hospital to CDCR facility, multiple failed appointments because of dialysis, and MD failure to entertain diagnosis of CHF in a patient with new orthopnea, exertional dyspnea and edema.

Perforated duodenal ulcer – failure by MDs and RNs to adequately respond to patient complaint about severe abdominal pain on multiple occasions over five days, resulting in prolonged delay in diagnosis and treatment.

Hyperthermia – unsafe transfer of [redacted] patient from one CDCR facility to another [redacted] resulting in death from hyperthermia.

Incarcerated hernia – five week delay in referral to specialist for a patient with recurrent severe abdominal pain, vomiting and known bilateral inguinal hernias.

Acute pancreatitis – failure of RNs and MDs to properly triage, evaluate and manage a patient who presented nine times over three days with severe “10/10” abdominal pain, resulting in prolonged delay in recognition and treatment.

Stroke – midlevel practicing beyond scope in poorly supervised setting who failed to evaluate a pt who had symptoms of weakness, inability to walk [redacted] and who was repeatedly known to be “down” for more than 48 hours.

Testicular cancer – two year delay in diagnosis of testicular cancer in [redacted] patient with chronic testicular pain, metastatic at time of eventual diagnosis, botched transfer with inadequate information passed from

facility to facility (lost urology consult), failure of MDs to work up for cancer in a young man with 17 months of testicular pain.

C. Possibly Preventable Deaths

1. Causes of possibly preventable deaths

5	Sudden cardiac arrest
4	Coccidioidomycosis
4	AIDS
3	Acute myocardial infarction
3	Bowel perforation
3	Sepsis
2	Coronary artery disease
2	Congestive heart failure
2	Drug overdose
2	Gastrointestinal hemorrhage
2	Subdural hematoma
2	Colorectal cancer
2	Opiate toxicity
12	1 each of COPD, gastric cancer, cholecystitis in end-stage liver disease, acute renal failure from rhabdomyolysis following trauma, cervical cancer, lung cancer, pneumonia, aortic dissection, drug induced hepatitis, diabetic ketoacidosis, carcinoma of thymus, seizure disorder
48	Total

2. Lapses in care in cases of possibly preventable death -

Cases	Lapses
30	Errors by individual physicians, nursing and midlevel staff – includes failure to adequately evaluate clinical “red flag” signs and symptoms, (chest pain, abdominal pain, weight loss, seizures, altered mental status, fever and tachycardia, poorly resolving pneumonia, joint effusion, history of significant trauma), failure to adequately pursue abnormal test results (leucopenia, abnormal blood sugars, abnormal radiology studies), failure to transfer patients to appropriate higher levels of care, inadequate clinical surveillance of known conditions (cervical cancer, immune compromised patients)
11	Delayed referrals for specialty care or special tests – (cardiology, gastroenterology, vascular surgery, stress tests, etc.)
9	Delays in access (delayed response to patient requests for care – “7362s”)
7	Poor provider communication, including failure to act on specialist

- recommendations and lost medical information when patients undergo interfacility transfers
- 6 Missed abnormal test results (chest x-rays, CT scan, blood sugars, positive stress tests)
 - 5 Fragmentation of care, multiple providers with no individual ownership of a patient's complaint or abnormal finding
 - 3 Poor response to emergency or "man down" situations
 - 2 Surgical or procedural complications (colonoscopy and herniorrhaphy resulting in perforated bowel)

DISCUSSION

A. Lapses in Care

Significant lapses in care were noted in more than half of the death reviews. These can be divided into individual practitioner lapses, systemic lapses, and "no-fault" lapses

1. Individual practitioner errors in judgment or attitude

- Failure to appreciate potentially serious signs and symptoms (exertional chest pain, new onset shortness of breath and dizziness, unexplained tachycardia as harbingers of cardiac events, severe abdominal pain and abdominal distention as signs of acute abdominal catastrophe, increased use of inhalers as prelude to status asthmaticus),
- Failure to tailor the pace of evaluation to the clinical situation (rectal bleeding, testicular pain, indicating rapid workup to detect potentially curable cancers),
- Failure to perform the basic history and physical examination,
- Failure to follow well established guidelines for care (asthma, diabetes mellitus, hypertension, coccidioidomycosis)
- Failure to apply critical thinking or to enlist help in difficult cases
- Superficial or no documentation to indicate thought processes.
- Failure to take individual responsibility for patient outcomes

2. Systemic lapses

- A system that allows delays in triaging and processing patient requests for care resulting in patients with red flag symptoms not being evaluated in a timely manner.
- A system that allows fragmentation of care and clinical inertia, leading to lack of individual practitioner responsibility and accountability for each patient.
- Systemic and pervasive prolonged delays in specialty referrals

- No system for flagging abnormal test results,
- Incomplete medical records
- Poorly managed transfers of care – when patients move from one facility to another, there is increased risk of medical error.
- Practices which place mid level providers in vulnerable clinical situations, poorly supported or unsupported, with little or no mentoring.
- Practice environments (noisy, unkempt, crowded, lacking privacy) and patient characteristics (high rate of dual diagnosis, chronic pain, and manipulation for secondary gain) and other cultural factors which promote practice isolation and discourage collegiality and professionalism.

3. “No-fault” lapses

- Patient “non-adherence” to suggested treatment
- Patient “refusal” of care or evaluation (sometimes masking frustration with the system of care or reflecting poor provider – patient communication)

B. Trends in Preventable Deaths Over Time

There was no clear trend indicating an increase or decrease in the number of preventable deaths over time. Unlike the situation in hospitals, in which quality improvements can lead to aggregate decreases in mortality within the space of a year, improvements in primary care may take longer before yielding mortality decreases.

Month	Deaths	Preventable	Possibly preventable	All preventable and possibly preventable deaths
January	42	0	3	3
February	35	3	4	7
March	46	1	4	5
April	31	1	8	9
May	36	1	4	5
June	39	0	6	6
July	40	2	3	5
August	36	2	1	3
September	25	1	3	4
October	32	3	6	9
November	32	0	3	3
December	29	4	3	7

C. Comment on CDCR Environment of Care

CDCR medical staff has been working in an environment of care characterized by crowded and poorly equipped clinical areas. The medical record systems are outdated and medical information is difficult to retrieve. The dispensing of prescribed drugs is often delayed, and there is an unreliable system for refilling medications for the treatment of chronic medical diseases such as diabetes, hypertension, asthma and coronary heart disease. The drug profile information is unreliable. Practices in many of the prisons focus on episodic care rather than continuity of care and preventive medicine. The environment does not guarantee patient confidentiality, and the culture does not promote patient advocacy.

The patient population has a number of unfavorable characteristics, such as a high incidence of dual diagnosis (serious mental illness coexisting with physical illness), chronic hepatitis, HIV infection, drug and alcohol addiction, and skillful manipulation for secondary gain.

Despite these barriers, it is noteworthy that 167 of the death reports contained no serious lapses in medical care. This is a reassuring indication that there are many conscientious providers and RNs who are doing a good job despite the environment in which they find themselves.

RECOMMENDATIONS

The CDCR must create a culture of patient safety, in which clinicians readily identify mistakes and system vulnerabilities and in which all staff share in the responsibility for optimal patient outcomes. Systems should be reviewed or redesigned to support this end.

To that end, the Death Review Committee should continue in on-going fashion the analyses piloted in this analysis, identifying not only individual performance issues but also the most common systemic lapses in care. The Committee should begin to standardize a list of the lapses and vulnerabilities that contribute to preventable deaths. The Joint Commission provides examples of how to proceed in this area, e.g., in categorizing the causes of sentinel events or specifically the causes of delays in treatment (see the Sentinel Event Alert of June 17, 2002). The Committee should continue its efforts to standardize its methodology for classifying preventable deaths.

These overall recommendations and most of the specific recommendations which follow are contained in Goals B, C, and D of the California Receiver's Plan of Action of May 2007 (POA). Where applicable, relevant POA goals and objectives follow each numbered recommendation below.

1. Continue PPEC evaluation of individual practitioners referred by the Death Review Committee.
2. Develop and circulate a Clinical Newsletter in order to improve communication, educate CDCR providers about important findings of the Death Reviews and to make meaningful clinical suggestions for improving care. (C.8.1, A.8.5.2)
3. Develop a system wide quality initiative focusing on the management of asthma. (B.2.5, B.2.6.1)
4. Develop system-wide quality initiatives on the recognition and management of “red flag” clinical signs, and other subjects, using death review cases as indicators. (C.1.1, C.1.2, C.6.1)
5. Pilot practitioner “daily reports” at each prison for purposes of peer collaboration and discussion of problem cases, mistakes, “near misses,” cases of patient non-adherence or refusal of care, local system process redesign, development of collegiality, and shared responsibility for patient care. (C.5, C.6, C.8)
6. Redesign CDCR processes for mid-level credentialing, privileging, supervision and mentoring. (A.8.5)
7. Redesign CDCR systems of care (including scheduling) to promote individual and shared responsibility for patient care outcomes, and to reduce fragmentation of care wherever possible. (B.3)
8. Redesign process of RN triaging of form 7362s to eliminate delays in care. (B.7.1, C)
9. Develop systems for tracking and following up abnormal laboratory and other test results. (B.12.1, B.12.2)
10. Create new templates for managing requests for specialty services in order to meet minimum standards for emergency (24 hour) urgent (7-14 day) and routine (60 day) priorities, and to ensure that consultation results are seen by ordering clinicians within one week of service. (B.3.1.8)
11. Review process for response to emergencies. (B.1)
12. Design and implement system-wide integrated health information systems. (goal D)
13. Redesign the environment of care to promote efficiency, teamwork, professionalism, and respect for patients, creating an ethically-based system of care. (B.3, B.10)
14. Wherever applicable, develop the standard quality metrics to support the foregoing recommendations. (POA, page 47)