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Assessing Medical Systems for the California Prison Health Care Receivership Corporation:

MORTALITY REVIEW POLICY AND PRACTICE

Final Report
Submitted September 27, 2018

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I. ABOUT THIS PROJECT AND REPORT

In December 2017, the California Prison Health Care Receivership Corporation (CPR) engaged Dr. Brie Williams and her Criminal Justice & Health Program at UCSF to conduct an independent assessment of specified California Correctional Health Care Services (CCHCS) medical systems with the goals of:

- assessing whether those CCHCS systems conform to community standard policy and practice in federal and/or California state (“community”) integrated health care systems, and
- developing recommendations to optimize those CCHCS systems in view of those findings.

The current project calls for an assessment of four systems:

- (1) CCHCS Mortality Review Policy and Practice
- (2) CCHCS Systems for Maintaining a Qualified Workforce (including peer review systems)
- (3) CCHCS Patient Safety Program
- (4) The Medical Inspection Program of the Office of the Inspector General (OIG)

Our approach will be to establish community standards for each project based on reviews of multiple community integrated health care systems and to issue evidence-based policy and practice recommendations consistent with CCHCS’s specific needs and constraints. Our overarching goal is to aid CCHCS’s ongoing advancement towards what we have termed a “healthy health care system,” which we define as one that is self-examining, responsive to evolving community standards, and rooted in a systems-driven culture of patient safety, quality improvement, and ongoing learning. We derived this definition from the Institute of Medicine’s seminal report on health care quality, *Crossing the Quality Chasm*,¹ which defines *quality* as “the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” and identifies six components of quality: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity.

This report describes our analysis of item #1 above, CCHCS Mortality Review Policy and Practice, and sets forth recommendations to optimize that process. These recommendations are based on the following activities:

- Review of the relevant literature on mortality review and related systems;
- Analysis of mortality review and related systems at community integrated health care systems including UCSF, San Francisco General Hospital, Kaiser of Northern California, Mayo Clinic, and the VA;
- Key informant interviews with policymakers and clinical leaders at most of the systems listed above;
- Review of all relevant CCHCS policies, procedures, and definitions;
- Stakeholder interviews with CCHCS leadership and clinical staff, including independent experts;
- Independent mortality review of a small sample of randomly selected and expert-identified cases; and
- Feedback to our presentation of preliminary results to Judge Tigar and the Receiver, Mr. Clark Kelso.

Work on items #2 and #3 above, CCHCS Systems for Maintaining and Qualified Workforce and the CCHCS Patient Safety Program, is underway as of this final report (September 27, 2018).

¹ Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A new health care system for the 21st century.* Washington DC: National Academies Press; 2001. Available: <https://www.ncbi.nlm.nih.gov/pubmed/25057539>

II. COMMUNITY STANDARD MORTALITY REVIEW

Over the past 20 years, mortality review policy and practice have evolved considerably across community integrated health care systems. Each of the five community systems we assessed for this project – Kaiser, Mayo, VA, UCSF, SFGH – has transformed their approach to mortality review in this time. For most, this transformative process is either recently completed or ongoing. For example:

- The Mayo Clinic began publishing results of its new “Mortality Review System” in 2014;²
- Kaiser implemented a new system in recent years and is in the process of enhancing that system through its electronic health record; and
- UCSF Medical Center is rolling out a new mortality review policy this year (2018).³

As a result, now is an opportune time for CCHCS to re-consider its mortality review policy and practice in view of evolving community standards.

From Person to Systems Approach

The evolving community standard in mortality review is best understood as a shift from a person-centered to a systems approach. Through the 20th century and into the 2000s, the dominant response to mortality was to focus attention narrowly on the providers involved in the care leading up to a patient’s death. The goals of this approach were two-fold: (1) eliminate unwanted variability in human behavior (human error), and (2) identify and remove error-prone actors. Thus, the person-centered approach focused on mental states and processes: forgetfulness, inattention, negligence, and/or moral failing.⁴

The person-centered approach has benefits and shortcomings (Box 1). But evidence suggests that the person-centered approach does not generally lead to higher performing and/or safer health care systems.⁵ In complex medical systems, the majority of errors are blameless and/or complex while the types of egregious errors that require a provider’s removal are relatively rare. (System approaches to mortality review still identify and respond to egregious errors, as we discuss further in later sections.) An overly or narrowly punitive, person-centered approach to error may rid a system of its bad actors, but it may also have an adverse impact on the quality of care delivered by remaining healthcare providers who are not directly impacted by the punitive action. The change in provider behavior in response to the perceived risk of sanction has been termed “defensive medicine.” Defensive medicine raises costs - for example,

Box 1. Person-centered approach to error

Benefits

- ✓ Emotionally satisfying / reassuring to blame & remove individuals
- ✓ Perceived as reducing culpability / litigation for institutions

Shortcomings:

- ✓ Best people make mistakes
- ✓ Errors in complex systems often blameless (e.g. good-faith, reasoned decision-making)
- ✓ Errors are systematic: similar errors arise from similar sets of circumstances

² Huddleston JM, Diedrich DA, Kinsey GC, Enzler MJ, Manning DM. Learning from every death. Journal of patient safety. 2014 Mar 1;10(1):6-12.

³ Information on Kaiser and UCSF from key informant interviews.

⁴ The canonical account of the person-centered approach can be found in: Reason J. Human error: models and management. BMJ: British Medical Journal. 2000 Mar 18;320(7237):768. Available here: <https://www.bmj.com/content/320/7237/768>.

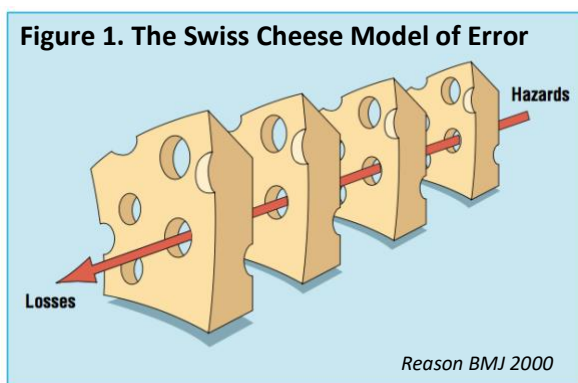
⁵ For example, see: Wilson DG, et al. “Medication errors in pediatric practice: insights from a continuous quality improvement approach.” Euro J Pediatr (1998) 157:769-774 and Jarve K, Sultan R, Lee A, et al. Multi-professional mortality review: supporting a culture of teamwork in the absence of error finding and blame-placing. Hosp Q 2002;5(4):58-61.

when providers deliver unnecessary care; and lowers quality and access - for example, when clinicians avoid or refer patients who are prone to complications or require risky procedures.⁶ There is broad consensus in the medical community that perverse incentives from the threat of personal blame (a person-centered approach to error) yield undesirable outcomes.⁷

“A transformation in the medical environment is needed so that a system-wide culture of safety develops and a system of blame is replaced with one of shared responsibility.” - Institute of Medicine patient safety report⁷

In most community systems, a systems approach to error has (or soon will) replace the person-centered approach and is considered the community standard approach to error in the context of mortality. This approach aims to create systems that prevent error and/or mitigate harmful consequences when errors inevitably occur. This approach to error was developed outside of medicine, in “high reliability organizations” (e.g. aviation, nuclear power), and operates from the following assumptions:

- (1) humans are fallible, and
- (2) errors will occur, *but*
- (3) systems can reduce the likelihood and impact of errors.
- (4) “We cannot change the human condition, but we can change the conditions under which humans work.”⁸



The most common conception of the systems approach to error in the field of medicine is the Swiss Cheese Model (Figure 1), which describes the need for layers of defense to ensure that failures and enabling conditions are less likely to align (and cause an error and/or harm). In this view of error, human failures are difficult to foresee but the enabling conditions for failure can be identified and addressed by asking *why and how system(s) failed whenever an adverse event arises.*

A critical difference between the person-centered and the systems approach to error is that a systems approach to error is

proactive while a person-centered approach is reactive.

Components of Community Standard Mortality Review

Focus on quality improvement and patient safety

Across the community integrated health care systems we reviewed for this project, all had transitioned from a mortality review classification scheme focused on labelling each death as “preventable / nonpreventable” to one that classifies each death as “expected / unexpected” (or “anticipated / unanticipated”). In all but one system (SFGH), this transition accompanied the removal of “preventability” as a relevant factor (SFGH does both). The

⁶ For example, see Studdert DM, Mello MM, Sage WM, et al. Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment. *JAMA*. 2005;293(21):2609–2617. doi:10.1001/jama.293.21.2609.

⁷ From: Institute of Medicine (US) Committee on Optimizing Graduate Medical Trainee (Resident) Hours and Work Schedule to Improve Patient Safety; Ulmer C, Miller Wolman D, Johns MME, editors. Washington (DC): National Academies Press (US); 2009.

⁸ Reason J. Human error: models and management. *BMJ: British Medical Journal*. 2000 Mar 18;320(7237):768. Available here: <https://www.bmj.com/content/320/7237/768>.

Mayo Clinic, whose policy and practice transformation has been led by the nation’s foremost expert in mortality review (Jeanne Huddleston, MD, MS⁹), has incorporated quality improvement into their metric explicitly. As a result, reviewers in the Mayo system determine whether a death is:

- Anticipated with no opportunities for improvement,
- Anticipated with opportunities for improvement, or
- Unanticipated with opportunities for improvement.¹⁰

This move away from “preventability” reflects a growing awareness that preventability and quality improvement are not perfectly overlapping goals. Many non-preventable deaths include opportunities for improvement (OFI). In addition, the term “preventable” may imply that a person (or some people) could have prevented the death, but – even when errors occur – that is not always the case in the context of complex medical care. (It is important to note here that CCHCS has introduced OFI into their preventability rubric, which we discuss further under Recommendation 1 below.) Overall, according to Mayo, this shift in language is designed to “increase motivation for practice modifications ... and constantly promote organizational learning.”¹⁰ (See Figure 2 for examples of commonly found OFI in the Mayo system.)

Multi-level, Multi-disciplinary, and Multiple Reviews

Community standard approaches like the Mayo Clinic’s “Mortality Review System” typically comprise an inclusive process running laterally across disciplines and vertically through seniority levels. This approach acknowledges that deaths occur in a complex system and causative factors beyond the proximate cause of death are potentially important for identifying OFI. This inclusivity is leveraged again when the review generates a quality improvement or patient safety initiative that requires the buy-in and participation of multiple actors.

Multiple reviews are required both to corroborate findings and to provide layers of defense against missed opportunities (and, hence, recurring error - as described by the Swiss Cheese Model). A prompt initial review (typically within 24 hours) is required to identify urgent safety issues requiring immediate attention. More thorough subsequent reviews are required to: assess the need to refer cases to an independent peer review process; identify complex system issues; identify all causative factors in a death; corroborate findings; and delineate and disseminate all related quality, safety, and/or clinical education initiatives.

An added, important benefit of this “multi” approach is that reviews are more likely to be timely and low-burden, both critical components in securing staff engagement in the process and avoiding staff burnout.

Figure 2. Using Mortality Review to Identify Opportunities for Improvement



Table 3 Opportunities for improvement as classified by the corporate mortality-review committee

Opportunity for improvement	Number of occurrences N=97
Goals of care were not discussed or the discussion was inadequate	25
Delay in diagnosis or failure to achieve a diagnosis	8
Uncontrolled pain	7
Inappropriate delay in transfer to hospice or long-term care	7
Developed a pressure ulcer in hospital	5
Did not receive a treatment that was indicated	5
Appropriate specialists were not involved in the patient’s care	5
Fall in hospital	4
Delay in surgery that affected patient’s outcome and contributed to death	4
Hospital-acquired infection	3
Had multiple ER visits leading to admission and did not receive appropriate treatment	3
Complications of a procedure	2
Admission to hospital was unnecessary. There was no care given in hospital that the patient was not already receiving at their place of residence	2
Inadequate assessment and consideration of preoperative risk	2
Inadequate monitoring of an unstable patient	2
Error made during surgery	2
Other	11

⁹ Dr. Huddleston has made a compelling case for the Mayo approach to mortality review in a number of high impact forums. An example is available online: <https://careuniversity.com/wp-content/uploads/2017/03/TMC-MRS-Enormous-Payoff.pdf>

¹⁰ Huddleston, et al. Learning from Every Death. *Journal of Patient Safety*. 2014.

“Doing mortality reviews does NOT save lives... ONLY identifying common patterns of process failures... and targeting and prioritizing an improvement initiative... will make a meaningful, measurable difference.”⁹ - Jeanne Huddleston, national expert in mortality review

Action-Oriented

Consistent with the change in focus described above, the goal of mortality review in community integrated health care systems is to identify and act on OFI. In some systems, like the Mayo Clinic, it is expected that most if not all reviews will yield OFI and corresponding action and / or initiatives. To maintain a focus on quality and patient safety, peer review cases that are generated in the course of mortality review are referred out to an independent peer review process and committee (as is also done when adverse and sentinel events occur).

Measuring Success

There is no community standard definition of “high” or “adequate” performance in either mortality review or mortality outcomes. This is also true of health care systems broadly: there is no agreed upon definition of a “high performing” system.¹¹ Rather, each area of clinical practice has performance benchmarks. However, there are community standard approaches to measuring performance in mortality review and in mortality outcomes.

A well performing mortality review system will identify OFI leading to quality improvement, patient safety, and / or clinical education responses (immediate change) or initiatives (longer term) that are then evaluated to determine whether they yielded improvements along relevant clinical benchmarks. Thus, to assess performance of mortality review policy and practice, systems often track the number and quality of OFI identified via mortality review as well as the ultimate outcomes of responses or initiatives that arise from those OFI. Figure 3 describes a sample approach to evaluation from Mayo.

Figure 3. Measuring Review Performance (One Approach)

Time frame	Timing*	Example Metrics
Short-term	After first 100 cases**	- Proportion of reviewed cases with OFIs - Proportion of cases with OFIs NOT identified in normal channels of adverse event detection
Medium-term	After 6 months	- Proportion of OFI's that inform new, or existing, QI initiatives
Long-term	> 1 year**	- Meaningful reduction in primary outcome***

* Clock starts ticking after first meaningful review is completed
 ** Timing is completely dependent upon leadership buy-in and resourcing of QI initiatives to address identified OFIs
 *** This depends upon cohort selected to review (mortalities, sepsis, readmissions, cardiac cases, etc)

¹¹ According to a recently published systematic review funded by AHRQ (*What Defines a High-Performing Health Care Delivery System?*) and published in the Joint Commission Journal on Quality and Patient Safety, available here: [https://www.jointcommissionjournal.com/article/S1553-7250\(16\)30045-9/pdf](https://www.jointcommissionjournal.com/article/S1553-7250(16)30045-9/pdf).

Over time, a well performing mortality review practice should also contribute to improvements in mortality outcomes. This has been borne out by a growing literature showing that effective mortality review can yield measurable improvements in quality that, in turn, can reduce mortality (Figure 4).¹²

Figure 4. Mortality Review Can Improve Quality and Reduce Mortality

Jt Comm J Qual Patient Saf. 2013 Sep;39(9):387-95.

The Mortality Review Committee: a novel and scalable approach to reducing inpatient mortality.

Barbieri JS¹, Fuchs BD, Fishman N, Cutilli CC, Umscheid CA, Kean C, Koshy S, Sullivan PG, Brennan PJ, Kelz RR.

RESULTS: During the committee's first six years of activity, the University HealthSystem Consortium (UHC) mortality index decreased from 1.08 to 0.53, with observed mortality decreasing from 2.45% to 1.62%. Interventions aimed at improving sepsis management implemented between 2007 and 2008 were associated with increases in severe sepsis survival from 40% to 56% and septic shock survival from 42% to 54%. The mortality index for sepsis decreased from 2.45 to 0.88. Efforts aimed at improving delirium management implemented between 2008 and 2009 were associated with an increase in the proportion of patients receiving a "timely" intervention from 18% to 57% and with a twofold increase in the percentage of patients discharged to home.

DISCUSSION: The establishment of a mortality review committee was associated with a significant reduction in the mortality index. Keys to success include interdisciplinary membership, partnerships with local providers, and a multipronged approach to identifying important clinical opportunities and to implementing effective interventions.

However, measuring mortality outcomes is challenging. Individual systems generally set their own benchmarks. One important reason for this is that patient populations differ in ways that are critical to health – including potentially causative factors in mortality - but may be beyond the control of health care systems (e.g. gender, age, socioeconomic background, behavioral health history). The *standardized mortality ratio* is a commonly used measure of mortality outcomes that can account for some of these complexities and is a useful metric for tracking performance *within* a health care system *over time*. The Mayo Clinic, for example, targets a standardized mortality ratio of 0.71 at their hospitals (meaning that for every one hundred expected deaths, 71 patients die). We discuss the standardized mortality ratio further under Recommendation 1 (pages 13-14).

Close the Loop, Celebrate Success

As identifying OFI is now at the center of community standard mortality review, there is a concomitant focus on evaluation and dissemination of the overall process. Approaches to dissemination vary across systems but often include quarterly mortality reports with aggregated findings (from both mortality review and related initiatives) shared across all disciplines and clinical areas.

Typically, however, integrated health care systems take multiple approaches to dissemination to ensure that all staff are aware of and engaged in quality improvement. This includes recognizing staff who have contributed to the identification of OFI and/or the implementation or evaluation of corresponding initiatives. Evidence shows that health care providers respond positively to recognition and are more engaged in care when working in a culture that prioritizes quality improvement.¹³ In fact, AHRQ identifies these as among a number of important factors in cultivating and supporting quality improvement leaders.



¹² John S. Barbieri, Barry D. Fuchs, et al. The Mortality Review Committee: A Novel and Scalable Approach to Reducing Inpatient Mortality. The Joint Commission Journal on Quality and Patient Safety, Volume 39, Issue 9, 2013, Pages 387-AP9.

¹³ For example, Karen Luxford, Dana Gelb Safran, Tom Delbanco; Promoting patient-centered care: a qualitative study of facilitators and barriers in healthcare organizations with a reputation for improving the patient experience, *International Journal for Quality in Health Care*, Volume 23, Issue 5, 1 October 2011, Pages 510–515, <https://doi.org/10.1093/intqhc/mzr024>

III. CCHCS MORTALITY REVIEW

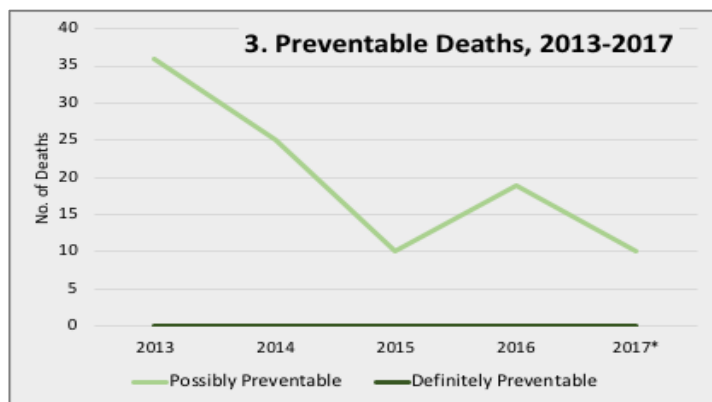
Brief Overview of Deaths in the CDCR Population, 2013-2017

From 2013 through 2017, the CDCR recorded 1,762 deaths, or 352 annual deaths on average (Figure 1).¹⁴ The proportion of deaths due to illness over this period ranged from 74% in 2017 to 86% in 2014 (79% on average).

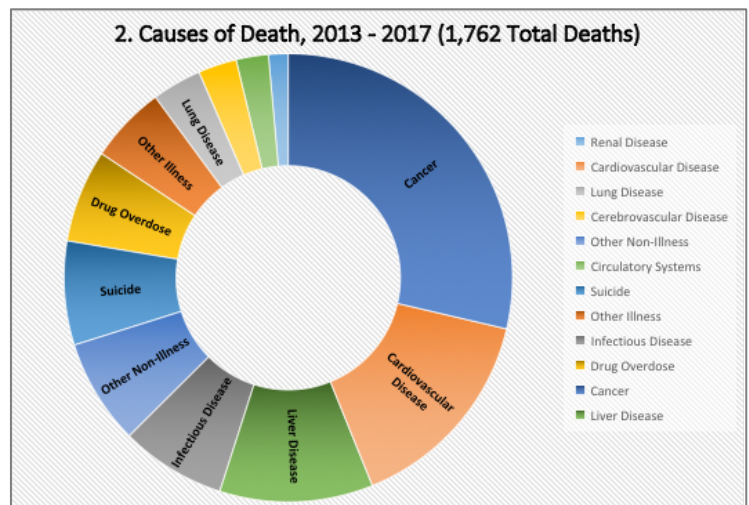
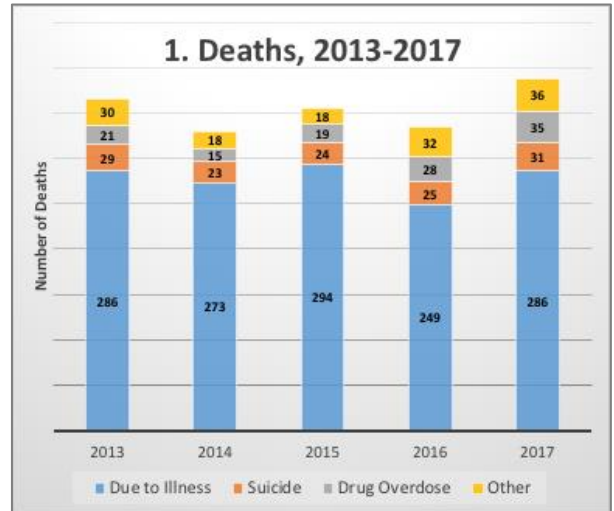
The three leading causes of death (COD) over that time were cancer, cardiovascular disease, and liver disease, accounting for 55% of all deaths. Infectious disease, drug overdose, and suicide also *each* produced more than 100 deaths over the five years, together accounting for 22% of all deaths (Figure 2).

According to current CCHCS mortality review policy and practice (discussed in detail in the following section), every death is investigated and determined to be not preventable, possibly preventable, or definitely preventable. From 2013-2017, no deaths were found to be definitely preventable. (According to the “Analysis of 2016 CCHCS Death Reviews,” there were 16 definitely preventable deaths in the five years prior (2008-2012), ranging from 1 to 5 per year.¹⁵)

From 2013-2017, one hundred deaths were assessed as possibly preventable: 5.7% of all deaths and 7.2% of deaths due to medical illness (excluding suicide, drug overdose, and other non-medical causes). The number of possibly preventable deaths ranged from 10 in 2015 to 36 in 2013 (Figure 3). (The number of possibly preventable deaths in 2017 was 10 according to the available data; however, this number does not include 80 deaths (21%) from that year for which a preventability determination has not yet been recorded.)



*2017 counts do not include 80 deaths not assessed at time of these analyses



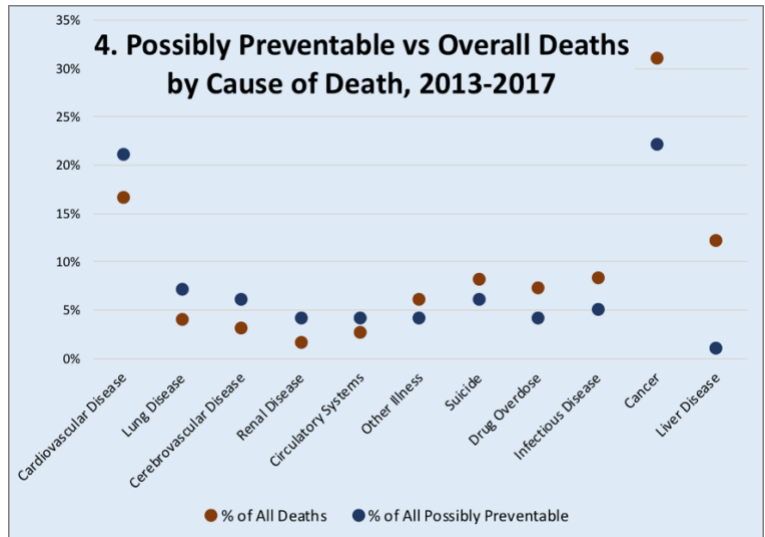
The annual average of 20 possibly preventable deaths from 2013-2017 is substantially reduced from an annual average of 50 such deaths recorded from 2008-2012.

Over the past 5 years, possibly preventable deaths were most disproportionately prevalent among deaths due to cardiovascular disease (21% of preventable deaths versus 16.5% of all deaths excluding homicide and accidents), renal disease (4% versus 1.5%), and cerebrovascular disease (6% versus 3%) (Figure 4).

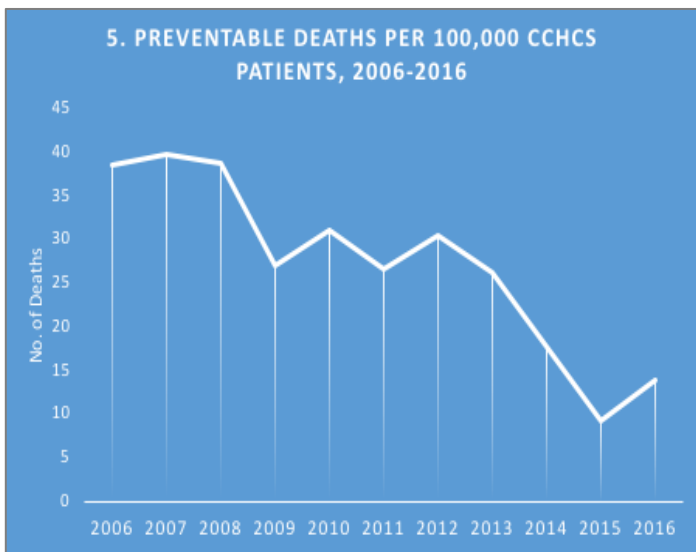
¹⁴ All data in this section from a source provided by CPR describing each patient death over the 5 year period by date, cause of death, category of death, and outcome (preventable, possibly preventable, definitely preventable), except where otherwise noted. These data did not permit in-depth analyses of deaths by gender, race/ethnicity, facility, or other factors.

¹⁵ See page 10: <https://cchcs.ca.gov/wp-content/uploads/sites/60/2017/11/2016-Inmate-Death-Reviews.pdf>.

Preventable deaths were most disproportionately *under*-represented in liver disease (1% of preventable deaths versus 12% of all deaths excluding homicide and accident) and cancer (22% versus 31%). However, cancer and liver disease still accounted for a substantial proportion (23%) of all possibly preventable deaths. While the majority of possibly preventable deaths occurred in deaths related to medical illness, one in ten (10%) were in cases of drug overdose or suicide (Figure 4).



Overall, the reduction in preventable deaths among CCHCS patients over time using a consistent system for detection suggests a positive quality improvement trend. However, preventable deaths remain persistent across a number of disease categories, as well as in non-illness but health-related areas like suicide and drug overdose. In addition, this brief overview of deaths over a five-year period highlights CCHCS’ reliance on “preventability” as its primary metric for assessing quality improvement in the context of mortality. As discussed in the previous section, that narrow focus is increasingly at odds with evolving community standard practice in mortality review and leaves open the likelihood that quality improvement opportunities may be under-detected in the current system. Each of these observations points to an opportunity to further optimize mortality review for continued quality improvement. In the next section, we describe current CCHCS mortality review policy and practice in greater detail and identify opportunities for optimization.



Mortality Review Policy and Practice at CCHCS

Through its early years, the California Prison Health Care Receivership (CPR) undertook a targeted and successful effort to identify and remove grossly unqualified providers from practice in CCHCS. In this context, mortality review in these years focused predominantly on identifying poorly performing clinicians and referring them into the peer review process. In 2006 and 2007, 70 CDCR physicians were reported to the medical board.¹⁶ CCHCS saw a subsequent corresponding decline in its preventable death rate (Figure 5, 2006-2011).¹⁷

In 2011-2012, CPR endeavored to re-balance CCHCS mortality review policy to focus on identifying

opportunities to reduce the incidence of preventable deaths in CCHCS while continuing to refer clinicians for peer review as needed. That shift in emphasis again precipitated a decline in preventable deaths (Figure 5, 2012-2016). In recent years, CPR has continued to integrate its mortality review practice into CCHCS’s larger quality

¹⁶ Terry Hill, MD offers a detailed account of the successful peer review effort in the CDCR in these years in a [recent article](#) titled “A case for revisiting peer review: Implications for professional self-regulation and quality improvement.” The brief summary of that period included here relies on that article in addition to stakeholder accounts and perspectives.

¹⁷ Data from the Analysis of 2016 CCHCS Death Reviews, see page 22: <https://cchcs.ca.gov/wp-content/uploads/sites/60/2017/11/2016-Inmate-Death-Reviews.pdf>.

improvement initiative. According to the most recent annual analysis, CCHCS mortality review is now “incorporated into the overall strategy of improving the quality of healthcare... [as a] systematic process of identifying lapses in healthcare [with the] overall goal of preventing unnecessary deaths.”¹⁸ To meet this goal, CCHCS reviews 100% of deaths using a process aimed at determining four outcomes:

1. Cause of Death
2. Preventability
3. Lapses in care
4. Extreme departures in care

Key terms for understanding these outcomes are defined in annual mortality review reporting:

- *Care lapse*: any departure from the standard of care posing a risk to patient safety (Box 2).
- *Extreme departure from care*: a care lapse which no reasonable and competent provider would have provided under the same or similar circumstance.
- *Not preventable*: a death that could not have been prevented or significantly delayed despite identified opportunities for improvement in the medical care.
- *Possibly preventable*: a death wherein opportunities for clinical intervention or lapses related to care delivery were identified that MIGHT have prevented or significantly delayed the patient’s death.
- *Preventable*: a death wherein opportunities for clinical intervention or lapses related to care delivery were identified that WOULD have prevented or significantly delayed the patient’s death.

Box 2. CCHCS Taxonomies of Care Lapses

1. Failure to manage important symptoms and signs (clinical “red flags”)
2. Failure to follow clinical care guides, evidence-based guidelines
3. Delay in access to the appropriate level of care resulting in harm
4. Failure to appropriately respond to abnormal test results
5. Communication failure b/t providers, especially care transitions
6. Failure to assume responsibility for care - lack of a primary care model
7. Iatrogenic injury resulting from a surgery or procedure
8. Medication prescribing error
9. Medication delivery error, including delay
10. Practicing outside the scope of one’s professional capability
11. Failure to adequately supervise a midlevel practitioner
12. Patient communication failure
13. Patient non-adherence
14. Delay or failure in emergency response

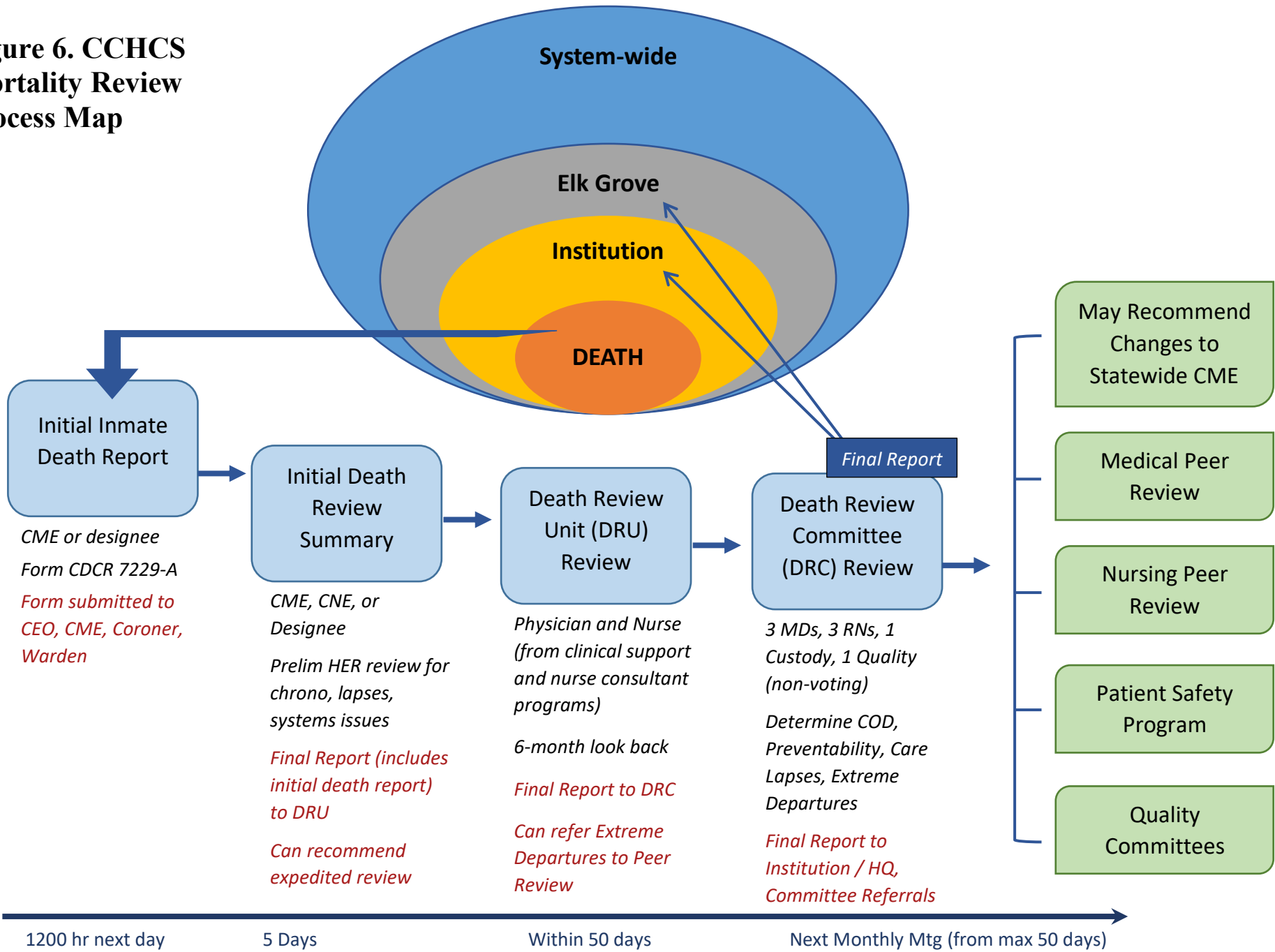
Sub-standard quality of care, typically identified in the context of a preventable death, may result in referral to any number of committees aimed at preventing unnecessary deaths in the future.¹⁹ Mortality review is also used to measure trends in preventable deaths over time. For each death, a final Mortality Review Committee report is issued to headquarters and shared back to institutional leadership at the facility where the death occurred. [Figure 6](#) provides an overview of CCHCS mortality review policy and practice²⁰ as well as potential outcomes, including targeted time frames for completion.

¹⁸ 2016 CCHCS Death Reviews report, page 1.

¹⁹ CCHCS mortality review policy has the secondary goal of meeting all Department of Justice (DOJ) reporting requirements. It is our assessment, based on a review of all relevant DOJ requirements, that the current policy exceeds these requirements. As a result, we will not discuss DOJ requirements in this report.

²⁰ Suicides are reviewed by the Suicide Prevention and Response Team (SPRFIT) rather than the standard Death Review Committee.

Figure 6. CCHCS Mortality Review Process Map



Overall, current CCHCS mortality review policy and practice has a number of critical strengths, representing an excellent foundation on which to continue to integrate mortality review into overall quality improvement. Specifically, the current system provides pathways for connecting mortality review to quality improvement and patient safety, which is foundational to community standard mortality review across all major integrated health care systems included as benchmarks in these analyses.²¹ CCHCS's use of multi-level, multidisciplinary, and multilayer review is also consistent with community standard practice in these systems. However, in the course of our analyses, we identified several opportunities to further optimize mortality review in the context of evolving community standard policy and practice.

In the following section, we offer recommendations intended to produce a mortality review system that is consistent with CPR's current foundation and an important complement to CCHCS's broader quality improvement and patient safety programs.

²¹ For this project mortality review systems at the Veterans Affairs Health System, Kaiser, UCSF, SFGH, and the Mayo Clinic were analyzed.

IV. RECOMMENDATIONS TO OPTIMIZE CCHCS MORTALITY REVIEW

Our primary recommendations reflect and extend the many steps California Prison Health Care Receivership Corporation (CPR) has already taken in moving its mortality review policy from a person-centered to a systems approach, consistent with standard practice in community integrated health care systems (as described in Section II). These recommendations are intended to provide a roadmap for continuing that evolution and ultimately realizing a mortality review policy that is wholly integrated with CCHCS’s quality improvement programs.

1. Put quality improvement at the center of the process

CCHCS has updated its mortality review policy in recent years to focus increasingly on quality improvement, for example changing its definition of “not preventable” to include “opportunities for improvement.” This suggests that CCHCS mortality reviews should generate patient safety and/or quality improvement responses *regardless of preventability*. But according to our conversations with stakeholders and our independent review of recent deaths, reviewers continue to focus disproportionately – and narrowly - on searching for evidence of clinical care lapses in the context of potential preventability.

As has been the case in each of the integrated health care systems we reviewed for this project, the shift from a person-centered approach to a systems approach requires a significant shift in culture. CCHCS has a number of opportunities to continue developing its mortality review policy so that it reflects and supports the broader culture of quality improvement. Because “culture” is overarching, each one of our recommendations bears on this essential challenge. Here, in Recommendation 1, we focus specifically on policy language, measures of success, and reconciling the need for strong peer review processes with an evolving mortality review policy.

1a. Transition from “preventability” to “expected / unexpected with or without opportunities for improvement”

Tension between the goals of (a) improving quality and (b) reducing preventable deaths is ongoing and likely undermines quality improvement. For example, though the “opportunities for improvement” (OFI) language has been incorporated into the existing mortality review policy, it is preceded in the most recent annual Analysis of CCHCS Death Reviews by language defining mortality review’s first function as “identifying individual providers for further peer review” and is followed by the conclusion that “the major purpose of the death review process is to reduce the occurrence of preventable death.”²² (Box 3 shows additional examples of this tension.)

Box 3. Putting Preventability Before Quality

The quality improvement motive in CCHCS mortality review is intended to operate independently of preventability. Yet:

- Care lapses are defined as “common reasons for substandard health care that might result in *preventable* deaths”
- Mortality review forms (reviewed for this report) continue to cue reviewers to focus on “significant lapses related to patient care that may have *prevented or significantly delayed* the death”
- Mortality review policy (see Figure 6) allows *extreme departures from care* to trigger expedited referral to peer review committees but does not appear to allow (or encourage) expedited referral for quality improvement or patient safety
- The primary objectives of the Death Review Committee remain backward looking - determining cause of death, identifying care lapses, and assessing preventability – without a forward-looking focus on quality improvement.

²² Analysis of 2016 CCHCS Death Reviews, page 2.

As preventability remains prominent in mortality review policy, reviewers – who are also providers themselves – may be biased against identifying opportunities for improvement that might point to past preventability. The focus on preventability *alongside* quality improvement may be particularly difficult in CCHCS because of CPR’s past success using mortality review to accelerate much-needed peer review. (An appropriate and critical use of mortality review in that historical context.) We heard this in conversations with clinical staff, some of whom continue to associate mortality review closely with peer review (see quote).

“Staff needs training so reviews identify problems with the intent of finding solutions rather than punishment...It has become a ‘gotcha’ process”

- CCHCS Stakeholder

In addition, we conducted an independent review of 7 deaths – 4 randomly selected and 3 referred to us by independent experts – without considering whether potential quality concerns bore on preventability (or determining preventability at all). We found approximately 4 times the number of OFI and/or areas for further inquiry than were identified in mortality review records for those same cases. While the focus on preventability alone does not likely account for the entirety of this discrepancy, our conversations with stakeholders and our review of completed mortality reviews lead us to believe that replacing “preventability”

with “expected / unexpected with or without opportunities for improvement” will improve the detection of OFI by focusing policy more squarely on preventing *future* deaths and other adverse outcomes (“putting preventability in the future”).

1b. Implement appropriate quality measures to assess mortality review and the mortality outcome

Tracking trends in “preventable” deaths to measure quality as is currently done is flawed in two critical ways. First, it assumes a significant correlation between preventability and OFI that is not borne out in the literature.²³ While all preventable deaths indicate OFI, many if not most not-preventable deaths do also. (The Mayo Clinic, for example, aims and expects to identify OFI in every review.) Second, using “preventability” as a measure of mortality outcomes (by aiming for a decline in preventable deaths) risks imprecision because the concept is vague (e.g. what conclusions regarding quality should be drawn from the rise in preventable deaths from 10 in 2015 to 18 in 2016?) and, in many cases, subjective. A vague, subjective measure is not good for indicating specific OFI or measuring quality improvement but it is also susceptible to bad faith manipulations, for example to mask OFI at an institution that is already under scrutiny or external evaluation.

Most community integrated health care systems solve these problems by implementing, first, a more *holistic* approach to measuring performance of mortality review and, second, a more *specific* approach to measuring mortality outcomes. The approach to measuring success that we recommend CCHCS adopt is modeled by the Mayo Clinic (see “Figure 3 Measuring Review Performance,” page 5). The underlying concept is that mortality review should produce specific responses and/or initiatives that, in turn, yield measurable improvements on established indicators in relevant clinical areas.

The proposed evaluation process comprises three components:

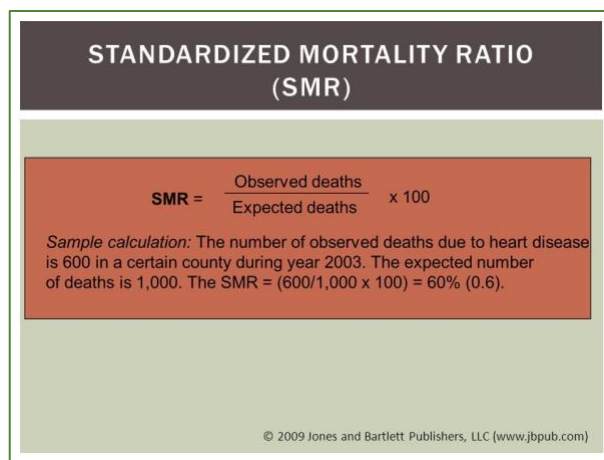
1. Track the number of OFI identified by mortality review and the proportion of cases that produce OFI
2. Track the proportion of OFI that generate new quality, safety, and/or educational responses or initiatives

²³ Huddlestone JM, et al. Learning from every death. Journal of patient safety. 2014 Mar 1;10(1):6-12.

3. Track outcomes of the specific responses and initiatives that arise (and credit results to mortality review)

This holistic approach requires some additional supports that we discuss later (e.g. disseminate results system-wide, recognize mortality review staff when their OFI results in an effective initiative). With those supports in place, this process provides a metric for evaluating mortality review policy and practice (by individual death and over time) and creates an important bulwark to the broader culture shift needed to better integrate mortality review into quality improvement. Disseminating these results broadly aims to identify mortality review, in the eyes of staff, with quality improvement and with opportunities for recognition and leadership.

To better understand how patient safety and quality improvement efforts (some spurred by mortality reviews) affect mortality outcomes specifically, many hospitals now use the “standardized mortality ratio” (SMR): a comparison of the observed death rate to the expected death rate for a particular disease and population. The SMR can be used to set quality targets and track performance over time without relying on subjective and often variable assessments of “preventability.” A standardized mortality ratio score of 1 indicates a level of observed mortality equal to what would be expected given the patient population. A score of less than 1 indicates fewer deaths than expected. The Mayo Clinic targets a 0.71 SMR in its hospitals and in the third quarter of 2017 achieved that ratio or lower in 7 out of 9 facilities.²⁴



Because the SMR can account for population characteristics that are beyond a system’s control - like age, gender, and race – it can be used to compare performance in different settings. However, we offer caution that there is a considerable literature showing that it is difficult to “standardize” case mix accurately for the purpose of comparison between integrated health care systems serving distinct populations.²⁵ Further, because the CDCR’s patient population and the correctional health care setting are so unique, the SMR is probably best used by CCHCS as an internal measure of performance over time (and, *potentially*, between institutions). In addition, while it is beyond the scope of this report to identify a rigorous approach to establishing “expected mortality” rates in the CDCR population, we expect that CCHCS will likely have to develop its own “expected mortality” benchmarks in order to implement SMR as a quality measure. (To our knowledge, “expected mortality” data for correctional populations does not exist and the use of general population data for this purpose is likely inappropriate.) Such an effort would be aided by CCHCS’ unparalleled EHR and related data systems. Overall, subjective “preventability” does not approximate SMR. Rather, SMR would offer CCHCS an improved internal quality measure for mortality outcomes. However, additional investigation, potentially including the development of expected mortality benchmarks, is needed before implementing this measure.

1c. Separate Peer Review from Mortality Review

As CCHCS implements the quality measures described above, there is an important opportunity to similarly re-frame peer review. **Peer review should remain an important potential outcome of the mortality review process, and reviewers should be alert to the potential need for - and supported in making – peer review**

²⁴ The Mayo Clinic, Quality Measures. Available from: <https://www.mayoclinic.org/about-mayo-clinic/quality/quality-measures/mortality-ratio>

²⁵ For example, see: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3621877/>; and <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2709867/>

referrals. However, peer review policy and practice (which we are evaluating currently under the “Maintaining a Qualified Workforce” project) should emphasize **multiple potential channels into peer review**. Similarly, mortality review policy should present peer review referral as separate from the primary goal of identifying OFI. Accordingly, we recommend:

1. Issuing an updated independent peer review policy that places the mortality review channel in appropriate context, as one channel for referral into the separate peer review system (detailed in our forthcoming “Quality Workforce” reporting),
2. Making changes to language throughout the mortality review policy to emphasize quality improvement over peer review (e.g., as recommended re: preventability above), and
3. Allowing the Death Review Unit to make expedited referral to any committee.

As a coda to this recommendation, we note that a focus on peer review (and, by extension, preventability) in mortality review policy has been appropriate for CCHCS in the past. We discuss this important historical context, describe why it is now an appropriate time to make the proposed changes, and respond to a recently published study on this topic using CDCR data²⁶ in Appendix 1.)

1d. Redefine Existing Committees to Drive Quality Improvement

Finally, we recommend, first, reorganizing the current roster of committees to which the Death Review Committee can refer findings and, second, making expectations for referrals explicit (see Figure 8, page 21).

Presently, OFI are referred to one or more of the following committees:

- Medical Peer Review
- Nursing Peer Review
- Patient Safety Program for Sentinel Events
- Quality Committees

We recommend reorganizing these committees – in mortality review policy and in relevant forms and/or reports – to emphasize quality improvement, patient safety, and clinical education. In addition, we recommend establishing a new committee of expert practitioners in the care of patients with serious or life limiting illness (“end of life care”) and in medical parole and recall of sentence (“compassionate release”) policies and implementation. *All expected* deaths should be referred to this committee for assessment of OFI. The Mortality Review Committee should also consider referring relevant unexpected deaths to this committee as needed.

We recommend making the following committees available for referral (most of which currently exist but can be reorganized and newly emphasized in order to indicated a focus on quality, safety, and education):

- (1) Clinical Training and CME Committee (*every death*)
- (2) Quality Improvement Committee(s) (*target referral in most deaths*)
- (3) Patient Safety Committee (*as needed, frequently*)
- (4) End of Life Care, Medical Parole, Recall of Sentence Committee (*all expected deaths, others as needed*)
- (5) Peer Review Committees (*rarely*)

²⁶ Hill TE, Martelli PF, Kuo JH. “A case for revisiting peer review: Implications for professional self-regulation and quality improvement.” PLoS ONE, 2018;13(6): e019961. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29953510>.

Committees should be included on each review form to drive appropriate referrals. We further recommend that Committee reports and initiatives (i.e. action plans) and their outcomes be summarized in regular “Mortality Case Reports” that are disseminated system-wide.

2. Emphasize *action*, system-wide when appropriate

Based on our review of relevant CCHCS policies and annual mortality reports, our conversations with clinicians and stakeholders, and our analysis of a small sample of recently completed mortality reviews, we conclude that current mortality review practice too often fails to generate action. For example, while the current process (Figure 6) collects a wealth of patient and clinical encounter data, calls to action embedded in the policy are limited to:

- Institutional leadership may recommend expedited review
- The Death Review Unit may refer cases to a peer review committee ahead of Death Review Committee
- The Death Review Committee may recommend (via headquarters) changes to care guides / protocols and/or refer findings to peer review, patient safety, quality improvement committees
- A final report is issued to headquarters and the institution at which the death occurred

These activities have generated important action in the past, including playing a central role in accelerating peer review at a time of critical need. However, based on our assessment, these provisions too often result in a predominantly descriptive exercise, reflecting a process that, by design, culminates in a written report.

Conversely, the six core practices for mortality review recommended by the federal Agency for Healthcare Research and Quality (AHRQ)²⁷ conclude with these two:

- Engage in action planning
- Evaluate effectiveness of actions

“The question is: does the review get communicated back to the facility and translated into a corrective action plan?”

- CCHCS Stakeholder

This action-oriented approach is foundational to mortality review in each of the community integrated health care systems we reviewed. For example, UCSF Medical Center’s recently revised mortality review process enshrines an action-oriented approach in the following requirements:

- Initial reviewers (48-72 hours from death) complete a form asking them to identify any immediate patient safety or other action that should be taken
- Secondary review by quality / safety / clinical experts asks them to evaluate the need for further action
- If action is required, a dissemination, coordination, and monitoring plan is developed to ensure that action items are translated into appropriate quality and / or patient safety initiatives.
- Results of those initiatives are carefully evaluated and disseminated system wide (and the mortality review team whose findings identified the OFI is recognized), creating a general expectation that mortality reviews produce *actions* beyond their core “review” function.

²⁷ AHRQ “Selected Best Practices and Recommendations for Improvement.” Available from: https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/hospital/qitoolkit/combined/d4n_combo_iqi-mortalityreview-bestpractices.pdf

Community integrated health systems view the dissemination of mortality review findings as essential for multiple reasons. First, an open, transparent, and widely disseminated process ensures that mortality review is understood as an important component of quality improvement (rather than a “closed door” peer review process). Second, wide dissemination ensures that the quality improvement, patient safety, and/or clinical education efforts that arise from mortality review are incorporated throughout the system.

Our review of CCHCS policy and practice suggests that when action is generated, it could often be more broadly applied. For example, findings and reports are typically channeled back to the institution (and sometimes regional office) at which the death occurred. We reviewed one case in which CCHCS mortality reviewers correctly identified an opportunity to improve anti-coagulant prescribing practices for patients at risk of bleeding and referred the case back to the institution at which the death occurred and its regional director.

“They don’t seem to do death reviews to identify problems and address them effectively.”

- CCHCS Stakeholder

These are appropriate and timely steps needed to mitigate immediate risk at a specific institution. However, it is also possible, if not likely, that other institutions and/or providers system-wide might have benefited from some combination of related clinical education and patient safety intervention. Yet based on the

records we were able to review for this case, these efforts stopped at the regional level. In this case, CCHCS policy worked excellently, yielded a strong and timely result – but missed an important opportunity to extend its clinical education and patient safety efforts system-wide.

In addition, it is our understanding that when mortality review produces a system-wide initiative (for example, through the statewide CME) those efforts are then decoupled from mortality review (and issued as stand-alone directives). To the extent this is true, this represents a missed opportunity to fold mortality review into CCHCS quality improvement culture and may partly explain why some clinical staff continue to view mortality review as essentially a peer review exercise (see quotes above).

Some common practices in mortality review among community integrated health care systems that we recommend CCHCS adopt in order to create a more action-oriented policy (Figure 8, page 21) include:

- (a) Require preliminary reviewers to identify any needed immediate patient safety actions;
- (b) Require secondary reviewers to identify any further quality improvement, patient safety, or clinical education actions needed and allow secondary reviewers to request expedited referral of urgent cases to *any* committee (not just peer review);
- (c) Require that all products and reports incorporate action and evaluation planning (or explicitly conclude that no action is required);
- (d) Disseminate action and evaluation planning – and relevant mortality review findings – system-wide.
- (e) “Close the loop”: share the results of quality, patient safety, and clinical education initiatives arising from mortality review through all staff levels system-wide, connecting those efforts to the mortality review process.

2a. Redraw Forms to Motivate Analysis (versus Description)

Based on our review of a sample of recent mortality reviews and conversations with stakeholders, we observed that the typical CCHCS mortality review is deeply detailed and descriptive – sometimes at the expense of

clarity and useful analysis. This may be, in part, a function of the forms, which ask reviewers to recount clinical care encounters and important chronologies. In some cases, we found that this approach resulted in little more than a restatement of the electronic health record (see Figure 7).

Every community integrated health care system that we reviewed for this project emphasized the importance of a multidisciplinary practice in effective mortality review, in order to incorporate *analysis and insight* from diverse perspectives. CCHCS policy is strong in drawing in multidisciplinary perspectives, but multidisciplinary participation does not always translate into multidisciplinary analysis and insight.

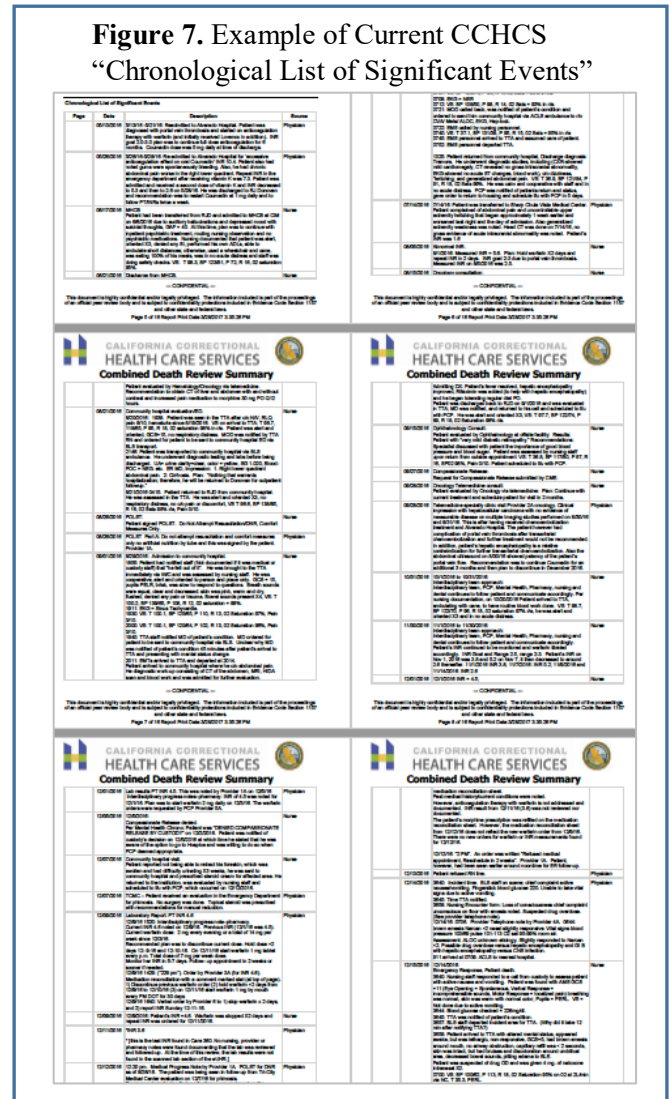
To resolve this issue, and produce more concise and analytic primary and secondary reviews, we recommend updating current forms to better guide reviewers to reflect, identify and dilute non-critical information, and exercise critical thinking in their reviews. See Appendix 2 for preliminary drafts of recommended forms. (If CCHCS accepts this recommendation and would like to implement new forms, we recommend allowing our team to work more closely with relevant clinical leaders and mortality review participants to finalize forms specific to CCHCS’s needs, constraints, strengths, weaknesses, and staff preferences.)

2b. Streamline the Process

In addition to recommended changes to the mortality review forms described above, we recommend eliminating the Initial Death Review Summary (by CME, CNE, or designee within 5 days) review stage. Based on our conversations with stakeholders and our review of community integrated health care systems, we concluded that this step is redundant. However, because input from CMEs, CNEs, and/or their designees is often critical, we allow multiple opportunities to include these perspectives in our proposed process and reaffirm the critical need for an immediate (within 24 hours) review that can potentially result in immediate action to address urgent patient safety issues (see Figure 8, page 21).

2c. Require Timely Review

CCHCS has an established timeline for mortality review that is consistent with community standard practice in other integrated health care systems. However, in our small sample mortality review, half of the reviews exceeded the targeted timeframe and all of those that did not required more than 80% of the time allotment to complete (more than 50 out of 60 days). Timeliness in mortality review is critical for quality improvement, patient safety, and staff engagement / trust in leadership. A time-consuming process may also indicate unnecessary work burden on reviewers and suggest an opportunity to streamline, in turn creating a better experience for staff engaged in the process. However, because we relied on such a small sample to reach this conclusion, we recommend that CCHCS consider a more in-depth investigation of the timeliness of its mortality review practice and address any opportunities to expedite the process. Indeed, the timeliness of mortality review should be an ongoing, reported quality metric in the CCHCS system.



2d. Ensure Reviewers are Adequately Trained and Evaluated

A successful mortality review system that is focused on quality improvement and identifies critical actions for local and system-wide implementation requires appropriate and adequate training for physician and nurse reviewers. Such reviewer training is an essential component of effective mortality review programs in community integrated health care systems. Most notably, the Mayo Clinic included a training program in the launch of its Mortality Review System at each of its hospitals. Those trainings included (but were not necessarily limited to): an overview of the new system and its goals, training in conducting reviews via webinar, and on-site training for reviewers using group case discussion. The Mayo Clinic rolled out their new system to multiple facilities over time and were able to leverage internal expertise for training by identifying physician and nurse “super-users” to conduct webinars and on-site trainings. These super-users also conduct ongoing evaluation and training by leading regular group case discussions to review opportunities for improvement described by reviewers, identify opportunities for improvement that reviewers missed, and reflect on lessons learned to inform future reviews. A useful overview of the Mayo Clinic approach to training and evaluation for reviewers is available online.²⁸ That resource also includes ideas for generating staff buy-in for new approaches to system / quality improvement.

3. Ensure a culture of ongoing learning

The systems approach to mortality review that has emerged in community integrated health systems over recent years puts quality improvement at the center of the process and, in doing so, places mortality review at the center of complementary efforts to create cultures of ongoing learning. Today’s emphasis on continuing medical education (CME) for clinicians of all disciplines grew up alongside the revolution in patient safety and quality improvement that has happened over the past twenty years. If quality and patient safety are to steadily improve, clinicians must always be learning.

As CME has advanced, there is growing evidence that ongoing learning is most effective for clinicians when it is continuous (rather than sporadic), interactive with ongoing clinical performance, learner-driven and reflective (giving learners the opportunity to reflect on their own needs and performance), and connected to measurable clinical outcomes that allow learners to see the fruits of their learning labor.²⁹ This knowledge of what works in CME has led integrated health systems to encourage continuous learning and incorporate opportunities for learning into relevant quality improvement programs and initiatives, including mortality review.

The most common mechanism for continuous learning in mortality review is the “morbidity and mortality conference” (M&M). Specific M&M design varies across systems but its core purpose is universal: to provide a moderated forum for the discussion of difficult cases with the goal of asserting institutional accountability for high quality care, learning from errors, and disseminating new insights into patient care.³⁰ M&M is a multidisciplinary and inclusive process whose explicit goal is to have system-wide impact.

AHRQ developed a model of M&M explicitly linked to mortality review, by which a case with system-wide implications is selected for presentation at a monthly M&M meeting with physician, nursing, pharmacy, and other clinical participants. A senior physician moderates the meeting, which includes audience input. At the

²⁸ See slide 54 out of 61 of Dr. Jeanne Huddleston’s talk titled “Mayo Clinic Mortality Reviews: Next Generation Patient Safety” available, as of this writing, here: <https://careuniversity.com/wp-content/uploads/2017/03/TMC-MRS-Next-Generation-Pt-Safety.pdf>.

²⁹ For an example of this literature, see: Mazmanian PE, Davis DA. Continuing Medical Education and Physician as Learner. JAMA, September 4, 2002—Vol 288, No. 9, pages 1057-1060.

³⁰ For example, see Orlander J. The Morbidity and Mortality Conference: The delicate nature of learning from error. Academic Medicine. 2002, 77(10): 1101-1006.

conclusion of the meeting, work groups are responsible for developing system-wide initiatives in response to each case. AHRQ's study of the process found that it is an effective tool for driving quality improvement and clinical education opportunities as well as for engaging a broad cross-section of clinical staff in discussions of error-related quality improvement.³¹

We recommend implementing a system of quarterly M&M in each of the four CCHCS regions. Because mortality review policy will focus primarily on developing quality improvement and patient safety initiatives, we recommend that M&M also focus on the development of clinical education initiatives. We further recommend a regional approach to motivate collaboration, competition, and learning across institutions and regions (all M&M proceedings and findings should be disseminated system-wide).

In addition to M&M, we recommend the following policies and procedures to further engage clinical staff in mortality review and support a culture of ongoing learning (see Figure 9, page 22):

- (a) Allow any staff person (including custody) to complete (or “tag” another person to complete) a basic, anonymous mortality review in the first 48 hours after a death aimed narrowly at identifying urgent safety and quality concerns; and
- (b) Implement a “quality star” system to recognize reviewers, committee members, M&M participants and others whose input leads to the development or successful implementation of high-yield initiatives. We recommend this system be implemented at every institution and in every region – and recognition be disseminated system wide.

³¹ Deis JN, et al. Transforming the Morbidity and Mortality Conference into an Instrument for Systemwide learning. AHRQ. Available from: https://www.ahrq.gov/downloads/pub/advances2/vol2/advances-deis_82.pdf.

Figure 8. Proposed CCHCS Mortality Review Process Map: Putting Quality First and Emphasizing Action (Recs 1 & 2)

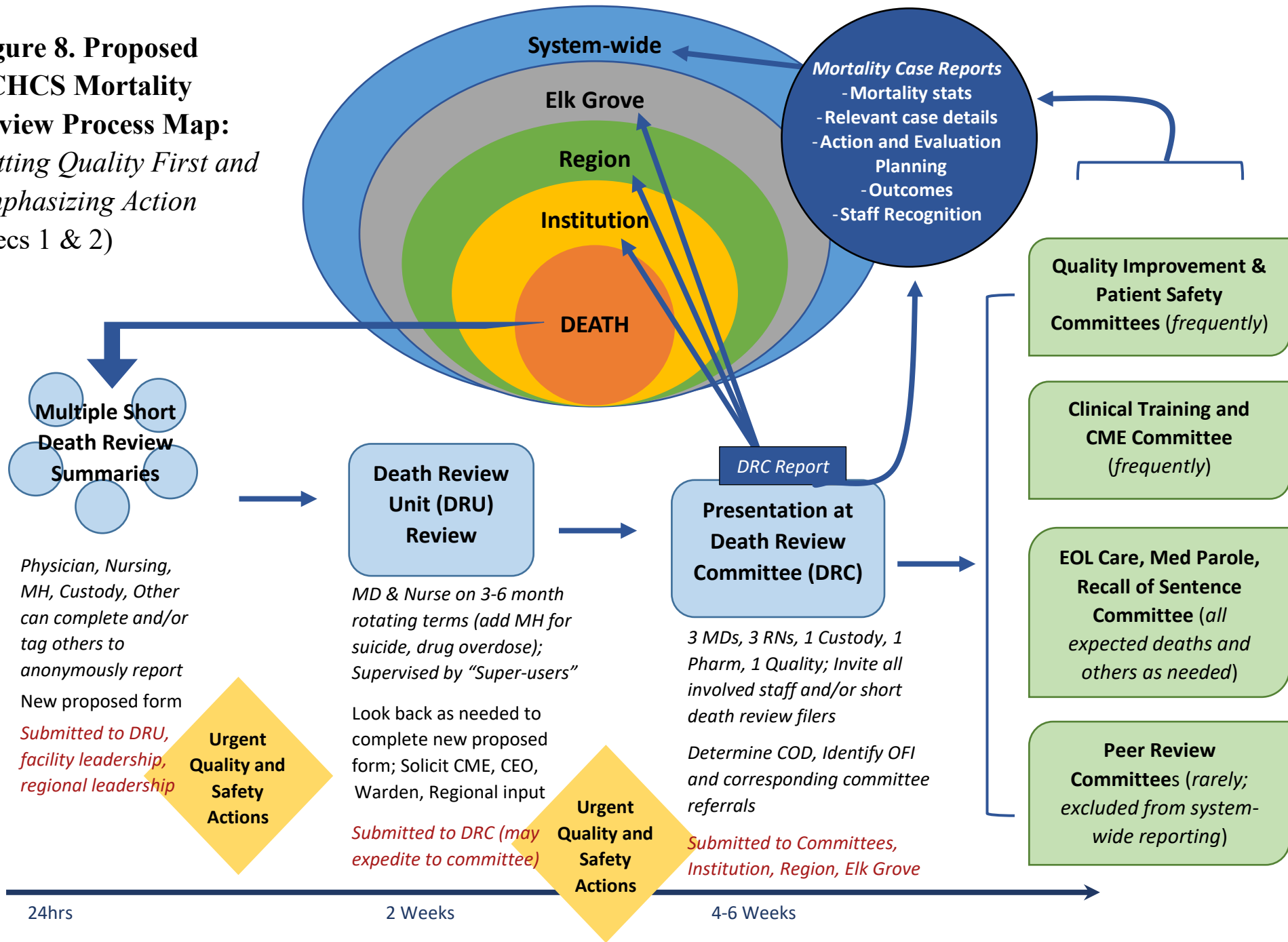
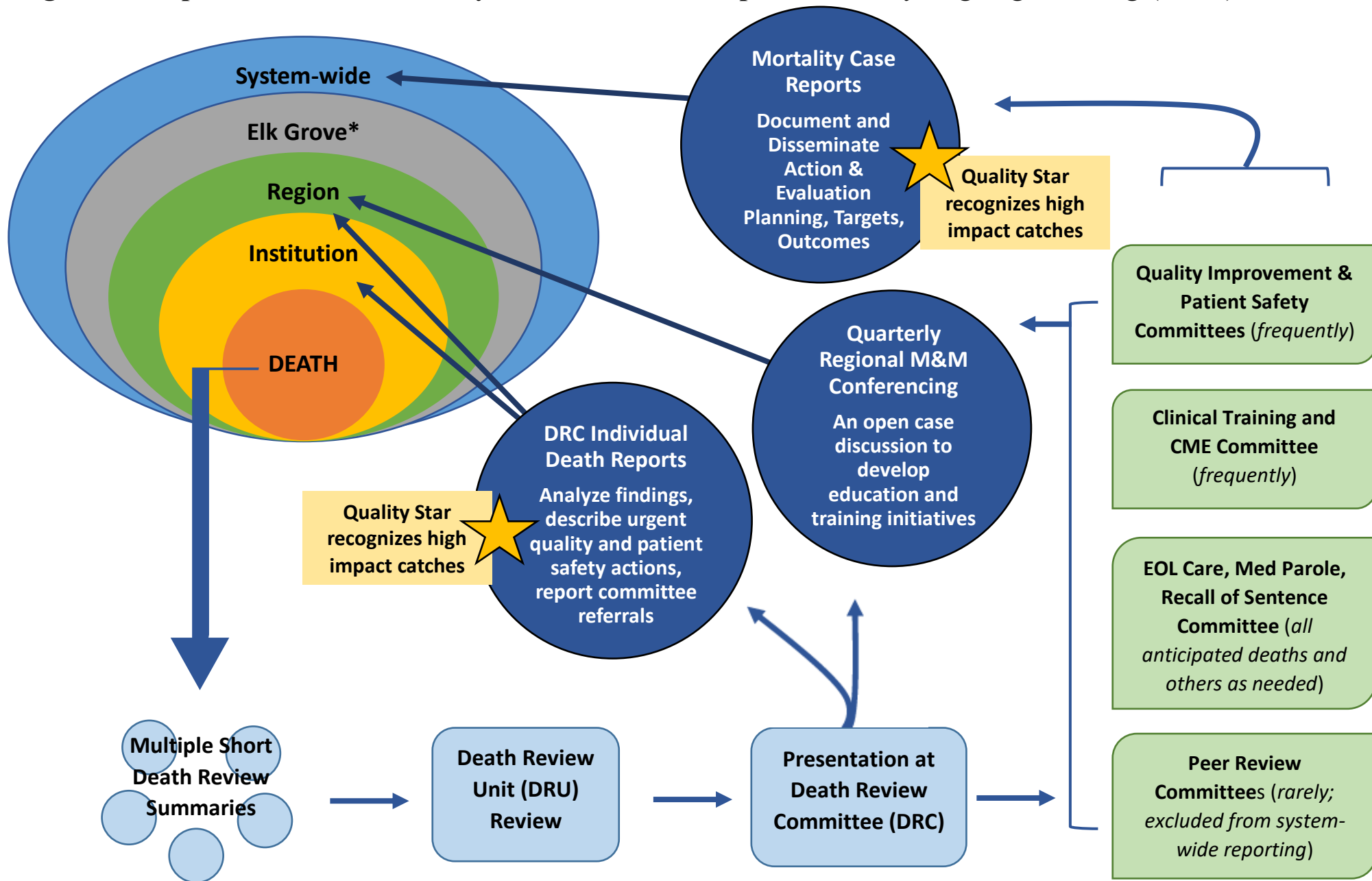


Figure 9. Proposed CCHCS Mortality Review Process Map: A Culture of Ongoing Learning (Rec 3)



* Headquarters receives and reviews all reports and may attend M&M Conferencing at discretion. Arrows here indicate levels targeted for learning.

Appendix 1. Mortality Review and Peer Review: Overlapping but Distinct Priorities

Considering Hill et al “A case for revisiting peer review”

In a recently published article in the medical journal PLoS ONE, former Chief Medical Officer of the Receivership, Dr. Terry Hill, provides an excellent overview of the unparalleled peer review effort undertaken by the CPR from its establishment through 2007.³² In it, Dr. Hill and his colleagues cite compelling circumstantial evidence to argue that the peer review process undertaken by the Receiver led to a dramatic decline in the mortality rate among CDCR patients for the period 2007-2009 (compared to 1998-2006). This downward trend, the paper argues, could not be attributed to quality improvement programs that had not been fully implemented or given sufficient time to produce changes in mortality outcomes as early as 2007-2009 and thus should be understood as a product of that peer review effort.

As Hill et al. acknowledge, it is beyond the scope of their analyses to assess how much of the mortality decline should be attributed to the removal of poorly performing and dangerous physicians versus contemporaneous changes in culture, local (informal) quality improvement efforts, or other causes. However, as the authors make clear, it is beyond dispute that the meticulous, considered removal of a high number of unqualified and/or negligent providers – and their replacement by a new cohort of physicians meeting newly elevated professional standards – saved lives and improved care in the CDCR. The Hill article concludes:

“our analysis argues against a dichotomous opposition between professional self-regulation and continuous improvement” ... “the core contribution of our study is its empirical evidence for the value of workforce accountability processes in preventing harm to patients.” (pages 12 and 16)

We agree, and find the Hill et al. study consistent with the recommendations proposed in this report. Because peer review is such a critical component of ensuring quality care, we advocate a strong, independent peer review policy and practice that overlaps with mortality review. By prioritizing both peer review and mortality review as two functions operating *independently* of one another, CCHCS will accomplish three related goals:

- (1) A mortality review system that engages staff and focuses on driving quality improvement and patient safety gains beyond what can be achieved by peer review alone.
- (2) A peer review system capable of identifying and responding to lapses of care in a variety of contexts (not just lapses resulting in death), including mortality review, adverse and sentinel event reporting, anonymous peer reporting, and others.³³
- (3) Complementary mortality review and peer review systems that each reflect current standards in community integrated health care systems.

We agree with Hill and his co-authors that peer review is critical but would add that the success of past peer review efforts in CDCR makes strong quality improvement mechanisms all the more necessary today. As the Hill et al. study notes, significant declines in mortality in the California prison system circa 2007-2009 reflect, in part, a uniquely troubled system with an astoundingly high number of physicians who would ultimately be removed or leave voluntarily for reasons related to the provision of substandard care. Because a CCHCS now boasts a new, more qualified generation of providers (among other reasons), it is unlikely that peer review alone would produce comparable improvements going forward.

³² Hill TE, Martelli PF, Kuo JH. A case for revisiting peer review: Implications for professional self-regulation and quality improvement. PLoS ONE, 2018;13(6): e0199961. Available from: <https://doi.org/10.1371/journal.pone.0199961>.

³³ We will address this fully in our project on Maintaining a Qualified Workforce (underway).

In addition, the authors make the case, though indirectly, for the importance of a systems approach to quality improvement when they describe the distribution of physician performance (page 14). Considering just individual provider performance in an improving system, they write, means that good and very good performers will increasingly cluster against an upper bound of performance while the greatest variation in quality care among providers will occur among poorer performers (the “long tail” of the distribution). As a consequence, peer review has continued salience even as performance overall improves. We agree. However, this mix - the improvement of overall performance towards an upper bound alongside some shrinking yet persistent cohort of poor performers - also suggests the importance of expanding and optimizing systems approaches to detecting and combating error. A systems approach is particularly important in this context, first, because the elimination of all poor performers – including good performers whose performance declines for some reason – is impossible. And second, because the inevitable errors that do occur are less likely to be easily assignable to poor clinical performers (e.g. errors of omission that cannot be attributed to an individual), making systematic layers of defense aimed at mitigating harm essential.

Hill et al. ultimately call for the “optimal integration of professional accountability and quality improvement systems” (abstract). We agree that peer review and mortality review systems will and should overlap in critical ways, particularly to ensure responsive, efficient processes in both areas. For example, mortality review is one critical pathway for referral to peer review; those referrals must be accompanied by the transparent exchange of information between mortality review and peer review systems. But the evidence from numerous community integrated health care systems – as described in this report - is that mortality review’s highest use is as an engine for improved quality and patient safety rooted in a blame-free culture of provider engagement and enthusiasm for ongoing learning. Just as peer review has continued importance to CCHCS, so too will the system greatly benefit from an independent mortality review process that is increasingly focused on quality improvement and patient safety regardless of blame.

We believe that the Hill et al. article confirms that the overlapping yet independent approach underlying the recommendations in this report is consistent with CCHCS’s specific history and a logical next step in its development.

Appendix 2. Sample Proposed Mortality Review Forms

Initial Brief Death Summary

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Immediate death review (Complete < 48 hours)

Please complete the survey below.

Thank you!

Reminder: You do not need to conduct a chart review to complete the following questions. Please answer them to the best of your knowledge. Your responses are shared with qualified quality and safety staff. If you would like to anonymously report adverse events, please visit <https://adverseevents.cdcr.gov>

Please return this form within 48 hours from date of death to drc@cdcr.gov

Information for individual completing form

Name of Individual Completing form _____

Title Physician
 Nurse
 Mental Health Professional
 Custody
 Other _____

Other title _____

Date completed _____

Inmate Demographics

CDCR ID _____

Last name _____


First Name _____

Date of birth _____

Gender Male
 Female
 Transgender

Race/Ethnicity White
 Black
 Latino/Hispanic
 Native American
 Asian
 Other
 Unknown _____

Institution _____

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Death Information

Date of death _____

Time of death _____

Age at death _____

Place of death Cell
 Infirmary
 Hospital
 Other _____

Place of death exact name _____

Autopsy requested? No
 Yes
 Unknown

Type of death Suicide
 Homicide
 Accident
 Medical
 Unknown

Please provide a brief summary about the circumstances surrounding the death _____

Likely cause of death (may say "probable" or "unknown", do not use mechanism of death, e.g. respiratory arrest) _____

Due to (medical co-morbidities, errors) _____


Other significant conditions/medical problems? _____

Resuscitation Attempted No, but they were full-code
 No and they were DNR
 Yes
 Yes but they were DNR
 unknown

Did patient receive naloxone (Narcan)? Yes
 No
 Not applicable

Quality Improvement Information

Death expected/anticipated? Yes
 No
 (Was it anticipated that individual could die on the day he/she died?)

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Does immediate action need to be taken?

Does immediate patient safety action need to be taken within the next 24 hours? Yes
 No

What is the safety issue? Provider Decision-Making
 Access to Care
 Communication
 Medication Errors
 Facilities (including equipment malfunction)
 Custody (including timely transport)
 Other _____

Other _____

Please explain further the specific safety issue. If you have suggests for improvement, please report this as well. _____

Other comments? _____

Would you like someone from the Center for Professionalism and Peer Support to contact you? Yes
 No

Inmate deaths or adverse events can be distressing for providers/custody, and this group can offer additional support or guidance. Peer support is private and confidential.

If you'd like another individual to complete this form, please submit their name below (this reference is confidential). _____
 (Also provide their email address, if you know it.) _____

Are you interested in speaking with the Patient/Safety committee or attending the death review? Yes
 No

How would you like to be contacted? Email
 Pager
 Telephone
 Other _____

Please provide your preferred contact method. _____

Comprehensive Review (Sample)

Confidential Initial Death Review
Page 1 of 5

Complete death review (complete < 14 days)

Participant ID _____

This form is to be filled out by two death review committee members: 1 physician and 1 nurse. For a likely suicide, this form should also be filled out by a mental health professional.

Reviews are due within 14 days of assignment to the death review committee.

Name of Individual Completing form _____

Title _____
 Physician
 Nurse
 Mental Health Professional
 Custody
 Other

Other title _____

Date completed _____

Inmate Demographics

Last Name [name_1] _____

First name [name_first_1] _____

CDCR ID [cdcr_id_1] _____

Date of birth [dob_1] _____

Gender [gender_1] _____
 Male
 Female
 Transgender

Race/Ethnicity [ethnicity_1] _____
 White
 Black
 Latino/Hispanic
 Native American
 Asian
 Other
 Unknown

Confidential Page 2 of 5

Death Information

Date of death [death_date_1] _____

Time of death [death_time_1] _____

Age at death _____

Place of death [death_place_1] _____
 Cell
 Infirmary
 Hospital
 Other

Place of death exact name [death_placename_1] _____

Please identify EXACT cause of death (e.g. stroke) [death_cause_1] _____

Cause of death category _____
 Cancer
 Cardiovascular disease
 Liver disease
 Infectious disease
 Drug overdose
 Suicide
 Homicide
 Cerebrovascular disease
 Pulmonary disease
 Circulatory disease
 Neurologic disease
 Accidental injury
 Hematologic disease
 Other
 Unknown

Other death category _____

Due to (e.g. other comorbidities, errors, etc) _____

Last primary care visit before death: _____

Time from PCP visit to death? _____

List medical problems _____
 (Prior to hospitalization?) _____

List Medications and doses/administration _____
 (Prior to hospitalization?) _____

Confidential Page 3 of 5

Please provide a BRIEF summary about the circumstances surrounding the death, that SYNOPSISIZES your chart review: _____

Paragraph 1: Preceding pertinent medical history (e.g. month/year of cancer diagnosis/treatment that ultimately lead to death). _____

Paragraph 2: Circumstances immediately surrounding death (e.g. brief timeline surround patient decline/death). If death occurred in hospital, please briefly summarize hospital course. _____

Was patient seen within last 48 hours of death by health care professional? Yes No

Date of oldest record reviewed for death review _____

Look-back period _____

Autopsy completed? Yes No

Autopsy results _____

Coroner's office evaluated? Yes No

Coroner findings _____

Have you identified any potential opportunities for improvement in care delivery? Check all that apply and explain.

Communication (e.g. between patient and provider; between nurse and provider; between subspecialist; poor documentation) Yes No

Describe opportunities for improvement in COMMUNICATION: _____

Transitions of Care (e.g. incorrect medication reconciliation, moving between prisons) Yes No

Describe opportunities for improvement in TRANSITIONS OF CARE: _____

Medication Delivery (e.g. missing/delayed dose, wrong patient/route/med/dose, drug interaction) Yes No

Describe opportunities for improvement in MEDICATION DELIVERY: _____

Testing/Diagnostics (e.g. unperformed testing, labs not followed up on) Yes No

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Describe opportunities for improvement in TESTING/DIAGNOSTICS: _____

Patient Factors (e.g. refusal to take medications, administering illicit substances, suicide attempt) Yes No

Describe opportunities for improvement in PATIENT FACTORS: _____

End of Life Care (e.g. hospice/palliative referral, lack of advance directives) Yes No

Describe opportunities for improvement in END OF LIFE CARE: _____

Clinical Management (e.g. inadequate health care maintenance, delay in diagnosis, treatment delay) Yes No

Describe opportunities for improvement in CLINICAL MANAGEMENT: _____

Custody Care (e.g. slow/no referral for medical complaint, in-hospital issues) Yes No

Describe opportunities for improvement in CUSTODY CARE: _____

Administration (e.g. overcrowding, follow-up appointments not made, tests not scheduled, records not obtained) Yes No

Describe opportunities for improvement in ADMINISTRATION: _____

Emergency Medical Care (e.g. Narcan inappropriate admin, AED inappropriate use, slow response by on-call doctor or nurse), delay in 911 call Yes No

Describe opportunities for improvement in EMERGENCY MEDICAL CARE: _____

Other Yes No

Describe opportunities for improvement in OTHER: _____

Was this death anticipated/expected? [death_anticipated_1] Anticipated/expected with NO opportunities for improvement
 Anticipated/expected WITH opportunities for improvement
 UNANTICIPATED/UNEXPECTED WITH opportunities for improvement

If death was anticipated/expected, was patient considered for Medical Parole or Compassionate Release?

- Yes
- No

Please explain further why patient was not considered for medical parole/compassionate release?

(Missed opportunities for palliative care should be referred to Medical Parole/Compassionate Release committee)

If anticipated/expected, did patient receive hospice/palliative care?

- yes
- no

Please explain further why patient did not receive hospice/palliative care?

(Missed opportunities for palliative care should be referred to QI/safety committee)

Did patient have a POLST on file?

- Yes
- No

Did patient have advance directives or advanced directives discussion documented?

- Yes
- No

Health care proxy identified?

- Yes
- No

Date presented to death review committee

Days from death until presentation at DRC

Actions recommended:

- Risk Management Committee for Root Cause Analysis (all cases with potentially preventable significant harm) (x#####)
- Adverse Events discussed with family
- Morbidity & Mortality conference (x#####)
- Referral to QI/Patient Safety (x#####)
- Referral to Suicide Prevention and Response Focused Improvement Team (x#####)
- Referral to Medical Parole/Compassionate Release Committee (x#####)
- Referral for Provider Peer Review (x#####)
- Referral for Nursing Peer Review (x#####)
- Referral for Mental Health Peer Review (x#####)
- Referral for Custody Peer Review (x#####)
- No further referrals/QI measures need to be taken

Chairperson assigned to this death review is responsible for notifying below committees for referral within 24 hours of meeting.)

Please briefly describe the recommended actions to be taken.

Brie Williams, MD, MS & Cyrus Ahalt, MPP
with **Leah Witt, MD**
The Criminal Justice & Health Program at UCSF

Assessing Medical Systems for the California Prison Health Care Receivership Corporation:

MORTALITY REVIEW POLICY AND PRACTICE

Final Report

Submitted September 27, 2018