



The Health Care Quality Improvement Act and Peer Review: Time to Rethink Outdated and Ineffective Approaches

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Executive Summary

Medical errors are common. Almost all are committed by competent, conscientious healthcare professionals. They cannot be eliminated completely. The goal of quality management and peer review should be to reduce errors to a minimum, recognize them quickly when they do occur, and minimize their adverse impact on patients.

These goals are currently thwarted by ignorance and the way peer review is practiced. Few healthcare professionals understand why errors occur. When an error does occur, the general response is to find someone to blame, not why the error occurred, how its recurrence could be prevented, or how its adverse impact can be minimized. This article briefly summarizes why this approach has been ineffective, and what might be done to change things.

The Medical Profession has Historically Both Resisted and Misused Peer Review

Peer review is the name given to the process by which the medical profession oversees the quality of medical care. Although used in other industries, medical peer review has unique features that undermine its effectiveness. Most physicians are independent contractors, which means, on the one hand, that economic competitors are reviewing each others' work and errors, and on the other hand, that physicians have no authority over other healthcare team members whose interests may be divergent making team work difficult to achieve.¹

The medical profession has historically both resisted and misused peer review. Accepted practices have typically resisted change except by those who defined them,

and the outcome of peer review has usually depended on whose ox was being gored.

At the end of the 19th century, the Hungarian obstetrician Ignaz Semmelweis demonstrated that puerperal (childbirth) fever, the leading cause of maternal mortality in his day, was lower on the midwifery service than on the obstetrical services of the Viennese hospital where he worked because physicians and medical students came to the delivery ward straight from the post-mortem room often without washing their hands. It was one of the most significant observations in the history of medicine. Nevertheless, Semmelweis' findings were rejected, he was ostracized by his colleagues and the medical profession, prevented from practicing medicine, and was eventually driven insane.² It must be cold comfort to Semmelweis that the medical school in Budapest is named after him rather than his tormentors.

In the 1920s, Dr. Ernest Codman of the Massachusetts General Hospital was ahead of his time when he advocated the reporting of end results from surgery and holding surgeons accountable for their outcomes. He was forced to leave the hospital, and after he set up his own hospital, his continued pursuit of his ideas brought him "disgrace, notoriety and near financial ruin".³

Time has vindicated the critics of the mutilating, radical operations once used to treat breast cancer, but in their day they were vilified in editorial after editorial as surgically incompetent,⁴ and decried by organized medicine as dangerous extremists.⁵ In the last decade, laparoscopic surgery was derided as a "surgical gimmick" and its advocates patronized and subjected to contumely by the surgical professoriate who could not perform the procedures.⁶

Peer Review as Traditionally Practiced is Based on an Erroneous View of Medical Errors and has not Improved the Quality of Medical Care

Medicine has obviously made great strides over the last century in developing effective treatments for human diseases but peer review has contributed little if anything to these advances.⁷ There are at least three reasons for this.

¹ Risser, DT, Rice, MM, Salisbury, ML, et al. *The potential for improved teamwork to reduce medical errors in the Emergency Department*. 34 Ann. Emerg. Med. 373 (1999).

² Note: *The Fox Guarding the Henhouse: How the Healthcare Quality Improvement Act of 1986 and State Peer Review Protection Statutes Have Helped Protect Bad Faith Peer Review in the Medical Community*, 18 J. CONTEMP. HEALTH L. & POL'Y 239 (2001).

³ Vu, JT, Scull, MJ, Ferris, LE, Hux, JE, Redelmeier, DA. Problems for Clinical Judgment: 4. Surviving the report card era. 164 CMAJ 1709 (2000) (citing A. Donabedian, *The end results of health care: Ernest Codman's contribution to quality assessment and beyond*. 67 Milbank Q 233 (1989)).

⁴ See e.g. Warfield M. Firor, Regression in the treatment of mammary carcinoma, 26 AM. SURGEON 63 (1960) (denigrating those who advocated simple mastectomy plus radiation as "unskilled operators" who were substituting an easy operation "either from ignorance, hurry or sheer laziness").

⁵ See JAMES S. OLSON, BATHSHEBA'S BREAST: WOMEN, CANCER AND HISTORY (2002) p 108 (describing attacks on Dr. George Crile, an early critic of radical mastectomy at the Cleveland Clinic).

⁶ Kadar N: Randomized trials for laparoscopic surgery: valid research strategy or academic gimmick? 3 Gynaecol Endosc 69 (1994).

⁷ Jawahar Kalra, Medical errors: overcoming the challenges, 37 CLIN. BIOCHEM. 1063 (2004).

First, quality healthcare is an elusive concept that cannot be satisfactorily measured or even defined. Complication rates, returns to surgery, re-admissions to hospital, for example, are commonly used measures of the quality of surgical care but these can be expected to be very low for a gynecologist who does unnecessary hysterectomies, but quite high for the dedicated, master surgeon to whom most complex pelvic operations are referred.

Second, optimal care is indeterminate except at the margins, and similar conditions can be properly managed very differently by different doctors. Everyone agrees over certain basics, at least at some level of generality: broken bones are set, abscesses are drained, inflamed appendixes are surgically removed, and persons with hypertension and diabetes are treated with drugs that lower blood pressure and blood sugar, and so on. But beyond what might be called first order medical decisions, the notion that there is one correct and optimal way to treat a medical condition is, in most cases, a fiction.

Third, peer review, as traditionally practiced, is conceptually flawed because it is orientated towards uncovering errors and attributing them to particular individuals, without regard to the circumstances under which the errors occurred. It is a retrospective, backward-looking exercise that is open-ended, has no parameters, and whose outcome is left to the subjective judgments of the peer reviewer(s). The purpose of the exercise is to construct a counterfactual world, and identify causes and what could and should have been done, not to reconstruct the world as it appeared to the person who made the error, to understand why the decisions and actions seemed reasonable to that person based on what he or she knew at the time.

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The norms of this counterfactual world are constructed after the event, under peer review, occurred not in advance.⁸ Each event under review brings into being its own frame of reference and is interpreted and evaluated by evoking pre-computed schemas. The approach leads to judgments, not understanding. It creates a culture of blame “operationalized in terms of pursuit of culprits, threats of disciplinary actions and threats of stigmatization”, which degrades, rather than improves performance, and “drives out information about systemic vulnerabilities, stops learning and undermines the potential for improvement”.⁹

An Erroneous View of Medical Errors also Underlies the Enactment of the Healthcare Quality Improvement Act (HCQIA)

The blame and shame approach to peer review is epitomized by the enactment of HCQIA in 1986, a nation-wide regulatory attempt to encourage effective peer review. Congress believed that a small but very destructive group of incompetent or unprofessional doctors injured most patients.¹⁰ However, they escaped detection because hospitals, rather than disciplining these physicians, entered into plea bargains with them for fear of being sued, and agreed to keep quiet about their record if they resigned and moved elsewhere to practice.¹¹ Congress enacted HCQIA to end this practice by creating the National

Practitioners Data Bank, and immunized peer reviewers from private law suit liability for money damages to encourage them to discipline and report incompetent colleagues.¹² However, the Act did not create any incentives to engage in peer review, much less mandate peer review.

Undoubtedly there are unscrupulous and incompetent physicians who do terrible things to patients. However, they are rare.¹³ Most bad outcomes and medical errors are “caused” by competent, conscientious doctors who are capable of managing the situation or performing safely the task that resulted in the bad outcome, who had managed similar situations and performed similar tasks safely on many prior occasions, and who face significant personal consequences for the poor outcome, injury or error—i.e. have an incentive to avoid them.¹⁴ As Atul Gawande noted, “The real problem isn’t how to stop bad doctors from harming, even killing their patients; it’s how to prevent good doctors from doing so”.¹⁵

HCQIA’s “bad apples” approach to medical errors is deeply flawed but beguiling because it takes the easy to understand view that “single events have single causes that originate in individuals”.¹⁶ Identify the individual, remove him or her from the medical staff, and everything will be fine. The approach does not work because it “ignores the larger context of the error that may be causative, leaving the dangerous system in place so that the same error is likely to occur to another unlucky physician”.¹⁷ Therefore, the only impact HCQIA has had on peer review and the quality of healthcare is to provide legal protection for unwarranted peer review against physicians “who do procedures that are new or different” or buck the system in other ways.¹⁸

⁸ Kahnemann, D, Miller DR. Norm theory: Comparing reality to its alternatives. 93 Psychol Rev 136 (1986).

⁹ Behind human error: Human factors research to improve patient safety, Testimony of David Woods at the National Summit on Medical Errors and Patient Safety Research, available on-line at www.apa.org/ppo/issues/smederrors.html

¹⁰ 42 U.S.C. § 11101(1)-(5).

¹¹ 42 U.S.C. § 11101(2); 132 Cong. Rec. H9957 (daily ed. Oct. 14, 1986); Health Care Quality Improvement Act of 1986: Hearings Before the Subcomm. on Health and the Environment of the House Comm. on Energy and Commerce, 99th Cong., 2d Sess. (July 15, 1986) at 191 (Statement of Rep. Waxman).

¹² See 42 U.S.C. § 11111(a).

¹³ Saul N. Weingart, et al., Epidemiology of medical error, 320 BMJ 774 (2000) (stating examples of malevolent providers are rare, and that there is little evidence that medical errors are due to “bad apples”).

¹⁴ Thomas W. Nolan. System changes to improve patient safety. 320 BMJ 771 (2000).

¹⁵ A. Gawande. When doctors make mistakes. The New Yorker. 1st February, 1999, 40-45 (cited in Alfred Cuschieri. Medical errors, incidents, accidents and violations. 12 Min. Invas. Ther. & Allied Technologies 111 (2003).

¹⁶ Raymond L Ownby, Medical Error Prevention, at 12-14, available at http://www.med.miami.edu/med/education/cme/documents/OwnbyMedicalErrors_SelfInstructional2003_2.pdf

¹⁷ Id.

¹⁸ See supra note 1 (citing Error! Main Document Only.David. W. Townsend, Hospital Peer Review is a Kangaroo Court, MEDICAL ECONOMICS, February, 2000 at 1, stating that physicians vulnerable to unwarranted peer review are solo practitioners, physicians new on the staff, and physicians who do procedures that are new or different); Susan O. Scheutzow, State Medical Peer Review: High Cost But No Benefit - Is It Time for a Change? 25 AM. J. L. AND MED. 7, 8 (1999).

Contemporary Approach to Peer Review

Medical errors are the result of errors in cognition of the person most proximate in time and place to the error—the person traditionally held accountable for the error.¹⁹ Human beings can process information rapidly and make effective, error free judgments and decisions under most circumstances.²⁰ However, the semi-automated aspects of this process that endow it with these capabilities also create biases that under some circumstances cause people to make erroneous judgments and incorrect decisions.²¹

“Most bad outcomes and medical errors are “caused” by competent, conscientious doctors who are capable of managing the situation.”

The risk of a medical error is not, however, solely a function of the cognitive endowments and personal characteristics of the person who makes the error but is predictably influenced by the task being performed, the institutional context and work environment in which it is performed, and the patient being treated.²² These systemic or latent factors are now recognized to be important causes of medical errors, and have caused a paradigm shift away from the “blame game” to a systems approach to improving patient safety.²³ The focus of the systems approach is the identification of latent failures in the healthcare environment that increase the uncertainty inherent in medical decisions and predispose to error. Specific strategies have been developed to reduce the risk of errors in medical care. Perhaps the simplest example is the time out or “pause period” that is now a routine

part of surgical practice introduced to reduce the risk of wrong-side surgery. By encouraging “continued adherence to [a discredited persons approach]”, HCQIA “is likely to thwart the development of safer healthcare institutions” because the most important change hospitals will need to make to implement effective peer review is a “cultural one”.²⁴

The systems approach was adopted from the work of safety experts in other high risk industries such as aviation and the chemical and nuclear industries.²⁵ However, the nature of the healthcare environment is different and uncertainty in

decision making is greater. In other high-risk industries outcomes are governed by deterministic physical laws, whereas the outcome of medical therapy has a large stochastic (random) component, and is far less deterministic. Social arrangements in the healthcare environment are also different. Physicians do not have authority over nurses and other physicians—radiologists, anesthesiologists, consultants—on whom they and their patients depend. The surgeon in the operating room, for example, is not captain of the ship to the same extent as the pilot in a cockpit, and does not have the same control over his or her environment.

The cognitive revolution of the past 30 years or so has yielded insights into the way human beings process information, form mental categories in which their knowledge resides, and make decisions. Proper application of these insights promises to reduce medical errors. For

example, Pat Croskerry has described 30 heuristics physicians may use as short cuts and that can lead to errors.²⁶ Some of these and others are listed in Table 1. An important way to avoid these errors is through “metacognition” or thinking about how we think.²⁷ Some of the ways to reduce the risk of medical errors in healthcare are listed in Table 2.

Peer review is susceptible to all the cognitive biases that bedevil medical decision making, and these are further compounded by hindsight bias and counterfactual thinking.²⁸ People do not take neutral positions with respect to information until sufficient evidence is available but believe information they receive, and disbelieving that information requires cognitive work.²⁹ In the counterfactual world peer review creates and in which outcomes are known, people tend to form opinions early in the decision task more so than in routine clinical work, and are reluctant to change their opinions once they have formed them.³⁰ Confirmation and expectation biases cause reviewers to seek out and give more weight to evidence that confirms their first impressions, and to avoid and discount evidence that contradicts them. Hindsight bias biases their judgments about the processes that led to the outcome, including its causes, and how predictable the outcome was before the fact.³¹ A standardized approach to peer review is required that removes these cognitive biases and subjectivity from the process if peer review is to have any impact on the quality of healthcare and patient safety.

Concluding Comments

New understandings are difficult to implement operationally because implementation requires effective communication and dialogue. For two

¹⁹Lucien L. Leape. Error in Medicine. 272 JAMA 1851 (1994).

²⁰Id.; Amos Tversky & Daniel Kahnemann, Judgment under uncertainty: Heuristics and biases, 185 SCIENCE 1124 (1974).

²¹Id.; Redelmeier, DA, Ferris, LE, Vu, JT, Hux, JE, Scull, MJ. Problems for clinical judgment: introducing cognitive psychology as one more basic science. 164 CMAJ 358 (2001).

²²James Reason, Human error: models and management, 320 BMJ 768 (2000).

²³Id. (noting that the causes of medical errors are “not so much the perversity of human nature as... ‘upstream’ systemic factors... in the workplace and the organizational processes that give rise to them”).

²⁴Leape, supra note 18 at 1857.

²⁵Reason, supra note 21; Robert L. Helmreich. On error management: lessons from aviation. 320 BMJ 320 (2000).

²⁶Pat Croskerry, Achieving quality in clinical decision making: cognitive strategies and detection of bias. 9 Acad. Emerg. Med. 1184 (2002).

²⁷Pat Croskerry: The importance of cognitive errors in diagnosis and strategies to minimize them. 78 Acad. Med. 775 (2003).

²⁸Robert L. Wears & Christopher P. Nemeth, Replacing hindsight bias with insight: Toward better understanding of diagnostic errors, 49 ANN. EMERG. MED. 206 (2007); Robert P. Agans & Legh S. Shaffer, The hindsight bias: the role of the availability heuristic and perceived risk, 15 BASIC AND APPLIED SOCIAL PSYCHOLOGY 439 (1994).

²⁹See DANIEL T. GILBERT, INFERRENTIAL CORRECTION 167-184 (Thomas Gilovich, et al. eds. (2002)).

³⁰See Redelmeier, supra note 20.

³¹See supra note 27.

Table 1: Some Heuristics and Biases that Affect Decision Making and Lead to Error

Bias or Heuristic	Effect of Bias or Heuristic
Anchoring	Tendency to fix on the most salient features of a patient’s initial presentation. This initial impression may not be properly adjusted to take account of later information.
Ascertainment bias	Some information is inherently more readily obtainable than others. There is also a tendency to mentally register information that conforms to expectations, rather than to other available information.
Availability heuristic	What readily comes to mind is judged to be more frequent than it may actually be.
Base-rate neglect	Tendency to ignore the prevalence of disease.
Cognitive lock-up	Failure to revise decision or action as a situation changes or develops.
Confirmation bias	Tendency to preferentially seek out information that confirms the hypothesis one is testing.
Expectation bias	Tendency to give more weight to evidence that confirms one’s expectations. Not quite the same as tendency to seek out (confirmation bias) or notice (ascertainment bias) what one expects.
Hindsight bias	The likelihood of a known outcome is judged to be much more likely than it actually was, and, hence, to be much more foreseeable/predictable than it really was.
Inert knowledge	Person has requisite knowledge but it is not activated and used when required.
Loss of situational awareness	Failure to appreciate that circumstances are changing, and that action(s) have to be changed or taken in light of the changed circumstances to avoid an error. Leads to cognitive lock-up.
Outcome bias	Favoring diagnoses that lead to good outcomes. Leads to delays in diagnosis of post-operative complications, for example.
Overconfidence	General tendency of people to overrate their own knowledge, abilities and performance. The Lake Wobegon phenomenon, where everyone is above average.
Premature closure	Search for evidence stops when a diagnosis is reached, which precludes considering alternative diagnoses. A common reason diagnoses are missed.
Search satisficing	Results in premature closure as search stops when a diagnosis is found.

people to communicate effectively, each must assume that the terms they use will cue the same concepts in the other. When concepts are new, this assumption fails. It is difficult to implement strategies when dialogue never gets beyond the stage of defining what one means by the concepts that underlie the strategies. To implement the understandings gained about why medical errors occur, how

human beings make decisions, and what affects them requires education—general education of physicians and other healthcare professionals, not just administrators involved in quality or risk management. Just because someone is a superb obstetrician or an ICU nurse does not mean that he or she has any understanding of how errors come about beyond the simplistic notion that

someone made a mistake. Worse still, the void in understanding is usually filled in using personal norms and judgments. The evaluation of errors needs to be standardized, so that evaluations are objective, reproducible and assess relevant factors. This requires use not only of checklists but also of standardized de-biasing formats for reports, including expert reports. One

Table 2: Some Methods for Reducing Medical Errors

Strategy	Goal
Task simplification	Provide easy access to clear, simple information about task to reduce task ambiguity.
Minimize time pressures	Provide more time to complete task and make decisions. Time pressure increases cognitive load and leads to more automatic processing.
Increase teamwork	Creation of small teamwork teams, teaching teamwork behaviors and skills, developing teamwork habits to improve communication, coordination, and reduce errors. E.g. surgeons should work with same anesthesiologist and operating room staff as occurs in Europe.
Limit hours on call	Fatigue impairs performance. Limiting hours on call should not impair continuity of care if teamwork is also fostered.
Metacognition	Train and develop ability to step back and reflect on the thinking process underlying decisions.
Cognitive forcing strategies	Develop strategies to avoid predictable biases in decision making.
Feedback	Provide decision makers rapid, accurate and non-judgmental information about the outcome of their decisions.
Avoid unapproved abbreviations	Reduce risk of medication errors by the use of ambiguous abbreviations in medical orders.

way to minimize the various cognitive biases that plague retrospective evaluations is to require reports to expressly state the issues raised by the incident(s) under evaluation, the relevant facts, and the evidence (inconsistent as well as consistent) with each conclusion drawn.

The institutional “culture” of most hospitals must be changed,³² and the practice of encouraging nurses and other healthcare workers to write incident reports as a way to police physicians must stop. These clandestine subjective accounts are concealed from the person they are directed at, and those who make them receive no feedback about the outcome of the process triggered by their reports. They must be replaced by face to face encounters between the person who has a concern and the subject of his or her concern.³³

Finally, a hospital report card³⁴ and transparency are required, which will require regulation at the national level. HCQIA was special interest legislation that created no incentives for hospitals to implement effective peer review, much less penalties for failing to do so. It has had no impact on the quality of healthcare, and has only encouraged the misuse of peer review. An institutional culture that permits the misuse of peer review is inimical to the implementation of the changes this article is advocating. **NP**

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³²See supra note 19.

³³See supra note 1.

³⁴See supra note 3.