

Annotated Bibliography: Impact of Adverse Events on Caregivers

Aasland OG, et al. Impact of feeling responsible for adverse events on doctors' personal and professional lives: the importance of being open to criticism from colleagues. *Qual Saf Health Care*, 2005;14:13–17.

Objective: To investigate the impact of adverse events that had caused patient injury and for which the doctor felt responsible, and the experience of acceptance of criticism among colleagues.

Design: Self-reports based on postal questionnaires to 1616 doctors.

Setting: Norway.

Participants: A representative sample of 1318 active doctors.

Results: 368/1294 (28%) reported that they had experienced at least one adverse event with serious patient injury. Being male and working within a surgical discipline (including anesthesiology, obstetrics and gynecology) significantly increased the probability of such reports. 38% of the events had been reported to official authorities and, for 17% of doctors, the incident had a negative impact on their private life; 6% had needed professional help. 50% and 54%, respectively, found it difficult to criticize colleagues for their ethically or professionally unacceptable conduct. Doctors who found it easy to criticize colleagues also reported having received more support from their colleagues after a serious patient injury.

Conclusion: Male surgeons report the highest prevalence of adverse events. Criticism for professionally and ethically unacceptable conduct is difficult to express among doctors. More acceptance of criticism of professional conduct may not only prevent patient harm, but may also give more support to colleagues who have experienced serious patient injury.

Allen S. The second victims of medical tragedies. *The Boston Globe*. 2004.

http://www.boston.com/yourlife/health/other/articles/2004/11/30/the_second_victims_of_medical_tragedies/

Now, doctors, nurse and patients are taking the problem into their own hands. An organization founded by an anesthesiologist and his patient, who nearly died during routine surgery, is offering group counseling for nurses who have witnessed -- or even caused -- unexpected injuries to patients. If doctors come forward, Medically Induced Trauma Support Services will offer group sessions for them, too.

Anonymous. The mistake I'll never forget. *Nursing* 1990: 90, 20(9), 50-51.

Baker GR, et al. The Canadian adverse events study: the incidence of adverse events among hospital patients in Canada. *Canadian Medical Association Journal*, 25, 1678-1686.

Background: Research into adverse events (AEs) has highlighted the need to improve patient safety. AEs are unintended injuries or complications resulting in death, disability or prolonged hospital stay that arise from health care management. We estimated the incidence of AEs among patients in Canadian acute care hospitals.

Methods: We randomly selected 1 teaching, 1 large community and 2 small community hospitals in each of 5 provinces (British Columbia, Alberta, Ontario, Quebec and Nova Scotia) and reviewed a random sample of charts for nonpsychiatric, nonobstetric adult patients in each hospital for the fiscal year 2000. Trained reviewers screened all eligible charts, and physicians reviewed the positively screened charts to identify AEs and determine their preventability.

Results: At least 1 screening criterion was identified in 1527 (40.8%) of 3745 charts. The physician reviewers identified AEs in 255 of the charts. After adjustment for the sampling strategy, the AE rate was 7.5 per 100 hospital admissions (95% confidence interval [CI] 5.7–9.3). Among the patients with AEs, events judged to be preventable occurred in 36.9% (95% CI 32.0%–41.8%) and death in 20.8% (95% CI 7.8%–33.8%). Physician reviewers estimated that 1521 additional hospital days were associated with AEs. Although men and women experience equal rates of AEs, patients who had AEs were significantly older than those who did not (mean age [and standard deviation] 64.9 [16.7] v. 62.0 [18.4] years; $p = 0.016$).

Interpretation: The overall incidence rate of AEs of 7.5% in our study suggests that, of the almost 2.5 million annual hospital admissions in Canada similar to the type studied, about 185,000 are associated with an AE and close to 70,000 of these are potentially preventable.

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Bates, JE, et al. The Physician's Perception of Medical Error and its Application to the Development of an Educational Training Tool. *AMIA Annual Symposium Proceedings/AMIA Symposium: 2003: 787*

It is becoming clear that if we are to impact the rate of medical errors it will have to be done at the practicing physician level. The purpose of this project was to survey the attitude of physicians in Alabama concerning their perception of medical error, and to obtain their thoughts and desires for medical education in the area of medical errors. The information will be used in the development of a physician education program.

Bell SK, Moorman, DW, Delbanco T. Improving the Patient, Family, and Clinician Experience After Harmful Events: The "When Things Go Wrong" Curriculum. *Academic Medicine, 2010; Vol. 85, No. 6*

The emotional toll of medical error is high for both patients and clinicians, who are often unsure with whom—and whether—they can discuss what happened. Although institutions are increasingly adopting full disclosure policies, trainees frequently do not disclose mistakes, and faculty physicians are underprepared to teach communication skills related to disclosure and apology. The authors developed an interactive educational program for trainees and faculty physicians that assesses experiences, attitudes, and perceptions about error, explores the human impact of error through filmed patient and family narratives, develops communication skills, and offers a strategy to facilitate bedside disclosures. Between spring 2007 and fall 2008, 154 trainees (medical students/residents) and 75 medical educators completed the program. Among learners surveyed, 62% of trainees and 88% of faculty physicians reported making medical mistakes. Of those, 62% and 78%, respectively, reported they did not apologize. While 65% of trainees said they would turn to senior doctors for assistance after an error, 26% were not sure where to get help. Just 20% of trainees and 21% of physicians reported adequate training to respond to error. Following the session, all of the faculty physicians surveyed indicated they felt better prepared to address and teach this topic. At a time of increased attention to disclosure, actual faculty and trainee practices suggest that role models, support systems, and education strategies are lacking. Trainees' widespread experience with error highlights the need for a disclosure curriculum early in medical education. Educational initiatives focusing on communication after harm should target teachers and students.

Blendon, RJ, et al. Views of Practicing Physicians and the Public on Medical Errors. *New England Journal of Medicine, Dec. 12, 2002, 347(24):1933-40.*

Background: In response to the report by the Institute of Medicine on medical errors, national groups have recommended actions to reduce the occurrence of preventable medical errors. What is not known is the level of support for these proposed changes among practicing physicians and the public.

Methods: We conducted parallel national surveys of 831 practicing physicians, who responded to mailed questionnaires, and 1207 members of the public, who were interviewed by telephone after selection with the use of random-digit dialing. Respondents were asked about the causes of and solutions to the problem of preventable medical errors and, on the basis of a clinical vignette, were asked what the consequences of an error should be.

Results: Many physicians (35 percent) and members of the public (42 percent) reported errors in their own or a family member's care, but neither group viewed medical errors as one of the most important problems in health care today. A majority of both groups believed that the number of in-hospital deaths due to preventable errors is lower than that reported by the Institute of Medicine. Physicians and the public disagreed on many of the underlying causes of errors and on effective strategies for reducing errors. Neither group believed that moving patients to high-volume centers would be a very effective strategy. The public and many physicians supported the use of sanctions against individual health professionals perceived as responsible for serious errors.

Conclusions: Though substantial proportions of the public and practicing physicians report that they have had personal experience with medical errors, neither group has the sense of urgency expressed by many

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national organizations. To advance their agenda, national groups need to convince physicians, in particular, that the current proposals for reducing errors will be very effective.

Bognar A, et al. Errors and the Burden of Errors: Attitudes, Perceptions, and the Culture of Safety in Pediatric Cardiac Surgical Teams. *Ann Thorac Surg* 2008; 85:1374– 81.

Background. The fear of committing clinical errors in perioperative care has a negative impact on the psychological well-being of surgical team members and ultimately on patient care. We assessed the perceptions and attitudes of surgical teams relative to committing errors, the impact of errors, and the culture of safety.

Methods. Pediatric cardiac surgery team members at three academic hospitals were surveyed. The survey included scaled, open-ended questions and a clinical vignette. Respondents were asked about the safety climate, team climate, stress recognition, and the impact of error as they relate to making and the anticipation of making clinical errors.

Results. The response rate was 69%. Safety attitudes were influenced by the work environment climate. Many respondents felt unable to express disagreement and had difficulty raising safety concerns. Staffing levels, equipment availability, production pressures, and hectic schedules were concerns. Respondents admitted that errors occurred repeatedly, and that guidelines and policies were often disregarded.

Conclusions. A psychometrically sound teamwork culture tool was used and demonstrated that surgical teams are influenced by the recognition of medical errors and that these errors carry significant personal burden. The findings suggest that the safety attitudes among team members may impact their performance and need to be carefully taken into consideration. Providers' reluctance to share safety events with others, as well as the perceived powerlessness to prevent events, must be addressed as part of an overall strategy to improve patient care outcomes. The study points to the need to address teamwork culture in efforts to improve patient care.

Brenner M. Collateral Damage. *JAMA*. 2009;301(16):1637-1638.

As health care professionals, physicians have an uncomfortable familiarity with incidental injury. Such injury is fundamentally different from the medical errors that have attracted so much national attention. This injury is not the result of egregious errors, and it therefore is more likely to "fly below the radar." Some forms of incidental injury, such as a neonatal fracture, are conspicuous and prompt detailed evaluation and discussion at conferences. But most forms of collateral damage are more insidious. They tend to affect the spirit more directly than the body. Some people fail to recognize these forms of collateral damage or tacitly accept them as an understandable and reasonable cost of providing patient care. I have started to wonder about how we might do a little better in this regard. Whereas systems based practices may decrease medical errors, a culture of professionalism is needed to decrease injury that is of a more spiritual nature.

Brink S. Errors Take a Toll on Doctors Who Make Them. *Los Angeles Times*. January 28, 2008.

<http://articles.latimes.com/2008/jan/28/health/he-errorside28>

Mistakes that harm patients are hard on healthcare workers too.

A survey of more than 3,000 doctors, reported in the August 2007 Joint Commission Journal on Quality and Patient Safety, found that doctors lost confidence, were anxious about future errors and had trouble sleeping and reduced job satisfaction when they had been involved in a medical error. Only 10% said they thought their institution provided adequate support following an error.

"We have begun to learn not to blame doctors and nurses," says Dr. Donald Berwick, president of the Institute for Healthcare Improvement. "They're doing their best. These are highly stressful jobs, and people feel battered."

Cardinale, V. (1999). Recovering from medication errors: Tales of two pharmacists, *Hospital Pharmacist Report*, July, 26-27.

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Carr S. Disclosure and Apology: What's Missing? Advancing Programs that Support Clinicians. *Patient Safety & Quality Healthcare*, March/April 2010.

Ten years following Linda Kenney's medically induced trauma, the organization she founded to "support healing and restore hope" for patients, families, and clinicians following adverse events co-sponsored an invitational forum about ways to offer emotional support to clinicians. Collaborating with the Massachusetts Medical Society (MMS), CRICO/RMF, and ProMutual Group, Kenney's organization, MITSS (Medically Induced Trauma Support Services), hosted the event at the MMS offices in Waltham, Mass., on March 13, 2009, during Patient Safety Awareness Week.

Catchpole K. Who Do We Blame When it All Goes Wrong? *Qual. Saf. Health Care*, 2009;18;3-4

When things go wrong in healthcare, there are often two victims; the patient who is harmed, and the care giver who made the critical error. Toft and Gooderham raise the prospect of additional victims—hospital managers who are under time, financial, performance target, and perhaps public relation pressures, and are already predisposed to blame care givers, to implement quick but ineffective fixes, or who simply do not have the resources or support to deal with safety problems. A key question is whether this will encourage better relationships between management and practitioner through a clearer understanding of shared culpability, or enhance the divide by further entrenching fear and blame on both sides. Where it encourages the former—and in the long term, this must be the more rational approach—improvements in safety are far more likely to follow.

Christensen, JF; Levinson, W; Dunn, PM. The heart of darkness: the impact of perceived mistakes on physicians. *J Gen Intern Med*. 1992 Jul-Aug;7(4):424-31.

Objectives: To describe how physicians think and feel about their perceived mistakes, to examine how physicians' prior beliefs and manners of coping with mistakes may influence their emotional responses, and to promote further discussion in the medical community about this sensitive issue.

Design: Audiotaped, in-depth interviews with physicians in which each physician discussed a previous mistake and its impact on his or her life. Transcripts of the interviews were analyzed qualitatively and the data organized into five topic areas: the nature of the mistake, the physician's beliefs about the mistake, the emotions experienced in the aftermath of the mistake, the physician's way of coping with the mistake, and changes in the physician's practice as a result of the mistake. PARTICIPANTS AND SETTING: Eleven general internists and medical subspecialists practicing at a community, university-affiliated hospital in Oregon.

Results: Themes emerging from analysis of the interviews were the ubiquity of mistakes in clinical practice; the infrequency of self-disclosure about mistakes to colleagues, family, and friends; the lack of support among colleagues; the degree of emotional impact on the physician, so that some mistakes were remembered in great detail even after several years; and the influence of the physician's professional locus of control on subsequent emotions.

Conclusions: The perception of having made a mistake creates significant emotional distress for practicing physicians. The severity of this distress may be influenced by factors such as prior beliefs and perfectionism. The extent to which physicians share this distress with colleagues may be influenced by the degree of competitiveness engendered by medical training. Open discussion of mistakes should be more prominent in medical training and practice, and there should be continued research on this topic.

Conway J. Leadership: Assuring respect and compassion to clinicians involved in medical error. *SwissMedWkly* 2009 ; 139 (1 – 2) : 3.

The last 15 years have seen an exponential increase in research on and attention to medical error and patient safety in health care. Grounded in ethical practice, respect and compassion, we are learning to

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acknowledge our patients' unnecessary suffering. More and more often, we tell patients and their families *what* happened, *why* it happened and *what's being done* to prevent it from happening again. We are learning to apologise. This respectful acknowledgment for the "first victims" of medical error – patients and families – has developed for many reasons. Reactively or proactively board, executive and clinical leaders are accepting their fundamental responsibility for the quality and safety of care, declaring the current state of suffering and harm unacceptable, and setting bold aims for a safer, more respectful healthcare system.

Corrigan, JM; Donaldson, MS; Kohn, LT; McKay, T. Committee on Quality of Health Care in America. *To err is human: building a safer health system. 2000. Washington, D.C.: National Academy Press.*

Crigger, NJ. Always having to say you're sorry: an ethical response to making mistakes in professional practice. *Nursing Ethics, 2004: 11, 568-576.*

Efforts to decrease errors in health care are directed at prevention rather than at managing a situation when a mistake has occurred. Consequently, nurses and other health care providers may not know how to respond properly and may lack sufficient support to make a healthy recovery from the mental anguish and emotional suffering that often accompany making mistakes. This article explores the conceptualization of mistakes and the ethical response to making a mistake. There are three parts to an ethical response to error: disclosure, apology and amends. Honesty and humility are discussed as important virtues that facilitate coping and personal growth for the health care provider who is involved in mistakes. In conclusion, a healthy view of nursing practice and mistake making is one that prevents error but, when prevention is not possible, accepts fallibility as part of the human condition and achieves the best possible outcome for all.

Delbanco T and Bell, SK. Guilty, Afraid, and Alone — Struggling with Medical Error. *N Engl J Med. 2007; 357:17.*

Since 1999, health care professionals have been focusing on *To Err Is Human*, the Institute of Medicine report that sounded alarms about medical error. As we have strived to reduce the rate of errors, systems-based practices such as electronic order entry and procedure checklists have proliferated. Meanwhile, little attention has been paid to the second half of the adage — "to forgive, divine." How can we characterize and address the human dimensions of medical error so that patients, families, and clinicians may reach some degree of closure and move toward forgiveness?

Denham, CR. Trust: the 5 rights of the second victim. *Journal of Patient Safety. 2007; 3, 107-119.*

Historically, we have referred to "The Five Rights" when we consider medication safety. We deliver treatment to the right patient, with the right drug, at the right time, with the right dose, and use the right route. The purpose of this article is to propose 5 rights of our caregivers; 5 human rights that our health care leaders must consider as an integral part of a fair and just culture when patients are harmed during the process of care. They may be remembered by the acronym, TRUST (Treatment that is just, Respect, Understanding and compassion, Supportive Care, and Transparency and the opportunity to contribute to learning). Not only must we bear in mind the sacred trust of our patients but we also must honor the sacred trust of our caregivers who serve in our hospitals and health care organizations.

Engel, KG, et al. Residents' responses to medical error: coping, learning, and change. *Academic Medicine, 2006; 81(1),86-93.*

Purpose: To explore the significant emotional challenges facing resident physicians in the setting of medical mishaps, as well as their approaches to coping with these difficult experiences.

Method: Twenty-six resident physicians were randomly selected from a single teaching hospital and participated in in-depth qualitative interviews. Transcripts were analyzed iteratively and themes identified.

Results: Residents expressed intense emotional responses to error events. Poor patient outcomes and greater perceived personal responsibility were associated with more intense reactions and greater personal anguish. For the great majority of residents, their ability to cope with these events was dependent on a

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combination of reassurance and opportunities for learning. Interactions with medical colleagues and supervisory physicians were critical to this coping process.

Conclusions: Medical mishaps have a profound impact on resident physicians by eliciting intense emotional responses. It is critical that resident training programs recognize the personal and professional significance of these experiences for young physicians. Moreover, resident education must support the development of constructive coping skills by facilitating candid discussion and learning subsequent to these events.

Gallagher, TH. Patients' and Physicians' Attitudes Regarding the Disclosure of Adverse Events. *JAMA*, 2003; 289: 8, 1001-1007.

Physicians may not be providing the informational or emotional support that patients seek following harmful medical errors. Physicians should strive to meet patients' desires for apology and for information on the nature, cause and prevention of errors. Institutions should also address the emotional needs of practitioners who are involved in medical errors.

Garbutt, J and Waterman, A, et al. Physicians Communicate About Medical Errors. *Health Affairs* 27, no. 1 (2008): 246–255; 10.

Although physicians have been described as “reluctant partners” in reporting medical errors, this survey of 1,082 U.S. physicians found that most were willing to share their knowledge about harmful errors and near misses with their institutions and wanted to hear about innovations to prevent common errors. However, physicians found current systems to report and disseminate this information inadequate and relied on informal discussions with colleagues. Thus, much important information remains invisible to institutions and the health care system. Efforts to promote error reporting might not reach their potential unless physicians become more effectively engaged in reporting errors at their institutions.

Gazoni, Farnaz M, et al. The Impact of Perioperative Catastrophes on Anesthesiologists: Results of a National Survey. *Anesthesia & Analgesia*, March 2012; 114(3): 596-603.

Background: Most anesthesiologists will experience at least one perioperative catastrophe over the course of their careers. Very little, however, is known about the emotional impact of these events and their effects on both immediate and long-term ability to provide care. In this study, we examined the incidence of perioperative catastrophes and the impact of these outcomes on American anesthesiologists.

Methods: We sent a self-administered postal survey to 1200 randomly selected members of the American Society of Anesthesiologists. Participants were sent an advance letter, up to 2 copies of the survey, up to 2 reminder postcards, and a small cash incentive. Six hundred fifty-nine physicians (56%) completed the survey.

Results: Eighty-four percent of respondents had been involved in at least one unanticipated death or serious injury of a perioperative patient over the course of his/her career. Queried about the emotional impact of a “most memorable” perioperative catastrophe, 70% experienced guilt, anxiety, and reliving of the event with 88% requiring time to recover emotionally from the event and 19% acknowledging having never fully recovered. Twelve percent considered a career change. Sixty-seven percent of respondents believed that their ability to provide patient care was compromised in the first 4 hours subsequent to the event, but only 7% were given time off.

Conclusion: A perioperative catastrophe may have a profound and lasting emotional impact on the anesthesiologist involved and may affect his or her ability to provide patient care in the aftermath of such events. (www.anesthesia-analgesia.org)

Goldberg, RM; Kuhn, G; Andrew, LB; & Thomas, HA. Coping with medical mistakes and errors in judgment. *Annals of Emergency Medicine*; 2002: 39(3),287-292.

Attention has recently been focused on medical errors as a cause of morbidity and mortality in clinical practice. Although much has been written regarding the cognitive aspects of decision making and the importance of systems management as an approach to medical error reduction, little consideration has been given to the emotional impact of errors on the practitioner. Evidence exists that errors are common in

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clinical practice and that physicians often deal with them in dysfunctional ways. However, there is no general acknowledgment within the profession of the inevitability of medical errors or of the need for practitioners to be trained in their management. This article focuses on the affective aspects of physician errors and presents a strategy for coping with them.

Heard, Gaylene C, et al. Barriers to Adverse Event and Error Reporting in Anesthesia. *Anesthesia & Analgesia*, March 2012; 114(3): 604-613.

Background: Although anesthesiologists are leaders in patient safety, there has been little research on factors affecting their reporting of adverse events and errors. First, we explored the attitudinal/emotional factors influencing reporting of an unspecified adverse event caused by error. Second, we used a between-groups study design to ask whether there are different perceived barriers to reporting a case of anaphylaxis caused by an error compared with anaphylaxis not caused by error. Finally, we examined strategies that anesthesiologists believe would facilitate reporting. Where possible, we contrasted our results with published findings from other physician groups.

Methods: An anonymous, self-administered, mailed survey was conducted of 629 consultant anesthesiologists and 263 anesthesiology residents on the mailing list of the Australian and New Zealand College of Anaesthetists in Victoria, Australia. Participants were randomized into "Error" versus "No Error" groups for the specified anaphylaxis adverse event section of the survey. Data were analyzed using nonparametric descriptive and inferential tests.

Results: There were 433 usable returned surveys, a usable response rate of 49%. First, there was only 1 of 13 statements on attitudinal/emotional factors that influenced reporting of an unspecified adverse event caused by error with which more anesthesiologists agreed/strongly agreed than disagreed/strongly disagreed: "Doctors who make errors are blamed by their colleagues." Second, when an error rather than no error had caused anaphylaxis, participants were more likely to agree/strongly agree that 6 statements about litigation, getting into trouble, disciplinary action, being blamed, unsupportive colleagues, and not wanting the case discussed in meetings, were perceived as reporting barriers. Finally, the most favored assistive strategies for reporting were generalized deidentified feedback about adverse event and error reports, role models such as senior colleagues who openly encourage reporting, and legislated protection of reports from legal discoverability.

Conclusion: The majority of anesthesiologists in our study did not agree that the attitudinal/emotional barriers surveyed would influence reporting of an unspecified adverse event caused by error, with the exception of the barrier of being concerned about blame by colleagues. The probable influence of 6 perceived barriers to reporting a specified adverse event of anaphylaxis differed with the presence or absence of error. Anesthesiologists in our study supported assistive reporting strategies. There seem to be some differences between our results and previously published research for other physician groups. (www.anesthesia-analgesia.org)

Hilfiker, D. *Facing Our Mistakes*. *New England Journal of Medicine*, Jan. 1984.

Hilfiker, D. *Healing the wounds: a physician looks at his work*. New York, NY: Pantheon Publishing, 1985.

Hu, Yue-Yung, et al. Physicians' Needs in Coping With Emotional Stressors *The Case for Peer Support*. *ArchSurg*, March 2012; 147(3): 212-217. Published online November 21, 2011. doi:10.1001/archsurg.2011.312

Objective: To design an evidence-based intervention to address physician distress, based on the attitudes toward support among physicians at our hospital.

Design, Setting, and Participants: A 56-item survey was administered to a convenience sample (n=108) of resident and attending physicians at surgery, emergency medicine, and anesthesiology departmental conferences at a large tertiary care academic hospital.

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Main Outcome Measures: Likelihood of seeking support, perceived barriers, awareness of available services, sources of support, and experience with stress.

Results: Among the resident and attending physicians, 79% experienced either a serious adverse patient event and/or a traumatic personal event within the preceding year. Willingness to seek support was reported for legal situations (72%), involvement in medical errors (67%), adverse patient events (63%), substance abuse (67%), physical illness (62%), mental illness (50%), and interpersonal conflict at work (50%). Barriers included lack of time (89%), uncertainty or difficulty with access (69%), concerns about lack of confidentiality (68%), negative impact on career (68%), and stigma (62%). Physician colleagues were the most popular potential sources of support (88%), outnumbering traditional mechanisms such as the employee assistance program (29%) and mental health professionals (48%). Based on these results, a one-on-one peer physician support program was incorporated into support services at our hospital.

Conclusions: Despite the prevalence of stressful experiences and the desire for support among physicians, established services are underused. As colleagues are the most acceptable sources of support, we advocate peer support as the most effective way to address this sensitive but important issue.

Kalb, C. Fixing America's hospitals. *Newsweek, October, 44-68 (2006).*

Every day, hospitals across the country care for Americans in need. Babies are born, heart-attack victims are saved, broken bones are healed. But today, as the population ages, medical demands surge and costs rise, America's hospitals are being tested like never before. Solving the crisis is a formidable task, but innovative hospitals are rising to the challenge--they're reforming nursing practices, digitizing medical records, transforming end-of-life care.

The most urgent hurdle of all: improving patient safety. In 1999, the Institute of Medicine declared that close to 100,000 Americans die annually from medical errors. This year, more dire news: medication errors harm at least 1.5 million people and cost some \$3.5 billion per year. What goes wrong? Missed diagnoses, incorrect drug dosing, failure to treat promptly. Experts agree that doctors, nurses, pharmacists and technicians will always make mistakes--it's the safety net around them that needs to be fixed. "No matter how good people are, they suffer from being human and they're going to screw up," says Jim Conway, senior vice president at Boston's Institute for Healthcare Improvement. "We have to put systems in place that stop that error from causing harm."

Kalra, J. Medical errors: overcoming the challenges. *Clinical Biochemistry, 2004; 37,1063-1071.*

The issue of medical errors has received substantial attention in recent years. The Institute of Medicine (IOM) report released in 1999 has several implications for health care systems in all disciplines of medicine. Notwithstanding the plethora of available information on the subject, little, by way of substantive action, is done toward medical error reduction. A principal reason for this may be the stigma associated with medical errors. An educational program with a practical, informed, and longitudinal approach offers realistic solutions toward this end. Effective reporting systems need to be developed as a medium of learning from the errors and modifying behaviors appropriately. The presence of a strong leadership supported by organizational commitment is essential in driving these changes. A national, provincial or territorial quality care council dedicated solely for the purpose of enhancing patient safety and medical error reduction may be formed to oversee these efforts. The bioethical and emotional components associated with medical errors also deserve attention and focus.

Kenney, LK. More Victims Than Meet the Eye – Patients are not the only victims in medical errors, *American Academy of Orthopaedic Surgeons Now, November 2011, Vol. 5, No. 11.*

Kenney, LK. Patient Safety: A Patient Perspective: *Prescriptions for Excellence in Health Care, A Collaboration Between Jefferson School of Population Health and Lilly USA, LLC. Issue 9, Summer 2010.*

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Kenney, LK; LaFarge S; van Pelt, RA. Effective Support for Patients, Families, and Staff after Traumatic Medical Events, *Viewpoint*, Winter 2009, Vol. 19, No. 1.

Kenney, LK and van Pelt, RA. To Err Is Human; The Need for Trauma Support Is, Too – A Story of the Power of Patient/Physician Partnership After a Sentinel Event. *Patient Safety & Quality Healthcare*, Jan./Feb. 2005: 6-9.

This article describes the development of a new program for providing trauma support services to people who have experienced unanticipated outcomes from medical care or, more particularly, the failure of medical care. Medically Induced Trauma Support Services or MITSS (www.mitss.org) was developed in partnership by a patient and an anesthesiologist involved in the unanticipated event that seriously harmed the patient.

Lee, TH. A Broader Concept of Medical Errors, *New England Journal of Medicine*, Dec. 12 2002: 347(24):1965-7.

No one disputes the goal — a health care system that can reliably provide high-quality care with minimal waste to all in need. Disagreement begins with the question of which problems are most urgent. Some cite inequities in access to care; others emphasize gaps in quality that transcend race, sex, and social class. Employers bemoan the rising costs of health care, whereas the press and health care leaders are appalled by the 44,000 to 98,000 deaths per year that, according to the Institute of Medicine (IOM), may be caused by medical errors. The accuracy and implications of these estimates are controversial, but the precise number has not been as important as the revelation that preventable deaths occur at all. In response to these estimates and the resulting public attention, high-level positions with titles such as chief safety officer have been created at many institutions. Computerized order-entry systems have been installed at some hospitals and have been the subject of anguished contemplation at the rest. Data on the presence or absence of these and other systems that are believed to reduce medical errors are now available on the Internet (<http://www.leapfroggroup.org>).

Levinson, W and Dunn, PM. A piece of my mind: coping with fallibility. *Journal of American Medical Association*, 1989; 261(15), 2252.

Coping with Fallibility It has been 12 years since my internship, but I frequently think about a mistake I made one night when I was on call. Any memory of the circumstance makes me feel heavyhearted and guilty. A man in his mid-80s was admitted through the emergency department with an acute exacerbation of his chronic lung problem. I evaluated him and wrote his initial orders. Unfortunately, I misinterpreted his arterial blood gases and did not appreciate the severity of his acidosis nor the tenuous nature of his clinical situation. I was shocked when the nurses called to tell me that he was in cardiopulmonary arrest. The patient died and I had to tell his wife. Although I realized that many factors contributed to the patient's demise, I felt sick about my judgment error and ashamed the next day when the chief of medicine reprimanded me.

Manser, T. Aftermath of an adverse event: supporting health care professionals to meet patient expectations through open disclosure. *Acta Anaesthesiol Scand* 2005; 49: 728—734.

An important element of how adverse events are handled is effective communication between health care providers and patients and their families. This review addresses the main questions: What do patients expect in the aftermath of an adverse event? What is known about the practice of open disclosure? How can organizations support health care providers in the aftermath of an adverse event, both professionally and personally? Patients clearly expect open disclosure to include an explanation of what happened, an apology for harm done, that appropriate remedial action will be taken and an explanation of what will be done to learn from the event and to prevent recurrence. Research has found that open disclosure is not very common although the ethical duty to disclose is widely acknowledged. Barriers to open disclosure include discomfort and a lack of training how to disclose, a fear of litigation, a culture of infallibility among

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health professionals, and inadequate systems for analysis, discussion and learning from mistakes. Significant commitment is required from health care organizations and managers to develop frameworks for open disclosure to occur, to assure its quality and to support health care providers in this process. Organizations also need to address the emotional needs of health care professionals in the aftermath of an adverse event. Last but not least, adequate systems for debriefing and incident analysis need to be in place to learn from adverse events and to avoid recurrence.

Martin, Timothy W. MD, MBA and Roy, Raymond C. PhD. Cause for Pause After a Perioperative Catastrophe: One, Two, or Three Victims? *Anesthesia & Analgesia*, March 2012; 114(3): 485-487. Editorial.

McCready, S. A national survey of support and counseling after maternal death. *Anaesthesia*, 2009, 64, pages 1211–1217.

The 2000–2002 Confidential Enquiry into Maternal and Child Health report highlighted several cases of maternal death where the staff who had been involved, were not offered support. The report recommended that ‘Trusts must make provision for the prompt offer of support and / or counseling for all staff who have cared for a woman who has died.’ We conducted a postal survey to firstly establish whether Trusts had implemented this, and also to ascertain the experience of consultant obstetric anaesthetists. Of 706 respondents (response rate 64%), 60% involved in a maternal death or other traumatic event received no offer of support, 65% were unaware of potential sources of support and only 5% received details of further help available. Furthermore, 69% were unaware of policies within their own Trusts for the provision of support services. We suggest that a formal structure should exist within all units that offers confidential support services and/or debriefing facilities to all staff involved in a maternal death or other traumatic event.

McDonald, TB, et al. Responding to patient safety incidents: The “Seven Pillars.” *Qual Saf Health Care*, 2010, 19: 1-4 originally published online March 1, 2010. Doi: 10.1136/qshc.2008.031633.

Background: Although acknowledged to be an ethical imperative for providers, disclosure following patient safety incidents remains the exception. The appropriate response to a patient safety incident and the disclosure of medical errors are neither easy nor obvious. An inadequate response to patient harm or an inappropriate disclosure may frustrate practitioners, dent their professional reputation, and alienate patients.

Methods: The authors have presented a descriptive study on the comprehensive process for responding to patient safety incidents, including the disclosure of medical errors adopted at a large, urban tertiary care centre in the United States.

Results: In the first two years post-implementation, the “seven pillars” process has led to more than 2,000 incident reports annually, prompted more than 100 investigations with root cause analysis, translated into close to 200 system improvements and served as the foundation of almost 106 disclosure conversations and 20 full disclosures of inappropriate or unreasonable care causing harm to patients.

Conclusions: Adopting a policy of transparency represents a major shift in organisational focus and may take several years to implement. In our experience, the ability to rapidly learn from, respond to, and modify practices based on investigation to improve the safety and quality of patient care is grounded in transparency.

Mizrahi, T. Managing medical mistakes: ideology, insularity and accountability among internists-in-training. *Social Science and Medicine*, 1984; 19(2), 135-146.

Nelson, WA, Beyea, SC. The role of an ethical culture for the prevention and recovery of ‘second victims’. *Quality and Safety in Health Care*, 2009; 18:323-324.

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The Natural History of Recovery for the Health Care Provider “Second Victim” After Adverse Patient Events (see page 325) provides some helpful insights into the nature and complexity of the consequences clinicians experience when they are involved in an “unexpected event”. The clinicians’ experiences described in this analysis reflect the overall culture of their healthcare organization and its programs for safety and quality. Importantly, this organisation’s Office of Clinical Effectiveness observed and then assessed the suffering experienced in numerous caregivers (second victims) who were involved in a patient safety event. These research findings provide clear evidence of this particular healthcare organisation’s commitment to its patients and caregivers and creating an ethical, high-quality practice environment and a culture of safety.

Newman, MC. The emotional impact of mistakes on family physicians. *Archives of Family Medicine*, 1996; 5(2),71-75.

Objective: To explore the emotional impact of the most memorable mistake on family physicians, the support they needed and received, and their response to a hypothetical scenario in which a colleague's decision was associated with a fatal outcome.

Setting and Participants: Randomly selected members of a county chapter of a Midwestern state academy of family physicians.

Design: Qualitative cross-sectional survey using in- depth interviews subject to content analysis.

Methods: I audiotaped interviews with each of the physicians in their offices. Two medical sociologists and I first independently, and then consensually, categorized the data based on the frequency with which a word or idea appeared in the text.

Results: Thirty (75%) of the 40 physicians originally contacted participated in the study. Twenty-three (77%) of the 30 physicians admitted to making a mistake. The physicians experienced emotional adversity. Of 27 physicians, 17 (63%) needed someone to talk to, 13 (48%) needed to review their case management, 16 (59%) needed professional reaffirmation, and eight (30%) needed personal reassurance. Having someone to talk to was the support that 12 (44%) of the 27 physicians most. Eighteen (67%) of 27 received this support from someone other than their peers. Although all subjects recognized their colleague's pain and need for support in the hypothetical scenario, only nine (32%) of 28 physicians would have unconditionally offered support.

Conclusion: Making mistakes unfavorably affects family physicians and creates a strong need for support. Family physicians may benefit from sharing experiences that diminish perfectionism and recognize mistakes as a natural part of practicing medicine. Further research needs to address how physicians can be encouraged toward therapeutic self-disclosure and peer support.

O’Beirne, Maeve MD, et al. Emotional Impact of Patient Safety Incidents on Family Physicians and Their Office Staff. *The Journal of the American Board of Family Medicine*, March-April 2012, 25(2), 177-183.

Objective: The objective of this study was to investigate the emotional responses and coping strategies that family physicians and their office staff reported in response to a patient safety incident.

Method: Two questions contained in a patient safety incident report developed for a study of patient safety in family practice were analyzed. The questions asked reporters to indicate their emotional response to a patient safety incident and how they coped with it. A total of 264 confidential patient safety incident reports collected from September 2007 to August 2010 were analyzed.

Results: An emotional response was reported on 82.4% of reports. Of those reports on which an emotional response was reported, a coping strategy was reported on 62.8%. The top 4 reported emotional responses were frustration (48.3%), embarrassment (31.5%), anger (12.6%), and guilt (10.1%). Physicians reported an emotional response more often than clinic staff. An emotional response was reported more often when there was a possibility of harm. Coping strategies were reported as follows: 52% talked to someone about the incident, 37.2% did nothing in response to the incident, 17.9% told the patient about the incident, and 3.6% did something else. Female physicians reported using coping strategies less often than male physicians. A coping strategy was reported more often when there was a possibility of harm.

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Conclusions: All members of the health care team report experiencing emotions related to patient safety incidents in their practice. Incidents with minor or no harm still invoked emotional responses from the providers. It is important to understand the impact that patient safety incidents have on the medical clinic as a whole.

Pollack, C; Bayley, C; Mendiola, M; and McPhee, S. Helping clinicians find resolution after a medical error. *Cambridge Quarterly of Healthcare Ethics, 2003; 12,203-207.*

Clinicians, operating within complex systems, make mistakes, as people do in every human endeavor, and when they do, patients are sometimes harmed. One important question is how we as clinicians can find resolution in the wake of an error. The published literature has divided errors into those caused by “systems” and by “individuals.” But whereas both “systems” and “individual” approaches are important in understanding the cause of an error, neither alone can fully lead to resolution once an error has occurred. Instead, both are necessary to understand, resolve, and prevent errors.

Pratt, S, et al. How to Develop a Second Victim Program: A Toolkit for Health Care Organizations. *The Joint Commission Journal on Quality and Patient Safety, May 2012; 38(5), 235-240.*

Rassin, M; Kanti, T; Silner, D. Chronology of medication errors by nurses: accumulation of stresses and PTSD symptoms. *Issues of Mental Health Nursing, 2005; 26(8),873-886.*

The aim of this research was to examine the influence of medication errors on the mental state of the erring caregiver. In-depth interviews were conducted with 20 erring nurses. The data were analyzed using content analysis. The following categories were identified: “stress, pressure, and inattention,” “responsibility,” “the double fear,” “I might get fired,” “he who works, errs,” waiting for the inquiry—“every day is like eternity,” “absurdly, it got worse with time,” and “following the event I learned my lessons.” The emotional distress of several subjects was, across time, reminiscent of PTSD symptoms.

Rivard, PE, et al. *Enhancing Patient Safety through Organizational Learning: Are Patient Safety Indicators a Step in the Right Direction? Health Research and Educational Trust 2006;*

Objective: To assess the potential contribution of the Agency for Healthcare Research and Quality Patient Safety Indicators (PSIs) to organizational learning for patient safety improvement.

Principal Findings: Patient safety improvement requires organizational learning at the system level, which entails changes in organizational routines that cut across divisions, professions, and levels of hierarchy. This learning depends on data that are varied along a number of dimensions, including structure-process-outcome and from granular to high-level; and it depends on integration of those varied data. PSIs are inexpensive, easy to use, less subject to bias than some other sources of patient safety data, and they provide reliable estimates of rates of preventable adverse events.

Conclusions: From an organizational learning perspective, PSIs have both limitations and potential contributions as sources of patient safety data. While they are not detailed or timely enough when used alone, their simplicity and reliability make them valuable as a higher-level safety performance measure. They offer one means for coordination and integration of patient safety data and activity within and across organizations.

Rosshem, J. To err is human - even for medical workers. *New York Times: August 19, 2010.*

<http://www.nytimes.com/2010/08/19/health/19chen.html>

One afternoon, I overheard a nurse asking another physician how she was feeling. The physician, a young woman known throughout the hospital for her cheery disposition and sunny bedside manner, looked ashen. She smiled weakly in response and insisted that nothing was wrong.

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Sacks, SB; Clements PT; Fay-Hillier T. Care after chaos: use of critical incident stress debriefing after traumatic workplace events. *Perspect Psychiatry Care*. 2001 Oct-Dec;37(4):133-6.

CISD is a specific model of group debriefing, which can be used to accelerate recovery from traumatic workplace events. The impact of critical incidents may be debilitating—from recurrent intrusive images, persistent fear, displaced anger, guilt, and isolation. CISD can accomplish psychological closure, prevention, and mitigation of traumatic stress, and promote return to normalcy, benefiting the individual, organization, and the community at large. The field of critical incident stress management is open to advanced practice nurses who seek to apply their crisis-intervention expertise within a nontraditional role and workplace setting. With specialized training, the advanced practice nurse may pursue a career as a crisis-response provider, working independently or with an established CISM team. Practice requirements include CISM certification, along with the acquisition of a referral source. The prevention and mitigation of traumatic stress can yield a rewarding career in CISM.

Schwappach, DLB, et al. The emotional impact of medical error involvement on physicians: a call for leadership and organisational accountability. *Swiss Medical Weekly* 2008.

Objective: Involvement in errors often results in serious health effects, emotional distress, as well as performance and work-related consequences in staff members, in particular physicians. The aim of this systematic review was to evaluate current evidence on a) the impact of involvement in medical errors on physicians, b) needs and experiences in coping with the experience of error, and c) interventions to support physicians involved in errors.

Methods: A systematic review was conducted in a two-step procedure using predefined search protocols and inclusion criteria that cover the relevant literature published between 1980 and 2007.

Results: Of 3,852 identified candidate articles, 87 studies were selected for critical appraisal and 32 were included in the review. Involvement in medical errors often provokes intense emotional distress that seems to considerably increase the risk for burn-out and depression. The evidence suggests a reciprocal cycle of these symptoms and future suboptimal patient care and error. Communication and interaction with colleagues and supervisors are perceived as the most helpful resource by physicians. Physicians involved in errors usually feel not supported in coping with this experience by the institutions they work in.

Conclusion: Many professionals respond to error with serious emotional distress, and these emotions can imprint a permanent emotional scar. Given the significant burden on physicians' health, well-being and performance associated with medical errors, health care institutions and clinical leaders have to take accountability and provide staff with formal and informal systems of support.

Scott, SD, et al. Caring for our Own: Deployment of a Second Victim Rapid Response System. *The Joint Commission Journal on Quality and Patient Safety*, 2010, 36(5):233-240.

Individuals who choose to become health care professionals are likely to be exposed to emotional turmoil repeatedly during their careers. Patient tragedies such as loss of life—even when expected—stillbirths, and permanent harm or deaths from violence or trauma affect the most resilient health care professional. It is normal for clinical members of health care teams to face unfortunate events with their patients. Entire health care teams can suffer when unanticipated clinical events or medical errors occur. Patient suffering from complications of treatment or consequences of medical mistakes can shake the strongest clinical foundation of seasoned, health care providers, even jolting their career paths.

In February 2009, a 10-item Web-based survey was distributed to approximately 5,300 faculty/staff at MUHC. Across six facilities, 898 surveys were returned from four professional groups, for an overall response rate of 17%. Thirty-four percent of third- and fourth-year medical students, as well as one fourth of physicians and professional nurses, responded. Thirty-nine percent (352/898) of the approximately 30% (269/898) reported experiencing personal problems within the past 12 months, such as anxiety, depression, or concerns about their ability to perform their jobs, as a result of a clinical patient safety event. Approximately 15% (40/269) reported seriously contemplating leaving their chosen profession, and 65%

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(175/269) reported working out the issue(s) on their own. When support was offered, 35% of the responding second victims reported receiving support from colleagues and peers, and 29% received support from supervisory personnel. Narratives offered suggestions for supportive interventions that could be readily available within the health care system. Eight themes regarding characteristics of general support characteristics for second victims were identified and served as the basic infrastructure of support for deployment of a rapid response team for clinicians. Regardless of professional group or years of experience, respondents preferred formal support that was provided by the institution, optimally at the department/unit level. In addition, the support network, when needed, should be readily accessible with prompt, easy access to professionally trained counselors.

Scott, SD, et al. The natural history of recovery for the healthcare provider “second victim” after adverse patient events. *Qual Saf Health Care*, 2009;18;325-330.

Background: When patients experience unexpected events, some health professionals become “second victims”. These care givers feel as though they have failed the patient, second guessing clinical skills, knowledge base and career choice. Although some information exists, a complete understanding of this phenomenon is essential to design and test supportive interventions that achieve a healthy recovery.

Methods: The purpose of this article is to report interview findings with 31 second victims. After institutional review board approval, second victim volunteers representing different professional groups were solicited for private, hour-long interviews. The semi structured interview covered demographics, participant recount of event, symptoms experienced and recommendations for improving institutional support. After interviews, transcripts were analyzed independently for themes, followed by group deliberation and reflective use with current victims.

Results: Participants experienced various symptoms that did not differ by sex or professional group. Our analysis identified six stages that delineate the natural history of the second victim phenomenon. These are (1) chaos and accident response, (2) intrusive reflections, (3) restoring personal integrity, (4) enduring the inquisition, (5) obtaining emotional first aid and (6) moving on. We defined the characteristics and typical questions second victims are desperate to have answered during these stages. Several reported that involvement in improvement work or patient safety advocacy helped them to once again enjoy their work.

Conclusions: We now believe the post-event trajectory is largely predictable. Institutional programs could be developed to successfully screen at-risk professionals immediately after an event, and appropriate support could be deployed to expedite recovery and mitigate adverse career outcomes.

Scott, SD; Hirschinger, LE; & Cox, KR (2008). Sharing the load: rescuing the healer after trauma. *RN Magazine*, 71(12),38-43.

The Institute of Medicine's riveting report, *To Err is Human*, projected that as many as 44,000 to 98,000 individuals die annually from preventable medical errors in U.S. hospitals.¹ Several other authors cite similar statistics, reinforcing the epidemic of preventable harm within our healthcare systems. Behind these startling medical-error statistics are numerous well-meaning professionals who, like Tony, could be suffering in silence. Tony's crisis occurred despite there being no evidence of a medical error. How many other nurses are suffering in silence? How many resolve their victimization and personal conflict by leaving the profession?

Working as patient safety experts at UMHC, an academic medical center in Columbia, MO, we began to realize that individuals directly involved at the sharp end of an unexpected patient decline demonstrated predictable patterns of behavior. The intense pain that these individuals feel is represented in emotionally poignant phrases we have heard repeatedly (see table in this article).

Sexton, JD; Pennebaker, JW; Holzmeuller, CG; Wu, AW; Berenholtz, SM; Swoboda, SM; Pronovost, PJ; Sexton, JB. Care for the caregiver: benefits of expressive writing for nurses in the United States. *Progress in Palliative Care* 2009; 17:307-312.

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Serembus, JF; Wolf, ZR; Youngblood, N. Consequences of fatal medication errors for health care providers: a secondary analysis study. *Medsurg Nursing*, 2001; 10(4),193-201.

For all health care providers involved in the process of administering medications, the potential for error exists (Hunt & Rapp, 1996; Potts & Phelan, 1996; Rolfe & Harper, 1995). Serious errors may occur in approximately 2 per 1,000 prescriptions (Lesar et al., 1990). The rate of adverse drug events (ADEs), including medication errors, are estimated at approximately 1%, with 12% to 30% of them classified as serious or life threatening (Lindquist & Gersema, 1998). Approximately 1,000 medication errors yearly are estimated to be associated with the deaths of patients.

For many health care professionals, making a medication error is antithetical to the personal goals of alleviating suffering, restoring and promoting health, and preventing illness (Arndt, 1994). Medication errors are equated with failure and a breach of the implicit trust between nurses, physicians, pharmacists, and patients (Wolf, 1994). The prospect of making a medication error invokes anxiety on the part of some health care providers (Cheek, 1997).

Silversides A. Fault/no fault: bearing the brunt of medical mishaps. *CMAJ* 2008; 179(4): 309-11.

“I’d rather not talk about it, even though in the end no fault was found. For 7 years it went on, months sitting in court listening to what a terrible person you are, no one recovers from that. It is on your mind every day, every minute. It changed the whole way I practised. The empathy I had, that I was known for, just wasn’t there anymore. Every patient was a potential lawsuit.” — retired Canadian doctor

Doctors don’t want to talk about it. When CMAJ spoke over the telephone with the doctor quoted above, who didn’t want his name used, hurt and anger seeped into his voice as he described the events that occurred over 25 years ago. His experience was not unusual.

Smetzer, J. Don’t abandon the “second victims” of medical errors. *Nursing*, February 2012; 42(2): 54-58.

Smith, ML and Forster, HP. Morally managing medical mistakes. *Cambridge Quarterly of Healthcare Ethics*, 2000; 9,38-53.

Mistakes and errors happen in most spheres of human life and activity, including in medicine. A mistake can be as simple and benign as the collection of an extra and unnecessary urine sample. Or a mistake can cause serious but reversible harm, such as an overdose of insulin in a patient with diabetes, resulting in hypoglycemia, seizures, and coma. Or a mistake can result in serious and permanent damage for the patient, such as the failure to consider epiglottitis in an initial differential diagnosis, resulting in a chronic vegetative state for a seven-year-old boy. Or a mistake can be an error in judgment that leads to a patient’s death.

Despite the fact that healthcare professionals are “only human” and are susceptible to making mistakes, there is a prevailing expectation both within and outside the healthcare professions that medical mistakes are unacceptable. Usual responses to mistakes include silence or discounting, denial and “coverup” if possible, and then blame and even legal repercussions if the “code of silence” is broken. There is a profound irony here for healthcare delivery systems adopting strategies of “continuous quality improvement” (CQI): the fear of legal liability and other repercussions prevent disclosure and open discussion about mistakes, while it is only through disclosure and open attitudes that the causes of mistakes can be identified, “systems” can be improved, future mistakes minimized and/or prevented, and attitudes toward

Souter, KJ, and Gallagher, TH. The Disclosure of Unanticipated Outcomes of Care and Medical Errors: What Does This Mean for Anesthesiologists? *Anesthesia & Analgesia*, March 2012; 114(3): 615-621.

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The disclosure of unanticipated outcomes to patients, including medical errors, has received considerable attention of late. The discipline of anesthesiology is a leader in patient safety, and as the doctrine of full disclosure gains momentum, anesthesiologists must become acquainted with these philosophies and practices. Effective disclosure can improve doctor–patient relations, facilitate better understanding of systems, and potentially decrease medical malpractice costs. However, many physicians remain wary of discussing errors with patients due to concern about litigation, the communication challenges of disclosure, and loss of self-esteem. As a result, harmful errors are often not disclosed to patients. Disclosure poses special challenges for anesthesiologists. There is often very limited time before the anesthetic in which to build the patient–physician relationship, and anesthesiologists usually function within complex health care teams. Other team members such as the surgeon may have different perspectives on what the patient should be told about operating room errors. The anesthesiologist may still be physically caring for the patient while the surgeon has the initial discussion with the family about the event. As a result the anesthesiologist may be excluded from the planning or conduct of the important initial disclosure conversations. New disclosure strategies are needed to engage anesthesiologists as active participants in the disclosure of unanticipated outcomes. Anesthesiologists should be aware of the emerging best practices surrounding disclosure, as well as the training opportunities and disclosure support resources that are increasingly available. Innovative models should be developed that promote collaboration between all perioperative team members in the disclosure process. There are important opportunities for anesthesiologists to play a leading role in defining specialty specific disclosure practices and to more effectively meet patients’ needs for disclosure after unanticipated outcomes and medical errors.

Taylor, D. Unexpected Intraoperative Patient Death: The Imperatives of Family- and Surgeon-Centered Care. *Arch Surg.* 2008;143(1):87-92.

Conveying to family members that their loved one has unexpectedly died during an operation is perhaps the most stressful task a surgeon must perform. The loss of a patient’s life precipitates enormous personal and professional anxiety and stress on a surgeon: profound grief, damage to self-esteem, loss of self-confidence and reputation, and the specter of litigation. Most surgeons feel unskilled in such a setting, yet how they communicate—what they say and how they say it—is extremely important for everyone involved. Two distinct, but interactive, phases of response are relevant when communicating with a family before and after an unexpected death of their loved one: a proactive phase (“CARE”) intended to establish a positive therapeutic relationship, and a reactive phase (“SHARE”) intended to respond to the crisis in a compassionate and respectful manner and to ensure self-care for the physician.

Vander Zyl, SK, Hohneke, L. The battlefield of caring. *NursingMatters*, 2006; July,7-8.

Van Pelt, F. Peer Support: Healthcare Professionals Supporting Each Other After Adverse Medical Events, *Qual Saf Health Care*, 2008; 17: 249-252.

The patient safety movement in healthcare is beginning to openly acknowledge the need to support the human side of adverse medical events in conjunction with evidence-based improvement initiatives. While medical literature has sporadically reported on the emotional impact of adverse events on healthcare professionals, little has been documented on the implementation of support services following these events. This article describes an adverse medical event where open communication and apology catalysed the development and implementation of a structured peer support service for care providers at the Brigham and Women’s Hospital following adverse events. The Peer Support Service bypasses the stigmas that limit the utilisation of formal support services and offers care providers a safe environment to share the emotional impact of adverse events while serving as a foundation for open communication and a renewal of compassion in the workplace. As the breadth of stressors impacting healthcare professionals is revealed, the Peer Support Service is being recognised as a vital hospitalwide service. It also appears to offer an important leap forward in the critical areas of patient safety and quality of care.

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Van Spall, Harriette G. When My Father Died. *Annals of Internal Medicine*, June 19, 2007, 146(12):893-4.
Being a physician has its share of blessings and afflictions when a parent is ill. The intentions are always well-meaning, the hopes always optimistic, but when injudicious care is provided and accountability withheld, the outcomes can be devastating. I have yet to overcome the failure, sorrow, loss, and despair that descended upon me when my father died. "Time heals all wounds," I am told. The wounds of this physician will last a lifetime.

Waterman, A, et al. The Emotional Impact of Medical Errors on Practicing Physicians in the United States and Canada. *Jt Comm J Qual Saf*, 2007 Aug; 33(8):467-476.

Background: Being involved in medical errors can compound the job-related stress many physicians experience. The impact of errors on physicians was examined.

Methods: A survey completed by 3,171 of the 4,990 eligible physicians in internal medicine, pediatrics, family medicine, and surgery (64% response rate) examined how errors affected five work and life domains.

Results: Physicians reported increased anxiety about future errors (61%), loss of confidence (44%), sleeping difficulties (42%), reduced job satisfaction (42%), and harm to their reputation (13%) following errors. Physicians' job-related stress increased when they had been involved with a serious error. However, one third of physicians only involved with near misses also reported increased stress. Physicians were more likely to be distressed after serious errors when they were dissatisfied with error disclosure to patients (odds ratio [OR] = 3.86, confidence interval [CI] = 1.66, 9.00), perceived a greater risk of being sued (OR = .28, CI = 1.50, 3.48), spent greater than 75% time in clinical practice (OR = 2.20, CI = 1.60, 3.01), or were female (OR = 1.91, CI = 1.21, 3.02). Only 10% agreed that health care organizations adequately supported them in coping with error-related stress.

Discussion: Many physicians experience significant emotional distress and job-related stress following serious errors and near misses. Organizational resources to support physicians after errors should be improved.

Wears, RL and Wu, AW. Dealing with failure: the aftermath of errors and adverse events. *Annals of Emergency Medicine*, 2002; 39,(3), 344-346.

The ongoing discussion about errors and adverse events in health care has, until recently, concentrated largely on prevention and detection; in short, what happens before an injury. In this issue of *Annals*, 2 articles address an issue that is equally important: what happens after an injury has occurred, or the "aftercare" of the victims of adverse events. Goldberg et al lay out general principles for coping with mistakes and adverse events, while Yee's personal narrative in "Change of Shift" makes these issues real and hard to forget.

West, CP, et al. Association of Perceived Medical Errors With Resident Distress and Empathy: A Prospective Longitudinal Study. *JAMA*, September 6, 2006—Vol 296, No. 9.

Context: Medical errors are associated with feelings of distress in physicians, but little is known about the magnitude and direction of these associations.

Objective: To assess the frequency of self-perceived medical errors among resident physicians and to determine the association of self-perceived medical errors with resident quality of life, burnout, depression, and empathy using validated metrics.

Design, Setting, and Participants: Prospective longitudinal cohort study of categorical and preliminary internal medicine residents at Mayo Clinic Rochester. Data were provided by 184 (84%) of 219 eligible residents. Participants began training in the 2003-2004, 2004-2005, and 2005-2006 academic years and completed surveys quarterly through May 2006. Surveys included self-assessment of medical errors and linear analog scale assessment of quality of life every 3 months, and the Maslach Burnout Inventory (depersonalization, emotional exhaustion, and personal accomplishment), Interpersonal Reactivity Index, and a validated depression screening tool every 6 months.

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Main Outcome Measures: Frequency of self-perceived medical errors was recorded. Associations of an error with quality of life, burnout, empathy, and symptoms of depression were determined using generalized estimating equations for repeated measures.

Results: Thirty-four percent of participants reported making at least 1 major medical error during the study period. Making a medical error in the previous 3 months was reported by a mean of 14.7% of participants at each quarter. Self-perceived medical errors were associated with a subsequent decrease in quality of life ($P=.02$) and worsened measures in all domains of burnout ($P=.002$ for each). Self-perceived errors were associated with an odds ratio of screening positive for depression at the subsequent time point of 3.29 (95% confidence interval, 1.90-5.64). In addition, increased burnout in all domains and reduced empathy were associated with increased odds of self perceived error in the following 3 months ($P=.001$, $P=.001$, and $P=.02$ for depersonalization, emotional exhaustion, and lower personal accomplishment, respectively; $P=.02$ and $P=.01$ for emotive and cognitive empathy, respectively).

Conclusions: Self-perceived medical errors are common among internal medicine residents and are associated with substantial subsequent personal distress. Personal distress and decreased empathy are also associated with increased odds of future self perceived errors, suggesting that perceived errors and distress may be related in a reciprocal cycle.

White, AA; Waterman, A; McCotter, P; Boyle, D; & Gallagher, TH. (2008). Supporting health care workers after medical error: considerations for healthcare leaders. *Journal Clinical Outcomes Management, 15,240-247.*

To describe how errors personally affect medical professionals, barriers to the implementation of provider support programs, and key issues for hospital leaders to consider when creating a support program.

Methods: Literature review.

Results: Health care providers involved in medical errors experience significant emotional turmoil. Nurses and physicians report feeling anxious, upset, guilty, depressed, and scared after an error, often for prolonged periods. Furthermore, job satisfaction and performance may decline. Unfortunately, providers are often reluctant to discuss these emotions with colleagues and may not seek support from others as they cope with these emotions. Recent evidence shows that physicians are dissatisfied with the emotional support they receive from health care institutions after medical errors. Multiple barriers present challenges for health care leaders to designing effective support programs, including physician perceptions of efficacy, privacy, and availability. However, a few malpractice insurers and large medical centers have created programs that successfully provide emotional support to providers after errors through one-on-one counseling.

Conclusion: Medical professionals frequently experience emotional distress after medical errors and often do not receive support for coping with this distress. Leaders at medical centers and malpractice insurers should consider providing counseling services and other means of support to health care providers involved in medical errors.

Williams, ES, et al. The Relationship of Organizational Culture, Stress, Satisfaction, and Burnout with Physician-reported Error and Suboptimal Patient Care: Results From the MEMO Study, *Health Care Management Review, July-Sept. 2007, 32(3):203-12.*

Wolf, ZR. Stress management in response to practice errors: critical events in professional practice. *Pennsylvania Patient Safety Reporting System-Patient Safety Advisory, 2005; 2(4),1-4.*

Healthcare providers have been educated to believe that they must perform perfectly in clinical practice. Recent studies and initiatives are dispelling this myth and compelling providers to accept their fallibility. Many safety initiatives require nurses, physicians, and pharmacists to change entrenched behaviors and develop additional interdisciplinary skills. However, accepting human imperfections and practicing safety initiatives fail to eliminate the immediate and persistent stress that providers experience because of occurrences involving healthcare errors. When nurses, physicians, and pharmacists make medication

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errors, they respond emotionally, socially, culturally, spiritually, cognitively, and physically. They are fearful and distressed by the real or imagined consequences of the mistakes. Chief among providers' concerns is that they have harmed a patient. The personal and professional impact on them is tremendous. The stress that accompanies the error remains throughout the provider's career as situations bring the memory back.

Wolf, ZR; Serembus, JF; Smetzer, J; Cohen, H; Cohen, M. Responses and concerns of healthcare providers to medication errors. *Clinical Nurse Specialist*, 2000; 14(6),278-287.

This descriptive, correlational study examined the responses and concerns of healthcare professionals about making medication errors and estimated patient harm from such errors. A systematic random sample of nurses, pharmacists, and physicians (N = 402) completed a self-report survey about a medication error they judged to be serious. Respondents were guilty, nervous, and worried about the error. They feared for the safety of the patient, disciplinary action, and punishment. A few subjects indicated that they never reported the errors. The most frequent symptoms associated with errors were neurologically based. The injury suffered by patients was not severe overall according to the harm scales. Weak correlations were found for the harm scales and responses and concerns. The authors suggest a supportive environment for the provider following an error and continuous quality improvement efforts to eliminate system-based errors.

Wu, AW; Folkman, S; McPhee, SJ; & Lo, B. Do house officers learn from their mistakes? *Journal of American Medical Association*, 1991; 265(16),2089-2094.

Wu, AW; Folkman, S; McPhee, SJ; Lo, B. How house officers cope with their mistakes. *Western Journal of Medicine*, 1993; 159(5), 565-569.

We examined how house officers coped with serious medical mistakes to gain insight into how medical educators should handle these situations. An anonymous questionnaire was mailed to 254 house officers in internal medicine asking them to describe their most important mistake and their response to it; 45% (N = 114) reported a mistake and completed the questionnaire. House officers experienced considerable emotional distress in response to their mistakes and used a variety of strategies to cope. In multivariate analysis, those who coped by accepting responsibility were more likely to make constructive changes in practice, but to experience more emotional distress. House officers who coped by escape-avoidance were more likely to report defensive changes in practice. For house officers who have made a mistake, we suggest that medical educators provide specific advice about preventing a recurrence of the mistake, provide emotional support, and help them understand that distress is an expected concomitant of learning from the experience.

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Think back to your last mistake that harmed a patient. Talk to a colleague about it. Notice your colleague's reactions, and your own. What helps? What makes it harder? Physicians will always make mistakes. The decisive factor will be how we handle them. Patient safety and physician welfare will be well served if we can be more honest about our mistakes to our patients, our colleagues, and ourselves.

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