In this issue of Health Ethics Today we have two articles which are focused on the quality of patient care, and which explore patient safety from different points of view. Patricia Marck’s paper entitled Ethics in Hard Places: The Ecology of Safer Systems in Modern Health Care draws our attention to resource conservation as an ethical practice in health care. Marck uses the ideas of Eric Higgs on eco-preservation to illustrate her own ideas about ethical stewardship of our health care resources, including nursing staff. She draws striking parallels between the environmental conservation principles required to balance society’s demands on resources with the future health of this planet, and the stresses and strains within the Canadian health care system. Based on her own qualitative research she presents us with a vivid picture of a specific crisis in quality of care, and of the frustration of the caregivers involved. Marck is optimistic however that by focusing on the relational ethical nature of all patient – professional interactions within a broad understanding of respect for persons, we will not allow such situations to recur.

Barbara Russell addresses the thorny issue of clinical error by using the high profile and dramatic case of Jesica Santillan who died after receiving a mismatched organ transplant followed by attempted rescue with a second transplant operation. Rather than adding to the mountain of criticism heaped upon Dr. Jaggers and Duke University Hospital Russell offers different conceptions of justice as a way...

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Editor's Forum

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Ethics in Hard Places:
The Ecology of Safer Systems in Modern Health Care

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Move them out, we’ve got more coming in. ...we’ve got nine that we don’t want to send to the floor but we want to bring in more, so who is the one we are least worried about? Elva (1, p. 6).

Recently, Canada’s policy makers have weighed in on something that practitioners have known for some time: Today’s health care environments can be very hard places in which to deliver safe, competent, ethical care. The Canadian Institute for Health Information reported in 2001 that health care work generated the fourth highest rate of staff injury across all large industries (2), and in 2002, the National Steering Committee on Patient Safety (3) called our health system a “high-risk environment”. Health care practitioners are morally distressed about the prevailing conditions for patients and staff within modern hospitals (4; 5; 6). There is international consensus on the systemic nature of many safety concerns (7; 8; 9; 10; 11). In this article, I will argue that the ethics and science of safer health systems is rooted in a strong ecology of safe places in which to give and receive care.

So why ecology for a health system, and to what ends? Across health disciplines, health research, and health ethics, experts agree that disturbing features of today’s practice environments are critically related to the well-being of patients and staff. For example, experts note that many health care organizations exhibit over-controlling cultures and relationships that suppress the development of more ethical and adaptive approaches to safety issues within our health system (5; 6; 12; 13). In addition, our aging, overtaxed health care workforce registers record rates of injury, illness and attrition (2; 14), and the related use of overtime, double-shifting, and other strategies to “fill the gaps” further depletes a shortening supply of experienced practitioners (2; 14; 15). Continual changes to technology coupled with rising patient acuities, an escalating pace of work, and budgetary constraints, make for an increasingly complex and vulnerable system (3; 16; 17).

As agreement about the types of risks that characterize today’s practice environments grows, what is noteworthy is that perspectives on how modern health care systems actually function still vary. Comparisons of health systems with aviation systems, the military, the nuclear industry or other constructs bring different concepts and principles to bear, and experts debate which models or approaches can actually strengthen our system’s structures, processes and environments in affordable, sustainable ways (13; 16; 18; 19; 20; 21). Underneath this ongoing debate about a preferred approach, a more fundamental question about patient safety therefore remains, which is: When we try to improve the safety of today’s health system, just what kind of system(s) are we trying to repair? Recent accounts of nurses’ work in re-engineered Alberta hospitals (1; 22; 23; 24) to think about and to deal with such tragedies. Her ‘risk – benefit’ analyses are very different to the usual ‘name and blame’ practice in such cases. In the increasingly complex and demanding workplace environment of today’s hospitals, and with the involvement of many different health care facilities in a patient’s care, the potential for error is significant. Unfortunately most cases are presented in the media as ‘horror stories’ without any clinical background.

Both papers are very pertinent as we hear about errors within the health care system on a daily basis. With so many suggestions for ‘naming, blaming and fixing things’, we should attend to Marck’s question; “just what kind of system(s) are we trying to repair?” and to Russell’s ideas which do not always demand a scapegoat. ■
suggests that our scientific and ethical thinking about modern health systems, along with the system itself, are in need of some ecological repair.

“Thinking Like” a System – Rejoining Science and Ethics in an Ecological Approach

When we see land as a community to which we belong, we may begin to use it with love and respect (25).

What is the “logic of (safer) systems” in health care; just what sort of thinking do we need to do? In the view of Eric Higgs (26; 27), effecting scientifically sound restorations of damaged ecosystems is fundamentally a moral task. We only achieve good and lasting restorations, he asserts, to the extent that we foster more ethical relations with each other, and with the land. In 1949, Aldo Leopold urged his fellow American citizens to wonder what it meant to “think like the mountain” as he noted the devastating soil erosion that comes from the excessive harvesting of trees. Daniel Worster (28) draws on Leopold’s teachings in his discussion of the care of water sources for farming, noting that water as a commodity is just “seen as a ‘cash flow’, no longer as the lifeblood of the land.” Worster’s advice seems more prescient than ever when we think of the present diseases that plague over-farmed and over-developed lands around the world.

The communal commitments of ecological restoration, Higgs argues, come to fruition when we purposefully inhabit a place in order to know it (good science), and watch over it together (good ethics), as we would a cherished home place (25; 26; 29; 30). In short, the ecology of an environment that is “safe and sound” is one where the science of systems is inseparable from the ethics of place. In the discussion that follows, we can recognize our health care environments as threatened home places that need our protection as we reconsider concepts of community, efficiency, and the capacity to respond through an ecological lens.

Rebuilding Community in Health Care – Picking up the Fragments

Many of today’s urban and rural areas, as well as most present day health care environments, are fragmented by the loss of historical continuity and local knowledge. Specifically, a decade of health care downsizing, bumping, work redesign and other changes has produced fragmentation and dislocation of practice communities and their local, shared clinical wisdom. As experts in health care, ecological restoration, and health care ethics all note, overly fragmented communities are vulnerable places where the potential for adverse outcomes grows (6; 26; 31; 32; 33; 34; 35; 36). So how do we rebuild our communities of practice; what actions aid this vital work? When restoration scientists and practitioners seek to repair damaged habitats, they work with local citizens to discover and apply shared knowledge of the community’s history, culture, practices, resources, and other attributes (26; 30; 37). Research is integrated with the conduct of restoration work, as “best practices” are developed and applied in a cycle of inquiry, evaluation and adaptation. In health care, most safety research and policy work still targets the collection of error data and the regulation of prac-
titioners rather than the re-development of practice environments to support the delivery of good care. While better data and sound regulatory frameworks are essential components of safer systems, research with practitioners in their own workplaces to re-store their practice environments is long overdue. Seasoned nurses, physicians, and other practitioners shepherd vulnerable patients and families through the dangers of our health system with knowledge of their workplaces that only healers know. If successful restoration projects are any clue, researchers and decision-makers in health care safety need to spend more time inhabiting the same places where practitioners are providing care. Shared knowledge of safer systems will develop when, at least some of the time, we all call the same workplaces home.

Efficiencies and Deficiencies:
The Ecological Equation

In ecologically damaged environments, the chronic over-use of unsustainable practices is associated with long term, unanticipated costly deficiencies and harms. In degraded ecosystems, this “efficiency : deficiency” equation is at work when the short-term “profits” of today’s frenetic production pace are soon out-stripped by much deeper, long-range costs in the form of environmental pollution and species decline. In our present health system, the immediate budget reductions that are achieved through such measures as reduced staffing, decreased health profession programs, and increased throughput of patients are closely associated with the rising costs of excessive overtime, workforce attrition, recruitment programs, and patient and practitioner harms. For both eco-systems and health systems, a similar ecological principle holds: The immediate savings wrested from these flawed practices are transient, and longer term costs outstrip the original “efficiency” (38; 39; 40; 41). As both Leopold and Worster might ask, what is “eco-logical” about health care workplaces where today’s “savings” so quickly fuel tomorrow’s human and material deficits?

With these notions about eco-efficiency in mind, it is all too easy to spot a host of threats to daily practice in today’s health care system. For instance, what does it mean for nurses to rush back and forth between a perpetually re-organized supply cart and an escalating volume of acutely ill patients who await care? As one practitioner after another fumbles through a cart of constantly changing packages and product lines, what are the chances of spreading infectious agents? Then as we compare the “savings” of 2 - 3 cents per package, which are achieved by switching IV tubing brands for the third time in 14 months with the costs of fighting MRSA, SARS, and other outbreaks, we have to ask: Just what short-lived “efficiencies” are regularly inflicted on patients and practitioners in our complex modern health care environments, with what deeper and more lasting human and material costs?

Adaptive Responses: Regenerating Mechanisms of Self-Correction

.....even poorly run codes, there’s never the opportunity to debrief. You know we don’t even discuss what happened pre-code....I think part of it has been there has been no time. .....no initiative to say, “What happened here? How can we do better next time? Michelle (1, p. 132).

As fragmentation and false efficiencies within an over-burdened environment increase, degraded places and their inhabitants become less and less able to effectively respond. Early
warning systems and responses across an ecosystem falter, and small assaults that were formerly self-limiting more readily become disasters. In a comparably strained health system, similar systemic vulnerabilities are the hallmark of several recent mishaps. The corrective mechanisms that characterize adaptive systems erode, and the potential for dysfunction grows. As Justice Sinclair notes in his report on 12 pediatric cardiac surgery deaths (6), the re-engineering of Winnipeg Health Sciences in the early ‘90’s rendered nursing invisible in the hospital’s formal organization and on several clinical teams where nursing expertise could have significantly improved the safety of patient care. More recently, Gloubeman (42) notes that government cutbacks, gaps in critical check points and communication, and other systemic factors contributed to Walkerton’s contaminated water supply disaster. Most currently, there is consensus that an over-dependence on casual and part-time employment practices weakened the capacity of the Toronto hospital system to either contain or respond to the SARS outbreak. The dangers to practitioners and patients then deepened when nurses’ warning of a SARS reoccurrence were initially ignored (43).

As we wonder why the early warnings of first Winnipeg’s and then Ontario’s nurses were discounted during the mounting cardiac deaths and the reoccurrence of SARS respectively, the same question emerges for all threatened living systems across the globe. Why do we stumble onto the same warnings over and over again, only to turn away once more from our healing tasks? If we want safer systems of care, we must create safe places where practitioners are supported in saying hard things out of shared ethical commitment to best possible care. Are we really willing to commit to building safe places in health care, or will we simply listen to the receding footsteps of more and more practitioners who walk away?

Safe Places, Safer Systems:
An Ecological Task

Now that the need to build safer practice environments is recognized, it is timely to ask: Can the wisdom from two healing vocations, those of nursing and ecological restoration, assist us to research and repair damaged practice environments? In the hard places where practitioners presently struggle to maintain safe care, it is hard to imagine why we would hesitate. We need multiple perspectives on the nature of health systems, but if we hope to sustain healers and the essential work that they do, a better understanding of the ecology of living systems, including that of our 21st century health system, is surely one essential kind of knowledge for safer and more ethical care.

Key References


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In 1995, the *Journal of the American Medical Association* published the results of the SUPPORT Study, an extensive investigation of end-of-life care at five major U.S. hospitals. The results incited vigorous discussions about serious clinical and ethical deficiencies in such care and possible reasons for the dramatic failure of the proposed intervention. Just as the SUPPORT Study “pushed” ethics to the forefront of clinical practice, so did the Institute of Medicine’s (IoM, 1999) report on medical error in America. The IoM report concluded that errors cause 44,000 to 98,000 deaths annually. The magnitude of these numbers demanded the attention of the healthcare community and governmental regulators. A study by the Canadian Institute of Health Research and Canadian Institute for Health Information on errors rates in Canadian healthcare will soon publish its much-anticipated findings. Complementing this initiative is Edmonton’s Patient Safety Institute (Health Canada, 2002) to be funded federally for five years at $10 million annually, as well as a fellowship opportunity in patient safety, co-sponsored by the Health Quality Council of Alberta and Alberta Heritage Foundation for Medical Research.

The IoM report exposed a long-standing, serious problem. Errors should never have been treated as shameful secrets because the associated consequences have been unacceptable: Patients are suspicious, practitioners have inexpressible guilt, facilities worry about disabling lawsuits, and practice does not improve. In studying errors in healthcare, it quickly becomes clear how multi-faceted is this issue. Numerous articles and studies now scrutinize how to appropriately define “error,” (“When medical error becomes medical malpractice,” Archives of Surgery, 2003) what is the connection between error and harm and negligence, what to disclose to the patient, how to assign responsibility, what qualifies as acceptable punishment, what remedies are warranted, and how to reduce incidence rates.

From an ethical perspective, this work should be informed by four over-arching goals. First, minimize patient harm and practitioner moral distress. Second, preserve the patient’s and the family’s trust. Next, support professionals’ commitment to continue putting patients first and self-interest second. And fourth, sustain health facilities’ provision of responsive and reasonable treatment and care to the public.

Although the case of Jesica Santillan at Duke University Hospital (Resnick, 2003; Snyderman, 2003) is rife with ethical concerns, I will use only portions of it to examine the role of fairness or justice in terms of assigning responsibility, meting out penalties, and identifying suitable remedies in response to error. As an abbreviated summary of the case: a set of heart-lungs were transplanted into 17-year old Jesica. The organs were of A-type blood, yet she had O-type blood. A rejection response set in very quickly and the expected outcome was death. While Jesica was sustained by life support, a set of O-type organs was located in the region thirteen days later. A second operation took place. It was determined shortly thereafter that irreversible and major brain damage had occurred after the first operation. The fam-
ily eventually agreed to discontinue life-supporting interventions which resulted in her death.

From the outset, compassion is necessary in this situation: for Jesica and her family in light of such loss. Compassion is needed, too, for Dr. Jaggers, the transplant surgeon, who expressed his grief and remorse to the family. Yet justice is warranted, too. There are five kinds of justice and, as explained below, all prove relevant to this case:

- **compensatory**: trying to return the victim to his pre-harm state
- **distributive**: allocating limited goods and burdens among members of a particular group
- **procedural**: formulating rules of conduct that will apply equally or equitably
- **restorative**: determining how the transgressor can be accepted fully back into the harmed community
- **retributive**: deciding which penalties are imposed on whom

Past discussions about the role of retributive justice have included worries about “shame and blame” responses to clinical error. However, prior to meting out punishment, retributive justice requires determination of culpability. Three concepts are helpful for establishing culpability: causation, responsibility, and accountability. For my purposes here, the causal agent is the person directly causing the harm to occur. Since it was Dr. Jaggers who replaced failing organs with mismatched organs, he is the causal agent. The person or persons responsible, however, are those whose job it was to verify the blood match or to enter blood-type data into a computer bank. Only if Duke’s transplant procedure stipulated that the surgeon must verify matching would Dr. Jaggers be among those responsible for the error. Lastly, accountability means answerability such that someone must come forward with an explanation of the events and face the victims and critics. As Jesica’s primary physician, Dr. Jaggers is accountable to her and her family. The chief of Duke’s transplant program would be accountable for maintaining the trust of current and future organ donors and recipients.

With these distinctions made, it must also be determined why those responsible did what they did. Was it due to a system problem (e.g., a computer “glitch”), ignorance, carelessness, viciousness, or just being human (e.g., fatigue, forgetfulness)? The answer to this question will affect the extent of their individual culpability and whether their actions also meet the legal standard for negligence.

Retributive justice also demands fair penalties. To qualify as fair, penalties must be imposed on the party responsible, prescribed by a legitimate authority, and proportional to the harm incurred. People learn less from being punished if they consider the penalty to be disproportional or prescribed by illicit parties. In other words, if a penalty is deemed inadequate, the wrongdoer does not change and others are not deterred. Or if a penalty is excessive, fear causes errors to “go underground.” And finally, a wrongdoer may dismiss the validity of a penalty when it is imposed by colleagues, rather than by a supervisor or licensing board.

**Restorative justice** is an intriguing new form of justice and can be useful in cases of serious medical error. Its goal is for the wrongdoer to rejoin the harmed community as, once again, an equal member. Applied to a healthcare setting, this type of justice would reject continued ostracism or marginalization of an erring practitioner from the daily operations of a clinic, hospital unit, or health program. Furthermore, it would reject rash dissolution of the practitioner – patient relationship.

Turning to the harm suffered by Jesica, was transplanting the second set of organs a fair response or only a compassionate one? **Distributive,** **compensatory,** and **procedural** justice help answer this question. First, **distributive** and **compensatory** justice. Distributive justice demands defensible allocation of scarce organs in terms of their benefits and burdens. Compensatory justice insists that Jesica be returned to her pre-transplant state as much as possible. To illustrate how these two forms of justice can conflict, imagine that the clinical situation unfolds as follows:
Feb. 4th: the first name on the O blood-type recipient list: Jesica
the first name on the A blood-type recipient list: Erik
- without a transplant, Jesica and Erik have a 60% chance of dying within 3 months
- if each is transplanted, he or she has an 80% chance of living 2+ years
- if a person is at the top of the waitlist, the average wait is 6 weeks

Feb. 5th: a set of pediatric A blood-type heart – lungs becomes available

Feb. 6th: Erik receives the organs (i.e., no error occurs)
- Erik now has an 80% chance of 2+ years while Jesica must wait 6 more weeks
- since Erik was at the top of the A list, this allocation was fair
- since Jesica is not harmed, no compensation is needed

Feb. 6th: Jesica receives the mismatched organs
- now she has virtually no chance of living more than 2–3 weeks; Erik must wait 6 more weeks
- Jesica has been harmed severely and Erik has been harmed to some degree

Feb. 20th: a set of pediatric O-blood type heart–lungs becomes available

Feb. 21st: Jesica receives the compatible O organs
- she now has an 80% chance of living 2+ years
- since she met the recipient criteria, she was a qualified recipient
- since she is restored to a non-error state, compensation is total

Imagine, however, that on February 19th, the medical team discovers Jesica suffered extensive, irreversible neurological damage from the first operation. A criterion that becomes directly salient is the one that requires that possible recipients must be expected to receive a certain number of years of benefit:

Feb. 20th: a set of O–blood type heart–lungs becomes available. Duke’s recipient criteria include a requirement that potential recipients must be reasonably likely to live 2+ years post-transplant

Feb. 21st: Jesica receives the compatible O organs
- she now has an 80% chance of living 2+ years
- since she met the recipient criteria, she was a qualified recipient
- since she is restored to a non-error state, compensation is total

—but what if Duke’s criteria included concern for a recipient’s quality of life, not just physiological recovery?

Feb. 20th: imagine that the criteria include a specific requirement that potential recipients must be reasonably likely to live 2+ years AND that the transplant is expected to help recipient live a personally desirable and meaningful life

Feb. 21st: Jesica receives the O organs
- she now has an 80% chance of living in an irreversibly comatose state for 2+ years which constitutes a personally undesirable, inadequately meaningful life
- since she did not meet all recipient criteria, the allocation was unfair
- since it is impossible to return Jesica to a meaningful life, compensation is not possible

This last scenario hinges on procedural justice because the transplant program’s allocation criteria qualify as rules which must then be equitably applied.

In conclusion, clinical error is an extremely complex subject which, in turn, necessitates avoidance of a “rush to judgment” as well as avoidance of “knee-jerk reactions.” As shown above, great care is needed to accurately assess culpability, to determine fair penalties, and to choose appropriate remedies for those harmed. It will not be possible to prevent all harmful errors because illness and healthcare inescapably involve uncertainty, fallibility, and danger. With this said, however, facing and responding to practitioners’ errors can be turned into ethical opportunities to demonstrate integrity, trustworthiness, and compassion.

References


Notes
1 This name is fictitious, but there was likely someone with A-blood type waiting for the heart-lungs, or perhaps one person waiting for the heart and two people waiting for a lung. This brings up the issue of multi-organ transplants wherein one person benefits, rather than several. Because of limitations on the length of this article, I will only consider a person who needs all three organs.

2 The issue of what constitutes a meaningful life is contentious because non-disabled people tend to evaluate disabilities more negatively than those who are disabled. Accordingly judgment of changes to personal abilities must remain individual although it is imperative for the individual to be educated about new ways to live---and live well----in spite of disability.

3 Injured parties have recourse to tort laws and the courts. However, it is acknowledged readily that monetary awards do not compensate adequately for a person’s death.

4 Solely to illustrate the impact of procedural justice on organ allocation decisions, it has been assumed that Jesica would not desire to live in a non-reversible PVS state.

5 Berlinger’s recent article is an especially valuable contribution to discussions regarding how to address harmful errors.
In everyday healthcare, much is straightforward and predictable. And, yet, describing the nexus of patient – practitioner as just a “medical encounter” says too little. Although many interactions are routine, they all have potential for much more.

Complications: A Surgeon’s Notes on an Imperfect Science does not offer a comprehensive theory of ethical practice or definitive concepts to apply to practice. Gawande, himself a surgeon at Harvard, admits in the book’s introduction that his focus is “the moments in which medicine actually happens” (p. 7). Accordingly, Complications is a testament to his curiosity and insightfulness. He does not maintain readers’ interest by discussing dazzling innovations or dramatic emergencies. Instead the subtleties, complexities, and momentousness in routine medical care are identified. The book is also a testament to honesty: It does not advocate grand ideals or excels. Rather, Gawande’s evaluations concede the unavoidable limits to medico-scientific knowledge and the fallibility of human beings while, at the same time, acknowledging a kind of mystery or wonder in what practitioners actually do for and with patients.

The book relies on richly-described cases that, in turn, affirm the legitimacy of its analyses and the practicality of its recommendations. While each chapter tackles a different situation, the book has three sections. The first section’s examines physician competence in light of the fact that there is always more to imagine, more to know, more to ask, more to do than can be humanly imagined, known, asked, or done. The second section explores seemingly mundane illnesses in terms of what is still so intriguing about them. And the final section challenges standard descriptions of “shared decision-making”, which is the intersection of professional judgment and patient autonomy. The chapters in this section present a very different and likely more accurate description: one that I can describe best as a mutual “dance of many veils.”

Complications is a gem: engaging, revealing, and provocative. I highly recommend it for anyone currently in medicine, considering a medical career, or educating physicians. I also recommend it for those who critique physicians’ actions and character; people such as healthcare administrators, clinical and theoretical ethicists, and yes, even patients and their families.

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The John Dossetor Health Ethics Centre promotes professional and public debate and research on matters of ethical concern in our health care facilities and communities. In order for students educated in different disciplines at the University of Alberta to become accomplished researchers and practitioners, it is clear that they need information and training in the area of health ethics. The Dossetor Centre is committed to providing this education. Ethical decisions by researchers and practitioners will ultimately shape the health care delivery practices and models of the future.

It is the goal of the Centre to raise $20,000 in order to endow the John Dossetor Graduate Scholarship. An endowed scholarship invests the principal allowing the interest to fund the award every year. The scholarship will be granted to a qualified graduate student who conducts research in the area of health ethics at the University of Alberta.

You are invited to make a gift toward the John Dossetor Graduate Scholarship in Health Ethics. This scholarship will serve as a lasting legacy of the contribution of Dr. Dossetor to the ongoing teaching and research of health ethics at the University of Alberta and will be an important step in ensuring its success. All donations are welcome and will be directed to the scholarship and all donations will be tax-deductible.

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