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Healthcare Quarterly

SPECIAL ISSUE

Seventh in a Series

Papers

PATIENT SAFETY

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Ten Years Later

Patient Safety at the Frontlines:
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Governance, Policy and System-Level Efforts
to Support Safer Healthcare

Improving Safety: Engaging With Patients
and Families Makes a Difference!

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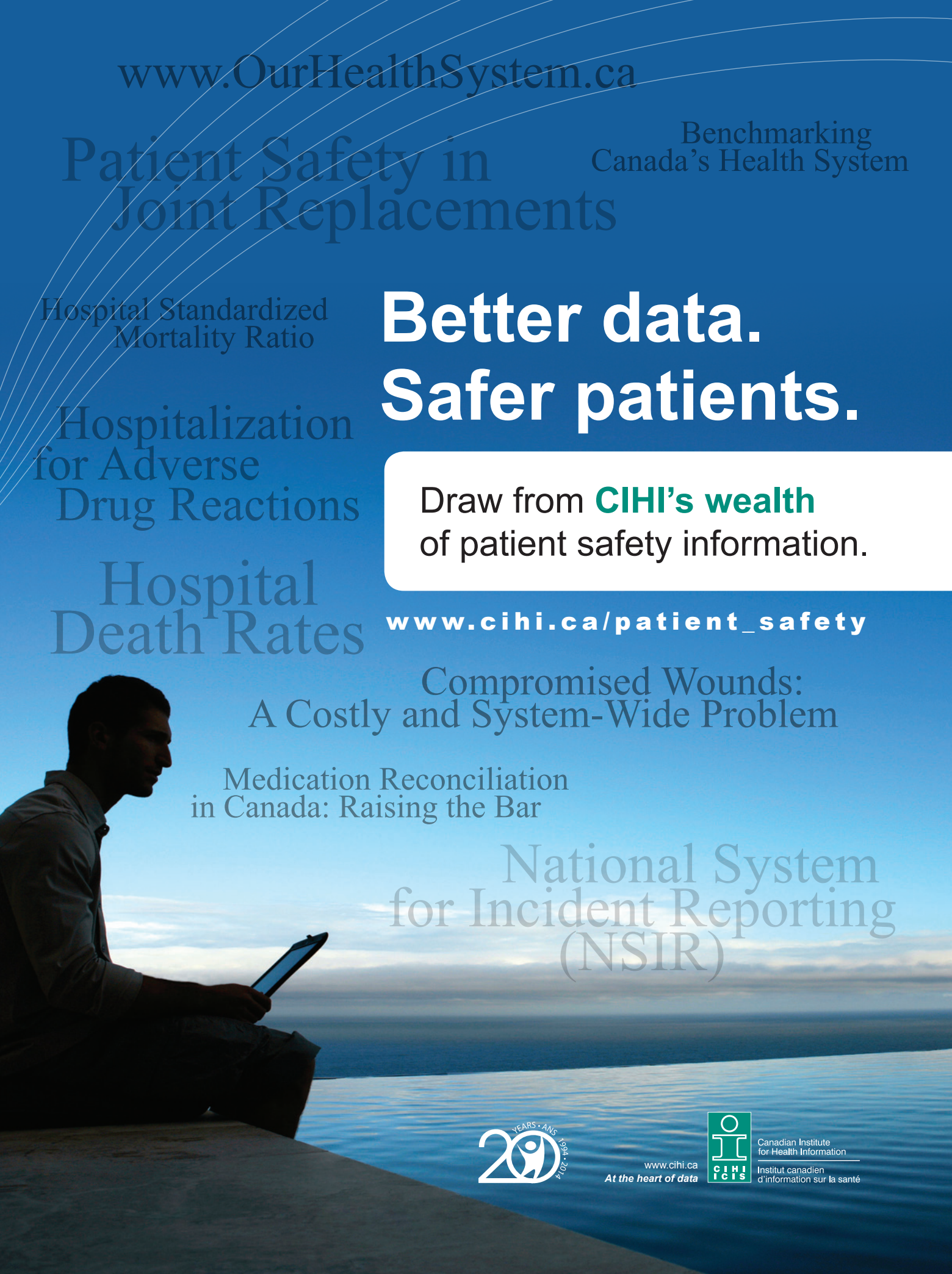
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An Opportunity for Reflection

G. Ross Baker

Tenth year anniversaries provide opportunities for reflecting on accomplishments and for making plans for the future. This year—2014—marks two important 10-year anniversaries of watershed events in the evolution of safer patient care in Canada:

- The launch of the Canadian Patient Safety Institute (CPSI), a national non-profit organization dedicated to raising awareness about patient safety and to facilitating the implementation of best practices (www.patientsafetyinstitute.ca).
- The publication of the results of the Canadian Adverse Events Study (Baker, Norton et al. 2004), which identified an adverse events (AEs) rate of 7.5% (projected to be 185,000 events in the year 2000) among all adult acute care hospital admissions in Canada, with over one-third (70,000 events) estimated to be potentially preventable.

Since then, there has been a vast amount of research, discussion, planning and activity aimed at ensuring that the care patients receive – not only in hospitals, but in home and other settings – is safer. For instance, new accreditation requirements have come into force, dedicated patient-safety training and professional development have arisen and been expanded and, across both the healthcare sector and society at large, awareness of the critical value of patient safety has expanded exponentially. On the care-delivery side, considerable evidence has been developed informing implementation of patient safety practices including medication reconciliation, surgical checklists and "bundles" of unit-based practices addressing ventilator-associated pneumonia, central-line infections and other sources of harm.

Despite all these innovations, however, there is still uncertainty over whether patient care is safer now than it was in 2004. A recent study, for example, revealed no statistically significant correlation between the introduction of surgical safety checklists in Ontario – a widely deployed tool in Canadian hospitals – and measures of patient deaths and complications (Urbach et al. 2014). Moreover, studies of adverse events in other environments, including pediatric hospitals (Matlow et al. 2012) and home care (Blais et al. 2013) have emphasized that risks and harm exist in many settings, not just in adult acute care hospitals.

The harsh reality is that even after 10 years of intense efforts and large expenditures, Canadian healthcare is still not reliably safe, a prospect that few anticipated in 2004. New sources of harms continue to be identified and evidence-based solutions are often difficult to implement and sustain. This reality provided the impetus and context for creating this special patient safety issue of *Healthcare Quarterly*. The collection is divided into two main sections. Part one comprises two edited transcripts of roundtable discussions conducted with some of the leading individuals involved in patient safety efforts across Canada. The first meeting brought together people at the helm of national groups, while the second involved leaders from provincial and regional organizations. Part two of this issue presents six original essays. Each one focuses on a particular "lever" that is crucial to advancing patient safety: governance and policy, education, frontline practice, patient and family engagement and measurement and evaluation.

Roundtable Discussions

The national and provincial/regional telephone roundtables were convened in early 2014. The first of these – the national discussion – involved six participants. That wide-ranging conversation generally took a big-picture view of the patient-safety landscape, starting with several of the past decade's major achievements, such as the solid increase in awareness of the importance of patient safety and the related development of specific patient-safety agendas. Other positive gains mentioned by participants include the addition of patient and family members' voices, increased transparency and reporting (including establishment of a national system for medication incident reporting) and medication reconciliation.

Concern was expressed, however, over the pockets of persistent resistance to change, the growing recognition of the dangers of care transitions and the continued repetition of identical events across different jurisdictions. Looking towards what ought to be done in the future, participants underscored the importance of measurement, better communications, leadership, collaboration, sustainability and workplace health.

A few weeks later, a provincial/regional roundtable was convened; this discussion was oriented around many of the same questions. However, given the nature of the participants' organizations – for example, four health quality councils – the discussion during this meeting tended to delve more into on-the-ground implementation of the patient-safety agenda.

One concern mentioned by the national-level participants and echoed during the provincial/regional roundtable was the integral nature of safety and quality. Too often, both groups noted, these two concerns are artificially isolated. Instead we need to see, in the words of one of the participants, that "safety is the core dimension of quality." Other issues that received attention during the second roundtable included the increased inclusion of patient safety in provider education and a growing commitment among system leaders to patient safety (coupled, again, with the challenge of making the connection to the front

lines). The roundtable also featured extensive discussion – with recent examples – of efforts to develop adverse-events reporting systems that can also be used for learning purposes.

Assessing and Improving Key Levers to Patient Safety

Key experts were commissioned to write detailed papers on five of the topics addressed during the roundtable meetings. Ross Baker begins with an essay on critical aspects of governance and policy: the "blunt end" of the patient-safety spectrum. This paper provides an overview of developments in the disclosure of incidents to patients and their families, incident reporting and learning, medical liability, accreditation, performance measurement, investments in quality improvement capacity and capability, governance specifically targeted at safety and quality and patient engagement. The paper also points to the regulation of health professionals, an area that "offers opportunities to create safer practices."

In a reflective piece that complements Baker's essay, Dennis Kendel provides a more detailed assessment of the importance of using regulatory and policy levers to narrow the "gap between worker capacity to perform safely … and actual worker performance." In this context, Kendel strongly underscores the vital importance of applying accountability expectations uniformly to all provider groups, presently a major shortcoming across the Canadian healthcare system.

Kendel's argument that policy and regulatory levers have been differentially applied to various groups finds an interesting corollary in Brian Wong's article on the need to educate frontline staff in the fundamentals of patient safety and healthcare quality. In this regard, he analyzes the formal, informal and hidden curricula, arguing that the last of these is "perhaps the most underappreciated but incredibly powerful influence" on care providers' education and a necessity to help mitigate the risk of providers unlearning formally taught lessons and practices.

Andrea Bishop and Mark Fleming also explore a critical dimension of the "hidden" side of learning in their discussion of frontline staff – "sharp end" – engagement. While more research needs to be done to establish clear connections between engagement and patient-safety outcomes, Bishop and Fleming argue that "ensuring that frontline providers, especially physicians, are engaged in safety leadership positions is vital to ensuring more widespread adoption of safety behaviours by healthcare professionals." There are also several points of convergence in their piece with the two roundtable discussions; for example, in the discussion of "culture," leadership (traditional executive but also among frontline staff) and adequate resourcing for change.

Another form of engagement is the focus of Carol Kushner and Donna Davis's contribution: patients and family members, they contend, absolutely must be integrated into efforts to improve patient safety. Noting that "the perspectives of patients and family members may often differ from those who work in the system," Kushner and Davis see value in this divergence for developing and sustaining safer practices. While they admit that hard evidence on outcomes is limited, Kushner and Davis present six anecdotes from members of Patients for Patient Safety Canada that speak to the positive potential of such engagement. Again, though, it is important to note that culture – in this case, an "inability" to listen and stereotyping of patient and family concerns – again resurfaces as a major barrier to change.

Our final paper explores measurement and evaluation. Setting his discussion in the broader context of measuring healthcare performance in general, Gary Teare laments Canada's "many, uncoordinated measurement and reporting initiatives," which have sometimes "created a cacophony of measures, measurement approaches and messages" – a veritable "state of 'indicator chaos'." Not unlike several of the other contributors who address the importance of frontline care provision, Teare identifies one of the major sources of difficulty as the distance and disconnect of measurement from "the daily processes of care." By focusing only on outcomes, care teams are unable to learn about either the performance of the processes – or their "inputs" (e.g., patients and materials) – that led to those outcomes. Teare argues that even in successful initiatives such as Safer Healthcare Now!, measurement runs the risk of being an "add on" function and not a seamless part of work.

Will Canada – or some part of this vast country – eventually produce a high-performing and safe system? The roundtable reports and essays presented in this special issue show that the previous 10 years have brought us a good part of the way to achieving that goal. They also all make clear that considerable challenges remain in developing the collective will, implementing effective practices and creating the leadership and culture necessary to achieve reliably safe care. HQ

G. Ross Baker, PhD is professor and program director of the MSc Quality Improvement and Patient Safety program at the Institute of Health Policy, Management and Evaluation at the University of Toronto.

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National Perspectives on Patient Safety: Ten Years Later

In early 2014, *Healthcare Quarterly* convened a roundtable discussion on the subject of patient safety. The meeting's main goal was to get the perspectives of some of the leading healthcare organizations across Canada on what has been accomplished during the past 10 years, what has been learned and what remains to be done. The participants were:

RB = G. Ross Baker (moderator), Professor, Institute of Health Policy, Management and Evaluation, University of Toronto
BG = Bruce Gamage, President, Infection Prevention and Control Canada
SJ = Shelly Jamieson, CEO, Canadian Partnership Against Cancer
HM = Hugh McLeod, CEO, Canadian Patient Safety Institute
WN = Wendy Nicklin, CEO, Accreditation Canada
JW = John Wright, CEO, Canadian Institute for Health Information
JZ = Jennifer Zelmer, Executive Vice-President, Canada Health Infoway

The following text is not a verbatim transcript of the meeting. Rather, it distils the main content while, we hope, preserving the energy, enthusiasm and insights each person brought to the discussion.

RB: Ten years after the founding of the Canadian Patient Safety Institute (CPSI) and the Adverse Events Study, what do you think have been the major achievements in Canada in terms of improving patient safety?

HM: The first thing we've achieved is elevating awareness of the importance of patient safety. That has translated into the development of specific patient safety agendas, usually driven by health quality councils or associations.

The second piece has been the combining of disparate parts that didn't connect before. Now, the research community, the education community and the experts in quality improvement have come together to build an array of tools. The CPSI was the quarterback, but the tools – such as the GSKs and the starter kits – were built, delivered and owned by the system, and that basically came out of Safer Healthcare Now!

There is also today endorsement across the country of the importance and the power of the patient and family voice.

WN: There's also recognition – including by governments – that poor quality costs money, and that if you want an efficient and effective healthcare system, you need to focus on quality.

We've also seen progress with transparency. Today, there's a clear recognition of the importance of transparency and that it needs to be monitored with indicators and embedded in communications.

Accreditation Canada is pleased with the impact of our Safe Surgery Checklist Required Organization Practices (ROP) and the evolution of the ROPs. There's still work to be done, yet there have been some marked improvements.

BG: The infection control world has been helped by some scary organisms that came down the pipe, such as SARS, the *C. difficile* outbreaks and the newer multi-drug-resistant organisms. Those brought infection control and systemic gaps to a heightened level of public awareness. Healthcare leaders

realized we needed to get more bodies in place, more funding and to stop paying lip service.

SJ: In the cancer world, the last decade has seen more reporting by agencies, institutions and provinces. There's also less tolerance in the public, among funders and by government, for those of us in healthcare not co-operating on patient safety.

Those of us working in cancer realized there wasn't enough oversight from place to place in terms of putting patients at the centre and making sure the care they receive is the right quality and being done properly. Two examples of how we have addressed these issues are, first, our exploration (with Accreditation Canada) of ambulatory systemic cancer therapy service standards launched in 2011. And last year we started looking at quality radio therapy with the Canadian Organization of Medical Physicists (we've released the first set of technical quality standards).

JW: One important development has been the establishment of a national system for incident reporting. We have five Canadian jurisdictions involved in this, with almost 300 facilities (in the next 12 months we'll hopefully have another two provinces join).

We've also made tremendous strides in medication reconciliation and associated problems. And there's been progress in performance benchmarking and transparency; for example, using indicators to compare hospital deaths and other safety-related items. Finally, there's a lot of analysis that's come out of the data, which have led to better benchmarking.

JZ: I'll start by circling back to something Hugh began with: awareness. We recently consulted with 500 people across Canada, and one of the top five opportunities for action was digital healthcare. There have also been many advances in medication safety and our ability to detect and understand

Canadian Institute for Health Information

A list of highlights of patient safety activities on-going at the Canadian Institute for Health Information (CIHI):

National System for Incident Reporting (NSIR)

- Web application to share, analyze and discuss medication incidents
- Exploring use of NSIR for reporting of radiation oncology incidents

Planned 2014-2015 Projects

- Comparison of weekend/weekday mortality
  - Do weekend admitted patients have a higher death rate, and if so, possible explanations
- Harmful incidents in hospitals
  - Number and types of hospital safety incidents, associated costs, patient groups impacted, most common safety incidents
- Drug use among seniors on public drug programs
  - Number and types of drugs used by seniors, focusing on inappropriate use (Beers' drugs list)
- In-hospital infection indicators
  - In-hospital sepsis rate, sepsis mortality rate
  - Surgical site infection rate
  - In-hospital infection rate – Clostridium difficile, methicillin-resistant Staphylococcus aureus and vancomycin-resistant Enterococcus
- Harmful incident indicator (new safety measure)
  - Harm that occurs and treated in the same acute inpatient admission
- Obstetric trauma measure
  - Updates trauma measures such as lacerations or tears
- Falls prevention
  - Partnership project regarding data on falls across care settings and profiles prevention initiatives and tools

Recent Analytical Products

- OurHealthSystem.ca
  - Public website features patient safety measures: hospital death rates, use of antipsychotic drugs without diagnosis, compromised wounds
- International comparisons
  - Using Organisation for Economic Co-operation and Development data compares Canada's to other countries with focus on care quality and patient safety
- Compromised wounds
  - Prevalence of wounds across different health settings, and patient characteristics associated with high wound rates
- Hospitalization for adverse drug reactions
  - Prevalence of adverse drug reaction-related hospitalizations in seniors, the types of drugs and reactions and the risk factors
- Medication reconciliation
  - Status of medication reconciliation implementation and benefits of more widespread implementation

For more go to www.cihi.ca

medication conflicts and other issues. There has also been a variety of system-level changes; for example, in surveillance and education.

RB: The next question is about surprises. What has surprised you in these efforts over the last decade to improve patient safety? What have been the unanticipated developments?

HM: My biggest surprise is the gap between assumptions and expectations. I assumed political figures, governments and senior health-system leaders got the importance of patient safety. On paper, patient safety is often a priority; however, it frequently gets sidelined in practice.

In Crossing the Quality Chasm (2001), the authors said, "The science and technologies involved in healthcare, the knowledge skills, care intervention, devices and drugs have advanced more rapidly than our ability to deliver them safely, effectively and efficiently." That's a powerful statement, and I see its truth every day.

These challenges have forced us to think and act differently, and to collaborate at a level I haven't seen before. We now know that the patient safety agenda is beyond any single organization and the only way to move forward is to value what each partner brings.

BG: I am reminded of the saying "Culture eats strategy for lunch." We talk a lot about the fact that we're trying to move to patient-centred care, but I've been surprised by the amount of resistance to that change. So much care today is staff-centred and, unfortunately, physician-centred. We run up against this a lot when we try to implement big changes. Healthcare workers, especially physicians, often resist change.

WN: I am more disappointed than surprised. Why aren't we seeing some measurable change? The healthcare system is still very unsafe. How do we really get at meaningful initiatives that will make a measurable difference?

Transitions are a huge issue. Many adverse events occur when patients transition between organizations, care providers and units, as well as when they're discharged to home.

JZ: One of the surprises for me has been the number of people I've talked to recently who have had friends, relatives or are themselves involved with the health system and who are also interested in quality. It's so challenging, though, especially for patients and families, to be active and engaged participants in safety.

JW: The push-back from the healthcare community on the adoption of flu shots or hand hygiene continually surprises me.

But, on the upside, I must say many jurisdictions are becoming and wanting to be more transparent around safety. There's a lot more interest in better comparative data, and that's been a positive surprise.

SJ: I'm surprised by the repetition of mistakes across different jurisdictions. Something bad happens in one province and is all over national papers and watched daily for months and examined through standing committees. And then 24 months

goes by and the same thing happens in another jurisdiction.

I think what happens is you solve one crisis and you just move on to the next one, without fixing the systemic problem or learning the lesson from another jurisdiction.

RB: I would like us now to think about where we should go next. What should we be doing, and what are the strategies and investments we need to be making to continue to push this agenda forward?

SJ: At the core of the solution is who does what. I talk inside of our cancer world about the sweet spot for our organization, about stepping into the spot where no one else is. Any time we're duplicating something that someone else is doing we really have to ask ourselves if that's what the taxpayer expects from us.

BG: We need to look at how to deal with low hand-hygiene and flu vaccine rates – to get people to take ownership of those issues. We need people to recognize that not making those changes is putting lives at risk.

One of the ways this is being moved forward is the use of measures as performance indicators, including pay-for-performance indicators. But that's a dangerous, slippery slope because of rate-gaming and surveillance biases. We need to be careful about messaging so that people take ownership of the rates, as opposed to looking at them in a punitive light.

JW: One of the main challenges is communication, not only with the public and CEOs, but at the frontline. It's about education and ethics.

Bruce is right that one indicator isn't the be all and end all. But pushing indicators down to the shop floor or the nursing unit is a major challenge.

JZ: I'm a big believer in making the right thing to do the easy thing to do. So, how can we build in the opportunity for systemic change? By focusing on leadership and culture we can make change happen, and not just with particularly enthusiastic individuals.

We also need the right tools at the frontline and throughout the system. That's where digital health comes in. It's how, for instance, you make it easier for somebody to do medication reconciliation and ensure that surgical checklists are completed.

WN: Building on Shelley's point, each of our organizations has a niche, and it comes down to how we optimize contributions. Accreditation is a vehicle to help move this agenda forward.

Picking up on Jennifer's comments, leadership must come from all levels of the organization. How we align goals among leaders is key. In terms of the national agenda, however, the system is fragmented with varying priorities. While those of us in this discussion are doing our best to align, the reality is

that Canada has 13 or 14 different health systems (provincial, territorial, national) with variable priorities.

As Bruce mentioned, it's critical to ensure that physicians are involved. In addition, we need focus on the continuum of care. We should identify big dot measures and critical initiatives that will have the biggest impact.

HM: The good news is that everybody is involved in patient safety. The bad news is that because everybody is involved, we trip over each other. We must leverage the root strength that each organization brings and work in partnership.

You would think, after all of the data streams we've created, we'd be much better at dealing with system variances. But that requires rigorous political, governance and senior leadership.

It's also important that we avoid declaring victory too soon. Let's first learn about where we're at and then identify the work still to be done.

I recently heard a great talk by Marian Walsh, the president and CEO of Bridgepoint Active Healthcare. Marian pointed out that the majority of our patient safety and quality tools came from research that was tidy and linear. But patients are messy; they present with multiple chronic conditions. Marian said that disjuncture is creating huge quality and patient safety gaps.

At the CPSI, we've spent a lot of time looking at what Australia, Scotland and the United States are doing. And we've got a big table (chaired by Michael Kirby) set up on January 27th to begin the conversation about what a national, Canadian-made framework would look like – one that could accommodate individual organizational strategies.

RB: Some would argue there is already a lot of effort being put into organizing care and making linkages between people, settings and agencies. So, what kinds of further collaboration do we need?

SJ: Perhaps the CPAC model is applicable to this issue. As an example, our cancerview.ca portal has about 45 different players in the cancer field. The search engine is linked and the materials are all there. We were trying to create one place where the entire cancer control community could go to be directed to anybody who'd done relevant work. The key here is not being the one in charge, but being the one that facilitates.

Similarly, I could get excited about a national framework that others could hang their work on. It would be our collective responsibility to ensure those efforts had a measureable impact and could spread.

JZ: It's absolutely essential that, at the level of national organizations, we are making sure we don't fall over each other and that we're good at communicating what we're doing.

BG: IPAC has 1,700 members across the country, and we have a lot invested in getting the work of infection control front and centre, and really making changes. When there is a major issue that needs to be addressed, we want people to recognize that there is a national association – with a huge amount of expertise and influence – that needs to be at the table.

Infection Prevention and Control – Canada

The Infection Prevention and Control - (IPAC-Canada) continues to work collaboratively with our partners in Canada to promote patient safety. Our work with the Canadian Patient Safety Institute, Accreditation Canada and the Public Health Agency of Canada around 2013 STOP! Clean Your Hands Day is ongoing. A series of webinars were held to coincide with the 2013 WHO Hand Hygiene Day. We are also working with the Canadian Patient Safety Institute (CPSI) on the development of a national patient safety strategy.

Within IPAC we have undertaken many initiatives towards patient safety. A working group has been appointed to develop core competencies for infection prevention and control professionals across Canada. This document will be a roadmap for all infection control professionals as they work towards becoming experts in their field. It will also assure patients that healthcare providers in this field are competent in their practice.

Hand hygiene has been identified as the cornerstone for preventing healthcare-associated infections. It is also well-known that compliance with hand hygiene among health-care providers is suboptimal. IPAC is developing a series of webinars around adult learning and hand hygiene.

IPAC has developed more than 40 audit tools. The tools can be used in healthcare facilities to ensure appropriate practice is being followed and identify areas where intervention is needed to keep patients safe from acquiring infections.

Finally, IPAC will be developing a Learning Objects Repository (LOR). Member-developed education resources will be posted to our website after review by a group of expert educators.

Further information on these initiatives is available at www.ipac-canada.org

RB: Bruce, do you see linking your work to a broader patient safety strategy as something that would help to deepen commitment or something that might move people away from the issues you see as critical?

BG: It's a double-edged sword. We don't want to lose ownership of our piece, but we also have to acknowledge that we can't do it on our own and that we need to collaborate in order to push the agenda.

WN: I believe we need to be clearer about the steps required for change and sustainability. What would success (a safer system) look like? Appreciating the fact there are variances depending on our areas of focus, we need to understand what success would look like in five years and how to get buy-in from all the collaborating partners (including governments, patients and families).

There may be a place for regulation in advancing patient safety. And I also believe we need the federal government involved.

JW: CIHI collaborates at many different levels, be it with ministries or the national system, as well as with practitioners, CPSI, Accreditation Canada and others, to turn data into information and knowledge. For example, we've completed a couple of analytical reports on falls prevention and we have another one forthcoming later this year.

We also work at a third level, which is with a lot of advisory committees that involve people across the country on developing indicators. So, we need to be asking, "What are the safety indicators we should develop nationally? How should they be presented in comparisons?"

HM: We have an opportunity to move the agenda forward by figuring out what each one of us brings to the table individually and then harnessing our collective strengths. Doing so will also bring new credibility and, thereby, make us able to knock on the doors of the federal and provincial governments to influence policy (and perhaps funding), to influence the research and education communities and to influence board governance and senior leadership.

RB: Much of what we've done in the last 10 years has been around awareness-building and engagement. But many of us are still surprised by how difficult the process is and how resilient some of the patient safety challenges have been. Do we have to alter our approaches?

WN: Progress has been slower than we would like. We need to recognize complexity and address the complexity of the healthcare system. What are some of the barriers? What are the ingredients of success? What is their contribution? Who are the key stakeholders? Where are we headed? Do we have collective buy-in to reach those goals?

JZ: There are places where engagement is really appropriate, and there are other places where enforcement might be appropriate. I also think we haven't taken as much advantage as we might of global examples.

JW: The sharp pointy sticks of enforcement, as well as blame and shame, are effective in the short run. But we're playing in a long-run game. It's about the nudge, it's about the cultural change that Hugh and Bruce spoke to. From where I sit – getting the evidence out, getting the facts, doing the education and so on – an engagement strategy is definitely preferred.

HM: I believe you need both engagement and enforcement, but I'm always cautious about using a sharp stick. I think you need a blunt instrument. I really like the Excellent Care for All Act in Ontario, where the province is already seeding changes in behaviour and mindset through the Quality Improvement Plans (QIPs).

We still have a pile of work to do with behaviour and mindset. We talk a lot about culture, and that resides at the unit level. It even changes between shifts and between nurses.

Another issue to deal with is the unhealthiness of our workplaces. We have more people off on sick leave, long-term disability and workers' compensation than ever before.

WN: Building on Hugh's comments, I believe a patient-safe environment is a staff-safe environment. Initiatives to support healthy work environments must be on the patient-safety agenda.

BG: From an infection-control perspective, I'm invested in engaging frontline folks, patients and the public to make these changes. In British Columbia (BC), one of the big drivers of change has been pay-for-performance around infection control. That gets the attention of senior leaders but, as I mentioned before, it could also lead to gaming and under-reporting.

The other interesting thing happening in BC has been the mandatory flu-vaccine program. There's been a lot of yelling and screaming in response. But it's almost come down to unless you have a pointy stick, change doesn't happen.

RB: What one or two things do you think we should focus on during the next five years if we're going to advance the patient safety agenda?

JZ: We need to focus on transitions of care. There's growing evidence of serious transition-related safety risks. The second thing is a continued focus on the patient and family voice, and the culture that supports that.

BG: It will be critical to bring together all the groups and to work together with the ministries. We need to continue to push these agendas and get the messages out there; otherwise, it's going to be a huge bursting bubble.

HM: In this era of social media, we'd better pay attention to the patient–family–client mix. If we don't, bad news will spread and that will lead to knee-jerk reactions by the government.

Patients also tell us they're tired of providers orbiting around and not connecting. This is a fundamental issue that needs addressing.

My third wish is for the development of a strategy to build a new kind of resiliency – coping and adapting capacities and skills for frontline workers so they can face all those changing winds we've been talking about.

JW: From the CIHI perspective, it will be important to round out the databases by ensuring all jurisdictions have the opportunity to participate in the development of the patient safety indicators needed at the local, regional and national levels for performance benchmarking.

WN: I would add that we should be cautious to not focus on the narrow wedge of safety, because safety is just a component of quality. We ought to keep an eye on other measurable aspects of quality – such as appropriateness and population health – as well as what's happening to outcomes. Otherwise an overbalance of focus on safety will lead to other major risks and safety issues arising.

In addition, communication is important. Some of the spread and uptake challenges may be in how we communicate.

In the next five years, we need to see improvement relative to the OECD numbers. Finally, as stated before, we must be clear about our goals and measuring and reporting on progress.

HM: I agree with Wendy, and I believe we need to ensure there's connectivity between patient safety and appropriateness, quality, wait time and other issues. That speaks to the need for a new narrative, one that connects all the pieces.

RB: In many ways the patient safety agenda has become much more complex because it's very difficult just to focus on safety alone and expect, thereby, to get people's attention and make progress. We need to have a much bigger picture than that.

HM: I think back again to the warning the Crossing the Quality Chasm authors gave in 2001. When I reflect on where we're at today, the situation is even more complex. We need more of these kinds of conversation.

RB: Thank you for saying that, Hugh, and thanks everybody for your participation today. This has been a rich, wonderful discussion. HQ

Patient Safety at the Frontlines: The Provincial Context

In early 2014, *Healthcare Quarterly* hosted a second roundtable discussion on the subject of patient safety, this time with some of the leading provincial healthcare organizations across Canada. The participants were:

RB = G. Ross Baker (moderator), Professor, Institute of Health Policy, Management and Evaluation, University of Toronto
BB = Bonnie Brossart, CEO, Health Quality Council of Saskatchewan
DC = Daniel Chartrand, Chairman, Patient Safety Committee, Canadian Anesthesiologists' Society; President (or Chairman), Groupe Vigilance pour la sécurité des soins, MSSS (Québec)
TF = Theresa Fillatre, Senior Policy Advisor, Canadian Patient Safety Institute – Chair, Atlantic Health Quality and Patient Safety Collaborative
AT = Annemarie Taylor, Provincial Director, BC Patient Safety & Learning System
JT = Joshua Tepper, CEO, Health Quality Ontario
DW = Dale Wright, Senior Project Lead, Health Quality Council of Alberta

The following text is not a verbatim transcript of the meeting. Rather, it distils the main content while, we hope, preserving the energy, enthusiasm and insights each person brought to the discussion.

RB: Ten years after the founding of the Canadian Patient Safety Institute (CPSI) and the Adverse Events Study, progress seems to have been slow. Why is that, and what have we learned?

TF: While there are many more players in the patient safety arena these days, people we support still see a lot of tolerance for unexplained practice variations. One of the other challenges is the provincial structuring of our health system and relationships with the federal government.

We also underestimated the complexity of patient safety improvement work. Safety is the core dimension of quality, yet we've isolated it. And we still have to work on privacy legislation solutions to overcome perceived and real obstacles to sharing lessons learned.

DC: When the law was changed in Quebec, we had to train a lot of people – risk managers, patient safety officers and healthcare workers. But we've realized that when you go back to train a team again, half its original members have retired or moved on to other jobs.

However, there are some signs of positive change. For example, many students and residents are now talking about and studying patient safety. The University of Montreal also has a new program that takes a patient-partner approach, whereby patients are becoming experts in teaching patient safety to healthcare workers. As well, the Federation of Specialized Physicians has made patient safety a priority for all its associations.

BB: Regrettably, there's still a belief that mistakes are inevitable. Also, there have been lots of good intentions over the last 10 years, but that's not the same as "intentionality." To paraphrase Saskatchewan's past deputy minister, I would say it has been, to some degree, a leadership failure.

DW: But maybe we've been more successful than we want to give ourselves credit for. There actually is a greater awareness about safety now than there was 10 years ago. But I think that's also come with higher expectations, by ourselves and patients.

There's also been progress in analyzing adverse events to focus on identifying contributing system factors and making system improvements. Think about some of the work we've done around disclosure and the great work of Safer Healthcare Now!

AT: Perhaps measuring progress depends on perspective. Trying to use traditional measurement to reflect progress may not be the way to go.

As well, healthcare has evolved quite rapidly, especially with regard to patient care practices. An example in BC is the implementation of NSQIP, which began only three years ago but we now have a stable system that's informing thinking about surgical care.

Compared to five years ago, in BC we see far greater attention paid at the level of governance to adverse events that harm patients. We are also doing better with individual adverse event management and problem-solving.

There has also been a definite change in how leaders at many levels perceive patient safety and adverse events: they are paying more attention, support greater transparency, are more collaborative in their improvement efforts and are more focused on the patient. I have also seen changes in the perception of what is acceptable risk because patients are more engaged, better informed and have higher expectations.

RB: Ten years ago, most of us did not think that we would be sitting here in 2014 pointing to isolated examples of success and not to some sort of broad-scale achievements. That raises the question, what do you think are the critical things that must be done – by your organization or collaboratively – to overcome complacency and address complexity?

BB: We have to build capability in our workforce – from the leadership all the way through to point of care. Success requires intentionality around leaders' commitment to zero tolerance for harm, and then acting in a way that demonstrates that commitment and removes the barriers.

In Saskatchewan, that's been the real game-changer for us. We talked a good talk in this province for several years. We participated in a number of the great initiatives, but then the work went quiet. What's changing now is there's again a zero acceptance for harm to patients. It doesn't mean we're there yet, but there's a commitment to strategic oversight right through to where the work is being done.

TF: You can put your shoulder to the wheel, engage folks, do the measurements and support the work, but as soon as we let up measurement and using the data, momentum for sustainability ceases. That tells me there are too many priorities on the table.

Atlantic Health Quality and Patient Safety Collaborative (AHQPSC)

The Atlantic Health Quality and Patient Safety Collaborative (AHQPSC) was launched by the Atlantic Deputy Ministers of Health in May 2011, from the origins of the Atlantic Node Safer Healthcare Now! Steering Committee. Membership includes the Chairs of the provincial quality and patient safety committees in the four Atlantic provinces, health ministry persons responsible for quality and patient safety, the New Brunswick (NB) Health Council and representatives of health regions (system). The Canadian Patient Safety Institute (CPSI) serves as coordinating secretariat. The primary mandate is to make recommendations to the deputy ministers on common quality/patient safety policy or capacity-building strategies. Priorities in action at this time include: development of critical mass of local board members to provide quality and patient safety governance education on an ongoing basis, with the intent that these resources be shared between provinces, and that the Health Association of Nova Scotia take on the coordination of the program through a contractual arrangement with CPSI and the provinces; delivery of a hybrid patient safety officer education program locally augmented by online learning and coaching through Canadian Healthcare Association and CPSI partnership; and planning for the third Atlantic Learning Exchange (ALE) in May 2015 in Halifax. An inter-provincial planning committee is leading that work, using the feedback from the 250 participants in the highly successful ALE 2013, Moncton, NB. The primary goal is spotlighting Atlantic quality and patient safety initiatives that are making a sustainable system impact and to share contacts and lessons learned. The AHQPSC was recognized by the Health Council of Canada as an emerging innovation on its portal. The greatest success of the AHQPSC is the working relationships that have developed between the provinces and the enthusiasm to embrace collaborative change strategies together.

For more information, see www.saferhealthcarenow.ca/EN/shnNewsletter/Pages/

We also haven't fully harnessed governments in their leadership role. In the Atlantic region, we've seen restructuring in every province. Each time that happens, the players change, the strategic leadership is lost and any momentum or constancy of purpose is eroded, and we dedicated our resources to catch up.

But I believe there's a growing appetite for moving patient safety forward. For example, the CPSI hosted a consortium meeting at the end of January 2014. The aim was to establish some kind of framework for action that would help to align what the provinces are doing, whereby all could see themselves in a framework, come to terms with what some of the initial system-level measures are and sort out the leadership roles with the key organizations in order to reduce duplication and accelerate progress.

DW: Theresa's comment about ongoing restructuring taking its toll in terms of a loss of momentum, loss of strategic leadership and changing focus underscores the fact that it's been a wild ride here in Alberta.

To address the fact patient safety has sort of fallen off the radar, we need to recognize that safety is an important part of some of these other priorities, and keep reminding government and senior leaders that it is a way to achieve goals such as accessibility and accountability.

DC: Here in Quebec, we sometimes still have to take a step-by-step approach using pilot projects. If you can show that not only is a solution better for patients and patient safety but at the same time hospitals are saving money, then you get everybody on board to go ahead.

JT: For Health Quality Ontario, patient safety is well-entrenched, but just one component of the broader quality agenda. Moving forward, the issue will be about spread – about trying to create changes and replicate successes.

AT: In BC, we've realized there are two sides to the coin: making care better and safer and making care less expensive and more efficient really are interdependent. As long we see those dimensions as separate, they're going to be competing for attention and resources.

TF: In the Atlantic provinces, when we're choosing patient safety initiatives we're also taking into account areas in which we will see impact on other dimensions, including financial.

BB: When I think about the conversations that we're now having in Saskatchewan, safety definitely has a prominence, but it's not exclusive. Our conversations at the leadership tables now speak about how we look at quality, cost of care, access, what safety looks like and morale.

The real challenge going forward is the line of sight from the micro-system, where the work is being done, to the macro-system, where policy and levers are developed to facilitate change.

JT: At Health Quality Ontario, we are trying to drive alignment among the different parts of the organization, including our IT side. This is particularly important in the acute-care sector, where there is a lot of activity, resources and players. We want to complement that and provide supportive resources, data reporting, etc.

"Groupe Vigilance" for Healthcare Safety (Quebec)

More than 12 years ago, after the tragic death of her daughter from a medication error, Michelle Beauchemin-Perreault has mobilized all her energy to prevent such events. She was able to convince the politicians to modify the Quebec Health Law to improve patient safety and to establish a culture of safety. She also became the first patient representative in the "Groupe Vigilance."

As an interprofessional group of patient safety experts, Groupe Vigilance has received the mandate to make recommendations to the Ministry of Health on its own initiative or at the request of the Ministry. For example, looking at more than 450,000 adverse events reported last year in the Quebec Registry http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2013/13-735-02W.pdf (cf. pp. 12–13), the Quebec Minister of Health has recently asked the Groupe Vigilance to make recommendations to prevent and to minimize the consequences of the two most frequent problems reported: falls and medication-related adverse events. For this specific mandate, two sub-groups of experts have been created and they will soon make their final recommendations.

The Groupe Vigilance is also: reviewing the results of the accreditation process in the Quebec healthcare organizations, identifying best healthcare practices and collaborating in the improvement of healthcare practices, proposing strategies to promote and improve the culture of safety, participating in educational activities about patient safety (French version of ASPIRE, symposium, interprofessional continuous professional development), etc.

Finally, if one mother has been initially able to change the Quebec healthcare system, today the Groupe Vigilance can still count on the contribution of expert patient-partners who are actively training other patients and healthcare professionals. Working with and for the patients, the Groupe Vigilance hopes to help improve the quality of care and patient safety.

We're going to be looking at things like transitions of care and working with the HealthLinks quite a bit. Even though safety won't be a solo issue, it will have a steady presence in all aspects of our work.

RB: Ten years ago we thought it would be critical to develop a system that ensured there would be reporting of many, if not all, patient safety events and that there would be analysis of many, if not all, of those events individually or in groups. Were our expectations met in those systems?

DC: At the hospital level, that's probably been the case. It's mandatory in Quebec to report all adverse events; whatever is added to the hospital database is sent to the Quebec National Database. We get about 450,000 events a year and we are starting to make sense out of those data. Not surprisingly, we found that falls and medication errors are the two top problems. The health minister then authorized the creation of "ad-hoc" expert groups to examine those issues. We are hoping that within the next few years, we will also be able to learn more at the micro-system level.

AT: In BC, we've had a provincial electronic reporting system in place since 2011. It's used by everyone that works in healthcare in all settings. So, well over 100,000 people can potentially report in our system.

Aside from data and analysis, some sort of reporting and learning system is an important part of the overall policy framework. We're also seeing more and more that where the data are most meaningfully applied is at the local level. And we are now trying to take those examples and share them across the province, so that we can start to bring about the spread of best practices at the larger system level. Taking a provincial collaborative approach to reporting has also led to standardization in language and processes for responding to and investigating events.

Our focus now is on looking at ways we can build a more comprehensive picture of patient safety. To that end, we're applying some work that's been done by Charles Vincent and the Health Foundation in the United Kingdom on measurements and monitoring of safety.

BB: In Saskatchewan, we are making some headway with how we report issues related to safety. I think the next frontier is replication or spread.

What's changing now is the behaviour of leaders. Every couple of weeks we bring all the CEOs together in a room or on the line to have a conversation. These meetings always start with a critical incident that has happened in an organization, and we use that as a springboard for learning.

JT: I actually worry about the amount of reporting that's occurring, in part because I don't know how well the data are being used. There are frameworks and structures in place, but the opportunity now is to determine how they are operationalized.

DW: Over the past five or six years, the Alberta Health Services (AHS) has been working on standardizing procedures related to reporting and event analysis. As well, AHS has a reporting-and-

learning system that's used internally. Unfortunately, though, we don't know how effective it is, as information is not shared outside AHS.

RB: My next question addresses how we create systems that are able to identify issues and then translate insights on the frontline into strategic activities (and vice versa). What do you see in terms of good examples of linking frontline staff and leadership in creating effective quality improvement and patient safety efforts?

TF: Our two-year Atlantic Spread and Sustainability Learning series revealed that with our regional structures, the notion of linking executive sponsors to middle managers and frontline managers to frontline clinical teams didn't work. Executive sponsors' spans of control were huge in the large regions and they couldn't fulfil these roles, which they had to delegate down the line – sometimes successfully and sometimes not. Leadership changed and structures changed. We also learned it was difficult to maintain physician input to the local frontline team processes.

There's just too much on the plate, especially when regional structures are changing at the same time that these kinds of change initiatives are going on or governments are reorganizing their health departments and reallocating regional resources. In those instances, patient safety and other initiatives stall and have to restart – with different people each time.

DC: In Quebec, it's roughly the same. Even if patient representatives are sitting on hospital boards to ensure that what the patients and frontline caregivers see as problems are discussed at the highest level, some CEOs are not yet taking patient safety seriously in terms of priorities.

JT: Part of the challenge is how we think about leadership. In Ontario, the really good HealthLinks are full of great leaders. One of the powers of HealthLinks is to bring to the forefront a new group of leaders that were not well-recognized in historical structures and processes; for example, in primary and home care.

BB: During the last two years in Saskatchewan, our commitment to consistent methodologies and principles has started to change the way leaders think and behave. Unlike in the past, today you see leaders not just visiting but having conversations with staff and patients about what care is really like.

What's also fundamentally different is the capability we're building in our leaders through rigorous, unrelenting learning. These people are expected to commit to 80 days above and beyond their regular work over a two-year period to learn new methods and actually apply them.

DW: One thing I've learned is that changes work best when you have a leader who truly has a passion for and a commitment to an initiative. For a change initiative to be successful, a leader has to bring an existing passion and commitment to the project. Change is unlikely to occur when a leader without true commitment is delegated to be the project sponsor.

AT: I believe it's essential for leaders to keep a relentless focus on quality and safety, despite the fact that change and challenges are always arising at the leadership level. There must also be a connection between senior leaders' goals and what's important

to the frontline, and ways for the groups to give feedback to each other.

TF: Creating stronger links between leaders and the frontline makes sense to me, as does bringing patients into the picture as partners in care design.

JT: I don't know whether greater involvement of patients is going to help create more energy and more communication between the senior levels and frontline leaders. Overall, though, I think it will create a better shaping of the agenda at each level.

RB: Some believe that sharing lessons across the country would be valuable, yet it doesn't happen in an organized or systematic fashion. What do you think the mechanisms are for us to learn from each other?

AT: There are some pan-Canadian initiatives that are already working to achieve those kinds of goals. One example is CPSI's virtual forum, a good example of a multi-dimensional approach to sharing learning and lessons.

Our experience in BC with safety and quality has shown us there are two levels of learning we can achieve: by individuals and by larger groups. Sharing and learning in groups can help us to establish best practices, and I wonder whether there's a way to be quite deliberate and focused about this by bringing people together across the country around particular issues rather than having a global data-collection approach.

DC: In Quebec, the language barrier is often a problem. Because of that, I don't know how we can easily share podcasts and videos, and have a networking system. As well, I'm not sure how we can encourage people from Quebec to participate in a Canadian initiative when, even at the provincial level, things are still somewhat fragmented.

TF: I think some of the issues to solve pertain to provincial privacy legislation, which is an impediment (real or perceived) to sharing and not reinventing the wheel. Taking a national policy look at enabling privacy legislation might help.

Another way to facilitate knowledge sharing will be through the national summits CPSI is organizing with clinicians, policy-makers and so on across the country, beginning in March 2014. Those summits will be on key topics of focus that have been established as common system priorities through third-party evaluation and feedback: infection prevention and control, surgical care safety, homecare safety and medication safety with attention on the patient care transitions in each area of focus.

BB: Sharing and learning across the country seems timely, and I believe it always has merit. As I listened to today's conversation, all I could think of is we know it's complicated at the organizational level, but it's even more complex at the level of regions, provincial health systems and across the country.

The best place to start might be to focus on a common pebble; for example, medication errors or surgical site infections. That would be useful regardless of whether we're using Lean methodology in Saskatchewan while others might be using QI methodology.

JT: I believe there are more similarities than disparities across the country. In fact, I think it's easier to share learning about patient safety than it is, say, primary care models or EHR (where there's lots more variation).

Health Quality Council, Saskatchewan

Within Saskatchewan, there are several important activities underway that are improving safety for both patients and for those who work in the health system. Saskatchewan continues to be actively involved in a number of Canadian Patient Safety Institute (CPSI) programs, including the Surgical Safety program (via the implementation of the surgical site infection bundle); the Medication Safety program (via the Medication Reconciliation program); and infection prevention and control. The Saskatchewan Health Quality Council (HQC) has endorsed Canadian Patient Safety Week (CPSW) 2014 and we will promote to our audiences the campaign's safe care messages during CPSW in October.

As part of the province's implementation of Lean principles and methodology, it is required that all leaders pursuing Lean Leader certification are taught and participate in a Mistake Proofing project. These four-month quality improvement projects focus on eliminating defects in clinical processes that may result in harm to those who use the healthcare system and to those who are working in it. HQC coordinates the selection and scheduling of these projects as part of the Provincial Kaizen Promotion Office function we took on last April. During the past two years, 85 Mistake Proofing projects have been undertaken; more than half have reached zero defects, with the remainder at less than one per cent defects at four months. Saskatoon Health Region is currently prototyping a Safety Alert/Stop the Line System inspired by Virginia Mason Medical Center. Our goal is that by 2017 we will have one system for the entire province.

For more information, see www.hqc.sk.ca/

RB: Given the resources and challenges of 2014, what do you think we need to do next in order to make patient safety a more fundamental part of daily clinical work and daily system work?

TF: It's really about the will to work together. No one organization or province can do it all on their own. We at least need to get the national organizations working together to better understand what the needs and the readiness in the provinces are.

I think it's about focusing on and finishing a few things. I don't see us doing that very well today – and that's also from my experience as a surveyor with Accreditation Canada as well.

DC: I agree that partnerships should increase between regions and provinces. In Quebec, we are trying to find a new model that would empower clinical units to create quality teams on every possible point of care, in partnership with patients. One other thing I'm pushing is the education and engagement of healthcare professionals, especially new ones.

JT: I believe the critical strategic lever will be a focussed learning platform. It can't feel like an add-on to a fairly full plate, and it's got to have a clear value add.

BB: For me, the critical lever is engaging in activities that are fundamentally going to grow and nourish a culture of safety, both for patients as well as those who provide care. It's also all about leaders' verbal and visible commitment to safety.

DW: In Alberta, we have learned that it is increasingly difficult to separate safety and quality issues. We therefore need to be more intentional about talking about safety in everything we do.

AT: As Theresa mentioned, let's stay the course and keep focused. And, as Daniel said, training new healthcare providers and leaders is going to be a huge lever. I would add, too, that it will be critical to meet patients' growing expectations for safety and quality care, as well as communicating with them and ensuring they and their families are front and centre. We'll also have to deal with the challenges posed by an ageing workforce and ageing patients. HQ

BC Patient Safety and Quality Council

The British Columbia (BC) Patient Safety and Quality Council supports activities that improve care quality, including initiatives under the BC Ministry of Health's Clinical Care Management program. The Council facilitates and promotes improvement projects across the province and at each of the health authorities, in hand hygiene, critical care, care for seniors, heart failure, venous thromboembolism, medication reconciliation and antipsychotic use in residential care. Highlights include creating the BC Sepsis Network; leading a provincial collaborative on care for stroke and transient ischemic attack patients in emergency departments; and supporting initiatives designed to improve surgical care quality, including the National Surgical Quality Improvement Program, the surgical checklist and infection prevention. Building capability and capacity for improvement is also an important focus, and is achieved through the Quality Academy, the Board and Executive Learning Series, the annual Quality Forum and monthly online learning activities.

The BC Patient Safety & Learning System (BCPSLS) remains an important component of the patient safety policy framework. The first province-wide system of its kind in Canada, BCPSLS is used by all health authorities across acute, residential, community and ambulance care settings to identify, manage and learn from adverse events, near misses and hazards. Increased emphasis on data analytics is aimed at better measurement and monitoring of patient safety. The BCPSLS blog is proving to be an effective means of engaging people and sharing stories of improvement and change. Patient's View, a version of BCPSLS that captures patient and family perspectives on safety, is showing early signs of success and exciting potential.

BC Patient Safety & Quality Council: www.bcpsqc.ca

BC Patient Safety & Learning System: www.bcpsls.ca

Governance, Policy and System-Level Efforts to Support Safer Healthcare

G. Ross Baker

Abstract

Over the past 10 years there have been concerted efforts across Canada to create safer healthcare systems both by improving practices at the frontline and by creating an environment that encourages the development of effective safety practices and a safety culture. There have been major changes in organizational policies regarding the disclosure of adverse events to patient and families, the reporting of patient safety incidents to facilitate learning, and new accreditation requirements. Governing bodies for healthcare organizations have been given clearer accountabilities for quality of care and patient safety, and improved performance measurement, greater engagement of patients and families, and a trend toward greater transparency have aided efforts to improve patient safety. However, some areas where changes were anticipated, including the reform of medical liability processes and changes to regulations that govern health professional practices have not progressed as much as some expected. Overall, a decade following the release of the Canadian Adverse Events Study and the creation of the Canadian Patient Safety Institute many healthcare organizations have made only limited progress toward the creation of "a culture of safety" and a safer healthcare system.

In May 2004, the Canadian Adverse Events Study identified a substantial burden of injury among hospital patients resulting from adverse events (Baker et al. 2004). The Canadian Patient Safety Institute (CPSI) had just been launched and its first major national initiative was Safer Healthcare Now! – a pan-Canadian campaign targeting ventilator-associated infections, central line infections, medication adverse events and other common sources of hospital adverse events. Safer Healthcare Now! was targeted at frontline teams responsible for patient care to provide an immediate answer to the safety gaps in daily practice. But efforts to improve safety at the "sharp end" (Reason 1990) needed to be linked to broader changes in the healthcare system. Accordingly, CPSI, provincial governments, healthcare associations and others have also focused on changes in policy, regulation and governance to create a healthcare system that could more effectively identify and address patient safety and quality problems. These efforts were guided in part by the earlier National Steering Committee report in 2002 recommending the creation of CPSI that could create a safer system (National Steering Committee on Patient Safety 2002). A decade has now passed since the creation of the CPSI and the publication of the Canadian Adverse Events Study. What have we learned about supporting patient safety "at the blunt end"? This paper provides an overview of some key changes across Canada in the policy, programs and governance and leadership developed to support safer healthcare.

Disclosure

The current policies of health professional associations across Canada clearly state that when a patient is harmed during his or her care, the physician or other care provider must disclose this harm to the patient and family (for example, see College of Physicians and Surgeons of Ontario 2010). Such disclosure is an important step in helping the patient and family deal with the aftermath of this event and in ensuring that information about the event can be analyzed and used to limit the chances of reoccurrence. However, this practice has not always been the case and the failure to disclose harm and the commission or omission of actions that led to harm produced anger, mistrust and ill will. One of the positive impacts of the focus on patient safety in the past decade has been the development and general acceptance of disclosure of harm to patients and families as a common practice.

Failure to disclose harm to patients has always been ethically questionable, and threatens patients' confidence in their physicians, other care providers and the larger healthcare system. But concerns about medical malpractice liability, disciplinary action and reputation made disclosure, particularly about major events, difficult for care providers. Moreover, risk managers, lawyers, insurers and colleagues frequently counselled against disclosure. Physicians, nurses and other care providers thus found themselves often uncomfortably caught between a desire to share information about these incidents with their patients and advice from others not to disclose it.

This situation has changed dramatically in the past decade, benefiting patients, physicians, other staff and the organizations they work in. The Canadian Patient Safety Institute (CPSI) working with a broad group of stakeholders released a set of disclosure guidelines in 2008 (updated in 2011) (CPSI 2011) that have provided clear directions and helpful advice about disclosure. The Canadian Medical Protective Association (which insures physicians) endorses the CPSI guidelines and encourages physicians to disclose harm to patients, as well as offering a set of resources to physicians including a disclosure checklist (Canadian Medical Protective Association 2008). Attitudes around disclosure are viewed as an important component of patient safety culture (Etchegaray et al. 2012) and a critical factor contributing to the ability of individuals and organizations to learn from patient safety incidents. Still, disclosure behaviours in many settings do not correspond with recommended practices (O'Connor et al. 2010). While disclosure policies have explicitly urged practitioners to discuss events with patients, there continue to be challenges. These include continuing concerns about liability for the actions being disclosed, caution about what practitioners should tell patients about the actions of their colleagues and the need to coordinate disclosure among team members (Jeffs et al. 2010). Moreover, some organizations that have attempted open disclosure of events affecting larger groups of patients have found themselves the subject of class action lawsuits (Dudzinski et al. 2010).

Incident Reporting and Learning

The publication of the Canadian Adverse Events Study made it clear that adverse events were more frequent than many had previously believed and that similar events occur in many organizations. Few formal mechanisms existed to transfer knowledge gained about addressing safety gaps in one organization to similar organizations – and tragic events like the death of cancer patients from the administration of chemotherapeutic agents by the wrong route have been repeated in hospitals across Canada and abroad (Nobel and Donaldson 2010; National Steering Committee on Patient Safety 2002).

Developing effective incident reporting systems and mechanisms for analyzing these reports, identifying strategies and tactics to limit the occurrence of such events and sharing this learning across organizations and healthcare systems have been a major focus in Canada as in a number of other countries. Saskatchewan was the first jurisdiction in Canada to require healthcare organizations to report all major adverse events to the Department of Health in 2004, and a number of other provinces followed suit. Saskatchewan leaders saw the need for a provincial strategy to ensure that knowledge about safety gaps could be communicated across the province and that analysis of the contributing causes of these events could also be shared (Beard and Smyrski 2006). Other provinces, including Manitoba, British Columbia, Quebec and Ontario, also have reporting systems for critical incidents. CPSI developed and offered for several years a course in Root Cause Analysis to provide quality and patient safety professionals and others the skills to analyze these events. The Institute for Safe Medication Practices Canada (ISMP Canada) collaborated with CPSI in the development of these resources and launched its own reporting system focused on medication-related events.

The approach used by healthcare organizations for incident reporting, incident analysis and learning and the communication of key lessons across organizations was based partly on strategies used in aviation and other industries. But the complexity and politics of healthcare have made this strategy difficult, if not problematic. Studies have shown that staff, particularly physicians, do not report many incidents (Lawton and Parker 2002), although the development of new electronic reporting systems has reduced some of the barriers to entering reports. There are continuing concerns that staff will not report incidents if they feel this information may be used to hold them accountable for the outcomes of these incidents. More critically, incidents provide relatively limited information about their associated causes (Cook, Woods and Miller 1998; Vincent 2004). And, even when events are reported, only a small number are analyzed and the techniques for identifying potential solutions are often cumbersome, time-consuming and frequently yield few sustainable and actionable recommendations. Recognizing these challenges, there have been recent efforts to develop strategies for improved reporting and more effective incident analysis techniques (CPSI 2012). Efforts to develop a pan-Canadian national reporting and learning strategy (apart from medication safety) have not been successful, despite efforts to identify obstacles and consult with and recruit interested organizations and provinces (Weisbaum and Hyland 2007; CPSI 2010).

Medical Liability

Historically, one of the most important avenues for redressing injuries resulting from care has been the legal system. Lawsuits for negligence and substandard care provide a means to seek damages for injuries suffered by patients and their families and help ensure that practitioners are competent and that organizations provide environments that support safe and effective care. But, in fact, relatively few injured patients sue their physicians or other caregivers, and few among these receive compensation (Flood and Bryan 2011). Joan Gilmour (2011) notes that "the [Canadian] medical liability system is inadequate in providing compensation or reducing the likelihood of harm." But, at the same time, there appears to be little appetite for reform. In fact, patient safety advocates have argued that the medical legal system serves as a deterrent to improving safety because it decreases the reporting of critical incidents, limits the information available about the context and contributing causes and creates an adversarial relationship between patients and their care providers. Indeed, the greatest change in medical-legal

aspects of patient safety has been the growing protections for information gathered to investigate incidents and to recommend changes in care processes and systems. These protections have been enacted or strengthened in provinces across the country to encourage reporting and investigations. But, in some jurisdictions, these protections have come at the cost of the availability of information outside of the hospital (or other organization) in which the investigation occurs. In Ontario, for example, information protected under the *Quality of Care Information Protection Act* ensures that interpretations and findings made in the review of an incident are protected against disclosure in the courts. But often the findings are not conveyed to patients, other organizations and practitioners who may find themselves vulnerable to committing similar harms, or to government and other bodies who wish to share this knowledge more broadly. Such legislative changes made to create a culture of learning have created inadvertent roadblocks to a safer system.

Health Professional Regulation

Legislation and the regulation of health professionals is another area that offers opportunities to create safer practice. In spite of a number of high-profile incidents and inquiries that involved health professional incompetence or malfeasance as a contributor to patient harm, there have been surprisingly few changes in the structures and processes of health profession regulation in the past decade in Canada. Health profession regulation is a provincial and territorial responsibility (although the medical licensing authorities have agreed to a national standard for licensing), and each province or territory has jurisdiction over the licensing, standards of practice and discipline. Some changes have occurred. For example, most provinces require physicians to participate in continuing education (Shaw et al. 2009), but efforts to ensure continuing competence through revalidation have not led to changing requirements (Levinson 2008).

Healthcare organizations also have a legal duty to ensure that healthcare practitioners are appropriately educated, supervised and monitored. Most non-physician staff are employees, and their recruitment and practice is supervised by their managers. A great majority of hospital-based physicians are independent professionals who are credentialed to practice in hospitals. The privileges of hospital-based physicians are reviewed annually and approved by boards. But in many organizations, this review is perfunctory and does not assure that the privileges of poor performers will be limited or withdrawn. Some hospitals have experimented with more rigorous performance reviews (Forster et al. 2011), and greater attention to the board's responsibilities in the governance of quality and patient safety has raised the profile of credentialing and the annual review and renewal of physician privileges. But in many healthcare organizations, board review of these activities likely remains limited.

Dennis Kendel offers reflections on the role of healthcare workers, both professionals and other staff, and their part in creating a safer healthcare system (Kendel 2014).

Accreditation

Accreditation Canada is an independent, not-for-profit organization that has assessed and certified the operations and performance of hospitals – and now a wide range of healthcare organizations – for more than 50 years using standards developed by healthcare managers, clinicians and other experts, and site surveys based on these standards. While accreditation has no official regulatory status, many provincial governments require acute care facilities or regional authorities to participate in the accreditation program. Accreditation status has thus become a de facto requirement signifying acceptable performance.

Accreditation Canada has taken an important leadership role in identifying effective patient safety practices and integrating them into the accreditation process. In 2004, Accreditation Canada convened an expert group to identify actions that would promote safer care and this group selected a small number of these as "Required Organizational Practices" (ROPs), whose status would be assessed in accreditation surveys. This list of practices has grown over the past decade and covers a variety of actions and policies related to safety culture, communication and medication use (Accreditation Canada 2013). After the first several years of assessing organizations on the ROPs, Accreditation Canada recognized that establishing standards for clinical safety practices related to medication use, safety checklists and infection control was insufficient for improving patient safety. More recently, Accreditation Canada has emphasized leadership and governance accountability for performance and the roles of leaders and boards in creating a broader environment that supports safer care (Accreditation Canada 2012). Working closely with CPSI and ISMP Canada, Accreditation Canada has established a pan-Canadian approach to patient safety through the development of these ROPs and a continuing emphasis on patient safety as a core element of high-quality healthcare organizations. In an era where the Canadian government has withdrawn from a leadership role in shaping the direction of the healthcare system, Accreditation Canada's efforts to promote patient safety have established explicit pan-Canadian patient safety standards and expectations of leadership and governance.

Performance Measurement

The data on adverse events and initial efforts to improve performance highlighted the lack of patient safety measures. Not surprisingly, in the aftermath of the creation of CPSI and the publication of studies of adverse events and incidents, patient safety became a new focal area for performance measurement. In 2004, the Canadian Institute for Health Information (CIHI) offered a detailed analysis on the information available

on patient safety and the relevance to the Canadian healthcare system (CIHI 2004). CIHI has continued to provide reports on patient safety and to select measures that assess patient safety performance (CIHI 2007; CIHI 2008).

One measure that raised considerable controversy, but also contributed significantly to efforts to improve safety was the hospital-specific mortality ratio (HSMR). The HSMR is a measure of actual versus expected mortality calculated on the most common types of acute care hospital patients. It was initially developed in England by Sir Brian Jarman and used in several countries prior to its adoption in Canada. The strength of HSMR was its role in providing a clear comprehensive and comparative measure of hospital performance. The CIHI reports on HSMR generated considerable media attention and leadership action on patient safety. However, a number of researchers published critical assessments of HSMR and challenged its utility (Shojania and Forster 2008; Penfold et al. 2008). Still many organizations continue to use HSMR as a measure of overall patient safety in conjunction with more specific measures of patient safety events and key processes linked to these events. A number of patient safety measures have been publicly reported in Ontario and used in the Quality Improvement Plans mandated by the Ontario Ministry of Health and Long-Term Care for acute care hospitals. The growing sophistication of performance measurement in healthcare, coupled with the number of performance measures linked to patient safety and quality of care, has accentuated a clear trend towards greater transparency of hospital and health system performance. Many hospitals and regions now publish their performance on these metrics on their websites, and, in British Columbia, Saskatchewan, Ontario and other provinces, there is a growing expectation that performance measures will be open to government and public scrutiny – and used by boards to review the performance of senior leaders.

Growing Investments in Quality Improvement Capacity and Capability

Performance measurement highlights the strengths and weaknesses of organizations, but improvement requires understanding how to redesign care processes and use human resources, technology and other resources more effectively. Efforts to improve patient safety require, first, recognizing the need to change; second, support for clinicians and managers in reviewing their practices; and third, testing and implementing changes that improve results. Over the past decade, many provinces established patient safety and quality councils (or similar bodies) charged with supporting improvement efforts and monitoring performance. More than any other factor in the past decade, patient safety helped to raise the visibility of the gap between existing and possible performance, leading to substantial investments in oversight and investments in quality improvement efforts. The creation of quality councils in many provinces also helped to spur greater investments in capability and capacity to support organizational and system quality improvement efforts.

Governance for Safety and Quality

Efforts to improve performance in patient safety also led to recognition that responsibility for quality of care in the Canadian healthcare system was often diffuse and ill-defined. Governments provided much of the funding but had limited powers to create change, except in extreme cases where they could replace the leadership and board of healthcare organizations. Medical advisory committees in hospitals (or regions) have responsibility for advising hospital/region boards on quality-of-care issues and reviewing the credentials of physicians applying for privileges or their renewal. Patient safety incidents could be reported to the board, although this practice varied from organization to organization. Overall then, the "governance" of patient safety and quality of care was ambiguous and often contested. In Ontario, the Ontario Hospital Association commissioned a report in 2008 to review legislation, policy and practice to clarify of the role of boards in regard to patient safety (Corbett and Baker 2008). In Quebec, the Ministry of Health passed legislation (Bill 113) that required disclosure of patient safety incidents to those who were harmed, mandated risk management committees to follow up on incidents and made boards accountable for the safe provision of care (Ste-Marie 2005). But in most provinces, it was not clear what the responsibilities of boards were for quality of care and patient safety.

In 2010, the CPSI and the Canadian Health Services Research Foundation created a training program and a set of resources for healthcare board members focused on improving governance for quality and patient safety. Based on research that reviewed evidence and leading practices in Canada and the USA (Baker et al. 2010), the program has been offered in a number of provinces across the country and adapted for members of primary care organization boards in Ontario. One key component of this training has been an emphasis on the strategies that boards can use to monitor and improve performance, including more informed use of information about critical incidents and performance measures and more explicit identification of quality and safety goals.

While other pressures besides patient safety have increased the pressures on accountability of healthcare organizations, the visibility of safety incidents and the attention garnered by reviews of large-scale system failures such as the Cameron Inquiry in Newfoundland and Labrador on the failure to accurately test and report the diagnostic status of breast cancer patients (Commission of Inquiry on Hormone Receptor Testing 2009) has greatly increased governance and leadership accountability for quality performance.

Patient Engagement in Healthcare Organizations

Efforts to make healthcare more patient-centred have a long history, and include initiatives to increase patient input into decisions about their care and strategies to make healthcare organizations more "patient friendly" with changes in visiting policies, improved communications with patients and families and other practices (Conway 2011).

Patient safety incidents and initiatives have greatly accelerated the integration of patients into healthcare organization decision-making and the visibility of patient perspectives and preference in improving care. High-profile incidents led to greater involvement of patients in patient safety and broader organizational oversight. For example, the death of Betsy Lehman, a Boston Globe reporter who received a massive chemotherapy overdose at the Dana Farber Cancer Center in the US, led to a transformation in that hospital's operations where patients are now integrated into all decision-making bodies in the hospital, an example that influenced practice in the US and elsewhere. The high visibility given by Sir Liam Donaldson in the World Health Organization (WHO) to patients and families involved in patient safety incidents demonstrated the power and impact of the patient voice in recognizing safety lapses and improving care. Donaldson created a group, Patients for Patient Safety, that invited patients and families to work in the WHO patient safety program. The CPSI, following the WHO example, created Patients for Patient Safety Canada and recruited and supported patients, encouraging their efforts to improve patient safety at an organization level and policy deliberations. Many healthcare organizations have followed suit, so that the practice of inviting patients to participate in patient safety and quality improvement efforts has become increasingly common.

The patient perspective has also influenced the structure and focus of broad patient safety and quality initiatives. For example, the Saskatchewan Patient First Review has emphasized the need to change patient experience and to alter the delivery of care to improve how services are delivered and administered (Saskatchewan Ministry of Health 2011). Increasingly then, patient safety initiatives have included patients as key stakeholders and participants.

Building a Safer System

Efforts to create more a systematic focus on patient safety have had an important impact on the Canadian healthcare system. Ten years ago, there was limited knowledge about the safety of healthcare in this country, and little appreciation for the interventions, leadership and systems needed to reduce unintended harm. Today, healthcare organizations have detailed knowledge about their safety and quality performance generated by internal reporting systems and external measures of patient safety indicators. CIHI has continued to develop useful measures of quality and patient safety that enable benchmarking across organizations and regions. And provincial governments and health quality councils have developed dashboards and defined accountabilities around patient safety and created a range of initiatives aimed at critical issues.

Several provinces, including British Columbia and Saskatchewan, have developed sophisticated systems for reporting incidents, analyzing contributing causes and disseminating learning about effective practices. There is also a much greater understanding about the need to develop capabilities from "board to ward" to understand patient safety and quality improvement, and, at the front line, to link improvement skills to knowledge of evidence-based patient care.

Still challenges remain. Despite continuing efforts to integrate quality improvement education in the preparation of healthcare professionals, many practitioners graduate with only limited knowledge of these skills. And continuing education resources are just as scant, a situation that limits the ability of teams and organizations to improve the safety and quality of their care. Efforts to share learning from critical incidents across provinces have not been successful, although the work of ISMP Canada has helped to create a broader understanding of safe medication systems.

The National Steering Committee report identified "creating a culture of safety" as the central goal for Canada in developing a safer healthcare system. Some of the elements identified in that report, such as altering existing tort and insurance systems, have received limited attention, but, in general, investments across Canada to raise awareness, build supportive education and engage leadership and governance have moved patient safety from a hidden issue to a prominent focus. In the process, work on patient safety has become more closely linked to quality of care, patient engagement and integrated care, performance transparency and professional competencies, strengthening not only those efforts, but broadening perspectives on what constitutes safety in a complex healthcare system. Improving patient safety requires concerted efforts to integrate new behaviours into daily care practices and to develop systems of learning and effective work environments that support safer care. HQ

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About the Author

G. Ross Baker, PhD, is professor and program director of the MSc Quality Improvement and Patient Safety program at the Institute of Health Policy, Management and Evaluation at the University of Toronto.

Are We Afraid to Use Regulatory and Policy Levers More Aggressively to Optimize Patient Safety?

Dennis Kendel

Context

Healthcare is a very labour-intensive process. The performance, individually and collectively, of a diverse array of healthcare workers has profound implications for the safety of care provided to patients and clients. It is worthwhile to consider how effectively we have used regulatory and policy levers over the past 10 years to assure optimally safe performance by the entire healthcare workforce.

In any consideration of human performance, it is important to differentiate between human capacity to perform at a high level and the consistency of actual human actions on a day-to-day basis. It is important to remain ever mindful of the factors that influence performance capacity and those that influence workplace actions.

In 1990, George Miller published in Academic Medicine, an article that described four facets of professional expertise and visually depicted these facets as layers of a pyramid (Miller 1990). In Miller's Pyramid, "knows" forms the base, followed sequentially by "knows how," "shows how" and "does." Although Miller applied this construct to professionals, I believe it is applicable to all workers.

Patient safety is compromised when there is a gap between worker capacity to perform safely (know how) and actual worker performance (does). Both regulatory and policy levers can narrow that gap if they are applied effectively. Historically, we have applied regulatory and policy levers quite differently to professional workers as opposed to non-professional workers. We have also applied these levers differently to healthcare system employees as opposed to workers who hold independent contractor status in the system.

I will explore some of the implications of our differential application of regulatory and policy levers to different categories of healthcare workers. I will also issue a challenge to reconsider how such levers might be used more effectively in the future to enhance patient safety in Canada.

We Are In This Boat Together – or Are We?

Although there are certainly important differences in the nature of the work undertaken by professional and non-professional workers in the course of patient care, over the past 10 years, we have come to appreciate that we have significantly undervalued the impact of the non-professional workforce on patient safety. For example, in respect to our management of risks such as hospital-acquired infections, we have come to better appreciate how pivotal the work of hospital cleaning staff is to reducing this risk of patient harm.

We have also come to appreciate that non-professional workers are just as resourceful and insightful as professional workers in their capacity to identify workplace and work process changes with potential to enhance patient safety. Consequently, we now routinely bring together teams of professional and non-professional workers to jointly explore opportunities to make healthcare safer.

The ascendency of patient safety as an important issue for the entire healthcare workforce has had a very salutary impact

on the historical social and class divisions between professional and non-professional healthcare workers. In many respects, patient safety has modulated health workplace cultures to create a sense of shared purpose and goals among the entire workforce.

However, notwithstanding a growing sense that all healthcare workers are "in the same boat," we continue to apply regulatory and policy levers very differently to various groups of workers. The regulatory levers applicable to health system employees are different from those applied to "independent contractors" such as physicians.

Tensions Between Professional Autonomy and Accountability for Patient Safety

Healthcare is increasingly becoming a team-based activity, and patient safety is heavily reliant on a diverse array of healthcare personnel functioning effectively as teams.

When critical incidents occur, which cause patient harm, suboptimal team performance is often identified as a contributing factor. Accountability mechanisms for effective performance as a team member are different for various members of the team. That variance in accountability mechanisms is often linked to the concept of professional autonomy. While all professionals attach some value to the concept of professional autonomy, this concept accounts for the medical profession having a working relationship with health authorities (HAs) and hospitals that is distinct from most other professions.

An HA or hospital may adopt a policy or regulation that is applicable to all of its employees but may not be applicable to physicians unless they voluntarily agree to comply. The mechanisms for monitoring and assuring physician compliance with HA or hospital policies and regulation remain different than for most other members of healthcare teams. In some instances, unreasonable physician insistence on professional autonomy compromises the potential for HAs and hospitals to optimize patient safety.

The implementation of the surgical safety checklist across Canada has served as an interesting case study in respect to the application of policy to different members of the surgical team. When HAs and hospitals elected to implement this evidence-based policy, compliance by all employees was not optional. However, in many instances, obtaining surgeon compliance required protracted dialogue and negotiations.

Effectiveness of Professional Regulatory Agencies in Assuring Patient Safety

Before being deemed eligible to provide any patient care, professionals must acquire and sustain registration or licensure with their respective professional regulatory agencies.

These agencies place a great deal of emphasis on the first level of Miller's Pyramid as a condition for initial registration. That means that they expend much effort to ensure that the professionals they license have acquired the knowledge essential for competent practice. All define entry-to-practice education programs that are perquisite to licensure. Many also require successful completion of national standardized examinations. All of these examinations measure knowledge, while some, such as those offered by the Medical Council of Canada, also reliably measure problem-solving skills and performance in simulated clinical situations (the second and third tiers of Miller's Pyramid).

However, once they admit individuals to a profession, professional regulatory bodies have very limited capacity to reliably assure their continuing competence. Most require their members to complete a minimum volume of continuing professional learning activity as a surrogate for maintenance of competence.

Professional regulatory agencies have even less capacity to effectively monitor and reliably measure the daily performance or actions of their members (the apex of Miller's pyramid). They are too remote from the environments in which their members practice to effectively assess their day-to-day performance.

In respect to professionals who practice as employees of health service agencies, most professional regulatory bodies rely on employers to measure and manage the day-to-day performance of their members. Many have convinced governments to adopt legislation that obligates employers to notify the regulatory body of any decisions to suspend or terminate the employment of one of their members. However, bilateral information sharing between employers and professional regulatory bodies at a lower level of concern is uncommon and is actively opposed by many professional associations and unions.

Because a significant proportion of medical practice is conducted in private practice settings, medical regulatory authorities have expended considerable effort over the past 10 years to periodically review physician performance in office settings. Most medical regulatory agencies now operate systems for peer inspection and review of doctors' office practices at five to ten year intervals. This is akin to the periodic evaluation of HAs by Accreditation Canada. It is commendable but remains insufficient to assure patient safety on a day-to-day basis.

Many of the professional medical regulatory authorities in Canada have developed quite sophisticated systems for real-time monitoring of the prescribing of all narcotic and controlled drugs by physicians and quickly intervene when they identify prescribing patterns that put patients at risk of preventable harm. Some are beginning to explore future opportunities to use data from electronic health records (EHRs) and electronic medical records (EMRs) to evaluate physician performance. To date, no college of physicians and surgeons has been granted statutory authority to access data in EHRs or EMRs.

Using Policy and Regulatory Levers More Effectively to Enhance Future Patient Safety

Through my service on the board of the Health Quality Council in Saskatchewan over the past 11 years, I have had some wonderful opportunities to study high-performing healthcare systems beyond Canada's borders. In contrast to most hospitals and HAs in Canada, many of these high-performing healthcare systems consistently deliver safer care than we do.

I have reflected on how these systems use policy and regulatory levers to achieve and sustain their enviable patient safety standards. I believe there is much we can and should learn from these systems and apply those learnings in Canada.

These are some of my observations about high-performing healthcare systems that deliver safer healthcare than we do. These systems:

- make patient safety a high and publicly transparent priority;
- engage all service providers as well as patients and families in a continuing quest to make patient care safer;
- define very explicit and publicly transparent safety goals;
- clearly define the behaviours and actions of each provider group that are essential to achieving those goals;
- assist and support providers in maintaining those behaviours and actions but hold them very explicitly accountable for consistent compliance with expected behaviours and actions;
- measure provider compliance with expected behaviours and actions;
- provide timely feedback to providers regarding their compliance and offer coaching support where there is a gap between expected and actual provider performance; and
- terminate the working relationship with any provider who proves to be unwilling or incapable of compliance with the behaviours and actions essential to achievement of the organization's patient safety goals.

There is one very striking difference I observe between the safety culture and values in these high-performing systems and our culture and values. In respect to patient safety, these organizations apply accountability expectations to all provider groups, including their physicians, in a remarkably uniform manner. A physician who proves to be unwilling or incapable of meeting expected performance standards related to safety will be at the same risk of being severed from the organization as might be a member of the cleaning staff. In these organizations, safety trumps professional status and egos.

High-performing healthcare organizations that are committed to patient safety also devote considerably more energy and resources to reliable performance measurement for all providers. Data from that measurement are used to provide formative feedback to service providers coupled with supportive coaching. Where coaching fails to achieve expected levels of provider performance, the data are also used to make objective and defensible decisions to sever unsafe providers from the organization.

It is noteworthy how these organizations manage to hold their physicians accountable for safe behaviours and actions without circumventing the medical profession's historical expectation of control over its own affairs. As a condition of physician enrolment, high-performing systems make it very clear that the enrolled medical community will explicitly define policies and medical practice standards that ensure patient safety and hold its members accountable for compliance with those standards. On paper the model may not appear substantially different from the "internal self-regulation" concepts inherent in our hospital and HA medical staff bylaws. However, the application of these professional accountability precepts in high-performing systems has very real meaning and implications.

It is often said that the Canadian culture is defined by our inclination to "be nice" to one another. In some domains, that attribute may be a virtue. In other domains such as healthcare safety, that attribute may actually cause much preventable harm to patients. I will cite one very pragmatic example.

Back in 2008, the Canadian Patient Safety Institute and the Royal College of Physicians and Surgeons of Canada collaborated in defining a set of safety competencies relevant to all healthcare professionals. Those competencies were defined in the following six domains:

1. Contribute to a culture of patient safety
2. Work in teams for patient safety
3. Communicate effectively for patient safety
4. Mange safety risks
5. Optimize human and environmental factors
6. Recognize, respond to and disclose adverse events

Being the nice people that we are, these competencies were promulgated as a framework to influence the future education of health professionals in Canada. They are being integrated into the educational programs that are preparing future generations of physicians and other health professionals .On that basis, their positive impact on safe patient care would be deferred by a generation. And, given the enormous influence of role modelling on values and behaviours among future professionals, what is the likelihood that the next generation of healthcare professionals will fervently embrace, master and apply these competencies if they do not see them having current application to their teachers and mentors.

In Canada, we stopped short of making these safety competencies part of our current performance expectations of all practicing professionals and administering them through policy

or regulatory levers. No professional regulatory agency, HA or hospital has ever sanctioned or dismissed a professional for failure to apply these competencies.

In high-performing healthcare organizations, these same safety competencies drive real-time decision-making about hiring professionals, evaluating their daily performance, coaching them to enhance their performance and terminating professionals who are unable to master and demonstrate these competencies.

In Canada, we tend to write guidelines and fervently hope that altruism will motivate professionals to follow them. In optimally safe healthcare organizations, the very same document is more likely to be adopted as a policy with very explicit expectation of compliance.

We need to consider whether our comparably more timid approach to the use of policy and regulation as levers to protect patients from harm is appropriate. If the choice is one between being nice to healthcare professionals and saving the lives of patients, there can be no doubt that our decision must always be in the favour of patient safety. HQ

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About the Author:

Dennis Kendel, MD, is the CEO of the Physician Recruitment Agency of Saskatchewan. He is also a past Registrar of the College of Physicians and Surgeons of Saskatchewan, a member of the Board of Trustees of the Canadian Foundation for Healthcare Innovation, and a past president of the Medical Council of Canada. Dr. Kendel also participates on the Board of Directors of the Saskatchewan Health Quality Council.

How Health Professions Education Can Advance Patient Safety and Quality Improvement

Brian M. Wong

Abstract

A commonly held belief is that education and training are weak interventions that have limited success on their own in improving system reliability, clinical processes and, ultimately, patient safety and healthcare quality (Caffazzo and St-Cyr 2012). Yet, for emerging fields such as patient safety and quality improvement (PS/QI), one should not underestimate the importance of educating frontline staff in the fundamentals of these disciplines. For most healthcare institutions, there is a major bandwidth problem when it comes to PS/QI work, which acts as a critical barrier to accelerating change and improving patient safety and healthcare quality. Too few people are relied on to solve all of the institution's safety and quality problems.

Thus, engaging in efforts to broadly educate frontline providers and establish a basic understanding of core PS/QI principles has the potential to build capacity and significantly increase the number of active participants to support PS/QI initiatives (Ruud et al. 2012), minimize resistance to change and contribute to an improved institutional culture for PS/QI (Ginsburg et al. 2005; Pronovost et al. 2008). In this perspective, we review the evolution of patient safety health professions education in the wake of *To Err Is Human* (Kohn et al. 2000), provide an organizing framework that summarizes the different ways that health professionals learn about PS/QI and consider the critical next steps that need to be taken to achieve our ultimate goal, which is to ensure that all health professional are proficient in PS/QI.

Patient Safety Education in the Years After To Err Is Human

One can trace the evolution of patient safety and quality improvement (PS/QI) training back to the seminal Institute of Medicine (IOM) reports *To Err Is Human* (Kohn 2000) and *Crossing the Quality Chasm* (IOM 2001). It is generally known that these reports spurred a groundswell of research and discussion about patient safety issues (Stelfox et al. 2006), as well as the widespread adoption of a number of patient safety practices (Clancy 2009). Interestingly, there was a parallel trend towards an increased commitment to start teaching PS/QI to learners in all health professions that coincided with the release of these two reports.

In 2002, the Accreditation Council for Graduate Medical Education (ACGME), as part of their Outcome Project, implemented accreditation standards requiring postgraduate training programs to incorporate formal training to ensure that physicians developed competence in six core domains (Batalden et al. 2002). Two of the core competencies, namely, practice-based learning and improvement and systems-based practice, specifically define physician competencies that relate to PS/QI. For example, within systems-based practice, specific outcomes include developing physicians who can

"work in interprofessional teams to enhance patient safety and improve patient care quality" and "participate in identifying system errors and implementing potential system solutions."

One year later, the IOM released its "Health Professions Education: A Bridge to Quality" report (Greiner and Knebel 2007), which highlighted the need to redefine globally how physicians, nurses, pharmacists and other health professionals should be trained. This report proposed five key competencies that all health practitioners should acquire to meet the needs of patients, one of which specifically refers to "applying quality improvement." In light of this recommendation, the Quality and Safety Education for Nurses project was established to "prepare nurses with the knowledge, skills and attitudes to participate in continuously improving the healthcare systems in which they work" (Cronenwett et al. 2007, 2009). Funded by the Robert Wood Johnson Foundation, a national group of key stakeholders defined six competencies adopted from the IOM report, two of which specifically relate to quality improvement and patient safety.

In Canada, the Royal College of Physicians and Surgeons of Canada (RCPSC) introduced the CanMEDS competency framework in 2005 (Frank and Danoff 2007) and defined seven physician roles. Unlike the competency frameworks that were emerging in the United States, CanMEDS only peripherally indicated the need for physicians to develop competence in PS/QI. In recognition of this gap, the RCPSC collaborated with the Canadian Patient Safety Institute to develop a competency framework titled "The Safety Competencies: Enhancing Patient Safety Across Health Professions" (Frank and Brien 2008), intended to identify the knowledge, skills and attitudes required of all healthcare professionals to deliver safe patient care. This framework served as the basis for informing the integration of PS/QI competencies into the upcoming revision of the CanMEDS competency framework, due to be released in 2015 (Wong et al. 2014).

These competency frameworks provide the necessary foundation for the development of accreditation standards and training requirements in health professions education that will ensure that PS/QI concepts are introduced early in training. There are limited data to know whether the establishment of these competency frameworks resulted in the implementation of actual PS/QI training. However, a recent survey of U.S. pediatric residencies reported that the majority deliver QI training to learners in their program (Mann et al. 2014), suggesting that the implementation of accreditation standards in 2002 by the ACGME mandating PS/QI training has likely achieved its goal of introducing some PS/QI training into graduate medical education.

How Do Health Professionals Learn About PS/QI?

One way to categorize the ways that healthcare providers learn about PS/QI is to consider the *formal*, *informal* and *hidden* curricula that relate to PS/QI. Formal patient safety training might range from a seminar series or a workshop on a specific aspect of patient safety (e.g., teaching frontline nurses how to use a structured communication strategy such as Situation-Background-Assessment-Recommendation, or teamwork training to enhance patient safety) to an explicit patient safety curriculum delivered to medical or nursing students (Headrick et al. 2012). Several systematic reviews focused on clinicians (Boonyasai et al. 2007) and medical trainees specifically (Patow et al. 2009; Wong et al. 2010) suggest that formal training in PS/QI can improve knowledge and attitudes, and may even result in some improvements in clinical processes. However, there are few examples whereby training in PS/QI can be demonstrably linked to improvement in patient outcomes, although recently, the implementation of formal handoff training combined with direct observation and feedback in a U.S. pediatric residency program resulted in a significant reduction in adverse events (Starmer et al. 2013).

Even in settings where formal training does not exist, healthcare providers will often report that they are familiar with basic PS/QI practices. This is thought to be due to the fact that providers and trainees learn informally on the job about the use of tools that intend to improve patient safety and healthcare quality (Pingleton et al. 2010). For example, nurses might learn from a colleague about how to file an incident report. A pharmacy student might observe how a clinical pharmacist completes a medication reconciliation form. Medical students might observe teams using a surgical checklist prior to an operation. All of these experiences introduce a variety of PS/QI tools, and potentially the rationale for their use, in an informal way to health professionals and learners.

Perhaps the most underappreciated but incredibly powerful influence is what health professionals learn through the *hidden* curriculum. Fred Hafferty first coined the term and defined the hidden curriculum as "the set of influences or unintended messages that function at the level of organizational structure and culture" (Hafferty and Franks 1994). For example, a hospital might embark on an initiative to provide formal training across the institution to promote incident reporting. However, when a respected frontline staff member is seen telling his or her colleagues "what's the point in filing a report…no one responds to these anyways," this strongly influences the likelihood that others will see this as an pointless activity. In patient safety circles, this is often referred to as the patient safety culture of an organization.

Whatever the term, it is important to recognize the immense impact that this implicit form of role modelling has on what providers learn about PS/QI. The hidden curriculum often has a negative impact on learning, and can undo what has formally been taught about PS/QI. A recent study of medicine, nursing

and pharmacy students in Toronto revealed a concerning decrease in nursing students' perceptions of the quality of their learning about patient safety, as it related to working in teams when they entered the clinical setting. While there may be many explanations for this, one possibility is the hidden curriculum or institutional culture that exists, as it relates to interprofessional team functioning and the engrained hierarchies that exist between professions (specifically physicians and nurses). Medical students experience similar tensions, as they enter the clinical phase of their training (Liao et al. 2014a). There are medical student accounts with sobering examples of dysfunctional teams and unsupportive supervisors who impede students from speaking up in unsafe situations (Liao et al. 2014b). These clinical learning environments serve to demoralize students, reinforce existing hierarchies and may promote unsafe practices that can have a lasting effect on trainees.

In fact, there is evidence that suggests that where you train and the quality of care of that clinical environment matter when it comes to the quality of care that you eventually provide in your future practice. For example, Monette and colleagues (1997) found that one of the predictors of whether physicians in practice prescribed inappropriate benzodiazepine medications to elderly patients was the medical school that they attended; students graduating from one of the four medical schools in Quebec were much more likely to prescribe inappropriately than students graduating from the other three schools. More recently, Asch and colleagues (2009) found that women had a 32% higher relative risk of suffering a major post-partum complication if they were treated by obstetricians who trained in institutions in the bottom quintile with respect to major maternal complication rates.

Clearly, as we contemplate how best to establish patient safety competency among our healthcare providers, it will require formal training that is reinforced informally in the clinical care setting, and supported by providers who exemplify those attributes and behaviours that foster a positive safety culture.

What Needs to Happen to Advance PS/QI Health Professions Education?

One obvious challenge as we contemplate the expansion of PS/QI training across health professions education is the need to develop faculty who can teach the basics of patient safety to a broad audience of providers and trainees. Many institutions have identified this need for professional development programs to establish patient safety trainers, yet few examples of successful programs exist. One promising model is the train-the-trainer model, which, when implemented broadly across a number of trusts in the United Kingdom, resulted in the establishment of a cadre of senior-level patient safety trainers who successfully implemented patient safety training programs across numerous institutions (Ahmed et al. 2013).

The Canadian Patient Safety Institute established the Patient Safety Education Program – Canada (PSEP) in partnership with Northwestern University, which provides interprofessional team-based training with the aim to develop patient safety trainers who can return to their home institutions and deliver patient safety training to frontline staff (Canadian Patient Safety Institute 2014). In 2012 alone, this program trained more than 200 participants from a variety of health professional backgrounds from across the country. Recently, PSEP has been adapted to meet the needs of postgraduate and undergraduate medical trainees. Named ASPIRE (Advancing Safety for Patients in Residency Education), the inaugural program included more than 50 attendees from Canada, the United States and the Netherlands (Royal College of Physicians and Surgeons of Canada 2014). While the impact of these programs is currently unknown, their emergence signals recognition at the national level for addressing this need as a key enabler to promote patient safety education.

However, even if we undertake a massive effort to create the capacity to deliver PS/QI training in the majority of health professions schools, there is still the possibility for trainees to "unlearn" what is taught formally if we fail to improve the safety culture where they train. Lucian Leape has long recognized this concern as a major unmet need in our health professions training and calls for action to abolish the culture of disrespect that has become the norm in our training environments (Lucian Leape Institute 2010; Leape et al. 2012). This will require the joint effort of healthcare institutions and their partner health professions schools and the bodies that govern their educational practices.

This is starting to happen. The best example is the Clinical Learning Environment Review program launched by the ACGME in the United States (Weiss et al. 2013). This program was established to provide training programs with a review of their clinical learning environment on six key domains: patient safety, quality improvement, supervision, care transitions, professionalism and duty-hour oversight/fatigue management. The early experience from the first year of the program indicates a "generalized lack of resident engagement in a 'systems-based practice' of medicine in the clinical environments in which they learn and provide clinical care" (Nasca et al. 2014). Much of the attention will ultimately rest on improving safety culture and interprofessionalism (Bagian et al. 2014), which one hopes would have broad implications for the training of all health professionals in these clinical learning environments. Eventually, if successful, this program will improve upon these critical elements within the training environment and produce high-quality, safe health professionals who can deliver high-quality, safe care.

Are we certain that focusing on the training environment and addressing the informal and hidden curricula will yield

the desired result with respect to PS/QI education? Clearly, the answer at this time is unknown. However, the evidence is mounting that this aspect of PS/QI education can no longer be ignored. Furthermore, there are examples where positive role modelling can lead to tangible improvements in safety practices among health professionals. A recent study found that when the first person who enters and exits a patient room on a patient care team performed hand hygiene, the remaining team members were much more likely to also perform hand hygiene (Haessler et al. 2012). Interestingly, this effect was observed even when a more junior member of the team was the first to enter the room. There is no reason to believe that students immersed in an environment where the culture lives and breathes quality and safety would not come out at the end of their training better equipped to provide safer, higher-quality care.

Conclusion

We have come a long way over the past decade and a half since To Err Is Human with respect to PS/QI health professions education. We know now more than we ever have about how best to teach PS/QI. We have competency frameworks that clearly define the key and enabling competencies that are required of all health professionals. Yet, there is still much to be done if we intend to continue on our journey of transformation towards a safer, higher-quality healthcare system. Much will rest on the coordinated effort between health professions schools and healthcare institutions to foster clinical learning environments that support implicitly what is explicitly taught, and build towards a culture that emphasizes the importance of providing safe, high-quality care. HQ

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About the Author

Brian Wong, MD, FRCPC, is an assistant professor in the Department of Medicine at the University of Toronto, and associate director of the Centre for Quality Improvement and Patient Safety at the Sunnybrook Health Sciences Centre in Toronto, ON.

Patient Safety and Engagement at the Frontlines of Healthcare

Andrea Bishop and Mark Fleming

Abstract

Since the release of the seminal work To Err Is Human in 1999, there has been widespread acknowledgement of the need to change our approach to patient safety in North America. Specifically, healthcare organizations must adopt a systems approach to patient safety, in which organizations take a comprehensive approach aimed at building resilient barriers and ensuring a culture of open communication and learning. Here in Canada, the patient safety movement gained momentum following the publication of the Canadian Adverse Events Study in 2004, which concluded that close to 40% of all hospital-associated adverse events were potentially preventable. Baker et al. (2004) argued for the need to modify the work environment of healthcare professionals to better ensure barriers were in place, as well as the need to improve communication and coordination among healthcare providers. The changes proposed a decade ago required greater healthcare worker engagement in patient safety and the creation of a culture of patient safety.

Patient Safety Culture

Patient safety culture has been defined as "an integrated pattern of individual and organizational behaviour, based upon shared beliefs and values, that continuously seeks to minimize patient harm that may result from the processes of care delivery" (Kizer 1999). The creation of a positive safety culture involves promoting the desired healthcare provider attitudes and perceptions through frontline provider participation in the setting of patient safety and organizational objectives, as well as through leadership to ensure stakeholder involvement. Research has previously shown the importance in engaging frontline healthcare providers for hospital performance, including correlations between work engagement, patient-centred care and safety culture (Lowe 2012). In addition, hospitals and healthcare organizations need to promote engagement on a number of levels, allowing frontline care providers to have input into decision-making processes, leadership structures and ownership of patient safety strategies. Lack of frontline engagement, especially with physicians, may explain some of the disparities seen between management perceptions of safety culture improvement and actual improvements seen in the trenches (Parand et al. 2011).

Given what we do know about a systems view of patient safety, why are we not providing more mechanisms for provider involvement in the setting of patient safety strategies? In this paper we will discuss where the road to frontline engagement has taken us since the release of the Canadian Adverse Events Study a decade ago, some of the challenges encountered along the way and where we need to go in the next 10 years.

Building a National Dialogue

Since the establishment of the Canadian Patient Safety Institute (CPSI) in 2004, the organization endeavoured to provide healthcare organizations with evidence-based interven-

tions aimed at assessing and improving the safety of care received by Canadians. CPSI's flagship program Safer Healthcare Now! (SHN) has especially helped to improve provider input and knowledge regarding patient safety practices at the frontline of healthcare. SHN has set 11 priority directions for Canadian healthcare organizations wishing to improve patient safety, with a number of them aimed directly at frontline provider engagement and activation, including medication reconciliation, safe surgery, infection prevention and control and rapid response teams (Safer Healthcare Now 2012). Frontline staff also have the opportunity to participate in the Patient Safety Education Program, designed to provide an interprofessional team of healthcare providers with the ability to be patient safety trainers within their organization (Canadian Patient Safety Institute 2012).

Accreditation Canada has also served to bring about national attention to the role that patient safety plays in promoting high-quality and safe healthcare provision. Currently, Accreditation Canada has four required organizational practices relating to safety culture, including adverse events disclosure, adverse events reporting, client safety quarterly reporting and client safety-related prospective analysis (Accreditation Canada 2013). Accreditation results from 2008 to 2010 suggest that organizations are becoming more aware of the need to proactively ensure client safety and safety culture, with the greatest grounds of improvement being the use of prospective client safety analyses with a compliance increase of 30% over the three years studied (Accreditation Canada 2011). National results from the Patient Safety Culture Tool in 2009 also indicate that 71% of respondents (n = 35,901) gave their unit a positive overall grade on patient safety, while only 62% gave their organization a positive overall grade, suggesting that local process improvements at the frontline of care may be more readily seen (Mitchell 2012).

Patient Safety Culture Progress

Perception surveys

There have been a number of safety culture perception surveys used in healthcare within the past 10 years, including the Safety Attitudes Questionnaire (Sexton et al. 2004), the Stanford Instrument (Singer et al. 2003) and the Hospital Survey on Patient Safety Culture (Sorra and Nieva 2004). While these surveys have been widely used since their release, the surveys each have their own weaknesses that inhibit the ability for organizations to properly measure and evaluate frontline provider perceptions of patient safety culture. For example, these questionnaires tend to be rather lengthy in the number of survey items needed to complete the survey, as well as having sometimes low or non-existent reliability measures (Fleming 2005). However, measurement of provider perceptions, as well as psychometric properties of these survey instruments, is improving. The Canadian Patient Safety Climate Survey (Can-PSCS) helps to overcome some of the issues that arise when using past safety culture surveys for a number of reasons: it has been used and tested in a variety of care settings, it has robust psychometric properties and it contains a small number of dimensions with only 19 items (Ginsburg et al. 2014). Although the Can-PSCS has good psychometric properties, it, like other perception surveys, lacks evidence of predictive validity. Additionally, Can-PSCS is now being used by Accreditation Canada across healthcare organizations through its Qmentum accreditation program, thereby allowing for direct comparisons and better tailoring of national education and intervention programs to suit the needs of Canadian hospitals and further employee engagement. Recently, due to feedback from participating healthcare organizations, Accreditation Canada has also started to provide additional direction on how to design and implement changes stemming from the use of the Can-PSCS survey.

Frontline Provider Interventions

There have been few intervention studies looking at frontline engagement in patient safety in the past decade. Within Canada, Ginsburg et al. (2005) found statistically significant improvements in nurse perceptions of safety culture following two patient safety workshops aimed at educating senior clinical nurses regarding adverse event rates, human factors principles, learning from errors and the importance of teamwork and communication. Research conducted in Atlantic Canada with 123 frontline healthcare providers showed that providers' perception of threat of adverse events and barriers versus benefits influences provider participation in organizational patient safety practices (Bishop and Boyle 2014). Furthermore, although many healthcare providers in the study agreed that patient safety was a priority, only 53 (43.1%) providers agreed that employees generally participate in the setting and implementation of patient safety practices, and only 32 (26.0%) agreed that employee suggestions for improving patient safety are listened to (Bishop 2012). Walsh et al. (2009) highlight the importance of engaging physicians in quality and safety practices while also accepting the inherent barriers that exist due to time, remuneration structure and autonomy. Encouraging a team approach and ensuring that physicians and other frontline providers are incorporated as leaders and change agents was also a major insight from the intervention, which speaks to the need to greater incorporate clinicians in the initial processes of implementation. Professional peer involvement can also have significant influence on physician perceptions of and involvement in patient safety behaviours (Wakefield et al. 2010). Ensuring that frontline providers, especially physicians, are engaged in safety leadership positions is vital to ensuring more widespread adoption of safety behaviours by healthcare professionals.

Organizational Interventions

At the organizational level, leadership commitment and support has been identified as a required precursor to greater adoption of safety culture behaviours by employees (Griffiths 1985; Zohar 1980). At its core, patient safety requires organizational change. In their study of patient safety changes in the intensive care unit, Pronovost et al. (2008) stress the importance of engaging at levels of the organization, including executive leaders, team leaders and staff. The research team used a collaborative model that sought to engage, educate, execute and evaluate patient safety culture at all three employee levels, underpinning the importance of stakeholder engagement throughout the process of safety culture implementation. Interestingly, research has also shown that perceptions of quality and safety differ between frontline staff and managers who work in the same health setting (Parand et al. 2010). One way that these differences can be broached is through leadership walkarounds that can provide a means for many healthcare organizations to link senior leadership goals with the realities of frontline care (Budrevics and O'Neill 2005). Improving communication channels from the sharp end of healthcare to the hospital boardroom is vitally important when trying to align patient safety goals and can help to ensure that frontline staff feel that they not only have a voice in setting patient safety priorities, but also in contributing to overall system improvement.

Results from the Safer Patients Initiative in the UK found that while organization-wide impacts may have been small, gains were seen at the micro-system unit levels and within organizational safety culture perceptions (Health Foundation 2011). Perceptions of multi-professional engagement and communication were found to positively respond to the interventions undertaken during the initiative (Benn et al. 2009). However, physician engagement was still found to be an underlying issue. A qualitative follow-up study suggested a number of dimensions that affect physician engagement, including resource allocation and availability, perceptions of the purpose of the initiative and the presence of local champions (Parand et al. 2010). As such, while large-scale organizational initiatives may help to raise awareness of patient safety and improve certain dimensions of safety culture, local area improvements and clinical practice changes are still very much reliant on frontline education and engagement to ensure that organizational objectives are translated appropriately and improvements can be seen at the level of care.

Challenges Faced

While many strides have been made with regards to patient safety and frontline engagement in the 10 years since the release of the Canadian Adverse Events Study, there undeniably remain a number of challenges to ensuring ongoing cultural changes.

Readiness for Change

With the large-scale use of patient safety and quality initiatives set forth by national and international research organizations, often healthcare organizations have a difficult time adopting one-size-fits-all strategies when their organizational cultures are so disparate. If an organization's culture is resistant to change, or fails to set realistic expectations, then program failure is almost a foregone conclusion. As the end-users of change often determine its success, it is imperative to ensure that individual motivations and perceptions are properly activated for change to succeed (Armenakis and Harris 2009). The role of organizational support and self-efficacy are important dimensions to consider when undertaking organizational change and ensuring frontline engagement. Research has shown that a bottom-up leadership style and transformation approach is associated with a high level of organizational readiness, suggesting that organizations that do not already favour this leadership style may have trouble adopting patient safety strategies that require provider involvement (Burnett et al. 2010). The role of staff empowerment in promoting change is not a new concept (Kotter 2007); however, many healthcare organizations fail to understand the impact that having a disengaged and disenfranchised frontline can have on the success of patient safety initiatives. Engaging frontline employees at the beginning of the change process is essential but is often overlooked in an age where many change interventions are not locally produced.

Organizational Resources

Although time and money are hard to come by these days, there is evidence that greater engagement can be garnered through the realignment of financial and organizational incentives (Walsh et al. 2009). In short, if you compensate healthcare providers for their roles in safety and quality initiatives, there is more impetus for engagement and ownership. Additionally, mutual expectations should be defined between healthcare providers and the organization to properly define the provider role within safety initiatives and to help bridge the gap of the traditional autonomous healthcare provider to the needed interdisciplinary teamwork approach of providing safe care (Taitz et al. 2012). However, these changes require healthcare organizations to adopt new financial structures and realignment of performance evaluation measures, which can be difficult and lengthy to implement.

Behavioural Commitment

While organizational culture is often touted as a panacea to patient safety and frontline engagement issues, culture can also undermine change efforts and create blind spots within a healthcare organization. In the aftermath of the Bristol Royal Infirmary inquiry, researchers and investigators outlined what

they saw as a culture of entrapment (Weick and Sutcliffe 2003). Essentially, although red flags abounded, the mindset of the organization was one where negative performance was explained away and dismissed (Weick and Sutcliffe 2003). As such, although frontline providers may well be engaged, they are engaged in behaviours and norms that are counteractive to the adoption of a safety culture. Collective mindfulness, the ability to have organization-wide awareness of potential failures and see opportunities for improvement, is a hallmark of high-reliability organizations (Weick et al. 2008). As such, healthcare organizations need to be aware of their current organizational culture, as well as the perceptions of frontline staff, to ensure that frontline engagement is supporting a culture of safety, or whether the prevailing culture is one that favours suppression.

Opportunities Ahead

With patient safety rhetoric focusing on the need for leadership in promoting patient safety, the leadership roles of frontline staff have been diminished in favour of a more traditional senior leadership stance on what constitutes safe patient care. While many healthcare organizations in Canada have begun to collect data on safety culture dimensions and safety practices as they related to required organizational practices and SHN priority areas, we need to stop and think whether or not measurements are meaningful at the frontlines of care. How do frontline care providers feel about our current patient safety strategies? How well do we involve them in the setting of patient safety strategies, or are they merely consulted? Who are the patient safety leaders in our healthcare system? While many healthcare organizations measure employee engagement in a general sense, more emphasis on frontline provider engagement in patient safety, including the measurement of provider perceptions and organizational safety culture, is necessary to ensure that all members of the care team have defined roles in the provision of safe patient care. In fact, in many ways, the patient safety movement has moved beyond provider engagement due to the many difficulties organizations face and has gone directly to the patient. However, patient engagement in patient safety inherently requires frontline engagement in patient safety – if we are asking patients to question the care they are receiving, we will get nowhere if providers are unwilling to be challenged. Building professional capacities for frontline staff to become leaders in patient safety and improve interdisciplinary teamwork and communication is necessary if we are to see continuing improvements in the coming decade. HQ

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About the Authors

Andrea Bishop, PhD, is a postdoctoral fellow in the Department of Psychology at Saint Mary's University In Halifax, Nova Scotia.

Mark Fleming, PhD, is the Canadian Professor of Safety Culture in the Department of Psychology at Saint Mary's University in Halifax, Nova Scotia.

Improving Safety: Engaging With Patients and Families Makes a Difference!

Carol Kushner and Donna Davis

Abstract

Following a brief review of the history and context for patient and family member involvement in healthcare safety improvements, a variety of tools and mechanisms for patient engagement will be offered along with specific examples from Patients for Patient Safety Canada (a patient-led program of the Canadian Patient Safety Institute) to illustrate the impact of involving patients and family members in safety work. Barriers and facilitators to patient engagement in safety will also be examined.

History and Context

Patient safety became an issue of deep concern in Canada when the Baker–Norton Adverse Events Study (Baker et al. 2004) was released a few years after the Institute of Medicine's published To Err Is Human, which established that medical error was between the fourth and eighth leading cause of preventable death in the United States (Kohn et al. 1999). It has now been 10 years since the World Health Organization (WHO)[1] made patient safety a priority in October 2004 and called on the healthcare community to welcome patients and their family members as partners in creating a safer system. The WHO's Patients for Patient Safety (PFPS) program stream was created to support this initiative and the following year, invited a small group of 21 patients and family members who had experienced harm from healthcare to a meeting in London, England. This is where The London Declaration[2] was conceived, and it continues to be used to underpin the commitment and aspirations of PFPS Champions around the world as they work to make the system safer. To become a PFPS Champion, candidates must attend a WHO-approved patient safety workshop, must endorse The London Declaration and must sign an agreement, signifying their willingness to work in collaboration with the health system and its providers. Today there are more than 300 WHO PFPS Champions[3] in more than 50 countries, including 43 in Canada, most of whom are also members of Patients for Patient Safety Canada (PFPSC), a patient-led program of the Canadian Patient Safety Institute (CPSI). The rationale for involving patients and family members in safety work is to recognize that the perspectives of patients and family members may often differ from those who work in the system and can be valuable in planning and implementing safety improvements that are truly patient- and family-centred.

Strategies and Tools

Over the past decade, a great deal of work has been done to advance the involvement of patients and families in patient safety work both here in Canada and around the world. In the United States, for example, the Institute for Patient- and Family-Centered Care has developed a package of resources for health organizations wanting to advance patient engagement. This package includes a variety of specific strategies and tools tailored to specific healthcare settings including hospitals, primary care and other ambulatory settings.[4] These materials are available for free downloading and provide useful guidance for getting started and expanding and sustaining the work. Other helpful resources are available from the Institute for Healthcare Improvement (IHI), Planetree and the Joint Commission.[5]

In Canada, the CPSI has demonstrated a strong commitment to patient engagement since 2006 by providing staff support to help create and sustain PFPSC's volunteer network. CPSI also

involves PFPSC members in all of their safety initiatives. This includes the development of a national integrated patient safety strategy and the working groups established to develop action plans to advance four areas of clinical focus: medication safety, infection prevention and control, surgical safety and home care safety. Also, for the past three years, CPSI has begun each day of its virtual conference on quality and safety by featuring a patient safety story from a PFPSC member.[6]

PFPSC members sit on a variety of external bodies including, for example, the board of the International Society for Quality in Healthcare, and the advisory council of Accreditation Canada, and have worked as advisors to the Institute of Safe Medication Practices Canada and Canada Health Infoway. Provincial Ministries of Health have either created Patient Advisory Councils to provide input about provincial initiatives or asked PFPSC members to provide this feedback. PFPSC members have been consulted about the development of new PFPS organizations in Malaysia, Ecuador, Ireland and Australia and are looking at ways to work together with the Canadian Family Advisory Network. PFPSC provided input to the revised Canadian Disclosure Guidelines[7] and to the Canadian Incident Analysis Framework[8] released by CPSI in 2011 and 2012, respectively, to reflect the perspectives of patients and family members. PFPSC has also developed or advised on other patient safety materials such as hand hygiene guides and patient-held medication lists, and has contributed to the development of instructional materials for students in the health professions, and helped to judge patient safety and quality competitions.

Since its inception, PFPSC members have also made hundreds of presentations to safety conferences and to provincial quality councils; addressed medical, nursing and pharmacy students; and participated in high-level roundtables, such as the recent patient safety summit hosted by the Royal College of Physicians and Surgeons, examining the implications of culture on safety and the curriculum changes needed to ensure safety competency for medical specialties.[9]

The Impact of Patient Engagement on Safety Improvements

At the Royal College summit, mentioned above, one of the authors of this paper (CK) had the opportunity to ask Dr. Lucian Leape, arguably the grandfather of patient safety in the United States, what impact patient and family involvement has had on safety improvements. His response: "There is no evidence. [The impact] might be great, but we don't really know."

This lack of evidence may begin to change soon. PFPSC is currently being formally evaluated to assess the impact the of the work of the members of PFPSC on the system's safety. The network is also the subject of a PhD thesis currently being completed. Other groups with an interest in quality and safety have entered the arena, notably Patients Canada[10] (formerly the Patients Association of Canada) with a large membership and an active and highly experienced board, and a number of provincial patient organizations such as BC's Patient Voices Network.[11]

However, without the validation of research, the evidence of impact can only come from two sources: anecdotes and testimonials. And so, from the former category, the following examples about PFPSC members are offered to illustrate how patient engagement can help change policy and procedure and affect standards and norms in practice.

The following six examples demonstrate some of the ways in which patients and family members have worked and are working to transform personal tragedy into positive change. Note that these examples do not offer very much detail about individual patient safety stories; however, links to videos of these are offered for those who wish to know more.

Sabina Robin, an experienced nurse, has worked in partnership with other patient safety advocates and the healthcare system to champion open disclosure, after a sequence of adverse events led to the death of her baby daughter, Mataya, in 2004. She pushed for the creation of an order set for idiopathic thrombocytopenic purpura (an unknown cause for decreased platelets, which can cause bleeding) to standardize the management of patients with this condition in Calgary hospitals. She has advocated strongly for the adoption of improved communication techniques and the need for patients and family members to receive sincere apologies from the providers directly involved in the incident when things go wrong. Sabina has also been instrumental in promoting the adoption of "Condition H (Help)," which enables family members to summon a rapid response team when they are unable to get the current team to recognize a deterioration that they have noticed in the patient <http://www.patientsafetyinstitute.ca/English/news/PatientSafetyNews/Pages/Patient-Safety-Stories---Mataya%27s-Story.aspx>.

Following the death of her daughter, Annie, Barbara Farlow has become a well-known advocate for ethics and equity in healthcare, including respect for parental decision-making, the importance of informed consent and treating people with disabilities humanely. Barbara is a popular conference speaker and has worked to sensitize students in the health professions to some of the unjust labels that can affect treatment plans in ways that cause harm to patients. She has also published on these topics in notable medical journals. She just completed her term as the Honorary Patient Advisor on the board of the International Society of Quality in Health Care <http://www.gowebcasting.com/events/cpsi-virtual-forum/2013/10/29/patients-for-patient-safety-canada-video/play/stream/9289>.

Tania Maron turned her dreadful experiences of healthcare's abandonment during the induced stillbirth at 18 weeks' gestation of her daughter, Sophia, into potent messages for improving the care provided to others in similar circumstances at her local hospital. Asking the hospital to become a model for others, she was welcomed to participate in developing the new policies now in place to ensure that pregnant women and their partners receive compassionate service and appropriate support in what can be a very difficult and wrenching experience. She also sits on the hospital's Perinatal Bereavement Committee and is working to see that the changes inspired by her advocacy locally

will spread across the province and the country <http://www.patientsafetyinstitute.ca/English/news/PatientSafetyNews/Pages/Patient-Safety-Stories---Sophia%27s-Story.aspx>.

Johanna Trimble's mother-in-law experienced severe side effects to new medications prescribed after an admission to the hospital for flu-like symptoms and dehydration. Subsequently, she and the family advocated successfully for a "drug holiday" and her mother-in-law, who had been further diagnosed with dementia and depression, fully recovered her mental capacities. Unfortunately, she lost independence due to functional decline after being bed-ridden for months while in the facility. Johanna has been using this experience to educate and inform others about the widespread overuse of medications and the poster she designed titled: "Is your mom on drugs?" was awarded the top prize at the international "Selling Sickness" conference in Amsterdam in 2010. Since then she has been invited to speak at many provincial, national and international conferences and also to participate on the British Columbia Polypharmacy Initiative Steering Committee. Johanna is also on the Patient Safety Advisory Council for Vancouver Coastal Health Authority <http://www.patientsafetyinstitute.ca/English/news/PatientSafetyNews/Pages/Fervid%E2%80%99s-legacy-of-care-lives-on-through-loved-ones.aspx>.

Theresa Malloy-Miller's son Dan died unexpectedly after being admitted to the local hospital for persistent vomiting after a series of diagnostic, communication, equipment and medication errors. The hospital has made many changes in the wake of this event: they now have a standard protocol for children with abnormal blood values, and for fluid resuscitation, new blood pressure equipment, new protocols for RN-MD communications and new guidelines for sedation. Following Dan's death, the Director of Nursing at the hospital set up a patient safety conference and invited Theresa to make a presentation. Theresa sat on the planning committee for this annual conference and now serves on the hospital's Corporate Quality Council <http://www.gowebcasting.com/events/cpsi-virtual-forum/2013/10/28/patients-for-patient-safety-canada-video/play/stream/8261>.

Donna Davis, a nurse with 26 years' experience, was powerless to help her 19-year-old son as she watched him deteriorate and die from a head injury that, if treated appropriately, could have been prevented from turning into a tragic outcome. Dismissing her concerns, health professionals insisted he had a minor injury. That mindset and multisystem breakdowns at all levels contributed to his death: a classic "Swiss cheese" example of harm. As a direct result of hearing (6 years later) the family perspective of what occurred during this critical incident, three healthcare providers from the same region designed a patient alert system for their department where a stop sign is placed on the patient tracking system so that the patient is not transferred or discharged until the concern has been addressed. Anyone can place "Vance's Stop Sign" on the chart. The CPSI Patient Safety Global Alert site was inspired by the work Donna has done in partnering with the healthcare community to share the lessons of patient safety incidents. Knowing first-hand how important honest, transparent and compassionate disclosure is following a patient safety incident, Donna was successful in bringing a stronger patient voice to the 2012 revision of the Canadian Disclosure Guidelines and the 2013 revised Canadian Incident Analysis Framework. Working as a patient advisor to the Saskatchewan Ministry of Health, Donna has been able to shape policies and development of programs with patient and family needs as the priority (<http://www.patientsafetyinstitute.ca/English/news/PatientSafetyNews/Pages/Patient-Safety-Stories---Vance%27s-Story.aspx>).

These are only six of many examples where PFPSC members have been able to use their passion for patient safety to partner for changes in the way the system provides care and services. The true value of this input will only increase as patient- and family-centred policies – doing with, rather than doing to, or doing for – become the new normal.

Barriers and Facilitators for Patient Engagement in HealthCare Safety

There are a variety of reasons why the healthcare community hesitates to embrace patient and family input in their safety work. The most obvious is fear.[12] Fear of showing vulnerability; fear of exposing that providers do not have all the answers; fear that it will take more time; fear of losing control; fear of the unknown; fear that patients and families will derail the planned course; fear that their expectations will be unrealistic; and perhaps most of all, fear that patients and families will be disruptive rather than constructive. Organizations may also worry about time and budget constraints, the potential negative reaction of providers and whether patients and family members are sufficiently versed in health literacy and health system literacy.

Culture also plays a critical role. A recent text analysis (Buchan et al. 2014) of 10 PFPSC patient safety stories revealed two dominant themes implicating the culture of the organizations where the harm occurred: an inability of healthcare workers to listen to patients or families when they asked questions or raised concerns, e.g., "whatever I said it wasn't sinking in with anyone," and the stereotyping of patients and families to dismiss concerns raised, e.g., "seen as a mother struggling unsuccessfully to blame someone for her daughter's death." The authors conclude, "Although the editing of these stories reduces their authenticity, they did provide a rich source of information about the cultural norms surrounding adverse events." (Buchan et al. 2014)

It is fortunate that there are also strong internal and external motivators to encourage organizations to embrace patient and family engagement. External motivators include, among others, the desire to mimic others' success, legislation or regulations making patient and family engagement mandatory (as in Saskatchewan) and leadership from outside organizations, like CPSI in Canada and IHI in the United States. Internal motiva-

tors include a sentinel event, the business case for doing it, the desire to improve safety and quality, patient safety stories and altruism (Agency for Healthcare Research and Quality. 2012).

There are also facilitating factors at the organizational level (Agency for Healthcare Research and Quality. 2012), which include prior experience with and knowledge about working with patients and families; the existing organizational culture, especially one that embraces continual learning and evaluation and emphasizes accountability and responsibility in a non-punitive way; viewing errors as opportunities to correct systemic failures; and leadership from the board of directors, senior administrators and clinical staff.

In a summary prepared for the IHI, the authors offered this ringing endorsement of patient and family engagement (Reinertsen et al. 2008):

> "We have observed that in a growing number of instances where truly stunning levels of improvement have been achieved, organizations have asked patients and families to be directly involved in the process. And those organizations' leaders often cite this change – putting patients in a position of real power and influence, using their wisdom and experience to redesign and improve care systems – as being the single most powerful transformational change in their history. Clearly, this is a leverage point where a small change can make a huge difference."

Conclusion

No one has a greater interest in seeing improvements than those who have been harmed by the system. No one is in a better position to know when things just do not seem right. And when things go wrong, no one is more concerned than patients and families about making sure that what happened to them or their loved ones does not happen to others. As one of us (DD) said recently, "We cannot get back what has been lost, we cannot undo what has been done, but we can work together to make things better for others."

Patients and family members are increasingly being seen as an important resource to caregivers, armed with unique knowledge about themselves and their loved ones. That knowledge needs to be tapped to make the best decisions about an individual's care, but patients and families are also showing they can play a role in the broader arenas of helping to create safety tools and resources, planning and implementing safety improvements and in motivating and inspiring health workers to make "Every Patient Safe." HQ

Notes

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About the Authors;
Carol Kushner and **Donna Davis** are co-chairs of Patients For Patient Safety Canada, a patient-lead program of the Canadian Patient Safety Institute.

Measurement of Quality and Safety in Healthcare: The Past Decade and the Next

Gary F. Teare

Abstract

The author calls for a critical assessment of the impact of investments made in the measurement of quality and safety, and reflects on whether a reorientation of some of this investment is required to realize the healthcare quality and safety improvement the system seeks. This article also reflects on several Canadian initiatives that have been typical and draws on the experience of health systems that have used measurement to great effect to suggest how investments in healthcare quality and safety measurement should be focused in the future.

There has been an explosion of healthcare performance (quality and safety) measurement activity – in the decade since the Baker et al. study (2004) on patient safety in Canadian hospitals. Around the time of that study, several provinces had launched or were developing, provincial health quality councils or similar functions in government. These entities began to develop and release public reports on aspects of health system performance, work with healthcare organizations and teams on improvement of health services and develop capability for "measurement for improvement." The Canadian Institute for Health Information (CIHI) took on responsibility for propagation of public reporting on Ontario hospital performance, building on methods developed by the University of Toronto for the Ontario Hospital Association Hospital Reports (OHA 2003), eventually expanding the effort nationally. The Canadian Patient Safety Institute (CPSI) was created, and launched *SaferHealthcareNow!* (CPSI 2004) and its related system of patient safety indicators measurement. Several provincial governments initiated work on metrics-based accountability agreements with regional health authorities or other healthcare agencies. Think tanks (e.g., Fraser Institute; Frontier Institute) and news media organizations (e.g. CBC *The Fifth Estate*) have gotten involved in producing public reports on quality and safety of healthcare over the years.

This interest has been valuable in bringing attention and expertise to address what was a dearth of performance measurement in healthcare – a condition that has set healthcare in sharp contrast to most other industries. It also had its detrimental effects. The many, uncoordinated measurement and reporting initiatives have at times created a cacophony of measures, measurement approaches and messages that can confuse and distract rather than focus and provide insight helpful to systematic efforts to improve healthcare performance. This state of "indicator chaos" was highlighted, and potential solutions identified, at a May 2011 meeting in Saskatoon of representatives from many of the organizations and academics engaged in healthcare performance measurement (Health Quality Council 2011). A key idea that emerged from the participants of that meeting was that creation of a nation-wide mechanism to enable coordination of and collaboration in measurement work would help to reduce unnecessary duplication of effort.

Attempts to Bring About Improvement by "Top Down" Measurement

The largest investments in performance measurement in Canadian healthcare have been oriented to a "top down" theory of change. This is reflected in numerous efforts and large investments to identify and develop standardized indictors with appropriate adjustments for bias that enable comparisons of performance among jurisdictions or healthcare organizations/facilities. Ontario's *Hospital Report* (2003) and similar national or provincial initiatives have largely followed this path. The operative theory has been that if we get the measurement right, the facts will speak for themselves and organizations or jurisdictions that are outliers on particular measures will be motivated to make the required changes in behaviour. This in turn will bring about needed improvement in the healthcare processes underlying the results reflected in the measures.

To that end, we have invested heavily in (and spend a lot of time criticizing) the scientific validity of performance indicators, in identifying frameworks and sets of measures that are meaningful and feasible to measure across organizations and jurisdictions and in electronic reporting tools on which to report them. The data used for this measurement are generally taken from existing standardized data sources such as administrative health data, although in some cases, new data collection is developed for the purpose. While the data all come out of the daily activity of healthcare, they are often abstracted from the process and the clinicians generating the data often are not highly aware of the data. In other cases, where the data collection was created specifically for the measurement purpose, clinicians may be hyper-aware of the data, and annoyed by the "add on" activity of collecting it. The quality and safety measures themselves are generally calculated at some distance (in both space and time) from the point-of-care and are generally reported electronically – on a website or online reporting tool – using increasingly sophisticated graphics and methods to facilitate comparisons.

The typical response to this reporting is that an analyst distills the information into a report for the organization's leaders, who focus their attention on those measures where the organization is an outlier or is not performing as well as hoped. This is followed up by a command to "fix the problem."

Unfortunately, successful improvement based on this approach is limited and is often not sustained when the attention of the leader shifts elsewhere or when leadership changes. The measurement is disconnected from the daily processes of care, which is where the improvement needs to take place. The work is usually handed off to be directed by a committee and months may pass.

In successful cases, the key processes to be fixed are identified and improved. However, in getting there, the improvement team finds that the measures from the report that motivated the leader to say "fix it" are usually not timely enough to support process improvement work – the data they are based on are now old. Or the measures only reflect outcomes of care – and the team does not have available information about the performance of the processes that lead to those outcomes, nor about the inputs (e.g., patients and materials) to the processes, which would help them to interpret and contextualize the outcomes. So, successful improvement work requires the development of local, point-of-care measurement to understand and monitor the performance of those processes. Generally, the resources needed to do this improvement work are configured as additive to the care process itself. Enthusiastic clinical and administrative champions go "above and beyond" their daily work to make the improvements happen and that measurement and reporting supports (staff, tools) are put in place. Unfortunately, the success depends on these additional inputs, and when the enthusiasts tire or move on, or when leadership attention shifts to fixing a new problem the efforts cease. The entropy inherent in the system can undo any improvements fairly quickly.

Attempts to Provide Support "From Away" to Local Improvement as Part of Larger Campaigns

Recognizing that outcomes-oriented measurement was insufficient, many organizations have attempted to help local improvement teams by providing training and support. Quality improvement "Breakthrough Collaboratives" (HQC 2008) and national healthcare safety campaigns, such as SHN!, are examples of this kind of initiative. These initiatives have played an important role in spreading a working knowledge of quality improvement and patient safety methodology. They also give point-of-care teams (microsystems) hands-on experience in capturing and using data to understand and improve their care processes.

SHN! engaged healthcare organizations and providers across the country in focusing on improving a few key areas of healthcare known to be associated with higher risk to patients' safety. The point of the initiative was to help hospital healthcare teams to reliably follow practices that were previously demonstrated to be effective in dramatically reducing the frequency of patient harms. From a measurement perspective, SHN! provided support to healthcare teams' evaluation of their process improvement by providing well-defined measures, not only of outcomes but also of the key underlying processes, and by providing electronic tools to facilitate local data capture and basic analysis. Eventually an online tool was developed for data entry and basic reporting.

The improvement science and measurement support and the kinds of measurement done in SHN! provide an important next level of engagement to help local improvement teams meet what are still largely "top down" improvement goals. Having the important processes already identified, having appropriate

measures already defined and having some technology in place to facilitate data capture and reporting with potentially much less delay, address some of the key reasons for why the first kind of "top down" measurement often fails to lead to improved quality and safety. Unfortunately, the same key features of these initiatives, which enable them to achieve improvement results relatively quickly, can also be the source of their unsustainability.

In most examples of this kind of initiative – whether SHN!, or any number of other similar programs – the weak link is that the improvement activity and the related measurement is still an "add on" activity for the organization and the clinical teams delivering care. They struggle with the measurement and come to see it as something they are doing "for" the initiative or its sponsoring organization instead of for themselves and their own learning; measurement must be built into workflows so that it becomes a seamless and value-adding part of staff work. Having a separate online form or website for data entry and reporting does not work with clinical workflow. As a result, the job of measurement goes to a special resource (e.g. a research nurse or a study coordinator) – the kind that is the first to be cut under conditions of resource constraint (i.e., when leadership's priorities shift elsewhere, or budgets are cut).

Measurement to Support Bottom Up Improvement in the Context of Top Down Prioritization

To borrow something often said of politics – "all improvement is local." Achievement of improvements in patient healthcare outcomes all begins with improvement of appropriateness of the care and of the processes by which it is delivered. It seems self-evident that engagement of the hearts and minds of local healthcare teams – including the patient, the clinicians, support staff and their immediate supervisor(s) – in the effort to improve care is the way to sustainable, real improvement. This has certainly been the path taken by the healthcare systems most often looked to by others as examplars in achieving improvement success – places such as Virginia Mason Medical Centre (VMMC) in Seattle, Intermountain Healthcare in Utah, Southcentral Foundation in Alaska, or Jonkoping County in Sweden. Each have achieved this in different ways – and there isn't space to discuss all of them. Here we will focus on key lessons from Virginia Mason and Intermountain Healthcare pertaining to the important role measurement plays in improvement work and will touch on how some of these practices are being replicated in Canadian settings.

Visual Management

Visual management is a different form of "measurement and reporting" – a technique that is promoted in the quality and safety improvement practices that were most thoroughly developed for manufacturing at Toyota (popularly called "lean") and adapted to healthcare by Virginia Mason (2014). Developing visual management of a process involves having the team that does the work understand their processes and, wherever possible, create standards for the operation of those processes. Visual management involves creating visual (and sometimes audible) cues to signal to people working that process when a critical step in the process is ready to be taken or when a critical part of the process is not operating within the standard. For example, in a hospital or clinic, this could be a flag system on doorways to signal when the room is ready for a patient or to signal when the patient is ready for a particular provider type or service. Or it could be tracking of patient flow through a clinic, with different-coloured indicators on whiteboard showing whether each care team is on time or if any are running behind, to enable on-the-fly management of the schedule. Visual management is also the motivation for workspace clean-up and organization practice (called "5S") promoted in lean improvement methods.

Daily visual management (DVM) extends this kind of practice to how clinical teams make their work "visible" to each other, their leaders and their patients – through use of key process and outcome metrics that they capture during the course of their work and use to regularly update a "visibility wall" (metrics board) on a daily or weekly basis. The team uses the metrics on the board as a focal point for daily and/or weekly team huddles to plan or evaluate their work and to identify to each other opportunities for improvement or progress on improvements ideas being tested. The content displayed on visibility walls is largely driven by what is considered important by the local (microsystem) team based on their processes and what they are striving to improve. However, they can (and should) be used to help the team see the connections between their local work and organizational/system improvement priorities. Mature visibility walls will contain a balanced set of metrics to help the team reflect on the performance of their team with respect to quality, patient and provider safety, patient and provider experience, cost and the delivery of the services (usually in terms of timeliness and quantity).

DVM is often based on quite low-tech approaches to measurement like tracking of patient flow on a whiteboard with hourly status summarization to spur any actions needed. However, DVM can also involve information that is generated from electronic tools used in managing or delivering healthcare – such as digital whiteboards, bed management software and electronic medical records. The key is that the measurement and reporting is done in real or very close to real time so that the information can be used actively in decision-making. The collection and use of the data are built-in to the daily work routines.

Building DVM into the work routine is not automatic. It does take purposeful work, commitment and a flexible approach to make it best suit the needs of the team and help

the team see their connection of their work to larger organizational goals. It ultimately proves its utility to the team by helping them create a less chaotic work environment, helping to tell the story of their continuous improvement progress and helping to make evident the improvements in patient outcomes they are achieving. Hospital units and some primary care clinics in Saskatchewan have begun in the last two years to learn and apply this approach to use of measurement.

Ultimately – the practice of DVM cascades up and a similar approach informs visual management at higher levels of the organization and health system as a whole. In Saskatchewan, the Regional Health Authorities (RHAs) have developed their organizational- and department-level visibility walls for leaders at each level to use to track the work in their area and to inform "good questions" that leaders can ask of those who report to them to ensure that barriers to improvement can be identified and addressed. At the top level of the Saskatchewan healthcare system, the Deputy Minister of Health, Physician Advisors, RHA CEOs and Board Chairs all meet quarterly around a visibility wall to maintain focus on provincial improvement priorities.

Measurement to Assist with the Designing Care

While measuring and monitoring improvement in care processes is vital, and quality improvement methods including those of "lean" are tremendously helpful to improve how care is delivered reliably and safely, it is important to note that much of what is done in healthcare is not based on a solid evidence-base, so standardization of care that should be provided presents a special problem. That is not to say that standardization is anathema to problems of appropriateness in healthcare – but rather it means that a purposeful and careful approach is required to develop and use standards in determining what care to provide for patients. Intermountain Healthcare has developed a very robust method for developing and using measurement.

Called "Shared Baselines" – what Intermountain Healthcare did, was combine the standardization of experimental clinical trial methodology together with quality improvement methods to build standard evidence-informed routines into care while preserving clinicians' autonomy to treat each individual patient in the manner that seems to best suit that patient. The method is supported by a measurement system that is built into the clinical workflow to capture important aspects of patient characteristics (process inputs), key process decision/action points and patient and health system outcomes (clinical, experience and cost). Importantly –the measurement approach enables the capture of clinician-initiated protocol variations and includes a "learning loop" to feed the information on those variations and short- and long-term patient outcomes back to the clinicians on a regular basis (James 2014). The latter feature is key, as it forms the basis of "evidence-generating" healthcare – wherein aspects of healthcare, for which specific clinical trial grade evidence does not exist to guide decisions, can be informed by the documented accumulation of experience over time to improve care decisions. This is an important feature of this measurement approach, as most of healthcare in the real world is not provided to the highly selected patient populations included in clinical trials.

Where Intermountain Healthcare has excelled in its approach is that it prioritized its improvement work to focus first on the "golden few" care processes that comprise the bulk of the care their organization provides, they developed an information system and approach to measurement that embedded measurement into the clinical workflow, they adjusted their management structures to encourage use of the data for improvement and they aligned financial incentives to enable clinicians to provide the right care without suffering a penalty for doing so (James and Savitz 2011). Today, Intermountain Healthcare is widely known for its highly effective use of information technology in healthcare to guide improvement and achievement of better patient outcomes. The information technology is an important ingredient in Intermountain Healthcare's measurement approach, but Brent James is quick to caution against jumping to computer use too quickly – as Intermountain Healthcare wasted many millions of dollars in initial failed attempts at health information system until they aligned their IT strategy with their shared baselines clinical integration approach.

In a nutshell – the approach involves a team of clinicians, supported by measurement and quality improvement experts, visualizing the care process (the patient journey through the process) using process mapping, determining key decision points in the process and agreeing to a standard approach to care at those points and identifying key clinical, patient experience and cost outcomes pertinent to that care process. To round out the measurement needs, the team identifies key patient characteristics and other process inputs that will be important to know to properly interpret process and outcome measures (i.e., for stratification). The team determines the kinds of feedback reports that they will need to monitor the standards and to learn from clinician-initiated variations and identifies the specific data that will need to be collected to produce those reports. The next phase involves identifying the most appropriate places within the workflow to collect specific data elements and to run a trial of collecting those data – using pre-coded forms or checklists on paper – and produce initial copies of the reports. At that stage a final selection of the most valuable reports is made and only the data required to support them are "hard wired" into their electronic medical record and other electronic data collection tools. With regular feedback of the reports to clinicians and scheduled annual minor and triennial major reviews of the shared baseline protocols, the standards are continuously updated to reflect the latest evidence – both from the published scientific literature and from the accumulated observations and

interpretation of Intermountain Healthcare's own protocol variations data.

At present no Canadian health organizations or systems have created a system for the design of care and active learning from variation as well-developed as that of Intermountain Healthcare. The Variations and Appropriateness Working Group of the Saskatchewan Surgical Initiative (2012) have followed Intermountain Healthcare's lead in design of a shared baseline protocol in vascular surgery – and developed the measurement system following the method used by Intermountain Healthcare, but the province still lacks the information systems infrastructure to build measurement seamlessly into workflow, and has not addressed the issues of clinical management structure or financial incentives. Alberta's Strategic Clinical Networks seem to have important elements of clinical management structure in place but have yet to reliably deliver the hoped-for improvements in care. The entire package of changes to care design, measurement, management structure and incentives that will work in a Canadian context has yet to be realized. From a measurement perspective, It is important to note that the successful approach used by Intermountain Healthcare required an investment in improvement and measurement expertise that could be embedded with clinical standards development teams for an extended period – initially to help develop, and then to help maintain the shared baselines approach.

The Next Decade in Quality and Safety Measurement

As a country and as provincial/territorial healthcare systems, we will continue to need standardized, comparable metrics that can be used to identify areas where improvement is needed or to document trends in improvement (or not) over time among jurisdictions and organizations. There will continue to be areas of care where the existing evidence base relating specific processes to desired outcomes is quite solid, where there will need to be mechanisms such as large-scale campaigns or collaboratives to facilitate the spread of implementation of these better practices. Each of these approaches has an important role to play and needs further investment to improve their effectiveness.

An emerging area of healthcare quality and safety measurement, where a significant amount of investment and focus needs to be placed going forward, is in helping clinical teams and leaders at all levels learn how to make their work processes visual and to manage them in that transparent way. In short – it will require an openness to changing the healthcare leadership culture to one where transparency and visibility of processes and outcomes – the great, the good, the bad and the ugly – is a fundamental principle. So we will only see visual management increase if leaders at all levels invest – their time and their resources – in developing it.

A key area of healthcare quality and safety measurement that needs investment is in the development of local measurement-savvy quality improvement support personnel. They would work at the local, regional and provincial levels with healthcare providers and patients – to develop the kind of data and information that will be most useful to them in understanding and improving their care processes over time. These resources must have strong numeracy, solid quality improvement science skills, and be highly emotionally intelligent and skillful at working with groups of experts who often hold widely divergent opinions about the work at hand. There are few training programs in health systems or at universities to develop these skills in people. And – people with strong numeracy and analytical skills in Canadian healthcare organizations presently tend to find their time largely occupied responding to "fix it" imperatives from leadership, motivated by top down kinds of measurement and reporting.

The last area requiring significantly new and different development attention is information technology. For too long the focus of electronic medical record development has been to essentially replicate the paper medical record using bytes instead of a pen. Canada needs to develop information technology solutions that are easy to use and apply to data capture within the clinical workflow – and yet conform to compatibility standards to enable data flow in the health system. We need flexible online tools with interfaces that are easy to adapt to different scenarios to capture data on the fly – and that don't require a lot of primary programming by consultants to get data into them or out of them. We need personnel trained to work with these systems embedded along with the improvement support people in the clinical teams to ensure development of IT that truly enhances and fits with care workflow rather than adding extra work.

In conclusion, Canadian healthcare needs balance and parsimony (Meyer 2012) in its approach to large-scale measurement initiatives to ensure that much more time is given and appropriate investments made to develop local and provincial capabilities for visual management and care (re)design. HQ

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About the Author

Gary F Teare, PhD, MSc, DVM, is executive director, Measurement and Analysis at the Saskatchewan Health Quality Council in Saskatoon, SK.

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