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A culture of patient safety:

Foundation for a Royal College patient safety roadmap

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Introduction

Culture is ephemeral. Culture, or "the way we do things around here," refers to "the shared basic assumptions, norms, and values and repeated behaviours of particular groups into which new members are socialized."[1] Through contact with others, exposure and functioning within a particular environment, one becomes enculturated — imbued with the values, attitudes and norms of the group.

Patient safety culture is "a component of organizational culture" and "includes the shared beliefs, attitudes, values, norms and behavioural characteristics of employees, and influences staff member attitudes and behaviours in relation to their organization's ongoing patient safety performance."[2] An enabling patient safety culture is characterized by leadership that leads by example, transparent communication, psychological safety facilitating reporting of errors, patient and family engagement, and a commitment to ongoing improvement.[3] An improved patient safety culture has been associated with reduced patient harm[4], perception of better care by patients[5] and family members[6], and reduced staff burnout[7].

Leape et al. have examined patient safety culture with a different, but related, lens, describing how the prevailing culture of disrespect in medicine has created a dysfunctional culture that challenges teamwork and transparency, and threatens patient safety. Disrespect is "learned, tolerated and reinforced in the hierarchical hospital culture,"[8] and is antithetical to a culture of safety. A culture of safety underpins an enabling learning environment.

In March 2014, the Royal College held a two-day workshop titled "Transitioning to safe care: culture meets competence," to begin a national conversation around the culture of patient safety (Appendix A).

Discussions reaffirmed that without tackling the current problems in the culture of medicine; we reinforce our own, often unfavourable, habits and pass them on to future generations of health care providers. To help break this cycle, we focus in this document on *five areas*, offering *five recommendations* for each. Acknowledging the cross-cutting nature of the recommendations, we suggest convening a Patient Safety Culture Working Committee that can interface with initiatives and committees across the Royal College of Physicians and Surgeons of Canada (Royal College) to ensure an active and timely approach to embedding a culture of safety across the advanced medical education and specialty practice landscapes.

OPPORTUNITIES AND NEXT STEPS

1. Partner with National Specialty Societies to promote a culture of safety within disciplines

Efforts to improve the safety of health care have drawn on lessons from high-reliability industries, such as aviation and nuclear power — complex industries that maintain a high safety record despite the high risk for costly failures. Key to their performance is a "culture of safety" in which safety is considered a primary priority and where leadership is committed to open and frequent communication, and organizational learning (including around errors) is valued and treated as an opportunity to improve.[1]

The vision of the American health care system as a learning organization was recently articulated by the Institute of Medicine (IOM), who considered this approach to be a potential antidote to stalled efforts in achieving safe, high value health care.[2] As noted in their 2012 publication *Best Care at Lower Cost: The Path to Continuously Learning Health Care in America*, "achieving a learning health care system - one in which science and Informatics, patient-clinician partnerships, incentives, and culture are aligned to promote and enable continuous and real time improvement in both the effectiveness and efficiency of care - is both necessary and possible." The centrality of an enabling culture to the realization of the health care system as a learning organization harkens back to the culture of safety being a requisite for high-reliability organizations. Indeed, the IOM had previously highlighted the importance of a patient safety culture, which they characterized by

- a belief that although health care processes are high risk, they can be designed to prevent failure;
- a commitment at the organizational level to detect and learn from errors; and
- an environment that is perceived as just because managers discipline only when an employee knowingly increases risk to patients and peers.[3]

The Royal College espouses and underscores the centrality of a culture of patient safety to the delivery of safe, quality care across the professional life cycle. Notwithstanding the leadership role that the Royal College can assume with respect to knowledge dissemination and the development, aggregation and distribution of tools and resources; the Royal College's vision is best realized by partnering with more targeted organizations, as context-specific approaches are more likely to effect the sustained attitudinal and behavioural changes needed to shift the culture. Much of patient safety and quality improvement is indeed context-specific, with "context" referring to either populations (e.g. children versus adults, patients with diabetes versus those with dementia), types of practice (e.g. medical versus surgical) and/or places of practice (e.g. hospital versus private office, ambulatory versus in-patient, urban versus rural).

The country's National Specialty Societies (NSSs) can play a pivotal role in promoting and effecting cultural change and contextualizing recommendations, such as they have done for the Choosing Wisely-Canada campaign. One exemplar of a NSS initiative in this regard is the Society of Obstetrics and Gynecology of Canada's MORE[4] program, which has included cultural transformation along with effective communication, collaboration and teamwork, reflective learning, and system improvements as part of its integrated safety program.

All NSSs should engage, along with the Royal College, in driving a culture of safety throughout their constituency.

Next steps

1. Assemble a multidisciplinary roundtable with representatives from the Royal College and NSSs to
   a. articulate and position the need for a culture of safety, and
   b. align and communicate the Royal College and NSSs' visions on this topic.
2. Encourage the development of quality and safety committees in each NSS.
3. Define general and specialty-specific responsibilities and accountabilities toward a culture of safety.
4. Collaborate with other national organizations around a shared vision for a culture of safety.
5. Investigate opportunities to establish/facilitate collaborations with safety outcome measures, including a culture of safety.

2. Leverage the accreditation processes to promote a culture of safety

It has been said that "the introduction of innovation through accreditation is limited"[1] — yet this need not be the case. The potential to effect change through the accreditation process can be harnessed as a function to drive not only clinical and educational innovation, but the permeation of a safety culture across the medical landscape.

The Required Organizational Practices (ROPs) introduced by Accreditation Canada exemplify the leverage that can be afforded by accreditation in driving change in health care. The ROPs are divided into six patient safety areas including "Culture of Safety." Among the ROPs are practices such as medication reconciliation and monitoring hospital-associated infections. The importance of the ROPs is underscored by the fact that accreditation of an organization is only granted if there is full compliance with all of the ROPs.

A new ROP in the Culture of Safety domain is "Accountability for Quality," whereby "members of the governing body need to be aware of key quality and safety principles if they are to effectively understand, monitor and oversee the quality performance of the organization."[2] This ROP will help drive organizational culture at the foundational, governance level. The Royal College can similarly leverage its accreditation process to improve the culture of safety by stipulating the elements an organization must have in place in order to be a base for medical training.

The Royal College "ensure[s] that all residency programs in specialties that [they] recognize provide residents with the knowledge and expertise they need to practice specialty and subspecialty medicine at a high level" through the institutional "A standards"[3] and program-based "B standards."[4] Both sets of standards address some elements of a safety culture; according to the former, universities must provide a "proper educational environment free of intimidation, harassment and abuse with mechanisms in place to deal with such issues as they arise" (A1.3.7), and educational sites must "ensure resident safety" (A2.6) and have a "formal continuing quality improvement program including regular reviews of deaths and complications" (A2.5). The B standards state that ongoing review of each specialty training program "must take place in an open and collegial atmosphere allowing for a free discussion of the strengths and weaknesses of the program without hindrance" (B1.3.8.2) and "the learning environment of each component of the program must be evaluated (B1.3.8.6).

Policies governing resident safety (B1.3.9) and mechanisms to "manage issues of perceived lack of resident safety" (B1.3.9.2) must be in place. In addition, "teaching and learning must take place in environments which promote resident safety and freedom from intimidation, harassment and abuse" (B3.9).

Intimidation and harassment are ubiquitous, and threaten provider wellness and patient safety.[5] A learning environment free of harassment and intimidation, similar to that described in Standard (A1.3.7), has been linked to a culture of respect and safety.[6] This synergy could be fostered by embedding other essential components of a culture of safety — such as an explicit commitment to safety by a leadership group that values safety as a priority and "walks the talk", open and transparent communication at all levels, and reporting of errors and adverse events as an opportunity for system improvement without the fear of blame and/or personal repercussions[6] — into the accreditation process.

As a professional body, we need to ask ourselves whether the current accreditation process provides satisfactory psychological safety for trainees to come forward with concerns, or whether they reserve their concerns for anonymous, aggregated exit surveys. To act as a lever for change, the accreditation process must be deliberate and explicit in its inquiries about a culture of safety.

Next steps
1. Reframe the accreditation standards (both A and B) to lie within a culture of safety framework, introducing this concept in a preface to each set of standards.
2. Work with the Patient Safety Culture Working Group to identify key concepts and practices that define a culture of patient safety.
3. Communicate widely and repeatedly in all training sites the importance of a culture of patient safety to the accreditation process.
4. Develop and implement "Required Cultural Practices for Safety" akin to Accreditation Canada's Required Organizational Practices for the Accreditation A Standards.
5. Develop and implement "Required Cultural Practices for Safety" akin to Accreditation Canada's Required Organizational Practices for the Accreditation B Standards.

3. Evaluate the clinical learning environment

Adult learning theories posit that a teacher's ability to create a climate for learning is as important to the learner as transmitting knowledge or sharing expertise.[1] Medical learners' achievements and satisfaction are related to their perception of the learning environment.[2] The educational climate of medical training can be viewed through three lenses:

1. the physical environment (warmth, space, etc.),
2. the emotional climate (respect, encouragement, constructive feedback, etc.), and
3. the intellectual climate (evidence-based, active participation, motivating, etc.).[3]

Current interest in professional identity, professionalism and the hidden curriculum reflect back to the importance of the emotional climate. Harassment, bullying, disrespect and other unprofessional behaviours can impact a trainee or other health care provider. It could lead to burnout, depression, insecurity, and/or imitation/adoption of the maladaptive behavior — including blatant disregard of set policies or procedures. These may, in turn, impact the patient through unprofessional encounters and increased vulnerabilities in care. Indeed,

"the learning environment for medical education shapes the patient care environment"[4]; safe patient care requires a culture of safety imbued with transparency, accountability, mutual respect and a commitment to learning and improvement.[5]

The importance of the clinical learning environment to safe, quality care has recently been underscored by the Accreditation Council for Graduate Medical Education's new Clinical Learning Environment Reviews (CLERs), which will eventually be used as part of the accreditation process.[6] These reviews involve regular visits to the participating sites to evaluate the "quality and safety of the environment for learning and patient care." [6] Feedback is provided to institutional leaders offering an opportunity to improve weaknesses identified in the following six areas:

1. patient safety,
2. quality improvement,
3. transitions in care,
4. supervision,
5. duty hours oversight/fatigue management and mitigation, and
6. professionalism.[8]

Early findings have recently been published and indicate "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."[6] The ultimate goal of these reviews is to foster learning environments that support and reflect a culture of safety, improve the quality and safety of patient care, and create health care leaders who can participate in system-wide improvements in the future.

As an onsite observational tool, CLERs are resource-intensive and costly. Surveys offer an alternative method to measure the learning environment. A number of questionnaires have been developed for this purpose, including the Dundee Ready Educational Environment Measure (DREEM) [7], which is used primarily in undergraduate medical settings; the Postgraduate Hospital Educational Environment Measure (PHEEM)[8]; and the Dutch Residency Educational Climate Test (D-RECT).[9] D-RECT is currently used in a number of European countries as its psychometric properties have been shown to be more favourable than those of PHEEM. An additional value that has been derived from the use of D-RECT has been demonstration of a positive correlation between the climate of the learning environment and the teaching performance of individual faculty.

Context impacts performance and assessment, and as such, learners deserve to train in an environment that fosters professionalism and excellence. To optimize their experience, the learning environment clearly warrants examination.

Next steps
1. Commit to the importance of evaluating the learning environment.
2. Assemble a working group to conduct an environmental survey of strategies and tools to assess the learning environment (in PGME) and select a tool to be trialed.
3. Share with national and international accreditation systems and quality improvement/ patient safety organizations the rationale and principles of evaluating the learning environment.
4. Develop an implementation/assessment plan and pilot the selected tool(s).
5. Evaluate the results of the pilot and make further recommendations accordingly.

4. Promote the use of practice outcome data as a way to identify opportunities to enhance safety and support a safe culture

A truism increasingly applied to health care is that "you can't improve what you can't measure." This truism is a fundamental driver of health care reform, and in part underlies the implementation of mandatory public reporting of quality indicators in many jurisdictions. Evidence, however, that public reporting of institutional performance data improves care is inconsistent.[1] That said, a tenet in education circles is that targeted feedback drives practice improvement, and indeed there is evidence that providing provider-specific outcome data improves clinical outcomes.

The reporting of surgeon-specific, surgical site infection rates has been shown to be effective in reducing surgical site infections and became the standard of practice over three decades ago.[2] The practice has been integrated into the American College of Surgeons' National Surgical Quality Improvement Project (ACS NSQIP)[3] — a multifaceted intervention to improve surgical outcomes that was launched in 1994. ACS NSQIP provides high quality, risk-adjusted, infectious and other complication rates to participating facilities with procedure-specific and surgeon-specific infection data available on request. As reported, "this comparison allows surgeons and hospitals to see how they compare in terms of outcomes, which promotes accountability and stimulates work to correct the problems."[4] The focus on measures that can be evaluated shortly after the delivery of care, as well as the ability to adjust for case-mix, have contributed to the success of the program.

A direct relationship between surgical volume and outcome has been reported for numerous surgical procedures.[5] Recently, a direct relationship between surgical, technical skill and outcomes after bariatric surgery was reported in a study that used peer observation of videotapes to assess technical skill.[6] Both of the above examples offer opportunities to improve patient safety: in the former case, by restricting practice to individuals who do a minimum number of specified surgical procedures; and in the latter case, by highlighting opportunities to improve one's skill.

Clinical outcome review should be part of regular formative and summative assessments during training, and ideally would play a role in ongoing practice and maintenance of competence. This information must, however, be framed within a context of personal learning and improvement in patient care. Incorporating a systems approach into morbidity and mortality rounds during training can set such an example; however, for morbidity and mortality rounds to be structured and promoted as a vehicle for learning and improvement, there must be a "just culture" that balances blame-free and punitive responses to error by promoting personal accountability, systems-thinking, and a commitment to openness and transparency.[7]

In addition to provider-specific data, other data can drive improvement. These include data that is population-, disease- and facility-specific. Data may be culled from administrative and other databases, or provided through peer review and even self-audit. Standardized patient-reported outcomes may feature prominently in future years.[8] Formalizing a process for providing outcome data will require considerable thought on the scope and granularity of the data to be provided and the level of service provision that will be considered. The key point is that if we want to improve the quality and safety of patient care, we need to measure our current outcomes.

Next steps
1. Strike a working committee to consider the utility, scope and feasibility of supplying provider-specific outcome measures
   a. during training, and
   b. in practice.
2. Enlist the NSSs in discussing the future of patient reported and other provider-specific outcome measures.
3. Develop a white paper on the scope and utility of outcome measures, and their place in training and practice.
4. Promote the concept of a just culture.
5. Develop and/or consolidate the role of peer review in provider-specific outcomes.

5. Enhance faculty development to support the culture of safety

To achieve an all-encompassing culture of patient safety in medicine, health care providers and institutions of learning and patient care, must assume and enact a set of shared values and beliefs that position patient safety as a primary priority. An enabling patient safety culture is characterized by

1. leadership that "walks the talk," and by
2. transparent communication,
3. psychological safety that facilitates the reporting of errors,
4. patient and family engagement, and
5. a commitment to ongoing improvement.[1]

These characteristics must be consistently applied across all levels and sites of learning and practice. They must permeate the formal curriculum, and expose and rectify the hidden curriculum. While practitioners currently in the system may be reluctant and therefore slow to change, all efforts must be put in place to ensure that current and future trainees have the knowledge, skills and tools needed to effect change and improvement. Current and future trainees must also experience positive role models that personify the ideal culture we espouse. For this to happen, faculty development in the areas of leadership, teamwork, professionalism and quality, and patient safety must be enhanced.

The importance of leadership in fostering a culture of safety is well-recognized.[1,2] While it is common to believe that the responsibility falls to CEOs and department heads, leaders of microsystems play an important role in influencing the local culture. By promoting teamwork and shared purpose, they foster the culture needed to enable collective action toward a common goal.[3] Unfortunately, medical training has not traditionally taught the essentials of leadership[3,4], leading to efforts around the globe to engage both faculty and learners in medical leadership training.

Good leaders lead by example. It has been suggested that academic leaders (e.g. medical school deans and teaching hospital CEOs) could play important roles in inculcating our medical environments with positive role models by "emphas[izing] and promot[ing] the development and display of interpersonal skills, leadership, teamwork, and collaboration among faculty and staff."[1]

Communication problems are the most frequent factor contributing to the occurrence of major adverse events. Effective teamwork relies on good communication and is integral to safe patient care and to a culture of safety.[5] Both didactic team-training and use of simulation have been shown to improve communication and cooperation, and to improve patient outcomes.[6]

Quality improvement and patient safety are recognized to be essential elements of medical education curricula. One barrier to the adoption and spread of these disciplines into teaching and clinical practice has been a paucity of trained faculty.[7] An increased volume of various models of faculty development in quality improvement and patient safety is being reported[8,9,10,11] and opportunities are available both through the Royal College (e.g. ASPIRE program) and through academic institutions across the country. Department leads must acknowledge the importance of this body of knowledge and be prepared to invest in cultivating local expertise. Valuing academic productivity in quality and safety as meritorious of promotion is one strategy that can be used to encourage faculty to pursue scholarship in this area.[12]

For all of these reasons, a commitment to faculty development in leadership, teamwork, and quality and patient safety is essential.

Next steps
1. Expand opportunities for faculty development and continuing education in patient safety/quality improvement across Canada.
2. Position leadership, teamwork and patient safety/quality improvement education as prerequisites for academic hiring.
3. Incorporate mandatory patient safety and quality improvement activities into the annual Maintenance of Certification cycle.
4. Work with NSSs to adopt teamwork training programs.
5. Work with academic and hospital leads to align patient safety and quality improvement efforts.

Final thoughts
While the prevailing medical culture will not change overnight, we need to begin to make changes now for the sake of patients, learners and the health care system as a whole. This document is the first phase of a plan to embed a culture of patient safety within our physician community and their places of academic and clinical work. Rigorous implementation and evaluation will be necessary to evaluate the success of these efforts.

Bibliography

Introduction

1. Dixon-Woods M, Baker R, Charles K, Dawson J, Jerzembek G, Martin G et al. 2014. Culture and behaviour in the English National Health Service: overview of lessons from a large multimethod study. *BMJ Quality and Safety*. 23:106-15.

2. Morello RT, Lowthian JA, Barker AL, McGinnes R, Dunt D, Brand C. 2013. Strategies for improving patient safety culture in hospitals: a systematic review. *BMJ Quality and Safety*. 22:11-8.

3. Lucian Leape Institute. 2010. *Unmet needs. Teaching Physicians to Provide Safe Patient Care.* www.npsf.org/download/LLI-Unmet-Needs-Report.pdf

4. Weaver SJ, Lubomksi LH, Wilson RF, Pfoh ER, Martinez KA, Dy SM. 2013. Promoting a culture of safety as a patient safety strategy: a systematic review. *Annals of Internal Medicine.* 158: 369-74.

5. Sorra J, Khanna K, Dyer N, Mardon R, Famolaro T. 2012. Exploring relationships between patient safety culture and patients' assessments of hospital care. *Journal of Patient Safety*. 8:131-9

6. Dodek PM, Wong H, Heyland DK, Cook DJ, Rocker GM, Kutsogiannis DJ et al; Canadian Researchers at the End of Life Network (CARENET). 2012. The relationship between organizational culture and family satisfaction in critical care. *Critical Care Medicine*. 40(5):1506-12

7. Sexton JB, Sharek PJ, Thomas EJ, Gould JB, Nisbet CC, Amspoker AB, et al. 2014. Exposure to Leadership WalkRounds in neonatal intensive care units is associated with a better patient safety culture and less caregiver burnout. *BMJ Quality and Safety*. 23:814-22.

8. Leape LL, Shore MF, Dienstag JL, Mayer RJ, Edgman-Levitan S, Meyer GS, Healy GB. 2012. Perspective: a culture of respect, part 1: the nature and causes of disrespectful behavior by physicians. *Academic Medicine*. 87:845-52.

National Specialty Societies

1. Singer SJ, Gaba DM, Geppert JJ, Sinaiko AD, Howard SK, Park KC. 2003. The culture of safety: results of an organization-wide survey in 15 California hospitals. *Qualty & Sfaety in Health Care*. 12:112-8.

2. Committee on the Learning Health Care System in America. Institute of Medicine. Best Care at Lower Cost: The Path to Continuously Learning Health Care in America 2012. http://www.iom.edu/Reports/2012/Best-Care-at-Lower-Cost-The-Path-to-Continuously-Learning-Health-Care-in-America.aspx. Accessed October 14, 2014.

3. Committee on data standards for patient safety, Board on Health Care Services. Institute of Medicine. Patient safety: Achieving a new standard for care. Washington, DC: The National Academies Press 2004. http://www.nap.edu/openbook.php?isbn=0309090776. Accessed February 8, 2015.

4. Milne JK, Walker DE, Vlahaki D. 2013. Reflections on the Canadian MORE[OB] obstetrical risk management program. *Best Practice & Research Clinical Obstetrics & Gynaecology.* 27:563-9.

Accreditation

1. Nasca TJ, Philibert I, Brigham T, Flynn TC. 2012. The next GME accreditation system-rationale and benefits. *New England Journal of Medicine.* 15; 366(11):1051-6.

2. Accreditation Canada. Required Organizational Practices 2014. http://www.accreditation.ca/sites/default/files/rop-handbook-2014-en.pdf

3. Royal College of Physicians and Surgeons of Canada. General standards applicable to the university and affiliated sites. A standards. www.royalcollege.ca/portal/page/portal/rc/common/documents/accreditation/accreditation_purple_book_a_standards_e.pdf. Accessed February 8, 2015.

4. Royal College of Physicians and Surgeons of Canada. General standards applicable to all residency programmes. B standards. www.royalcollege.ca/portal/page/portal/rc/common/documents/accreditation/accreditation_blue_book_b_standards_e.pdf. Accessed February 8, 2015.

5. Leape LL, Shore MF, Dienstag JL, Mayer RJ, Edgman-Levitan S, Meyer GS, Healy GB. 2012. Perspective: a culture of respect, part 1: the nature and causes of disrespectful behavior by physicians. *Academic Medicine.* 87:845-52.

6. Leape LL, Shore MF, Dienstag JL, Mayer RJ, Edgman-Levitan S, Meyer GS, Healy GB. 2012. Perspective: a culture of respect, part 2: creating a culture of respect. *Academic Medicine.* 87:853-8.

7. Singer SJ, Gaba DM, Geppert JJ, Sinaiko AD, Howard SK, Park KC. 2003. The culture of safety: results of an organization-wide survey in 15 California hospitals. *Quality & Safety in Health Care.* 12:112-8.

Clinical learning environment

1. Hutchinson L. 2003. ABC of learning and teaching in medicine: Educational environment. *British Medical Journal.* 326: 810-812.

2. Genn JM, Harden RM. 1986. What is Medical Education Here Really Like? Suggestions for action research studies of climates of medical education environments. *Medical Teacher.* 8(2): 111-124.

3. Clapham M, Wall D, Batchelor A. 2007. Educational environment in intensive care medicine – use of Postgraduate Hospital Educational Environment Measure (PHEEM). *Medical Teacher.* 29: e184-e191.

4. Association of American Medical Colleges. AAMC Statement on the Learning Environment. https://www.aamc.org/download/408212/data/learningenvironmentstatementdownload.pdf. Accessed February 21, 2015.

5. Leape LL, Shore MF, Dienstag JL, Mayer RJ, Edgman-Levitan S, Meyer GS, Healy GB. 2012. Perspective: a culture of respect, part 2: creating a culture of respect. *Academic Medicine.* 87:853-8.

6. CLER Pathways to Excellence: Expectations for an optimal clinical learning environment ACGME 2014 https://www.acgme.org/acgmeweb/. Accessed December 2014.

7. Miles S, Swift L, Leinster SJ. 2012.The Dundee Ready Education Environment Measure (DREEM): a review of its adoption and use. *Medical Teacher.* 34(9):e620-34.

8. Roff S, McAleer S, Skinner A. 2005. Development and validation of an instrument to measure the postgraduate clinical learning and teaching educational environment for hospital-based junior doctors in the UK. *Medical Teacher.* 27:326-31.

9. Lombarts KM, Heineman MJ, Scherpbier AJ, Arah OA. 2014. Effect of the learning climate of residency programs on faculty's teaching performance as evaluated by residents. *PLOS | One.* Jan 28;9(1):e86512.

Outcome data

1. Ketelaar NA1, Faber MJ, Flottorp S, Rygh LH, Deane KH, Eccles MP. 2011. Public release of performance data in changing the behaviour of healthcare consumers, professionals or organisations. *Cochrane Database System Review*. Nov 9;(11):CD004538. doi: 10.1002/14651858.CD004538.pub2.

2. Haley RW, Morgan WM, Culver DH, White JW, Emori TG, Mosser J, Hughes JM. 1985. Update from the SENIC project. Hospital infection control: recent progress and opportunities under prospective payment. *American Journal of Infection Control*. 13:97-108.

3. Khuri SF, Daley J, Henderson W, Hur K, Demakis J, Aust JB et al. 1998. The Department of Veteran Affairs' NSQIP: the first national, validated, outcome-based, risk adjusted, and peer-controlled program for the measurement and enhancement of the quality of surgical care. National VA Surgical Quality Improvement Program. *Annals of Surgery*. 228:491-507.

4. Maggard-Gibbons M. 2014. The use of report cards and outcome measurements to improve the safety of surgical care: the American College of Surgeons National Surgical Quality Improvement Program. *BMJ Quality & Safety*. 23:589-99.

5. Boudourakis LD, Wang TS, Roman SA, Desai R, Sosa JA. 2009. Evolution of the surgeon-volume, patient-outcome relationship. *Annals of Surgery.* 250:159-65.

6. Birkmeyer JD, Finks JF, O'Reilly A, Oerline M, Carlin AM, Nunn AR, et al. 2013. Surgical skill and complication rates after bariatric surgery. *New England Journal of Medicine.* 369:1434-1442.

7. Marx D. 2001. *Patient safety and the 'just culture': a primer for health care executive*s. New York, NY: Columbia University.

8. Wu AW, Bradford AN, Velanovich V, Sprangers MA, Brundage M, Snyder C. 2014.

Clinician's checklist for reading and using an article about patient-reported outcomes. *Mayo Clinic Proceedings*. 89:653-61.

Faculty development

1. Lucian Leape Institute. Unmet needs. Teaching Physicians to Provide Safe Patient Care. 2010. Accessed February 8, 2015.

2. Singer SJ, Gaba DM, Geppert JJ, Sinaiko AD, Howard SK, Park KC. 2003. The culture of safety: results of an organization-wide survey in 15 California hospitals. *Quality & Safety in Health Care*. 12:112-8.

3. Bohmer RMJ. 2013. Leading clinicians and clinicians leading. *New England Journal of Medicine.* 368:1468-70.

4. Blumenthal DM, Bernard K, Bohnen J, Rohmer R. 2012. Addressing the leadership gap in medicine: residents' need for systematic leadership development training. *Academic Medicine.* 87:513-522.

5. Leonard M, Graham S, Bonacum D. 2004. The human factor: the critical importance of effective teamwork and communication in providing safe care. *Quality & Safety in Health Care.* 13Suppl 1: i85-90.

6. Weaver SJ, Dy SM, Rosen MA. 2014. Team-training in healthcare: a narrative review. *BMJ Quality & Safety.* 23: 359-72.

7. Wong BM, Goguen J, Shojania KG. 2013. Building capacity for quality: a pilot co-learning curriculum in quality improvement for faculty and resident learners. *Journal of Graduate Medical Education*. 5 (4):689-93.

8. O'Leary KJ, Afsar-manesh N, Buchnitz,Dunn AS, Myers JS. 2011. Hospital quality and patient safety competencies: development, description, and recommendations for use. *Journal of Hospital Medicine.* 6:530-536.

9. Runnacles J, Moult B, Lachman P. 2013. Developing future clinical leaders for quality improvement: experience from a London children's hospital. *BMJ Quality & Safety.* 22:956-63.

10. Ahmed M, Arora S, Tiew S, Hayden J, Sevdalis N, Vincent C, Baker P. 2014. Building a safer foundation: the Lessons Learnt patient safety training programme. *BMJ Quality & Safety.* 23:78-86.

11. Myers JS, Tess A, Glasheen JJ, O'Malley C, Baum KD, Fisher ES, et al. 2014. The Quality and Safety Educators Academy: fulfilling an unmet need for faculty development. *American Journal of Medical Quality*. 29:5-12.

12. Wong BM, Levinson W, Shojania KG. 2012. Quality improvement in medical education: current state and future directions. *Medical Education.* 46:107-19.

APPENDIX A

Transitioning to Safe Care: Culture meets Competence

Proceedings of a two-day workshop held in March 2014

Hosted by:

The Royal College of Physicians and Surgeons of Canada

Organizing committee

- Dr. Susan Brien
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Introduction to proceedings

As a patient is arriving for surgery on his spine, the surgical team uses a checklist similar to a pilot's checklist to ensure medications that thin the blood have been stopped prior to the procedure. The anesthesiologist is suspicious that drug has not been stopped so he calls the patient's bedside nurse who confirms that in fact, the drug has mistakenly been given. When the patient is told that the team has discovered the error and that consequently the surgery has been cancelled, the patient asks the surgical team, "Who here saved my life today?"

This anecdote is a true story. It is one small illustration, albeit with a positive outcome, of a prevalent and deeply rooted challenge for health care systems. Medical errors are ubiquitous. The World Health Organization reports that one in 10 patients globally are negatively affected by health care errors, and the WHO has declared that patient safety is an endemic concern worldwide. This reality appears to exist in all health systems all over the world. In fact, the WHO's estimate is based on the proportion of errors made in the health care systems of developed countries; the organization estimates that patient safety is a far more grave concern in developing countries.[1]

> "The biggest challenge to moving toward a safer health system is changing the culture from one of blaming individuals for errors to one in which errors are treated not as personal failures, but as opportunities to improve the system and prevent harm."
>
> Crossing the Quality Chasm, 2001

Canada is no exception to the rule. Although our medical system does not intend to harm patients — and indeed the vast majority of health care encounters are error free — the system is so complex that it is challenging to safeguard against every possible hazard. A system full of holes can be a set up for patient harm.

At the same time, there is a well-established and increasingly widespread opinion that health care systems can do much more to protect the safety of patients. Since the 1990s, patient safety and quality improvement have been a significant focus for discussion in such countries as the United States, the United Kingdom, Australia and Canada into how, when and via what mechanisms health care systems can make significant improvements.

A leader in patient safety since the 2000s

The Royal College of Physicians and Surgeons of Canada led Canada's early involvement in the patient safety movement when it convened a forum on the subject during its annual conference in 2001. The forum was attended by national and international health care leaders and a variety of other stakeholders and experts.

> "All physicians are learners and teachers at any given time, either formally or informally when they interact with patients, students and peers."
>
> —Dr. Anne Matlow

The forum led to the formation of the National Steering Committee on Patient Safety, which received support from Health Canada, eight provincial and territorial ministries of health and 26 Canadian health care organizations. The steering committee, working swiftly, produced a comprehensive report in 2002 and released 19 recommendations about how to improve patient safety in Canada. Called *Building a Safer System: A National Integrated Strategy for Improving Patient Safety in Canadian Health Care*,[2] the report was the first of its kind in Canada and served as a major impetus for change.

Of its 19 recommendations, the steering committee's most substantial was to establish the Canadian Patient Safety Institute, or CPSI, a not-for-profit body that since its inception in 2003 has raised awareness about patient safety and also facilitated the implementation of ideas and best practices aimed at achieving transformation across the health care industry.

Since *Building a Safer System* and the establishment of CPSI, the Royal College has undertaken a range of actions and contributed to a large body of research into educational and other strategies that can contribute to safer care. The following are some key examples:

- In 2005, the Royal College released the CanMEDS Physician Competency Framework, which describes the knowledge, skills and abilities that specialist physicians need for better patient outcomes. This framework swiftly became the gold standard for postgraduate medical education in Canada.
- In 2008, CPSI, in collaboration with the Royal College, released *The Safety Competencies: Enhancing Patient Safety Across the Health Professions*, which identified the key knowledge, skills and attitudes that would make up a simple, flexible framework of patient safety competencies for all health professionals.[3]
- The Royal College spurred the establishment of the National Steering Committee on Resident Duty Hours in 2012 which released a report in 2013 called *Fatigue, Risk & Excellence: Towards a Pan-Canadian Consensus on Resident Duty Hours*.
- In 2013, the Royal College began to integrate the *Safety Competencies* into the CanMEDS 2015 Physician Competency Framework, including patient safety and quality improvement as foundational elements across all seven CanMEDS Roles.
- In 2014, the Royal College published a series of white papers as part of its Competence by Design initiative. The *Just Culture of Patient Safety* white paper recommended a number of actions that could enhance patient safety education.

Unfortunately, health care remains unsafe. Population-based studies describing the scope of harm in Canada estimate that approximately 9.2 percent of children and 7.5 percent of adults admitted to Canadian hospitals annually experience a patient safety event.[4,5] Medical harm remains ubiquitous, even in tertiary care hospitals recognized for their efforts in improving patient safety,[6] with little evidence of change over time. The solution may not rest in isolated interventions but rather in a multipronged approach that addresses the underlying safety culture.[9]

A compelling need for a robust culture of patient safety

There are many definitions of a culture of patient safety. In essence, patient safety culture is "a component of organizational culture, includes the shared beliefs, attitudes, values, norms and behavioural characteristics of employees and influences staff member attitudes and behaviours in relation to their organization's ongoing patient safety performance".[10] For example, an intern who reminds his staff person to wash her hands prior to patient contact and is thanked for the reminder, is practicing within a positive safety culture. In contrast, a negative safety culture prevails when the healthcare team is hierarchical and members of the time do not act respectfully to each other. Why is a culture of patient safety important? Its importance lies in its direct impact on patient care. Improving patient safety culture has been associated with improved clinical care processes and aggregate indices of patient harm,[11] as well as with perception of better care by patients.[12] Clinician outcomes have also been reported to be better (less turnover or burnout) with an improved culture of safety. This evidence supports the imperative for a robust culture of safety. There are other

important impacts on medical education and learning; their indirect impact on patient care is discussed further below.

The interplay between a culture of patient safety and safe health care was elegantly reviewed in the document *Just Culture of Patient Safety. A white paper prepared for the Royal College of Physicians and Surgeons of Canada, Future of Medical Education in Canada.*[13] Broadly speaking, the four key recommendations to improve postgraduate medical education in the area of patient safety focused on

1. patient safety education and assessment,
2. faculty development in patient safety,
3. inter-professional patient safety curricula, and
4. optimizing the learning environment to support a culture of safety.

Acting on these four recommendations is critical for creating the transformative change needed in medicine and medical education.

Recognizing the need for further action in the area of patient safety culture, the Royal College sought broad stakeholder input and convened a two-day symposium in March 2014 called Transitioning to Safe Care: Culture meets Competence. The goal of the symposium was to further identify and elaborate on existing and new opportunities, including levers under the jurisdiction of the Royal College, to improve the culture of patient safety as a key ingredient in propelling Canada's health care system toward safer care.

The invitational event included attendees from across medical disciplines, from academia and patient groups. The goals were to review the Royal College's activities to date on patient safety, share stories, perspectives and research about patient safety culture in Canada and the United States, and draw on the knowledge of the gathered experts to produce detailed, focused recommendations for improving patient safety culture across the health care system.

Attendees heard a number of focused presentations during the symposium and consensus began to develop around the current state of patient safety culture in the health care industry and the specific opportunities and strategies that can be used to improve patient safety culture. The presenters included Dr. John G. Wade, chair of the National Steering Committee on Patient Safety, which authored the *Building a Safer System* report, and the inaugural Chair of the Board of the Canadian Patient Safety Institute; Mark Fleming, PhD, who holds the Canadian National Professorship in Safety Culture at Saint Mary's University's CN Centre for Occupational Health and Safety; Dr. Lucien Leape, Professor at the Harvard School of Public Health and a visionary in researching and advocating for the need for health care systems improvement to support safer care; and Dr. Brian Wong, Associate Director and Sunnybrook Health Sciences Centre Site Director of the University of Toronto Centre for Quality Improvement and Patient Safety, and a leader in delivering patient safety and quality improvement training to medical learners across the learning continuum.

> The participants of the two-day Patient Safety Summit were asked to respond to the question: "How can the Royal College promote a safe learning environment?" To view a video of their responses, please click on the following link: http://youtu.be/_R7TnmAxM74.

A predominant message from the symposium's major presenters was the key role that a robust safety culture plays in improving an organization's safety record. Wade, in providing a historical perspective of the patient safety movement in Canada, indicated that since the early 2000s many Canadian health care organizations have removed barriers to improving patient safety, for example by formalizing responsibility and accountability for patient safety and by adopting non-punitive reporting policies. Now begins the difficult work of addressing those cultural and attitudinal aspects of medical education and health care delivery that negatively affect patient safety.

> "A culture of safety can be 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.'
> —Kenneth W. Kizer[13]

Fleming described culture as a quality shared by members of a group and that can exist at the organizational level, the unit level and the occupational level. Speaking specifically about patient safety culture, Dr. Fleming used the definition developed by Kenneth Kizer, former Under Secretary for Health in the United States Department of Veterans Affairs: "An integrated pattern of individual and organizational behavior, based upon shared beliefs and values, that continuously seeks to minimize patient harm that may result from the processes of care delivery".[14] To take action, Fleming said, we must understand the current culture and how safety culture affects risk, and then describe the desired culture and design interventions that will promote it.

Fleming reported on research from high hazard, non-health care industries, showing that outcomes are influenced by people's perceptions of the relative priority of safety. He also reported on intervention research that shows safety can be improved by changing employee perceptions.[15,16] The same relationship appears to hold true for patient safety, but the evidence of the association is not as strong due to methodological limitations of the research conducted to date.[17,18,19] In addition, Fleming noted that while there are parallels between patient safety and safety in high hazard domains, there are important differences. For example, while a faulty nuclear power plant can be closed down, withholding health care because of identified hazards may not be possible. Fleming concluded that, currently, the relationship between health care culture and patient safety is not well understood. Understanding not only the culture, but also the context for that culture are key steps in moving forward with actions.

Leape provided a deeper understanding of how culture affects risk, reporting that the health care industry is characterized by a culture that often teaches, tolerates and rewards disrespectful treatment of its people: doctors, nurses, pharmacists, students and patients. This culture of disrespect is a major cause of poor quality and safety, and of the dissatisfaction and unhappiness of patients, nurses, doctors and other workers. The statistics are telling:

- The vast majority of nurses and other health care workers have either witnessed or received verbal abuse from doctors.
- Out of 41 interviews conducted with patients, 30 had serious problems with physicians who did not listen, would not explain, or were rude, demeaning or disrespectful.
- Many doctors still do not feel safe reporting an error.
- In the United States, hospitals have significantly worse safety records for employees than either the construction or manufacturing industries, and nearly 50 percent more injuries than average in other U.S. industries.

The significant effects of the hidden curriculum

According to Leape, learners are also impacted by the disrespectful behaviour of their faculty. Such behaviours may be witnessed directed at other health care workers, patients and/or peers. Internalization and reenactment of these role-modeled behaviours on the part of the learners can perpetuate a culture that is unsafe for both patient care and for learning.[20,21] Strong leadership is needed to reverse this type of dysfunctional culture.

Wong further addressed the issue of role modeling in his discussion of the informal and hidden curricula. Hafferty first coined the term "hidden curriculum" in 1998, referring to the organization's structural and cultural influences on the medical education curriculum as distinct from the formal curriculum, which is explicit (e.g., lectures and small group learning) and the informal curriculum, which is *ad hoc* (e.g., ward rounds).[22] More recently, the term has been used to connote all the non-formal influences on medical learning,[23] including the influences or tacit messages that function at the level of individual behavior (e.g., how an attending role models team behaviours), as well as organizational structure and culture. The effects of these forms of curricula on learning and behavior can be substantial—more significant, in fact, than the effects of formal curricula. In addition to acknowledging that the hidden curriculum can be a negative influence on patient safety culture, Wong acknowledges the importance of the hidden curriculum as a positive influence; formal curricula intended to foster patient safety must be supported by appropriate informal and hidden curricula if they are to be truly effective.[24]

> "Everyone in health care has two jobs when they come to work every day: To do their work and to improve it."
> —Batalden and Davidoff[26]

It is to be noted that safety climates tend to vary more *within* institutions than they do across institutions; care delivered on one ward can be far more safety focused than care delivered on another ward within the same hospital.[25] Thus, the health care community needs to be aware of the cultural differences in various local environments if it is to train specialists in a manner that will deliver high-quality, safe care.

To deliver such training, Wong noted the importance of situating patient safety competencies within the Medical Expert role of CanMEDS. As Batalden and Davidoff have said, everyone in health care has two jobs when they come to work every day: To do their work and to improve it.[26] The key question in determining the effectiveness of CanMEDS 2015 for improving patient safety is: in an unsafe situation, does the physician know what to do?

What does the patient want?

Berwick has eloquently articulated five needs of a patient undergoing surgery: "Don't kill me (no needless deaths). Do help me, and don't hurt me (no needless pain). Don't make me feel helpless. Don't keep me waiting. And don't waste resources, mine or anyone else's."[27] The first two concerns directly relate to safety. Daily, patients experience harm caused by their medical management. Can we as a community of physicians assure them that their care is always safe? Can we assure them that our learners, teachers and practicing physicians have the competencies needed to deliver safe care? We know there are numerous opportunities to improve the quality and safety of medical care. For every patient, tomorrow is too far in the future. We must actively improve the culture of patient safety… now!

Input from across the health care community

At several points during the Royal College's two-day symposium (Transitioning to Safe Care: Culture meets Competence), attendees broke into discussion groups. The purpose was to consider the information they had received from the symposium's presenters and bring their own knowledge to bear toward the development of recommendations that would propel further learning and action on patient safety in Canada.

On Day 1, each group considered educational gaps at a particular point in the professional life cycle, e.g. transition to post graduate education, post graduate education, Fellowship, etc. The following template was used.

	EDUCATION DOMAINS	Knowledge	Skills	Attitudes	Behaviours
PROFESSIONAL LIFE CYCLE					
Student					
Transition to PG					
PG (1-5)					
Fellowship					
Transition to Practice					
Practice					
Transitions IN practice					
Maintenance of Competence					

On Day 2, attendees broke into groups according to Royal College mandate areas with the goal of leveraging each area to promote a culture of patient safety. Again, the goal was to identify where gaps exist and come up with recommendations to fill those gaps.

	Undergrad = transition to postgrad	*PG and Transition to practice*	*Fellowship and transition to practice*	*Practice*	*Maintenance of Competence*	*Lead*
Royal College Mandate						
Accreditation						
Credentialing						
CanMEDS						
Maintenance of Certification (MOC)						
Policy						
Research and Innovation						
Exams						

Recommendations for fostering a culture of safety

Working collaboratively, the symposium's discussion groups identified a number of recommendations for creating system changes to foster a more robust culture of patient safety, as well as a safer learning environment for physicians. Note that not all of the recommendations presented here are actionable in the classic sense. Some simply represent the best thoughts of symposium attendees about how and by what means the Royal College, its partners and other stakeholders might move forward to promote a culture of patient safety in Canada.

Recommendation 1
- **Medical schools and postgraduate programs should ensure that all graduates have the knowledge, skills, attitudes and behaviours necessary to deliver safe, high quality medical care wherever they may practice across their professional life cycle.**

    a. Develop, implement and assess competencies in safety science, systems thinking, the science of improvement, human factors, teamwork and patient-centered care.
    b. Tools should be developed to assess all competencies (previous rec 13) as appropriate to the various stages in a professional's life cycle. This includes the development of assessment tools, measures and processes for attitudes (e.g. humility) and values, and must include multi-source feedback.
    c. Medical schools should ensure that physicians understand the impact of context, both professional (e.g. surgeon versus internist) and situational (e.g. ambulatory clinic, rural practice) on the delivery of safe care.
    d. The Royal College should develop and disseminate tools to assess all competencies as appropriate to the various stages in a professional's life cycle. This includes the development of assessment tools, measures and processes for attitudes (e.g. humility) and values, and must include multi-source feedback.

Recommendation 2
- **Wide access to faculty development in safety science, systems thinking, the science of improvement, human factors and teamwork should be available.**

    a. The Royal College should continue to offer advanced training opportunities such as a diploma program in patient safety/quality improvement across Canada.
    b. The Royal College should partner maintain a central repository of available educational programs in patient safety/quality improvement.

Recommendation 3
- **Professional schools should collaborate to develop a common curriculum in teamwork and a culture of safety at the undergraduate and postgraduate levels. This includes**

    a. an interprofessional curriculum addressing a culture of safety from the different perspectives; and
    b. formal measures of safety culture, including before/after intervention to be included as regular metrics in the training.

Recommendation 4
- **Trainees and practicing physicians should have the knowledge and skills to review their patients' outcome data in order to identify opportunities for improvements and initiate and evaluate change.**

    a. Develop curriculum/competencies in outcome measurement and assessment
    b. Regular quality improvement activities related to patient outcome data should be a requirement of the undergraduate and postgraduate curriculum
    c. Processes should be developed to provide physician-specific patient outcome data across the professional life cycle.
    d. NSS should develop measures for patient reported outcome measures.

Recommendation 5
- **Maintenance of competence activities should include additional activities:**

    a. The Royal College should mandate patient safety/quality improvement activities as part of the annual Maintenance of Certification cycle.
    b. Regular quality improvement activities related to patient outcome data should be explicitly integrated into the Maintenance of Certification cycle.

Recommendation 6
- **A peer support program/network should be developed.**

    a. Mentorship at transitions, and
    b. assessment of quality of care at significant transitions (e.g. pre-retirement).

Recommendation 7
- **Medical schools and the Royal College should ensure that all graduates have the knowledge, skills, attitudes and behaviours required to foster and promote a culture of safety.**

    a. The Royal College should define competencies required to foster and promote a culture of safety
        - The impact of context on culture should be one of these competencies, e.g. the ability to assess the local culture of safety, and identify and initiate improvements as required.
    b. Tools should develop/ implemented to assess competencies related to a culture of safety.

Recommendation 8
- **Faculty development in the areas of safety science, leadership, teamwork, just culture and improvement science should be fostered to increase the capacity for clinical and scholarly expertise as needed to create and sustain a culture of safety.**

Recommendation 9
- **All leaders in medical education, clinical care and health care management should understand their role in creating and sustaining a culture of safety.**

Academic, clinical and organizational leaders should *work together* to
- create a shared vision of a culture of safety for their organization;
- create and maintain a culture of safety that is patient-centered;
- ensure that the guidelines and policies required for a culture of safety are aligned and enacted as needed (e.g. recruitment, retention credentialing; code of conduct; just culture policy and training; safety reporting system; transparent investigation and system wide learning from events; disruptive physician, etc.)

Recommendation 10
- **Academic institutions should hold physicians accountable for enacting their roles as teachers of the formal, informal and hidden curriculum professionally. To this end**

  a. Physician educators should understand the difference between the formal, informal and hidden curricula and their role(s) and responsibilities in each.
  b. Academic institutions should develop standard policies/guidelines outlining professional responsibilities in undergraduate and postgraduate medical education.
  c. Faculty assessment should include an evaluation of their professionalism by learners and peers.
  d. Academic institutions should leverage the concept and content of the Royal College's Fellow's Code to emphasize the professional behaviour that the Royal College expects of its Fellows.

Recommendation 11
- **The Royal College should leverage the accreditation process through its standards by explicitly articulating, mandating and assessing select processes integral to a culture of safety.**

  a. The Royal College should frame the accreditation standards (both A and B) within a culture of safety framework, discussing this in a preface to each set of standards.
  b. The Royal College must be more explicit about requirements and measures for a culture of safety and a safe learning environment. It should identify and develop, where necessary, key standards that support a culture of safety; all these standards must be met to be fully accredited (in a manner similar to Accreditation Canada's Required Organizational Practices).

Recommendation 12
- **The Royal College should develop and implement a process (similar to ACGME's CLERs) that provides the accreditation review process an opportunity to assess the learning environment.**

Recommendation 13
- **Professional schools should collaborate to develop a common curriculum in teamwork and a culture of safety at the undergraduate and postgraduate levels. This includes**

    a. an interprofessional curriculum addressing a culture of safety from the different perspectives; and
    b. formal measures of safety culture, including before/after intervention to be included as regular metrics in the training.

Recommendation 14
- **The Royal College should seek out opportunities to leverage work being done by other organizations on the culture of safety.**

    a. The Royal College should partner with other academic organizations to leverage educational opportunities around creating, implementing and sustaining a culture of patient safety and relevant outcome evaluation.
    b. The Royal College should scope the patient safety landscape to identify opportunities to efficiently further its mission in promoting a culture of safety.

Recommendation 15
- **All venues wherein physicians advance their knowledge, skills and attitudes should be environments that foster and promote safe learning and inquiry. To this end, academic teaching organizations, department leaders and all Fellows of the Royal College should help ensure that**

    a. communication at all levels is open and transparent;
    b. the local and institutional culture is a "just culture";
    c. safety reporting of incidents is expected of physicians, and feedback to close the loop is strongly encouraged;
    d. physicians are engaged in quality improvement reviews and involved in the quality improvement initiatives arising;
    e. morbidity and mortality rounds are structured and promoted as a vehicle of learning and improvement, and not one of shame and blame.

Recommendation 16
- **The patient/family voice should help guide individual and system wide health care improvements across the professional life cycle. In addition to implementing curricula and related assessment, academic institutions and hospitals should**

    a. include patients as active participants on hospital committees/medical education committees.

Recommendation 17

- **The Royal College should facilitate (or should it just be the responsibility of the hospitals and FOMs the establishment by hospitals and faculties of medicine of mechanisms that identify and support the 'second victim' after any medical error/patient safety incident. Such mechanisms would**

  a. raise awareness of the concept of the second victim,
  b. provide guidelines and tools to recognize and support the second victim, and
  c. encourage trainees to report unsafe practices — and support them in doing so.

Recommendation 18

- **Specialty societies, with facilitation from the Royal College, should assume a more prominent role in promoting a culture of safety within their disciplines.**

  a. Specialty societies should work with the Royal College to define specialty-specific responsibilities and accountabilities toward culture of safety.
  b. All specialty societies should have a quality and safety committee.
  c. Specialty societies should develop and implement teamwork training curricula akin to the MORE obstetrics program.
  d. Specialty societies should investigate opportunities to establish collaboratives with safety outcome measures, including a culture of safety.

Recommendation 19

- **The Royal College should support and disseminate the results of research and innovation related to culture of safety.**

  a. The Royal College should partner with CMPA and other organizations to fund or co-fund research related to a culture of safety.
  b. The Royal College should leverage its relationships with other organizations to influence policy and promote best practice related to culture of safety.

Bibliography

1. World Health Organization. 10 facts on patient safety [Internet] (n.d.) http://www.who.int/features/factfiles/patient_safety/en/.

2. Wade, J. 2014, March. Reflections on Building a Safer System. PowerPoint presentation presented at Transitioning to Safe Care: Culture meets Competence, Ottawa, ON.

3. Frank JR, Brien S, (Eds) on behalf of The Safety Competencies Steering Committee. 2008. *The Safety Competencies: Enhancing Patient Safety Across the Health Professions*. Ottawa, ON: Canadian Patient Safety Institute.

4. Matlow, AG et al. 2012. Adverse events among children in Canadian hospitals: the Canadian Paediatric Adverse Events Study. *Canadian Medical Association Journal*. 184: E709–18.

5. Baker GR et al. 2004. The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *Canadian Medical Association Journal.* 170; 1678–86.

6. Landrigan CP, Parry GJ, Bones CB, Hackbarth AD, Goldman DA, Sharek PJ, et al. 2010. Temporal trends in rates of patient harm resulting from medical care. *New England Journal of Medicine.* 363:2124–34.

7. Classen DC, Resar R, Griffin F, Federico F, Frankel T, Kimml N, et al. 2011. 'Global trigger tool' shows that adverse events in hospitals may be ten times greater than previously measured. *Health Affairs* (Millwood). 30:581–9.

8. Shojania KG, Thomas EJ. 2013. Trends in adverse events over time: why are we not improving? *BMJ Quality & Safety*. 22:273-277.

9. Singer SJ, Vogus TJ. 2013. Reducing hospital errors: interventions that build safety culture. *Annual review of Public Health*. 34:21.1-21.4.

10. Morello RT, Lowthian JA, Barker AL, McGinnes R, Dunt D, Brand C. 2013. Strategies for improving patient safety culture in hospitals: a systematic review. *BMJ Quality & Safety*. 22:11-8.

11. Weaver SJ, Lubomksi LH, Wilson RF, Pfoh ER, Martinez KA, Dy SM. 2013. Promoting a culture of safety as a patient safety strategy: a systematic review. *Annals of Internal Medicine*. 158: 369-74.

12. Sorra J, Khanna K, Dyer N, Mardon R, Famolaro T. 2012. Exploring relationships between patient safety culture and patients' assessments of hospital care. *Journal of Patient Safety.* 8:131-9.

13. Just Culture of Patient Safety. A white paper prepared for the Royal College of Physicians and Surgeons of Canada, Future of Medical Education in Canada. www.royalcollege.ca/portal/page/portal/rc/common/documents/educational_initiatives/patient_safety.pdf. Accessed June 25, 2014.

14. Kizer, KW. 1999. *Large system change and a culture of safety. In: Enhancing Patient Safety and Reducing Errors in Health Care*. Chicago, IL: National Patient Safety Foundation.

15. Mullen JE, Kelloway EK. 2009. Safety leadership: A longitudinal study of the effects of transformational leadership on safety outcomes. *Journal of Occupational and Organizational Psychology*. 82: 253-272.

16. Zohar, D. 2002. Modifying supervisory practices to improve subunit safety: A leadership-based intervention model. *Journal of Applied Psychology*. 87:156-63.

17. Ginsburg L, Gilin D, Tregunno D, Norton PG, Flemons W, Fleming M. 2009. Advancing measurement of patient safety culture. *Health Services Research*. 44:223.

18. Fleming M, Wentzell N. 2008. Patient Safety culture improvement tool: development and guidelines for use. *Healthcare Quality*. 11 Special issue:10-15.

19. Jackson J, Sarac C, Flin R. 2010. Hospital safety climate surveys: measurement issues. *Current Opinion in Critical Care*. 16:632-638.

20. Leape LL, Shore MF, Dienstag JL, Mayer RJ, Edgman-Levitan S, Meyer GS, Healy GB. 2012. Perspective: a culture of respect, part 1: the nature and causes of disrespectful behavior by physicians. *Academic Medicine*. 87:845-52.

21. Leape LL, Shore MF, Dienstag JL, Mayer RJ, Edgman-Levitan S, Meyer GS, Healy GB. 2012. Perspective: a culture of respect, part 2: creating a culture of respect. *Academic Medicine*. 87:853-8.

22. Hafferty FW. 1998. Beyond curriculum reform: confronting medicine's hidden curriculum. *Academic Medicine*. 403-7.

23. Gaufberg EH, Batalden M, Sands R, Bell SK. 2010. The hidden curriculum: what can we learn from third-year medical student narrative reflections? *Academic Medicine*. 85:1709-16.

24. Wong BM. 2014, March. Rethinking Patient Safety Training and Physicians: The Formal, Information & Hidden Curricula. PowerPoint presentation presented at Transitioning to Safe Care: Culture meet Competence, Ottawa, ON.

25. Pronovost P, Sexton B. 2005. Assessing safety culture: Guidelines and recommendations. *Quality & Safety in Healthcare*. 14:231–233.

26. Batalden PB, Davidoff F. 2007. What is "quality improvement" and how can it transform healthcare? *Quality & Safety in Healthcare*. Feb; 16: 2–3.

27. Berwick DM. 2005. Improving patient care. My right knee. *Annals of Internal Medicine.* 18; 142:121-5.