CANADIAN JOURNAL OF

Volume 4 Number 4
2018

Physician Leadership

THE OFFICIAL MAGAZINE OF THE CANADIAN SOCIETY OF PHYSICIAN LEADERS

In this issue

CSPL Canadian Society of Physician Leaders

SCLM Société canadienne des leaders médicaux

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ISSN 2369-8322

ADVICE

Information onslaught: how to defend your distractible brain

Johny Van Aerde, MD, PhD

Do you have an urge to respond immediately to the sound of an incoming email? Do you feel anxious when your smartphone is not close by? Has it become a reflex to pull out your smartphone while waiting in a checkout line? This article explores why our brain is prone to distraction, why we crave information and novelty, how high-tech tools amplify our distractibility, and what we can do to attenuate the risk of excessive information foraging. Evidence-based studies provide suggestions for claiming back time and resisting distraction.

How serious is distractibility in day-to-day life?

More and more people experience anxiety when they turn off their phone in the middle of the day. Some even suffer from "nomophobia," the anxiety that comes from being out of mobile phone contact.[1,2] The average office email goes unanswered for only six seconds. More than 50% of adults check their smartphone the moment it makes a sound, 42% use it to kill time and avoid quiet reflective moments, 12% use it in the shower.[3] In colleges, the use of technology in the classroom leads to multitasking and task-switching, resulting in lower test scores and increased anxiety and dissatisfaction with life.[4,5] In the workplace, it takes 20 minutes to refocus on the task at hand after interruption by and replying to an email.[1]

A quick and informal survey of my Twitter followers revealed that 75% will check their smartphone when waiting idly in a lineup.

Evolution and neuroscience

Humans crave information and forage for it, just as they used to forage for food in ancient times.[1] In fact, survival depended on acquiring both: we needed information to find the best food sources and to figure out where predators might be lurking. The same ancient cerebral cognitive control circuitry is activated whether it is food or information that appears as a novelty.[6]

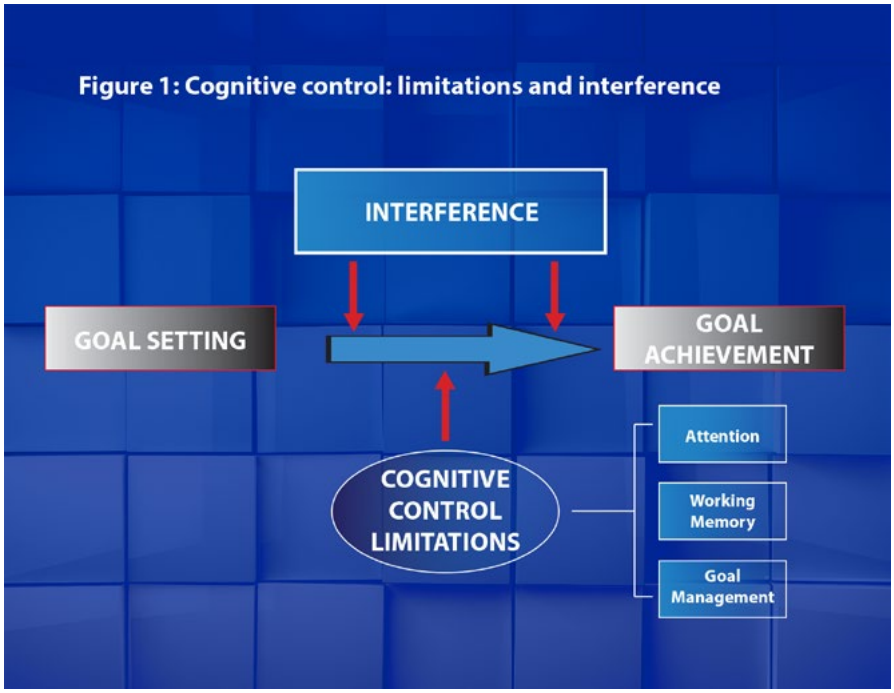
Every time something new appears, our dopaminergic reward system is activated and we feel a thrill; repetition of such thrills can lead to addiction by consolidating the reward circuits in our brain.[7] Imagine now how quickly this occurs with a smartphone, the Internet, and social media. "Likes," "shares," and "retweets" also boost dopamine rewards, contributing to a pattern of reinforcement that leads to habit formation.[8,9] In extreme cases, brain restructuring can take place: the fronto-striatal-limbic brain regions tend to have a smaller volume of grey matter in the subgenual anterior cingulated cortex, a key region for monitoring and control in neural networks underlying addictive behaviour.[10]

Goal setting, cognitive control, and distractibility

The brain parts responsible for goal setting evolved with the appearance of the neocortex, the pre-frontal cortex in particular, while cognitive control has remained similar to that of lower vertebrates. As a result, we are

not capable of either concurrently managing competing goals or switching rapidly between tasks.

In *The Distracted Mind: Ancient Brains in a High Tech World*, neuroscientists Gazzaley and Rosen describe the science behind this very well.[1] Poor cognitive control leads us to be easily distracted from the goals we set, which is aggravated by the exponentially increasing amount of information we have access to (Figure 1). As we forage for more and more information, we solidify our reward circuits and become less and less capable of concentrated and focused "deep work."[1,2] Our continuous drive to find information is making us very distractible at best and addicted to information foraging in the worst case.



Taking action against distractibility

Two ways to combat distractibility are boosting cognitive control and changing behaviour.

Boosting control

Physical exercise has been demonstrated to be the most effective tool for increasing cognitive control.[11-13] fMRI studies show that exercise increases prefrontal cortex activity and decreases the impact of distraction on task performance.[14] In adults aged 55–80, combined strength and aerobic training improved cognitive control more than aerobic exercise alone, and the longer the training, the greater the effect.[14] Among 144 people aged 19–93, performance on a cognitive test improved immediately after a single 15-minute bout of moderate-intensity stationary cycling.[12]

Meditation increases the ability to sustain attention, speed of processing, and capacity of working memory.[15] A range of techniques – from weekly three-hour classes, to daily 30-minute meditation, to mindfully monitoring one's breath, thoughts, or sensations in the moment – have been studied. Despite some methodological limitations, there is mounting evidence in support of meditation for boosting cognitive control.[1] "Productive meditation" might also help with focus. It involves a period during which one is physically, but not mentally, occupied and a wandering mind is returned to focus, as in mindful thinking.[2] An example would be to focus on a single, well-defined professional or personal problem while running or cycling.

Brain games use adaptive cognitive exercises, in which the tasks become gradually more difficult as the participant's performance improves. Computerized software algorithms adapt the task challenge in real-time based on recorded performance metrics.[16] Similarly, well-designed video games might also amplify cognitive control.[17] While brain games focus on a particular cognitive skill, video games, even those designed with cognitive control in mind, do not focus on individual skills specifically. Although several games have been developed and studied rigorously, they are not yet commercially available.[1]

There is only weak to moderate evidence that traditional education, repeated exposure to nature, drugs, or neurofeedback boost cognitive control.[1]

Modifying behaviour

Behavioural changes (Table 1) can decrease our exposure to and interference from high-tech information tools. Internal

Table 1: Measures to reduce distractibility

BOOST CONTROL	MODIFY BEHAVIOUR
Physical exercise	Increase meta-cognition (awareness)
Meditation	Decrease access to distractions
Cognitive exercises or "brain games" (focused on one specific skill)	Reduce boredom
Video games (not focused on specific skill)	Reduce anxiety

interruptions can be reduced by increasing meta-cognition (awareness) and by decreasing boredom and anxiety. External distractions can be decreased by limiting access to the sources.

Increase meta-cognition: Lack of (self) awareness leads to a continuous state of partial attention. Research shows that those who think they are best at multitasking are actually the worst in lab experiments, and their perception of being good at task-switching and multitasking is not grounded in reality.[18]

Simple tools can heighten our awareness. Schedule in advance when you will use the Internet, and then avoid it altogether outside these times, no matter how tempting. Keep a notepad next to computers and record the next time you are allowed to use the Internet. The idea behind this strategy is that the use of high-tech information tools does not itself reduce the brain's ability to focus; it is the constant switching from low-stimuli, high-value activities to high-stimuli, low-value activities that teaches our mind to never tolerate an absence of novelty.[2] By creating a visual scorecard, you bring your Internet use into your awareness. Several apps are available to help, for both smart phones and computers: Focus Keeper, Moment-Screen Time Checker, Rescue Time, among others.[1] Some of these measure how much time you spend on your device(s); others also measure how much time you spend on various websites or social media.

Reduce accessibility: Completing work and projects, especially on a computer, is a challenge because of the constant availability of more and more information. Set up your environment to reduce the chances of being distracted or interrupted. Work with a single screen and open one website at a time. Eliminate the use of tabs whenever possible and close them rather than minimizing them for later reference.[1]

Remove the temptation to respond to every "ding" alert of an incoming message. Checking electronic communications should take place only at certain designated times of the day and not be constant interruptions. Studies indicate that people who limit their email work to three times daily, rather than responding immediately, suffer less stress and experience other physical and emotional benefits. Some apps, like Focus, can block or limit time spent on certain websites, while Concentrate and Think help specifically on sites related to social media. Finally, turn off the alarm on your email while keeping the phone component active so that people who need to reach you can do so.

Reduce boredom: Being alone with our thoughts has become boring for many people. Focusing on one perhaps less exciting assignment or project is becoming more difficult while novel and fun information is only a click away. Don't use the Internet to entertain yourself. Brief mental breaks can be restorative and help you stay focused. Apply the 20–20–20 rule by standing up and taking a 20-second break every 20 minutes to look 20 feet away. Changing your focal distance from inches to feet shifts some cerebral blood flow to brain areas not related to

constant attention. Although not conclusive, research shows that spending 10 minutes in a natural setting or even watching nature pictures can be restorative in terms of cognitive function.[1]
Talking to another human being, even on the telephone, productive meditation, or any other short relaxation method will help you re-engage with greater arousal, more capacity for attention, and less susceptibility to distraction and interruption.[1,2]

Reduce anxiety: Technology has induced anxiety associated with fear of missing something, which then causes you to interrupt your work and reorient your cognitive resources to the detriment of your performance. The strategies discussed under "Increase meta-cognition" and "Reduce boredom" can also be applied here. In addition, set expectations by informing others that you have a plan in which electronic communications will happen at pre-established intervals. A simple note at the bottom of all your outgoing emails, stating that you will reply at certain times is sufficient. As little as 12 minutes of exercise, productive meditation, and mindfulness all contribute to reducing anxiety.[1]

In summary, changing behaviour is not easy, but it is doable. Many physicians and physician leaders are continuously exposed to quick, acute changes in the health care system to accommodate patient needs. It is tempting to extend one's response to that fast-changing, attention-switching professional world into one's personal life. Our fast-paced profession and the health care system have made us susceptible to interruptions and distractions, and technology's impact on our distracted mind amplifies the risk of overindulgence.

It is a real risk, and as an active "twitterite," I have experienced it. Just by increasing my own awareness and monitoring access, I have freed up more than an hour daily to be enjoyed in more productive and healthier ways.

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This article has been peer reviewed.

Psychological health and safety in health care: what do doctors have to do with it?

Laura L. Calhoun, MD

Good quality patient care is something all physicians care about. The links between high-quality patient care, the psychological well-being of physicians, and psychological health and safety on health care teams are becoming increasingly clear. This article examines these links and defines psychological health and safety and how they are interdependent. It clarifies the tremendously important role of physicians in setting the stage for psychological safety on their teams and offers some potential ways forward.

KEY WORDS: psychological safety, psychological health, physician burnout, physician leadership, joy in work

I remember, as a medical student on an O&G rotation, being scared to death of the attending physician. He was a man my father's age, who had a reputation for scorning medical students if they made the slightest mistake and sometimes even before they made a mistake. I remember being frozen with fear when I, along with the female fourth-year resident, was helping a woman deliver a baby, and he came into the room and demanded to know "Why was I not called earlier?" in a booming voice.

No one said a word. He muscled the resident out of the way and said to both of us, "Stand back, doctors, just stand back." He proceeded to do exactly what we had been doing, muttering under his breath the whole time. By then the head had crowned, and there was very little left to do but wait, deliver the rest of the baby and the placenta, and sew up the episiotomy, something even I could do by then. I was so relieved when he left the ward, and I could sense the tension leaving everyone who was on duty at the time.

I didn't know it then, but I know now: this is the kind of behaviour that creates unsafe work environments. To think that the resident or I would call this attending physician if one of the patients on the labour floor needed something that night was laughable. We just went ahead and did what we had to do and never called him. Luckily nothing went wrong and none of the nurses "ratted us out."

I am willing to bet that every medical student has a story like this – at least one. I can easily recall three or four other such examples involving different physicians at different times when I was a student and a resident.

Of course, it is not just physicians who can display this type of disruptive behaviour. Anyone on the team can behave in a way that makes other members uncomfortable, or feel as if they need to walk on eggshells.

Have times changed? Are medical students, residents, nurses, and other health care professionals feeling safer while at work? Not from the anecdotes I've heard.

The vast majority of physicians and health care professionals behave well with their teams and intentionally create psychological safety every day. They do this by vocalizing their desire for teamwork. "We need all hands on deck today. I am open to hearing from all of you any ideas you have." Or "I am really tired today and I am going to need everyone to help me make sure I don't miss something. Please feel free to voice your thoughts and suggestions," or "Who is running point on this case? What do you

need from the rest of us to be successful?"

Being a true team player means creating, validating, and acknowledging interdependence. Other team members need you, and you need them to get the job done well. Many physicians are good team players and comfortable with interdependence. Some are good team players only when they are completely psychologically healthy, and some are not team players at all.

What is psychological safety in the workplace?

"A psychologically healthy and safe workplace is one that promotes workers' psychological well-being and actively works to prevent harm to worker psychological health due to negligent, reckless or intentional acts."[1]

Amy Edmonson[2] defines psychological safety somewhat differently: "a shared belief that the team is safe for interpersonal risk taking." She differentiates between psychological safety and trust in her research on teams. She teaches us that trust requires one person to think about another person's behaviour, whereas psychological safety requires one person to think about his or her own behaviour.

An example is useful. If I don't trust you, I am monitoring your behaviour to keep myself safe. If I don't feel psychologically safe around you, I am monitoring my own behaviour to ensure I don't do something that provokes you into making me feel stupid, ashamed, or "less than." Edmonson clarifies that psychological safety on teams is in the hands of the leader, in that he or she can easily set the stage for team members to know they will not be made to feel "less than" should they ask a question or make a mistake.

Edmonson's research, from the late 1990s, has been largely carried out using hospital-based teams and shows that psychological safety is an interpersonal team dynamic that is understood consistently by all members of a team; each person on the team has the same understanding of how safe it is to speak up, ask a question, or notice an error. Teams with high levels of psychological safety are more innovative, learn together,

and have a greater sense of work satisfaction and a feeling of engagement.[2]

How physicians and other health care workers feel emotionally fluctuates throughout the day depending on a multiplicity of factors, including how well they are physically, how fatigued they are, their mood in the moment, and the climate in which they are working.

Psychological safety can be measured using a variety of tools developed for this purpose. The Guarding Minds at Work Survey[3] was created at the Centre for Applied Research in Mental Health and Addiction. This is a free, easily accessible resource that can be used by any type of organization to establish a baseline or measure changes in safety culture as a result of intervention.

Psychological safety on health care teams, then, may hinge on physicians if they are seen or see themselves as the leader of the team.

What is psychological well-being?

Like physical well-being, psychological well-being exists on a continuum from healthy to ill, with infinite points in between. Psychological health comprises our ability to think, feel, and behave effectively at work, home, and in our social lives.[4]

How physicians and other health care workers feel emotionally fluctuates throughout the day depending on a multiplicity of factors, including how well they are physically, how fatigued they are, their mood in the moment, and the climate in which they are working. Health care workers who have been through traumatic events involving medical error without the necessary supports to return to full health are particularly at risk of burnout.[5]

The term "burnout" refers to an area on the psychological health continuum that could be termed "impaired," "ill," or "injured." Team members who are injured, ill, or impaired can hurt more than help their teams.[6] Recently, there is increasing awareness of physician burnout, which is traditionally measured by the Maslach burnout inventory (MBI). The MBI measures three domains: level of emotional exhaustion, frequency of experiencing depersonalization, and perception of decreased accomplishment. The syndrome of burnout has many consequences for individuals including physical illness, increased feelings of hopelessness, irritability, impatience, and poor interpersonal relationships. When severe, burnout can lead to diminished ability to work effectively.[7]

Behaviours that result from physician burnout are similar to those that result from physicians suffering with major depression and include "withdrawing from responsibility, procrastinating, using food, drugs or alcohol to cope, taking frustration out on others, arriving late or leaving early, making more errors, isolating from others or depending more on others to complete work tasks."[8]

Reducing burnout in physicians requires changes at the personal, structural, and organizational levels of health care.[9]

How do psychological health and psychological safety go together?

Although, at first glance, psychological health and safety can be viewed as separate constructs, it is helpful to think of them as interdependent. Psychologically healthy leaders are much more likely to create psychologically safe team dynamics. When we are well slept and look forward to our day at work, we have more mental energy to expend on treating other people well. As we move along the mental health continuum from healthy to fatigued to stressed to injured, it becomes harder for us to think, feel, and behave effectively. Our mental energy is expended quickly on just getting through the day with little left over in the way of empathy or compassion.

At the same time, psychologically unsafe workplaces can worsen our mental health. Walking on eggshells, being mindful of the invisible line between provoking anger in others and speaking up is stressful. Asking a question or making an observation that is reacted to in a way that makes you feel incompetent can worsen mood or increase anxiety. These types of workplace stress can

be chronic if left unaddressed. Chronic stress at work is a risk factor for psychological injury and mental illness.

Finally, when we recognize that we are psychologically unwell, we are often afraid to talk about it because of the stigma – the worry that we look weak, lose the respect of others that we crave, and perhaps even lose our jobs.[1]

A creative way forward?

The Institute for Healthcare Improvement (IHI) has taken the need for psychological health and safety in health care as a foundational prerequisite for an initiative they call "joy in work."[10] Using Maslow's hierarchy of needs for comparison, they note that safety is a primary need for individuals to thrive both in their lives and in their work.

The IHI's white paper[10] cites numerous studies that point to the same conclusion: when physicians and other health care workers are not emotionally well, they cannot provide good-quality patient care. "You cannot give what you don't have" is a quote Don Berwick uses in the white paper's opening comments. The link between physician burnout and patient quality care may be, in part, workplace psychological safety.

Quality of patient care is something every physician cares about. Helping people get well and stay well are reasons why people are drawn to medicine in the first place. It is what ignited our passion and keeps us motivated to attend continuing medical education, refine our skills, and research best practices.

Although the role of medical expert is assumed to be key to a good physician, other skills are equally important including the ability to create and maintain healthy interpersonal relationships on teams. Healthy relationships require the ability to be vulnerable and to admit to, notice, and acknowledge one's own fallibility. If the role of medical expert is valued more highly than others, such as self-awareness and team player, physicians may act unprofessionally without consequence.

Quality of patient care is improved when health care professionals are psychologically well, maintain good interpersonal relationships, and acknowledge interdependence within their teams.[10] This sets the stage for a psychologically healthy workplace where every member of the team feels safe to speak up, ask questions, and learn.

IHI has taken a novel approach with its joy in work initiative by aiming its recommendations at the level of the health care team and by using appreciative inquiry to investigate interpersonal dynamics. IHI asks that leaders begin by asking their direct reports "what matters to you?" as a conversation starter that leads to discovery of ideas for increasing joy at work that can be co-created, quickly tested, measured, and either kept or discarded. IHI's initiative builds on the quality improvement method of "plan-do-study-act" cycles that is familiar to physicians and health care organizations.

Is physician leadership skill a key to psychological safety on health care teams?

Physicians often perceive or assume that they are the most responsible provider on the team, which can lead to a sense that they are the de facto team leader. As we move toward team care practice, this perception may wane, but currently physicians are often the person for whom the rest of the team is waiting to discuss and decide on the next step in treatment, the care plan, the need for follow up. When physicians are perceived or assumed to be the team lead, they set the stage for the culture of the team through their ability to create and maintain a healthy interpersonal dynamic that allows every team member to be a full participant.

The IHI's joy in work initiative, recognizing that leaders set the culture, bases its recommendation on health care leaders taking action. Although physicians are seen as leaders on their teams, many have not had the benefit of leadership skill training required to set a positive, safe climate where team members feel comfortable being themselves and speaking freely.

One possible mechanism for improving psychological safety and quality of patient care, then, is basic physician leadership training that emphasizes aspects of emotional intelligence, such as self-awareness, self-management, and self-development. This training could help physicians stay psychologically well themselves through its emphasis on resilience, balance, and personal mastery.[11]

The links between the triad of psychological health and safety, physician wellness, and quality patient care are being clarified. Physician training in basic leadership skills offers one possible way forward that has the potential to positively affect all three aspects of this triad. Doctors have everything to do with psychological health and safety in health care.

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This article has been peer reviewed.

The evolving role of the patient and the future of digital health

Rashaad Bhyat, MD, Mike Figurski, MD, and Asim Masood, MD

An increasing number of physicians are using electronic medical records, and core electronic health record data continue to become more available. However, digital advances are also allowing patients to be more engaged in monitoring their own health. In response, physicians' roles will change, often toward a coaching or partnership model.

KEY WORDS: digital health, electronic health record, electronic medical record, communications, patient-physician relationship

Note: Mention of proprietary names and products does not constitute their endorsement by the authors or publishers.

The story of digital health in Canada has taken many twists and turns over the years, but slowly, surely, we are approaching a point of critical mass. Rates of adoption of the electronic medical record (EMR) for all physicians rose from 23% in 2006[1] to over 80% in 2017.[2] In some provinces, adoption rates for primary care physicians exceed 85%.[2]

In addition, the availability of core electronic health record (EHR) data continues to advance. Core repositories of important health information (including laboratory, diagnostic imaging, and drug information data) form the backbone of each province's and territory's EHR. Physicians can access more of this data in a timely fashion than ever before, although there is quite a bit of variability in the clinical settings in which these data are available.[3]

As physicians, we have more information available to us to inform our clinical decision-making than in the past. It's not perfect, but it has improved. However, the story of digital health in 2018 really centres around the evolving role of the patient.

Increasingly, generations of Canadians favour text, instant messaging, and video (e.g., Zoom, Skype, Facetime, and social media video chats) as a means of communicating and want to interact with their physicians in similar ways.[4] We know from annual tracking surveys that Canadians are keenly interested in accessing their own health care information.[5] From our experiences with our own patients, friends, and family, we know how important it is to have timely access to health information at a time of crisis or increasing medical need. At some point in our lives, we are all patients, even doctors.

Entrepreneur Leonard Kish famously described the engaged patient in 2012 as "the blockbuster drug of the century."[6] Although this may be hyperbole, there is increasing evidence that patients actively engaged in their own health care may have improved health outcomes.[7] Engagement can take many forms, including patients actively accessing their own health records and patients communicating with their health care providers in more modern ways.

As physicians, we must look beyond the hype of new technologies, and recognize that a paradigm shift is occurring with regard to patients' access to their health information and patients' desire to interact with physicians in modern ways. This shift has been accelerated by rapid changes in information technology that have made it possible to hold a very powerful super-computer literally in the palm of one's hand.

The underlying technology is not the most challenging part of these changes. At our presentation in April 2017 at the Canadian Conference on Physician Leadership, for example, Dr. Mike Figurski and a patient in his practice demonstrated a fairly straightforward electronic visit.

Dr. Figurski leveraged secure two-way video communication technology built on an open-source platform to create a remote clinical consultation experience on a basic laptop. His patient emphasized how critical it was to her to have had remote access to both her medical records and to her physician at a time when she needed it most.

Like Dr. Figurski, innovative physicians and other health care entrepreneurs are redefining the realm of the possible in terms of how clinicians, patients, families, and those in the broader circle of care might interact with one another. Some are redefining the modern EMR, while others are enabling unique remote patient monitoring and telemedicine solutions, or creating modern digital platforms to interact with patients (e.g., Input Health, CloudDx, Healthmyself, Avocare, Mousecall MD, and others).

Change itself, however, is tough. For physicians to adapt to an evolving patient role and new expectations, significant change is required – change to policy around remuneration structures and practice models and change to support structures for physicians (such as Peer Networks[8] and physician education). Navigating change is often the "elephant in the room" as physician leaders and health care system decision-makers discuss the potential adoption and integration of new technologies. Sometimes the process of change can be enhanced by using tools such as Infoway's Change Management Framework.[9]

As we approach 2020, patients will have increasing digital access to their health data, allowing greater engagement in their health. As patients' roles evolve, so too will physicians' roles, shifting toward a coaching/partnership model for some patients.

To realize the true transformative potential of engaged patients and aware physicians, all stakeholders in our health care system should recognize the need to support effective change processes. Physician leaders, acting as champions of change, will have an important role to play in highlighting and addressing this need.

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This article has been peer reviewed.

Physician leadership and leading across boundaries

Anurag Saxena, MD, MBA

Health care involves cooperation, coordination, and collaboration across multiple intra- and interorganizational stakeholder boundaries. Five domains of boundaries — vertical, horizontal, stakeholder, demographic, and geographic — are present in health care and in academic health centres. These highlight differences in mission, vision, mandates, and the organizational culture, structures, and processes of different groups. Groups have both negative and positive attitudes toward each other, which exist simultaneously and independently of each other. The boundaries can be viewed as constraints or as frontiers that can be explored for innovations and entrepreneurship. Physician leaders have an integral role to play in the ongoing evolution of health care toward an integrated model, which requires leading across multiple boundaries. The ultimate aim of cross-boundary work is to achieve shared goals, such as patient-centred care. In intergroup collaboration, physician leaders must be perceived as representing all groups; they must simultaneously mitigate group differences and enhance positive intergroup relations; and, when in dyad relationships, they must establish a joint front with the partner through mutually valued relationships and role clarity.

KEY WORDS: physician leadership, boundaries, identity, intergroup leadership, integrated health care

When working with people from different units, departments, professions, and organizations, we often wonder why their perspectives, positions, interests, ways of working, and proposed solutions are different from ours. Enter the concept of "boundaries."

According to the Merriam-Webster Dictionary, a boundary is "a limit that indicates where two things become different" or "that shows where an area ends and another area begins." Health care, with its many interdependent variables, is a complex adaptive system[1] because of its emergent, dynamic, entangled, and robust nature[2] and its numerous intra- and interorganizational boundaries. At the same time, the word "frontier," a synonym of boundary, refers to the limit of the most advanced achievement or knowledge and suggests opportunities for further development.

This dual interpretation of boundaries is attributed to Ernst and Chrobot-Mason's work.[3] The former definition conveys limiting possibilities, e.g., mere cooperation and coordination of efforts across borders, while the latter encourages exploration and expanding possibilities to create an inclusive future for all entities with a new identity. The difference lies in how leaders approach, collaborate, and innovate across the borders and divides.

Why should physician leaders care about this concept?

Physician leaders have an integral role to play in the ongoing evolution of health care toward an integrated model,[4,5] which requires leading across multiple boundaries. The Develop coalitions domain of the LEADS framework recognizes and addresses this need for collaboration.[6]

Even in leading apparently homogeneous groups, such as physicians in a unit, there are boundaries related to functions and demographics. Most health care work also requires cooperation and coordination across intergroup boundaries, between stakeholders with different backgrounds and mandates, e.g., professions, administration, organizations, social workers, communities, and government. In some cases, physicians share leadership with those from other, usually administrative, backgrounds (dyad leadership),[7,8] which adds a layer of complexity because leadership work itself must be coordinated for joint accountability. Academic physician leaders have an added dimension of working within universities and with other health profession education institutions.

The ability to lead across groups is not the same as that required to lead a single group.[9] Physician leaders must be adept at cross-boundary leadership to meet the expectations surrounding health care transformation.

Health care integration is cross-boundary work

The ongoing evolution from provider-centric to patient-centric care is a classic example of intra- and interorganizational cross-boundary work. Driven by the necessity for better access, higher quality of care, improved outcomes, and enhanced efficiency, health care systems are moving toward such an integrated model in Canada.[10,11] One Canadian definition –"integration is a coherent set of methods and models on the funding, administrative, organizational, service delivery and clinical levels designed to create connectivity, alignment and collaboration within and between the cure and care sectors"[12] – highlights the landscape of boundaries we face.

Ernst and Chrobot-Mason[3] delineate boundaries across five domains: vertical (rank, authority), horizontal (units, functions), stakeholders (alliances, networks, communities), demographic (race, gender, ideology), and geographic (regions, cultures). All five are present in health care and a few examples are listed in Table 1. Establishing the proposed foundations of integrated health care in Canada – patient access; patient-centred care; and informational, management, and relational continuity of care[11] – requires collaboration and synergy across these boundaries along with addressing the divides.[13]

Although regionalization of health care in Canada has brought together some pieces of fragmented care under unifying umbrellas,[10] this is considered to have had a somewhat limited impact[14-16] and its role in achieving integrated health care is unclear.[10] It appears, then, that the creation of a single health authority in Alberta in 2008[17] and in Saskatchewan in 2017 is based on the premise that this model (as opposed to multiple regional authorities) is better suited to achieve integrated health care.

In partnerships between medical schools and health care organizations (HCOs), despite mission overlap (clinical care, education, and research), priorities are usually different. Most professional education of physicians is in clinical settings and involves delivery of care by residents. Physician leaders on both sides are involved in ongoing medical education reform, including implementing the recent competency-based medical education initiative, which affects the nature of work for both residents and faculty across this boundary. In addition, academic physician leaders lead across multiple intra- and interorganizational boundaries, e.g., expanding distributed medical education involves working with governments, HCOs, advocacy groups, and communities.

What underlies boundaries?

Organizational boundaries are reflected in differences in mission, vision, specific mandates, and

Table 1. Five types of boundaries in health care and examples of some related challenges.

Boundary	Example	Challenges specific to this boundary
Horizontal	Inter-professional health care	Role changes, perceptions of successful collaboration, differences in professional power and culture, and knowledge bases[37]
		Exercise of collaborative leadership[38]
	Health and social services integration	Organizational: lack of common understanding of aims, roles and responsibilities; differences in policies, such as risk management; suboptimal information sharing; lack of co-location
		Cultural and professional issues: negative assessments and professional stereotypes, different professional philosophies
		Contextual: relationship between agencies[39]
	Administrative–clinical alignment (including finance, human resources, and information technology)	Differences in core values, knowledge of business and management, perception of roles[40]
Vertical	Integration of care domains (primary, secondary, tertiary)	Integrated governance across all 10 elements: "joint planning; integrated information and communication technology; change management; shared clinical priorities; incentives; population focus; measurement – using data as a quality improvement tool; continuing professional development supporting joint working; patient/community engagement; and innovation"[41]
	Organizational hierarchy (governance, strategy, policy, operations)	Organizational learning, and implementation of effective management practices[42]
Stakeholders	Patients, communities/populations, funders, hospitals, national and provincial medical associations, care providers	Population health management: governance arrangements, engaging the local community, appropriate payment models, and evaluation of complex interventions[43]
		Suboptimal engagement of communities/population groups[44]
Demographic	Similarities and differences in race, gender, generations, ideology, and culture:	
	Among providers	Suboptimal diversity in health care workforce[45]
		Challenges in managing a team with members with diverse cultural backgrounds[46]
	Between providers and patients	Cultural competence and attendant cultural generalizations and the potential for these to reduce disparity[47]
		Consideration for individual patients' health beliefs and attitudes[48]
Geographic	Widely distributed Canadian population, including multiple cultures and remote locations; underserved communities	Lack of qualified staff, dependence on aeromedical evacuations, the need to travel outside the community, paucity of preventive services[49]
		Lack of communication between service organizations and health care providers compounded by geographic distances[50]

territories related to group functions, organizational culture, and organizational structures and processes, e.g., around decision-making and accountability. These differences are ultimately linked to the notion of identity. A robust body of research on social psychology of leadership,[18] intergroup relations in organizations,[19] and social identity/identity theories[20] highlights the importance of social cognition and social identity and their implications for collaboration, a concept essential for health care integration.

Identity serves two somewhat opposing purposes: creating a sense of belonging and, at the same time, highlighting uniqueness.[21] Rooted in their social identity (based on who one is and to which group one belongs) and identity (based on what one does),[20] individuals and groups think and behave in ways commensurate with their own identity and organizational mandate, separating them from the efforts of others. By delineating roles and purpose, intergroup boundaries are helpful in making people feel safe; but these also create challenges to working together.

Negative aspects of intergroup behaviour refer to a spectrum of interactions between group members and others when the perspectives of non-group members may not be considered leading to in-group favouritism and out-group derogation.[22] These may lead to power struggles and relationship problems[22,23] and can manifest in many ways, such as

pulling apart of groups and a clash of values with no give and take.[3] This potentially breeds disruptive energy and negatively impacts collaborative work.

However, between-group attitudes are not necessarily negative. According to Pittinsky,[24] allophilia, "a term for positive feelings of kinship, comfort, affection, engagement and enthusiasm concerning members of a group different from one's own" has received considerably less attention. Groups with positive attitudes toward each other have a stronger propensity to work together and act on behalf of the other group compared with those who merely have an absence of negative intergroup attitudes.

The two attitudes – negative (prejudice) and positive (allophilia) – exist simultaneously and independent of each other and affect intergroup relations.[25] Reducing tensions between groups is simply not enough; enhancing positive attitudes is just as neccessary[26] to achieve the highest degree of collaboration.

Challenges in cross-boundary leadership

Leadership work across boundaries is challenging, and the limited progress toward integration highlights difficulties in achieving success. A few challenges are common across all boundaries, although their relative importance varies. Achieving cooperation and collaboration among those who have developed a strong sense of identity with a group/profession/organization through narratives and values is difficult.

Further, the capacity for collaboration and cross-boundary work among individuals and organizations may not be similar. For example, at the individual or group level, certain mental models, competitiveness, and a short-term focus hinder cross-boundary work. At the organizational level, operational leaders may not have bought into the common vision or there may be competition for scarce resources, unwillingness to share power, ineffective intergroup relations, and poor communication and misunderstandings, the latter especially in teams composed of members with different cultural backgrounds.[27] At the interorganizational level, differences in purpose, priorities, and agendas may hamper progress despite a common vision.

Some challenges are more applicable to certain boundaries. A few examples are listed in Table 1. The theme weaving through these challenges is the requirement for effective leadership across groups.

So how can cross-boundary work be accomplished?

Ernst and Yip[28] define boundary-spanning leadership as, "the ability to create direction, alignment, and commitment across boundaries in service of a higher vision or goal" (p. 89). The Develop Coalitions domain of the LEADS framework addresses collaboration among various stakeholders and articulates four required capabilities: building partnerships and networks; facilitating collaboration and coalitions to improve service; mobilizing knowledge; and navigating sociopolitical environments.[6]

In this paper, I offer strategies and specific actions for leading successfully across organizational boundaries and pitfalls to be avoided. Given the dominant nature of the physician profession in health care, physician leaders must be aware of sensitivities when leading coalitions of multistakeholder groups. Three considerations must be kept in mind (Figure 1): how the leaders are perceived by the groups; how to achieve intergroup collaboration; and exercising joint leadership in the dyad model.

When leading multiple groups, physician leaders must be perceived as leaders of all of them and as "one of us," not promoting physicians' interests only. Leaders who do not meet the expectations of their groups run the risk of being ineffective.[26] An awareness of this requirement is the first step.

Staying authentic and caring for all groups, especially those with less power, coupled with political savvy when addressing different stakeholder groups is helpful. Framing issues toward emergent future physician leaders conveys commitment to the success of intergroup collaboration.

Most leaders know that what they say and what they do must match in the eyes of their followers. For intergroup leadership, this requires even more attention, as multiple groups are watching. The ability to practise transformational

leadership is essential to cross-boundary work as this helps achieve group cohesiveness by motivating followers to achieve a higher goal and promoting values, such as equality and strong commitment.[29] However, caution must be exercised so as not to "mislead toward the truth" in pursuit of collective goals, because once discovered, the loss of credibility would be irreparable.

Achieving intergroup collaboration requires effort to bring groups together. As prejudice and allophilia between groups exist simultaneously and independently of each other,[24] working with groups involves deliberate mitigation of differences[3] coupled with emphasis and building on positive attitudes, including respect for each

other.[26] Both approaches aim to arrive at the same destination of synergy of efforts to achieve desired outcomes and continue the journey toward limitless possibilities through innovations and entrepreneurship.

The strategies and examples of specific actions given below reflect a distillation of the two approaches: Ernst and Chrobot-Mason's six boundary-spanning strategies[3] and Pitinsky's five pathways to promote positive intergroup relations.[26]

1. Creating safety: Recognize and define reality by clarifying groups' roles and contributions. Reducing real or perceived external threats to the groups lays the foundation for future collaboration.
2. Fostering intergroup respect: Ask meaningful questions that bring out deep differences (i.e., assumptions and emotions) and positive opinions (like/admire) about the other group's work. One cannot fast track this work as the groups need time to reflect.
3. Fostering trust: There are many ways to develop trust, e.g., meetings in neutral physical space, where members of different groups interact rather than mingle within their own group, and shared community spaces (physical or online environments). Intergroup work requires mutual trust and trust lays the foundation for relationship-building.
4. Developing community and creating a superordinate identity: A galvanizing common vision (e.g., patient care improvement) builds a community with a shared identity, where everyone can feel that they belong. Reducing intergroup bias by changing perceptions of group members from "them" and "us" to "we," e.g., through cooperative interaction,[30] or by emphasizing similarities has value, but is also fraught with risks. Bringing people under the umbrella of an overarching collective identity may not be successful when the subgroups perceive this as loss of their identity, e.g., when one dominant group, such as physicians, has a lot of say or when group conflict has not been addressed. This means that creation of a superordinate identity must include preservation and protection of group identities so that the collective work does not subsume groups and individuals.[31] A recent report from the King's Fund[32] highlighted that valuing identities helps develop trust and recognition that fosters cross-boundary work.
5. Increasing positive intergroup attitudes and developing strong intergroup relations: When people have mutually valued relations, they can solve almost any problem, as the trust between them and support for each other are high. This can be achieved by highlighting the mutual benefits of collaboration and the increased value it brings and making sense and meaning of the intergroup work.[9] Once established, these strong relations and intergroup relational identity can be leveraged for ongoing work.
6. Achieving collaborative intergroup performance: The role of leaders does not stop at managing conflict, promoting liking/kinship and respect, building a community around a compelling goal, identity management, and strengthening intergroup relationships. Leaders must also achieve results by ensuring "collaborative intergroup performance," as their success will be measured by this criterion.[9]
7. Being a resource steward and advancing interdependence: Often, groups compete with each other for limited resources, which may lead to conflict.[33] Leaders must ensure that groups work together to achieve interdependent goals that individual groups can not achieve on their own. This draws on the power of the unique expertise different groups bring.
8. Enabling reinvention: Long-term collaboration is enhanced by providing opportunities for all groups to contribute to newer ways of working and using diverse perspectives to develop the future state. This leads to reinvention, innovation, and new possibilities and identities.

Finally, in the dyad model, the exercise of leadership itself is to integrate administrative and clinical governance for joint accountability. At least four aspects of this require attention (Figure1). Leaders need a clear

understanding of roles and responsibilities in the individual and shared domains.[7,8] The groups they lead must perceive the dyad as a "united front," and this becomes authentic if the dyad partners develop a strong mutually valued professional relationship.[8] Finally, having good relations with at least some members of the other group (e.g., physician leaders with the administrative team) helps build intergroup cohesiveness.

It can be done but does it work?

A number of examples of successful cross-boundary work exist, although they have required adjusting strategies to the local context, as is almost always the case. In Alberta Health Services, three projects related to patient access (central access and triage, clinically coherent tools for prioritization, and access and efficiency collaboratives) involved connecting people, creating communities for action, balancing common good with self-interest, and minority versus majority opinion. This led to improvements in patient access to services.[34]

In another setting, successful collaboration between health and social services and housing professionals and between central and local health authorities led to improved integration of primary care services for vulnerable populations.[35] Specifically, development of local networks required addressing trust, mutual respect, diverse operations, funding arrangements, and professional and cultural fragmentation. The role of the central authorities focused on creating the legal and financial framework to facilitate local work. Improvements in interprofessional education and care across the health care–academic boundary required changes to policies, integration of top-down and bottom-up authority in joint working groups, sharing costs, and developing a culture of interprofessionalism.[36]

In summary, collaborations across boundaries in health care involve diverse people with different backgrounds in multiple groups. Physician leaders must be cognizant of the underlying social identity dynamics. Three aspects are relevant: perception of leaders as representing all groups; a combined approach that includes mitigating differences and building on and enhancing positive attitudes for intergroup collaboration; and the importance of role clarity, mutually valued relations, and a joint front in dyad leadership. These strategies will help provide leadership across health care boundaries, work with which physicians are increasingly being entrusted.

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Author statement
No sponsorship or funding was received for this work. I declare no conflicts of interest.

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This article has been peer reviewed.

Leading through tweeting: physicians and Twitter

Pat Rich

Although the uptake of social media by the Canadian medical community remains slow, Twitter has recently been used to great effect in physician elections, and social media are becoming pervasive in medical education and at medical conferences. However, discussions have become heated at times and have prompted displays of unprofessional behaviour. In response, the CMA has prepared a charter of shared values for physicians referencing the need for civility and appropriate behaviour when using such tools.

KEY WORDS: social media, Twitter, leadership, elections, medical professionalism

One need look no further than this year's election campaign in Ontario for president-elect of the Canadian Medical Association (CMA) to see an example of how social media and, specifically Twitter, can be used productively as a leadership tool.

Unfortunately, Ontario is also where one can see the challenges and pitfalls of physician use of Twitter or, to use Twitter parlance, hashtag "physiciansbehavingbadly."

Although Twitter has been a mainstay of the social media communications world for about a decade now, Canadian physicians have generally been slow to develop a presence or acknowledge the value of the platform. Comprehensive surveys show that fewer than 5% of Canadian doctors use Twitter professionally,[1] a statistic that has not changed over the years.

In contrast, in the United States most physicians seem to be using all social media channels, including Twitter, to support their practices.[2] Although some of this difference is a result of overexaggeration of the limited good data on physician use of social media, the gap can also be attributed to the competitive nature of practice in the US and the value of social media as a marketing tool.

Although social media and Twitter use has been fairly static in the Canadian medical community, there are indications that Twitter has become more entrenched, at least in academic medicine and as a learning tool.

Four years ago, Dr. Ali Jalali (@ARJalali), head of the division of clinical and functional anatomy at the University of Ottawa, was featured in a video[3] made for the Royal College of Physicians and Surgeons of Canada dealing with the value of social media for physicians and how to get started. With more than 2700 viewings, it has hardly gone viral, but, in many ways, it set out the rationale and standards for the professional use of social media by Canadian doctors.

Since making that video, Dr. Jalali has remained a leading Canadian academic physician when it comes to professional use of social media and has published several papers and studies with a special focus on the impact of social media on medical education and its use by medical students and residents. He believes social media have become much better accepted in the profession in Canada since he made the video.

"I don't think the idea was to get more and more doctors on social media," he said in an interview last summer, "but rather to make them more aware of what social media is."[4] With more patients using social media and posting queries for physicians, he said, it was important to make physicians aware of how to deal with these interactions. "We managed to open the discussion," he said. As a turning point in Canada, Dr.

Jalali points to a 2014 publication by the Canadian Medical Protective Association (CMPA) that acknowledged the reality of social media in medical practice. "Whether doctors choose to engage in social media or not, they cannot ignore the implications," CMPA CEO Dr. Hartley Stern wrote at that time.[5]

According to Dr. Jalali, this was a huge change from the earlier stance of the CMPA as totally opposed to physicians having anything to do with social media. "That gave a huge boost to our work in promoting the use of social media by physicians. It's not as exclusive as it was."[4]

Evidence of the continued recognition of Twitter and social media by leading physicians can also be seen in a recent news item in CMAJ, in which two Canadian physicians talk of the obligation for physicians to become engaged in conversations on social media, so that they provide knowledgeable opinions.[6]

Twitter use in physician elections

Five years ago, the two candidates for president-elect of the CMA, Drs. Chris Simpson (@Dr_ChrisSimpson) and Gail Beck (@GailYentaBeck), both embraced social media as election tools, a first for medical elections in Canada. Simpson, especially adopted Twitter and, as a cardiologist and currently acting dean of the faculty of health sciences at the Queen's University, continues to use it on a daily basis.

But this active sponsorship of Twitter by Canadian physician leaders was a bit of a blip on the radar, and it was only this year that the election for CMA president-elect was truly fought on Twitter. In a professional and courteous manner that must surely set the standard for such discussions, president-elect candidates, Drs. Sandy Buchman (@DocSandyB), Mamta Gautam (@PEAKMD), Darren Larsen (@larsen4CMA), and Atul Kapur (@Kapur_AK) took to Twitter to promote their platforms and debate issues.
With the shrinking number of non-peer reviewed printed publications aimed at Canadian physicians, this Twitter activity gave all Canadian physicians, not just the Ontario

CMA members eligible to vote, an opportunity not only to hear from the candidates but also to engage with them. And although the Twitter campaign was not perfect – it was a few days before #CMAelection was identified as the hashtag and one of the early election tweetchats occurred without a hashtag – it did confirm that Twitter continues to be a valid leadership platform for physicians in 2018.

General use of social media in medicine

Internationally, physicians have been talking about the evolution of digital health and social media and the importance of physicians being aware of and involved in this movement. Medical students and residents are entering medicine at a time when the Internet, digital health, social media, and mobile apps are becoming increasingly interconnected.

"Today's medical professionals must be masters of different skills that are related to using digital devices or online solutions" and mastering those skills "is now a crucial skill set that all medical professionals require," is how leading medical futurist Dr. Bertalan Meskó puts it.[7]

A paper published in the *Journal of Graduate Medical Education* last year spoke to the growing role of social media in general in academic medicine.[8] That document noted that social media present a new space for academic medicine that has enormous possibilities for research, education, clinical care, and dissemination of health care science. Institutions are starting to recognize social media scholarship as significant and meritorious and to include it when an academic is being considered for promotion and tenure.

Dr. Jalali speaks about how pervasive social media have become in medical education and at medical conferences, with every conference now having a specific hashtag and making conscious efforts to have delegates engage in online discourse. Hashtags are used on Twitter to organize content by topic or theme. Dr. Jalali said an intelligent Twitter presence is now a reality in medical education and this has immensely benefited those unable to attend major conferences in person. "In medical education, it has now become part of the conference."[4]

The same is true of health policy conferences. The number of participants tweeting about the CMA's annual general council meeting increased from 1946 in 2015 to 2295 last year, with the number of tweets also rising from 10,748 to 13,861.

However, the conflicting views that the medical profession continues to have about Twitter use can be seen in the fact that some conferences continue to try to forbid delegates from live tweeting during sessions or, more commonly, to forbid the posting of photographs from presentations. Witness also recent annual meetings of the Canadian Society of Physician Leaders where live tweeting has been encouraged, with the exception of the keynote panel discussion where delegates were asked not to tweet because of potential political sensibilities.

Dr. Jalali also points to the incredibly active social media debate and discussion around the Ontario Medical Association (OMA) and its interactions with the provincial government as well as its own internal politics in 2016 as another indicator of the growth in influence of social media. "The younger generation is saying, I can use this tool to my advantage."[4]

But this activity also revealed a dark side of physician Twitter use – one that has shaped discussions about how medical professionalism is being defined in Canada today. Briefly, heated debate about the proposed 2016 OMA fee deal escalated on Facebook and Twitter to the degree that one medical student leader had his career threatened for speaking out on the proposed agreement. While such threats were soundly condemned by other physicians, debate flared into threats once again in the summer of 2017 when proposed changes to incorporation rules for physicians dominated the physician policy agenda.

As a result of these situations, an ongoing discussion around a planned CMA charter of shared values for physicians (now published) focused very much on social media, specifically Twitter and the need for appropriate behaviour when using the platform. The section of this

charter dealing with civility can be seen as a direct response to the Twitter firefights between doctors that broke out in 2016 and 2017.

> As a physician, I will strive to be civil; I will respect myself and others, regardless of their role, even those with whom I may not agree; I will enter into communication with my physician colleagues with an attitude of active and open listening, whether it be in person, in writing, or virtually; and I will accept personal accountability.[9]

For some physicians, the circumstances surrounding the use of Twitter in relation to OMA and CMA issues has fundamentally changed their approach to the platform and, in some instances, led them to abandon it completely. It has become abundantly clear that the 140 (now 280) character limit on Twitter is not designed for detailed debate between those holding opposing views.

"Twitter has proven tedious and even toxic to what I enjoy most. 140 characters leaves little room for nuance, little room for substance, little room for clarification, and little room for courtesy, regret, or forgiveness," was how Dr. Frank Warsh (@DrWarsh) put it in a blog posting last year.[10]

Dr. Joshua Tepper (@DrJoshuaTepper), president and CEO of Health Quality Ontario, is similarly cautious. At a panel discussion during last year's Canadian Conference on Physician Leadership, Tepper described the use of social media, including Twitter, as "fun and educational but not without risks." He urged physicians and especially students and residents to be "very, very thoughtful" about how they engage on Twitter.

"For me, Twitter has emerged as more of an information channel than a true 'social' tool – for better or worse," said Dr. Bryan Vartabedian (@Doctor_V) in a blog post in January discussing the end of #hcsm, one of the original tweetchat groups dedicated to health care topics.[11] Dr. Vartabedian, a pediatrician at Baylor College of Medicine, has been a leading physician commentator on Twitter for several years.

But in another blog post, he remarked, "If you think Twitter has devolved into a buttoned-down forum for predictable professional posturing, check out #Ilooklikeasurgeon. This and other communities of female physician voices on Twitter are shaping a new image of the physician."[12]

In fact, some of the most active Canadian physician voices on Twitter today belong to female physicians, such as CMA president-elect Dr. Gigi Osler (@drgigiosler) and Dr. Susan Shaw (@drsusanshaw), chief medical officer, Saskatchewan Health Authority.

At a practical level, the potential benefits of using Twitter are not new and can be summarized as follows:

- To stay informed
- As a learning tool in medical education
- To communicate (engage) with peers and patients
- To disseminate information
- To advocate for/against something
- To deliver clinical care

Although other social media platforms, such as closed Facebook groups, are being explored to deliver clinical care,

the open and insecure nature of Twitter means it is ill-suited for delivering direct patient care. However, it is interesting to note that, several years ago, a pair of physicians from the Netherlands did successfully use Twitter to triage patients in primary care, but this was done purely as a pilot project to see if such an approach was possible[13]; it has not been pursued since.

Similarly, guidance on the professional use of Twitter for physicians has been constant for many years and revolves around maintaining patient confidentiality and using the same standards for professionalism as those applied to any other means of communication. Provincial medical colleges and numerous medical associations all have guidelines for their members on social media use, including Twitter.

Despite the ongoing dedicated use of Twitter by some physicians, Dr. Jalali said it remains uncertain whether social media have actually done anything to improve health outcomes or the health status of the public as a whole. And, like other physicians who have been leaders on Twitter in recent years, he has been rethinking his approach and took a conscious break from social media last year when he took paternity leave.

He said this was a very positive move that made him realize how important it is to wellness and personal relationships to maintain a balanced approach to social media use. "It definitely was a good thing to do," he says.

Dr. Jalali has now returned to Twitter and other social media but acknowledged that he is not as active as he once was. He says that when discussing the professional use of Twitter and social media with students and residents now, he also talks about wellness and how to manage time properly.[4]

Between those who suffer from FOMO (fear of missing out) and neglect other duties to spend inordinate amounts of time on Twitter and those who have avoided Twitter completely lies the path of the physician leader who can recognize both the benefits and drawbacks of the platform.

For those who use it appropriately, Twitter can serve as an unprecedented information source and a way to network, not only with peers but also with all stakeholders in the health care system including patients and members of the public. But, as with all modern communications channels, Twitter continues to evolve both in form and in function, and most productive use is best served by being aware of this.

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This article has been peer reviewed.

The competencies of the CanMEDS Leader role

Developing the moves and agility for a dance on shifting sands

Saleem Razack, MD

The CanMEDS Leader role is about collective ownership and stewardship in the health care system. Physicians balance both management skills (preserving organizational homeostasis) and leadership skills (disrupting for change). The tension between leading and managing requires considerable wisdom. I use three scenarios to illustrate the Leader role and show how the curriculum for physicians must include skill-building in systems understanding, in addition to the usual focus on biomedical and epidemiologic sciences, and skills in humanistic interaction.

KEY WORDS: CanMEDS roles, leadership development, systems sciences

What does it take to lead in the health care system, and why are physicians well-placed to do so? More important, what will it take to lead in tomorrow's health care system, and what competencies must we develop in the residents and students in our programs today to meet the challenges of tomorrow? Is there something different about health care now versus the past? Is health care really changing that quickly, or would a colleague from the 1970s have said the same thing about the system of the day? In training physician leaders of tomorrow, are we trying to develop their moves for a dance on shifting sands.

By some measures, health care is the fastest growing "business" in the developed world.[1] What are the motives and values behind this business, and how ought they to be incorporated into day-to-day decision-making and processes of care?

In this essay, I consider these questions through the lens of training future physicians to be engaged agents of change within our rapidly evolving health care system. I will use the three scenarios above, barely disguised as they are from my own and my colleagues' practices, as examples of how physicians lead on a daily basis. In this way, I hope to define the basic curriculum of physician leadership.

Training students and residents to be agents of positive change

The CanMEDS competencies of the Royal College of Physicians and Surgeons of Canada (RCPSC),[2] now also adopted by the Canadian College of Family Physicians,[3] consist of a series of seven roles that define the activities of a physician in day-to-day practice. They are used as an organizing framework for many undergraduate MD programs, residency training, and continuing professional development curricula.

Originally implemented by the RCPSC in 2001,[4] the seven original roles were: Medical expert, Communicator, Collaborator, Scholar, Advocate, Manager, and Professional. Educators in the health professions can see how a combination of experiential exposures (the traditional rotations through various services) and classroom instruction (workshops, lectures, and the like) in a training program would be able to assure a comprehensive training experience for their residents or students to prepare them well for the challenges of practice.

For instance, in the Communicator role, a program might identify breaking bad news as a key element in which trainees should develop competence. Through exposure and curriculum mapping,

the program leadership might develop a simulation-based workshop to prepare trainees for clinical exposure, and then develop an objective structured clinical exam, in which trainees would be observed and their performance assessed in terms of how they are able to deliver bad news to a simulated patient. The program might then identify critical care rotations as places where there is opportunity for the trainee to use these skills. Finally, in practice, there might be practice audit procedures in which the physician is observed in the act of breaking bad news and given feedback by peers.

In 2015, the CanMEDS roles were revised to reflect the realities of evolving practice. Some tweaks were made here and there to all of the roles, but the changes to the Manager role were revolutionary, and its name was changed to Leader role.[5] There was passionate debate among those of us involved in the discussion about this change, reflecting the tension between leading for change and managing to provide good stewardship. Just as tension on a violin string has the potential to create beautiful music, I believe that the Leadership role creates a sweet spot of opportunity where we can be engaged agents of positive change in health care, humbly and collaboratively, to ensure better health outcomes in the populations we serve.

Defining the CanMEDS Leader role

The essence of the Leader role is about collective ownership (with many stakeholders) and stewardship within the health care system(s). It encompasses four key competencies (each broken down into component enabling competencies).

Physicians are able to:

1. Contribute to the improvement of health care delivery in teams, organizations, and systems
2. Engage in the stewardship of health care resources
3. Demonstrate leadership in professional practice
4. Manage career planning, finances, and health human resources in a practice[6]

In the Leader role, physicians enact both leadership and management skills, where management can be considered actions that preserve organizational homeostasis and leadership is thought of as disrupting, safely, for change. Physicians are asked to manage the health care system and resources through effective stewardship, and themselves and their relationship with others through personal effectiveness strategies and an understanding of health human resources. They are also asked to lead desired change in professional practice.

The tension between leading and managing lies in a physician developing the phronesis[7] for negotiating the complex world of health organizations, having the prudence of thought to act to preserve a desired organizational homeostasis when appropriate (managing), and disrupting, safely, for change when appropriate (leading). It is developing this wisdom through critical reflective practice supervision, supplemented with well-chosen and well-placed didactic instruction, that lies at the heart of any Leader role curriculum.

Scenario 1: Understanding how organizations work

In the Pediatric Intensive Care Unit (PICU), the period between 0800 and 0815 frequently involves surgeons passionately advocating with raised voices for their planned operating theatre cases that require post-operative care in the PICU, a nursing team that feels harassed and overworked, and a physician who knows that there has to be a better way to organize bed flow.

In this scenario, a unit is having difficulty accommodating demand. In such a complex scenario, there are many players with competing and sometimes conflicting demands: staffing requirements, safety, accessibility, and cost.

What skills does the physician require to even begin to tackle this issue? The first and foremost involves systems analysis sciences. When I teach on rounds in the PICU at the Montreal Children's Hospital, in addition to discussing physiology and modeling humanism (with varying degrees of success), I introduce a conversion of systems sciences. It might be as simple as reviewing how a medication order progresses from a thought to a signed order and, finally, to a dispensed and safely delivered drug. The point is to have the students and residents consider how processes of care are organized, and how this organization has the potential to affect very real outcomes.

There is an informal curriculum of valuing multiple ways of knowing here as well: just as we like to see ourselves as "applied physiologists" (i.e., *science*), taking the science and applying it to patients in respectful and humane ways (i.e., *humanism*), we are also agents within systems and must also be applied *systems scientists* with the skill to analyze and change systems. None of these three forms of knowledge predominates over the other, and all are required for effective health care and excellent patient outcomes.

In the real-life scenario 1, we discovered that even when we delayed or canceled cases, 95% of the time, we would have been able to accommodate them later in the day because of the ripple effect of discharges from other units. This led to a policy of defining clear criteria for the automatic greenlighting of surgical cases, an institutional commitment to prioritize PICU transfers in daily bed management, and the creation of a weekly OR bed huddle in which operating theatre cases requiring PICU were distributed evenly throughout the week. This represented a huge culture change of accepting a calculated risk in our unit. The key leadership learning for a physician was to focus on the vision, communicate that vision, and work collaboratively on concerns.

We can explicitly teach and evaluate systems sciences through links with experts in management, including the growing cadre of physician colleagues with additional management training. Adding to familiar domains, such as patient safety and quality improvement, newer domains, such as organizational behaviour and human factors engineering, will also come to the fore of a systems science curriculum. In addition to formal instruction, promoting systems sciences understanding occurs in discussions around bed flow, say, where, reflective practice is supported as part of the supervision.

Scenario 2: Having a voice in health care organizations

The hospital budget report for the last fiscal year is out, and the news is not good. There has

> been a cost overrun of 10%, which will have to be recouped in the coming fiscal year. After a meeting of nurse managers and hospital administrators, eight beds have been cut from the general inpatient wards. It is winter, and the influenza virus is upon us. No physicians were present at any of the planning meetings on the cuts, as they are seen as independent practitioners with privileges at the hospital, not as employees.

Here, we see the marginalization of the physician voice in organizational decisions around health care. A cynic might see the institution's motivations here as potentially strategic, but this is not necessarily so. In most health care organizational settings in Canada, physicians are, indeed, autonomous professionals who are given "privileges" to practise in a particular setting, such as a hospital.

A risk to that approach is that, without conscious effort, the important voice of physicians in health care organizations can be muted. Critics will point out that there are many physicians in positions of hospital administration, but I see two issues with this critique. First, when physicians become administrators, when they act in the administrative role, are they physicians or administrators? The question is not banal. Medical acts are subject to professional regulation through peer review. Are administrative acts similarly regulated? Second, a look at the statistics shows low physician participation in key hospital administrative positions in both Canada (3-3.7%)[8] and the United States (15.9%).[9]

Teaching residents and students to assert their voice in health care organizations is about citizenship. Indeed, it is about differentiating what it means to be a *citizen* in an organization from what it means to be a *subject* of the sovereign authority of an organization, where that authority is understood as not including the subject. Citizenship is attitudinal, but it is also structural, needing to be deliberately built into decision-making processes.

Critical skills in analyzing decision-making within organizations must also be developed, and we must give trainees opportunities to think strategically about the micro- and meso-level structures of the health care system. An example of this approach would be for residents themselves to propose solutions to the issues arising from the human resource shortages, guided in the systems analysis process by skilled faculty members.

Scenario 3: Social accountability – the driving value of the "business" of health care

> The provincial transport system for critically ill children has as a policy that parents cannot accompany their child in transit; they take commercial flights following the transfer. About 90% of the children affected by this policy are from Indigenous communities. A physician working in tertiary care begins to speak out in local and national media for change, bringing many community partners and colleagues into the effort, and he frames his argument for change in terms of truth and reconciliation.

Social accountability of medical schools has been set by the World Health Organization as a requirement to orient their mission-based activities in clinical care, teaching, and research to the needs of the population they serve.[10] Often within this definition, special attention is given to vulnerable and marginalized populations.

In scenario 3, we see high-level advocacy to include demonstrated skills in stakeholder engagement, political aspects of leadership, and the attitudinal component of reserving special attention for vulnerable and marginalized populations. As indicators of access and safety are worse for patients from marginalized groups, notions of equity, diversity, and inclusion are integral parts of leadership.[11,12] The physician leader, here, coordinated political efforts involving community, physician groups, and media, resulting in the provincial government changing a policy.

The CanMEDS framework already includes a distinct Advocate role. Why situate the work described in scenario 3 in the Leader role as well? Put simply, advocacy is about identifying changes to improve the health of populations, whereas effective leadership is about understanding the best approaches to make those desired changes. Advocacy and leadership are inextricably linked. I would

posit that for the physician leader, the explicit link lies in professional codes. In an old version of the Hippocratic Oath, physicians swore that whatever houses they visit, whether the person were "bond or free," they would treat them equally.[13]

What does this mean in terms of training residents and students for the Leader role? Much of what we teach in this role will be about *what* and *how*: what is going on (systems analysis, budgets, etc.) and how to fix it (the principles of change, strategic thinking, etc.). In addition, we must also talk about *why* we are working as positive citizens in the health care system. To perform a budgetary analysis for a specific inpatient unit, for example, without explicitly stating the goal of improving health outcomes through access to quality care, tells only half of the story and runs the risk of minimizing the importance of the core values of the business we are in – access and quality.

A sage professor of management once reminded me that not all businesses have profit as their core motive. There are specific business models and practices of nongovernmental and charitable organizations, for instance. Health care, at least in Canada, is no exception, and we need to be explicit in Leader role training about its specific social accountability motive.

Teaching how to dance on shifting sands

The central thesis of this essay is that the curriculum for physicians needs to favour science, humanism, and systems understanding. Training in the Leader role clearly requires fostering notions of flexibility and resilience. The backbone is about knowing the core of what we do and why we do it, and the flexibility is about finding the ways and means to accomplish this core mission in different ways within a changing context. Doing so will require that our teachers also receive new training – faculty development that allows them to grow in their roles as flexible leaders.

If we remember the mantra of what (systems sciences), how (leading for change), and why (for better health outcomes for the population, including those who are vulnerable and marginalized) as we design innovative ways to teach the Leader role, the physicians of tomorrow will be well placed to be positive agents of change and engaged citizens in ever-evolving health care systems.

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This article has been peer reviewed.

Physician leadership development: University of Manitoba's landscape across the educational continuum

Ming-Ka Chan, MD, Debrah Wirtzfeld, MD, Aaron Chiu, MD, Shaundra Popowich, MD

The need for professional leadership development in health care is growing. Such development must start early in training and continue throughout the life cycle. In this case study, we review the numerous physician leadership education opportunities at the University of Manitoba, highlighting some exemplars and discussing enablers and challenges. Local, regional, national, and international opportunities exist for core development for all students and residents as well as enhanced leadership education. Although faculty have rich opportunities for leadership development, there is no mandated curriculum. Interprofessional learning opportunities are desirable and need further development. The diversity and breadth of leadership education for medical students, residents, and faculty are encouraging and the academic culture is supportive. Continued momentum to harness engaged learners and faculty is needed with priority on enhancing formal curricula, training the trainers, and developing widespread opportunities for experiential learning and application. Processes and outcomes need to be reviewed to understand the return on investment and allow for ongoing support and sustainability.

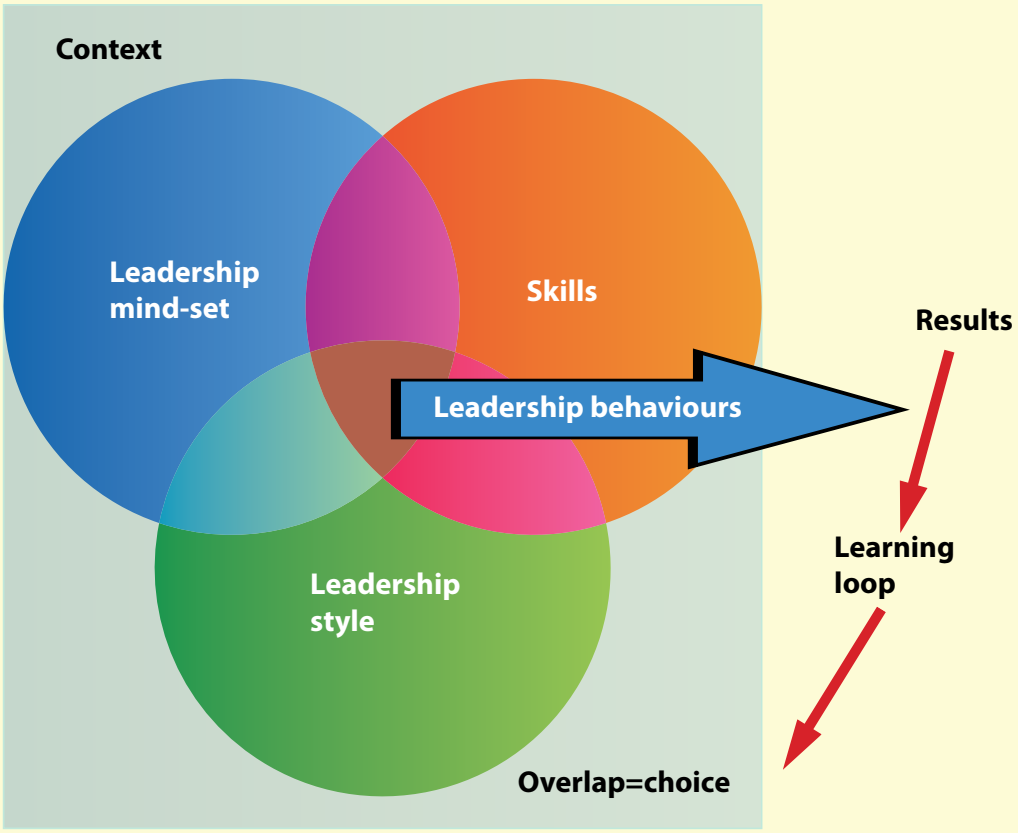
KEY WORDS: leadership development, education, curriculum, LEADS, medical students, residents, faculty

Leadership development for physicians and health care professionals has been identified as a growing need and part of the educational mandate around the world.[1] The Future of Medical Education in Canada (FMEC) reports for both undergraduate[2] and postgraduate[3] learners specify that leadership development must start early and continue throughout professional life.

At the Max Rady College of Medicine, University of Manitoba, the medical leadership development program is based on the premise that the acquisition of competencies and capabilities occurs along a continuum from undergraduate to postgraduate to faculty level. Curriculum planning centres, in part, around the debate about the need for "leadership education for all" versus "leadership education for some," and examples of both sides of the debate are apparent at our institution. The need for collaborative leadership, highlighted by both FMEC reports,[2,3] leads to the idea of developing leadership among multiple health care professionals and learner groups. We are in the early stages of such development, collaborating with other health care professionals by sharing resources and/or teachers and providing a small sampling of interprofessional leadership learning opportunities.

In this paper, we highlight the formal curricular opportunities offered to medical students, residents, and faculty at the University of Manitoba. Opportunities may be episodic or

Figure 1. Framework for results-oriented leadership*



***Based on Lebovitz Richmond S.[5]**

longitudinal and, although most are face to face, online sessions are also available. Although not explicitly discussed, we recognize that experiential learning and application along with feedback and mentorship are also important facets of lifelong leadership development.

The undergraduate medicine leadership landscape

The undergraduate program begins in the first year with mandatory sessions for all medical students, which carry through to the third year of the four-year program. This graduated curriculum supports students as they develop capabilities in the first two components of the LEADS framework: Lead self and Engage others.[4] The curriculum focuses on the intersection between the LEADS framework[4] and a model[5] that suggests that leadership behaviours arise from a combination of mental models of leadership, leadership skills, and leadership style (Figure 1). To build on this core curriculum, a limited number of students also have an opportunity to participate in an intense fourth-year leadership selective (see Appendix) emphasizing the Developing coalitions and Systems transformation parts of the LEADS framework.[4] Other formal and informal opportunities arise through student engagement in initiatives in and outside the university. Some local opportunities include medical student governance, leading student interest groups, and curriculum renewal endeavours.

National initiatives include Students and Trainees Advocating for Resource Stewardship (STARS) in collaboration with Choosing Wisely Canada,[6] as well as the collaborative efforts of the Canadian Federation of Medical Students and the Fédération médicale étudiante du Québec to develop a policy paper on advocacy and leadership

in Canadian medical school curricula.[7] Although all of these opportunities provide informal mentoring and experiential learning opportunities, some, such as the STARS initiative, incorporate formal leadership training through their annual one-day summit.

In the international arena, opportunities exist through resources and work with groups, such as the International Federation of Medical Students' Associations, which recently launched a Social Accountability in Medical Schools campaign.[8]

Undergraduate core curriculum

The core curriculum is based on the premise that all medical students should be aware that they are perceived as future leaders. An introduction to leadership in the medical profession, self-awareness, engaging others, and conflict management are essential to this mandatory part of the longitudinal leadership curriculum. There is an emphasis on leadership behaviours in physicians, being the culmination of a distributed leadership mental model on which individual styles and strengths are layered.

An important aspect of this curriculum is that leadership behaviours must be modeled by every physician, not just those who assume a named leadership position. It is based on the "five levels of leadership" model, proposed by John B. Maxell, which emphasizes that "positional leadership is the lowest level of leadership."[9] Teaching faculty come from a variety of medical disciplines as well as from the business school.

Most formal postgraduate leadership development activities are offered primarily within a discipline or specialty, although some are designed for interdisciplinary learning.

Undergraduate selective opportunities

Students with an interest in increasing their focus on leadership development are invited to participate in activities that will broaden their exposure to medical leaders in the health care system and the development and implementation of a business plan focused on health care transformation. Each year, three to six fourth-year (final year) medical students are invited to participate.

The objectives for the three-week selective are to identify important attributes of successful modern day medical leaders; to describe one historical medical leader and his or her contributions to the medical field; to gain greater personal insight into emotional intelligence and areas for leadership improvement through the EQi-2.0 leadership scale; and to gain familiarity with the leadership literature (Appendix).

Most important, each group of students comes together as a team to identify a critical issue in health care and develop a business plan (including requests for funding and identification of relevant positive and negative stakeholders). The business plan is presented to the Board of Doctors Manitoba (Manitoba's medical association), who must be convinced that the plan can be appropriately implemented and outcomes successfully measured before releasing the necessary funds.

The postgraduate medicine leadership landscape

Through the Royal College of Physicians and Surgeons of Canada (RCPSC) and the College of Family Physicians of Canada (CFPC), all Canadian residency programs use the CanMEDS[10] (Canadian Medical Education Directions for Specialists) physician competency framework, which defines seven physician roles. This framework highlights leadership in a number of ways including a role name change from Manager to Leader in 2015.[11] Leadership and management competencies are key components of the Leader role, along with those for patient safety/quality improvement and resource stewardship. As a result, leadership education is seen as a core requirement for residency education and there is momentum to continue to build and expand existing curricula.

Most formal postgraduate leadership development activities are offered primarily within a discipline or specialty, although some are designed for interdisciplinary learning. Most activities are implemented at a local level and, as for the medical student examples, there are formal and informal opportunities for additional experiential learning. Regional, national, and international opportunities are

also made available through participation in the core or task specific work in specialty organizations, professional societies, medical associations, education associations (e.g., RCPSC, CFPC, the Canadian Association for Medical Education, the Association of the Faculties of Medicine of Canada, or the Medical Council of Canada), or conferences, such as the International Conference on Residency Education (ICRE). The latter offers a variety of opportunities, such as ICRE chief resident roles, participation in planning committees, as well as a specific stream of formal sessions for resident leadership development.

Core curriculum and discipline-specific opportunities

Interdisciplinary opportunities exist within the core curriculum for all residents and include online and/or face-to-face sessions covering a variety of topics within the LEADS[4] domains, such as feedback, conflict negotiation, and practice management. These sessions are offered through the central postgraduate office. Additional opportunities to build on learning at these core events are encouraged within the individual residency programs.

Within a discipline, one model of formal leadership education for all residents includes the "transition to senior" workshops, such as those offered in pediatrics.[12] These workshops focus on the development of leadership (specifically Leading self and Engaging others),[4] management and teaching skills of all residents

Within a discipline, one model of formal leadership education for all residents includes the "transition to senior" workshops, such as those offered in pediatrics.[12]

transitioning to a senior role on call and as team lead on the wards. This annual one-day event is part of a longitudinal graduated experiential curriculum that prepares residents (from the lens of different CanMEDS roles[10]) to become a "senior." The formal longitudinal components include monthly mock resuscitations or codes, "buddied" call, where new seniors are paired with a more senior resident, as well as two weeks as "acting senior" during their final ward month. Ongoing peer and faculty mentorship also provide some of the needed support to develop as good team leaders and followers (as appropriate to the context).

A strategy to develop leadership in the Achieve results and Develop coalitions domains[4] is through a group advocacy project that has been completed by each third year (of four years) pediatric resident cohort since 2009. Through this endeavor, the residents collaboratively lead an initiative to advocate around a health issue for pediatric patients and their families.

Since 2014, faculty and learners from the university have also collaborated internationally to develop open-access online leadership education modules, which integrate the CanMEDS[10] competencies with the LEADS[4] leadership framework (available at **www.sanokondu.com**). Each case-based module can be adapted for local contexts and can be used for single or multidisciplinary teaching/learning. Five of these modules have been modified for local general surgery residents and delivery started in fall 2017.

Enhanced leadership education for some residents

Chief resident development has been a long-standing commitment at the University of Manitoba. Pediatrics has over 16 years of experience at the national level, which includes an annual 2.5-day conference in Winnipeg. The surgery department had also provided a conjoint surgical specialties chief resident development program for over five years with various models, ranging from a half-day session to a 1.5-day event. Other programs, such as internal medicine and psychiatry, send their chief residents to development programs that are run in Canada or the United States.

The Physician Leadership Institute (PLI) sessions offered through Joule/Canadian Medical Association (CMA) have been used by residents to continue to enhance their skill sets, with some online courses developed specifically for residents. Others have taken advantage of the diverse opportunities available to faculty, which are described below. Certainly, the development of the clinician investigator program at the university has offered additional salary support to residents and provided opportunities to those who wish

to pursue formal master's or PhD-level training in leadership education or other programs.

The faculty leadership education landscape

The process of lifelong learning and continuing professional development is complex for faculty. Designed to use reflection, self-assessment, and feedback, ongoing faculty development is typically self-identified and designed. Although there are currently no mandated educational activities for faculty (including specifically for leadership and management development) at this university, a range of leadership/management education opportunities are championed and promoted at the departmental and other levels.

Significant improvements have been made in more formalized longitudinal leadership development opportunities for faculty at the University of Manitoba through the George and Fay Yee Centre for Healthcare Innovation (CHI),[13] originally formed in 2008. In 2011, further evolution of the centre in partnership with the Winnipeg Regional Health Authority, University of Manitoba, and Government of Manitoba led to the launch of an Academic Health Sciences Leadership Program which began its seventh iteration in fall 2017. This programming was a critical advancement to the leadership development milieu, given further evidence suggesting that "when physicians actively and effectively participate in leadership roles, they can improve health care system quality outcomes."[14] Attendees include current and aspiring leaders in medicine and the other health care professions. The faculty are also interprofessional by design.

In addition, CHI has facilitated several targeted leadership education sessions annually including Crucial Conversations[15] and in-house versions of PLI courses (a longstanding professional development resource that provides a longitudinal curriculum built on LEADS[4]) since 2013. Doctors Manitoba (through the endeavors of the Health and Wellness

committee) offers an additional PLI session each year. Through these various initiatives, the CHI and Doctors Manitoba have helped create critical networking exposure to further shape the evolution of a multidisciplinary/multiprofessional collaborative culture for a group of health care professionals, who tend to be siloed by the intensity and nature of their work.

The "high-performance physician" course, originally designed by Dr. Cal Botterill and colleagues for a research study with multiple stakeholder support,[16] has evolved into a longitudinal program. This program supports leadership development by providing skill building and personal growth opportunities learned from performance psychology with "strategies to increase focus at work, improve recovery from stress, and sustain personal and professional performance."[17] Workshops have been designed and contextualized for different audiences and time-frames, including those given at Doctors Manitoba and in various university departments. Leadership-building competencies have been focused primarily at the postgraduate level, such as regular integration into the emergency residency curriculum,[18] but many faculty have also participated, with positive feedback.

Longitudinal development through graduate programming, such as the master's in leadership degree at Royal Roads University or master's in business administration offered at the University of Manitoba as well as attendance at annual education conferences or Canadian Society of Physician Leaders meetings, also round out opportunities for faculty (and learners). Indirect leadership education through other masters' programs, such as master's in education, also occur.

Other Canadian opportunities to develop core leadership competencies include the University of Toronto's Newly Emerging Academic Leaders longitudinal program and the Canadian Leadership Institute for Medical Education, an annual four-day event offered in English or French by the Canadian Association for Medical Education. Numerous international offerings, at a discipline specific or interdisciplinary/interprofessional level, are also available; these can be offered by field-specific organizations, e.g., Canadian Blood and Marrow Transplant Group, or through medical education conferences, e.g., ICRE, where CanMEDS Leader Role sessions are always part of the programming.

Enablers and challenges

Facilitating factors at an institutional level include a College of Medicine wide mandate for leadership development, as well as supports at the department or section level. The physician leadership development curriculum committee, chaired by one of us, brings together a cross-disciplinary membership of physicians passionate about advancing leadership development, many of whom are engaged on a broader scale, such as through the provincial medical association's health and wellness committee. The mandate is multifaceted, but includes efforts to consolidate, communicate, and assist implementation of leadership education opportunities that provide a more strategic alignment of curriculum across the spectrum of learners from undergraduate to faculty.

The crucial partnerships formed between the university and such stakeholders as Doctors Manitoba and the CHI represents a transformative commitment to advance interdisciplinary opportunities for leadership development, including subsidization of participant fees for annual leadership education events. There are also learners and faculty who are highly engaged in leadership education and its scholarship on local, national, and international platforms.

Coaching and mentorship form a strong facet of our medical community at all levels from undergraduate through to faculty. Opportunities exist at an individual and group level and include formal programming to support mentor and mentee development at the university and through Doctors Manitoba. Peer and more senior mentor support are both valued and encouraged within and outside the discipline or geographic site. Because much of the curricula for undergraduate, postgraduate, through to faculty level are based on the LEADS[4] model, this alignment is beneficial as faculty and learners can prepare

themselves as leaders and for the teaching of leadership to learners at all levels.

Challenges include the need to tailor to an individual's or cohort's learning needs as well as ensuring that workplace-based leadership teaching is supported and developed, given the pivotal role these experiences play in leadership development.[19] Reframing some of the innumerable challenges physicians address daily as opportunities for professional growth continues to provide development consistent with goals in the local context, while integration of these experiences can remain difficult for individual learners. The fragmented nature of such experiential learning as well as variation in opportunities across disciplines, coupled with additional barriers, may partly explain why health care leadership development continues to stagnate behind societal changes including "the transition from leadership based on the power and role of iconic individuals to leadership residing in networks of people."[20]

Specific funding to support leadership education for both learners and teachers is also a precious and limited resource. Collaborations between the health care disciplines and professions must be developed further with greater momentum.

Finally, comprehensive program evaluation strategies to measure the return on investment and look at our processes and outcomes have just started with, for example, development of a national pediatric chief resident feedback tool. This program evaluation needs to expand to ensure the effectiveness and sustainability of our leadership education programming.

Conclusions and next steps

Leadership education is an ever-changing but rich landscape for undergraduate, postgraduate, and faculty learners. Widespread support is a key factor in the success of leadership education at the university and includes engaged learners and teachers. Broader collaboration between disciplines and professions locally, nationally, and internationally is the aspiration. Ensuring equal opportunities tailored to meet individual learning trajectories in a landscape of competency-based education remains to be navigated.

Furthermore, we recognize that leadership education will need to continue to acclimate as more undergraduate leadership education programs develop both within Canada and beyond, thus influencing the postgraduate milieu. Faculty development will have to evolve further to ensure better alignment with advancements in both the undergraduate and postgraduate curriculum, without which we will be unable to ensure the transition of these theoretical frameworks into an empirical skillset that is applicable to all in the health care context. Integration of contextual leadership development opportunities along the educational spectrum using a robust leadership framework remains an aspiration.

In addition, the need to implement more rigorous methods for evaluation along the educational spectrum remains a challenge shared with other institutions[19] that must be addressed to support the return on investment required for further advancements in the future.

Appendix: Components of the core curriculum and opportunities for selected medical students

Year 1 core curriculum: what is leadership – framework development, self-awareness, and building diverse, successful teams

Goals

- Define leadership and discuss the importance of physician leadership to the health care system
- Develop a framework for results-oriented leadership that incorporates LEADS
- Gain familiarity with the LEADS framework for medical leadership
- Recognize what it means to Lead self through the administration of a personality inventory
- Engage others/Achieve results through a focus on using the personality inventory to gain self-awareness, appreciate differences between individuals, and build successful, diverse teams

Components

- Introduction to leadership using LEADS framework – 1 hour
- Myers-Briggs type indicator: Introduction to leading

self through increasing self-awareness of type and recognizing that differences between individuals adds to the diversity and strength of the group – 2 hours
- Myers-Briggs type indicator: Emphasis on building successful teams and fostering the development of others (Engage others and Achieve results) through an appreciation of differences between team members – 2 hours
- Team-based assessment: Completion of a team-based evaluation of preparation, participation, and cohesion following each of 20 sessions of self-directed clinical reasoning sessions over 2 years in a team with stable membership

Year 2 core curriculum: how to lead – appropriate leadership styles and leading by influence

Goals
- Define leadership styles and appropriateness in different settings
- Understand what it means to lead from a position of influence rather than a named leadership position

Components
- Leading by influence and leadership styles: Collaboration with the Asper School of Business, University of Manitoba, to define leadership styles, important roles in a team, and how to lead from a place of influence – 3 hours

Year 3 core curriculum: leadership in difficult times – conflict management

Goals
- Define conflict
- Identify conflict within a group or team
- Understand the importance of early identification of conflict
- Communicate effectively during conflict
- Identify resources available to medical students to continue to develop leadership

Components
- Conflict resolution lecture and panel discussion with faculty and residents who have a preference for different conflict-resolution styles – 3 hours with leadership psychologist

Year 3 selective leadership project

Target students: Third-year medical students who self-identify as future leaders and who are interested in health system transformation

Goals
- To identify important attributes of successful modern day medical leaders (LEADS)
- To detail one historical medical leader and his/her contribution to the medical field (LEADS)
- To gain greater personal insight into emotional intelligence (EI) and personal leadership strengths and areas for improvement through use of the EQi-2.0
- To develop a team-based business plan for a critical issue in health care, including presentation of the proposed approach to the Executive Board of Doctors Manitoba for their approval and potential funding (Develop coalitions, Systems transformation)
- To gain familiarity with the leadership literature through a journal club format (LEADS)

Components
- Review session on leadership – definitions, theories, importance of physician leadership
- Introduction to community medical leaders who will speak about their individual leadership journey, including strengths/weaknesses and the importance of influence and team-based leadership
- Each participant will choose a historical medical leader and present a 20-minute talk on attributes that lead to potential successes and failures based on LEADS format
- Use of the EQi-2.0 to assess areas for further self-development as leaders
- Working as a group, students will develop a business plan around the topic "How to get medical students more involved in the functions of Doctors Manitoba" (this business plan will be presented to a representative Board of Doctors Manitoba for discussion and potential funding)
- Participation in three journal clubs on physician leadership

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Acknowledgements

The authors acknowledge Ms. Margaret Shiels for her work in administering the Leadership Development Curriculum Committee at the Max Rady College of Medicine, University of Manitoba.

Author attestation

No funding or sponsorship was provided for the development of this paper. There are no conflicts of interest.

Ming-Ka Chan took the lead in organizing and developing the overall concept of the paper with emphasis on content development of the section on postgraduate leadership education. She also worked on the section on enablers/challenges and overall integration of the paper. Debrah Wirtzfeld took the lead in the description of the undergraduate leadership development program and overall review of draft and final versions of the manuscript. Aaron Chiu helped to develop the concept of the paper and reviewed draft and final versions of the manuscript. Shaundra Popowich took the lead in developing the continuing professional development section and helped develop the enablers/challenges section. She also provided an overall review of draft and final versions of the manuscript. All authors approved the final version of the article.

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This article has been peer reviewed.

Canadian guidelines on smartphone clinical photography

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The use of a mobile device to obtain clinical photographs is convenient and efficient compared with the traditional use of a medical photographer. It also enhances physician communication and allows ease of photograph storage and accessibility. However, provincial/territorial colleges across the country lack complete and readily accessible information to guide smartphone use for clinical photography. Evaluation of existing guidelines identified significant agreement between college recommendations in six main categories: consent, storage, retention, audit, transmission, and breach. Concise national guidelines pertaining to each of these categories will improve the ability of physicians to understand how to use clinical photography appropriately in the future.

KEY WORDS: clinical photography, electronic medical record, health information technology, smartphones, digital professionalism, guidelines

Technological advances in clinical photography have enhanced physician practices and patient care in many medical and surgical fields. Clinical photographs convey a great deal of information about a patient's condition, and the adjunct of a mobile device allows further enhancement of patient care by facilitating physician communication and education.[1-3] Photographs are important to document form and function, track wound healing, and aid in operation planning.[4,5] Recent studies have endorsed the efficacy of photography with a mobile device to improve the process of referral to burn centres[6-8] and free flap monitoring,[9] and to increase confidence in and the accuracy of diagnosis of surgical site infections.[10]

The use of a mobile device to obtain clinical photographs is convenient and efficient compared with the traditional use of a medical photographer. It also enhances physician communication and allows ease of photograph storage and accessibility. In light of these advantages, it is not surprising that 89% of Canadian plastic surgery residents and attending physicians surveyed by Chan et al.[11] use smartphones to take clinical photographs of patients.

However, despite their regular use of smartphones for clinical photography, half of the respondents felt uncomfortable with this practice, citing questions of security, privacy and confidentiality, and unfamiliarity with regional policies as the main reasons for their discomfort. Because health information in photographic form is considered highly sensitive and personal, their concern is founded.[12]

Given this clinician uncertainty, the primary purpose of our study was to gather information on the accessibility and completeness of guidelines for clinical photography using a smartphone in Canada. Secondarily, we aimed to provide brief direction for clinicians using smartphones for clinical photography. In the future, we hope to use the information gathered to develop a comprehensive set of national guidelines.

Methods

To identify guidelines from each of the 13 provincial and territorial colleges that regulate medical practice, as well as the

Canadian Medical Protective Association (CMPA), we sent an email to a representative of each organization asking for information and documents pertaining to the use of a smartphone for clinical photography in six categories. These categories were identified through discussion among the authors of this paper, as well as a legal team:

Consent
- Do you have special recommendations for consent regarding photograph taking/sharing using a smartphone?

Storage
- How should electronic photographs and text messages be stored in a smartphone?

Retention
- For how long should photographs/text messages be stored?

Audit
- What data points need to be tracked for audit purposes during smartphone text/photograph sharing?

Transmission
- What are the recommendations and requirements for the transmission of clinical messaging and photographs using smartphone technology?

Breach
- What constitutes a breach of data on a smartphone?
- How should it be contained and who should be notified?

If representatives did not reply to the email, we placed a follow-up telephone call within four weeks of the original email; all colleges were reached by either email or telephone. In addition, we searched the website of each college for clinical photography and mobile telephone guidelines.

A ranking system was used to evaluate the accessibility and completeness of the relevant material for each of the six categories. A ranking of two was given if information was readily available on the college website and was deemed to be complete, a ranking of one if website information was incomplete or obtained via email or telephone communication, and a ranking of zero if there was no information on the topic. These scores were not meant to evaluate the quality of the provincial organizations, but rather to assess the completeness of available information.

A second independent reviewer evaluated each organization's website to confirm results. Copies of emails and transcripts of telephone conversations were forwarded to the second independent reviewer where necessary. Any discrepancy in scores between the two reviewers was reconciled by a third independent reviewer.

Accessibility was scored separately. A ratio of the total number of points scored for completeness divided by the number of documents that were accessed to obtain this information was used to represent a guideline's accessibility. Thus, high ratios represent greater accessibility and low ratios represent less accessibility.

We reviewed all information available from each of the 13 provincial/territorial colleges and the CMPA, then met to synthesize preliminary recommendations for how to safely use smartphones for clinical photography and transmission in a way that would adhere to the policies of each organization.

A task force, including two privacy lawyers and two plastic surgeons met to revise the preliminary guidelines and develop a summary of recommendations for how to safely use smartphones for clinical photography and transmission based on existing data.

Results

Most of the information gathered came from college websites, rather than through email or telephone conversations. Of the 13 regulatory colleges contacted, 10 provided some relevant information on their websites (Table 1). For most topics (five of six) only incomplete data were available. Relevant and complete information related to retention period was the area most consistently reported, with 10 regulatory colleges providing some relevant information on their website. Only the Collège des médecins du Québec (CMQ) had guidelines for all six categories. Some regulatory colleges with no information on their website (e.g., the College of Physicians and Surgeons of Prince Edward Island) were able to provide select information through email. Seven colleges (54%) were

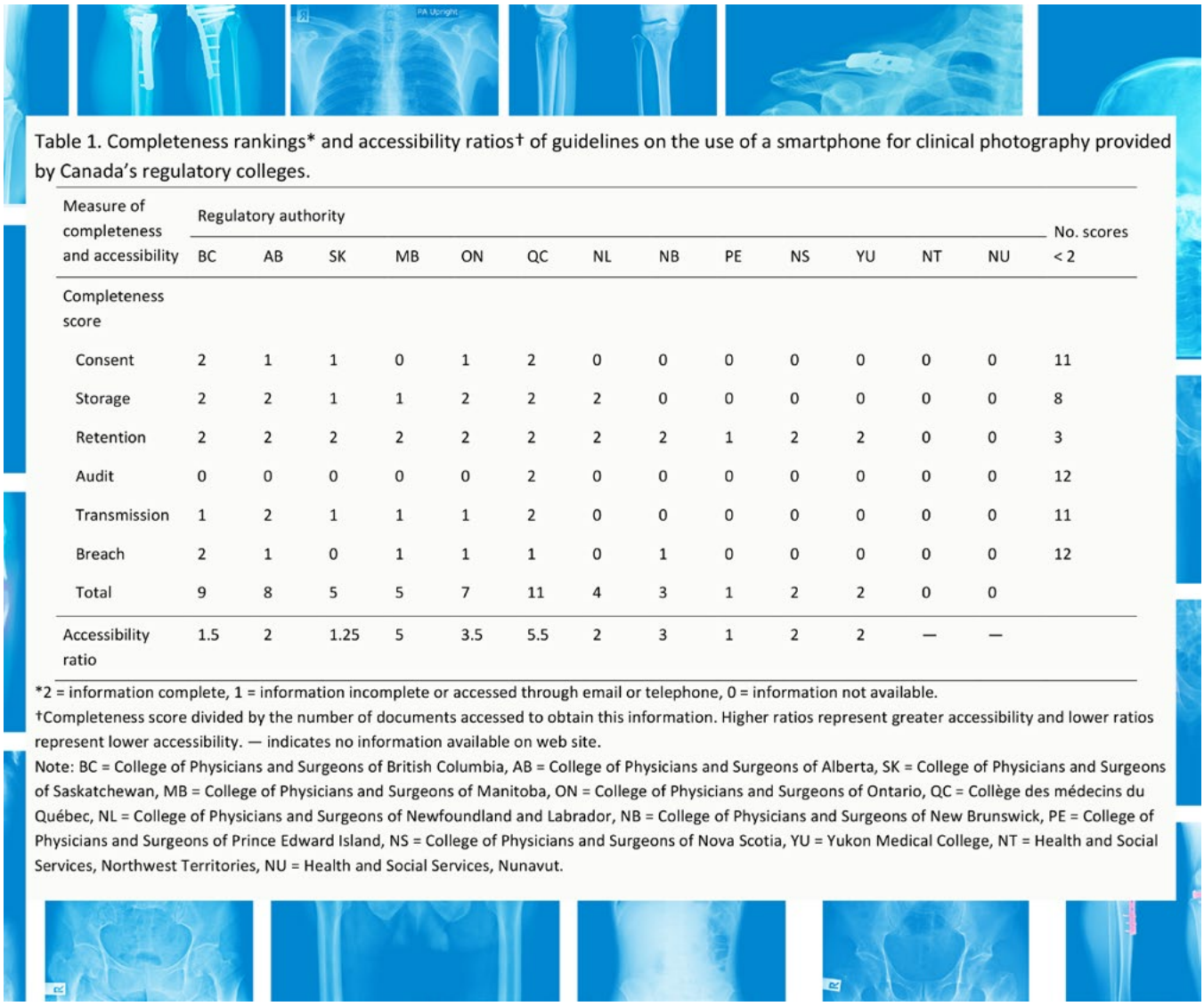


Table 1. Completeness rankings* and accessibility ratios† of guidelines on the use of a smartphone for clinical photography provided by Canada's regulatory colleges.

Measure of completeness and accessibility	Regulatory authority													No. scores < 2
	BC	AB	SK	MB	ON	QC	NL	NB	PE	NS	YU	NT	NU	
Completeness score														
Consent	2	1	1	0	1	2	0	0	0	0	0	0	0	11
Storage	2	2	1	1	2	2	2	0	0	0	0	0	0	8
Retention	2	2	2	2	2	2	2	2	1	2	2	0	0	3
Audit	0	0	0	0	0	2	0	0	0	0	0	0	0	12
Transmission	1	2	1	1	1	2	0	0	0	0	0	0	0	11
Breach	2	1	0	1	1	1	0	1	0	0	0	0	0	12
Total	9	8	5	5	7	11	4	3	1	2	2	0	0	
Accessibility ratio	1.5	2	1.25	5	3.5	5.5	2	3	1	2	2	—	—	

*2 = information complete, 1 = information incomplete or accessed through email or telephone, 0 = information not available.
†Completeness score divided by the number of documents accessed to obtain this information. Higher ratios represent greater accessibility and lower ratios represent lower accessibility. — indicates no information available on web site.
Note: BC = College of Physicians and Surgeons of British Columbia, AB = College of Physicians and Surgeons of Alberta, SK = College of Physicians and Surgeons of Saskatchewan, MB = College of Physicians and Surgeons of Manitoba, ON = College of Physicians and Surgeons of Ontario, QC = Collège des médecins du Québec, NL = College of Physicians and Surgeons of Newfoundland and Labrador, NB = College of Physicians and Surgeons of New Brunswick, PE = College of Physicians and Surgeons of Prince Edward Island, NS = College of Physicians and Surgeons of Nova Scotia, YU = Yukon Medical College, NT = Health and Social Services, Northwest Territories, NU = Health and Social Services, Nunavut.

missing guidelines on more than half of the six categories. The least amount of information was available for auditing criteria of smartphone use, as well as the definition and consequences of a breach of patient information on a smartphone.

The number of documents that had to be accessed to find information on all categories varied by province (Table 1). The CMQ had the highest accessibility ranking because only two documents had to be reviewed to obtain information pertaining to each of the six categories of interest. Although the College of Physicians and Surgeons of British Columbia scored high for completeness, its accessibility ratio remained low because six documents required review to obtain all relevant information. Saskatchewan's college had the lowest accessibility ratio because it scored low for completeness, and the information that was available was scattered among a large number of documents (five). An average of 2.4 documents per college (range 1–6) had to be accessed to find recommendations pertaining to all six categories. After reviewing all available guidelines, the taskforce (two privacy lawyers and two plastic surgeons) suggested the following summary statements for each of the six categories for how to safely use smartphones for clinical photography and transmission based on existing data.

Consent

- Clinicians must document informed consent and recognize that this does not revoke their legal duty to diligently protect patient information.

Transmission

- For transmission of data, use Canadian servers that offer end-to-end encryption.

Storage

- Clinical photographs should not be stored locally on a smartphone.

Auditing capability

- Patient demographics, as well as the details surrounding access to photographs must be tracked.

Retention period

- Clinical photographs are considered part of the patient medical record and should be maintained for 10 years or 10 years after the age of majority, whichever comes later.

Breach

- Loss of a strongly encrypted smartphone with no photos stored locally on the device is not considered a breach.

Discussion

Consent, transmission, storage, auditing capability, retention period, and breach of information are six important issues to consider for clinical photography using a smartphone. However, national and provincial college guidelines lack explicit and readily available instructions regarding clinical photography using a smartphone and electronic transmission of patient information. Photograph retention is the only category consistently and clearly addressed by the colleges.

As the use of mobile devices for this purpose becomes increasingly ubiquitous, concern over potential breaches in patient confidentiality leading to legal risks to the physician and hospitals will increase along with risks to patients.[13-19] The need for efficient clinical photography and immediate transmission of patient information has been emphasized in many studies,[2,5-8,20-22] and, as such, it is time that guidelines were adjusted to suit the current technological environment while protecting patient confidentiality.

Of the various categories relating to clinical photography and transmission of patient information, provincial guidelines for photograph retention and storage are most consistently provided: 10 colleges (77%) for retention, five (38%) for storage. The next-best-guided categories are for photograph consent and transmission, with only two colleges (15%) providing sufficient information. The lack of guidelines for clinical photography is concerning, given the rapid progression of smartphone use for this purpose and the associated privacy concerns.

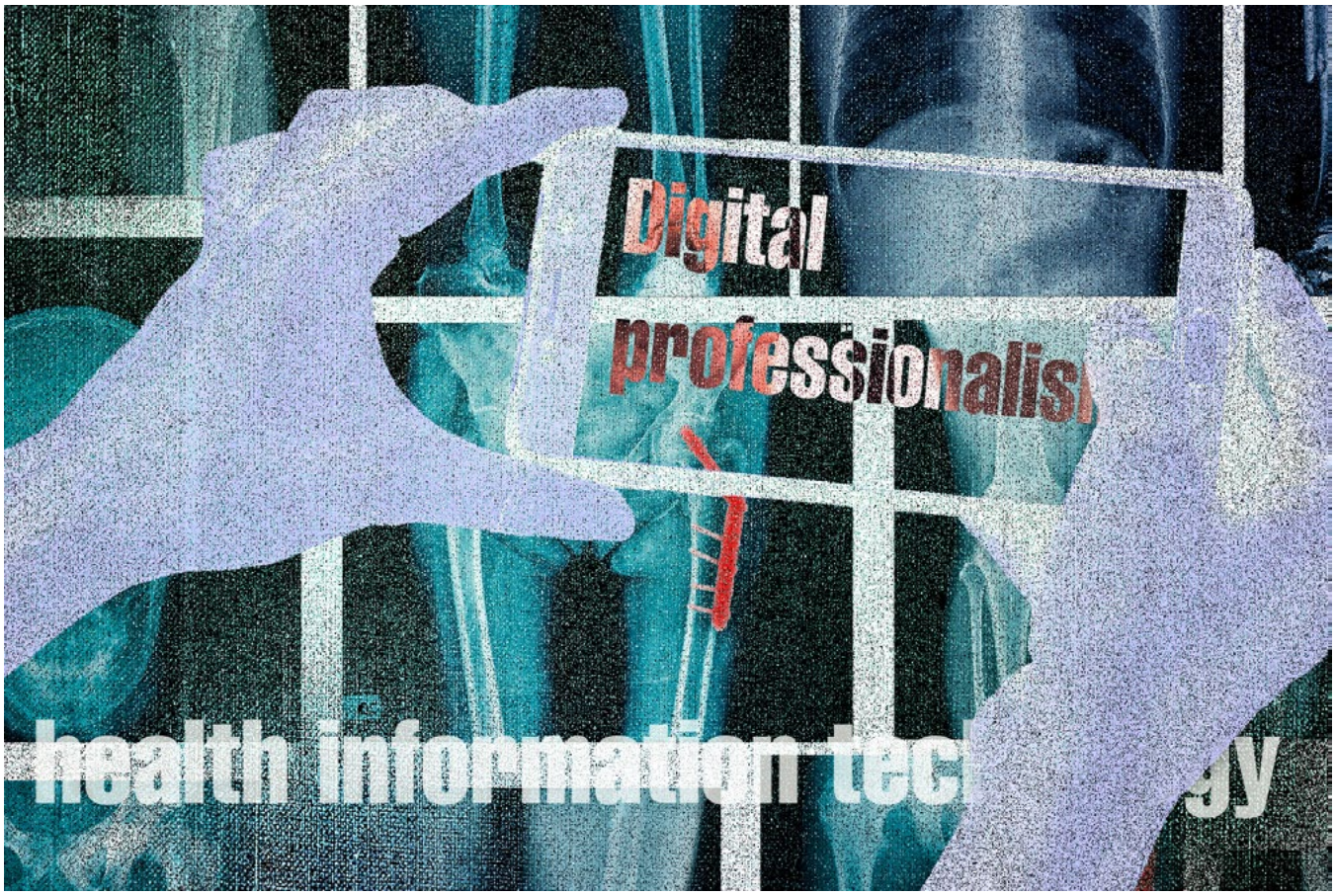
Clinical photography is essential to the practice of modern-day medicine, and technological advances in the form of smartphones have allowed improvements to patient care and physician education that are recognized by both physicians and patients.[7,21,23-26] To overcome the increased risk of patient security breach, physicians must familiarize themselves with existing guidelines. To do so, these guidelines need to be both comprehensive and readily accessible.

To address an unmet need, our taskforce developed summary statements on six issues. Informed consent should be obtained before taking clinical photographs. Transmission should be done using end-to-end encryption on Canadian servers only. Photographs should not be stored locally on the smartphone. Details regarding access of these photos should be tracked for audit purposes. Clinical photographs should be stored for a minimum of 10 years, as they form a part of the medical record. Loss of a strongly encrypted smartphone with no photos stored locally would not be considered a breach; therefore strict principles for transmission of storage are paramount to safe use of smartphone technology.

Because clinical photography is often used for communication between care providers, the success of implementing any sort of guideline will depend on the breadth and depth of engagement and alignment among physician leaders.

These guidelines reflect the current technological environment and aim to provide specific direction on how to securely practice clinical photography using a smartphone. They are the product of a multidisciplinary group discussion, allowing for input from the perspective of the surgeons, and a legal team.

The culture shift of medicine toward a more safe and secure, yet modern, way to communicate



with smartphones will take time. Barriers could include education of clinicians on safe storage of data in a telephone or in the cloud and the details of why all patient-related photos are part of the health care record. The varied technological literacy among doctors and the logistics and practicality of adhering to gold standard recommendations in clinical practice could make implementation difficult in some current medical ecosystems. However, we hope that the guidelines will be a reminder and a goal for improved digital professionalism.

Moving forward, it is imperative that physicians be aware of existing guidelines on the safe use of smartphones for clinical photography and work to follow this standard of quality and safety. A newly published comprehensive national guideline is available through the CMA[27] and should serve as a reference for the responsible use of clinical photography with a mobile device.

Among health care providers, physicians have significant influence in terms of leading future use of health information technology. Because clinical photography is often used for communication between care providers, the success of implementing any sort of guideline will depend on the breadth and depth of engagement and alignment among physician leaders. Moreover, this issue must involve ongoing discussion, and physicians must come together with a common purpose to ultimately improve patient outcomes and coordinate as an agency for change. Adherence to these guidelines by all physicians is imperative to maintain safe standards to protect health information technology in the future.

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Author attestation

The authors received no specific funding for this work. All authors declare that no competing interests exist.

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This article has been peer reviewed.

CSPL turns 20

We asked three of our earliest board members – Donald H. Atkinson, Orillia, Ontario; Chris Carruthers, Ottawa, Ontario; and Dennis A. Kendel, Saskatoon, Saskatchewan – to look back over the years and reflect on the CSPL and physician leadership.

What was your original reason for supporting the creation of the CSPL?

Don Atkinson: "I had recently started in a senior leadership role and recognized the need to develop my leadership skills and to connect with other physician leaders. There were few educational opportunities in Canada at that time, and I had already completed the five available Physician Leadership Institute courses. Creating a national organization with the goal of providing education and networking for physician leaders was an ideal opportunity."

Chris Carruthers: "The original idea was developed recognizing the need for such an organization in Canada, as physicians in management was just starting. I had taken on administrative roles at the Civic Hospital and also was quite familiar with the American organization [American College of Physician Executives, ACPE]. I recognized the need for a Canadian society and wrote to the CMA to propose a Canadian Society of Physician Executives (now CSPL). Simultaneously, but unknown to me, Dennis Kendel had similar thoughts and also wrote the CMA at the same time."

Dennis Kendel: "As registrar of the College of Physicians & Surgeons of Saskatchewan, I felt ill-equipped to deal with some of the leadership challenges inherent in that role. I enrolled in the educational programs then offered by the ACPE and found that experience very helpful. "That prompted me to wonder why we didn't have something like the ACPE in Canada. I spoke with Joe Chouinard at the CMA who told me that Chris Carruthers, an Ottawa-based orthopedic surgeon who had participated in ACPE offerings, was asking the same question. Joe got me connected with Chris."

How have your views on physician leadership changed in the past 20 years?

Don Atkinson: "Leadership is an ongoing process of learning, adapting, and changing to meet the particular needs of the day. It is very much a journey and not just a destination. With the complexity of health care, we need leaders with a variety of skills and styles."

Chris Carruthers: "Physician leadership has been enhanced, recognized, and significantly advanced over the years. There is better recognition of the need for MD leaders by those overseeing responsibility for health systems. Some provinces are further ahead than others. Those who understand and know health systems need to be in roles to manage and oversee system change, and these are physicians. Improved formal education has been key, and the CSPL has played a major part in these developments. Networking, a key component of leadership, has been spearheaded by the CSPL. Our annual meeting has been a huge success. Many hospitals have physician CEOs, and this is a direct outcome of the recognition of boards selecting leaders who have credibility and health system knowledge."

Dennis Kendel: "Over the past 20 years, through my service on the Board of Directors of the Health Quality Council (HQC) in Saskatchewan, I had opportunities to study and visit high-performing health care systems outside Canada. I gained an appreciation that such systems engage physicians in a wide range of leadership roles – a practice not common in Canada.

"Through a variety of channels, I then became an advocate for creating such physician leadership positions in Canada and helping physicians access the skill development they need to succeed in these roles. That skill development includes mentoring, and I have served as a mentor to a significant number of colleagues.

"I also came to appreciate that many physician colleagues who have the skills to be effective heath system leaders are very reluctant to give up the amount of time in clinical medicine that is necessary to effectively serve in these roles.

"Physicians who take on major system leadership roles without reducing their clinical workload are prone to burn out and also do poorly as system leaders. Their poor performance damages the view of others about the capacity of physicians to do this work and do it well. So, I strongly caution colleagues against taking on such roles as an add-on to an already excessive clinical workload. And, I have played a key role in convincing some physicians to 'take the leap' into an 80/20 split between non-clinical leadership and clinical work. For most physicians who do this, it turns out to be a healthy balance between non-clinical and clinical work."

How has the CSPL had an effect on physician leadership in the past 20 years?

Don Atkinson: "At the annual conference, it is clear that more physicians are interested in leadership development. What hasn't changed is that they are often struggling with common problems that existed 20 years ago as well as today.

"There is a greater awareness of the need to expand their skills, i.e., increase the number of tools in their 'tool box.' CSPL has opened the door for physicians to a multitude of leadership opportunities available today. The CSPL has provided common ground for physician education where they can learn new skills and be supported by their colleagues."

Chris Carruthers: "CSPL has had a significant influence on leadership development and championing its importance. CSPL has been the prime Canadian champion of physician leadership, particularly encouraging the CMA (Joule) and provincial organizations to invest in leadership training and development. CSPL executive leaders have championed physician leadership very successfully. As CSPL leaders, they have been listened to and heard across Canada.

"CSPL would not be the significant player it is today without the efforts and leadership of Carol Rochefort, its first and only executive director."

Dennis Kendel: "In my opinion, the CSPL has been the key 'game changer' in the advancement of physician leadership in Canada. Its collaboration with the CMA in offering high-quality educational programing has opened learning opportunities for physicians across Canada. Its publications help keep physician leaders informed about evolving trends and new opportunities. The networking development that occurs at the annual CSPL conferences is priceless."

How would you describe physician leadership in Canada today? Tipping point?

Don Atkinson: "There are more physicians involved in leadership today; however, it is still not at the tipping point where it is routinely accepted. There is a need for more physician involvement at the strategic planning phase of health care. Too often physicians are asked to participate in the implementation of decisions that have already been made by others."

Chris Carruthers: "Physician leadership is much improved and advanced compared with the past. A concern to me is that competent and experienced physicians are more reluctant today to step up to leadership positons for different reasons than in the past. In the past it was seen as going to the 'dark side.' There was also an economic loss.

"Today, with leaders in many organizations under attack (e.g., universities) and greater scrutiny, physicians are reluctant to take on these roles and the associated risks to their careers or their reputation. They don't see this as an advancement for their careers. As such, potentially strong leaders will not step forward. The gender distribution, with more women in the profession, brings new challenges for developing and encouraging leaders. There is a worry of disengagement by the younger physicians. Potential physician leaders need to be engaged and mentored early to take on leadership roles and the benefits explained. Significant changes are needed in our health system and they will not occur without physician leadership.

"Mental health problems and burn out within the profession are more prevalent, directly impacting leadership and this will need to be addressed."

Dennis Kendel: "Across Canada I see physician leadership as much stronger than it was 20 years ago, still growing but – sadly – still uneven.

"I see physician leadership much stronger in those provinces/territories where the profession has moved past its historical fixation on being 'independent from the system' and has embraced a culture that sees physicians as key players and partners with others in the system.
Some provincial and territorial medical associations have been more successful than others in helping our profession make that cultural transition. I would suggest that the association in Saskatchewan, Alberta, and British Columbia have been the most successful in this regard.

"As I live and work in Saskatchewan, I can speak most confidently about the changes that have occurred in this province. The Saskatchewan Medical Association (SMA) has been remarkably successful in radically changing its working relationship with government from a rabidly adversarial one back in 1979–80 (when I was the SMA president) to a responsibly collaborative one. That has yielded huge dividends in the transition to more active physician leadership in the health care system in this province.

"In 2016, I was privileged to be appointed by the Government of Saskatchewan to a three-member panel tasked with making recommendations for restructuring our health care system. In that capacity I made a concerted effort to educate my fellow panelists on the investment made by the SMA in supporting such a large cadre of MDs to complete the PLI programs that are foundational to obtaining the Canadian Certified Physician Executive (CCPE) credential. I explained that we had a significant cohort of physicians now well prepared to step into new senor leadership roles in our system, and we needed to create the framework for that to occur.

"My fellow panelists accepted my arguments/proposals, we collectively advanced them to the government, and they were accepted. The breadth and depth of physician engagement in key leadership roles in the new Saskatchewan Health Authority (SHA) is a true 'tipping point' in Canada.

"It simply would not have been possible for me to be successful in advancing these arguments

for much-expanded physician leadership in our new health authority without the leadership capacity-building of the CSPL.

"I recommend that you interview Dr. Susan Shaw (our new chief medical officer) and some of the other recently appointed physician leaders in the SHA to get a better sense of the transformation that is occurring with respect to physician leadership in Saskatchewan.

"I do think the SHA is a 'learning laboratory' for physician leadership. What is happening in Saskatchewan can be replicated across Canada if the CSPL makes an effort to study it and learn from it."

What will the CSPL look like in the future?

Don Atkinson: "Skilled physician leaders will result in a better health care system. CSPL will be seen as independent of political influence, unlike other physician organizations, and the best way to connect with other leaders to resolve challenges facing physicians today. The CSPL will have an important function in advocating for the role of physicians in leading health care reform. It will be a support to active physician leaders and a resource to the future of health care. I believe that there will be more opportunities for physicians to develop mentorship links through the CSPL.

"The focus of CSPL in the early years was to develop a high-quality national leadership conference. In future, I hope that physicians will be able to connect on a regional basis as well. This will provide opportunities to tackle the challenges that are unique to their regional jurisdiction.

"Physician leaders, with their front-line experience, will have the skills and the ability to improve the health care of all Canadians."

Chris Carruthers: "In the future it will still have a strong role in promoting and supporting physician leaders. It will be done with more collaboration among several different health organizations and system governing boards. We will need to partner with many other stakeholders in improving the health system through leadership. We can't do it alone. New leadership challenges will need to be addressed. There are significant opportunities. Failure to address the physician leadership need will significantly impede the sustainability of the Canadian health system.

"Carol will still be the executive director."

Dennis Kendel: "I think the future for the CSPL looks very bright if it continues to be a strong builder of physician leadership capacity across Canada and an effective facilitator of physician transition into major non-clinical leadership roles in the system.

"I think the CSPL needs to focus at both ends of the medical career spectrum. It needs to work with our medical schools to offer leadership development opportunities to our medical students and residents. It also needs to harness and leverage the trust and social capital that is vested in physician leaders at the end of their careers.

"In December 2017, I resigned from the Board of Directors of the Health Quality Council, a position I held since the council was created in 2002. For the first time in my life I do not hold any official title or affiliation that designates me as a leader. However, I don't think a week goes by that I am not asked unofficially for my opinion or advice on things that are happening in the health care system in Saskatchewan. I offer my opinions and advice freely and am often gratified to see good things happening to which I made some small contribution.

"I'm sure there are lots of colleagues across the country who are either doing or could be doing the same thing. I think the CSPL needs to market and support the concept that leadership is not always synonymous with a fancy title. If colleagues have led with integrity when they "held office," they still have much to contribute when they 'leave office.' We should help them to see that reality."

Authors

Donald H. Atkinson, MD, Chris Carruthers, MD, and Dennis A. Kendel, MD, are founding members of the CSPL and also recipients of the CSPL award for Excellence in Medical Leadership (https://tinyurl.com/y8b9qhvt).

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A PERSONAL JOURNEY

What can happen when we leave our comfort zone?

Fernando Mejia, MD

Editor's note: This story exemplifies several capabilities of the Lead self, Engage others, and Achieve results domains of the LEADS framework as well as disruptive innovation on a personal level.

Everyone has a comfort zone, a mental or physical state (or in some cases a combination) where we feel 100% in control. We usually create a comfort zone unconsciously by developing certain habits and skills that allow us to know exactly what needs to be done to obtain a desired outcome.

Although there is nothing wrong with living in a comfort zone, have you asked yourself what could happen if you left it? It's worthwhile to purposely challenge ourselves and explore beyond the boundaries of our comfort zone, as we might face experiences that can broaden our viewpoint, understanding, or meaning of certain things in life.

Taking that first step

Thirteen years ago, I left my comfort zone. After almost a decade in a rewarding general practice in Colombia, where I graduated from medical school, I decided to emigrate to Canada. My goal was to have a completely different life experience, and what could be better than going to a new country where even the language was going to be a challenge?

I remember arriving in Calgary in the middle of winter with my wife and five-year-old daughter. We chose Calgary because some friends told us that it was booming at that time, and there were lots of opportunities for newcomers. They said Alberta was a province so rich that the government was sharing the surplus, sending cheques to people. My friends set my expectations so high that I did not think twice about it. Now, I realize how important that was, as having high expectations was the main reason to move on when I had to start from scratch.

Fortunately, what they said turned out to be true and, just a week after arriving, I was working! As a matter of fact, I had two jobs! As a doctor, you may ask? Well, not even close: I was hired full-time at a retail store (working in shipping and delivery) and part-time at a convenience store (whose manager was a foreign doctor too). To be honest, those were not the kind of jobs I was expecting to have, but I needed to support my family, and I could not work on anything related to health care as I did not have a licence or adequate English communication skills. Although I did not know it at the time, the road back to my medical career was a long one.

The long road

Time went by and, after many English courses and job experiences, I started to improve my language skills – still a work in progress. My continued search for something better allowed me to find a job with a group of ophthalmologists, working as an ophthalmic technician, the person in charge of making a visual assessment of patients before they saw a specialist.

In that office, all the technicians were international medical graduates (IMGs); one of them an ophthalmologist. That was where I learned about the Canadian medical licensure process and how difficult it was to obtain a medical licence. Although the income was not the best, I decided to take advantage of the new opportunities offered by this job, such as interacting with

the medical staff and patients, performing visual exams, creating medical notes, and improving my communication skills in a professional environment.

As some of my co-workers were active in the licensure process, I asked for some guidance and opted to start my application process with the resolution that I would persist until I obtained a medical licence. I worked during the day and spent evenings at the public library preparing for the Medical Council of Canada (MCC) examinations. After three years of failing these exams multiple times and spending a significant amount of borrowed money, I passed and went on to apply to a medical residency program through the Canadian Resident Matching Service (CaRMS).

Although passing the MCC exams was challenging, the hardest part of the process was getting matched through CaRMS, because the number of spots available to IMGs is small, it is very competitive, and every province has its own restrictions and conditions.

Tough decisions

As my line of credit reached its limit, I realized I had to find a better job. I took advantage of my previous work experience in the pharmaceutical industry and found a full-time job as marketing coordinator in a multinational health insurance company. Although this increased my income, the downside was that I was going to be out of the health

Although passing the MCC exams was challenging, the hardest part of the process was getting matched through CaRMS, because the number of spots available to IMGs is small, it is very competitive, and every province has its own restrictions and conditions.

care field. It was a tough decision to make, but the well-being of my family was more important than my personal goal. I was not going to quit, but somehow I had to find a way to work during the day and continue studying and volunteering in the evening, to work with local doctors, and to stay close to medical practice.

After a few years working in that insurance company, I received approval to work more hours a day, so that I could have one day off each week to dedicate to "observerships," one of which was in a supervised clinical practice that also allowed me to obtain letters of reference, a crucial component of the CaRMS application.

I applied for residency through CaRMS consistently for four years with no result, not even an interview! Every year, I struggled to fulfill the requirements and pay the application fees. I would be lying if I said I didn't consider quitting. I was very fortunate to have my wife's support every time I failed, and, after dealing with frustration, I always tried one more time. Although this was difficult, I had put so much effort, time, and money into the process that I could not give up.

Waiting game

Finally in 2015, after five years applying through CaRMS, I got an interview, which I prepared for with all my heart and soul, knowing this was an all-or-nothing day. I spent hours visualizing myself doing a great interview, responding appropriately to any type of question, and obtaining the desired outcome. When I finished that interview, I had that inner satisfaction of knowing that I truly did my best, but the competition was tough because there were other candidates with better backgrounds and experience than mine.

I patiently waited two months for the CaRMS matching process, and asked my wife to be with me when the results were announced. My daughter, who was always aware of my challenging journey, wanted to be there too. At 10 a.m. on match day, the three of us got together in front of the computer, holding hands. With mixed feelings of excitement and fear, I clicked on the CaRMS link to find that I had matched with the Public Health and Preventive Medicine program at the University of Calgary.

It was one of the happiest days of my life, as I reached my goal after eight years of pure persistence from writing my first MCC exam until getting matched. I still remember my daughter shouting, "Dad, we made it!" Feeling that

happiness was enough to make up for all eight years of struggles.

Take the first step on your journey

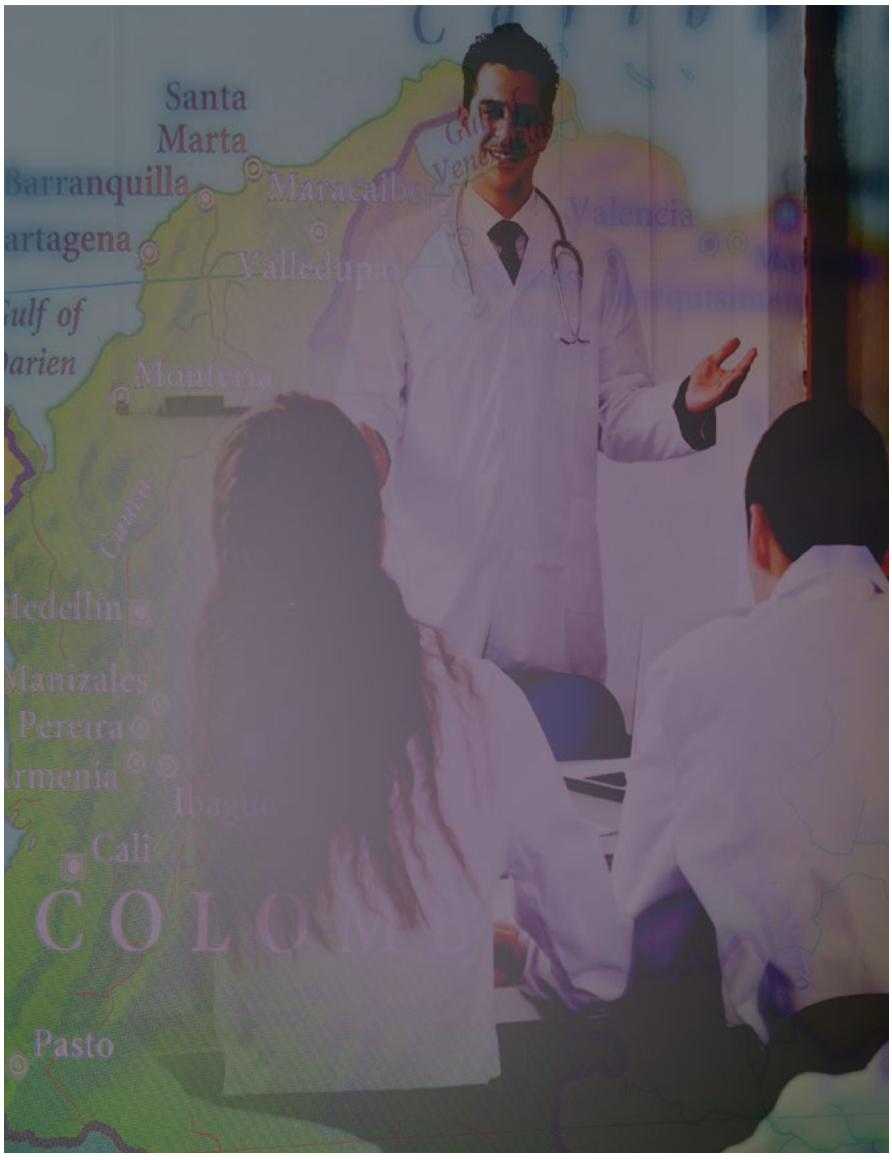
In the three years since then, despite many obstacles and challenges, I have been able to move forward enjoying every moment of my residency training. I have learned so much from many people including preceptors, teachers, fellow residents, and patients. I have realized that the most important thing is not to reach the goal; what really matters is the person you become during the journey.

I wanted to share my story to encourage you to get out of your comfort zone. I challenge you to leave your fears aside and embark on the adventure of your life. Whether this is starting a new venture, moving to another place to start a new life, or taking that trip you have delayed for years, I want you to make the decision and take the first step now!

Think about this: If not now, when? If not you, who? Once you take that first step, your life will never be same!

These five tips might help you to start your journey.

- Define exactly what you want to achieve and why.
- Identify small steps that will take you toward that goal.
- Start to implement those steps now (not tomorrow) and track your progress regularly.
- Be grateful for whatever you have now.
- Last, but not least, make the decision to be happy now (not tomorrow when you achieve the goal).



Acknowledgements

This is dedicated to my wife, Maria, to my daughter, Marianna, and to the IMGs who made the decision to leave their comfort zone and pursue a better future in this wonderful country.

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A version of this article was originally published in the November-December 2017 issue of Alberta Doctors' Digest, the flagship publication of the Alberta Medical Association.

2018 Canadian Certified Physician Executives

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Dr. Erik Swartz
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Vancouver, BC

2018 CSPL Excellence in Medical Leadership Award

(Chris Carruthers Award)

The CSPL presents this award annually to a physician who has made an outstanding contribution to the development and mentorship of medical leaders in the field of health services leadership and management.

Dr. Gillian Kernaghan

Dr. Kernaghan was appointed the President and Chief Executive Officer of St. Joseph's Health Care London in 2010. St. Joseph's is a multi-sited academic health care organization serving London and the region.

Dr. Kernaghan's passion for integrated patient care, leadership and performance excellence has inspired the organization to focus on the vision to "earn complete confidence in the care we provide."

Prior to assuming this role, she served for 17 years as the Vice President, Medical for various hospitals in London and led the medical staff during complex restructuring in which four hospitals merged to form St. Joseph's Health Care. Through this restructuring and various program transfers between organizations, the roles of the London hospitals dramatically changed.

In 1984, Gillian joined the medical staff of St. Joseph's, Parkwood Hospital and London Health Sciences Centre as a family physician. She completed her residency at St. Joseph's Hospital in 1984 upon graduation from University of Western Ontario and was awarded her Fellowship in 2000. She is an Associate Professor in the Schulich School of Medicine and Dentistry at Western University.

Gillian currently serves on the Ontario Hospital Association Board, the Council of Academic Hospitals of Ontario, is the Vice Chair of the Catholic Health Association of Ontario Board, and is Co-Chair of the CHLNet. She served as President of the Canadian Society of Physician Executives for 2010-2012. She is a past Board Member of Canadian Resident Matching Service and the Canadian Medical Hall of Fame. She has served on numerous regional, provincial and national committees.

She is a frequent speaker at conferences, a certified trainer in Crucial Conversations, Crucial Accountability and Influencer leadership courses and a faculty member of the Physician Leadership Institute.

She has been married for 37 years and is the proud mother of three sons, three daughters-in-law and one little grandson.

Gillian's commitment to enhancing our roles as physician leaders has lasted through her long and distinguished career. In London, for example, she conceived the Talent Management Program for clinical academics which remains to this day, to many other organizations, a model to which they aspire. The program starts with the hiring of a new clinical academic and lasts for his/her career. At every stage it strives to develop the physician's leadership capacity and offers resources and support to ensure optimal development of his/her skills. This remarkable concept has translated into Gillian's success as a much requested speaker on talent management, including her being in constant demand to present Physician Leadership Institute courses on this and related leadership topics. She can reasonably be seen as the pioneer of comprehensive talent management for physicians in Canada.

Finally, this review of Gillian's roles would not be complete if it did not mention her huge contributions to the CSPL. As we have grown from a small organization to the leading national physician leader society, Gillian has been a major builder of our Society. In her roles on the Board and eventually as CSPL President, she has immeasurably helped us build our influence and our membership. She is one of a very small group of Canadian physicians that has worked tirelessly to make the CSPL what it is and one only has to attend a CCPL conference to understand the excellence of the content and the enormous effect educating and supporting so many physicians in their leadership roles can have on our health system. We are a major force for health care progress and Gillian is one of the great builders of that success.

In summary, Gillian has demonstrated her absolute commitment to enhancing our leadership as physicians, has provided, regionally, provincially and nationally, great leadership of our health care system and has helped create the CSPL's success as the national physician leader organization.

C Robin Walker, MB, ChB, FRCPC, FAAP, CCPE
Integrated Vice President Medical Affairs & Medical Education, St Joseph's Health Care London & London Health Sciences Centre

STORIES FROM OUR CCPES

Dr. Annette Epp: gynecologist, mother, volunteer

by Christine Spetz

Editor's note: We asked CCPL members who have qualified as Canadian Certified Physician Leaders to tell us something about their "path" to leadership: what inspired them, how they succeeded, what they've learned. We hope their thoughts help you in your similar journey.

"It's been very fulfilling," says Dr. Annette Epp of her nearly 23-year career as a pelvic floor surgeon and physician specializing in obstetrics, gynecology, and urogynecology.

"I've had many moments of exhilaration, a few moments of terror, and some moments of extreme despair. I think that's a pretty typical physician story," she says, recalling a surgery in her residency when her surgical mentor, Dr. Stan Valnicek – who she proudly says is now in his 80s and still doing surgical assists – gave her the best advice of her career.

"We were in the operating room one night with a difficult case; I was very worried the patient would not survive. My mentor put down all the instruments, and he looked at me and said, 'We're done here. Perfection is the enemy of good.' What he taught me is that you have to know your limits. I don't think I've ever forgotten that," she says, adding that the patient survived without any complications.

"She was perfectly fine, but that's the voice of experience," she says, explaining that her interest in obstetrics snuck up on her in an unexpected way.

"I was interested in many parts of medicine and wasn't really sure what I wanted to do. My very first night as a JURSI (student doctor) I was on call and delivered a breech baby by myself. At the time, I had no idea how potentially dangerous that could be, but it was exhilarating and I was hooked," she recalls.

Her interest in urogynecology, a subspecialty of gynecology that manages pelvic floor disorders affecting the bladder, reproductive organs, and bowels, quickly followed.

"Through my residency training and exposure to really good surgical mentors, I saw that urogynecology was an area that was very underserviced. These disorders are so distressing for

women and their self-esteem. It's a hidden problem – women don't talk about it, but they live with it," she says. "It's a patient population I really enjoy working with because the patients are extremely grateful for any help you can give them."

When it came time to do her 1-year fellowship in urogynecology in Calgary, she took her baby daughter with her, so that her husband could continue farming full time in Saskatchewan. She returned to Saskatoon periodically throughout her fellowship to visit her husband and family and perform surgical assists to supplement the grant money she had received.

After her fellowship, she moved back to Saskatoon and has been with the same practice downtown for over two decades. When not at her downtown clinic, where she sees approximately 90–100 patients a week, she performs surgeries at Saskatoon City Hospital and outpatient procedures at City Hospital's Women's Health Centre. She is also the clinical head of gynecology for Saskatoon Health Region, medical director of the region's Pelvic Floor Pathway, and a clinical associate professor at the University of Saskatchewan.

The best part of her day, she says, is the diversity of people she sees. "I really enjoy interacting with people – I find people's journeys through life fascinating. And now that I do administration, I interact with people who are trying to make the system better," she says of her role as clinical head of gynecology for the region.

"Gaining an appreciation for the big picture perspective has been really interesting for me. What I've come to understand and respect about our administrative leaders is that they have a lot of integrity. They bring a lot of intelligence to the table. I love being able to make things better and thinking about how we can improve care, improve quality, and monitor and evaluate our progress."

Two and a half years ago, shortly after taking on her role as clinical head in 2014, she retired from obstetrics.

"It's a huge privilege delivering babies, and I do miss that," she says "but I realized that I was spread too thin. I had taken on the administrative role, and my passion is urogynecology. I didn't want to practise obstetrics in a marginal way." Even so, when she left obstetrics, she says she felt guilty for a long time.

"And so, I decided that if I'm not staying up all night delivering babies, I better do something else. I started volunteering with the SWITCH clinic. It's an inner-city clinic where I provide gynecology services to a vulnerable, underserviced population. I heard about it from residents, and I thought, if young doctors can do this, surely I can too," she says, adding that she has set up an emergency colposcopy service at her clinic that allows patients of SWITCH to receive treatment at her clinic on a walk-in basis.

"It's been unbelievably successful," she says. "I would say 90% of the women I've seen have needed treatment, and 100% of them have shown up for their surgeries. These women are the most vulnerable group of our population. They're the patients who typically die of cancer of the cervix, and even preventing one death makes a huge difference."

Although SWITCH may be Dr. Epp's most recent foray into volunteerism, it's certainly not her first. For the past 20 years, she has flown to La Loche to deliver an average of four 1-day clinics a year to women who might otherwise not have the opportunity to get gynecologic care. She also canvasses for the Cancer Society.

"I'm always the last person to get out there and return my stuff," she says laughing, "but I do canvass. I think it's really important to participate, however you can, in promoting positive change. I've been taught to lead by example."

Dr. Epp has a lot to be proud of in her career, but she's most proud of what her success is teaching her daughters, ages 20 and 24.

"I'm most proud that I've been able to show my daughters that you can be a woman in medicine, you can accomplish what you think you need to, but you can also be a mom and a human being. You can make mistakes, try again, forgive yourself, not be perfect, and that's okay. It's okay to achieve excellence but not perfection," she says, adding that when it comes to life lessons, her daughters are her teachers.

"They taught me the most about life and how to interact with people, appreciate people, and care for people," she says fondly.

"They have taught me that it's really important to be a listener and to not make assumptions about why people are doing or not doing something – to ask them."

Dr. Epp says it's important for everyone – physicians included – to have fun and nurture a life beyond their careers.

"In the summer, my husband and I and our kids go to our cabin. We love to play – play means we're out on the water all the time. My husband and I love to entertain. We love food. We love to travel and explore new cultures. We're just interested in tasting life," she says excitedly, the hint of a mischievous glint in her eyes.

Author
Christine Spetz is a communications specialist with Saskatoon Health Region.

This article first appeared on the Saskatoon Health Region's web site, Our Stories, on 26 July 2016.

STORIES FROM OUR CCPES

Mentorship, interprofessional relations, and "hand-holding"

Sandip K. SenGupta, MD

Editor's note: We asked CCPL members who have qualified as Canadian Certified Physician Leaders to tell us something about their "path" to leadership: what inspired them, how they succeeded, what they've learned. We hope their thoughts help you in your similar journey.

I entered the world of physician leadership relatively early in my career, just because it seemed to be the right thing to do in terms of medical professionalism and serving one's specialty at the macro level. It also seemed like a natural progression of career roles for me, as I had been gaining experience as a hospital laboratory medical director for a few years.

Of course it helped tremendously that I had a charismatic and highly effective mentor during my early professional years. Dr. Paul Manley not only showed me how to lead through his own successful interactions with physicians at multiple levels in the labyrinth of hospital academia, but he also greatly influenced my decision to pursue extramural medical leadership opportunities in organized medicine. His passion for performance improvement and customer service remains firmly entrenched in my psyche even today. (I know that I am not the only one who benefited from this outstanding mentorship, as just this past year, Queen's Faculty of Health Sciences bestowed its highest honour on him: the Ron Wigle Mentorship Award.)

I love the interprofessional nature of medical leadership. I especially enjoy collaborating with physicians from outside my own specialty in the extramural domain, perhaps because of the wonderful cross-fertilization of ideas that occurs and the sense of rejuvenation I feel when I come home to tackle common problems in my hospital.

As I completed my terms of office in a number of positions at the provincial and national levels, I came to realize the breadth of opportunity and the diversity of pathways by which physicians can ascend into leadership positions, depending on their interests and passion. For me, it was a burning desire to demonstrate the value that laboratory physicians can create for their health care ecosystem. In thinking back, all that I was really doing was carrying out some of the CanMEDS roles before they became mainstream: professionalism, communication, collaboration, leadership, and health advocacy.

Physicians with leadership aspirations should articulate their "burning platform" and identify a "coalition of the willing" to help collectively move their ideas forward. Not everyone needs to lead, but the "silent majority" can usually be carefully nurtured over time to be on one's side. Although it really can be easier than "herding cats," be prepared to do a lot of "hand-holding" through any period of intense change in your organization. Expecting your colleagues to learn to "swim at the deep end" with a weight tied to their ankle (i.e., their usual job) won't work!

These days, my leadership interests have shifted toward a

strong desire to work with other leaders to transform our regional health care system, to move away from the patchwork quilt of services that we currently provide toward an integrated, efficient, effective, seamless delivery system that is truly patient-centred and based on principles of performance improvement.

For example, while campaigns such as Choosing Wisely have made their way onto the public stage, in our region, we have only rudimentary systems in place to monitor the appropriateness of diagnostic testing and even less in the way of clinical decision support tools to help physicians make those right choices. Physician leaders who can envision a future state where technologies such as "big data" analytics, artificial intelligence, and "neural networks" enable their colleagues to make smarter choices more consistently will be able to make significant progress in health system transformation.

Over the past year, my experience with major transformation of hospital laboratory services and the integration of a small urban community hospital with a medium-sized academic hospital (approximately 100 km away) was, ultimately, very rewarding. We achieved all our objectives, on time and under budget, while receiving kudos from physicians on the front line and administrators in the "C-suite."

We "simply" said what we would do (in our regional strategic and operating plans) and we did what we said we would do. But there were probably hundreds of (unpaid) hours spent behind the scenes – working with countless health care providers and back-office support staff, at both hospitals, with the help of a professional project support team.

Reminiscing about the hand-holding is perhaps my parting thought. It is so important for physician leaders to appreciate just how vulnerable our colleagues are when faced with major change in their routine practice. It is essential to address all the issues that front-line physicians encounter, no matter how trivial they might seem on the surface. Some of them may turn out to be essential in ensuring patient safety and preventing harm to the patients who we are trying so hard to help.

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Invitation to submit articles

CJPL is inviting stories related to the CSPL white paper

A little over a year ago the CSPL produced a blueprint for transforming Canada's health care system, entitled "Accepting our responsibility." It included 20 recommendations aimed at physicians, health care organizations, provinces and medical associations, and Canada as a whole. Have those recommendations had an impact?

Are you aware of conversations or actions related to one or more of the recommendations? As a physician leader, what action have you taken or are planning to engage physicians in transforming Canada's health care system? Would you take the time to tell us about it in a short "story" of 800 words or less? Don't be shy – we provide strong editorial support.

The full white paper can be found on our web site: **https://tinyurl.com/ht2ykoq**.

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BOOK REVIEW

Extreme Ownership: How US Navy Seals Lead and Win

Jocko Willink and Leif Babin
St. Martin's Press, 2015

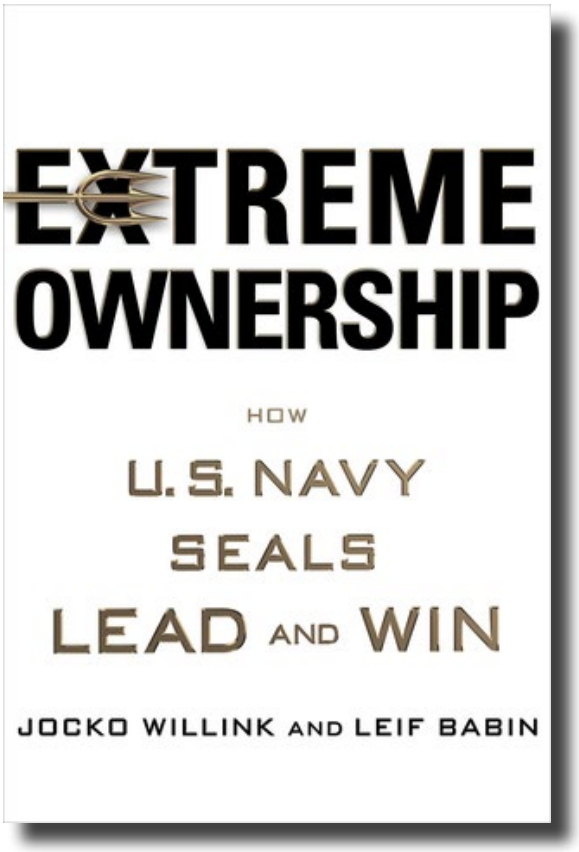
Reviewed by Laura Calhoun, MD, and Rowland Nichol, MD

Although I am not a fan of using war metaphors for health care operations, *Extreme Ownership* has some useful advice for leaders in our world of caring for others.

Jocko Willink and Leif Babin (even their names evoke images of Vikings and war) are Navy Seal officers who served together in Ar Ramadi, Iraq. They took the lessons they learned during their training and in the battlefield, reflected on them, and then created, evaluated, and incorporated a comprehensive paradigm into their personal approach to leadership and named it "extreme ownership."

An operational leader centred within concentric rings of activity and influence could visually represent this paradigm. The concentric circles contain elements relevant to the mission/leadership activity and are assumed to be within the leader's field of influence. Because a book has to be read linearly, the chapters necessarily detail parts of the concentric circles; however, the whole of the extreme ownership paradigm is more than the sum of the chapters.

Each chapter starts with a recounting of some part of the war, where a particular principle is used or should have been used. Each chapter also illustrates how the authors have since used the principle in the businesses with which they now work.



Although war is about fighting and winning, it also demands teamwork, communication, clear roles and responsibilities, and data analysis before, during, and after battle. The team must trust that everyone is working toward the same goal and that every team member has every one else's back. The leader must own the outcome, learn from it, communicate about it with the rest of the team and ensure understanding from each team member. There is volatility, uncertainty, ambiguity, and chaos in every battle and the executive leadership is nowhere to be found when the guns are blasting, even though they attempt to set everyone up for success and bear the ultimate responsibility for the outcomes. Except for the mission, then, much of the book's ideas generalize nicely to health care.

The book has three parts and each part has four principles. Part 1, "Winning the war within" shares stories and principles described as the foundational building blocks and mindset necessary to lead and win. The principles include

- "Extreme ownership"
- "No bad teams, only bad leaders"
- "Believe"
- "Check the ego"

This section is the most relevant for health care leaders, as it lays out the importance of leaders owning outcomes and holding themselves accountable. The authors make clear that they are talking about distributed leadership, where the leaders at each level align, communicate about who is accountable for what, and ensure everyone on their team has the same understanding of what success looks like.

Part 2, "The laws of combat," details four concepts that allow teams to be successful in battle. One principle, in particular, stood out for us as useful: the authors call it "decentralized command,"

meaning that each designated leader at whatever level has five or six people who report to them. That size of an ideal team echoes other relevant literature. For a leader to be successful, she cannot be responsible for more than a half dozen workers. This ratio of leaders to workers – called span of control – is not something we talk much about in medicine.

Part 3, "Sustaining victory," covers some of the more difficult aspects of leadership, such as the importance of leading up, not just down, understanding that you will never have all the information or know the exact right answer and making a decision anyway, and many of the paradoxes confronted by leaders every day. Leaders walk a fine line between being ready to lead, but also to follow when following will improve the chance of success. This section also describes the balance between knowing enough detail without micromanaging and having good relations with direct reports, but not favouring one over the other. The biggest seeming contradiction is owning the outcome, while distributing leadership and ownership throughout the organization.

A war mission is well defined and success is easily measured and understood; therefore, war is in the realm of the complicated, not the complex. In a complex social system, such as health care, there are innumerable "right ways" to define success that vary depending on your viewpoint, and herein lies the book's weakness.

Absent from the book is any discussion about the importance of communication and collaboration between and among leaders at each level so that the organization avoids the multiple silo effect.

The book deals exclusively with the hierarchical network, the command and control leadership style, and leaves out completely the flat networks that must exist at each level of leadership in any complex social system. There is no discussion of the quality improvement or innovation that are as necessary to health care as looking after patients, and that require work in horizontal networks as well as hierarchical ones. As well, there is no comparison between "citizen-centred" health care and "citizen avoidance" needed in war.

Despite the knowledge that health care is a complex social system, we often rely on command and control leadership. We seem to like our hierarchies and silos just fine. Some of the leadership principles in *Extreme Ownership* resonate with the way we currently do things. If every leader at every level of health care took ownership of the success or failure of predetermined metrics, I suspect we would learn a lot more from our mistakes.

Authors

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BOOK REVIEW

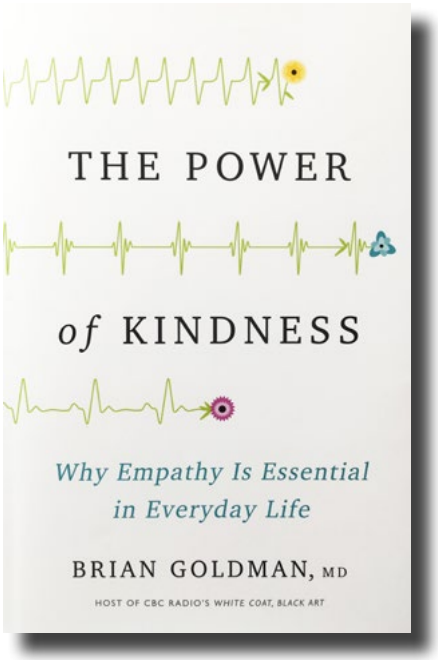
The Power of Kindness: Why Empathy is Essential in Everyday Life

Dr. Brian Goldman
Harper Collins, 2018

Reviewed by J. Van Aerde

These days, it seems that many people behave as if they were incapable of imagining what it is like to be in another person's shoes. We are too busy to be empathic, too stressed to be kind, and, as a result, empathy is declining in our society. Empathy is seeing things from the other person's point of view and using that perspective to guide our behaviour. In *The Power of Kindness*, through science and narratives, Brian Goldman searches for the origin and meaning of kindness and, in the process, discovers that the answer lies within each of us.

After investigating the neurophysiology and psychology of empathy and its development, Goldman traveled the world and collected narratives of people exploring different aspects of empathy. In doing so, he unraveled the importance of kindness in human relationships. Because Goldman is an ER physician, the lay press have often reviewed his book from



the perspective of the physician–patient relationship. However, this book is about much more than health care. It is about you and me. It is about us.

The capability to be kind is hard-wired into our brain, mainly in the cingular and insular cortex and in the circuits of the mirror neurons. Empathy also has a developmental component in which role-modeling plays an important part. Once structure and development are in place, it is in the executive part of our brain that we choose to exhibit kindness. Empathy cannot be taught, as it is experiential; one can only teach what empathy is and why it is important.

As I reflected on the technical chapters, I wondered whether empathy is necessary if one does the right thing, without feeling or caring. Perhaps that happens when numbness develops after repeated exposures to others' pain or suffering. If so, does this empathy fatigue trigger disengagement and burnout, or is it burnout that causes empathy numbness? Can burnout be influenced by kindness, for both receiver and giver?

To explore different expressions of empathy, Goldman recounts stories: about the successful donut shop owner in Ontario who employs people with disabilities as a priority, the bar owners in New York who created safe spaces for 9/11 responders, the Brazilian woman who found a soulmate in a homeless poet, and the caregivers of elderly people with advanced Alzheimer's who were able to connect through empathy despite severe limitations.

Although each chapter made me reflect on how Goldman's findings could relate to our health system or to leadership, the ones that stood out for me were about connecting with people who suffer from end-stage dementia, empathy robotics, and the consequence of unexpected kindness.

People with dementia become less agitated and stop repeating themselves when we validate their feelings by meeting them where *they* are rather than pulling them back to where *we* are and reason them back into the here-and-now. The story shows us how important it is to be in the moment with the feelings of others and how centring can help this happen: slow down your pace, relax your body, and clear your mind. Only by centring can one listen deeply, feel what others feel, and understand the meaning of their words.

Most work on empathy robotics is being done in Japan. That's where Goldman met ERICA, a female robot who looked human and acted like one. She had a sense of self, of the humans around her, and of the social scenario in which she is operating – all building blocks of empathy. At one point, she even said to Goldman, "It is important to have feelings so I can communicate with other people. Even if they are programmed, if I think they are real, they are real." When I read this, I wondered whether that is any different from humans, as our thinking influences our perception, just as it did for ERICA. In the future, will we rely on empathy robots to find kindness and manage our loneliness?

The most captivating chapter might be the one that describes professor Grit Hein's research. Her studies show that when people you expect to be unkind to you actually behave kindly, your brain is (re)programmed to like them. In other words, if you want to blow others away, show kindness to someone who least expects it from you.

It made me wonder what would happen if, as an unexpected act of kindness, we eliminated real and perceived power imbalances in hospitals and our health care system? What would that do to our relationships and conversations with our multidisciplinary teams, with patients and families, with government representatives? What if "team-talk" was no longer lip service and we added kindness to the arsenal of tools to improve "joy in work"?[1,2]

As for any values, practising empathy takes effort and energy,

and choosing to show kindness is a constant battle between our good and our less likable sides. If you want to connect with others, the first person you have to connect with is you. Be present, be in the moment, and listen deeply.

Being present can be intoxicating as it triggers curiosity about what is and what might be possible. Have courage, because you have to face your own fears as you let go of your mental models and judgement. Only after de-cluttering your mind can you be truly curious and wonder how the other person is feeling, what might be happening in their life, and what might be bothering them.

We are a caring profession, but how do we translate caring into kindness? As physician leaders, how do we (re)introduce kindness into our health care system? This book – a must-read for all of us – helps us find answers.

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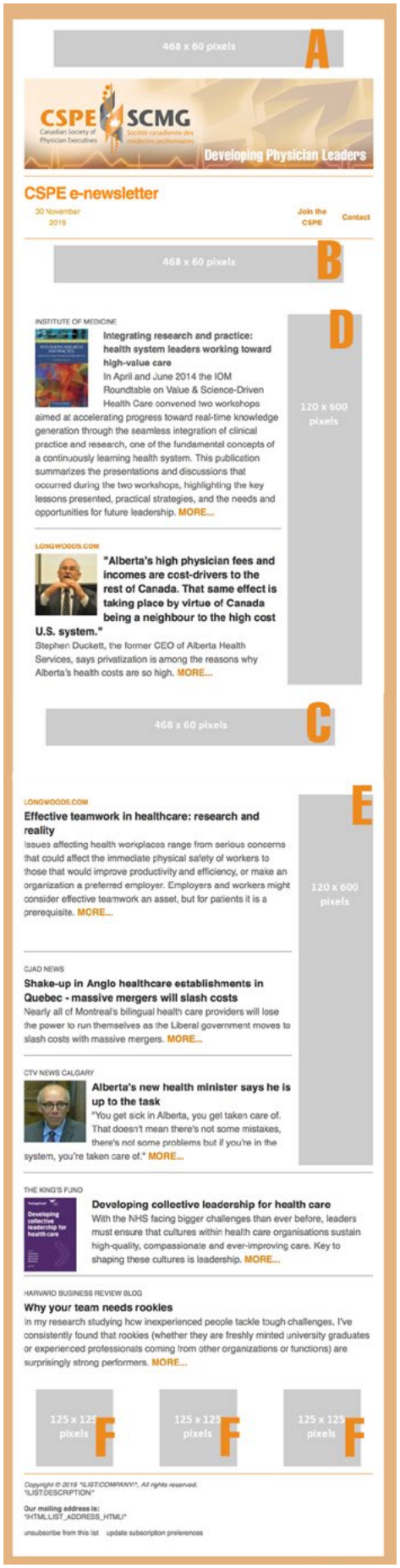

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