

Healthcare Quarterly

LEADERSHIP PERSPECTIVE

The Puck Stops Here:

Taking Organizational Accountability Seriously

p. 20



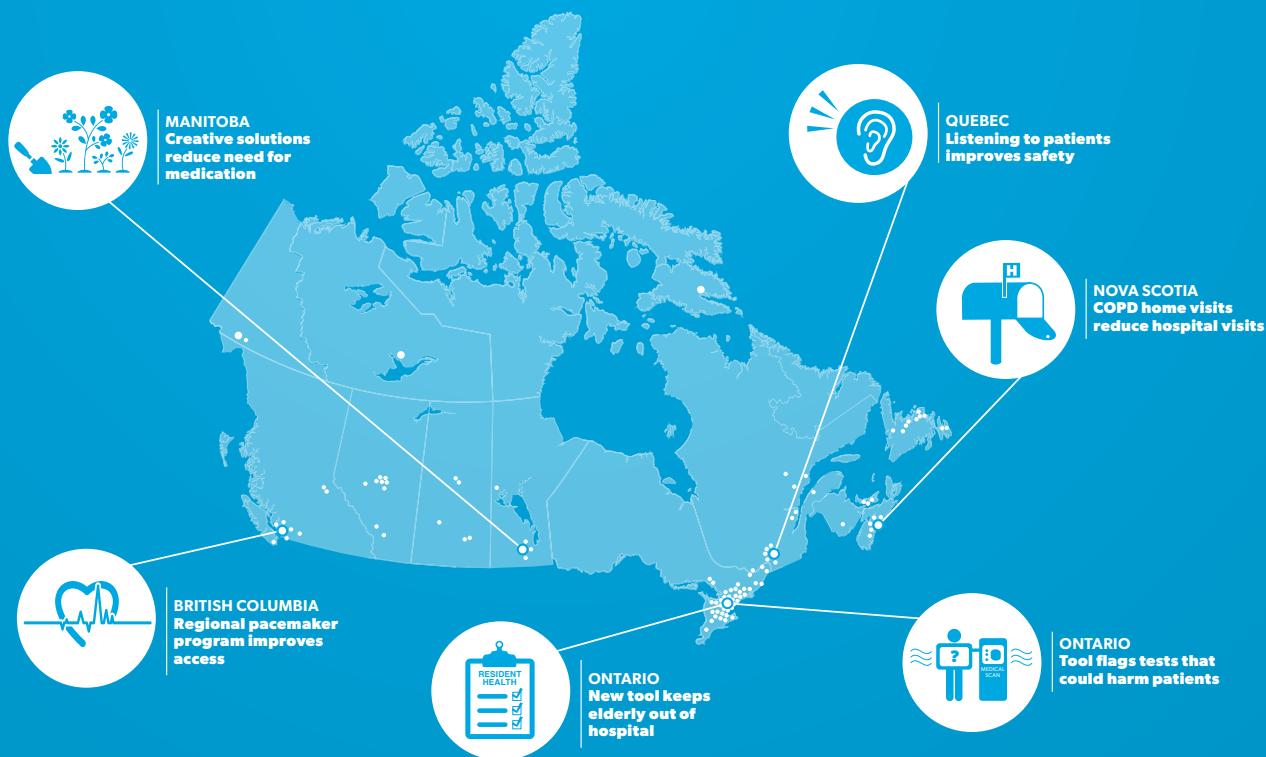
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“Capable leadership is a fundamental asset for the development of health systems ... The need for leaders has never been as critical as it is now.”

Those are the conclusions of one of Canada’s premier health-system leaders, Ray Racette, the CEO of the Canadian College of Health Leaders. In his wide-ranging conversation with Ken Tremblay presented in this issue, Racette has much to say about the connection between leadership skills – for example, being transparent in decision-making and growing an “environment of collaboration and cooperation” – and the future success of the country’s complex health systems.

Leadership Perspective

Racette’s insights and advice aptly preface the five articles that comprise the first section of this issue of *Healthcare Quarterly*. We start with Stephen Pinney and Anita Ho’s advocacy of greater accountability among healthcare leaders. Taking inspiration from recent reforms to the UK’s National Health Service, Pinney and Ho argue for – and offer four strategies for achieving – a “fundamental change in the ultimate responsibility for patient outcomes and system efficiency in Canada”; such responsibility would lie directly with health administrators.

What role can hospital leaders play in population health? That’s the central question Ross Graham and Ryan Meili set about to answer in their scrutiny of potential interventions an “upstream hospital leader” could take at the personal, organizational and system levels to address the “root causes” affecting population health improvement. Many of the points Graham and Meili make align with conclusions Jenna Evans and her co-authors draw based on leadership lessons learned by the Toronto Central Community Care Access Centre in connection with integrated care for complex populations. For busy decision-makers, likely the most immediately valuable part of Evans et al.’s article will be its leadership competency framework. This, the authors propose, is aimed at producing and supporting “system leaders” who, among other things, seek to understand patients’ and caregivers’ “needs and preferences.”

One of the thornier challenges in healthcare leadership is the role of physicians, and both of our final two leadership-focused articles examine the topic in the context of physician performance feedback (PPF). Taking the example of Toronto’s University Health Network (UHN), Kirsten Wentlandt et al. document a physician-led quality improvement project, central to which were surveys that provided physicians with feedback on their clinical performance. For their part, Amy Cheng and her co-authors give us a “primer” on the five “major” PPF methods, and their experience deploying (not unlike their UHN colleagues) one of them – multisource feedback – among 34 physicians at Toronto’s St. Michael’s Hospital. Rather interestingly, they conclude that others considering PPF broaden their approach by combining several methods in order to gather objective and subjective data.

Patient Self-Management

Chronic disease is a major concern in industrialized countries. Here, we gathered three articles that address patients’ self-management of their chronic conditions. In the first piece, Claudia Amar and her co-authors address two improvement projects in Atlantic Canada, both of which dwelt primarily on health-provider training in self-management support (SMS). In the second article, Peter Picton and colleagues describe an Ontario study looking at the use of an Internet-based diabetes self-care portal. Taking “system usage” as their key evaluative dimension, Picton et al.’s discovery of the impact of patient age and prescribed regimen frequency will prove critical to others planning SM programs. Continuing down the technology path, Bob Parke and Andria Bianchi round out the section with a look inside the role wearable digital devices could play in gathering health-related “micro data” for individuals with chronic diseases. The potential to improve the patient experience and to benefit the health system at large appears, they conclude, significant.

Patient Safety

Healthcare leaders are perennially concerned about patient safety, and over the years *Healthcare Quarterly* has devoted significant resources to exploring this issue. One of the principal hurdles institutional and system leaders face is the “extreme variability” among provincial/territorial and local approaches to reporting. Is a pan-Canadian reporting and learning system possible? Sarah Boucaud and Danielle Dorschner’s findings from a literature review suggest steps that might replace the current “patchwork.” Delineating five strategic “gaps,” the authors make recommendations for each one, such as improving alignment among systems, standardizing terminology and establishing “expectations” around the patient’s role in incident reporting.

Workplace Health

Nobody yet has fully cracked the mystery of the low influenza vaccination rates among healthcare workers. Examining a 2014–2015 incentives-based vaccination campaign at Trillium Health Partners in Mississauga, ON, Seema Marwaha et al. reveal the “moderately successful” results of the resource-intensive campaign: rates rose 10% over the year previous, but that still left a gap of 37%. Nevertheless, the team’s leveraging of concepts from social marketing and human-centred design will prove fascinating to others tackling this issue.

Changing Practice

Ann Salvador and her colleagues conclude with a report on the successful implementation of the RNAO Best Practice Guideline on Breastfeeding in support of the Baby-Friendly Initiative at Ottawa’s l’Hôpital Montfort. The authors share the 12 strategies the Montfort team deployed to “manage better.” And, of course, ending as we began, the Montfort experience shines a light on the powerful role of “capable leadership” when instigating such major policy and practice changes.

– The Editors

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Influencing Change: Preparing the Next Generation of Clinicians to Practice in the Digital Age

Cynthia Baker, Maureen Charlebois, Harold Lopatka, Geneviève Moineau and Jennifer Zelmer

Introduction

From connecting with friends and family to sophisticated supply chain management, digital solutions have fundamentally changed many aspects of our lives. The ways that we seek and receive healthcare are also undergoing profound transformation, a change that it is essential that the next generation of clinicians be prepared for and optimize. As Duncan Sinclair pointed out in a recent editorial in this journal (Sinclair 2014):

“While health professional education doesn’t need ‘destruction,’ it does need, and quickly, to consider creatively how to do its job more effectively and efficiently in this new digital world.”

In partnership with Canada Health Infoway (Infoway), Canada’s faculties of medicine, nursing and pharmacy embraced this challenge in 2011 when they agreed to focus on how to better prepare students to practice in modern, technology-enabled, clinical environments. The specific goals of this program were to:

- Ensure that clinicians-in-training are ready to practice in, and gain value from, an information and communications technologies (ICT)-enabled environment when they graduate; and
- Integrate concepts and expectations related to the use of ICT in practice into curricula design and educational processes.

The focus is not on basic digital competencies, such as navigating websites or using a tablet, but rather on how to use health informatics to enhance patient- and family-centred care.

Each of the professions began with understanding the current state of education across the country and then reached a consensus on important competencies for future professionals. They also gathered and developed teaching and learning resources aligned with the competencies to strengthen learning

and teaching for faculty and students. New awards were created to recognize faculty and students who demonstrate exceptional leadership and commitment to e-Health and informatics in education curriculum and to promote and showcase new innovative tools supporting health informatics. See Table 1 for links to these resources.

Building on this foundation, new initiatives are now underway to support faculty in preparing future clinicians to understand and practice in a digital environment consistent with the core competencies that have been established (see Table 1 for details and links to reference documents). These efforts are taking place both within disciplines and across them, leveraging the interprofessional relationships developed in the first phase of the initiative.

Medicine

The Association of Faculties of Medicine of Canada (AFMC) and Infoway (2015) launched a Physicians-in-Training project in 2011, with the overall objective of improving clinical practice and patient care by supporting medical students and residents in their adoption and use of digital health technologies. A Leadership Committee with academic e-Health experts from seven provinces steered the project. They first undertook an environmental scan and key informant interviews to assess undergraduate e-Health curricula at Canadian faculties of medicine. It identified disparate e-Health training in the medical curricula and the absence of criteria to address e-Health in medical curricula nationally.

The resulting recommendations drove the publication of the first ever national e-Health Competencies for Undergraduate Medical Education. They were aligned with the broader CanMEDS 2015 Physician Competency Framework. This next-generation competency-based medical education model under the auspices of the Royal College of Physicians and Surgeons of Canada describes the knowledge, skills and abilities that specialist physicians need for better patient outcomes.

TABLE 1.
Initiatives Underway

	Medicine	Nursing	Pharmacy
Project background	AFMC-Infoway Physicians in Training Project Review	CASN-Infoway Nurses in Training Project Review	AFPC-Infoway Pharmacists in Training Project Review
Competencies	eHealth Competencies for Undergraduate Medical Education	Nursing Entry-to-Practice Competencies for Registered Nurses	Pharmacy Informatics Entry-to-Practice Competencies for Pharmacists
Teaching and learning resources	Canadian Healthcare Education Commons Environmental Scan of eHealth in Canadian Undergraduate Medical Curriculum	Nursing Informatics Inventory: Existing Teaching and Learning Resources Nursing Informatics Teaching Toolkit	Informatics for Pharmacy Students e-Resource

The project also enabled AFMC to propose a new accreditation standard related to e-Health for Canadian medical schools.

In addition, the project engaged clinician educators, informatics experts, deans, students and residents in the creation and sharing of new e-learning resources to support the integration of digital health concepts into medical education curricula. Student/faculty teams developed 33 virtual patient cases by incorporating the use of digital health to improve patient care, the top three of which each year received national awards. A rich set of 185 resources was also contributed to an online community hosted through the Canadian Healthcare Education Commons.

This work and broader contributions were honoured annually at the Canadian Conference on Medical Education. Faculty members who demonstrated exceptional leadership and commitment to e-Health and informatics in the medical education curriculum received national awards.

Nursing

The Canadian Association of Schools of Nursing (CASN) and Infoway (2015) have been working together to help new nursing graduates enter the workplace able to practice effectively in the increasingly electronic world of healthcare delivery, thereby improving care delivery and patient outcomes. This initiative integrates concepts and expectations related to the use of digital health in practice into the curricula design and educational processes of the Schools of Nursing. The goal of the project is to develop a culture within nursing education in Canada that embraces the integration of nursing informatics in curricula and professional practice.

An early focus was to gain consensus on Nursing Informatics Entry-to-Practice Competencies for Registered Nurses. They outline the knowledge and skills that should be acquired by registered nurses over the course of their undergraduate education. Each is accompanied by a list of indicators, and together they are intended to provide direction for curriculum development. The competencies also led to strengthened e-Health content in CASN's Accreditation Standards.

Through the consultation with experts in nursing informatics, education, practice and policy, as well as CASN's 91-member schools, educational resources were created to support the nursing faculty in adopting and integrating the competencies. A Teaching Toolkit outlines key concepts and learnings, summarizing information faculty need to teach each of the nursing informatics competencies. It also provides teaching tools (e.g. presentations, case studies and discussion questions) that faculty can easily integrate into existing lesson plans. In addition, an inventory of available Canadian and international teaching and learning resources aims to increase the capacity of nurse educators to teach nursing informatics at an undergraduate level. It focuses particularly on resources that offer guidance on the integration of nursing informatics into curricula and practice. Collectively, the resources have already been downloaded more than 8,300 times.

Furthermore, faculty and student awards were designed to promote the adoption and integration of nursing informatics into nursing education and professional practice. Faculty were recognized for exceptional leadership and commitment to e-Health and informatics in nursing education. The focus of the Student E-Health Leadership Award was to recognize excellence in the adoption and use of digital health among Canadian nursing students and highlight the role of digital health solutions in enabling evidence-based, patient-centred care.

Promising changes are beginning to emerge. A 2014 survey found that 74% of nursing faculty are somewhat to very confident in teaching nursing informatics/e-Health. Likewise, 64% of faculty report having incorporated informatics into their curriculum, and 73% of respondents reported "threading" informatics throughout their curriculum.

Pharmacy

The objective of the joint Association of Faculties of Pharmacy of Canada (AFPC) and Infoway (2015) project is to better prepare pharmacy students to practice in modern, technology-enabled

environments by developing and integrating concepts and expectations related to the use of digital health into curricula design and educational processes.

The first phase focused on developing and validating an informatics competency framework for undergraduate education. The *Pharmacy Informatics Entry-to-Practice Competencies for Pharmacists* were based on an extensive literature review and review of existing relevant competency frameworks. The competencies were then validated and prioritized through a survey of pharmacy stakeholders and key informant interviews. The resulting framework consists of foundational skills on device and application use and three competencies (information and knowledge management, professional and regulatory accountability and information and communication technologies) with 31 corresponding indicators. These competencies served as a basis for development of the program content matrix, which, in turn, informed the national educational program that is being integrated into the undergraduate pharmacy curricula in Canadian Universities.

The complementary *Informatics for Pharmacy Students e-Resource* is a national online education program. Although primarily directed at pharmacy students, it is also expected to be of value to practicing pharmacists, pharmacy technicians and other healthcare professionals. Written by Canadian pharmacy faculty and clinicians with participation from upper-year pharmacy students selected through a competitive award process, the modules within the e-Resource can be integrated by faculty into existing courses or used on a stand-alone basis. The e-resource uses innovative learning activities including virtual patients, polls, discussion forums and self-assessment quizzes.

Moving Ahead

Canada is home to world-class medical, nursing and pharmacy schools whose educators and students recognize the value and potential of digital health to improve health and healthcare. With the groundwork laid for each of the three participating professions, the next stage of efforts is supporting faculties through the transformation process. Building on a model that has proven successful for practicing clinicians, Infoway, AFMC, AFPC and CASN recently launched faculty peer leader networks. These networks aim to create a collaborative and engaging environment that provides support and mentorship for the academic community as faculty integrate the competencies and e-resources into their teaching. In addition, new interprofessional awards recognize faculty who work together across disciplinary boundaries to help future clinicians use technology in innovative ways to provide high-quality services with and for patients and families. Individually and collectively, the goal of these efforts is to meet the challenge to the health profession outlined by Duncan Sinclair in his recent article (2014) – the need to “figure out what and how to change to meet the challenges of the digital revolution that is the hallmark of the 21st century.” **HQ**

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Opioid Use and Overdose: What We've Learned in Ontario

Tara Gomes and David N. Juurlink

Abstract

The dramatic rise in prescription opioid use in the past two decades across Canada and the United States has been accompanied by increased rates of adverse events, including premature death and neonatal abstinence syndrome. In Ontario, policies and programs designed to address inappropriate prescribing have been implemented with varying degrees of success. Emerging issues that require ongoing attention include the introduction of abuse-deterrent formulations of opioids and generic versions of long-acting oxycodone. As issues related to opioid misuse, abuse and premature overdose death continue to evolve, it is clear that they can only be addressed by more cautious prescribing practices and the provision of support to those already suffering from addiction.

The Issue

The past 20 years have witnessed a major increase in the prescribing of opioids for chronic pain across North America. This change was rooted in several factors, including the toxicities and limited effectiveness of other analgesics. A key driver, however, was the aggressive lobbying of physicians to prescribe opioids more liberally, under the pretext that the drugs were effective for many patients and the risk of addiction was low. Although these claims were not supported by well-designed studies (Chou et al. 2015; Dhalla et al. 2011), physicians were successfully induced to prescribe opioids as never before.

The dramatic rise in the prescribing of opioids was paralleled by an unfortunate rise in opioid-related harms, including dependence, addiction and death. Since 1997, the U.S. Centers for Disease Control and Prevention estimate that more than 175,000 Americans have died of opioid-related causes (Warner et al. 2014). These deaths represent the “tip of the iceberg,” with

millions of others misusing opioids, seeking care for addiction or suffering from a litany of other opioid-related problems.

This is an issue for policy makers in part because they share a measure of responsibility for the epidemic. In the United States, an Institute of Medicine report on the prevalence of chronic pain exaggerated the scope of the problem and may have been influenced by conflicts of interest (Faubert 2014). In 2000, the Joint Commission – the organization responsible for accreditation of U.S. hospitals – implemented the requirement that hospitals treat pain as a vital sign (Hanks 2008), something it is not, leading to a marked increase in the prescribing of opioids (Mehendale et al. 2013). In Canada, long-acting opioids were added to public formularies because they reduced pain scores to a greater extent than placebo in short-term studies of 12- to 16-week duration, not because they represented safe and effective long-term therapies or because they represented good value for money (Dhalla et al. 2009). Moreover, policy makers must now address the growing legacy of addiction spawned by the widespread use of opioids (Vowles et al. 2015). In short, this problem is not going away.

Trends in Opioid Use and Adverse Events

The use of prescription opioids in Ontario has increased considerably over the past two decades (Dhalla et al. 2009). In 2010, these rates exceeded 600 prescriptions per 1,000 population (unpublished). These rates are even higher among public drug beneficiaries, for whom the rate of prescribing of opioids increased from 1,848 to 2,148 prescriptions per 1,000 population between 2003 and 2008 (Gomes et al. 2011a). These rises have been mirrored by increased rates of adverse events, including neonatal abstinence syndrome (NAS) and death from opioid overdose. In fact, the rate of infants born with NAS increased

almost 15-fold between 1992 and 2011, with the majority of this rise occurring since 2007 (Turner et al. 2015). By 2011, the rate of NAS reached more than four cases per 1,000 live births, and more than 70% of mothers of babies born with NAS who were eligible for public drug coverage received prescriptions for opioids before and during pregnancy (Turner et al. 2015).

Similarly, overdose deaths involving opioids have increased by nearly 250% over the past two decades in Ontario, reaching nearly 42 deaths per million (or 550 deaths) annually by 2010 (Gomes et al. 2014a). Most of these deaths were accidental or of undetermined cause (79.7%) and involved at least one other central nervous system depressant such as alcohol (41.4%), benzodiazepines (50.5%) or multiple opioids (35.7%) (Gomes et al. 2014b). Because many of these deaths involve young people (median age 42 years), the toll on public health is enormous (Gomes et al. 2014a). The years of potential life lost (YLLs) due to premature opioid-related death increased more than three-fold from 1992 (7,006 YLLs) to 2010 (21,927 YLLs), and now surpass the toll from alcohol use disorders (18,465 YLLs) and pneumonia (18,987 YLLs) (Gomes et al. 2014a). In 2010, among Ontarians aged 25–34 years, one in eight deaths was opioid-related (Gomes et al. 2014a).

Relationship between Opioid Dose and Outcomes

In recent years, debate has evolved regarding the definition of a “high” opioid dose and the extent to which patients treated with opioids for chronic non-cancer pain are surpassing this threshold. Most guidelines suggest maximum doses of between 120 and 200 mg morphine or equivalent (MEQ) per day, with additional caution warranted for higher doses (Chou et al. 2009; National Opioid Use Guideline Group 2010; Washington State Agency Medical Directors’ Group 2007). However, in Ontario, 32.6% of all individuals aged 15–64 years receiving long-acting oxycodone under the public formulary exceeded 200 mg MEQ daily, as did approximately 20% of those treated with other long-acting opioids (Gomes et al. 2011a). Furthermore, although these dose thresholds are based on clinical consensus, several studies conducted in the Ontario population demonstrate an association between increasing opioid dose and adverse outcomes. For example, a nested case-control study among Ontarians aged 15–64 years and eligible for public drug coverage found that individuals prescribed more than 200 mg MEQ had a nearly threefold increased risk of fatal opioid overdose compared to those treated with less than 200 mg MEQ (Gomes et al. 2011b). Even moderate opioid doses (between 50 and 199 mg MEQ) were associated with a doubling in the risk of an overdose death (Gomes et al. 2011b). A similarly designed study found a comparable relationship between increasing opioid dose and risk of injury due to motor vehicle accidents when driving (Gomes et al. 2013).

Impact of Opioid Policies

As concerns about opioid misuse have mounted over the past decade, drug policy makers and healthcare professionals have implemented policies and programmes designed to address inappropriate prescribing, with varying degrees of success. For example, the College of Physicians and Surgeons of Ontario (CPSO) offers a course designed to improve physicians’ opioid prescribing habits. An evaluation of the impact of this course found no significant changes in the prescribing patterns of physicians who completed the course voluntarily (Kahan et al. 2013). In contrast, physicians directed to take the course by the CPSO prescribed fewer opioids, but these reductions occurred *prior* to course enrolment, suggesting that awareness of scrutiny by regulatory bodies can dramatically influence prescribing of opioids (Kahan et al. 2013).

... overdose deaths involving opioids have increased by nearly 250% over the past two decades in Ontario, reaching nearly 42 deaths per million (or 550 deaths) annually ...

In November 2011, the Ontario Ministry of Health and Long-Term Care (MOHLTC) implemented the *Narcotics Safety and Awareness Act*, a multifaceted strategy designed to promote appropriate narcotic prescribing and dispensing in the province (Ontario MOHLTC 2012). A key component of this strategy was the introduction of a prescription monitoring program, the Narcotic Monitoring System (NMS), which allows the MOHLTC to identify all prescriptions for controlled substances dispensed in Ontario. An evaluation of the impact of the NMS published in 2014 found that the legislation and prescription monitoring program led to significant reductions in the inappropriate prescribing of opioids and other controlled substances (Gomes et al. 2014c). Specifically, the prevalence of opioid prescriptions that are highly suggestive of misuse fell from 1.6% (12,346 prescriptions) in October 2011 to 1.0% (9,138 prescriptions) by May 2013 (Gomes et al. 2014c).

Finally, two studies have been conducted with the goal of determining whether the asynchronous introduction of a new abuse-deterrent formulation of long-acting oxycodone in Canada and the United States was accompanied by evidence of diversion near the border. One study found a significant rise in dispensing of long-acting oxycodone from Canadian pharmacies close to the Detroit Windsor Tunnel following the introduction of tamper-deterrent, long-acting oxycodone in the United States (Gomes et al. 2012). This activity was ameliorated following warnings issued by healthcare professional organizations, but only after an estimated

250,000 additional long-acting oxycodone prescriptions were dispensed over roughly one year of elevated dispensing (Gomes et al. 2012). Interestingly, a more recent study found no evidence of large-scale trafficking of generic long-acting oxycodone from Canada into the United States despite different regulatory decisions regarding the availability of this product in the two countries (Gomes et al. 2015).

Emerging Issues

Two emerging issues that have recently garnered attention are the development of abuse-deterrent formulations (ADFs) of opioids and the introduction of generic versions of long-acting oxycodone. The original formulation of OxyContin was easily crushed and either injected or insufflated nasally. The product's manufacturer withdrew this formulation in the United States in 2010 and in Canada in 2012, replacing it with an ADF formulation (marketed as OxyNEO in Canada) that does not powderize when crushed. Although some evidence suggests that this change was associated with reductions in opioid-related harm, the move was also associated with a marked increase in heroin use, most likely reflecting the transition of abusers from OxyContin to heroin because of the latter's ready availability and low cost (Cicero et al. 2012).

Generic drug manufacturers concurrently developed formulations of long-acting oxycodone that, like the original, are not tamper-resistant. While these products are less expensive than ADF formulations, many jurisdictions, including Ontario, have declined to add them to the public formulary out of concern that they will be especially prone to abuse. Despite their limited availability, there has been concern about the potential for generic non tamper-resistant formulations to negate any positive impact of ADFs. This has led to the federal government's recent announcement that, in the coming years, all opioids marketed in Canada will require abuse-deterrent formulations (Gonçalves 2015). However, experts have expressed concern that ADFs represent a "gimmick" of primary benefit to the pharmaceutical industry and that undue focus on them may undermine more meaningful measures aimed at reducing the harm associated with opioids (Leece et al. 2015).

Conclusion

Although rooted in well-intentioned medical care, the prescription opioid epidemic has evolved into the largest drug safety threat facing Canadians today. Policy makers should have an awareness of the magnitude of the epidemic. They should also understand that measures such as ADFs, while desirable, are not independent solutions. The epidemic can only be addressed by physicians prescribing opioids far more cautiously, and through the provision of support to those already suffering from addiction. **HQ**

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Trends in Income-Related Health Inequalities in Canada

Jean Harvey, Geoffrey Hynes and Erin Pichora

Over the past decade, there has been a growing call for action to reduce health inequalities in Canada (Public Health Agency of Canada 2011, Reading and Wien 2013, Standing Committee on Finance 2013, Canadian Medical Association 2013). In 2011, Canada joined a number of nations in a commitment to implement the *Rio Political Declaration on Social Determinants of Health* (World Conference on Social Determinants of Health 2011). In adopting the Rio Declaration, Canada committed to reducing health inequities in the country. Recent reporting of socio-economic health inequalities reveals that these inequalities are pervasive throughout Canadian society for a range of health indicators (Canadian Institute for Health Information 2013). The purpose of this study is to examine whether Canada and the provinces have made progress in reducing socio-economic inequalities in health and well-being over the past decade.

Health inequalities refer to observed differences in health by population groups, whereas **health inequities** describe differences that are unfair or unjust (Kawachi et al. 2002). Measuring the extent of health inequality is therefore an important step toward identifying and reducing health inequities in Canada.

Approach

To measure changes over time in inequalities, we examined 16 health indicators across five income levels (quintiles) using predominantly CIHI and Statistics Canada data. This analysis highlights how the health gap between the highest and lowest income levels has changed over time. Inequality is measured on both absolute (difference-based) and relative (ratio-based) scales to ensure a comprehensive understanding of inequality. The *disparity rate ratio* captures the relative difference and is calculated by dividing the highest rate (usually from the lowest income level) by the lowest rate (usually from the highest income level). The *disparity rate difference* captures the absolute difference and is calculated by subtracting the lowest rate from the highest rate.

To estimate the impact of income-related inequalities, we also calculated the *potential rate reduction* and the *population impact number*. The *potential rate reduction* measures the potential percentage reduction in a health indicator rate that would occur

in the hypothetical scenario where all income levels experience the same rate as the highest income level. The *population impact number* converts the potential rate reduction into the approximate number of cases that could be avoided in the hypothetical scenario where all income levels experience the same rate as the highest income level.

Key Findings at the National Level

Inequalities increased over the past decade for the following three indicators: smoking (18 years and older), chronic obstructive pulmonary disease (COPD) hospitalization (less than 75 years) and self-rated mental health (18 years and older). Inequalities in smoking increased over time due to improvements in the highest income level and no significant changes in the lowest income level. Increases in COPD hospitalization over time resulted from an increased rate in the lowest income level and decreases in the highest income level. Increased inequality was found for Self-Rated Mental Health because of the increasing number of Canadians in the lowest income level reporting their mental health as poor/fair (Figure 1).

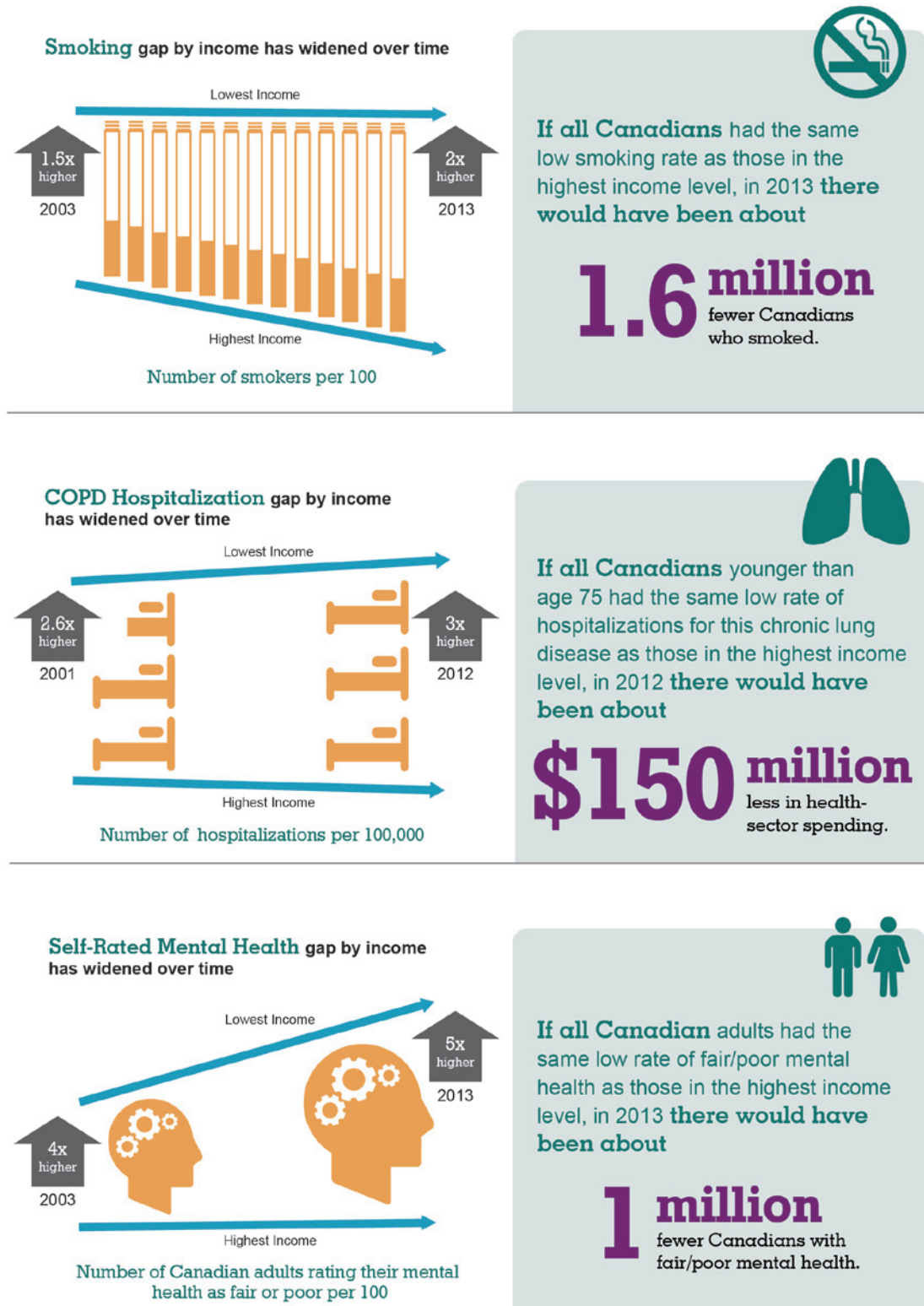
Our analysis also identified that, for the majority of indicators included in the study, inequality persisted over time. For some indicators, inequalities persisted, while the rates generally worsened across all income levels:

- children vulnerable in areas of early development;
- obesity among women (18 years and older);
- influenza immunization for seniors;
- fall injury hospitalization for seniors;
- alcohol-attributable hospitalization (15 years and older); and
- diabetes (18 years and older).

Persistent inequality was also noted for indicators where rates generally improved for the population: motor vehicle traffic injury hospitalization, hospitalized heart attacks and infant mortality.

While this analysis highlighted either increased or persistent inequalities for the majority of indicators, two indicators had decreased inequality over time: Small for Gestational Age and Mental Illness Hospitalization. Decreased inequality for these indicators was because of rates worsening in the highest income level (rather than improving in the lowest income levels).

FIGURE 1.
Have health gaps by income changed in Canada?



The patterns of inequality for men and women were the same over time for most of the indicators examined. A notable exception is obesity, for which no inequality was observed for men, while inequality persisted over time for women. However, despite similar inequality patterns, indicator rates across income levels for males were higher than those for females for the following indicators:

- children vulnerable in areas of early development;
- smoking;
- motor vehicle traffic injury hospitalization;
- mental illness hospitalization;
- alcohol-attributable hospitalization; and
- hospitalized heart attacks.

By contrast, the rates were higher for women than men for fall injury hospitalization for seniors.

The impact of inequalities, as measured by the potential rate reduction and potential impact number, is significant. For example, if all Canadian families experienced the same low rates of infant deaths as in the highest income level in 2011, there would have been 300 fewer deaths in that year. Combining the potential impact number with CIHI financial data, we can begin to crudely estimate the costs of health inequalities to the health system. For example, there could be a 45% overall reduction in the rate of COPD hospitalizations (less than 75 years) if Canadians in all income levels experienced the same low rate as those in the highest income level. This potential rate reduction represents 18,700 fewer hospitalizations in Canada per year which translates to approximately \$150 million in health system spending in 2013.

Detailed national and provincial findings – as well as more information on data, terminology and methods – are described in a recent CIHI publication *Trends in Income-Related Health Inequalities in Canada* (2015). This report also provides highlights of promising interventions that aim to reduce health inequalities. It is available at: <<https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC3024&lang=en>>

In conjunction with the publication, CIHI released the Health Inequalities Interactive Tool, which contains a series of online, interactive reports for nine selected indicators. Users are able to explore indicator rates, as well as corresponding measures of health inequalities, by income level, for each province and over time, and compare these measures to the Canadian average. It is available at: <www.cihi.ca/en/factors-influencing-health/socio-economic/health-inequalities-interactive-tool>.

Moving Forward

This trends analysis highlights the persistence of health inequalities over time in Canada. In moving forward, it is important to continue to monitor trends and to evaluate the impact of interventions targeted towards low-income populations. To do this work, the availability of reliable trend data is of paramount importance.

Monitoring the health of populations and inequalities over time can serve several purposes. For example, monitoring helps

to identify persistent and long-term issues in population health and the health system, and it can aid in identifying emerging health needs, particularly for priority groups. Moreover, this type of ongoing analysis can assist with planning for current and future health needs and can provide evidence of the combined effectiveness of policies and programs that aim to reduce inequalities and improve the overall health of Canadians.

Underpinning this type of analysis is the availability of reliable socio-economic and demographic data, including income, education, occupation, ethnicity and disability. Access to these data (including linkage across data sources) is critical to better understand and monitor the many complex factors related to the health and well-being of vulnerable populations. Moreover, analyses based on these data, as well as on the implementation and evaluation of interventions targeting these complex interactions, are needed for evidence-informed policy. **HQ**

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In Conversation with

Ray Racette

President and CEO, Canadian College of Health Leaders

Ken Tremblay



With some 3,300 members, 21 chapters and over 50 corporate partnerships spanning the full range of Canada's healthcare system, the Canadian College of Health Leaders (CCHL) has a mission to develop, promote, advance and recognize excellence in health leadership. Through a code of ethics, lifelong learning, credentials, leadership awards and robust advocacy agenda, the CCHL has contributed to Canada's health policy and performance since 1972. Any review of its membership uncovers an impressive cadre of names synonymous with Canada's brain trust in healthcare.

Ray Racette, President and CEO of CCHL since 2008, is an example of that leadership acumen and commitment. With a BSc in life sciences from Queen's and Masters in health administration from Ottawa, Ray's ascension through leadership included postings in Ontario, the Northwest Territories and Manitoba, with the latter culminating as President and COO of the Victoria General Hospital within the Winnipeg Regional Health Authority. Ray holds a CHE designation from CCHL and received its Leadership Award for Manitoba in 2005. Ken Tremblay spoke with Ray this Fall.

HQ: As CEO of the CCHL, you are a leader of leaders ...

RR: I'm really fortunate to be leading the college. What I bring to my role are diverse leadership experiences and that I've been a member of the college for my entire career, even as a student. Now, I have the fortunate opportunity to deliver on our new vision that includes advancing leadership and shaping health systems. Capable leadership is a fundamental asset for the development of health systems: not just for today but also for tomorrow. The need for leaders has never been as critical as it is now.

HQ: Canada's healthcare system has to be a very challenging leadership environment. What issues are keeping your members up at night?

RR: We have never been in a more complex period of change. That alone is tough, but there are others: the pressure of ongoing and multi-year funding cuts; the challenge of downsizing things you can no longer afford and the impact on people, programs and organizations; and, the need for improvement and accountability to meet targets. These are very stressful and challenging times. There is uncertainty over structural changes such as those in Nova Scotia, Manitoba and Alberta. Even Ontario, which is not regionalized, is likely to face some form of structural change. These changes are daunting because they impact how organizations are governed and managed.

We have an ageing workforce with widespread retirements spanning all the professions, including leadership. That's a particular challenge: a large group of boomers are entering retirement age without a sense of when and how this will unfold. Some [organizations] have recognized that they could lose 50% of their staffing over the next five years!

Lastly, there is a lack of a clear vision for the health system in most provinces. Leaders are left wondering what changes they actually have discretion over and which ones they don't. That tends to freeze people from moving on things that they might be able to do simply because they're not sure if they can.

HQ: Given that, what are the emerging leadership skills essential for success in these times?

RR: Self-management is important, being resilient, remaining optimistic and not dwelling on negative issues, especially those you can't control. Being curious. Staying personally healthy is important given the tremendous amount of pressure and uncertainty leaders face.

Being transparent in decision-making, especially with so many tough decisions that need honest and forthright discussion. High engagement is extremely important. The improvement agenda requires that you know how to build an environment of collaboration and cooperation amidst high

expectations and pressures to get things done. People within the organization need to want to contribute, thus the need for a more distributive leadership model versus command and control. Engagement across the organization ensures a voice for all levels of the organization in terms of what's important.

Being able to champion a change so that you can stand behind it, support it even when it starts going sideways, requires courage.

Leaders need a systems perspective in terms of achieving the Triple Aim objectives. Leaders need to look beyond geography and sectors and consider system investments. They need to be visionary and have a sense of direction. Often, they try to do too many things and lose focus. Being courageous. It's not easy making decisions that are tough and controversial but still need to be made. Being able to champion a change so that you can stand behind it, support it even when it starts going sideways, requires courage. Lastly, leaders need to build relationships and partnerships and networks and to create trust. That is particularly important for systemic change: How do you build the trust and partnerships as enablers for what needs to be done?

HQ: The college's membership structure includes chapters spanning the country's various jurisdictions and governance structures. How has provincial variation in system design affected the leadership acumen and skills needed for success?

RR: The issue for leadership is that extensive restructuring by the government negatively impacts leadership capacity, organizational health and decision-making. Alberta lost so much good talent in their changes that it is still struggling with how to actually lead change in Canada's biggest health system. These changes can be quite disruptive and, even though they're intended to achieve benefits, the reality is that the evidence is equivocal.

In provinces with regional structures, leadership roles have mandates and spans of control far beyond what you would find in a hospital setting. They often span a sector and offer unique challenges and opportunities in terms of the broader system. Where you might be a director of a facility laboratory in Ontario, a lab director in Alberta might oversee services in the entire province and even the private sector. These emerging roles are much larger than those experienced in traditional career paths; we haven't trained people for the scale, scope and geography of models like Alberta Health Services. These structures introduce new challenges for leaders: how to communicate effectively, how to make decisions and how to engage physicians who tend to be connected locally yet must function within bigger structures.

HQ: Leadership is not an intuitive suite of skills and many feel that more clinicians need to be prepared for leadership in the system. How do you think we need to engage the clinical side of the house for the system challenges we face in Canada?

RR: The elephant in the room: our current approach to physician reimbursement presents an enormous challenge to leaders trying to operate on a systems basis. If we look at countries and systems that are outperforming us, physicians are a part of the system in terms of how they're compensated and how they're organized, e.g., primary care at the hub of the system. In Canada, we're struggling with this. Even if we accept it as a constraint we can't necessarily control, there are many things we can and need to do to engage physicians because we cannot make substantive changes without them being on board.

Some of the things that I would suggest: make sure we focus on a common goal, i.e., the patient and patient-centred care; recognize clinical knowledge as an asset for change management and decision-making; understand the impacts of change on a clinical practice; create supportive cultures and find ways to involve them in decision-making; develop physician champions who can engage their colleagues; and be sensitive to their time and clinical obligations so that they can become involved. It's certainly doable and, in my experience, engaged physicians are a tremendous group to work with.

HQ: Given the CCHL's advocacy agenda, what are the top issues you are advancing to Canada's policy makers? What do we need to keep or change to deliver on the promise of Canada's healthcare delivery model?

RR: For our recent National Health Leadership Conference and a session called the Great Canadian Healthcare Debate, we asked leaders across the country to identify the policy issues most important for us to advance as a college. We received about 50 policy briefs and, with an expert group outside the college, reduced that number to 10. Our National Health Leadership Conference debated several and, in the end, three issues were viewed as the most important and highly valued to advance to government and system: increase in funding for mental health; the use of electronic health records (no modern health system is performing well without one); and a national pharmaceutical strategy.

There were some other issues identified as important because they could be done tomorrow if we chose to do them. One is mandatory screening for frail elderly to support patient and family engagement in decision-making and clinical care. We could move on that tomorrow and substantially improve our performance across the country. Similarly, we could choose

an integrated approach to palliative care that could support much better patient/family involvement in end of life care.

HQ: Healthcare providers via their associations and unions number in the tens of thousands; your college represents about 3,300 professionals. How do you get your message to the public as we debate healthcare's Triple Aim of better access, lower cost and better outcomes?

RR: We access the public through the quality of our membership and the work that they do. The work we do in terms of developing leaders and improving their leadership contributes to the effectiveness of our members as leaders. A lot of the things we do in governance and leadership hit the public that way. Going directly to the public is an area that we're just getting into, e.g., the Great Canadian Healthcare Debate and it generated substantive media coverage.

Another example is our work with HEAL where we released a consensus statement in December 2014 called *The Canadian Way – Accelerating Innovation and Improving Health System Performance*. In that document, we endorsed the Triple Aim as an important framework for performance improvement and innovation for our health system. Through the consensus statement, we engaged federal, provincial and territorial governments and the media about how we move the system forward as we advance the Triple Aim agenda.

HQ: The perennial bogeyman of healthcare in Canada is the private sector, a constituency that the CCHL has embraced through partnership. What are your views on how these national and global companies are shaping the performance of Canada's healthcare system?

RR: Our traditional view of industry has been too narrow; we've tended to view them as suppliers and procurement models have tended to focus on supply chain/commodity pricing when the broader value might include partnering for innovation and access to new technology. From a college perspective, we engage with industry because the traditional perspective undermines the substantive value they bring. There's no question that the private sector is the major research and development engine for innovation and new technologies. Many of the improvements and changes we need are in their product pipeline or readied for market through R&D funding. Secondly, these companies have a worldview of health systems, as many have global reach and operate in health systems around the world. They enrich the discussion and sponsor innovation for the Canadian system based on results in other countries. That perspective is essential when we consider how to improve our system.

HQ: One of the quirks of Canada's national performance is healthcare's assignment to 14 provincial and territorial jurisdictions with their variable uptake and outcomes with issues like e-health, pharmacare, chronic disease management and sustainability. When you meet colleagues across the country, what's their take on Ottawa taking a greater role in driving pan-Canadian solutions?

RR: The idea that the federal government should have a key [pan-Canadian] role has been a challenge for federal governments. An alternate view would be the need for collaboration among all levels of government and, particularly the federal government, to commit to building and sustaining relationships with the provinces and territories so that we can focus on improving our health system. I can't imagine any progress without the federal government being at the table with the provinces and territories.

All countries are struggling with ageing and chronic disease management; managing the complex needs for the elderly and end-of-life care are priorities everywhere.

Countries that are outperforming Canada, such as constitutionally similar Australia or those in Scandinavia, are performing better because they found a way to develop a national agenda. Our challenge is that we do not have a funded, collaborative structure that supports governments working together. While a working group with the Council of the Federation generated and shared a lot of ideas among its members, few were actionable without the requisite enablers.

As a college, there are four key areas where we think federal leadership is important. One is the ageing of our population and limitations of the Canada Health Act to cover services in home care, long-term care, home-based technologies, etc. We remain focused on "insured services" as being hospital care and physician services; we don't have a modern view of what should be insured, and this gap undermines our ability to develop consistent quality of care across the country. There's no way we can have an approach to prescription drugs without the provinces being highly engaged and strong federal leadership. Supporting the spread of health innovation is a major role for the federal government by virtue of its funding and research capabilities and role in disseminating innovation across the country. Countries doing better than us have a coordinated national approach to funding health innovation. Lastly, funding for infrastructure, modern hospitals, the electronic health record, etc. are key mandates that the federal government can leverage through their power and overarching leadership.

HQ: When you talk to your counterparts in other countries, what common themes or challenges surface?

RR: There's a global consensus that the Triple Aim objectives are an important focus. The United States has a unique challenge with an overhaul of their health insurance system. The United States is improving quickly under the Obama administration despite the rhetoric and media coverage. Accountable care organizations are a novel way to transform how these massive organizations work across the entire health systems. They're also looking at alternative ways of paying for health professionals. There is a massive decline in the number of fee-for-service physicians in the United States, and they're moving into a large number of new models of delivery and payment.

All countries are struggling with ageing and chronic disease management; managing the complex needs for the elderly and end-of-life care are priorities everywhere. While we sometimes worry about our system, even countries that are doing relatively well wonder if they have it right. Everywhere, funding models are moving to outcome-based models, and we are experimenting with such changes in Canada too. Sweden, for example, funds all surgeries as fixed/bundled payments. So, while we may have some catch-up to do on some of these topics, our agenda is not unique relative to other countries.

HQ: You've been at the college since 2008. What have been the highs and lows of your tenure? Any lessons learned, likes or dislikes that may be of interest to our readers?

RR: It was interesting to move to the association side from the hospital and regional side. I have really enjoyed the experience of working within the association environment, and the opportunity to work nationally and globally is a real privilege and honour.

It's mostly highs! We have a small staff: they're excellent, hard-working and very committed to supporting members. I've really enjoyed the opportunity to meet members and people from all across the country and gain an exposure and a connection with them. We've seen significant change since my arrival: new models of lifelong learning like e-learning and e-mentoring. We revamped our governance structure, and all of our internal structures and how we work have all changed. We've expanded the number and nature of our external relationships. Membership has expanded from 2,800 to around 3,300. We modernized our certification program and even our journal went from paper to online. The LEADS in a Caring Environment Framework has become the dominant leadership development framework in Canada, a success that has been both rewarding and humbling.

The major challenge is that we have to operate as a business and our funding is 100% activity-based. We have to earn revenues through the year and that, of course, works as a variable, impacting our staffing and capacity. Our aspirations to continually improve the college put pressure on us to deliver new mandates in new ways. It has forced us to expand our capacity through partnerships, networks and by leveraging the strengths of others.

HQ: What advice would you give to those contemplating a leadership role in healthcare in Canada?

RR: If you really want to have a challenging and dynamic career that requires commitment, ongoing learning and self-management, etc., you probably won't find a more complex

industry. I have spent my whole life in this industry and I still love it. But it's not for the faint of heart.

It's a great career choice for younger people. New opportunities will come with new delivery models and, as the boomers exit, even more opportunities will open. In terms of value to the public, it's the most important public service you could be involved in. You can make a difference as a leader. Those of us who have been in leadership for a long time have been able to advance agendas, and new leaders will make improvements by virtue of their energy, knowledge and the people you work with. It's an exciting career and one that brings a lot of personal value and rewards.

HQ: Thank you. HQ



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The Puck Stops Here: Taking Organizational Accountability Seriously

Stephen Pinney and Anita Ho

Abstract

This commentary presents an ethical argument and practical suggestions for holding health administrators accountable for quality improvement efforts and results. Using hockey analogies and drawing on evidence from various studies and literature in organizational ethics, it argues that health leaders must promote system performance by ensuring that there is a well-organized delivery system around patients' episodes of care and that all personnel are performing at an acceptable level. Informed by system transformation and successes in the UK, this commentary proposes four strategies to hold leaders accountable: require leaders to be familiar with front-line operations, adopt a service-line approach, evaluate organizational performance by analyzing and publicizing outcome metrics and utilize outcome-based incentives.

Introduction

A National Hockey League Stanley Cup finalist in 2011, the Vancouver Canucks underperformed in subsequent seasons. The team's president and general manager, Mike Gillis, was responsible for building the team and ensuring its on-ice success (MacIntyre 2014). After his team was eliminated from the post-season contention in 2014, he was fired, ending what some called a "reign of errors" filled with a spotty draft record, questionable trades and poor free-agent signings. This may seem like a harsh ending for a man who brought prior success to this hockey club. However, like healthcare, creating and

maintaining successful team performance in hockey requires good leadership in coordinating a complex set of variables. It is a difficult task, and, in professional sports, it is very clear that those running the team will be held responsible for the ultimate results that are achieved.

The same cannot be said for accountability in Canadian healthcare. Despite the 2002 report by the National Steering Committee on Patient Safety that called for a national, integrated strategy for improving patient safety and the establishment of the Canadian Patient Safety Institute by Health Canada in 2003 (Baker 2004), the latest Commonwealth Fund report (2014) rated the Canadian healthcare system as one of the "worst-performing" systems. The report puts it at number 10 on the overall ranking of 11 systems, only above the United States. Taking a page from the hockey playbook and looking at the substantial quality and efficiency improvements in the UK after an overhaul of its National Health Services (NHS), this commentary argues that the ultimate accountability for health-care performance should lie with those who organize and oversee the systems.

Where Lies the Responsibility

Since the release of the Institute of Medicine (IOM) reports, *To Err is Human* (1999) and *Crossing the Quality Chasm* (2001), there has been an increasing acknowledgement that poor systems of care contribute to most quality failures.

“Systems of care” in this context is defined as a group of coordinated interrelated elements that work together to achieve specific healthcare goals. There is a growing realization that most quality failures in modern medicine are not results of poor, incompetent or purposefully harmful *individual* performance. Rather, they happen because complex care processes involving multiple care providers occur within a healthcare environment that is poorly designed or uncoordinated (Reason 2000). In the Commonwealth report, the Canadian system’s overall rating was second last out of 11 industrial nations. It was rated second last on “safe care” and “efficiency” and dead last on “timeliness of care.” Canada ranked in the lower half on *all* other quality indicators such as effective care, coordinated care and patient-centred care. This result is in contrast with the UK’s NHS, which rated first overall, and was first in 8 of 11 subcategories despite spending \$1,100 less per patient. Certainly, it may not be possible to fully capture all elements of a large and variable health system in a single rating scheme. Nevertheless, the Commonwealth report, which is generated based on extensive data from the Organisation of Economic Co-operation and Development (OECD) and other sources, provides a window into the respective overall functioning of various health systems. What can Canada learn from the UK and other high functioning health systems? There is increased evidence that quality and efficiency failures at the bedside are directly attributable to flaws in design, organization and management of the healthcare system (Goldmann 2006; Wachter and Pronovost 2009). This commentary argues that high-functioning health systems, like high-performing professional hockey teams, need to hold those administrators who manage the system accountable for the results that are achieved.

There is increased evidence that quality and efficiency failures at the bedside are directly attributable to flaws in design, organization and management of the healthcare system

In complex modern healthcare, professional and organizational ethics both require that we take accountability seriously (Pellegrino 2004). Modern healthcare delivery depends on an inordinate amount of teamwork (Nance 2008: 43). Failure of care coordination predictably leads to complications, hospital readmissions, declines in functional status, and economic consequences (Berwick and Hackbarth 2012). Each practitioner has not only the individual moral and professional obligation to perform his or her assigned function competently but also the shared responsibility to ensure that the team performs well as a whole in promoting each patient’s interests. Nonetheless, how practitioners function individually and as part of a team depends largely on whether the organization’s

and system’s leaders are structuring the overall care delivery system in a coordinated, effective and efficient manner. When the system is not designed to prevent and correct system errors, the buck should stop with administrators who set-up or maintain a system that would predictably lead to poor or mediocre outcomes.

An Ethical Basis for Holding Administrators Accountable

Ensuring safety and holding not only clinicians but also administrators responsible for quality care are demanded by the intertwined bioethical principles of respect for autonomy, non-maleficence, beneficence and justice (Beauchamp and Childress 2012). Briefly, in healthcare, respect for *autonomy* requires that patients be informed of risks and benefits of various treatment options, and respected with their choices based on their values rather than the values of the healthcare providers. In the broader context of quality care, this principle also requires transparency about relevant outcome measures (e.g., infection, complication or readmission rates), so that patients can make informed decisions and demand accountability. *Non-maleficence* and *beneficence* describe the respective obligations to not inflict unnecessary harm on patients and to promote their clinical interests. Patients place their well-being in the hands of those who assume the responsibility of caring for the sick and injured, whether at the bedside or from the boardroom. They have the right to expect evidence-informed and safe care, defined by the Institute of Medicine (2001) as “avoiding injuries to patients from the care that is intended to help them.” *Justice* deals with fairness, equality and equitable use of healthcare resources to support patients’ needs. In Canada, an estimated 23.9 percent of every tax dollar collected will be spent on healthcare in 2015 (Palacios 2015). Taxpayers or people who contribute to insurance plans can rightfully expect healthcare providers and administrators to be responsible stewards of resources by maintaining an efficient and high-quality system. Justice also demands information symmetry to ensure that all critical stakeholders have the relevant information to make decisions about what serves their interests.

Compared to hockey team performance, healthcare team outcomes have even more significant human and societal implications. It is a professional and ethical imperative that entrusted healthcare providers and administrators, who are instruments of healing, take the ethical duty to provide a safe system seriously and coordinate their duties accordingly. Well-run healthcare teams and organizations require more than well-intended and hardworking individuals. They require the explicit cooperation and commitment of all personnel and managers in upholding their professional responsibilities (IOM 1999: 156), both as individual practitioners and as team members.

For example, many evidence-based quality improvement initiatives such as checklists for various procedures are now available and adopted by professional organizations and institutions. The Canadian Patient Safety Institute promotes leading practices and develops strategies, standards and tools that are available to healthcare organizations. Nonetheless, checklists and other quality improvement tools are only effective if they are utilized and adapted to relevant clinical decision-making. Given human fallibility, enforcement of standards that help systematize safe care is paramount to promoting quality care and reinforcing a culture of safety within the organization. Administrators, thus, need to provide an environment that would ensure the diligent adoption of these protocols as appropriate for the setting. From neglecting sterile technique in the operating room to failing to utilize implemented checklists for complex procedures, avoidable complications or errors that violate the accepted standard of practice pose risks to patients (Stastna 2013), making them professional and moral failures – they violate the ethical duties of beneficence and non-maleficence. Prevention and correction of these safety failures are, therefore, the ethical responsibilities of not only individual clinicians but also, or perhaps more importantly, those of health leaders who oversee the system.

Holding Administrators Accountable: Lessons from Other Systems

Traditionally, front-line clinicians are considered ultimately responsible for patient outcomes. Many health administrators are far removed from bedside care and may be unfamiliar with the day-to-day operation in the field. They may not consider that they are ultimately responsible for patients' outcomes. However, administrators' distance from the practice reality is part of the problem in quality improvement. Few individuals see and understand the entire episode of care, and those who do, including clinician leaders, are often powerless to impact the process (Pinney 2013: 28). If hockey coaches and managers are held responsible for their teams' failure, should we not expect even more from our healthcare leaders?

The UK's NHS was founded in 1948 with the goal of providing comprehensive coordinated healthcare to the population. Prior to 2009, the NHS had functioned with a baseline level of effectiveness as a system predicated largely on bulk yearly funding to hospitals and health trusts – a funding system similar to that of Canada. The 2010 Commonwealth report (based on 2007–2009 data) rated the UK system as second out of the seven countries it analyzed, performing at or below average in half of the subcategories including “quality of care,” “coordinated care” and “patient-centred care” – where it rated last.

In 2010, in response to a perceived lack of administrative accountability, the government released *Equity and Excellence:*

Liberating the NHS. This report highlighted some logical, but profound, system changes that were being instituted. Most notable was a renewed focus on the patient and accountability, with funding *following the patient*. Specifically, under the patient-centric model, patient satisfaction would now indirectly determine where funding would go. If a physician group, hospital or health trust attracted happy patients because of their performance, they would receive more funding. However, if dissatisfied patients migrated away from an institution, funding would be cut proportionally. The changes in the funding model created competition even within the NHS – some institutions prospered, while others faltered accordingly. Health systems with strong leadership continue to flourish and evolve, whereas administrators leading institutions that performed poorly soon found their jobs in jeopardy. These changes forced senior administrators to optimize the organization and functionality of their care delivery system or face the same consequence of an underperforming manager of a professional hockey team. Subsequently, the 2014 Commonwealth report rated the UK system as first in almost every subcategory.

We argue for a similarly fundamental change in the ultimate responsibility for patient outcomes and system efficiency in Canada. Having the authority and big-picture vision to initiate and propel necessary changes to improve quality, healthcare leaders must be held accountable for promoting the culture for improvement (Pronovost et al. 2006), taking preventive steps to design for safety and ensuring that potential problems are investigated, analyzed and addressed (Sharpe 2004). Top management determines how clinical care is organized, delivered and monitored. It is also their responsibility to allocate resources or find appropriate disciplinary mechanisms to ensure quality care and improvements in safety (IOM 1999: 156). It is, thus, their imperative to ensure that there is a well-organized delivery system around patients' episodes of care, and that all personnel are performing at an acceptable level.

If hockey coaches and managers are held responsible for their teams' failure, should we not expect even more from our healthcare leaders?

Four basic strategies can hold healthcare leaders accountable for their organization's or team's performance. First, healthcare administrators, particularly non-clinicians, cannot be divorced from the healthcare playing field. They must be familiar with the bedside operation and coordination, so that they can help find solutions that will truly address patient safety and quality care. Shared governance that puts physicians and administrators on the same team, as is successfully utilized in the Mayo Clinic Health System, is one example of ensuring that

administrators are familiar with the field practice. According to a 2012 survey, preference for Mayo Clinic as the source of care for serious illness was nearly three times greater than the second-leading academic medical centre (Berry and Seltman 2014). This institution also has one of the lowest staff turnover rates in the industry.

Patients, healthcare providers and the general public cannot scrutinize, demand or implement improvements if they do not know how things are going.

Second, in the clinical arena, an integrated and collaborative service line approach, which directly aligns resources and leadership oversight with the “outputs” of a patient’s episode of care, is an effective and efficient way of coordinating, managing and monitoring a patient’s care process. This entails a movement away from the traditional department-centred approach to healthcare delivery that fosters a fragmented approach to care delivery. Having the service line managed and overseen by a leader who is involved in and familiar with the logistics of the actual care process can promote timely feedback and response to any (potential) quality failures, thereby promoting the organization’s ethical duties of beneficence and non-maleficence. A recent study on total knee replacement surgery showed that the one institution that consistently matched surgeons with the same specialized team of technicians and nurses had the shortest operative times and lower inpatient complication rates (Tomek et al. 2012).

Third, accurate outcome metrics must be regularly collected, analyzed, evaluated and disseminated in transparent manners. Patients, healthcare providers and the general public cannot scrutinize, demand or implement improvements if they do not know how things are going. A hospital CEO may have little incentive to address a high complication rate for a particular service if the public and others are kept in the dark (Makary 2012: 210). In the UK, the Outcomes Framework, which measures clinical and patient-reported outcomes, safety and patient experience/satisfaction, provides a comprehensive set of indicators that can drive further quality improvement. In Canada, Saskatchewan, Quebec and Manitoba introduced legislation in the early 2000s obliging hospitals to report critical incidents. Nonetheless, other provinces rely on voluntary reporting of errors by staff, which has been shown to capture only a small proportion of errors and other quality failures.

Fourth, definitive outcome- or performance-based incentives such as those instituted in the UK will promote accountability by demanding that administrators act upon performance metrics to maintain and/or improve patient safety and ultimately patient satisfaction. In the UK, staff

and patient survey results are published nationally, and the focus on commissioning has brought an emphasis on monitoring quality and outcome as well as developing new models of care that can bring value for money (Hope 2015). Other publicly-funded systems, including the Medicare program in the United States, are also following suit in implementing quality- and value-based alternative payment models (2015). As Berwick et al. (1990: 22) argue, healthcare “may need a larger dose of consequences for inaction.” Local and systemic consequences for failing to achieve improvement in care delivery ought to be created (Berwick et al. 1990: 23). Because leaders are responsible for organizing and monitoring the quality and efficiency of care delivery, connecting patient outcomes and other quality measures to their funding incentives may be one way to hold administrators accountable and to help motivate serious process improvement (Pinney 2013: 28).

Conclusion

Organizational culture, including senior leaders’ ability to listen and act on concerns, has been shown to have important influences on patient safety (Pronovost et al. 2006). Nonetheless, more than a decade after the IOM reports and the National Steering Committee on Patient Safety’s recommendations, most healthcare organizations and systems in Canada continue to be trapped in a fragmented, silo-based approach to each patient’s care delivery. As healthcare systems across the world embark on reform in the face of continuing quality gaps and rising costs, it is time to formally place responsibility and accountability for patient safety with those individuals who are responsible for managing a given healthcare organization. It is time to take administrative and organizational accountability seriously – the puck must stop here. **HQ**

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The Upstream Hospital Leader: Taking Action to Improve Population Health

Ross Graham and Ryan Meili

Abstract

Canadian hospital leaders face numerous barriers when they seek to work upstream in an effort to improve population health. A noted challenge is lack of role clarity. We introduce the concept of an “upstream hospital leader” in an attempt to address this challenge, and suggest behaviours for how this role can advance population health at the individual, organizational and health system levels. These suggestions aim to contribute to the ongoing conversation and growing interest in the role of hospitals in population health improvement. We invite feedback on these suggestions and encourage leaders to explore opportunities where greater upstream action by their hospital and health system can improve population health.

Background

“Everyone in healthcare is working to improve population health these days. Or will be very soon. Or feel that they ought to be” (Casalino et al. 2015: 819).

Widespread adoption of the Triple Aim suggests its components – patient care, population health and cost reduction – resonate as critical goals for healthcare providers and health systems (Whittington et al. 2015). Resonance of the first and third aims is unsurprising. Improving patient care aligns with

traditional notions regarding the mandate of health systems and the professional responsibilities of clinicians. Similarly, there is consensus on the need to control or reduce healthcare spending (Simpson 2012). Resonance of the second aim has pleasantly surprised other health system actors who have long sought to advance population health (e.g., public health). This is because many in public health believe healthcare providers, namely, hospitals, have had little interest in population health over the past three decades (Casalino et al. 2015). Public health actors cite that while the World Health Organization (1986) has long advocated that healthcare providers “move increasingly in a health promotion direction, beyond [their] responsibility for providing clinical and curative services,” progress in this area has been limited and the optimal role for hospitals in population health improvement remains unclear (Catford 2014; Hancock 2011; Nutbeam 2008).

However, evidence suggests that Canadian hospitals have long desired to become more active in illness and injury prevention and population health improvement (Cohen et al. 2014; Neudorf 2012; Poland et al. 2005, Thompson et al. 1986). Unfortunately, few hospitals have been able to make significant progress in this area because demand for treatment consistently outpaces funding, and few Canadian hospitals are held accountable or are incentivized to improve population health (Frankish et al. 2007, Graham et al. 2014).

The result is a challenging scenario for hospital leaders (Canadian Institute for Health Improvement 2014; Lalonde 1989). While leaders may wish to allocate resources towards population health improvement activities, they are subject to the “tyranny of the urgent” and are predominantly held accountable for financial and clinical performance. This is problematic because hospital financial and clinical performance has “only tenuous or very indirect linkage with the improvement of the health and well-being of a population” (Denis 2014: 8).

For hospital leaders, upstream hot-spotting presents an opportunity to improve patient care and reduce costs through collaborating with housing, education, transportation, justice, social services and urban planning stakeholders.

Healthy populations clearly require acute care services, which are most often provided in hospitals. However, many suggest that Canadian health systems are overly acute care-centric, struggle to control costs and poorly address the needs of Canadians with chronic diseases (Daar et al. 2007; Picard 2013; Simpson 2012). This includes high-needs patients (Kuluski et al. 2013) and high-use/cost patients (Fitzpatrick et al. 2015). Acute care-centric systems also limit resources available to address the more influential determinants of population health: lifestyle factors and the social, economic, built and natural environments in which we live (Canadian Public Health Association 2015; Mikkonen and Raphael 2010). In other words, how effective are health systems that “treat people’s illnesses, [but] then send them back to the conditions that made them sick?” (Bégin in Mikkonen and Raphael 2010: 5). Lewis (2010: 2) reports another issue with acute care-centric health systems: The public becomes “persuaded of the value of increasingly specialized and sophisticated healthcare and health technology, despite the clear absence of effect on health status.” Serving a community that has a “symbolic and empirical devotion to health care” only exacerbates the challenge of advancing population health for hospital leaders (Lewis 2010: 2). The result is that the majority of health spending and health policy attention remains focused on improving and increasing healthcare services. While some evidence suggests that these investments have paid off (such as the 16% reduction in Canada’s hospital standardized mortality ratio since 2009), rising chronic disease rates and various population health indicators (such a threefold increase in youth obesity rates over the past 30 years) demonstrate that the acute-care-centric status quo is unacceptable (CIHI 2015): “The reality is that we’re treating symptoms. If we are going to flatten the cost or demand curves, the only way to do that effectively is to move upstream” (Waldner in Tremblay 2012: 15).

The topical issue of supporting high-use/cost patients by “hot-spotting” is an example of the need to work upstream. Two-thirds of Canadian healthcare resources are spent caring for only 5% of high-use patients (CIHI 2014a). Health systems across Canada have taken bold action in an attempt to better support these patients and reduce costs. However, many initial hot-spotting approaches have limited success because they focus solely on reorganizing care, and only for patients who are already high-use (Fitzpatrick et al. 2015). To address these limitations, health leaders across Canada have recognized the need for an upstream approach (CIHI 2014a). For hospital leaders, upstream hot-spotting presents an opportunity to improve patient care and reduce costs through collaborating with housing, education, transportation, justice, social services and urban planning stakeholders. It also presents an opportunity for hospital leaders to engage and educate political leaders and the public about the powerful influence of the social determinants of health (SDOH) on health and healthcare costs.

In addition to hot-spotting, a number of approaches have been suggested to support hospitals to work upstream. For example, Neudorf (2012) and Cohen et al. (2014) recommend that Canadian hospital leaders adopt a “population health lens” in decision-making. Poland et al. (2005) suggest greater collaboration between hospitals and community agencies. There is also a growing literature on the role of hospitals as “anchor institutions” in their communities, and the important role hospitals can play in local economic development through their purchasing, real estate, advocacy and hiring practices (Dragicevic 2015; Duffy & Pringle 2013). In the United States, 3,000 hospitals must now demonstrate community benefit beyond provision of medical treatment to remain exempt from federal taxes (Rubin et al. 2015). Also in the United States, Shortell has advocated for the creation of “population health organizations,” where hospitals and public health are integrated to better focus on addressing the determinants of health (Casalino et al. 2015). In (mostly) Europe and Asia, over 1,000 hospitals comprise the international Health-Promoting Hospitals movement, which posits that hospitals should (1) be healing environments, (2) use ‘clinical health promotion’ approaches with patients, (3) be healthy workplaces and (4) form inter-sectorial partnerships to create healthy communities (Pelikan et al. 2013).

Others have suggested the rise in chronic diseases and healthcare spending in Canada requires more drastic action. This includes the recommendation from Goodfellow (2015: 148) for a “dramatic dehospitalization” of current systems. Similarly, Hancock (2011: ii267) advocated for “a profound re-orientation of our current illness-care system.” However, while radical reform may be necessary, study of health system reform in Canada suggests that change will most likely be *evolutionary* not *revolutionary* (Lazar et al. 2013).

We applaud these approaches and support their continued investigation. However, a persistent challenge for hospitals across these approaches is lack of role clarity (CIHI 2014). In particular, limited attention has been paid to the role of hospital leaders in advancing this work (Wieczorek et al. 2015). This is unfortunate given the important role hospital leaders can play in population health improvement, and the challenging scenario many face when trying to advance upstream, population health-promoting activities (Cohen et al. 2014; Johnson 2001). In the remainder of this article, we introduce the concept of the “upstream hospital leader” and draw on the literature to suggest possible behaviours for this role at the personal (micro), organizational (meso) and system (macro) levels. These three levels are consistent with guidance literature for upstream family physicians (College of Family Physicians of Canada 2015).

Hospitals, as organizations, and those in leadership positions within hospitals are well-positioned to advance population health

Far from ground-breaking, our aim is to provide practical advice to busy hospital leaders interested in advancing this important and challenging area. We acknowledge that some leaders already practice these behaviours, and some Canadian hospitals are recognized as leaders in population health improvement (e.g., Winnipeg’s Seven Oaks General Hospital for physical activity and Toronto’s St. Michael’s Hospital for health equity). We include hospital-based clinical leaders in our definition, and have developed the suggestions accordingly. Those with a specific interest in the role of hospital-based clinicians in advancing population health should review existing literature on the topic (e.g., Allen et al. 2013; College of Family Physicians of Canada 2015; Whitehead 2005).

The Upstream Hospital Leader

Hospitals, as organizations, and those in leadership positions within hospitals are well-positioned to advance population health:

[Hospitals] represent the main concentration of health service resources, professional skills and medical technology. Communities readily identify with hospitals. They generally have substantial prestige and their staff are well respected. They are seen as credible sources of advice and expertise on health issues beyond their responsibilities for sick care services. So although hospitals are the high temples of sick care, the extensive resources they command mean that even a small shift of focus has the potential to bring about an increase in resources dedicated to health promotion and, in time, health benefits to a community (Johnson and Baum 2001: 282).

Hospital leaders (at all levels) have opportunities to advance population health as individuals, and as part of teams, organizations and a health system. The upstream hospital leader is someone who makes a concerted effort to seize these opportunities. This can range from leading revolutionary change to supporting a small shift of focus (Johnson 2001). The term “upstream” in this context refers to striving to prevent illness and injury by addressing root causes (rather than the notion of “swimming upstream,” although this may be required on occasion). To support busy hospital leaders interested in moving upstream, example behaviours are suggested below. These suggestions, and the notion of an upstream hospital leader, also contribute to ongoing discussions about the role of health professions and organizations in population health improvement. This includes physicians (Canadian Medical Association 2013; College of Family Physicians of Canada 2015), nurses (Canadian Nurses Association 2005; Whitehead 2005), all healthcare professionals (Allen et al. 2013) and medical schools (Health Canada 2001). An “all hands on deck” approach is clearly needed to achieve any significant reorientation of Canadian health systems and service providers towards population health.

Suggested Behaviours of an Upstream Hospital Leader

At the personal (micro) level

- Learn about the impact of the SDOH and your community’s health status, including key determinants and health equity issues (Neudorf 2012).
- Learn about possible interventions hospitals can use to advance population health (examples reported above) and introduce these interventions to colleagues (Johnson and Baum 2001).
- Learn about local, regional and/or national initiatives that aim to improve population health (e.g., Coalitions Linking Action and Science for Prevention [CLASP]) and determine whether your hospital could get involved (Poland et al. 2005).

At the organization (meso) level

- Test interventions that can advance population health in your setting (e.g., clinical health promotion approaches) and disseminate evaluation results (Johnson and Baum 2001).
- Assess the social challenges faced by patients who access your hospital and engage them in addressing these challenges (Ready 2014).
- Use community health assessment data to inform team, program and strategic planning (Neudorf 2012).
- Empower clinicians to explore clinical health promotion approaches with patients (Wieczorek et al. 2015).
- Empower clinicians and staff to learn about population health and be active in community partnerships that advance population health (Poland et al. 2005).

- Consider the impact on population health in the evaluation of projects, programs and services (Johnson and Baum 2001).
- Build relationships, partner and establish regular communication mechanisms with local public health leaders and community-based organizations (Poland et al. 2005).
- Communicate the importance of the SDOH to members of the public and engage the public in discussions on how you can collaborate to improve health (Johnson 2001).
- Explore the role of the hospital's board and foundation in community partnerships and advocacy (Johnson 2001).
- Develop social impact guidelines for purchasing and procurement activities (Duffy and Pringle 2013).
- Explore strategies to leverage the hospital's social capital, real estate holdings and other assets to advance local social, economic and land use planning goals (Dragicevic 2015).

At the health system (macro) level

- Support the upstream reorientation of healthcare providers and health systems (Hancock 2011).
- Advocate at municipal, provincial/territorial and federal forums about key health determinants and equity issues (e.g., healthy urban planning) (Johnson 2001).
- Promote the concept of health-in-all-policies as a means of integrating upstream thinking into policy making (Casalino et al. 2015).
- Participate in community partnerships as an individual or on behalf of your hospital (Poland et al. 2005).
- Advocate that your professional association(s) support the upstream reorientation of healthcare providers and health systems.
- Support the integration of population health into health leadership education (e.g., MHA programs; Joshi 2015).
- Engage political leaders and policy makers to enhance their understanding of the SDOH and policies that would help improve health outcomes.
- Use the platform given to you by your leadership role to speak in the media and other public venues in promotion of policies that improve health equity (Allen et al. 2013).

While appropriateness of these suggestions will vary by context, this list provides a starting place for hospital leaders to consider actions they can take to support population health improvement.

Conclusion

Canadian hospital leaders face a challenging scenario when they seek to work upstream in an effort to improve population health. Thankfully, there are a number of exciting approaches being explored to support hospitals advance this work. We have suggested some example behaviours to guide hospital leaders

advance these approaches and more broadly, the reorientation of their organization and health system. We invite feedback on these suggestions and encourage leaders to have discussions with their colleagues about how best to advance population health in their setting and system. There is great need for bold, upstream leadership if we are to improve the health of Canadians. **HQ**

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Leading Integrated Health and Social Care Systems: Perspectives from Research and Practice

Jenna Evans, Stacey Daub, Jodeme Goldhar, Anne Wojtak and Dipti Purbhoo

Abstract

As the research evidence on integrated care has evolved over the past two decades, so too has the critical role leaders have for the implementation, effectiveness and sustainability of integrated care. This paper explores what it means to be an effective leader of integrated care initiatives by drawing from the experiences of a leadership team in implementing an award-winning integrated care program in Toronto, Canada. Lessons learned are described and assessed against existing theory and research to identify which skills and behaviours facilitate effective leadership of integrated care initiatives.

Introduction

The rising number of individuals with multiple complex and chronic health conditions, combined with significant economic pressures, has propelled healthcare systems around the globe into rapid transformation (Wodchis et al. 2015). Healthcare providers recognize that the traditional silos for delivery of care are not capable of meeting the significant and varied needs of current and emerging patient populations. Integrating services across different organizations and providers and ensuring a continuum of care is critical to support patients who routinely access care from multiple sources. For leaders of healthcare organizations, this requires the skills to think and act with a “system” versus “organizational” perspective and to shift focus from what works for providers and organizations to what patients and families say is most important to them. Other skills and competencies that are required of healthcare leaders are similarly shifting.

Bringing multiple clinical and social service providers together to integrate care and create “one team” for complex patients and their families involves modifying how diverse organizations and professionals work and how they interact. Achieving such transformation across the healthcare system requires a multilevel strategy targeting policy, funding, organizational, provider and patient and family/caregiver factors (Suter et al. 2009). As the research evidence on integrated care has accumulated over the past two decades, so too has recognition of the influence leaders have on the implementation, effectiveness and sustainability of integrated care delivery (Edgren and Barnard 2012; Evans et al. 2015; Fillingham and Weir 2014; Suter et al. 2009).

Leading across complex interdependent sectors and settings of care is a new and challenging role for healthcare leaders who are already tasked with directing the internal affairs and performance of their organizations. This paper explores what it means to be an effective leader of integrated care initiatives by drawing from the experiences of the leadership team at the Toronto Central Community Care Access Centre (TC-CCAC) whose integration work spans the full continuum of care and has received numerous leadership awards and recognition. Lessons learned are described and assessed against existing theory and research to identify which skills and behaviours facilitate effective leadership of integrated care initiatives.

Leading Integrated Care: Competencies and Theories

Numerous healthcare leadership competency frameworks exist which identify the skills and behaviours leaders need to achieve superior performance in the management of healthcare organizations. Six leadership competency frameworks were chosen as a lens by which to explore the competencies required to lead integration. These frameworks are research-informed, used widely in practice and hail from diverse jurisdictions including the United States, Canada and the UK (Calhoun et al. 2008; CCHL 2013; Dickson et al. 2007; NHS Leadership Academy 2013; Provost et al. 2006; Stefl and Botempo 2008). A competency framework specifically for leading integrated care was recently developed, but the methods used to identify these competencies were not specified (Fillingham and Weir 2014); therefore, the theoretical and empirical base for the framework is unclear. Table 1 outlines leadership competencies across these seven frameworks, which overlap considerably with common themes including the development of a shared vision and the management of relationships, performance and change.

The most commonly used theory for examining the role of leadership in integrating care is Complex-Adaptive Systems (CASs) Theory (Edgren and Barnard 2012; Fillingham and Weir 2014; Tsasis et al. 2012). Several scholars have described healthcare in general (Plsek and Greenhalgh 2001) and integrated care delivery in particular (Tsasis et al. 2012) as CASs. CASs are capable of self-organizing without external control through relationships and interactions among diverse agents. A CAS lens suggests that a facilitative, distributed model of leadership works best in which everyone shares responsibility for leading integrated care efforts, including those without formal leadership positions such as front-line staff members (Edgren and Barnard 2012; Fillingham and Weir 2014). Leaders can positively influence integrated care delivery by demonstrating strong, consistent support for the initiative, empowering front-line staff to determine the required changes and removing barriers (Suter et al. 2009; Tsasis et al. 2012; Wheatley 2006).

In CASs, the future is unpredictable, so sensemaking and sensegiving are more important leadership behaviours than traditional “command-and-control” approaches (McDaniel and Driebe 2001). Sensemaking has to do with the way individuals understand and interpret a strategic change such as service integration (Weick 1995). Sensegiving is concerned with how leaders communicate their thoughts about the change to others and gain their support (Gioia and Chittipeddi 1991). The idea that we need to “make sense” of the integrated care process highlights the complexity of bringing together multiple diverse providers to improve care for shared patients. Often, there are differences in how “integrated care” is defined and understood, and varying perceptions of respective roles and desired outcomes (Evans et al. 2012; Pate et al. 2010). Leaders play a

role in framing the integrated care process in ways that surface these differences and facilitate negotiation and understanding.

Integrated Care Interventions led by the TC-CCAC

The Toronto Central Community Care Access Centre (TC-CCAC) has a mandate to enhance access and care coordination for complex clients. In partnership with clients and primary care providers, TC-CCAC develops comprehensive care plans; delivers home care services that support people to live at home; identifies and connects clients with community and social programs and services; and supports people to transition through the healthcare system including hospital to home and to long-term care.

The TC-CCAC has earned several local and national awards for developing and leading innovative integrated care models and practices, including:

- the 2014 Ontario Minister’s Medal (top honour) for Excellence in Health Quality and Safety for its integrated client care program for palliative care;
- the 2013 Ontario Minister’s Medal Honour Roll for Excellence in Health Quality and Safety for its integrated client care program for older adults with complex care needs;
- a “High Impact Practice” designation from the Canadian Home Care Association; and
- a “Leading Practice” designation from Accreditation Canada.

The TC-CCAC’s most prominent contribution to integrated care is the Integrated Care for Complex Populations (ICCP) program, a multi-year strategy for integrating care for populations with complex needs. Key features of the program include: (a) a single point of access, (b) an interdisciplinary, inter-organizational team of providers, (c) partnerships with primary care, hospitals, specialists, community support service and Emergency Medical Services, (d) case management/care coordination across the continuum of care, (e) individualized coordinated care plans for patients and families driven by what is most important to them, (f) medication management and (g) patient and family/caregiver education and support (Goldhar et al. 2015). Each integrated care team has a CCAC care coordinator who ensures that inter-organizational and interdisciplinary team members work together for joint assessments, joint care planning and joint home visits and/or virtual case conferences. Since its inception in 2011, ICCP for Older Adults, Palliative Care and Children with complex medical needs has supported thousands of clients and their families.

TC-CCAC Lessons Learned for Leading Integrated Care Initiatives

Through a series of open discussions among the TC-CCAC leadership team and an external researcher (See Appendix), three key lessons emerged for leading integrated care.

TABLE 1.
Seven International Healthcare Leadership Competency Frameworks

Healthcare Leadership Framework	Leadership Competencies, Behaviours and Skills
Framework for Leadership of Improvement (Provost et al. 2006)	Set direction: mission, vision and strategy (communicate the direction to all stakeholders) Establish the foundation (choose, develop and align a leadership team, build relationships and establish improvement capability) Build will for change (plan for improvement, set aims, allocate resources, measure performance and provide encouragement) Generate ideas (listen to patients and other stakeholders, benchmark, scan widely for external ideas, invest in research and development and understand the organization as a system) Execute change (test, adapt and implement new ideas, spread good ideas, communicate results and sustain improvement)
Pan-Canadian Health Leadership Capability Framework (Dickson et al. 2007)	Champion caring (inspire and encourage commitment to health, show respect for all, act with compassion and exhibit fairness) Cultivate self and others (demonstrate self-awareness and self-management, exhibit character, enable others to grow and create engaging environments where people have meaningful opportunities to contribute) Connect with others (communicate effectively with diverse stakeholders, build teams, develop networks and partnership and navigate socio-political environments) Create results (develop a shared vision, hold self and others accountable, use quality improvement and evidence in decision-making and manage resources) Change systems (build understanding of the complexity of the health system, mobilize knowledge and lead changes)
National Center for Healthcare Leadership Competency Model (Calhoun et al. 2008)	People (human resources management, relationship building, interpersonal understanding, professionalism, team leadership and talent development) Transformation (innovative thinking, strategic orientation, information seeking, analytical thinking and financial acumen) Execution (communication and collaboration skills, change leadership, accountability, project management and performance measurement)
The Healthcare Leadership Alliance Model (Stefl and Botempo 2008)	Communication and relationship management (communicate clearly with internal and external customers, establish and maintain relationships and facilitate constructive interactions) Leadership (inspire excellence, create a shared vision and manage change) Professionalism (align conduct with ethical and professional standards and commitment to lifelong learning and improvement) Business knowledge and skills (systems thinking, financial management, human resource management, governance, strategic planning and marketing, information management, risk management and quality improvement) Knowledge of the healthcare environment (understand the healthcare system and environment in which managers and providers function)
LEADS in a Caring Environment Framework (CCHL 2013)	Systems transformation (systems thinking, change management and continuous improvement) Develop coalitions (build diverse partnerships and networks) Achieve results (set direction, make evidence-based decisions and evaluate outcomes) Lead self (self-awareness and personal development) Engage others (communicate effectively, build teams and foster the development of others)
NHS Healthcare Leadership Model (NHS Leadership Academy 2013)	Inspire shared purpose (create and role model shared purpose and values for diverse individuals doing different work, question the way things are done and take personal risks to stand up for the shared purpose) Lead with care (understand underlying emotions of self and staff, care for staff members' emotional well-being and provide opportunities for mutual support) Evaluate information (seek out varied information, data and feedback, measure and analyze performance over time, use information to generate ideas and plans for change and make evidence-based decisions) Connect services (recognize how one's own area of work relates to other parts of the system, understand the culture and politics across the organization and build strategic relationships to make links across the broader system) Share the vision (create a clear and compelling picture of what everyone is working towards and use ongoing communication strategies) Engage the team (promote teamwork, value individuals' contributions and encourage individuals to identify problems and solve them) Hold to account (set clear expectations for self and others, provide performance feedback and support continuous improvement) Develop capability (provide learning and development opportunities to staff, provide mentoring, identify capability gaps and take steps to rectify them) Influence for results (adapt communication to connect with diverse groups, develop collaborative agendas and consensus and build sustainable commitments/agreements)
Knowledge and Skills Framework for Leadership Across Integrated Systems (Fillingham and Weir 2014)	Technical know-how (service design, governance arrangements, innovative contracting and financial mechanisms and technological savvy) Improvement know-how (systems thinking, improvement science and large-scale change) Personal effectiveness (interpersonal skills and behaviours, coaching ability and visionary and participative style)

Lesson 1: Change the Conversation

Traditionally, partnerships aimed at integrating care are characterized initially by a focus on clarifying respective roles in the joint initiative and defining performance metrics for evaluating success (Minkman et al. 2009). However, Wheatley (2006) notes, changing from a “task-focused” delivery model to a “communication-based” delivery model has greater likelihood of success because it focuses on building strong relationships versus focusing on tasks, functions, span of control and hierarchies – the latter examples being more traditional ways to deliver healthcare. The TC-CCAC initiated the change process by talking to patients and families to understand what is most important to them. Then the TC-CCAC re-framed its early conversations with existing and potential partners by focusing on how patients experience the healthcare system and by asking questions such as, “How can we make it better?” and “What do we *really* want to achieve together?” Posing these questions helped direct attention away from the mandates of each organization, and re-focus attention on the possibilities of what might be accomplished through collaboration for the organizations involved, and for patients and the healthcare system at large. These conversations generated multiple improvement opportunities. For example, the TC-CCAC used patient feedback to create One client, One team™ (trade-mark of TC-CCAC), which brings together providers from different organizations as one team. Other improvement opportunities that emerged include providing medication reconciliation during transitions from acute care to home to prevent hospital readmissions, creating coordinated care plans that span multiple providers, and developing a means to transfer critical patient information when paramedics respond to emergency calls.

One of the goals of changing the conversation among partnering organizations in this way is to break down boundaries between professionals and organizations, and create a sense of shared purpose and identity. Building a shared identity can be difficult for individuals who have been socialized into their professional roles and for organizations that have built a strong brand in the community (Pate et al. 2010). In order to change behaviours, leaders need to identify the values and agreements that will support the new behaviours and act congruently with desired values. The leader’s role is to ensure there is strong and evolving clarity about *why*, not what, how or when (Wheatley 2006).

The TC-CCAC realized that its efforts to change the conversation and foster a shared identity among partners were successful through two separate incidents. The first was at an event where several CCAC staff members identified themselves as members of an external primary care team in which they had been embedded. In other words, employees of different organizations perceived themselves as having a shared identity. The second example occurred when partnering organizations

took ownership and shared credit for an initiative that started with TC-CCAC and spread. In both cases, the TC-CCAC interpreted these incidents as indicators of success that boundaries were being blurred, best practices were being shared and adopted and that organizations were working collaboratively not competitively.

Lesson 2: Self-Reflect and Adapt

Leading integrated care initiatives requires proficiency in relationship-building. Traditional healthcare leadership competencies in technical areas, such as financial management and strategic planning, are inadequate. Effective relationship-building involves creating meaningful connections, trust and shared meaning among diverse individuals and groups.

The TC-CCAC’s approach to relationship-building involved constant reflection on the context and each partner: What is working? What is not working? What motivates each partner? What do they want from the relationship? Ongoing reflection on these questions enabled the TC-CCAC leadership team to tailor their tactics to the evolving needs and expectations of each partner.

Management tactics may also be tailored based on the implementation stage of an integrated care initiative and the maturity of the relationships involved. In the early stages, there is a need to develop trust and respect. Delivering on early commitments and creating opportunities for interaction are thus priorities. In later stages of the partnership, the focus expands to more difficult conversations about roles, accountability and funding. Without first building a foundation for understanding each organization’s perspective, it is unlikely that organizations will easily move to decision-making that impacts “turf,” such as conversations about respective responsibilities and resource commitments or “ownership” of programs and services.

Lesson 3: Allow for Evolution

Experts emphasize the importance of adapting integrated care models and interventions to the local context to enhance the probability of success (Bardsley et al. 2013). The TC-CCAC approach to implementing the ICCP allowed for local adaptation and learning over time through trial and error. Rather than calling ICCP a “pilot project,” the TC-CCAC deliberately framed the initiative as a “multi-year strategy.” This choice of wording was specifically designed to demonstrate long-term commitment.

There was also no *a priori* script for how the integrated care model would look or how change would be implemented. Instead, the TC-CCAC utilized an approach of rapid testing, which allowed the ICCP to be implemented and refined over time based on qualitative feedback from staff members, external providers, patients and caregivers. For example, rather than strictly defining roles and responsibilities upfront, the TC-CCAC gave their staff members

permission to make key decisions regarding how best to deliver services at the point of care. Staff members were encouraged to share and discuss their experiences at regular meetings, and this information was used collaboratively and iteratively to inform the development of formal policies and procedures.

The team noted that, as their internal organizational culture evolved with the implementation of ICCP, this created ripple effects which influenced others in the immediate context.

Discussion

Three overarching lessons emerged from the TC-CCAC leadership team's experience implementing ICCP: change the conversation, self-reflect and adapt and allow for evolution. These lessons align with the principles of CAS and sensemaking theories, which emphasize relationships and interactions among stakeholders, attention to context, continuous adaptation through learning and distributed leadership. The key lessons learned by the TC-CCAC leadership team also overlap with the content of existing healthcare leadership competency frameworks (Table 1). However, these frameworks outline a broad range of leadership competencies. The frameworks do not specify in adequate detail which leadership skills and behaviours are most important for managing effectively the challenges inherent in integrating care.

In Table 2, we present a leadership competency framework specific to integrating care. The framework highlights key skills and behaviours for those leading initiatives aimed at integrating care for populations with complex care needs. These include: (1) framing and re-framing issues, (2) taking the perspective of others, (3) focusing on patients and caregivers, (4) systems thinking, (5) sharing power and (6) reflective learning.

First, leaders play a key role in framing how stakeholders view and interpret the integrated care initiative. Careful consideration must thus be paid to messaging both in terms of the language leaders

use and the actions leaders take. Leaders skilled in framing tailor their message to the audience, incorporate multiple stakeholder perspectives and focus attention on finding common ground.

Second, leaders of integrated care initiatives must understand what motivates current and potential partners and how these underlying motivations shape their decisions and actions. By taking the perspective of others, leaders can frame issues and conversations in ways that recognize the respective needs and contributions of various partners.

Third, effective leaders gather information on the needs and preferences of patients and their caregivers to inform the design of integrated care initiatives. They also view care processes through the eyes of patients and families to understand which components add value and which do not. Focusing on patients and caregivers, rather than organizations and providers, is a useful method for unifying the diverse interests of partners.

Fourth, a micro-level focus on patients and caregivers must be balanced by a macro-level view of the healthcare system as a whole. In systems as complex and dynamic as healthcare, well-intentioned changes to structures or processes in one part of the system often have unintended consequences in other parts of the system (McDaniel and Driebe 2001). In designing and implementing integrated care initiatives, leaders must consider simultaneously the experience of patients and their caregivers as well as the performance of the healthcare system.

Fifth, effective leadership of integrated care is both an individual and a collective phenomenon. Success is predicated on leaders sharing authority over decision-making and work so that staff can shape and take ownership of the change process.

Finally, applying a learning lens to how integrated care initiatives are framed and implemented empowers staff to take risks and facilitates ongoing improvement. A learning lens emphasizes tactics such as small-scale testing, performance measurement, tolerance for failure and ongoing reflection.

TABLE 2.
Key Leadership Skills for Integrating Care for Populations with Complex Care Needs

Leadership Behaviour	Description	Desired Outcome
Framing and Re-Framing Issues	Using communication to influence how others see an issue and focusing their attention on particular aspects of the issue to bring clarity and agreement to complex or ambiguous situations	Shared purpose, shared identity and consensus-building among partners
Taking the Perspective of Others	Seeking an accurate understanding of the thoughts, feelings, motivations and intentions of current and potential partners, and using this information to build a "safe space" for partners to be open and collaborative	Stronger, more trusting relationships among partners
Focusing on Patients and Caregivers (Micro-Level View)	Ensuring care delivery is responsive to what is most important to patients and their caregivers, not providers and organizations	Patients and caregivers experience providers as a single team working in partnership with them
Systems Thinking (Macro-Level View)	Analyzing situations and problems by focusing on the linkages and interactions between different components of the healthcare system, rather than focusing on components or events in isolation	More synergistic solutions for fostering an integrated healthcare system
Sharing Power	Enabling those around you to think and behave in autonomous ways, and to control and take credit for work and decision-making	More engaged workforce that takes ownership of integrated care delivery
Reflective Learning	Thinking about and analyzing what one has done (or is doing) to identify factors affecting success, and embracing failure as an opportunity to learn and improve	Continuous improvement towards the vision of integrated care

Conclusion

Integrating care involves modifying how diverse organizations and professionals work and how they interact through changes to high-level policies, funding arrangements or organizational and provider configurations. These fundamental changes to how care is structured and delivered demand “system leaders” with leadership competencies that support effective and sustainable relationship development among traditionally disparate components of the healthcare system.

Drawing from the practical experiences of the TC-CCAC leadership team, as well as prominent scholarly theories, the lessons presented suggest that, in addition to developing the leadership capacity of individuals, we must also develop collective leadership capacity across the healthcare system. **HQ**

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Appendix: Semi-Structured Interview Guide

1. What principles or values underpin your approach to leading?
 - 1a. What leadership competencies underpin your approach to leading?
2. What kind of leadership is needed to increase the probability of success in integrated care initiatives? How do you know?
 - 2a. What is it about this leadership style/approach that makes it difficult to achieve or enact?
3. What kind of leadership does not work when it comes to integrating care? How do you know?
4. What are the enablers and barriers to effectively leading integrated care?
 - 4a. What are the key success factors?
5. Should the leadership approach change over the lifespan of the integrated care initiative?
 - 5a. Is what is needed different at the planning stage versus the implementation stage versus the spread stage?
6. Is the kind of leadership required to lead the process of integrating care different than it would be for other major change initiatives?
7. What are some lessons learned from your experience leading integrated care initiatives?

The Physician Quality Improvement Initiative: Engaging Physicians in Quality Improvement, Patient Safety, Accountability and their Provision of High-Quality Patient Care

Kirsten Wentlandt, Niki Degendorfer, Catherine Clarke, Hayley Panet, Jim Worthington, Richard F. McLean and Charles K. N. Chan

Abstract

University Health Network has been working to become a high-reliability organization, with a focus on safe, quality patient care. In response, the Medical Affairs Department has implemented several strategic initiatives to drive accountability, quality improvement and engagement with our physician population. One of these initiatives, the Physician Quality Improvement Initiative (PQII) is a physician-led project designed to provide active medical staff, in collaboration with their physician department chiefs, a comprehensive approach to focused and practical quality improvement in their practice. In this document, we outline the project, including its implementation strategy, logic model and outcomes, and provide discussion on how it fits into UHN's global strategy to provide safe, quality patient care.

The model of the twenty-first-century healthcare system has shifted, focusing now on value-driven care with an emphasis on safe, high-quality delivery at lower costs. Healthcare organizations are subsequently tasked with aligning their staff, services and budget to reflect this shift. In light of such demands, many healthcare organizations have attempted to develop an organizational culture that highlights the principles of accountability, patient safety and high-quality care delivery.

University Health Network, an organization that encompasses four academic hospitals in Toronto, Ontario, has been working to become a high-reliability organization, with a focus on safe, quality patient care (Dougherty and Conway 2008). In response, the Medical Affairs Department has implemented several strategic initiatives to drive accountability, quality improvement and engagement with our physician population. These projects include a physician onboarding program, physician experience surveys, leadership development and quality improvement plans. In this document, we will outline one of these programs, the Physician Quality Improvement Initiative (PQII).

The PQII is a physician-led project designed to provide active medical staff, in collaboration with their physician department chiefs, a comprehensive approach to focused and practical quality improvement in their practice. Using a series of multi-source feedback (MSF) surveys, each physician receives a brief, accurate snapshot of their practice through the eyes of the people they work with and serve. They work in partnership with their department chiefs to review their feedback, ultimately strengthening communication, advancing understanding and improving the quality of care within the department. PQII is not a part of hospital credentialing, disciplinary decisions or academic appointments; rather, this initiative fits into an overarching quality improvement agenda, and it fosters

accountability to the organization and dedication to quality patient care. An outline of the logic model, inputs, resources, activities and outcomes of the project is presented in Figure 1.

Inputs

Hospital Management and Project Lead

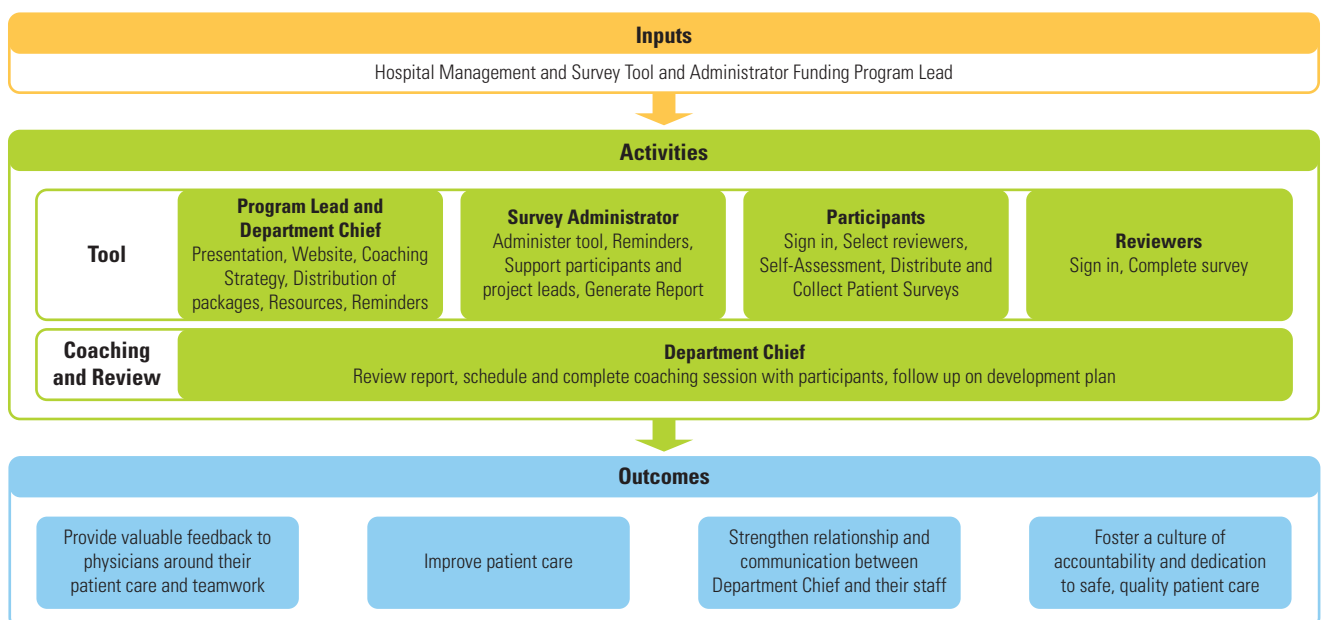
Evidence indicates that professional peer involvement and leadership in adoption of quality initiatives can influence physician perceptions, buy-in and, ultimately, project success (Bishop and Fleming 2014; Parand et al. 2010; Wakefield et al. 2010; Walsh et al. 2009). This project had strong support and leadership from the President and Chief Executive Officer, Vice President of Medical Affairs and Quality and Organizational Development leaders from Human Resources. The PQII Project Lead (PL) is a member of the University Health Network (UHN) physician population and supports each step of the project process, acting as a resource to both participating physicians and department chiefs (DC). Although the PL role falls within the Medical Affairs mandate, it is clearly communicated and transparent that this role has no involvement with credentialing or resource allocation. The PL worked in partnership with UHN's Human Resources Department to develop a toolkit of critical documents that support the PQII. A communication proposal, coaching strategy and development plan template are essential to support the report review process in helping the DC provide a safe and open environment that not only allows for exploration of a physician's feedback but also encourages development of a personalized improvement plan.

Survey Tool and Administrator

MSF, or 360-degree evaluation, is an expanding approach to the assessment of physicians. A survey-based process using self-assessment and physician colleague, co-worker and/or patient reviewers, MSF can be a valuable method to assess residents and physicians (Hall et al. 1999; Lipner et al. 2010; Ramsey et al. 1993; Violato et al. 1997; Wenrich et al. 1993) and has previously encouraged practice improvement (Fidler et al. 1999; Violato et al. 2008). MSF has been used successfully as both a formative assessment and as a quality improvement approach to drive enhancements in performance (Bracken et al. 2001; Tornow et al. 1998).

The options for MSF surveys applicable to physicians and created for the purpose of quality improvement are limited. The survey tool to be used for the PQII needed to be solidly based on the best practices, undergone validity testing and targeted to support quality improvement. The regulatory authority in Alberta, the College of Physicians and Surgeons of Alberta (CPSA), began using MSF with the initiation of the Physician Achievement Review (PAR) program (Hall et al. 1999). Since then, the program has become a mandatory requirement for continued licensure in Alberta and several other provinces (Hall et al. 1999; Sargeant et al. 2003). The CPSA-PAR program has several versions of the PAR tools according to physician specialty or practice, all of which have been validated and psychometrically tested (Lockyer et al. 2006a, 2006b; Violato and Lockyer 2006). Medical colleagues, co-workers, patients and the participating physician provide data using

FIGURE 1.
PQII Logic Model



different questionnaire forms that focus on several CanMEDs roles, including clinical knowledge and skills, communication skills, psychosocial management, office management and professionalism.

Once the feedback has been collected, a report is compiled and physicians receive a copy of their own data (presented as aggregate scores for each item) along with comparison data for their group (e.g., Anaesthesiologist, Surgical Specialist, Psychiatrist, etc.). Although the majority of the PAR program processes were adopted for the PQII, the PQII diverges once the report has been generated. In the CPSA–PAR program, CPSA mails the report to participant physicians, and physicians are expected to review their report independently. In the PQII, the report is given to participants during their report review session with their DC.

Funding

The Council of Academic Hospitals of Ontario (CAHO), the association of Ontario's 24 academic hospitals and their research institutes provided initial support during the implementation of PQII. The CAHO PQII Steering Committee and CAHO secretariat provided project management support, as well as an ongoing role, during the start-up phase to assist in the implementation of the PAR surveys. The four CAHO hospitals involved in piloting the PQII included North York General, Hamilton Health Sciences, the Ottawa Hospital and UHN. Each hospital has implemented the PQII differently, tailored to the structure and culture of their organization. Although they may differ on the number of resources, supports or processes, the ultimate goal of providing meaningful, valuable feedback to physicians remains the same across organizations.

Original funding for the pilot phase of UHN's PQII came from the Medical Affairs funding envelope, but to support the continuing project, a long-term plan was required. After initiating a communication strategy outlining the importance of physician involvement in quality improvement and organizational commitment to safe, quality patient care, an additional PQII fee was instituted and collected alongside the annual physician credentialing fee. More recently, another funding partnership has been developed with UHN's Medical Staff Association.

Activities

PQII Communication Plan

Several resources were put in place to support knowledge translation and change management. This included a website that held documents to support the initiative including a project summary, reviewer selection guides, a sample report, sample surveys, a general question and answers document, a development guide and a list of professional development and wellness resources for physicians. DCs were engaged early in the process and volunteers were solicited from self-identified

early adopters. Participating departments had a presentation to the physician group outlining the process, expectations and were given tips to support reviewer selection and survey collection (Figure 2).

FIGURE 2.
Outline of PQII Activities



Feedback Collection

Once a department was selected and oriented to the PQII process, participant physicians were given a package which includes their login information as well as their patient letters, surveys and envelopes. Physicians were responsible to sign in online to select reviewers and complete their self-assessment. Collection of patient surveys was done in either a clinic setting or in the inpatient environment. Physicians received support from the PL, DC and the Survey Administrator to help troubleshoot system issues and aid in project completion.

Facilitated Report Review

Evidence demonstrates that the power of feedback is highly reliant on the perception or interpretation of the information by the participant (Eva and Regehr 2013; Sargeant et al. 2007). To support the understanding and translation of the feedback into something considered both valuable and useful to physicians, we have structured a report review session to occur between a physician and their DC. This is an opportunity to discuss the physician's career goals, their achievements, strengths and weaknesses and reflect on the report feedback with the guidance of their supervisor. This also strengthens intradepartmental communication and the understanding between the DC and their physicians.

To support physician leaders in their coaching role for the PQII, UHN has developed several resources to facilitate these discussions and their ability to provide meaningful feedback. The PL meets with all DCs to review their group's reports to help strategize optimization of meeting structure and personalized feedback for the report reviews. This session also facilitates understanding of more global trends within the department and the organization.

Challenges

Implementation of the PQII was not without its difficulties. The overall acceptance of a quality improvement project targeting physicians was high, but finding time to complete the initiative was seen as a barrier. Practice design played a role in how difficult it was to collect feedback. Departments in which physicians shared patients, had a multidisciplinary team and had an outpatient clinic, selection of reviewers was straightforward but participants who worked in isolation, strictly on inpatient units, and worked in smaller teams found the collection of data quite challenging. Other limitations included the response rate of physician colleague and co-worker reviewers and having to manually add contact information of reviewers who worked outside of the organization. The PQII team worked to minimize these barriers and to facilitate completion of the project.

Outcomes

A thorough evaluation was conducted of the pilot project (Wentlandt et al. 2015), including an online exit survey ($n=30/45$) and qualitative interviews DCs ($n=5$) and participant physicians ($n=12$). Participants indicated that the MSF practice was a valuable process that promoted quality improvement and accountability. Overall, 54% contemplated practice changes in response to their PQII feedback, and these changes were most often related to how they communicate with patients. The qualitative feedback indicated that the PQII provided an opportunity for individual physician development, affirmation and reflection. DCs found the PQII to be a structure to

further departmental quality improvement; transfer of best practices; and, finally, an opportunity to enhance communication, accountability and relationships between the organization, department chiefs and their staff.

Clinical performance feedback is an important component of the ongoing development and education of physicians.

Discussion

Culture is often described as a common meaning, understanding, significance, values and norms (Schein 2009). According to Needle (2004) organizational culture represents the collective values, beliefs and principles of organizational members and includes the organization's vision, values, norms, systems, symbols, language, assumptions, beliefs and habits (Needle 1994). Thus, creation of a patient safety or quality care culture involves promoting clinician attitudes and perception through engagement on organizational objectives (Lowe 2012). Although the entire organization and its employees need to be invested in organizational culture change, the importance of specifically engaging physicians has been highlighted in quality and safety practices (Walsh et al. 2009). In this paper, we have described the implementation of the PQII, and how we have involved physicians in our global quality improvement agenda.

Clinical performance feedback is an important component of the ongoing development and education of physicians. Assessment of performance can drive learning, professional development and performance enhancement of individual physicians (Veloski et al. 2006). Generally, practicing physicians have few opportunities to gain feedback about their clinical practice, which is central for developing both confidence and competence at all stages of their medical careers (Kaye et al. 2014). The PQII addresses this gap and provides an opportunity for UHN physicians to garner valuable feedback from their peers, co-workers and patients.

The PQII has implemented a report review session, which is a divergence from the original PAR program. Institution of this review session served several purposes. Evidence demonstrates that the extent to which practice changes occur following provision of MSF will be influenced by the acceptability of perceived negative information (Sargeant et al. 2007) and the approach in which motivation is encouraged (Eva and Regehr 2013). The goal is to have the DC help participants translate their feedback in a meaningful way to encourage development. This meeting also facilitates DC understanding of their front-line staff, and it naturally extends into the relevance of the feedback towards career goals and how the DC and their department can support a physician's development.

Recognizing that individual physician performance problems may identify larger systems' challenges, the PQII also

allows UHN to aggregate information to understand particular patterns of strength and weakness in performance within the department and organization. Assessment helps identify best clinical practices and evidence–practice gaps, knowledge of which can be shared more widely, as part of physician-led quality improvement programs (Scott 2009). Finally, the PQII has been seen as an opportunity by DCs to engage physicians around their accountability in providing quality care, as well as addressing a broader agenda for quality improvements, not only in an individual's practice but also across the department's.

Accountability has been highlighted as an important element of a safe and quality care culture in high-performing healthcare systems. Clear accountability expectations must exist for all provider groups, including physicians (Kendel 2014). Unfortunately, a great number of hospital-based physicians are independent professionals, and are not considered employees of the organization. Often, their only true link to the healthcare organization is through the credentialing process. Accountability can be difficult to connect to this annual privilege review, as it is frequently a perfunctory process and is rarely linked to performance (Baker 2014). Although professional regulatory agencies have a more formalized accountability structure with physicians, they have less capacity to effectively and reliably monitor performance (Kendel 2014).

Implementation of the PQII is strengthened by situating it in our global strategy to become a high reliability organization. Feedback is often found to be most effective when integrated within a broader quality improvement agenda (Kiefe et al. 2001); it should not be an isolated, fragmented initiative; rather supported with resources and a minimal number of systemic barriers towards improvement (Kaye et al. 2014). UHN has developed an infrastructure to support the administration of the PQII, as well as worked to establish a safe environment for communication, feedback and disclosure. Evidence indicates that attitudes around feedback or disclosure are an important factor in changing organizational culture towards providing safe, quality patient care (Etchegaray et al. 2012).

Individuals' understanding of their work forms the basis for their attention to what is interesting, important and relevant, and determines what skills they develop and how work is performed (Sandberg and Targama 2007). Managing individual understanding is thought to be shaped through socialization, and to develop a larger appreciation of patient safety and quality care, projects like the PQII have to be the norm within an organization. The PQII, as a sole initiative, works to improve clinical care, but, in a broader context, it supports the organizational culture to focus on accountable, safe and high-quality patient care. **HQ**

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Conducting Effective Physician Performance Feedback: A Primer for Healthcare Leaders

Amy H. Y. Cheng, Jason Manayathu, Douglas Sinclair, D. Elizabeth Tullis and Glen Bandiera

Abstract

Physician performance feedback (PPF) can help physicians gain insight into their practice, to identify areas for improvement, and to implement changes to improve care.

There is increasing interest in the use of PPF in Canada. However, little is known about the different types of PPF methods and whether PPF can lead to improved physician performance and patient outcomes.

We provide a primer for healthcare leaders interested in doing PPF by reviewing common PPF methods. We then describe our institution's experience with physician multi-source feedback and provide strategies to conduct meaningful PPF.

Background

There is increasing public interest in healthcare performance. Systematic reporting and regular feedback of quality measures are important to help policy makers identify whether policy changes and public investments have been effective. For administrators and healthcare providers, reporting and feedback of quality measures help identify areas for improvement and track progress of quality improvement initiatives (Health Quality Ontario 2014). Around the world, performance measures and patient health outcomes such as ED wait times and morbidity rates are reported, compared, and benchmarked – but often on an institutional and systems level, and often done sporadically.

With current reporting mostly done on a macro level, physicians may be unaware of their own performance and individual physician performance feedback (PPF) offers an option. In contrast to public reporting, PPF focuses on quality measures of individual physician effectiveness in domains such as: clinical processes, clinical outcomes, patient experiences, and resource utilization (Shaller and Kanouse 2012). PPF reports are confidential and at times shared only with the physician's clinical chief or delegate. PPF helps physicians gain insight into their own practice by providing individual performance data that is often benchmarked against clinical guidelines or peer performance. Physicians can reflect on the data and implement changes to improve patient care; regular reporting allows for the monitoring and tracking of the progress of improvement initiatives.

The use of PPF is increasing worldwide. The Agency for Healthcare Research and Quality (AHRQ) in the US has recently sponsored a number of organizations to produce private performance reports for physicians (Shaller and Kanouse 2012). Physician regulatory bodies in the US, the UK and Canada are increasingly using PPF as part of the physician maintenance of certification process (American Board of Internal Medicine 2014a; College of Physicians and Surgeons of Alberta 2013; General Medical Council 2014). In the fall of 2014, Health Quality Ontario partnered with the Institute for Clinical Evaluative Services and Cancer Care Ontario to pilot

a project that provided PPF to Ontario primary care physicians on their cancer screening practices, healthcare utilization, and diabetes practices (Health Quality Ontario 2014). Hospital departmental chiefs across the US and Canada have begun to use PPF as part of individual physician's regular performance review, and as a way to monitor and improve the quality of patient care. A recent Cochrane review suggests that audit and feedback may lead to small improvements in professional practice, and that the effectiveness of the feedback is dependent on the physician's baseline performance and how the feedback is delivered (Ivers et al. 2012).

The purpose of this paper is to provide healthcare leaders with a primer to conduct effective PPF. We review the current available literature on PPF methods with a discussion of the pros and cons of each. We then describe our institution's experience with conducting a multisource feedback (also known as the "360"), and conclude with lessons learned and strategies for conducting meaningful PPF.

Physician Feedback Methods

The published (Pubmed and Ovid medline databases from inception to October 2014) and grey literature were reviewed. The reference lists of relevant articles were hand searched for pertinent articles. The World Wide Web was also searched to identify reports, documents, books and any other articles that may not have been identified using the databases described. Studies were included if they were written in English, and described the development, implementation, evaluation, and/or impact of an individual PPF method or tool. Articles that document PPF in any medical specialty were considered.

We define PPF methods as mechanisms to provide physicians with individual practice data with the intention of stimulating individual practice reflection and quality improvement. The intervention may be part of an education program, maintenance of certification requirement, or as part of a performance review. The reports may be provided to the physicians only, or to the physicians and their local clinical oversight or regulatory bodies.

The five methods to generate physician performance feedback are: 1) Chart audits, 2) Video feedback, 3) Simulations, 4) Balanced scorecards, and 5) Multisource feedback (360).

Chart audits

Chart audit is a practice where a physician (self or peer) audits and reviews a selection of his/her charts on processes and outcomes of care. This practice may be combined with patient surveys. After the completion of the chart audits, physicians may also be asked to compare their practice with clinical guidelines, identify an area for improvement and propose a quality improvement intervention. Physician certification bodies, such as the College of Physicians and Surgeons of Ontario (CPSO), often use random chart audits conducted by a peer assessor

as part of the physician maintenance of certification process (American Board of Internal Medicine 2014b; College of Physicians and Surgeons of Ontario 2014; Lockyer et al. 2011).

Hospital departmental chiefs across the US and Canada have begun to use PPF as part of individual physician's regular performance review, and as a way to monitor and improve the quality of patient care.

Chart audits help physicians understand their current practice and identify areas for improvement. Focus groups have shown that physicians' receptivity to the chart audit results are mixed: some found that it highlighted areas (i.e., communication skills) that needed to be addressed, some found the information confirmed their practice (and didn't think there was any areas to improve), and others saw the audit as an obligation and did not incorporate the feedback to improve their practice (Lockyer et al. 2011).

Video feedback

Video feedback uses video recordings of physician-patient interactions to provide feedback on physician performance during clinical encounters. A recent study recorded the day-to-day patient interactions of 28 primary care physicians in the Netherlands using an unmanned video camera (Noordman, Verhaak and van Dulmen 2011). The participating physicians and an assessment team subsequently viewed and scored the interactions on a secure website. A feedback session based around an individualized feedback report that contains the individual physician's raw scores, mean peer score, and patient ratings were given to the individual physicians via the telephone or a written report. While the physicians found the exercise helpful, this method is time consuming, expensive and not feasible to provide on-going feedback and monitor progress. It also only measures the communication aspect of a physician's ability to deliver care. Video feedback therefore has limited utility in providing physicians with ongoing feedback about their regular practice that can lead to an improvement in outcomes.

Simulations

Simulations refer to the use of simulated scenarios (involving mannequins, simulated patients, etc.) to train physicians and/or evaluate their performance by mimicking clinical situations that one would encounter in practice. In a typical simulator exercise, participants work in an inter-professional team to respond to a scripted scenario. The performance is evaluated in real time by an observer. The evaluator conducts a debriefing session with the team after the simulator session to solicit team feedback about the performance from the participants, and the evaluator

also provides feedback and suggestions for improving future performance. Simulation has the advantage of being able to assess both technical and non-technical skills (i.e., communication, leadership, inter-professional skills). While simulation has its role, it is limited to situations based on a pre-scripted scenario, with the patient outcome often controlled by the evaluator. Its use is more common in training, allowing participants to gain and keep up to date with managing rare but critical situations. Simulations are not capable (nor feasible) to evaluate physician performance in everyday practice (Ehrenfeld 2014).

Despite the strengths, the utility of MSF as the sole performance feedback tool is still being questioned.

Balanced Scorecard

The balanced scorecard is a business strategic performance tool that allows companies to view their performance broadly using multiple sources of information (Kaplan 2010). It is increasingly being used by healthcare organizations as a strategic management tool. Many departmental chiefs are adopting a similar approach to deliver PPF by presenting multiple domains of a physician's performance simultaneously. The specific data presented is usually determined by the clinical chief or his/her delegate, and selected to be relevant to the medical specialty and the local context. The data is abstracted from the electronic medical records (EMR) and reported on a pre-specified time period (i.e., quarterly), or in "real time" (as a clinical dashboard) depending on the robustness of the EMR and the outcomes measured. While many medical and surgical specialties have begun to use the balanced scorecard-like approach, emergency medicine has embraced it. In Calgary, Alberta, for example, emergency physicians have access to a secure clinical dashboard that has individual and peer comparison information on four domains: safety and clinical acumen (3-day revisit rate), workflow efficiency (patients seen per hour), efficacy of decision-making (patient length of stay), and resource stewardship (diagnostic image utilization) (Curry et al. 2014). Other emergency departments use the traditional approach of collecting data and then distributing the individual results (with group mean for comparison) in an anonymous manner to the physicians. Despite the popularity of using a balanced scorecard-like approach to provide PPF in emergency departments, there are limitations with their current use: 1) the process and outcome measures differ between hospitals so that inter-hospital comparisons are not possible, and 2) most departments do not have the EMR infrastructure nor personnel to enable regular data collection and reporting to occur. For PPF to provide meaningful feedback that will act as an impetus for improvement, data must be measured and reported regularly so that individuals can track the progress and outcome of any change initiative.

Multisource Feedback (MSF) or 360 reviews

Multisource Feedback (MSF), commonly known as the "360 review," is an employee performance evaluation tool adapted from the private sector that has been increasingly used as a method to provide PPF (Overeem et al. 2012). Aggregate data about a physician's performance is obtained via solicited feedback from medical colleagues, other health professional co-workers, and patients (Lockyer et al. 2011). MSF surveys ask about the respondent's perception of the physician's: clinical knowledge and skills, professionalism, interpersonal, office management and communication skills. The aggregate data is compared with the physician's assessment of his or her own performance, and helps to identify any areas of weakness and possible need for improvement (Overeem et al. 2012).

One of the most widely used MSF in medicine is the Physician Achievement Review (PAR), developed by the College of Physicians and Surgeons of Alberta (CPSA). The CPSA mandates all active physicians in Alberta to complete a MSF every five years. The survey items differ between different specialties. The survey results are analyzed by an independent organization and sent back to each physician with recommendations for improvements. Individual items on the survey are scored using a 5-point Likert scale; a composite score for each domain is calculated and reported to the physician as a percentile rank against others in their specialty. A quality committee reviews physicians who are at less than the tenth percentile on multiple domains, and advises these physicians on areas for improvement and/or arranges further support through a practice visit (College of Physicians and Surgeons of Alberta 2013). The PAR is used in some provinces in Canada, and has been adapted for use in the Netherlands and the UK (Murphy 2012; Overeem et al. 2012).

There are multiple strengths of the PAR: using an independent organization to analyze the results, keeping the results of the surveys confidential and protected by the Health Professionals Act, and benchmarking individual physicians to their peers. Despite the strengths, the utility of MSF as the sole performance feedback tool is still being questioned.

A number of studies questioned the ability of MSFs at identifying low performing physicians (Wright et al. 2012). Two recent studies on the MSF found that patient and colleague ratings were highly skewed towards a more favorable assessment of the physician's performance (Overeem et al. 2012; Wright 2012). The length of the respondent's relationship with the physician and rater's familiarity with the physician's practice are factors that contributed to the bias (Overeem et al. 2012). Critics of MSF also suggest that another source of bias arises from physicians nominating individuals to complete the MSF. The literature supporting the use of physician peer reviewers is mixed (Evans, Elwyn and Edward 2004). Ramsey et al. (1993) found the MSF survey response is not substantially biased by

the relationship between the rater and the subject, and that reliable results can be obtained with 11 surveys. However, other studies suggest that peer reviewers do not provide valid ratings of a physician's "humanistic qualities" when compared to an external observer (Evans, Elwyn and Edward 2004).

Finally, whether MSF results in a change in physician practice is unclear. Recent focus groups showed that some physicians used the MSF to identify areas for improvement, while others found the process cumbersome and ignored the feedback (Lockyer et al. 2011). Other studies found that 61–66% of physicians were considering or had changed their practice as a result of the MSF feedback (Hall et al. 1999; Sargeant et al. 2003).

Table 1 compares the five methods to generate physician performance feedback that were discussed above.

The St. Michael's Hospital 360 Experience **The Physician Quality Improvement Initiative (PQII)**

In 2012, the Council of Academic Hospitals of Ontario (CAHO) implemented the Physician Quality Improvement Initiative (PQII) in various Ontario hospitals. The goal of the PQII is to increase individual physician and organization performance by providing direct feedback to physicians and tools to support and enhance their performance (Council of Academic Hospitals of Ontario 2015).

PQII uses the PAR to provide individual feedback to physicians: each physician was asked to survey eight medical colleagues, 25 patients, and eight non-physician co-workers. The results were given to physicians confidentially. Departmental chiefs were encouraged to discuss and review the results with the physicians, and work with the physicians to identify and plan for improvement when necessary.

St. Michael's Hospital's 360 Experience

St. Michael's Hospital (SMH) is a tertiary teaching hospital affiliated with the University of Toronto in downtown Toronto. In August 2014, physician leadership at SMH piloted the PQII in the Division of Respiriology and Department of Emergency Medicine under the direction and with oversight of the Quality Sub-Committee of the SMH Medical Advisory Committee. The 360 used at SMH was adapted from the PAR by CAHO. The SMH 360 consisted of four parts: self-assessments, non-physician co-workers, medical colleagues and patient feedback. All attending physicians in the two departments were asked to participate. All of the surveys (with the exception of the patient surveys) were submitted online.

Once all of the required surveys were submitted, a confidential report (with peer comparison data) was generated for each physician and was shared with his/her departmental chief. It was at the department chief's discretion as to how and if a formal review of the individual results occurred.

Of 34 participating physicians, 30 (88%) have completed full assessments. All 34 physicians received a confidential report that could be reviewed with his/her departmental chief. In the four cases where feedback thresholds were not met within reasonable timeframe, reports were issued with available assessment data. For the 34 physicians involved in the pilot, the PQII process received feedback from 688 unique patients, 276 medical colleagues, and 268 non-medical co-workers. The physician leadership at SMH is now conducting an evaluation of the 360 pilot to learn about the participants' view of the process, whether the participants have made practice changes in response to the 360 feedback, and how the pilot may be scaled across the hospital.

TABLE 1.
Comparison of PPF methods

Feedback Method	Feedback Source	Quality Domains Measured	Limitations
Chart audits	• Patient charts • ±Patient surveys	• Adherence to clinical guidelines • Quality of written records • Patient satisfaction (if patient surveys are used)	• Small sample, may not reflect breath of practice • Mixed receptivity to feedback in inspiring change in practice
Video feedback	• Video recording of clinical encounter	• Communication and inter-personal skills	• Not feasible for large group practices • Limited to assessing communication skills only • Costly
Simulations	• Self • Colleagues • External assessors	• Technical skills • Decision-making • Communication skills	• Not feasible to simulate "common cases" seen in everyday practice
Balanced Scorecard	• Medical records • Administrative data	• Process measures • Clinical outcomes • Safety • Domains determined by clinical chiefs and/or delegate	• Current reporting is sporadic • Need robust EMR and dedicated personnel • Potential to cause change in outcomes not evaluated
Multisource Feedback (MSF)	• Self • Colleagues (physicians and non-physicians) • Patients	• Clinical knowledge and skills • Professionalism • Interpersonal and communication • Office management	• Response may be biased • Potential to cause change in outcomes not evaluated

Lessons learned from the SMH experience

Physician leadership and ownership of the process

The pilot at SMH was initiated and led by its physician leadership through the Medical Advisory Committee. The departmental chief of Emergency Medicine and division head of Respiriology were engaged early, provided strong leadership, and involved their staff physicians in planning and preparation for the pilot. This helped ensure staff physicians were fully informed, engaged, and committed throughout the process.

Preparation and planning to the unique nature of each department

Although the majority of the process was online, the collection of patient feedback – which was the largest component of the multi-source feedback – was paper based and required planning with departmental leadership, participating physicians, departmental staff, and administrative support staff. Unique processes were developed to meet the needs of SMH's two very different initial pilot areas: the very busy and unpredictable environment of the emergency department, and the more structured and scheduled nature of respiriology clinics. Every detail, such as when and how forms were given to patients, where patients would deposit the forms confidentially, and how the forms were collected, were customized to the unique nature of each area. The investment of time for detailed planning unique to each participating department is not to be underestimated when preparing for broad implementation.

Communicate early and often to re-enforce key messages and ensure progress

Early communication and engagement prior to the process as well as communication throughout the pilot was critical to its success. A lesson learned is that it is important to re-enforce key messages, both within the pilot group as well as the broader physician and hospital community, even if participants indicate that they feel well informed and supported.

In most cases, physicians' self-assessment was more critical than assessments provided by others.

Although PQII was physician led and meant to be a form of PPF for self-improvement and reflection, there were still perceptions that the pilot was mandated by hospital administration and that the reports were meant to formally evaluate competency as a physician. Lack of broad awareness of the pilot beyond participating departments led to confusion, in some cases, regarding why potential assessors were receiving requests to provide feedback about a colleague. Such misperceptions and misunderstandings have the potential to undermine both the value of receiving confidential feedback and the overall process itself.

Regular project communication was key to achieving high response rates in a timely manner. Weekly updates regarding the number of feedback forms completed online (staff and physicians) and on paper (patients) were shared with pilot area leadership, so that appropriate follow-up action could be taken in a timely manner. Although the weekly updates regarding feedback received online from staff and physicians were up to date, the time required to collect and process the paper based patient feedback forms resulted in a lag in terms of when these numbers would be reflected in the weekly updates. Monthly updates on overall pilot progress were provided to the Quality Sub-Committee of the Medical Advisory Committee, where strategic direction or key concerns were discussed.

Physician response to the feedback

Chiefs were provided with training on interpretation and feedback skills prior to disseminating information to physicians in their department. The feedback to physicians was provided in one-on-one meetings with the clinical chief. Physicians were oriented to the nature and format of the feedback and the benchmarking model, followed by a review of their own data. In general, physicians were receptive to the feedback provided and most could identify areas that surprised them in terms of higher or lower scores than anticipated. In most cases, physicians' self-assessment was more critical than assessments provided by others. Physicians indicated that the lack of narrative or specific comments hindered their ability to fully understand the feedback. In general, most feedback provided validation that the physician was providing high quality care, and physicians indicated their intent to see it this way.

Conducting Effective PPF

Based on the conclusions of the recent Cochrane review, our own review and the experience at our institution, we conclude the following factors are important to conducting effective physician feedback (Ivers et al. 2012):

- Feedback should be provided by a source that is a supervisor or a senior colleague.
- Provide feedback on the multiple dimensions of a physician's care.
- Include feedback from multiple perspectives (self, patients, colleagues).
- Feedback should be provided both verbally and in writing.
- Compare individual with peer performance.
- Feedback should be provided regularly, so that physicians can plan, implement, and assess improvement of their change efforts.
- Provide an opportunity for physicians to reflect, discuss and plan for improvement.
- Include clear improvement targets and an action plan.

Unfortunately there is no one PPF method that meets all of the above criteria, and each existing PPF method has its own limitations and its relevant costs. The experience at SMH highlights the importance of early and frequent physician engagement, physician leadership and ownership of the PPF and the need to adapt the PPF to each unique clinical environment. Given the limitations of each PPF method, combining complementary PPF methods will allow multiple aspects of physician performance to be evaluated (i.e., using MSF to provide subjective communication and patient satisfaction data, and a clinical dashboard to provide objective process and utilization data), but one must also factor in the costs of using multiple PPF methods (i.e. financial, time, etc.).

A combination of PPF methods should be considered, so that objective and subjective data about patient care can be captured.

A careful review and selection of outcomes must be considered. Healthcare leaders should consider including measures that are patient-centered and address the breath of patient care, including but not limited to: physician clinical knowledge and competency, processes and efficiency, resource utilization, safety, communications and interpersonal skills. The data need to be reliably measured and reported. Valid and reliable data, confidentiality of the PPF process, as well as emphasizing that quality improvement (rather than competency assessment) is the end goal will help to achieve physician buy-in and ensure the ultimate success of PPF. Timely and frequent (quarterly at minimum) reporting enables physicians to effectively plan, implement, and assess the results of their change efforts.

A culture that supports reflection and change must be also created. Clinical chiefs need training and support to effectively deliver feedback and create opportunities for physicians to reflect, discuss and plan for improvement. Organizationally, medical leadership must champion PPF amongst its physician groups as well as with hospital administration to ensure that plans for improvement are encouraged and appropriately supported.

Conclusions

Improving the quality of healthcare starts at the doctor-patient level. Physicians need information about their performance so that areas of improvements can be identified and changes can be made. The current review demonstrates that there are five major methods to provide physician feedback, each with its own advantages and disadvantages. The recent experience with multi-source feedback at St. Michael's Hospital highlights the importance of physician leadership and engagement in the feedback process that is necessary for its success. When considering implementing a PPF tool, healthcare leaders should select

measures that capture the breath of patient care within their local clinical context whose data can be reliably and validly measured. A combination of PPF methods should be considered, so that objective and subjective data about patient care can be captured. Physician leadership and engagement is necessary for buy-in, and training and support of clinical chiefs will be required to ensure the feedback can be delivered in a manner that can lead to reflection and changes for improvement to be implemented. **HQ**

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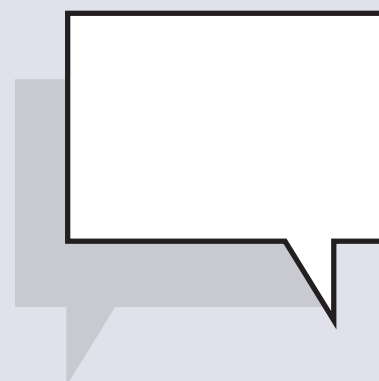
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Self-Management Support in Chronic Care: Practice Implementation Lessons for Healthcare Providers from an Atlantic Collaborative

Claudia Amar, Jenn Verma, Darla King, Donna MacAusland, Therese Harper and Michael Vallis

Abstract

In Atlantic Canada, people live with greater risk factors and higher rates of chronic disease than the average Canadian; and health system costs have historically risen faster than other parts of the country. Many clinicians endorse self-management support (SMS) as a means to help patients manage their chronic conditions but often lack the confidence and proper expertise to do so due to limited literature on SMS implementation. This paper draws on two case examples from Atlantic Canada to address gaps between effective SMS interventions and the implementation and evaluation of such interventions that can support provider adoption.

Nearly 60% of Canadians aged more than 20 years have at least one chronic disease (CD) (Public Health Agency of Canada 2013) and face health issues and socioeconomic challenges: they are poorer, older and less educated. In Atlantic Canada, CD prevalence and risk are above the national average, and health system costs have also risen faster (Canadian Institute for Health Information 2014; Statistics Canada 2013, 2014). CD management requires self-management (SM) because behavioural choices outside of the healthcare setting affect adherence to clinical recommendations. Self-management support (SMS) is the “systematic provision of education and supportive interventions, by healthcare staff, to increase patients’ skills

and confidence in managing their health problems, including regular assessment of progress and problems, goal-setting and problem-solving support.” (Adams et al. 2004). SMS increases self-confidence, reinforces healthy behaviours and improves quality of life, clinical outcomes and appropriate use of healthcare resources (Ahmad et al. 2014; Liddy and Mill 2014; Panagioti et al. 2014). However, SMS requires an important individual commitment. Cultural issues, education and low health literacy levels are known barriers. Many providers endorse SMS, but in practice are more comfortable providing information and education than supporting behaviour change (de Silva 2012; Vallis 2015). In fact, there are tensions between providers’ desires to respect patients’ preferences and the directions articulated in clinical practice guidelines (CPGs) (Boivin et al. 2008). If CD outcomes are dependent on individual behavioural choices, then provider competencies in supporting SM require addressing complexity (individual, social, cultural, etc.), beyond biomedical evidence and CPGs.

Canadian SMS programs vary in design, implementation and evaluation (Bourbeau and Van der Palen 2009), with evaluation often limited to educational activities and rarely based on chronic disease management (CDM). Literature on SMS implementation remains limited, as programs are often considered as quality improvement (QI) and implementation and results are seldom documented, thereby limiting dissemination and adoption.

Additionally, medical research is often “reductionist” (e.g., the randomized controlled trial), which works well with simple systems, whereby the degree of knowledge and agreement on the phenomenon in question are high. SM choices are more accurately described as complex, where the degree of understanding and agreement are moderate at best (Cornforth 2013).

This paper draws on two case examples from Atlantic Canada to address gaps between effective SMS interventions (which aim to increase patients’ skills and confidence in managing their own health) and the implementation and evaluation of such interventions that can support provider adoption. While the goal of SMS is to support patients in managing their conditions, this paper reports on implementation progress and practice as important precursors to patient outcomes.

Methods

The Atlantic Healthcare Collaboration for Innovation and Improvement in Chronic Disease (AHC) supported 11 improvement project (IP) teams leading patient- and family-centred CD redesign initiatives (Verma et al. 2016). The Chronic Care Model (CCM) (MacColl Center for HealthCare Innovation, Group Health Research Institute 2002) features SMS prominently and guided the development of this pan-Atlantic collaborative (Wagner 1998). The AHC provided a platform for testing new approaches to SMS, with seven teams focusing on SMS initiatives. The Western Health (WH), Newfoundland and Labrador (NL, Case 1) and Health Prince Edward Island (PEI, Case 2) IPs are highlighted herein. Both cases serve predominantly rural and aging populations, with Health PEI serving the entire island (~140,000 people) and WH serving the west coast of the island portion of NL (~79,000 people). Both systems endorse the expanded CCM as the guiding framework for CD care with an important role for SMS in care delivery.

Results

Case 1. WH: Improving Care for Type 2 Diabetes Patients

At the time the AHC was introduced, a region-wide CDM program was underway, SMS strategies were lacking and service restructuring provided an opportunity to embed SMS into services. Teams (seven in total, involving community health nurses, nurse practitioners, diabetes nurse educators and dietitians working with local physicians) completed a standardized assessment (Primary Care Resources and Supports for Self-Management Tool, PCRS) to measure baseline SMS implementation (Diabetes Initiative Robert Wood Johnson Foundation 2008). Results were discussed to reach team consensus on three priorities for improvement: (1) emotional health; (2) patient input and (3) provider SMS training. Action plans were developed, including protocols for emotional health

management and SMS core competencies training for teams. WH invested in a training program that drew on the strengths of existing models, with an aim to develop “SM champions” to support the spread.

The Behaviour Change Institute delivered the training to diabetes teams, with training focused on core competencies and raising awareness, confidence and creativity in the use of SMS. A community of practice helped to support integration of SMS into clinical practice, with a blog to promote networking/resource sharing, and regular meetings to facilitate integration of new skills into practice.

Evaluation and results

The PCRS was re-administered post-training, with scores improving across all 16 domains (Table 1). The overall improvement may be attributed to a higher level of awareness regarding SMS best practices as a result of implementation of this project. Greatest improvement occurred in the three targeted domains.

Team members completed skills and attitudes self-assessments three times: initial (T1), immediately before (T2) and after (T3) the advanced training. Provider competency in SM self-ratings decreased from T1 to T2, possibly reflecting that providers lacked a fulsome understanding of the concepts until training occurred and/or initially overestimated their skills. Training subsequently may have increased insight into practice – by T3, scores increased to baseline or higher.

Self-assessments also showed attitude changes, specifically an increased importance on SMS, suggesting a positive shift towards a behaviour change care model. A patient survey (the *Patient Assessment of Chronic Illness Care*) administered during the IP assessed the extent to which patients perceived their care as patient-centred, proactive, planned and including collaborative goal-setting, problem-solving and follow-up; findings showed an overall score of 4/5 for the redesigned diabetes program.

Case 2. Health PEI: Supporting Realistic Behaviour Change

An island-wide primary healthcare survey in 2011 indicated a need for effective ways for providers to support behaviour change. Health PEI consequently sought to equip its clinicians with the skills to support lifestyle behaviour changes – through the supporting realistic behaviour change (SRBC) IP. The SRBC program is a training program based on well-established behaviour change theory (Glasgow et al. 2006; Prochaska and DiClemente 1992; Rollnick et al. 2008; Vallis et al. 2013). SRBC involves assessing patient readiness for change and supporting the changes. The training entails two full-day sessions offered one month apart for community-based clinicians. This work was facilitated through the AHC and will rollout to clinicians in acute care. A total of 182 health providers, predominantly nurses (>55%), have completed the training.

TABLE 1.
Increase/decrease in scores (0–10) from baseline to follow-up PCRS scores for each diabetes team

SMS domain	Team 1	Team 2	Team 3	Team 4	Team 5	Team 6	Team 7	Overall average
1. Individualized assessment of patient's SM educational needs	-1	3	5	4	6	4	2	3.2
2. SM education	4	5	3	3	4	0	1	2.5
3. Collaborative goal-setting	4	3	4	2	5	1	2	2.3
4. Problem-solving skills	2	6	3	3	5	2	1	3.3
5. Emotional health	3	7	4	2	7	7	1	4.5
6. Patient involvement in decision-making	5	7	2	3	5	-1	3	3.2
7. Patient social support	0	2	2	2	4	0	2	1.4
8. Link to community resources	0	3	2	1	1	1	0	0.9
9. Continuity of care	3	5	3	3	4	2	-1	2.1
10. Coordination of referrals	-1	6	3	1	3	-1	0	1.2
11. Ongoing QI	3	7	6	5	5	3	5	4.5
12. System for documentation of SMS service	2	3	4	1	3	2	1	2.2
13. Patient input	4	5	7	5	3	5	5	4.3
14. Integration of SMS in primary care	1	5	6	4	5	1	3	3.5
15. Patient care team	2	3	1	0	4	-1	0	0.7
16. Provider SM education and training	4	9	7	4	1	3	3	4.1
Overall average	2.2	4.9	3.9	2.7	4.1	1.8	1.8	2.8

During the next three years, the goal is to train ~1,000 providers. The SRBC program is supported by a provincial senior health leadership steering committee, while a working group developed and implemented a work plan to spread the SRBC training across PEI.

Evaluation and results

A comprehensive evaluation examined four components: delivery, quality, context and patient outcomes. All but patient outcomes are reported herein (Table 2), recognizing a longer time trajectory is needed to collect and report on outcomes.

Delivery

Participants report high satisfaction with the training experience and content on Day 1 ($n=95$; mean $[M]=4.28/5.00$; standard deviation $[SD]=0.58$) and two ($n=52$; $M=4.00/5.00$; $SD=0.58$). Focus groups with SRBC peer trainers identified barriers and enablers. Barriers included participant resistance to change, large group size (20+ participants) and managing room preparation and training facilitation. Enablers included continued communication with fellow trainers and continued support from the steering committee, working group and management.

Fidelity and quality

Self-efficacy is an important determinant of behaviour change and future behaviour (Ajzen 1991) and is a central tenet of the SRBC training. Post-training, it was essential that participants held a high level of confidence in their ability to practice SMS. Independent samples of t -test demonstrated that at end of Day 1 ($t[189]=-4.82$, $p<0.00$) and 2 ($t[92]=2.55$, $p<0.01$), participants reported significantly greater confidence in their ability to apply the acquired skills, which increases the likelihood that they will implement these skills.

Post-training on both days, participants identified tangible practice changes, including: 1) asking more questions and demonstrating better listening; 2) assessing patient readiness to change in a non-judgmental way; 3) setting goals with patients and pre-identifying barriers to change; and 4) using the training tools.

Context

Health PEI leadership supported SRBC and set the expectation to spread the training to all clinical areas. Managers acted as change agents and communicated the opportunity as professional development to encourage uptake. The timing was favourable, given a willingness from multiple stakeholders to implement techniques proven to effect patient behaviour change and slow the “revolving door” of patients presenting with no change in their behaviour.

TABLE 2.**SRBC improvement initiative process and outcome measures administration schedule**

Evaluation component and aim	Evaluation question	Information source, timing of data collection, and analysis conducted	Administered to: Participant or Peer Facilitator	Measure Type: Process or Outcome
<i>Delivery</i> Extent to which intended providers participated in SRBC training; and extent to which participants were satisfied with training.	How many staff received complete SRBC training (two days)?	Participant attendance record Start of each session		Process
	How many staff received partial SRBC training (one day)?	Participant attendance record Start of each session		Process
	Were the participants satisfied with the training experience and content?	Participant post-training Day 1 and 2 questionnaire (descriptive statistic)	Participant	Process
	What were participants overall impressions of the training experience?	Participant post-training Day 1 and 2 questionnaire	Participant	Process
	To what extent was training provided as planned? What were enablers and barriers to implementation?	Peer facilitator focus group (after 50 participants were trained) Working group feedback (monthly)	Peer Facilitator and Working group	Process
<i>Fidelity/Quality</i> Extent to which intervention was implemented as planned. Extent to which participants felt confident in their ability to use SRBC techniques, and are using the skills in practice.	Did participants acquire knowledge of SRBC content and techniques through the training sessions?	Participant pre-training Day 1 and 2 questionnaire Participant one month post-training questionnaire (Independent samples t-test)	Participant	Outcome
	To what extent did participants report changes they would apply to their daily practice following the days training?	Participant post-training Day 1 and 2 questionnaire	Participant	Outcome
	Are participants confident in their ability to use content skills?	Participant pre- and post-training Day 1 and 2 questionnaire (Independent samples t-test)	Participant	Outcome
<i>Context</i> Improved system and provider practices through an environment conducive to enabling participants to implement training techniques.	Are participants' attitudes congruent with the training content principles?	Participant pre-training Day 1 questionnaire Participant post-training Day 2 questionnaire (descriptive statistic)	Participant	Outcome
	What factors in the organization or other situational issues could potentially affect a participants' ability to implement SRBC techniques?	Participant post-training Day 2 questionnaire Participant one month post-training questionnaire Participant and facilitator focus group	Peer Facilitator and Participant	Process

A key success factor involved targeting early adopters. Staff who had successfully integrated SRBC training into clinical practice were invited as facilitators. Their modelling of the approach helped engage participants who were less ready to adopt. Garnishing participant buy-in is among the greatest barriers in increasing uptake of new care models (Van Til et al. 2010).

Intention to engage in a particular behaviour is influenced by an individual's attitude towards that behaviour. Therefore, trainee attitude must be congruent with the SRBC program for success to be realized. Pre-training ($n=99$, $M=4.01/5.00$, $SD=0.56$) and post-training ($n=55$, $M=3.95/5.00$, $SD=0.73$), participants believed that assisting patients with behaviour change was invaluable and within their practice scope.

During the IP, Health PEI was undergoing a significant amount of change. While change is inevitable, change fatigue was a factor and will require continued monitoring. All staff involved

in the development and implementation, as well as trainees, were involved in many initiatives with competing demands.

Discussion

The AHC provided an opportunity to deliver SMS across contexts, yielding three themes: (1) documenting processes and costs as well as measuring outcomes; (2) collaborating for consistent and reliable SM care; and (3) training providers to deliver SMS CD interventions.

Documenting Processes and Measuring Outcomes of QI Initiatives

The evidence base for the design and evaluation of SMS programs is limited, and existing studies often do not rely on the same metrics to evaluate outcomes, making program comparisons difficult (Sherifali et al. 2011). Paterson et al.

(2009) described the limited literature base of SMS interventions in Canada as consisting mostly of short surveys, developed by healthcare administrators and not based on validated tools, theories or outcomes (Paterson et al. 2009). Moreover, the way SMS programs are implemented varies, challenging comparisons of program effects (Johnston et al. 2008). This is partially explained by limited evaluation capacity among implementing sites (Johnston et al. 2012). Other reported barriers include limited funding and the inability to recruit providers with the necessary skills. Generating capacity for evaluation at the grassroots level requires skill-building, dedicated resources and partnerships with program implementers as well as academic and policy experts (Johnston et al. 2012). Aside from demonstrating outcomes, measurement can in and of itself trigger behaviour change and should be incorporated into the design of the improvement.

Evaluation also needs to incorporate appropriate outcomes. The tendency is to evaluate SMS interventions on the basis of biomedical outcomes, such as A1c of blood pressure; however, these remote outcomes are complex and multi-determined. It is, therefore, important to measure outcomes more proximal to the interventions. If an intervention is targeting SM, then the primary outcome should be behaviour, not remote biomedical status. Robust measurement and a focus on outcomes were key features of the AHC and facilitated knowledge exchange and adoption.

Collaborating for Consistent and Reliable SM Care

Successful SMS interventions are most reliably tied to other systemic changes in delivery-system design, such as adopting interdisciplinary team-based care (Johnston et al. 2008). Effective teamwork, alongside reliable processes of care, is essential for delivery of high-quality care (Leonard and Frankel 2011). A well-functioning team enables more patient needs to be met and increases staff and provider satisfaction (Wagner 2014). In such a scenario, the team identifies the clinical tasks associated with evidence-based care, determines the most suitable team member to undertake the task, convenes to review the patient data before the encounter to identify the required services and structures the patient-provider encounter so that team members deliver optimal care. For SMS implementation, effective teams forge linkages with SMS programs in the community, organize and train team members to provide basic SMS, build that support into every interaction and document SM goals and their attainment in patients' records. Chronically ill patients benefit from a team of skilled clinician educators. Providing effective SMS requires changes in how providers work together as well as with patients; it involves a shift in the patient-provider relationship from *points of care* to *shared decision-making*, wherein establishing rapport and trust with patients and their families is critical to success (Ahmad et al. 2014; de Silva 2012).

Training Providers to Deliver CD SMS Interventions

Supporting providers in delivering SMS can counterbalance the unease they experience in delivering such interventions. The AHC experience validates that many providers lack a fulsome understanding of what SMS entails. Provider skills most apt for development are action-planning, problem-solving, skill-building and motivational counselling – all of which are essential in overcoming cultural barriers and literacy issues that confound the health and care experience for many patients and providers. Provider attitudes and skills have an important impact on the extent to which patients feel engaged and supported (Hibbard et al. 2010; Lam and Lam 2010). Limited provider engagement with SMS interventions and shared decision-making is a commonly cited barrier to implementation (Bourbeau and Van der Palen 2009).

Limitations

The most effective education and supports to enhance provider skills, behaviours and attitudes towards SM are not well-known, but SMS interventions must occur in concert with effective team-based care, developmental evaluation, training as well as efforts to change provider roles, behaviours and mindsets. An important precursor to effective SMS implementation is provider awareness that one size does not fit all. Demographics, socioeconomic and other determinants of health, skills, knowledge, confidence levels, beliefs and preferences, health status and condition, as well as mental health status, constitute barriers for patient engagement in SM. The most effective programs customize to patient need and offer flexibility of content and delivery.

Conclusion

The WH and Health PEI cases demonstrate the importance of documenting SMS improvement processes, measuring associated impacts and equipping providers with necessary skills. Living with a CD has become the norm, so care must meet chronic needs. Sharing examples of provider practice change, with integrated evaluation, will likely facilitate the spread of SMS best practices. **HQ**

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Engaging Patients in Online Self-Care Technologies for Chronic Disease Management

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Abstract

A common perception is that the use of Internet-based self-care systems is best suited for a younger, tech-proficient population, and that these systems will increase the burden on patients with complex chronic conditions.

The study stratified patients with diabetes into three regimens of use of an Internet-based diabetes self-care portal. Results show that patients were more likely to adhere to a diurnal regimen than a variable regimen, and older patients, over the age of 60, were more adherent than younger patients, regardless of regimen.

This suggests that common misconceptions should be reconsidered when prescribing Internet-based interventions for patients with chronic illness.

Introduction

The alarming rise in the prevalence of diabetes is a growing concern in Canada and around the world. The Diabetes Association of Canada has estimated that the number of people diagnosed in Canada doubled between 2000 and 2010, rising to approximately 2.5 million (Canadian Diabetic Association and Diabète Québec 2010). Not only is this concerning given the poor health outcomes associated with diabetes, there is also a severe economic impact that this creates for the Canadian healthcare system. Diabetes, along with other chronic diseases, represents \$68 billion in costs, well more than half of annual

healthcare spending (58%). By taking into account indirect costs stemming from income and productivity losses, there is an additional \$122 billion impact on the Canadian economy (Canadian Nurses Association 2011). Given these conditions are largely preventable through lifestyle changes, it is clear that improving individuals' ability to self-manage is key to improving health outcomes and abate the high financial burden it has laid on the healthcare system.

Diabetes and other chronic conditions require an integrated approach to care management, one that involves not only the involvement of the patient and healthcare providers but also their family, friends and community for further support (Yach et al. 2004). In aiming to address these issues, healthcare practitioners and health policy makers alike have investigated the potential of information and communication technologies to enhance care management models. A number of studies, typically including Internet-based glucose monitoring systems, have shown that such technology can have significant impact on health outcomes, notably in reducing levels of HbA1c (Cho et al. 2009; Kwon et al. 2004; Lorig et al. 2010; Lyles et al. 2011; Noh et al. 2010).

In this trial, we evaluated the impact of providing patients and healthcare providers access to the online health portal, mydoctor.ca (MD Physician Services, Ottawa). The implementation of the mydoctor.ca system was the primary

eHealth enhancement of the HEALTHeCONNECTIONS project, one of several initiatives sponsored by Canada Health Infoway's Patient Access to Quality Care (PAQC) program and the Ontario Ministry of Health and Long-Term Care. Key functionalities available on the portal included the recording of health metrics, including blood glucose, blood pressure, weight and exercise information; access to a health information library; secure messaging between patients and their care team; care provider access to the patient-recorded health metrics; as well as patient access to their own medical records.

The approach taken in our analysis took as its basis the Canada Health Infoway Benefits Evaluation Framework developed for the evaluation of health information systems (Lau et al. 2007). The present analysis focuses on a key dimension of the evaluation framework – system usage. To improve the effectiveness of these systems, it is important not only to monitor system usage but also to determine the factors influencing this usage.

Patients enrolled in this trial were prescribed a regimen of use for the portal. The regimen was based on individual patient needs and had as its main focus the expected frequency of recording health metrics, most notably, blood glucose levels. In evaluating both the adherence to this regimen, and associated characteristics of the patients, the present analysis demonstrates the impact that age, and the frequency of the assigned regimen had on system usage.

Methods and Research Design

Subjects for this study were recruited from the patient rosters of eight Family Health Teams (FHTs) from the Waterloo Wellington Local Health Integration Network. Both patients with Type 1 and Type 2 diabetes were recruited, though only patients with Type 2 diabetes were included in the present analysis. Patients were considered eligible for the study if they were comfortable corresponding in English, had a basic foundation in using a personal computer and the Internet as well as having regular access to the Internet through a computer at home, work or at a local library. In total, 887 patients were recruited for the study, and 854 patients with Type 2 diabetes are included in the present analysis (28 patients had Type 1 diabetes, and five were excluded owing to early drop-out from the study). Patients were recruited between September and December 2009 and spent five to nine months using the system.

The benefits evaluation study included both survey tools and measures of physiological parameters. Patients were asked to complete surveys both pre- and post-study. Surveys were administered via the online survey service, QuestionPro. Patients were sent a link to the survey via email. The survey covered demographics, the patients' experience with their care management as well as validated instruments relevant to our study. The SF-12v2 Health Survey (QualityMetrics) provided two measures of health status with both physical and mental component scores (Ware et al. 2002). The Diabetes Treatment

Satisfaction Questionnaire (DTSQs) provided a measure of treatment satisfaction (Bradley 1994), whereas the Self-Efficacy for Managing Chronic Disease 6-item Scale (SE) provided a measure of patient's confidence in dealing with their condition (Lorig et al. 1996). The Self-Care Inventory (SCI-R) provided a measure of a patient's level of adherence to standard diabetes self-care recommendations (Weinger et al. 2005). Physiological parameters were collected from the patient's electronic medical records. The baseline values provided in this report are the most recent HbA1c, LDL and blood pressure results that were recorded within the year leading to their enrolment in the study. If the most recently available measure was older than a year, the parameter was considered unavailable and not included in the analysis. For the current analysis, patient age was gleaned from the electronic medical record, whereas patients provided "years since diagnosis" via the online survey.

Stratification of Patients According to Regimen Complexity

On entering the study, patients were stratified into different regimens of expected portal usage based on the severity of their condition and their related self-care management needs. Patients stratified to the GREEN regimen were asked to record their health metrics one to two times per week, patients stratified to the YELLOW regimen were asked to record their health metrics three to six times per week and patients stratified to the RED regimen were asked to record their health metrics seven times per week.

Clinical staff at the FHTs assessed adherence to these portal usage regimens on a month-by-month basis. Patient adherence was evaluated as being "Fully Adherent" (all health metrics expected were recorded), "Partially Adherent" (some health metrics were recorded within the month period) or "Non-Adherent" (no health metrics were recorded). Subsequently, in our analysis, two measurements were derived: "Percentage of Months Fully Adherent" and "Percentage of Months Active" (meaning either fully or partially adherent).

As disease management needs for patients change over time, clinicians were given the option to prescribe a new regimen complexity level on a month-by-month basis. As such, when comparing adherence ratios to complexity of regimen, analysis was conducted from two vantage points: (1) the number of patient-months on a particular regimen complexity and (2) with patients classified into different severity levels based on the highest complexity level they were assigned to during the study.

Results

Both adherence indicators show a significant correlation with patient age. With a dividing threshold of 60 years of age, it was the older patient cohort that demonstrated higher adherence both in terms of percent months fully adherent and percent months active (Table 1). As well, years since diagnosis as

reported by the patients showed no significant correlation to the adherence indicators. As such, the adherence to regimen appears to be more tied to age rather than the patient's length of experience with the condition and associated self-care management activities.

TABLE 1.
Correlation of Age with Adherence and Baseline Measures

Characteristic	Age groups		<i>p</i>	Age – Characteristic Correlation Coefficient
	<60 years	>60 years		
<i>n</i>	437	417		
% Months fully adherent	26.1	35.7	<0.001	0.159 (<0.001)
% Months active	45.6	56.1	<0.001	0.156 (<0.001)
<i>Baseline physiological measures</i>				
HbA1c (M)	7.43 (369)	7.00 (363)	<0.001	-0.199 (<0.001)
LDL (M)	2.42 (357)	2.19 (358)	<0.001	-0.172 (<0.001)
SBP (M)	128.5 (372)	131.3 (349)	0.016	0.108 (0.004)
DBP (M)	78.11 (371)	73.7 (348)	<0.001	-0.223 (<0.001)
<i>Baseline validated instrument score</i>				
SF-12 PCS (M)	47.0 (340)	42.9 (347)	<0.001	-0.130 (<0.001)
SF-12 MCS (M)	47.2 (341)	53.0 (348)	<0.001	0.199 (<0.001)
SCI (M)	59.0 (323)	64.4 (324)	<0.001	0.154 (<0.001)
SSE (M)	7.17 (333)	7.53 (337)	0.02	0.098 (<0.001)
DTSQs (M)	26.9 (324)	29.1 (337)	<0.001	0.145 (<0.001)

n indicates the total number of subjects within two groups with available adherence data.

N indicates the number of subjects with available data for the measure characteristics.

Patients assigned to the RED portal regimen at some point during the study showed significantly higher adherence levels than those that were assigned to either the YELLOW or GREEN regimens as their highest regimen frequency during the study (Table 2). This relationship holds true for both the adherence indicators (% Months Fully Adherent, $p<0.05$; % Months Active, $p<0.01$).

This relationship between portal regimen complexity and adherence also holds when patient-months on a particular regimen complexity level are observed individually. When comparing patient-months on the RED portal regimen with those on either the YELLOW or GREEN regimen, patients at the higher complexity level exhibited higher adherence levels when observing either the *fully adherent* or *active* indicators ($p<0.05$ and $p<0.01$, respectively). When observing all three regimen complexity groups separately, the relationship between higher complexity and higher adherence still holds true (Table 3).

TABLE 2.
Correlation of Regimen Complexity with Adherence and Baseline Measures

Characteristic	Highest Complexity Reached		<i>p</i>
	RED	YELLOW/GREEN	
<i>n</i>	70	744	
% Months fully adherent	40.8	30.5	0.029
% Months active	67.7	49.5	<0.001
<i>Baseline physiological measures</i>			
HbA1c (M)	8.11 (34)	7.13 (354)	<0.001
LDL (M)	2.28 (61)	2.41 (618)	0.825
SBP (M)	130.9 (62)	129.9 (625)	0.630
DBP (M)	76.6 (62)	75.7 (623)	0.544
<i>Baseline validated instrument score</i>			
SF-12 PCS	44.0 (59)	45.0 (591)	0.513
SF-12 MCS	48.7 (59)	50.3 (593)	0.285
SCI-R	62.7 (55)	61.6 (557)	0.585
SSE	6.83 (58)	7.42 (576)	0.034
DTSQs	26.2 (57)	28.3 (548)	0.009

n indicates the total number of subjects within two groups with available adherence data.

N indicates the number of subjects with available data for the measure characteristics.

TABLE 3.
Correlation of Adherence and Patient-Month Regimen Complexity

Characteristic	Patient-Month Complexity			<i>p</i>
	RED	YELLOW/GREEN		
<i>n</i>	208	5,288		
% Months fully adherent	38.9	32.3		0.045
% Months active	70.7	51.8		<0.001
Characteristic	Patient-Month Complexity			<i>p</i>
	RED	YELLOW	GREEN	
<i>n</i>	208	643	4,645	
% Months fully adherent	38.9	37.3	31.6	0.002
% Months active	70.7	62.5	50.4	<0.001

Discussion

The influence that age had on the adherence to the portal regimen brings to the forefront other factors that may be impacting usage of the health portal. For one, there appears to be little evidence to suggest that the lower Internet usage rates expected from older patients led to lower adherence to a regimen revolving around the usage of an online self-care management tool.

To note, although the population aged over 65 years lags behind other age groups in terms of their Internet usage, the proportion of this age group that uses the Internet has been on the increase over the past several years (rising dramatically from 23.8% in 2005 to 40.7% in 2009) (Statistics Canada 2010). One point of consideration that might explain the correlation between age and adherence may be stage-of-life influences. Though employment status was not captured in the online survey, clearly there would be more retired individuals among the older age group. One qualitative study examining influences on the day-to-day self-management of African American women with Type 2 diabetes found that key stressors that impeded self-care management were associated with life stage. In particular, workplace and multi-caregiving responsibilities – characteristics that would be prevalent among the younger group in the present study – were seen as interfering with daily disease management activities. Other studies monitoring adherence to diabetes self-care regimens have often not shown a link between adherence and age (Toljamo and Hentinen 2001); nevertheless, there are some exceptions. Park et al. observed that although age did not predict adherence to self-care behaviour in terms of glucose monitoring, diet and exercise, older patients were more likely to take part in diabetes education programs (Park et al. 2004). Other care management domains have shown a link between age and adherence to care regimen. Most notably, in antiretroviral therapy for HIV-positive patients, a number of studies observed that older patients were more adherent to their medication regimen. Specifically, Barclay et al. note that this tendency for higher adherence among older patients may be a product of older patients already being accustomed to such a routine, given their past experience with other age-related illnesses (Barclay et al. 2007). Furthermore, they hypothesize that medication regimens may be more easily accommodated by older patients in terms of integrating the routine into their daily lives.

Integrating self-care activities into a daily routine may certainly have been more likely to succeed than a regimen that varies from one day to the next.

Our observations of adherence, as it relates to the prescribed health portal regimen, provide further insight into the difficulties that some patients have with integrating self-care management activities into their daily routine. The data clearly show that it was in fact a regimen of higher frequency – notably that of the daily activity expected on the RED regimen – that was associated with greater adherence. As such, when there was a higher level of expectation placed upon the patients to perform

these self-care activities, they were more likely to adhere to the regimen. By stratifying a patient to the RED regimen, this may have served as a point of emphasis for these patients to focus on their self-care management, thereby resulting in higher levels of adherence. Nevertheless, it may be the increased frequency itself – this higher degree of regularity – that may have played a role in improving patient adherence to the care plan.

Again, medication adherence for HIV-positive patients provides a notable point of reference for this case, as a number of studies in this field have pointed to the need for tying medication regimens to daily activities, thereby reinforcing the behaviour to the daily routine (Gifford et al. 2000; Roberts 2000; Ryan and Wagner 2003). Furthermore, Denham (2003) highlights the protective function that rituals and routines serve in managing chronic illness. Integrating self-care activities into a daily routine may certainly have been more likely to succeed than a regimen that varies from one day to the next.

Nevertheless, as some self-care practices do not necessitate daily activity, other means can be used to improve adherence. Given the flexibility of online tools and the ubiquity of mobile phones, it is possible to use automated reminder systems to further assist patients in adhering to their care regimen (McDonald et al. 2002). As well, facilitation of self-care activities using mobile phones as both a means to access information and as a tool for the automated upload of medical readings has shown considerable promise in improving health outcomes (Azar and Gabbay 2009; Cafazzo et al. 2012; Logan et al. 2007, 2012; Seto et al. 2012). Furthermore, as patients and providers both noted the importance of improving the usability of portal features, ongoing improvement of the interface will potentially enhance adherence to usage (Urowitz et al. 2012).

Considerations for Consumer Health Initiatives

Both key findings demonstrated in this study – the impacts that age and stage of life, and regimen of prescribed use have on usage – point to an important concept in consumer health informatics: patient context. As has been noted, for technologies in this space to be successful, it is imperative that they effectively integrate into the user's daily activities. This idea is strongly supported by a large meta-analysis incorporating 563 research studies of consumer health interventions (Jimison et al. 2008). This study identified the need for the intervention to fit into the user's daily activities to be critical to ensure usage of the technology.

This notion is further supported by the qualitative analysis of patient interviews conducted as part of the present study (Urowitz et al. 2012). Among its findings, this arm of the study identified patients' perceived barriers to using the portal.

A common view among users was that other life events took priority over usage of the portal, which was seen by some as being difficult and time-consuming (most notably in terms of data entry). As investments are made in consumer health initiatives, emphasis must be put on how the interaction with the technology will be integrated with the user's routine. This may involve customization of the application's settings to suit the user's preferences as well as utilizing features of the technology that the consumer may already be accustomed to (e.g., embedding self-care activities into existing notification and scheduling features on mobile phones).

There is further common ground between the referenced meta-analysis and the findings of the present study: the value of patient-provider communication. Though a key aim of consumer health initiatives is to engage patients in their own self-care, positive behaviour changes are further reinforced when patient-provider communication is an integral component of the intervention. Our qualitative analysis indicated that though patients valued interactions with allied health professionals through the portal – primarily nurses and dietitians – they also wished that their physicians had been more involved in the program (Urowitz et al. 2012). Similarly, the meta-analysis identified that the most important and consistent finding was the need for the systems to provide a complete feedback loop that included assessment of current patient status leading to the communication of recommendations back to the patient.

Though there is a demand for this type of interaction, Canada has been slow in adopting communication technologies for this purpose (Rayar et al. 2015). This slow adoption is confirmed in a survey of 10 countries, which showed that only 11% of physicians communicated via email in Canada, while this rate was higher in the United States (34%) and much higher in European countries like Switzerland (68%) (Schoen et al. 2012). Given the asynchronous nature of email and other forms of electronic messaging, expanding these forms of communication may help patients who find it difficult to obtain medical advice between visits – something particularly important for those with chronic disease (Health Quality Ontario 2015). Though there are concerns regarding workload increases and remuneration for these types of interactions, other jurisdictions have moved forward with policies that have significantly enhanced the role of communication technologies in healthcare delivery. Denmark, for instance, has mandated that primary care physicians allow their patients to communicate with them over email and have built this into their fee schedule (Pedersen et al. 2012). In Canada, these types of interactions may already fit well within capitation funding models, but work remains to support them for those working under fee-for-service models.

As investments are made in consumer health initiatives, emphasis must be put on how the interaction with the technology will be integrated with the user's routine.

Conclusion

In the study, it was found that patients were more likely to adhere to a daily regimen than a variable regimen. As well, older patients, over the age of 60, were more adherent than younger patients, regardless of regimen. This indicates that common misconceptions of age, complexity and perception of burden should be reconsidered when developing and prescribing Internet-based interventions for patients with chronic illness. Patients appear to be more capable of using these interventions on a daily basis and at an advanced age. As well, it is clear that enhancing communication between patients and their providers through these platforms will further inspire positive self-care practices. Focusing on developing consumer health technologies that are not only practical but also flexible to adapt to the varying needs of individual patients should allow for continued improvements in enhancing technology for the support of chronic disease management. **HQ**

Statistical Analyses

One-way analysis of variance was used to determine the significance of differences between the selected age and regimen complexity groups with respect to adherence levels, baseline physiological measures and baseline survey scores. The relationship between these measures and age was computed using bivariate correlation analysis; Pearson correlation coefficients and two-tailed significance measures are reported.

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Micro Data: Wearable Devices Contribute to Improved Chronic Disease Management

Bob Parke and Andria Bianchi

Abstract

Issues involving chronic disease prevention and management (CDPM) are prevalent in today's aging society, and suggestions for improvement are essential to treat this patient demographic effectively. This article addresses the use of wearable devices for the medical community to improve CDPM by relying on the accumulation of micro data. For the patient, we recognize that these devices can be an effective tool to facilitate real-time monitoring of their vital signs and activity levels. With real-time monitoring and earlier responses, individuals can benefit by preventing, delaying or reducing exacerbations of chronic diseases. Use of these devices also has great benefit to the person and has the potential to decrease the individual's emergency room visits, hospital admissions and re-admissions. As patients and their healthcare providers work together to identify cumulative trends in their micro data, transitions in care planning will be enhanced, further contributing to improved chronic disease management.

Introduction

In 2007, Matthew W. Morgan, Nicholas E. Zamora and Michael F. Hindmarsch addressed the topic of chronic disease prevention and management (CDPM) in their article, "An Inconvenient Truth: A Sustainable Healthcare System Requires Chronic Disease Prevention and Management Transformation." In this

article, they claimed that Canada's approach to improving the healthcare system by reducing wait times will not suffice, unless it is coupled with a focus on CDPM (Morgan et al. 2007: 7).

Eight years later, issues involving CDPM are still prevalent. To call attention to this issue, we will briefly explain some of the most significant claims mentioned by Morgan et al. We will then highlight the benefits that may result from accumulating micro data from wearable technological devices, which are presently available for the medical community. Our aim of this article is to establish the importance of using micro data technology through wearable devices to address challenges of CDPM. We believe that with patient consent and privacy assured, the use of wearable devices can help prevent or reduce the impact of a pending illness or an exacerbation of an existing chronic disease. The implementation of these devices has the ability to positively influence the well-being of individuals and the healthcare system as a whole.

Chronic Disease Prevention and Management

In "An Inconvenient Truth: A Sustainable Healthcare System Requires Chronic Disease Prevention and Management Transformation," Morgan et al. argued that while Canada's focus on shortening wait times was a national priority in 2004, it would not transform our healthcare system unless CDPM was equally addressed (Morgan et al. 2007: 7).

The authors demonstrated that medical advances, in combination with our aging population, result in a rise of chronic disease (Morgan et al. 2007). This is because acute illnesses that were previously life-threatening diseases are now treatable (Morgan et al. 2007). For instance, an acute disease such as bronchitis may have unsurprisingly resulted in death before the advancement of more effective antibiotics and treatments. Although these diseases are now recoverable and allow individuals to live longer, the likelihood of developing a chronic disease such as congestive heart failure, renal disease and/or dementia has increased.

Morgan et al. also demonstrated that "... our current healthcare system does not enable physicians and other members of the healthcare team to provide... chronic disease prevention and management" (Morgan et al. 2007: 8). Without this particular type of care, patients become consistently dependent on our healthcare system. If we are able to improve CDPM, then the number of patients requiring hospital care will decrease, thereby reducing wait times for all individuals (irrespective of whether one has a chronic disease) (Morgan et al. 2007).

Although the importance of CDPM is recognized, the number of patients requiring chronic care is far surpassing the services that are offered. In 2004, it was "... estimated that more than half of all North American adults have a chronic disease, two-thirds of medical admissions are due to the exacerbation of a chronic disease, 80% of primary care physician visits are related to chronic disease, and more than two-thirds of all medical costs involve chronic disease" (Morgan et al. 2007: 7). More recently, however, as published in an article in the Public Health Agency of Canada, "Out of every 5 Canadians aged 20 years or older, 3 have a chronic disease and 4 are at risk of developing a chronic condition" (Betancourt et al. 2014: para. 1).

These growing numbers demonstrate that CDPM is essential to the effectiveness of our healthcare system, especially as a large percentage of hospital admissions currently result from insufficient CDPM processes.

In response to this challenge, we would like to offer a new approach to improve the CDPM process and patient experience. This approach focuses on the use of wearable technological devices to obtain an individual's micro data. The benefits of this approach have not been fully recognized and implemented as of yet, but could significantly improve the CDPM process and overall healthcare system. As noted in Dr. Kevin Pho's online webpage, the use of digital devices in healthcare is "... a missed opportunity given the vast potential for digital health to improve operational efficiencies and patient outcomes" (Pelletier 2014: para. 4). We agree that taking advantage of digital opportunities in healthcare has the capacity to improve the patient experience, especially regarding CDPM.

Micro Data and Wearable Devices

As stated in the *International Journal of Internet Science*, "Big Data is ... used to describe data sets so large and complex that they become awkward to work with using standard statistical software" (Snijders et al. 2012: para. 1). Big data represents the accumulation of a significant amount of data from "... repeated observations over time and/or space," such as the Web log, which "... records millions of visits a day to a handful of [internet] pages" (Jacobs 2009: 40).

The accumulation and organization of big data is beneficial for influencing institutional improvements and/or policy changes; however, we believe that the accumulation of micro data can be especially valuable for individual amelioration in the healthcare realm. Individual micro data can be accumulated through the use of wearable digital devices, which would provide patients and healthcare professionals with real-time data regarding one's health status, especially related to one's chronic disease(s). The lightweight, small and convenient traits of wearable devices have the potential to improve the overall health of many individuals affected by chronic disease, as physicians can consistently monitor the individual and treat them in a timely manner.

Moreover, the implementation of wearable devices will positively influence hospital wait times and the corresponding use of limited healthcare resources, as they will be used primarily outside of the hospital. For instance, if an individual with a chronic disease requires frequent monitoring, then the use of wearable devices will allow them to be monitored by a physician in the comfort of the individual's own home. Consequently, this individual will not be using limited healthcare resources and/or unnecessarily waiting in line for hospital admission/re-admission. The potential consequences of using wearable devices are beneficial for the individual with a chronic disease, other individuals seeking immediate medical attention and the healthcare system as a whole.

The accumulation and organization of big data is beneficial for influencing institutional improvements and/or policy changes ...

For example, the February 7, 2013 edition of *The Globe and Mail* presented a study in which a wearable device was recognized as having the potential to be used as a stroke prevention tool. The patients in this study were required to use a wearable device that allowed them to be monitored for prolonged periods of time (Taylor 2013: para 1). The results of this study were phenomenal. The 30-day monitoring detected atrial fibrillation in 16% of patients (Taylor 2013: para. 9). As stated by the lead researcher, "...one in six patients... were found to have a new diagnosis of atrial fibrillation that otherwise would have gone undetected and it resulted in a significant increase in patients

receiving treatment with stronger anti-clotting medications for stroke prevention” (Taylor 2013: para. 8). The use of this wearable device served as a key preventative tool against one’s likelihood of experiencing a stroke. It seems likely that various wearable devices could serve comparable purposes.

The Aging Population and Wearable Devices

On the other hand, one objection to implementing wearable devices as a part of the CDPM process is that the increasing development of chronic disease is, at least in part, due to our aging population (Morgan et al. 2007: 7). It is often thought that individuals who are of an older demographic may be uninterested in using digital devices as a part of their healthcare regimen, which would evidently eliminate the effectiveness and practicality of our suggestion.

While this objection may be legitimate in certain circumstances, consumer research as completed by The Link Group suggests otherwise (2011). As indicated in *Business Wire* in 2011, The Link Group completed consumer research that reflected on seniors’ willingness to use a Mobile Personal Emergency Response System (MPERS) (Saluke 2011: para 1). The MPERS included features such as automatic fall detection, a GPS and cellular capabilities, which allowed individuals to remain independent while feeling safe (Saluke 2011). Through this research, The Link Group determined that “... today’s seniors are active and are not afraid of using technology to maintain their lifestyles...” (Saluke 2011: para. 2). More specifically, it seems that seniors are willing to use technology that meets their specific needs (Saluke 2011: para. 4).

... wearable devices are well-suited as aids in the management of chronic diseases.

The only limitation in their willingness to use these devices was the potential of being labelled/stigmatized. To eliminate this possible outcome, “Potential users identified design elements such as color, weight, and form as influencing their likely acceptance of such a wearable product” (Saluke 2011: para. 1).

Similarly, the July 25, 2014 edition of *The Guardian* stated that the “wearables market is poised to grow from 14 million devices shipped in 2011 to as much as 171 million units shipped in 2016” (Duffey 2014: para. 3). Further in the article it makes the point that it is not just young people who want to use wearable devices, it is people of all ages (Duffey 2014). These very convenient devices, which can be used to track a person’s overall health status, have the added benefit of providing real-time monitoring and can send alerts when abnormalities or risks to one’s wellness are detected. As such, wearable devices are well-suited as aids in the management of chronic diseases.

On the basis of this research, it seems that all individuals, including seniors, would be willing to use wearable devices for their CDPM needs insofar as they are not labelled/stigmatized and understand the potential benefits of using the device (i.e., not remaining in hospitals, waiting for medical attention, consistently receiving in-person care, etc.).

Case Study Analysis

Following a heart attack, Matthew was diagnosed with congestive heart failure at the age of seventy-one. After his heart attack, Matthew started to see his family physician and members of his family health team on a regular basis. Matthew is widowed with no children. Consequently, he has no one who is consistently present to observe his state of well-being and compel him to obtain medical assistance when changes occur. With this in mind, Matthew (who is technologically-savvy) started to use a wearable device, which he agreed to let his family health team review when he makes appointments. Due to the information acquired by his wearable device, Matthew’s physician and healthcare team can continuously support any fitness and activity level improvements, and recommend any changes that need to be made to manage his cardiac health and overall well-being. As technology becomes more reliable and accurate, Matthew allows his physician and healthcare team to remotely monitor his chronic disease and help him manage it accordingly. He knows that early recognition of pending health problems will allow him, in alliance with his healthcare team, to proactively manage exacerbations of his congestive heart failure. Matthew believes that integrating innovative new technologies into his care can help him manage his chronic disease and maintain a consistent sense of wellness for as long as possible. Moreover, he believes that the use of his wearable device will assist with keeping him out of hospital.

Matthew’s narrative is not atypical. As noted above, numerous individuals are using and discovering the benefits of wearable devices, thereby supporting our claim.

Conclusion

In conclusion, we believe that the implementation of wearable devices for CDPM would significantly improve the patient experience. Moreover, it would likely ameliorate the healthcare system as a whole, by eliminating the constant need to assist those with chronic diseases who unnecessarily contribute to the growing wait times. Therefore, it seems that wearable devices are an essential component to improving the CDPM process, the overall patient experience and, consequently, our healthcare system. **HQ**

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Patient Safety Incident Reporting: Current Trends and Gaps Within the Canadian Health System

Sarah Boucaud and Danielle Dorschner

Abstract

Patient safety incidents are a national-level phenomenon, requiring a pan-Canadian approach to ensure that incidents are reported and lessons are learned and broadly disseminated. This work explores the variation in current provincial and local approaches to reporting through a literature review. Trends are consolidated and recommendations are offered to foster better alignment of existing systems. These include adopting a common terminology, defining the patient role in reporting, increasing system users' perception of safety and further investigating the areas of home and community care in ensuring standard approaches at the local level. These steps can promote alignment, reducing barriers to a future pan-Canadian reporting and learning system.

Patient safety incidents are a national phenomenon, currently addressed through a patchwork of national-, provincial- and local-level reporting programs and requirements. The impact of these incidents is wide reaching, felt by the patient, their family and care providers alike. The Canadian Adverse Events Study predicted that 1 in every 13 Canadian adults admitted to a hospital will encounter a patient safety incident, 36% of which are preventable (Baker et al. 2004).

The event itself is often the manifestation of a systemic failure. This highlights significant opportunity for the prevention of incidents before they occur. Coordinated reporting and large-scale dissemination of lessons learned are important in realizing these improvements. System failures are not only recognized, but shared widely, informing change, which extends locally, provincially and nationally, preventing incident reoccurrence. In fact, the failure to do this is a source of frustration for both patients and providers (WHO 2005).

A patient safety incident is defined as a circumstance or an event that could or did result in harm to a patient (CPSI 2012b). The term “patient safety incident” is used in this paper to reflect best practice. However, in staying true to the intent of reporting requirements, other versions and local adaptations of the term are referenced, including adverse event, critical incident, sentinel event and quality-related event.

This report consolidates existing patient safety incident reporting requirements throughout the Canadian provinces to identify trends. It provides an analysis of existing gaps in the system and offers recommendations in an effort to stimulate greater alignment between reporting systems. Improved alignment may serve as a foundation for better coordination in the dissemination of learnings from patient safety incidents.

Parameters

The scope of this paper is on both legislative and other reporting requirements that may exist in the form of policies and guidelines. Reporting refers to advising others about the patient safety incident (Gaulton 2014). In what concerns this research, reporting must extend a single organization and therefore be mandated to a higher entity, such as a regional health authority, provincial government or national-level program. Programs and systems for reporting patient safety incidents were also included to ensure the comprehensiveness of this search.

Disclosure requirements, although a valuable component of incident management, were excluded from this review process. Disclosure refers to advising those impacted by the event about a patient safety incident (CPSI 2011; Gaulton 2014).

Accreditation Canada is additionally a unique example of a national-level organization that offers voluntary participation in its program.

Both reporting and disclosure are elements of the Canadian Incident Analysis Framework (CPSI 2012b). The framework's purpose is to help individuals and healthcare organizations determine what happened, how and why the incident occurred. Reporting is one step in this framework. While it is the focus of this paper, several other elements are involved in learning from patient safety incidents. Please refer to the framework for more information (CPSI 2012b).

Methods

Data have been gathered using two means: a literature review and key informant interviews. Because of the lack of available and current literature within academic databases, publicly available sources were largely sought. This included reports from quality councils, provincial governments and third-party organizations that drive quality care, such as the Canadian Patient Safety Institute (CPSI) and Accreditation Canada. Current legislation was also reviewed through the Canadian Legal Information Institute's database (<www.CanLii.org>). Through this source, statutory reporting requirements were sought from applicable acts and regulations. Key search terms included: patient safety incident(s), adverse events, critical incidents, quality-related events and reporting, requirements, guidelines, systems or policies. Key informant interviews were used to support and elaborate upon evidence found in the literature review.

Trends: The Patchwork of Requirements

The investigation revealed a patchwork of reporting requirements and systems throughout the provinces and territories. Trends are consolidated in this paper through four levels of analysis: international, national, provincial/territorial and local.

International level

A single, comprehensive international reporting program was observed. It is included in this synthesis of the literature, as Canadian organizations voluntarily participate and report to this program. *Global Patient Safety Alerts* was launched in 2011 as a joint initiative between CPSI and the World Health Organization (WHO). It permits public sharing of information and alerts across international borders to be used in improving patient safety globally (CPSI 2012a). CPSI's annual review 2014-2015 counted more than 1,200 patient safety alerts and an estimated 6,100 recommendations from organizations within Canada and abroad (CPSI 2015).

National level

It was found that national-level reporting programs, while several exist, are generally narrow in scope. They focus ultimately on the collection of information from medication and vaccination incidents and participation is voluntary in nature. Provincial acts and regulations may, however, place participation in these national programs as a statutory requirement. This approach is quite common in what concerns reporting to the Public Health Agency of Canada's (PHAC) Canadian Adverse Events Following Immunization Surveillance System (CAEFISS). For example, the Immunization Regulations of the Northwest Territories require, under s. 3(2), that if a healthcare professional is notified that a person has experienced an adverse reaction to an immunization, he or she shall provide the Chief Public Health Officer, within 24 hours of the notification, a copy of the Report of Adverse Events Following Immunization required by PHAC. Manitoba, New Brunswick, Nova Scotia and Prince Edward Island also have similar statutory requirements in place.

Additionally, the Ontario Ministry of Health and Long-Term Care (MOHLTC) has a directive in place that requires all Ontario hospitals to report critical incidents related to medication/IV fluids to the Canadian Institute for Health Information's (CIHI) National System for Incident Reporting (MOHLTC 2013). Please see Table 1 for a complete list of national reporting programs (CIHI 2014; Health Canada 2011a, 2011b; ISMP 2015; PHAC 2013, 2014).

An exception to these trends is the Canadian Forces Health Services Centres' (2015) reporting and follow-up program. This program both mandates reporting and collects information on a comprehensive list of patient safety incidents. Within the Health Services Centres, policies call for immediate reporting of all patient safety incidents, regardless of the type. Investigation and follow-up protocols are also referenced in these policy documents (Canadian Forces Policy Documents).

Accreditation Canada is additionally a unique example of a national-level organization that offers voluntary participation in its program. However, this organization is able to strongly incentivize the use of reporting systems.

TABLE 1.
National-level reporting programs in Canada

Organization	Program Name	Patient Safety Incident Type
CIHI	National System for Incident Reporting	Medication or IV fluids
PHAC	Canadian Adverse Events Following Immunization Surveillance System	Adverse events following immunization
Health Canada	Canada Vigilance Program	Prescription and non-prescription medications, biologics, natural health products and radiopharmaceuticals
Institute for Safe Medication Practices (ISMP)	Canadian Medication Incident Reporting and Prevention System	Medication incidents
Canadian Forces Health Services Centres	Patient Safety Incident Reporting and Follow-up	All patient safety incidents

As part of the Qmentum accreditation program, organizations must meet designated Required Organizational Practices (ROPs). An ROP exists with regards to patient safety incident management, where “a patient safety incident management system that supports reporting and learning is implemented” (Accreditation Canada 2015: 13). The high priority placed on ROPs encourages patient safety incident reporting for healthcare organizations that wish to receive an accreditation designation.

Provincial/Territorial Level

Extreme variability exists between the provinces and territories with regards to patient safety incident reporting requirements and systems. Some provinces have their own provincial reporting systems in place: Nova Scotia, Newfoundland and Labrador, Prince Edward Island, British Columbia and Alberta (Alberta Health Services 2015; BC PSLs Central 2015; Elliot 2010; Elliot et al. 2014; Health PEI 2013). Other provinces have strong statutory reporting requirements that are supported through protocols and guidelines. Prince Edward Island’s *Practice of Pharmacy Technicians Regulations* was the only legislation identified, particular to a health professional group that required patient safety incident reporting. Both Manitoba’s *Regional Health Authorities Act* and Saskatchewan’s *Regional Health Services Act* provide for healthcare organizations to report such events to their designated health authorities under certain conditions. Following specific sets of requirements, the health authorities may also have to report to the provincial minister of health.

Two provincial legislative requirements call for patient safety incident data to be collected in a manner beyond case

reports or the individual incident. The *Excellent Care for All Act* in Ontario requires the collection of aggregate data upon which quality improvement reports are to be generated. Quebec’s *An Act Respecting Health Services and Social Services* requires the executive director to report all events to an agency at agreed-upon intervals (233.1).

This variability distinctly contrasts with the territories that have limited reporting requirements in place and no reporting systems at this time.

Several protocols and guidelines also exist for patient safety incident reporting and, while quite explicit in nature, they do not carry the legal weight of an act or regulation (Government of Saskatchewan 2004; Government of Manitoba 2010; Interior Health 2014; Nova Scotia Health and Wellness 2012). Please see Table 2 for further information.

Local Level

A unique approach to reporting requirements was found to be emerging at the local level. Two instances were identified where professional colleges leveraged their regulatory role to mandate patient safety incident reporting for community-based practices. The College of Physicians and Surgeons of Ontario (CPSO), as of 2013, requires out-of-hospital premises to report adverse events, as prescribed in s. 51 of by-law 77 (CPSO 2013). A two-tiered adverse event reporting system was put in place, ensuring data collection for both incident management and for quality improvement activities (CPSO 2013). Following the report submission, the college may choose to take further action (CPSO 2013).

The Nova Scotia College of Pharmacists (NSCP) (2010), in a similar instance, has mandated a continuous quality improvement process be undertaken by community pharmacies. This process incorporates patient safety incident reporting to a third-party organization. Reporting has traditionally occurred to Institute for Safe Medication Practices (ISMP), but a new system, SafetyNET-Rx, has recently been pilot tested in Nova Scotia and may begin to gain acceptance (NSCP 2010). Leveraging their regulatory role, professional colleges are in a unique position to mandate reporting.

TABLE 2.
Provincial protocols, guidelines and policies

Province	Guideline/Protocol/Policy
British Columbia	Protocol for Health System Response to Adverse Events and Service Issues
Manitoba	Critical Incident Reporting Guidelines
Nova Scotia	Serious Reportable Events Interim Reporting Policy
Saskatchewan	Critical Incident Reporting Guidelines

Pulling the Pieces Together: Gaps and Recommendations

The gaps identified are strategic in nature. The first gap speaks to a vision for a national-level reporting system. The recommendations provided for the remaining identified gaps have been leveraged to provide foundation building steps for this national system. Five gaps are identified below:

The lack of a comprehensive, pan-Canadian reporting system

A national system that collects all types of patient safety incident information would not only enhance analysis at the local level, but foster improved decision-making and promote the broader dissemination of advisories and lessons learned. The PHAC's CAEFISS is exemplary of these benefits, where case reports for AEFIs are analyzed nationally to better perceive trends that may not be visible at either local or provincial levels (PHAC 2013).

Over a decade ago, the value of a pan-Canadian reporting and learning system was recognized (Hoffman, Beard and Yu 2008). CPSI released a consultant's report that offered recommendations towards a Canadian Adverse Event Reporting and Learning System. Since this report, no further national developments were observed from the literature. Evidently, such a project would require significant financial and human resources, as well as commitment and engagement from stakeholders nationwide. It is an endeavour that Canadians may not yet be prepared to undertake.

Recommendation

It is recommended that small steps be taken to improve alignment between the various reporting systems and requirements in Canada. This will begin to build a foundation for a pan-Canadian reporting and learning system, reducing barriers and facilitating future implementation of this system in the right climate.

A need for greater standardization of patient safety incident terminology

Although the CPSI and Accreditation Canada have moved to adopt the WHO's International Classification for Patient Safety, an extensive variety of terminology is used within the provinces and territories to communicate patient safety incident information (CPSI 2012b; WHO 2009). These preferred terms and definitions are encased in acts, regulations, protocols and guidelines, including critical incidents in Manitoba, quality-related events in Nova Scotian community pharmacies and the term adverse events, heavily embedded in statutory AEFI reporting requirements (Government of Manitoba 2010; NSCP 2010).

A common language for patient safety incidents creates a unified tool for communication, reporting, information dissemination and learning. This is a necessary foundational element that will allow provinces to engage with each other at the pan-Canadian level.

Recommendation

It is recommended that as organizations and governments revise protocols, guidelines, regulations and acts within their jurisdictions that they think critically about the adoption of WHO's classification. The move towards a standardized terminology will create much needed alignment throughout reporting systems and structures.

Undefined role of the patient in reporting

The patient lacked a standardized role in the reporting literature. Some reporting systems offered a separate portal for reporting by patients. This is true of the PHAC's reporting program for AEFIs (PHAC 2014). Accreditation Canada has further emphasized the importance of the patient's awareness of organizational reporting mechanisms. This is incorporated into Accreditation Canada's ROPs (Accreditation Canada 2015).

A common language for patient safety incidents creates a unified tool for communication, reporting, information dissemination and learning.

In fact, the role of patients in reporting and learning was an interest in early conversations concerning a pan-Canadian reporting and learning system (Hoffman et al. 2008). However, further research was required at the time (Hoffman et al. 2008). Questions that were put forward included: (1) What type of information can patients provide; (2) What options exist for reporting mechanisms for this unique group; and (3) What infrastructure is needed to support patient reporting?

The undefined patient role indicates that reporting systems and requirements are still strongly provider-focused. While this is important in fostering use of reporting systems, it cannot be completely emphasized at the expense of the patient-centred model. Defining what role patients are expected to play in patient safety incident reporting will ensure the patient-centred care model is not a secondary discussion.

Recommendation

It is recommended that national leaders in the field of patient safety begin to draft expectations towards the patient's role in reporting and integrate these into subsequent frameworks and programs.

The system users' perception of safety

It was identified that health professionals are generally still hesitant in their use of reporting systems. Fear of being blamed or of litigation impairs the use of these systems. Successful adoption of reporting practices stems from a culture of continuous quality improvement and learning.

Recommendation

It is important that these fears are addressed by leadership at local levels. If greater adoption and ownership of an organization's internal reporting structures are fostered, this will strengthen commitment to reporting, perhaps extending to the provincial, territorial or national levels. This paper proposes a call to action for emerging and working healthcare leaders to openly communicate with staff on the topic of reporting and to continue to promote cultures of continuous quality improvement within their organizations.

Home and Community Care and Reporting at the Local Level

Targeted efforts have been made at the local level to respond to a lack of reporting requirements for community healthcare practices. While room exists for a standardized approach to reporting among healthcare organizations, a particular need was revealed within the home and community care environment. To the extent of this scan, no specific legislative requirements were revealed within these settings. Manitoba's *Personal Care Homes Standards Regulation* was the closest example. Under s. 24(2), the operator of a personal care home must ensure that established written policies and procedures exist for pharmacy services. This includes policies for reporting, documenting and ensuring follow-up of medication incidents and adverse reactions.

Patient safety incident reporting is a small piece of the incident management system with significant potential for realizing better outcomes for patients.

The complexity of home care and community care systems did not always fall within broader patient safety incident legislation. An example is found within the Saskatchewan context. The *Regional Health Services Act* states in s. 58(3) that a healthcare organization shall give notice to the regional health authority of the occurrence of a critical incident. While this statement is seemingly comprehensive, in s. 2, a "healthcare organization" is described as an affiliate or a prescribed person that receives funding from a regional health authority to provide services. This statement, therefore, excludes a potentially large number of community organizations that do not receive funding from a regional health authority.

This gap has not gone unnoticed. A 2013 study by CPSI acknowledged limited data availability concerning client safety in home care and sought to explore the incidence and magnitude of adverse events. A key finding and recommendation for policy makers was to expand the use of electronic reporting (CPSI 2013).

Recommendation

It is recommended that further research be conducted in home care and community care environments. This will be a critical area to explore as provincial governments continue to move towards healthcare delivery in the community in response to an aging Canadian population.

Conclusion

The purpose of this paper was to investigate patient safety incident reporting requirements in different Canadian jurisdictions. This allowed for the identification of gaps within these systems. The literature review uncovered a patchwork of patient safety incident reporting requirements and programs. Clear dichotomies existed between the current roles played by the federal and provincial governments. At a national level, distinct, voluntary reporting programs were found, with little support from federal legislation. However, some provinces supported the use of these programs through their own statutes. Significant variability existed amongst the provinces and territories, with less of a legislative emphasis for patient safety incident reporting within the territorial systems. Hospital and community healthcare centres were also exposed to a unique dichotomy with the regulatory role of the professional colleges. The gaps identified were as follows: (1) the lack of a central and comprehensive pan-Canadian reporting and learning system; (2) a need for the standardized adoption of patient safety incident terminology; (3) the undefined role of the patient in reporting systems; (4) the users' perceptions of reporting; and (5) home and community care and reporting at the local level.

Recommendations were provided that would enable better alignment of reporting systems and requirements throughout Canada, creating a foundation upon which a pan-Canadian system may eventually take root. Recommendations focused on the gradual adoption of the WHO's patient safety classification and defining the patient role in reporting. In addition, it was recommended that leadership continue to foster the use of reporting systems at the local level through communication and education and, lastly, that further research be conducted in the home and community care environments. This research will help build a centralized reporting system that extends to the various sectors of Canadian healthcare.

Patient safety incident reporting is a small piece of the incident management system with significant potential for realizing better outcomes for patients. If reporting is embraced and conducted at a broad level, it can catalyze management of and learning from patient safety incidents, building safer, more proactive and better systems for the patients and communities of tomorrow. **HQ**

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GET POKED: Comparing an Incentive-Based Flu Campaign with Vaccinate-or-Mask Policies to Boost Influenza Vaccination Rates Among Healthcare Workers

Seema Marwaha, Bailey Lorv, Susanne Henseleit and Ngozi Iroanyah

Abstract

The median influenza vaccination rate for Toronto acute care facilities in 2013/14 was only 44%, well below the target rate of 90%. While many Toronto hospitals adopted a vaccinate-or-mask policy, Trillium Health Partners (THP) opted to create a multimodal incentives-based flu campaign entitled GET POKED. This campaign, which required significant additional resourcing, only increased our vaccination rate by 10%. While having some modest success, we believe it is unlikely that non-policy based interventions will efficiently and sustainably raise flu vaccine rates. Vaccinate-or-mask policies, while having some inherent challenges, may be worth exploring as part of THP's larger flu-prevention strategy.

Background

Healthcare worker (HCW) influenza (flu) vaccination rates are consistently lower than the Toronto Public Health target rate of 90% (Toronto Public Health 2014). Influencing HCWs to get their flu vaccine has become the focus of influenza campaigns in most healthcare institutions. HCWs are at the front-line of patient care and can act as vectors for the influenza virus, transmitting the potentially preventable communicable disease to vulnerable patients who are at risk for severe illness or flu-related complications. Until recently, flu vaccination campaigns have been almost exclusively voluntary in Canada (Lam et al. 2010). This practice has led to HCW vaccination

rates that are well below the recommended coverage rates to achieve herd immunity (Parker et al. 2013). Herd immunity is the concept that if enough people within a group have immunity, those without immunity are protected because the disease lacks hosts to spread (Fine 1993). In theory, if enough people get vaccinated in a healthcare environment, those too unwell to be vaccinated against the flu will be protected simply by never being exposed to the flu.

Despite having greater medical knowledge than the general public, not all HCWs choose to get the flu vaccine. Perception of a strong immune system, concerns that the vaccine can cause illness, inconvenience and variable vaccine efficacy are commonly cited reasons as to why some HCWs do not get the annual flu vaccine (Bellia et al. 2013). Overcoming these barriers and improving flu vaccination rates in HCWs is a recognized annual challenge in most Canadian healthcare institutions, but no gold-standard approach exists. A systematic review of institutional flu campaigns concluded that voluntary campaigns involving only education or promotion resulted in minimal changes in HCW vaccination rates, but is the most common type of campaign executed by hospitals (Lam et al. 2010). Trillium Health Partners (THP) has been no exception to this observation. Our annual flu campaigns have been voluntary education-based and consist mainly of posters, emails and in-person “myth-busting.”

This approach yielded a 35% compliance rate in 2012. The introduction of chocolate bars as an incentive for vaccination and improved data integrity increased compliance rates to 53% in 2013.

Several American healthcare organizations mandate annual flu vaccinations as a condition of employment and have achieved near universal HCW vaccination rates (Wicker and Marckmann 2014). Canadian healthcare organizations, bound by the Charter of Rights and Freedoms, employment law and collective agreements with employees, have not been able to proceed with mandatory flu vaccine policies (Gruben et al. 2014). Vaccinate-or-mask policies are emerging as a reasonable solution compared to ineffective voluntary programs and condition-of-employment policies. With vaccinate-or-mask, the annual flu vaccine remains voluntary for HCWs, but staff who choose not to vaccinate are required to wear a surgical mask at all times in patient-facing areas (Ksienski 2014). Wearing a mask may protect patients by decreasing the rate of virus transmission (Cowling et al. 2009), but it can also be seen as a consequence to opting out of the flu vaccine. Vaccinate-or-mask policies have been shown to increase HCW vaccine rates by almost 20% in some instances (Nowalk et al. 2013).

The Toronto Academic Health Science Network (TAHSN) includes 14 academic healthcare organizations in the greater Toronto area. Twelve of the 14 TAHSN organizations adopted a vaccinate-or-mask policy for the 2014/2015 flu season, along with many other hospitals in the region (Toronto Public Health 2014). THP, a multisite academic community hospital located in Mississauga Ontario, is one of the two TAHSN acute care hospital organizations that did not implement a vaccinate-or-mask policy for 2014/2015. This presented an opportunity to try a new, innovative approach to an incentive-based vaccination campaign and compare our vaccine rates with other TAHSN organizations that instituted a vaccinate-or-mask policy in the same season. The new approach we took was GET POKED; a multimodal, incentive-based campaign that aimed to improve the flu vaccination experience and recognize those who got their flu shot. The goal of GET POKED was to increase our HCW vaccination rates and compare results with our TAHSN partners that adopted a vaccine-or-mask policy.

GET POKED Campaign 2014/2015

Our approach to creating a flu campaign, which was aimed to more effectively increase vaccination rates, began with an analysis of past THP campaigns. Specifically, we looked at visual elements, communication strategies and any available vaccine data associated with these campaigns. We interviewed those who administered vaccines in previous years to understand barriers they may have observed. Additionally, we reviewed the existing literature for best practice models and identified several gaps regarding campaign elements that best encouraged HCW vaccinations.

Rather than redoing an educational flu campaign for 2014/2015, we looked to successful marketing and advertising approaches from other industries to design a new branded campaign that was not solely based on education and awareness. We specifically looked at social marketing and human-centred design as alternative approaches. We made two key assumptions when conceptualizing this new campaign:

1. HCWs most likely know that getting vaccinated is important and have intent to do so.
2. HCWs encounter certain barriers and limitations that prevent them from getting vaccinated.

Because social marketing conceptually assumes that people act primarily on self-interest (Grier and Bryant 2005), incentives can help drive and affect simple behaviour change like flu vaccination (Volpp et al. 2008) when both knowledge and intent are present. Therefore, a major part of our approach included developing larger incentives for HCW vaccination. Human-centred design is a process where the limitations and needs of a user are considered when creating a product (Matheson et al. 2015). We tried to reduce some of the barriers to getting vaccinated by identifying them and understanding their impact on HCW vaccination rates.

The resulting GET POKED campaign focused on five streams of activity: offering incentives for getting vaccinated, using disruptive advertising, improving vaccine access, improving the quality of flu vaccine data and creating a streamlined reporting system for those vaccinated outside the hospital. In addition to this new campaign, we secured senior hospital leadership support early on and increased campaign resourcing significantly compared to previous years.

Overview of the 2014/2015 Campaign

The GET POKED campaign was launched 15 October 2014 and ran for eight weeks – from when the vaccine was first made available until the deadline for reporting to Toronto Public Health. The campaign consisted of five major streams of activity (Figure 1):

1. *Incentives:* Employees who received their flu vaccine were instantly recognized at the time of vaccination with a chocolate bar and the opportunity to roll dice for a coffee gift card. They were also automatically entered into weekly and grand prize draws. The earlier an employee received a vaccination, the more weeks they were eligible to win an additional prize. Winners were publicly acknowledged, with their permission, in weekly communications to the organization and at public events. All incentives were generously provided by the Trillium Health Partners Foundation and Trillium Health Partners Volunteers.

2. *Disruptive Advertising:* We assembled an interdisciplinary design team with representation from Communications, Employee Health Safety and Wellness (EHSW) and Research to brainstorm different campaign concepts. Concepts went through three rounds of internal feedback and one round of feedback from frontline workers and senior hospital leaders. The resulting campaign was entitled GET POKED and aimed to shift employee perception of the flu vaccine from an annual burden to an opportunity to be recognized. In addition to carrying the visually distinct GET POKED branding throughout all campaign elements, we publicly displayed the current flu vaccination rate at each site.
3. *Improving Vaccine Access:* We increased the number of circulating flu carts from five the previous year to eight. We also trained 36 “vaccinators,” employees from clinical areas who learned to administer the flu vaccine and vaccinated colleagues. We used our site-specific outpatient pharmacies as static vaccine administration sites that were available to employees on weekends and off-hours. We purchased mobile and branded screens for the flu carts to offer privacy for employees to expose their arm when being vaccinated in a public place.
4. *Improving Data Integrity:* We created binders with full names of all employees as they appear in the EHSW database printed on adhesive labels. These labels were transferred to the vaccine log at the time of vaccination to minimize difficulties in reading handwriting and ensure that employees did not use nicknames that could not be matched in the EHSW database. To get an accurate

denominator, we cross-referenced human resources payroll data with EHSW data and asked managers/supervisors to update their employee lists. Weekly reports of vaccine compliance were sent out to managers and senior executives and publicly posted on individual units. Senior executive progress was also visualized on a leaderboard displayed publicly to encourage competition.

5. *Reporting:* We created and distributed branded vaccine status cards that employees could easily submit via email to EHSW. Employees, professional staff (including physicians) and volunteers who were vaccinated outside the hospital or who have a documented medical exemption were able to use this method if needed. We also allowed for self-reporting via email of vaccine status – employees were required to submit proof of their vaccine status, but at a later date.

Results of The 2014/2015 GET POKED Campaign

THP has close to 7,000 full-time employees and professional staff and 1,300 volunteers that could be vaccinated. In the first two weeks of the campaign, 2,472 vaccinations were given to HCWs compared with only 1,148 vaccinations given in the same time frame in 2013. Thirty-six vaccinators were trained and they administered 3,285 vaccinations to THP employees over the eight weeks. The previous year, 77 staff members were trained as vaccinators, but only 27 of those participated, administering 1,196 vaccinations over the same eight-week period. Following the full eight-week implementation period, THP recorded a total of 5,825 vaccinations amongst its employees, professional staff, students and volunteers (Table 1).

FIGURE 1.

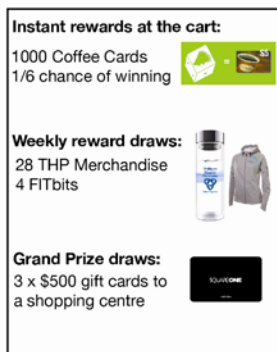
An overview of the GET POKED campaign’s five streams of activity: (a) incentives, (b) disruptive advertising, (c) vaccine access, (d) data integrity and (e) reporting

GET POKED CAMPAIGN: 5 STREAMS OF ACTIVITY

Instant rewards at the cart:
1000 Coffee Cards
1/6 chance of winning

Weekly reward draws:
28 THP Merchandise
4 FITbits

Grand Prize draws:
3 x \$500 gift cards to a shopping centre



a: incentives - three levels of rewards were available for employees

Getting your flu shot can be really rewarding (literally).

Get poked. Beat the flu. Get great stuff.

GOAL 100%

POKE-METRE



b: disruptive advertising - bright colors, porcupine mascot and a focus on incentives

3 additional flu carts

36 vaccinators

2 outpatient pharmacies open after hours and on weekends.

Privacy screens for public vaccinations



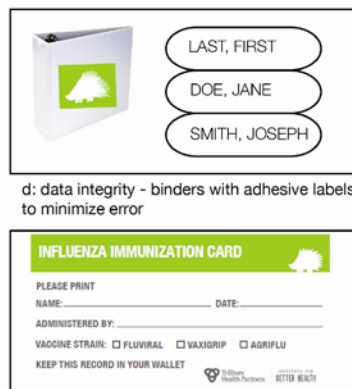
c: vaccine access - actions taken to make the process of getting the vaccine easy and minimize barriers

LAST, FIRST
DOE, JANE
SMITH, JOSEPH

d: data integrity - binders with adhesive labels to minimize error

INFLUENZA IMMUNIZATION CARD

PLEASE PRINT
NAME: _____ DATE: _____
ADMINISTERED BY: _____
VACCINE STRAIN: ☐ FLUVIRAL ☐ VAXIGRIP ☐ AGRIFLU
KEEP THIS RECORD IN YOUR WALLET



e: reporting - reporting cards staff could submit via email

TABLE 1.
Flu Campaign Results at THP in 2014 and 2013

	2014 (GET POKED)	2013
<i>Documented vaccination</i>		
Staff	3,870	3,892
Physicians	419	301
Volunteers/Student/Other	1,536	1,104
Documented Exception	21	9
Total population/Denominator	9,353	10,045
Reported Vaccine Rate	63%	53%
<i>Documented:</i>		
Influenza Cases	34	18
Influenza Outbreaks	6	2
<i>Other factor:</i>		
Participating Vaccinators	36	18

A summary of the major results of the 2014/2015 GET POKED campaign, including the number of documented vaccinations, vaccine rate and outbreaks.

This represented 63% of total full- and part-time employees, medical staff, students and adult volunteers and a 10% absolute increase in vaccination rate compared to the same period last year. To achieve the documented increase, we spent additional funds in promotional materials and prizes and increased staff resourcing significantly.

Despite having the highest flu vaccine rate in our organization's history, we experienced an increase in influenza cases, both community- and hospital-acquired. We also had a higher number of flu-outbreaks compared with previous years (Table 1). The number of confirmed hospital-acquired influenza cases at Trillium Health Partners from October to April was 34, up from 18 in the previous season. We also had a higher number of confirmed influenza cases. According to the Centers for Disease Control and Prevention (CDC), the 2014 flu vaccine was only 19% effective against the circulating strains of the flu (CDC 2015; McCarthy 2014).

According to Toronto Public Health, the median HCW vaccination rate for Toronto acute care facilities during the same reporting period was 62%. The maximum institutional rate documented in Toronto was 75% and the lowest documented rate was 29%. THP's rate was 1% higher than the median rate (Figure 2) (Yaffe 2015).

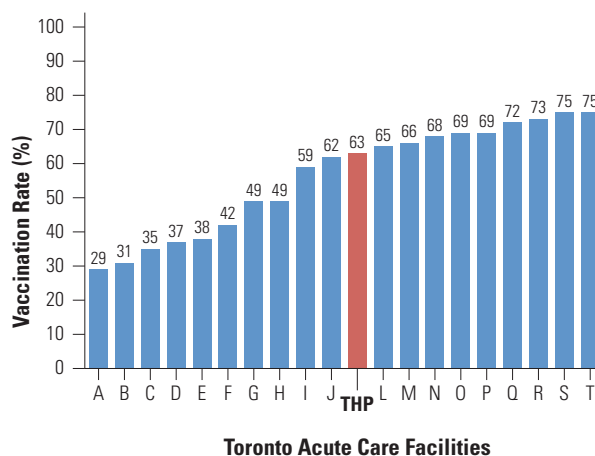
Anecdotal feedback was obtained from vaccine administrators and front-line staff. Overall, GET POKED created a more positive experience at the flu carts and focused on recognition. However, as was observed in previous years, there were reported incidents of tension and confrontation from unvaccinated staff near the campaign's final two weeks.

The incentives made the experience at individual vaccine carts fun and engaging despite extra steps for vaccine administrators. The branding was attention-grabbing and stood out from other hospital communications.

Challenges faced during implementation of GET POKED

As a large healthcare organization, it is a yearly challenge to ensure vaccinated individuals are accurately recorded and entered into the THP EHSW databases. While the labelling system we implemented was an improvement over handwriting names onto log sheets in that it reduced transcription error, it still required a substantial amount of manual labour and did not eliminate the opportunity for human error. It was also difficult to get an accurate denominator with which to calculate the institutional flu vaccine rate because at THP, these data were stored in multiple unique databases that separated employee, volunteer and physician information. Another recurrent concern is that many employees get their flu vaccine at their own doctor's office or pharmacy. These employees are required to provide documentation of their vaccine and submit it to EHSW. While we enabled people to self-report via email, this process was not yet streamlined or standardized. We suspect many employees did not submit proof of allergy or vaccination status, so our final vaccination rate may not have been fully representative. Finally, our volunteer population was difficult to reach through standard campaign communication channels. THP has over 1,300 volunteers who work anywhere from a few hours to regular weekly shifts. We suspect a large proportion of them received their vaccination outside of the hospital but were not captured in our numbers.

FIGURE 2.
Influenza immunization rates for Toronto acute care facilities as reported to Toronto Public Health (Yaffe 2015)



Discussion

Within any group of HCWs, there exist both individuals with intent who will actively seek out the annual flu vaccine and individuals who will oppose vaccination regardless of intervention (Cohen et al. 2013). The remainder of individuals are likely to be “fence-sitters” who are undecided, but whose decision can be affected by the decision of their peers and the elimination of other barriers to getting vaccinated. Our campaign was primarily designed to target these undecided individuals and to convince them to receive their vaccination through awareness, ease of access, convenience and incentives to promote maximum vaccine coverage.

We were able to increase HCW vaccination rates more with this approach than with previous more traditional flu awareness campaigns ...

Overall, our multimodal GET POKED campaign was moderately successful in increasing employee vaccination rates. We were able to increase HCW vaccination rates by 10% (to 63%), which put us above the Toronto Public Health average for the region and ahead of many organizations that implemented a vaccinate-or-mask policy. However, we still remained below the Public Health target rate of 90%. The highest any TAHSN acute care hospital was able to achieve was 75%, and this hospital had implemented a vaccinate-or-mask policy. Our campaign most likely raised awareness and supported those with the intent to vaccinate to get their vaccinations more easily. We were able to vaccinate twice the number of individuals in the first two weeks of the campaign compared to the year before. The initial boost in vaccinations suggests earlier adoption among HCWs who may have otherwise received their vaccinations later in the season. Additionally, the observed increase in total number of vaccinations suggests that we were also able to influence some “fence-sitters.” Despite this, a significant proportion of staff remained unvaccinated. This may indicate that the number of HCWs who refuse the flu vaccine is higher than previously believed or that a vocal minority is affecting the decision of their colleagues (Cohen et al. 2013). An additional consideration that may have influenced HCW behaviours was the widely reported limited effectiveness of the 2014 flu vaccine. Although our target audience was exposed to positive messaging at work, negative media coverage about the vaccine’s effectiveness may have influenced perceptions on the necessity of the flu vaccine.

Additionally, we encountered a number of operational challenges. Capturing accurate data, minimizing human error and identifying employees that got vaccinated elsewhere were difficult to execute. It is likely that these challenges will continue to present themselves in a policy-based approach like vaccinate-or-mask and are not unique to a voluntary campaign.

Using technology such as radio frequency identification (RFID) in employee ID badges to electronically scan those getting vaccinated directly into a database could eliminate some of the potential for human and transcription error when documenting vaccinations. More work will need to be done to create seamless self-reporting mechanisms for staff who get vaccinated outside the hospital.

Using core concepts from social marketing and human-centred design made our campaign different and stand out from previous flu campaigns. The iterative multimodal nature of our campaign’s design made it difficult to determine which elements of the campaign were most effective though. We were able to increase HCW vaccination rates more with this approach than with previous more traditional flu awareness campaigns (Lam et al. 2010), but the sustainability of this increase is unknown. To achieve our 10% increase, we invested significantly more resources, including additional staff dedicated to the campaign and incentives to support it. In our region, where a consistent vaccinate-or-mask policy was implemented, vaccination rates in acute care hospitals went as high as 75%. Vaccinate-or-mask policies have also been specifically criticized for being primarily punitive while not proving they are able to more effectively protect patients and colleagues (Gardam and Lemieux 2013; Van Buynder et al. 2015); in a recent arbitration between the Ontario Nurses’ Association and the Ontario Hospital Association in Sault Ste. Marie, the arbitrator concluded that the proposed vaccinate-or-mask policy was unreasonable for this reason. Being required to wear a mask for the entire flu season can also be intrusive, impact staff morale, negatively impact the patient experience and can be difficult to implement. It also exposes the vaccination status of HCWs to patients and those required to enforce the policy. In contrast, a mandatory condition of employment flu vaccination policies for HCWs has been shown to achieve higher average vaccine rates, is probably more cost-effective and yields sustainable behaviour change as demonstrated in the United States (Babcock et al. 2010). If an institution’s goal is to achieve the highest HCW flu vaccine rate possible, then making flu vaccination a condition of employment is likely a better means to achieve this. Further work will need to be done to determine if vaccinate-or-mask policies are sustainable.

After running the GET POKED campaign where the primary focus was to achieve the highest HCW vaccine rate, we questioned whether this metric should be the sole emphasis of an annual flu campaign. HCW flu vaccine coverage is only one component in preventing hospital-acquired flu transmission and protecting vulnerable patients against flu-related complications (Wicker and Marckmann 2014). Efforts such as proper hand hygiene, proper infection control procedures practiced by employees and visitors, availability of equipment like gowns and gloves, influenza diagnostic test turn-around time and patient

and visitor vaccine rates all impact the spread of influenza in hospitals (Nowalk et al. 2013). These patient safety interventions are a priority for THP on a year-round basis. As the focus of the annual flu campaign is to reduce transmitted flu cases and outbreaks, a comprehensive approach that includes these proven patient safety efforts should be included.

Based on improvements achieved last year, THP is moving forward this year with the following influenza vaccination plan to protect patient safety:

- Delay implementing a full vaccinate-or-mask policy to take the time needed to understand the recent Sault Ste Marie arbitrator's decision, monitor implementation of similar policies in other Ontario hospitals and continue with a strong commitment to flu prevention.
- Increase opportunities for vaccination at THP by training and supporting additional flu vaccinators in the organization.
- Continue to improve data regarding influenza vaccination rates and work to make it easy to report vaccination status.
- Empower leaders with information and tools, including data regarding vaccination rates for their teams, to support increased vaccination.
- Rollout a comprehensive education plan for all staff, physicians, volunteers and others to educate on our influenza vaccination program over the summer months prior to the flu season, followed with further marketing to motivate vaccinations in the fall.
- Overall infection prevention and control efforts, including hand washing, are fundamental to preventing the spread of the flu.

Bottom Line

We were only able to increase vaccination rates to 63%, a 10% absolute increase from the previous year, using a multimodal voluntary campaign where we invested significantly more resources to support the campaign with staff, materials and prizes. However, this incentive-based campaign that focussed on recognition yielded many positive results and likely influenced the “fence-sitters.” As demonstrated by U.S. hospitals, the mandatory condition of employment policies has shown to achieve higher average vaccine rates, is probably more cost-effective and yields sustainable behaviour change. But Canadian hospitals are bound by the Charter of Rights and Freedoms, employment law and union collective agreements, so mandatory policies are currently not being implemented. Vaccinate-or-mask policies, although having their own inherent challenges, have emerged as a reasonable alternate solution. Therefore, comprehensive campaigns that include a vaccinate-or-mask policy, incentives to recognize staff and efforts to enhance infection prevention and control practices will be required to achieve the goal of reduced flu transmission in the Canadian context. **HQ**

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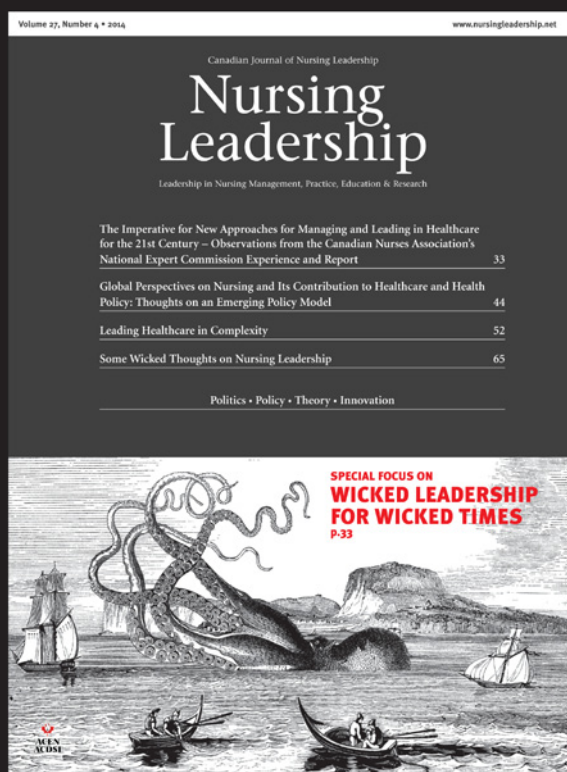
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A Dozen Strategies Along the Ten Steps Baby-Friendly Initiative Journey

Ann Salvador, Louise Dumas, Barbara Davies, Marie-Josée Emard and Kim Lortie

Abstract

To improve the quality of care and maternal-newborn outcomes, Hôpital Montfort implemented the Registered Nurses' Association of Ontario Best Practice Guideline on Breastfeeding, which supports the Baby-Friendly Initiative (BFI). This journey was challenging yet rewarding. Overall, we report success with increased mother-infant skin-to-skin contact at birth and breastfeeding immediately postpartum. However, challenges with formula supplementation rates continue. This paper discusses 12 strategies that emerged from lessons learned and provides links to our policies and patient education materials. The information may be helpful to others, as implementation of parts of the BFI are inserted in criteria for the Canadian accreditation.

Background

Hôpital Montfort is a Francophone academic healthcare institution that delivers primary and secondary short-term care in both official languages. In an effort to support its nurses, Montfort joined forces with the Registered Nurses' Association of Ontario (RNAO) to implement the Nursing Best Practice Guidelines.

Starting in 1999, during a multiyear provincial project, the RNAO developed and evaluated the implementation of nursing guidelines (Grinspun et al. 2001/2002). Subsequently, the RNAO developed and launched the Best Practice Spotlight Organization (BPSO) initiative to provide organizational

support to hospitals, public health centres and other healthcare settings for the implementation of best practices (Higuchi et al. 2012). In 2012, RNAO designated the Montfort as a BPSO following the implementation of three guidelines, one of which concerned breastfeeding to better support the roughly 3,200 mothers who give birth at Montfort annually.

The RNAO Best Practice Guideline on breastfeeding is aimed at improving the health outcomes of both mothers and newborns. The recommendations are consistent with the "Ten steps for successful breastfeeding" developed as part of the World Health Organization (WHO) and UNICEF Baby-Friendly Hospital Initiative (1991) and are recognized as being vital to mothers and babies. This initiative is better-known in Canada as the Baby-Friendly Initiative (BFI), and the criteria to become designated as a Baby-Friendly health-care facility have been established for both hospitals and public health centres (Breastfeeding Committee for Canada 2011). Furthermore, guidelines from the Accreditation Canada Qmentum program include criteria from this initiative (Accreditation Canada 2012).

BFI: A Bumpy Road

The BFI involves the protection, promotion and encouragement of breastfeeding as the normal, natural method of child feeding. The BFI encourages adopting behaviours that are

conductive to ensuring informed decision-making by the mother as well as sound and consistent clinical practices to support the mother, and tools to ensure seamless transitions from different healthcare providers or settings. Steps are summarized in Table 1 (Breastfeeding Committee for Canada 2011).

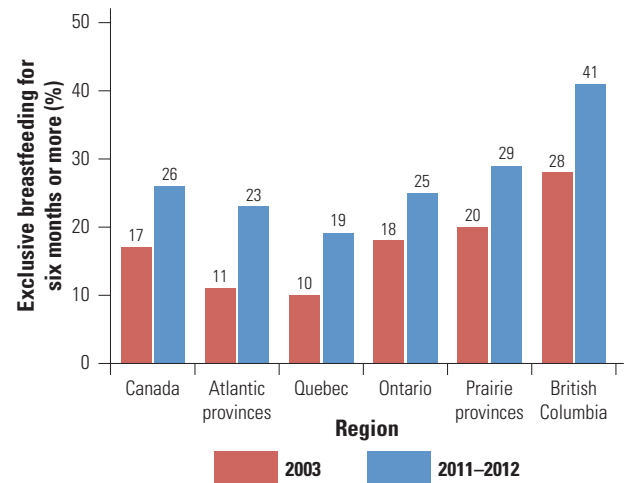
TABLE 1.
Summary of the Ten Steps for successful breastfeeding, adapted from the BCC integrated Ten Steps practice outcome indicators for hospitals and community health services (2011)

1. Adopt a written child feeding policy and make sure everyone in the health centre knows his/her role in its implementation.
2. Make sure all persons in contact with pregnant women, new mothers and children have the competencies to support them in their decisions.
3. Inform pregnant women about the risks of non-breastfeeding and the process of breastfeeding.
4. Place all babies skin-to-skin with their mothers immediately at birth for at least one hour without interruption and encourage mothers to recognize when their babies are ready to feed, offering help as needed.
5. Assist mothers to breastfeed and maintain lactation even when they face challenges such as separation from their infants. Assist mothers who made an informed choice not to breastfeed how to choose, prepare and safely give breast milk substitutes.
6. Support mothers to exclusively breastfeed for the first six months unless supplements are medically indicated.
7. Facilitate 24-hour rooming-in for all mothers and babies.
8. Encourage baby-led breastfeeding. Encourage sustained breastfeeding beyond six months after the introduction of appropriate complementary foods.
9. Support mothers to feed and care for their babies without the use of artificial teats.
10. Provide a seamless transition between services provided by hospital and community, referring mothers to peer support programs.

Like other evidence-based practices, the implementation of the BFI is complex and requires a major shift in the knowledge and attitudes of all healthcare providers involved in prenatal, perinatal and postnatal care (Melnik 2002). It is recognized that “change is rarely easy if the innovation requires complex changes in clinical practice or better collaboration between disciplines or changes in the organisation of care” (Grol et al. 2013). In 2011–2012, the rates of exclusive breastfeeding from birth until six months varied immensely across Canada from 19% in Quebec to 41% in British Columbia (Gionet 2013, Figure 1). This fact substantiates both large variations across Canada and also that there is considerable room for improvement to meet the guideline recommendations.

As reported in 2012, breastfeeding rates drop off steeply with 91.8% of mothers initiating some breastfeeding, yet 61.5% of mothers breastfeeding exclusively at discharge. The report recommends areas to focus on for effective practices, including improving organizational factors, changing clinical practices and educating pregnant women.

FIGURE 1.
Rates of exclusive breastfeeding from birth until 6 months



Statistics Canada, Canadian Community Health Survey, 2003 and 2011–2012.

A Dozen Strategies: A Learning Journey

At Montfort, since the fall of 2009, there has been a focused effort on achieving best practices in breastfeeding. Some difficulties were encountered and creativity was imperative in solving them. As reported by Sanson-Fisher et al. (2004), “There is a growing interest in developing strategies to encourage adoption of best evidence into practice, including efforts to change behaviour. The effectiveness of these efforts is likely to depend on a complex interaction between the nature of the clinical activity to be changed and the costs and benefits of adopting the change for the healthcare professionals, patients and organizations involved” (p. 205).

Throughout this journey, we reflected on the lessons learned about practices, policy documents, educational material and reports of mother–infant outcomes. Twelve strategies emerged which facilitated the process for Montfort and may assist other institutions to embark on this venture.

Multidisciplinary, multisite committee

As recommended in the BFI, a strong multidisciplinary, multi-level and multisite Breastfeeding Committee was first established at the Montfort and continues to meet monthly. The mandate of the Breastfeeding Committee is to plan strategically, change policies and procedures, discuss difficulties as they arise, develop tools for healthcare providers and patients, conduct monthly chart audits and reflect on the appropriate steps to follow. The membership consists of registered nurses from the Family Birthing Centre (FBC) at Montfort, physicians, midwives, one clinical manager, representatives from senior administration (Montfort) and representatives

from another partner – the Ottawa Public Health Department (OPH). An asset to this committee is the continuous participation of a bilingual BFI Lead Assessor and Nurse Researcher (Louise Dumas).

Dedication of a large team to improve health outcomes of mothers and newborns is an important part of Montfort's Breastfeeding Committee mandate. The dedication of the team proved to be a winning strategy, as ideas, skills, beliefs and concerns from people with a range of professional backgrounds enrich the implementation and sustainability of this type of endeavour (Maher et al. 2010).

One of the main challenges experienced by this committee was finding suitable meeting times for everyone. To help increase attendance at meetings, various meeting options (e.g., membership involvement by phone, in-person) were offered and deemed successful.

To implement evidence-based practices is more than simply educating healthcare providers and expecting that the changes will happen.

Initial assessment

An assessment of the progress on each of the Ten Steps within the FBC was initially conducted. The initial assessment consisted of an analysis and an evaluation of the strengths and weaknesses for each of the Ten Steps. This approach helped to build capacity and empower the FBC team, that is, evidence-based family-centred practices were becoming part of the culture and also reflected patients' choices and needs.

Results of the initial assessment demonstrated difficulties with skin-to-skin practices immediately after vaginal birth and caesarean section (Step 4). Additionally, formula supplementation rates were a concern (Step 6) as were mother–infant unnecessary separations (Step 7). To address these issues, the FBC team agreed to make these three BFI steps a top priority for the first year.

Strategic planning

The development of a strategic plan proved to be a winning strategy, as it helped the team focus on the priorities needing the most attention. The strategic plan was designed to include outcome indicators from the RNAO Breastfeeding guidelines (2007) as well as from the BFI integrated 10 Steps for hospitals and community health services (Breastfeeding Committee of Canada 2011).

Considering the North-American bottle-feeding culture, and given that the three identified priorities (BFI Steps 4, 6 and 7) are more difficult to implement, detailed strategic planning proved to be an effective monitoring tool to set direction. As such, to overcome the challenges encountered, improvement opportunities were categorized using the LEAN

Methodology (KPMG 2011). The LEAN tools helped provide focus on daily continuous improvements to capitalize on quick wins resulting in great impacts. Strategic planning along with management support and multifaceted interventions all focused on obtaining small successes to build on a “yes we can” sustainable approach (Davies et al. 2010).

Management support

Literature on implementing best practice guidelines and sustaining evidence-based practice demonstrates the importance of accountability and continuous support from first-line clinical managers and senior administrators (Gifford et al. 2011, Maher et al. 2010). In addition, organizational support from key leaders clearly denotes the intent of the hospital to engage in the BFI activities. Considering that “Baby Friendly Hospital Initiative practices often take a back seat to the time pressures and increased workload” (Reddin et al. 2007), having management support at all levels as well as staff buy-in is of utmost importance.

At Montfort, the value of the BFI process was clearly endorsed by all administrators who facilitated the adoption of the policy. Financial and time release support was provided to an experienced registered nurse who successfully completed a three-month RNAO Advanced Clinical Practice Fellowship. During the fellowship, a breastfeeding educational program was developed and subsequently offered to all healthcare providers.

Passionate leaders

Nickel et al. (2013) identified organizational factors having an impact on the implementation of the Ten Steps. Collective efficacy and collective commitment were described as the shared belief that with the support of everyone, the team can implement and sustain best practices (Nickel et al. 2013). In our context, ongoing clinical staff champions were instrumental in empowering the entire FBC team involved in implementing the Ten Steps. Their clinical expertise, coupled with enthusiasm, creativity, patience and perseverance, made the change happen. FBC members understood that they were involved in some part of the implementation process and its sustainability. Examples of their efforts included developing clinical tools to facilitate clinical reflection and interventions, involving the staff in the selection of a champion team member to supervise their clinical practice, congratulating colleagues for purposeful and positive interventions, conducting chart audits and providing feedback to staff when incomplete data were found.

Staff training and clinical supervision

To implement evidence-based practices is more than simply educating healthcare providers and expecting that the changes will happen. More than knowledge acquisition, the BFI involves a radical change in culture to become centred on

the mother–infant dyads and align practices with best recent research results (Matthew-Maich et al. 2013).

Many barriers have been identified in the implementation of evidence-based practice. Such barriers include lack of knowledge, misperceptions, negative attitudes and fear about practicing differently (Grol 2013; RNAO Implementation Toolkit 2012). At Montfort, we addressed these barriers by offering various training options to all healthcare providers. Theoretical training included a workshop on skin-to-skin at birth by a perinatal expert (Dumas 2010), the RNAO e-learning breastfeeding course, the American Academy of Pediatrics online training and an eight-hour in-class workshop for Registered Nurses and Registered Practical Nurses based on the key concepts of each BFI step. In addition, two in-class breastfeeding education sessions were provided on breastfeeding challenges to physicians, pediatricians and midwives. Furthermore, case scenarios led by the lactation consultant were also presented and discussed at the staff meetings. Practical training was also provided: mentoring with peers, building each team member's confidence by immediate and respectful feedback and support on clinical interventions. One of the goals was for members of the healthcare team to communicate consistent messages to mothers to avoid conflicting advice about breastfeeding.

Development of strategies and tools

To facilitate uptake of new knowledge in practice, tools were developed based on the needs of health professionals and the parents. Frontline FBC staff were continually engaged in bringing forward ideas that were discussed, selectively implemented and evaluated at the monthly Breastfeeding Committee.

Documentation strategies consisted of the development of policies and procedures, posters, decision trees, process flow diagrams and enhanced electronic documentation screens. Descriptions of these tools included the following: flow charts to facilitate uninterrupted skin-to-skin at birth; decision tree for supplementation according to the baby's behaviour; revised nursing interventions; a new organizational policy on breastfeeding; and posters reminding staff, parents and families about newborn sleep patterns and feeding cues (using a traffic light system analogy). Many of these tools are now available in different areas on the unit, notably patient rooms, common areas of the unit and operating rooms.

Client-centred educational material

Montfort is a Francophone institution offering services in both English and French; however, one of the challenges in Ontario and other regions of Canada is that educational material in French is sometimes scarce. Therefore, meeting our patients' needs requires additional resources to translate and validate the translation with both staff and patient

populations. Examples of education material developed by our team at Montfort or adapted from public health include patient- and family-centred posters highlighting benefits of skin-to-skin, breastfeeding calendars, pamphlets and free perinatal videos. In addition, a virtual tour of the Family Birthing Centre was created to provide families with educational material surrounding the birth, the care of the newborn and the hospital stay. Many short texts were developed for the hospital website that contribute to prenatal information as well (<<http://www.hopitalmontfort.com/en/nutrition-baby>>).

Continuum of care

Regular communication between healthcare organizations has led to discussions on how to improve care and services between hospital and community services. Montfort has very close links with the public health services. One common goal is to offer mothers similar or identical educational material on best practices around breastfeeding to convey a coherent message for families. Public health units in Ontario are also expected to follow BFI recommendations. Of note, the OPH Unit became a newly designated BFI centre.

New breastfeeding drop-in clinics in the community as well as standardized breastfeeding discharge plans have been put in place to ensure consistent transition for the mothers from home to hospital and back home again around childbirth. Such open discussions between hospital and community-based professional staff seemed to result in better accessibility of postnatal services to breastfeeding mothers and allowed an effective reorganization of services from both Montfort and OPH.

Regular communication between healthcare organizations has led to discussions on how to improve care and services between hospital and community services.

Monthly monitoring

Monthly chart audits are compiled and studied at the breastfeeding committee to assess trends and define strategies to be adopted. Even after changes in structure, policies and practices as well as increased efforts to improve attitudes and abilities, rates on some practices remain challenging.

Remaining challenges at Montfort are similar to other healthcare facilities and require specific efforts while also keeping in mind the need for higher and sustainable rates (e.g., duration of skin-to-skin at caesarean births, frequency and amounts of formula supplementation given to breastfed babies according to their age, alternative methods to bottle administration of supplements).

One common problem across healthcare facilities in most provinces in Canada is the difficulty in obtaining clear, timely and meaningful statistics on breastfeeding as requested by the BFI.

Moreover, the QMentum Program in obstetrics/perinatal services is strongly recommending detailed data collection for hospital accreditation (Accreditation Canada 2012). Our experience supports the need for federal and provincial governments to develop easy data collection tools to facilitate this time-consuming process.

Research

As part of the RNAO Best Practice Spotlight Candidacy Program, healthcare facilities are required to participate in a research study, preferably evaluating the impact of implementing RNAO guidelines on nursing practice modifications and reporting patient outcomes. A team of academics proposed a two-year study to evaluate a sustainability-oriented intervention from 2009–2011 based on the Maher et al. (2010) NHS sustainability model (Davies et al. 2012). Nine organizations volunteered to participate, and each was required to identify one RNAO guideline for this research. Leaders at the Montfort selected the RNAO breastfeeding guideline. Overall, sustainability interventions offered by the academic research team included the following: annual workshops for sustainability action planning, ongoing monthly mentoring and problem-solving teleconferences as well as annual site-specific reports of process and patient outcomes.

Each site selected the top two or three priority process and patient outcomes to focus on. Table 2 provides a summary of priorities selected by leaders and the Breastfeeding Committee at Montfort. At Montfort in 2009, 92% of mothers intended to breastfeed on admission, and only these charts were audited for the sustainability study. The average patient was 39.5 weeks' gestation, and the overall caesarean section rate was 29.3%. There were no statistically significant differences in gestational age, type of birth or intent to breastfeed in these independent chart audits. Results show statistically significant improvements in skin-to-skin contact within two hours of delivery from 83.6% to 93.3% and in attempts to breastfeed immediately after birth from 56.1% to 66.6% (Table 2). There was no statistically significant change in formula supplementation.

TABLE 2.
Summary of priority indicators

Process and Patient Outcomes	2009 N=222 (%)	2011 N=196 (%)	p value 2009–2011
<i>Skin-to-skin contact at birth and for the first 2 hours</i>			
Yes	83.6	93.3	0.005*
<i>Attempt to breastfeed immediate postpartum</i>			
Yes	56.1	66.6	0.048*
<i>Supplementation with formula</i>			
Yes	35.1	33.3	0.699

*Statistical significance of change assessed through Pearson chi-square.

The most interesting result using information about type of birth was that the subgroup of caesarean section mothers had little opportunity to breastfeed immediately postpartum in the operating room in 2009, but by 2011, this rate had increased substantially from 2.3% to 46.4%, as depicted in Table 3. While not statistically different, the formula supplementation rate was consistently higher for mothers having caesarean sections. Formula supplementation remains our organization's biggest challenge to date. Results of the overall study were reported at an international guideline conference (Davies et al. 2012) (summary results are provided in Tables 2 and 3).

TABLE 3.
Comparison of process and patient outcomes by type of delivery

Process and Patient Outcomes	2009 N=222		2011 N=196		p value 2009–2011
	C Section (%)	Vaginal Delivery (%)	C Section (%)	Vaginal Delivery (%)	
Skin-to-skin contact at birth and for the first 2 hours	65.9	89.8	77.5	98.4	0.023*
Attempt to breastfeed immediate postpartum	2.3	76.3	46.4	74.3	0.000*
Supplemented with formula	43.1	31.8	53.6	24.4	0.350

*Statistical significance of change assessed through Pearson chi-square.

Communication and providing feedback

To sustain our new and improved processes, the managers and clinical educators at Montfort used every opportunity to recognize staff for their successful interventions and provide positive and constructive feedback. Similarly, to use every possible occasion for constructive peer mentoring, statistics around breastfeeding and skin-to-skin have been posted at the Family Birth Centre and are visible to staff and families.

Critical assessment of practices and of barriers serves as an on-going evaluation of how we are encouraging and facilitating exclusive breastfeeding during hospital stay and also how we are educating mothers who have made an informed choice not to breastfeed (Magri and Hylton-McGuire 2013).

Conclusion

It is widely recognized that hospital and health professional practices influence breastfeeding during the few days following birth (Cattaneo and Buzzetti 2001; Ekström et al. 2005; Ip et al. 2007; Li et al. 2014; Ramakrishnan et al. 2014;

Wright et al. 1996). The BFI is an international quality of care program focusing on the structure, process and outcomes of implementing the Ten Steps for successful breastfeeding (WHO/UNICEF 1989, 1991) and for respecting the WHO International Code of Marketing of Breastmilk Substitutes (WHO 1981).

At Montfort, we are continuing to work hard on implementing practices based on evidence from the BFI and the RNAO guideline. Like other healthcare facilities in Canada, we find some of the elements of this program to be challenging, and over the years, we have developed a dozen strategies to manage better. The aim of this paper was to share our approaches and lessons learned with administrators, policy makers and healthcare providers. This paper was also intended to share our approaches for facilitating change processes with other organizations, as the implementation of the WHO/UNICEF Baby-Friendly Hospital Initiative (1991, 2009) is now mandatory for all healthcare facilities in Ontario as well as in other provinces in Canada. **HQ**

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