e-Technology-Facilitated Patient Care: Complementary and Contrasting Views of the Canadian Pubic and Health Professionals

Amédé Gogovor, Sara Ahmed, Joanna Nemis-White, Emily Torr, John Aylen, Lucas Marshall, Terrence Montague for Health Care in Canada Survey Members

Abstract

The Canadian public, as well as professional providers and administrators, have retained a favourable impression of the quality of health care over the last two decades, as measured in serial Health Care in Canada (HCIC) surveys. This is despite a growing perception the prevalence of excellent, or very good, health among the population has decreased; and, the reality that our aging population has a concomitantly increasing prevalence of chronic diseases, led by cardiovascular, arthritic and mental disorders. The most important contemporary care issue cited by both public and professionals is lack of timely patient access, which is also the public's most highly rated factor in determining a sense of patient centricity in health care. To improve care, enhanced use of e-health technology, especially via the internet and electronic health records (EHR), is increasingly supported in the opinions of the majority of the public and health professionals. And, e-health implementation has a high priority ranking among the public. However, disconcertingly, enhancing EHR use is near the bottom of professionals' implementation priorities. Thus, it appears that, while general support for patient-centric, technology-facilitated care strategies have increased within all stakeholder groups, inter-stakeholder differences in implementation priorities have emerged. Whether inter-stakeholder divergence between intellectual support for, and priority implementation of, e-health technologies will become more concordant, or more discordant, with time is uncertain. It is likely, however, the evolution of such differences among stakeholders will play a key role in shaping our health care future.

Introduction

The propagation of e-health technology, in synergy with other developing tools such as evidence-driven health social networks, offers promise to enhance patient-centred care and outcomes (1-9). Nonetheless, based on findings from the 2013-2014 Health Care in Canada (HCIC) survey (10, 11), there appears to be some differentiation among public and professional stakeholders between the generally perceived value of e-health technology and its priority for implementation.

The purposes of this paper are to outline these differences, and the potential challenges they represent, to the optimal impact of e-health technology.

Data Sources

The principal data underlying this review were the representative opinions of the general public, as well as those of health provider and administrative professionals, solicited online between November 2013 and January 2014 (10, 11). POLLARA Strategic Initiatives

developed and administered the 2013-2014 HCIC survey questions, following repeated consultations with all HCIC partners: Canadian Cancer Society; Canadian Foundation for Healthcare Improvement; Canadian Home Care Association; Canadian Hospice Palliative Care Association; Canadian Medical Association; Canadian Nurses Association; McGill University-affiliated Constance Lethbridge Rehabilitation Center; Health Charities Coalition of Canada; Institute of Health Economics; Institute of Work and Health; and Merck Canada Inc. Project management was provided by Strive Health Management. Care*Net* Health Management Consulting delivered survey oversight and leadership.

The study populations were nationally representative samples of the adult Canadian public (n=1000) with a weighting variable based on 2011 Canadian census data to correct for age and sex within regions; and, key health care professional groups: doctors (n=101), nurses (n= 100), pharmacists (n=100); and, administrators (n= 104).
There were 37 questions for health professionals; and, 56 for the general public, covering multiple domains: health / disease status; access to, quality and affordability of, care; and, specific characteristics and priorities of patient-centred care (10, 11).

Patient-Centred and Evidence-Based Care
Access to care, particularly timely access, was the overwhelmingly dominant contemporary health care concern of the adult public, above all other issues (10, 11). Similarly, among health professionals, access and wait times were rated as the top issues of concern (10, 11). Not surprisingly, when the public was asked their level of support for specific elements to enhance patient-centred care,

readily obtained and timely care was the number one attribute. Following closely were: care delivered in a caring and respectful manner, with transparent communication and shared decision making; and, research-supported care with outcome-measurements (10, 11).

Among professional stakeholders, the findings were very similar. Timely and caring care drew the highest levels of support in creating patient-centred care, very closely followed by communication transparency, shared decision making; and, research-supported, outcomes-measured care (10, 11).

However, when all stakeholders were asked to prioritize their top three implementation preferences to improve patient-centred care, some key inter-stakeholder differences became apparent. Although timely access to care remained the number one implementation priority for all stakeholders; and, the number two priority remained care delivered in a caring, respectful manner for the public. In contrast, the number two implementation priority of physicians was evidence-based care; and, for nurses, pharmacists and health administrators, the number-two priority was patient-provider partnering in decision making (10, 11). Care provided in a caring, respectful context achieved a top-three rating only among administrators, falling to a fourth priority for physicians, nurses and pharmacists.

Inter-stakeholder differences between care improvement concepts worthy of support, versus their priorities for implementation, suggest future challenges in gaining stakeholder consensus around how to practically, or politically, advance health care.

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As detailed below, they may be particularly relevant, regarding the advance of e-health technology to facilitate patient-centred care.

About e-health Technology

Computer-assisted, or e-health assisted, care is not new. It has, however, had a tumultuous developmental curve. In its early iteration, it is fair to say that user opinions, particularly of EHR, were, on balance, negative. In particular, there was little positive evidence linking availability of EHR with important clinical variables, like improvement of providers' clinical practices and patient outcomes; and, there were strident managerial criticisms, including high cost and little return on investment (12-14).

In a previous analysis, we felt that e-health technology offered promise as a synergistic tool to improve partnership-measurement disease management practices, particularly improved care and outcomes, both patient and financial (7). However, in the absence of such use, e-health technology was considered at risk of being viewed as a promising, but not optimally realized, opportunity (7). Data from the 2013-2014 HCIC survey have allowed for a more nuanced, and more positive, view. Contemporarily favourable support for technology, especially the increase in use of e-health technology and EHR, has become very broad and very high among all stakeholder groups (Figures 1, 2).
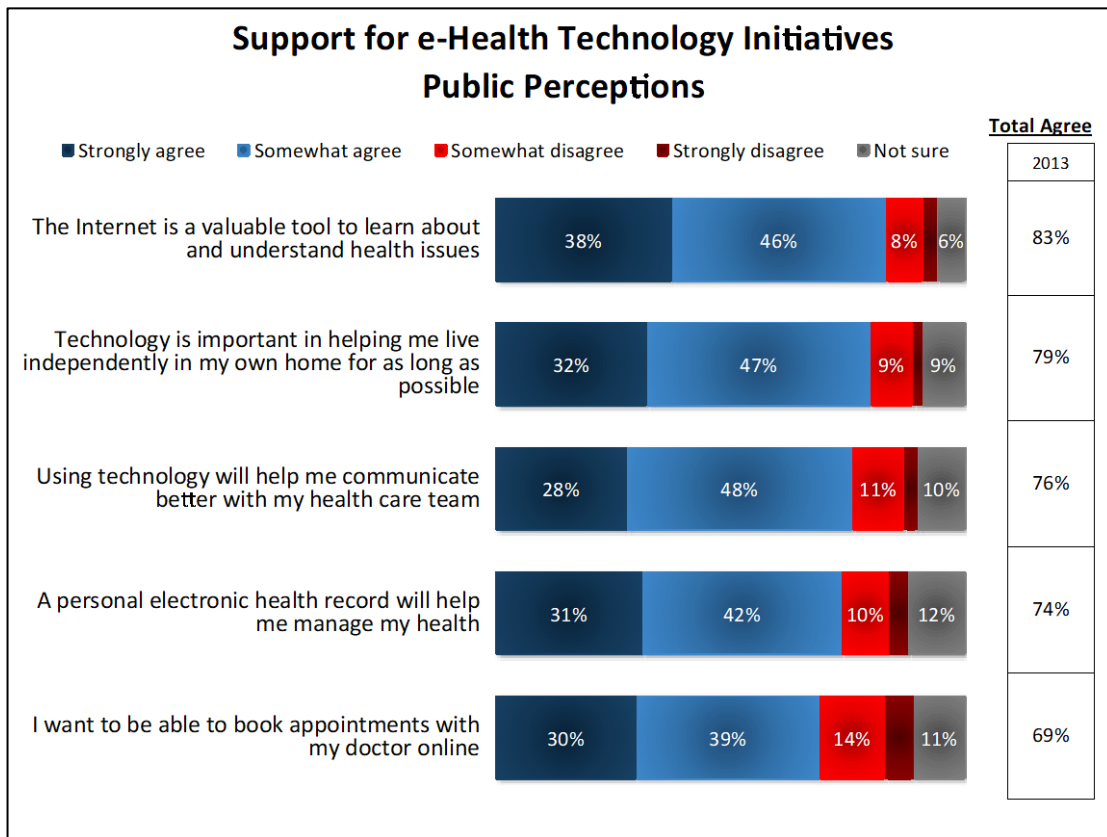

Figure 1. Public's strong support for e-health technological initiatives options to improve health care delivery, 2013-2014.
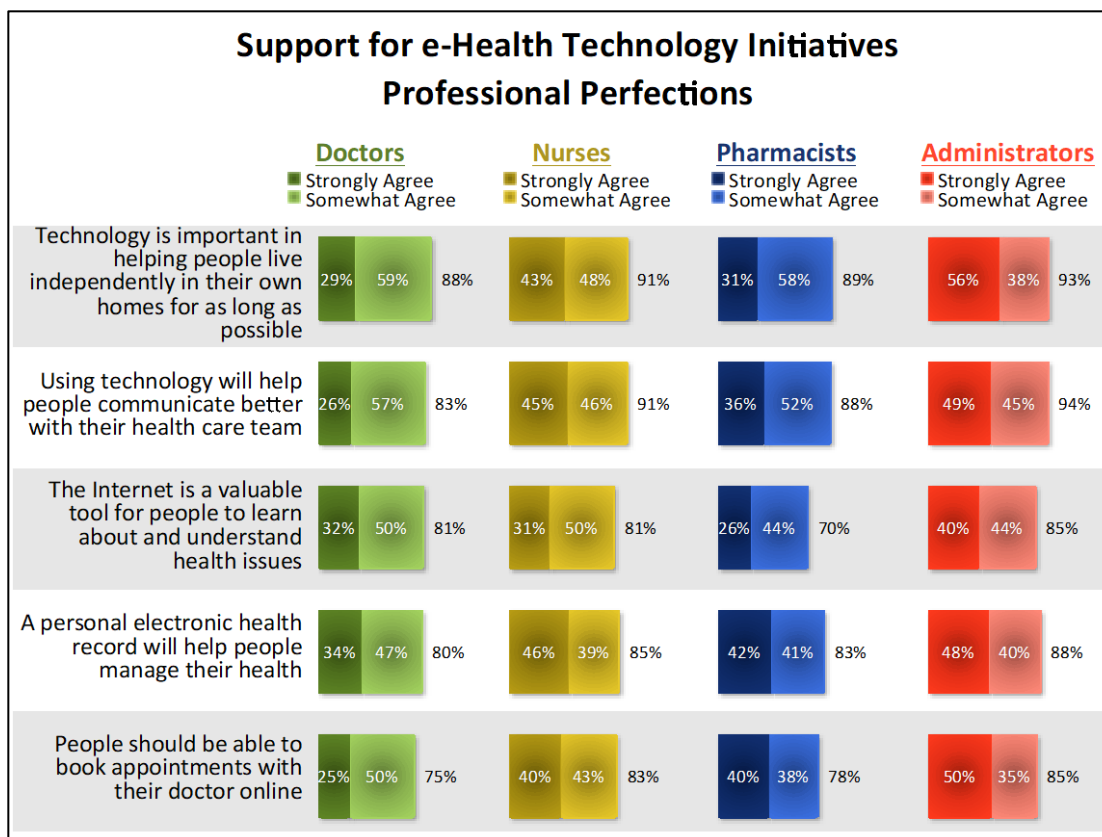
Figure 2. Professional stakeholders' universally high support for e-health technological initiatives to improve health care delivery, 2013-2014.

For example, general support for EHR among the public has increased from 52 percent in the 2007-2008 HCIC survey to 74 percent in 2013-2014 (Figure 1). And, Canada's professional care providers now echo the views of the Canadian public in terms of sensing the overall benefits of EHR outweighing any contravening risks; including a desirability of increased inter-professional accessibility of EHR (Figure 3).

Moreover, there was also a very high cross-over among the public's association between strong support of EHR use and its role as a keystone component of patient-centered care. Specifically, 70 percent of the public who strongly supported readily and timely accessed care; and, 69 percent who supported care

provided in a caring and respectful manner, also strongly supported accelerating the use of accessible EHR. This was much higher in degree of cross-over association compared to other measures of patient-centered and e-health facilitated care, which ranged from 54 to 43 percent.

Somewhat disconcertingly, despite the strong and broad current support for e-health technologies, including the marked increase in support for EHR systems over the last several years, when professionals were asked for their implementation priorities to improve health care, use of EHR placed very low on their list of priorities (Figure 4).
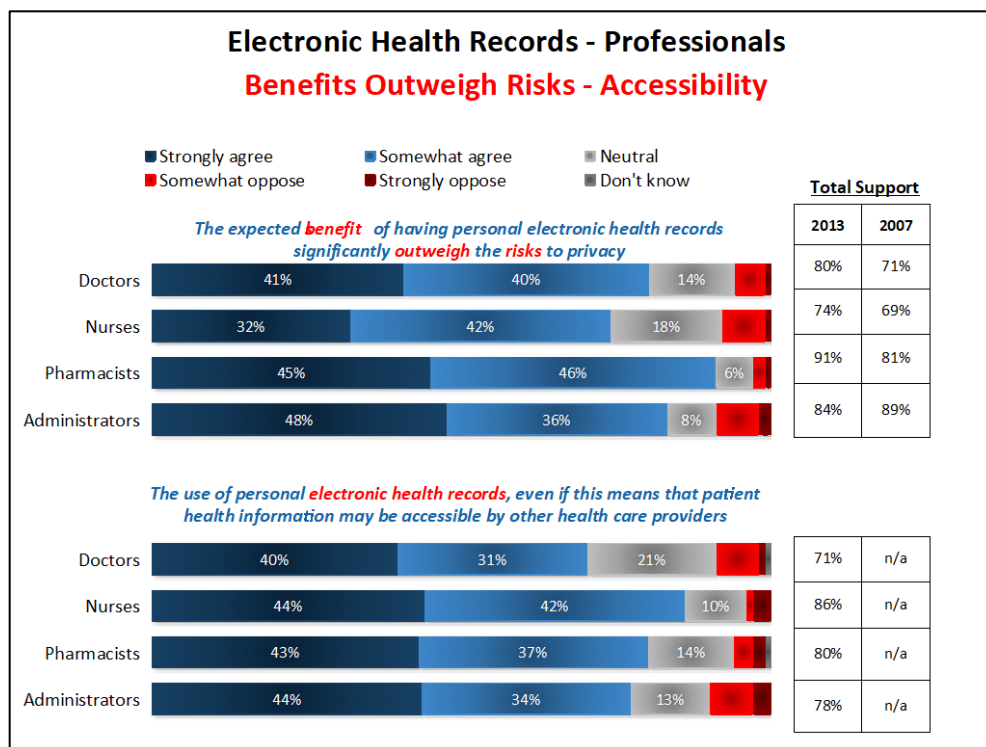
Electronic Health Records - Professionals
Benefits Outweigh Risks - Accessibility

Legend: ■ Strongly agree ■ Somewhat agree ■ Neutral ■ Somewhat oppose ■ Strongly oppose ■ Don't know

*The expected **benefit** of having personal electronic health records significantly **outweigh the risks** to privacy*

		Total Support 2013	Total Support 2007
Doctors	41% / 40% / 14%	80%	71%
Nurses	32% / 42% / 18%	74%	69%
Pharmacists	45% / 46% / 6%	91%	81%
Administrators	48% / 36% / 8%	84%	89%

*The use of personal **electronic health records**, even if this means that patient health information may be accessible by other health care providers*

		2013	2007
Doctors	40% / 31% / 21%	71%	n/a
Nurses	44% / 42% / 10%	86%	n/a
Pharmacists	43% / 37% / 14%	80%	n/a
Administrators	44% / 34% / 13%	78%	n/a

Figure 3. In 2013-2014, professional stakeholders' believe the benefits of EHR use outweigh risks, including concern for patient privacy and the inter-professional accessibility of the records.
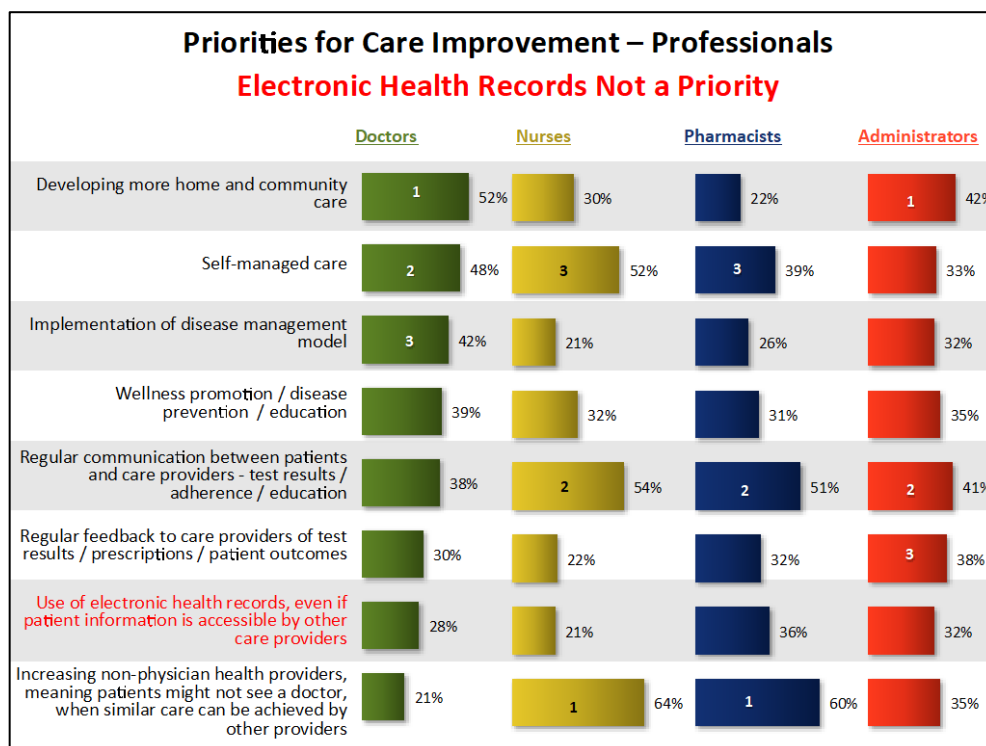
Priorities for Care Improvement – Professionals
Electronic Health Records Not a Priority

	Doctors	Nurses	Pharmacists	Administrators
Developing more home and community care	1 — 52%	30%	22%	1 — 42%
Self-managed care	2 — 48%	3 — 52%	3 — 39%	33%
Implementation of disease management model	3 — 42%	21%	26%	32%
Wellness promotion / disease prevention / education	39%	32%	31%	35%
Regular communication between patients and care providers - test results / adherence / education	38%	2 — 54%	2 — 51%	2 — 41%
Regular feedback to care providers of test results / prescriptions / patient outcomes	30%	22%	32%	3 — 38%
Use of electronic health records, even if patient information is accessible by other care providers	28%	21%	36%	32%
Increasing non-physician health providers, meaning patients might not see a doctor, when similar care can be achieved by other providers	21%	1 — 64%	1 — 60%	35%

Figure 4. Priorities of health professionals in 2013-2014 to improve patients' health care.

What Are Others Thinking?

The Institute of Medicine report (15) on how health systems' can be reinvented to foster innovation and improve the delivery of care, pointed to the potential of information technology for transforming health care delivery and safety, while conceding the challenges of applying information technology should not be under-estimated.

Other perceptions of very experienced clinicians have continued to reflect significant reservations about the expanding use of computers, especially in the inter-personal clinical setting of the provider / patient covenant that has traditionally been at the centre of physician-directed patient diagnosis and treatment recommendations (16-19). Interestingly, an international survey reported that Canadian and Australian primary care physicians were the least likely to favour e-health-facilitated care (17).

In this context, as described by Ober and Applegate, e-health technology is pictured not so much as a passive, or missed, opportunity, but rather as an active and growing competitor, in terms of time and intimacy, with caring and respectful care (16). These authors argue that a great many physicians, particularly young doctors, are routinely taking a hand-held computer into examining rooms and spending as much time addressing the computer as the patient. They further suggest the computer-driven prompts and demands to fit the patient's initial history and subsequent clinical course into a relatively inflexible data map may detract from critical thinking in determining underlying pathophysiology and efficient development of differential diagnoses and

prescription of appropriate therapy. In summary, they paint a picture of computer-centred care that is somewhat divorced from some key features of what the Canadian public considers to be at the heart of patient-centred health care (Figures 1 and 2).

In another recently released policy statement, the Centers for Medicare and Medicaid Services of the United States government promised more flexible and simple Stage 3 "Meaningful Use" rules for their multi-billion dollar, nation-wide EHR Incentive Program (18). This third stage is envisaged as the final stage of this federally funded program whose overarching goal is developing EHRs across the United States, with major objectives being improvement of patient care quality, safety and efficiency, while improving public and population health. Thus, the likelihood, at least in the United States, is that e-health technology will continue to expand, despite concerns that it may not enhance, or even detract from, patient-centricity as seen by patients (16).

What We Now Think– Where is e-Health Technology Going in Canada?

Briefly, the future is uncertain. Specifically, predicting whether e-health evolution will continue to practically engage all stakeholders' increasing support; and, produce a well-financed, technologically-efficient and clinically-useful care technology, while avoiding potential clinical pitfalls (16), is uncertain. The challenges in money, interoperability, training and application are great.

 Nonetheless, some predictions are possible. First, the perceived potential, as suggested by

the strong support of all Canadian stakeholders in the HCIC surveys, is strong. Second, the time may be right for the acceleration of e-health development and adoption because technology is simultaneously advancing with stakeholder support.

However, there is an important caveat. Accelerating progress toward large-scale, practical and meaningful use of e-health technology, particularly enhanced EHR use, to improve patient care and outcomes measurement will require professional stakeholders to recognize they may not be optimizing this potential; and, to consider why this may be so. For example, do professionals consider EHRs are already being used to their ultimate utility in office management activities like scheduling and billing; and, they have no practical advantage in patients' knowledge acquisition or outcomes measurements? Currently, these remain unanswered questions.

Lastly, it is likely the synergistic advance of e-health technology, will not be smooth or devoid of vested interests. There is always the reality of resistance to, or wilful disbelief in, change messages, irrespective of their evidence base (18). Nonetheless, repeated proof and propagation of the messages, as defined by the HCIC survey data, offer one means to potentially reduce negative reactance to the messages (18).

In conclusion, synergistic merger of evidence-based and patient-centred health care with e-health technology to improve care and outcomes seems possible (8). Its realization, however, may require more attention to defining, proving and implementing priorities.

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About the Authors

Amédé Gogovor, MSc, DVM, is a PhD candidate and Research Assistant, Faculty of Medicine, McGill University, Montréal, QC.

Sara Ahmed, PhD, is Associate Professor, Faculty of Medicine, McGill University, with appointments in the School of Physical and Occupational Therapy, the University Health Center's Division of Clinical Epidemiology, Clinical and Health Informatics; and, the Centre de recherche interdisciplinaire en réadaptation, Montréal, QC.

Joanna Nemis-White, BSc, is a Principal, Strive Health Management Consulting Inc., Halifax, NS.

Emily Torr, MSc, is Associate, CIHR Institute of Human Development, Child and Youth Health, and knowledge translation consultant to the HCIC project, Toronto, ON.

John Aylen, MA, is President, John Aylen Communications, Montréal, QC.

Lucas Marshall, B Journ, is a senior research consultant and Vice President, Public Affairs, POLLARA Strategic Insights, Toronto, ON.

Terrence Montague, MD, is a Principal, **Care***Net* Health Management Consulting Ltd., and Adjunct Professor of Medicine, University of Alberta, Edmonton, AB.

Data Access

Health Care in Canada raw data are overseen by McGill University, Montreal, QC. HCIC data can be accessed via request to: info@hcic-sssc.com or hcic@mcgill.ca

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