

HEALTHCARE

POLICY

Politiques de Santé

*Health Services, Management and Policy Research
Services de santé, gestion et recherche de politique*

Volume 13 + Number 4

**What's Canadian about Medicare? A Comparative Perspective
on Health Policy**

CAROLYN HUGHES TUOHY

Ontario and New Zealand Pharmaceuticals: Cost and Coverage

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POLICY

Politiques de Santé

Health Services, Management and Policy Research
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Healthcare Policy/Politiques de Santé seeks to bridge the worlds of research and decision-making by presenting research, analysis and information that speak to both audiences. Accordingly, our manuscript review and editorial processes include researchers and decision-makers.

We publish original scholarly and research papers that support health policy development and decision-making in spheres ranging from governance, organization and service delivery to financing, funding and resource allocation. The journal welcomes submissions from researchers across a broad spectrum of disciplines in health sciences, social sciences, management and the humanities and from interdisciplinary research teams. We encourage submissions from decision-makers or researcher–decision-maker collaborations that address knowledge application and exchange.

While *Healthcare Policy/Politiques de Santé* encourages submissions that are theoretically grounded and methodologically innovative, we emphasize applied research rather than theoretical work and methods development. The journal maintains a distinctly Canadian flavour by focusing on Canadian health services and policy issues. We also publish research and analysis involving international comparisons or set in other jurisdictions that are relevant to the Canadian context.

Politiques de Santé/Healthcare Policy cherche à rapprocher le monde de la recherche et celui des décideurs en présentant des travaux de recherche, des analyses et des renseignements qui s'adressent aux deux auditoires. Ainsi donc, nos processus rédactionnel et d'examen des manuscrits font intervenir à la fois des chercheurs et des décideurs.



Nous publions des articles savants et des rapports de recherche qui appuient l'élaboration de politiques et le processus décisionnel dans le domaine de la santé et qui abordent des aspects aussi variés que la gouvernance, l'organisation et la prestation des services, le financement et la répartition des ressources. La revue accueille favorablement les articles rédigés par des chercheurs provenant d'un large éventail de disciplines dans les sciences de la santé, les sciences sociales et la gestion, et par des équipes de recherche interdisciplinaires. Nous invitons également les décideurs ou les membres d'équipes formées de chercheurs et de décideurs à nous envoyer des articles qui traitent de l'échange et de l'application des connaissances.

Bien que *Politiques de Santé/Healthcare Policy* encourage l'envoi d'articles ayant un solide fondement théorique et innovateurs sur le plan méthodologique, nous privilégions la recherche appliquée plutôt que les travaux théoriques et l'élaboration de méthodes. La revue veut maintenir une saveur distinctement canadienne en mettant l'accent sur les questions liées aux services et aux politiques de santé au Canada. Nous publions aussi des travaux de recherche et des analyses présentant des comparaisons internationales qui sont pertinentes pour le contexte canadien.

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Cybersecurity in Health: A 21st-Century Imperative

LOCKED FILING CABINETS ARE NO LONGER ENOUGH TO ENSURE SECURITY OF RESEARCH data and results. In the 21st century, cybersecurity is foundational to the ethical conduct of research and its application to health services and policy. It matters for ensuring the confidentiality of personal data, for integrity of research systems, for safety of digital interventions that are being studied, for protection of intellectual property, and more.

The challenge is real, not theoretical. The National Research Council has experienced state-sponsored cyberattacks (Moens et al. 2015). Universities have reported ransomware attacks (CBC News 2016). And cyberattacks are relatively frequent in the health sector, a potential source of vulnerability that is recognized by health sector leaders and citizens alike (Zelmer 2018). For instance, multiple organizations have reported malware, spyware or ransomware attacks; phishing and cyber fraud; denial of service attacks; and human error that affected critical systems. On a global scale, the World Medical Assembly has stated that “cyber-attacks on healthcare systems and other critical infrastructure represent a cross-border issue and a threat to public health” (WMA 2016).

Addressing these challenges depends on both individual and collective action. At a recent national Summit, health leaders and cyber experts explored options for strengthening the health sector’s resilience to cyber threats (HealthcareCAN 2018a). Building on the *National Strategy for Critical Infrastructure* endorsed by federal, provincial and territorial governments, participants declared a shared commitment to cybersecurity and to six tangible actions to increase preparedness:

- *Championing cybersecurity in Canada’s health sector;*
- *Contributing to shared action plans that build collective resilience to cyberattacks;*
- *Sharing information, best practices, and tools with others within and beyond the health sector to build collective capacity and resilience;*
- *Informing leaders, staff and partners about the scope of the challenge and opportunities to mitigate risk;*
- *Progressing cybersecurity in ways consistent with each signatory’s mandate, considering opportunities for prevention, mitigation, preparedness, response and recovery; and*
- *Ensuring transparency in the context of each signatory’s unique circumstances and capacity by confirming how it will apply these commitments in its unique context and/or with its community by Cybersecurity Awareness Month in October 2018 (HealthcareCAN 2018b).*

I worked with HealthcareCAN and its many partners to arrive at this *Declaration*. This editorial is part of my commitment to spreading the word about the challenges that we face and the importance of taking proactive action to address them. I invite you to join us in this effort to foster robust, safe and effective health and health research systems that benefit those we serve. For more information about the *Declaration*, how to take part in the collective effort and to get access to a range of associated resources, please visit <http://www.healthcarecan.ca/what-we-do/health-policy/infrastructure/>.

The need for shared commitment and mutual support to make progress is not unique to cybersecurity; collaboration and collective contributions are equally important for producing a journal like *Healthcare Policy/Politiques de Santé*. As this is the last issue of this volume of the journal, I would like to express my thanks to the team responsible for its production. The Editorial Board steers the journal's direction, as well as the path of individual submissions. They work closely with the reviewers who volunteer their time to ensure that the quality of papers we publish is high (see page 84 for a list of reviewers over the past year). Both interact directly with Ania Bogacka, the Managing Editor, and the team at Longwoods Publishing, who are core to the journal's production and distribution. And, of course, scholarly journals depend on the creative and thoughtful efforts of the authors who publish in our pages.

My sincere thanks to everyone involved, as well as to our readers who thoughtfully reflect on how to use the insights published here to continue to improve health and healthcare.

JENNIFER ZELMER, PHD

Editor-in-Chief

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La cybersécurité dans le secteur de la santé : une réalité du XXI^e siècle

LES CLASSEURS FERMÉS À CLEF NE SONT PLUS SUFFISANTS POUR ASSURER LA SÉCURITÉ des données et des résultats de recherches. Au XXI^e siècle, la cybersécurité est en effet un aspect incontournable de la recherche et ses applications aux politiques ou services de santé. La cybersécurité est essentielle, entre autre, pour assurer la confidentialité des données personnelles, pour l'intégrité des systèmes de recherche, pour la sécurité des interventions numériques à l'étude et pour la protection de la propriété intellectuelle.

Les défis sont bien réels et non théoriques. À preuve, le Conseil national de recherches a été victime de cyberattaques appuyées par des États (Moens et al. 2015). Des universités ont indiqué faire l'objet de rançongiciels (CBC News 2016). Et les cyberattaques sont relativement fréquentes dans le secteur de la santé; c'est là une source de vulnérabilité reconnue par les dirigeants et la population (Zelmer 2018). Par exemple, plusieurs organisations font état d'attaques par logiciels malveillants, espions ou rançonneurs; d'hameçonnage ou cyberfraude; d'attaques par déni de service et d'erreurs humaines qui affectent des systèmes névralgiques. À l'échelle mondiale, l'Association médicale mondiale a affirmé que « les attaques cybernétiques des systèmes sanitaires et autres infrastructures essentielles constituent un problème dépassant les frontières et une menace pour la santé publique » (Association médicale mondiale 2016).

Faire face à ces défis demande une action individuelle et collective. Lors d'un récent sommet, des cadres de la santé et des cyberspécialistes ont exploré les façons de renforcer la résilience face aux cyberattaques dans le secteur de la santé (SoinsSantéCAN 2018a). En s'inspirant de la Stratégie nationale sur les infrastructures essentielles cautionnée par les gouvernements fédéral, provinciaux et territoriaux, les participants au sommet ont rédigé une déclaration d'engagement commun pour la cybersécurité, laquelle comprend les six actions concrètes suivantes qui visent à accroître le degré de préparation :

- + *Plaider en faveur* de la cybersécurité dans le système de santé du Canada;
- + *Contribuer aux plans d'action communs* qui créent la résilience collective aux cyberattaques;
- + *Partager l'information, les pratiques exemplaires et les outils* avec d'autres intervenants du secteur de la santé et d'autres secteurs pour bâtir la capacité et la résilience collectives;
- + *Inform*er les dirigeants, employés et partenaires de l'étendue du défi et des possibilités d'atténuer le risque;

- Assurer la progression de la cybersécurité de manière cohérente avec le mandat de chacun des signataires et tenir compte des occasions de prévention, d'atténuation, de préparation, de réaction et de rétablissement;
- Faire preuve de transparence selon le contexte et les capacités de chacun des signataires, en confirmant les mesures prises pour concrétiser ces engagements dans ledit contexte et/ou auprès de la collectivité, et ce, dans le cadre du Mois de la sensibilité à la cybersécurité, en octobre 2018 (SoinsSantéCAN 2018b).

J'ai participé avec SoinsSantéCAN et ses nombreux partenaires à la rédaction de la *Déclaration*. Cet éditorial s'inscrit donc dans le cadre de mon engagement pour faire connaître les défis présents et signaler l'importance de gestes proactifs pour y faire face. Je vous invite tous et toutes à vous joindre à l'effort afin de rendre solides, sécuritaires et efficaces nos systèmes de santé et de recherche, et ce, pour le bien de ceux que nous desservons. Pour obtenir plus de renseignements sur la *Déclaration*, sur la façon de contribuer à l'effort collectif ou sur une gamme de ressources en ce sens, veuillez consulter <http://www.healthcarecan.ca/fr/ce-que-nous-faisons/politiques-en-sante/linfrastructure/>.

Le besoin d'engagement commun et de soutien réciproque n'est pas le fief de la cybersécurité; la collaboration et l'effort collectif sont aussi importants pour produire une revue comme *Politiques de Santé/Healthcare Policy*. Puisqu'il s'agit du dernier numéro de ce volume, j'aimerais remercier l'équipe responsable de sa production. Le comité éditorial dirige l'orientation de la revue ainsi que le parcours des propositions d'article. Le comité travaille étroitement avec les évaluateurs qui offrent bénévolement leur temps afin d'assurer la qualité supérieure des articles que nous publions (consulter la liste des évaluateurs pour l'année écoulée à la page 84). Le comité et les évaluateurs interagissent directement avec Ania Bogacka, directrice de rédaction, et avec l'équipe de Longwoods Publishing qui œuvre à la production et à la distribution de la revue. Et, bien sûr, une revue scientifique comme la nôtre dépend de la créativité et du travail des auteurs qui publient dans nos pages.

Mes sincères remerciements à ceux et celles qui y travaillent, de même qu'aux lecteurs et lectrices qui réfléchissent aux façons d'utiliser les pistes publiées ici afin de continuer à améliorer la santé et les soins.

JENNIFER ZELMER, PHD

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What's Canadian about Medicare? A Comparative Perspective on Health Policy

Quelle est l'essence canadienne de l'assurance maladie? Regard comparé sur les politiques de santé



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Abstract

Is medicare a reflection of Canadian values? Or did those values develop as we experienced the common ground of a universal system? Nothing in public opinion in Canada and the US in the 1960s, or in their respective healthcare systems, would have suggested that they would evolve in such divergent ways. Instead, decisions taken by political elites set the two systems on very different courses. In Canada, that course profoundly shaped the way we understand ourselves as citizens, and also established a powerful place for clinicians at the political core. In so doing, it insulated the system from change, for both good and ill.

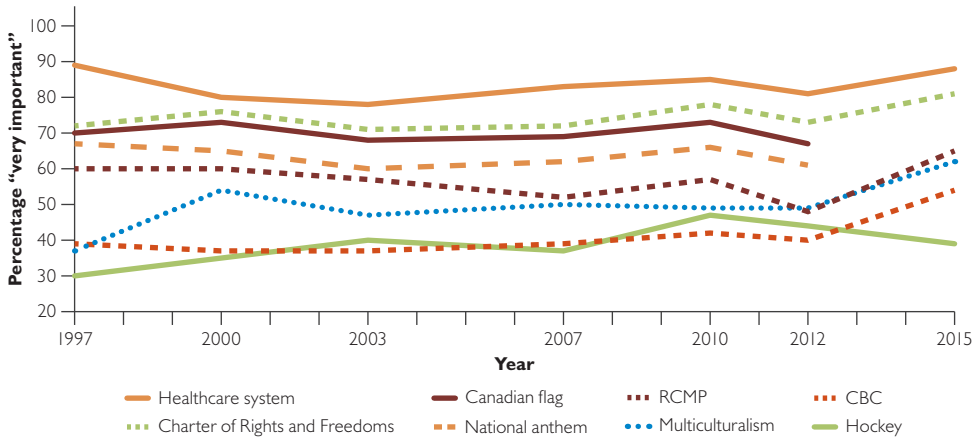
Résumé

L'assurance maladie est-elle le reflet des valeurs canadiennes? Ou plutôt, ces valeurs se sont-elles développées alors que nous nous dotions d'un système universel? Rien dans l'opinion publique des années 1960 au Canada et aux États-Unis, ou dans leurs systèmes de santé respectifs, ne laissait croire qu'ils évolueraient de façon si divergentes. Pourtant, les décisions prises par les élites politiques ont aiguillés les deux systèmes vers des chemins très différents. Au Canada, cela a profondément modifié l'identité citoyenne et a placé les cliniciens en position de force sur la scène politique. Ce faisant, le système est devenu plus imperméable au changement, pour le meilleur et pour le pire.

As Canadian as Medicare

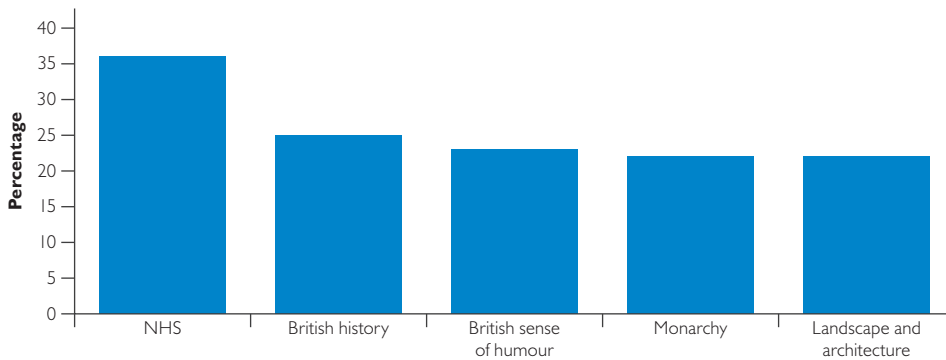
It is a truism to observe that medicare is a Canadian icon. It is consistently cited as a leading, possibly *the* leading, symbol of Canadian identity (Figure 1). Indeed, it plays a role in the Canadian psyche at least as important as that played by the National Health Service (NHS) in Britain (Figure 2) (although Canada has not gone so far as to feature medicare in its Olympic opening ceremonies, as the British did with the NHS in 2012).¹

FIGURE 1. Important symbols of Canadian identity (1997–2015)



CBC = Canadian Broadcasting Corporation; RCMP = Royal Canadian Mounted Police.
 Source: Data compiled from Environics Institute 2011, 2013, 2016, and Soroka and Robertson 2010.

FIGURE 2. What makes you most proud to be British?*



NHS = National Health Service. *Three choices possible. Source: Crouch 2016.

Medicare is an important expression of Canadian values indeed. But which came first? Did Canadian values shape medicare or is it the other way around?

My argument here is that *medicare came first*: it profoundly shaped Canadians' understanding of themselves as a sharing community. The available data do not allow us to make a systematic pre- and post-comparison of Canadian attitudes. But a careful look back at the history of Canadian medicare in comparative context can serve to make the argument.

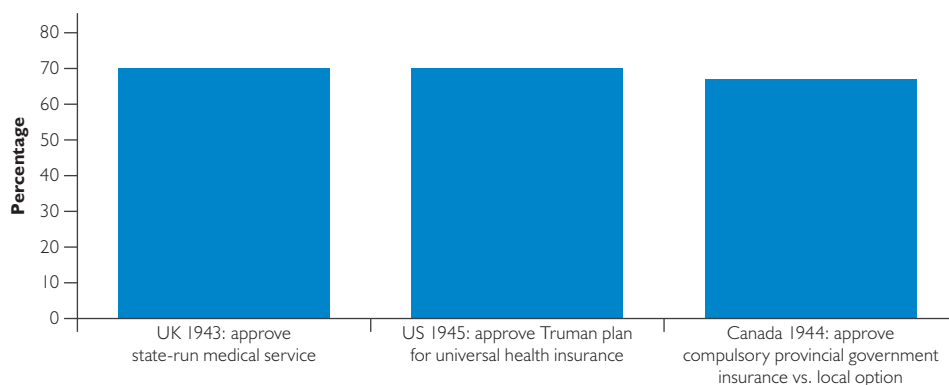
First, let me be clear about how I am using the concept of “medicare” in this context: I mean the federal framework that establishes principles of healthcare coverage that are common across the country. It is this common framework that has become central to the definition of a pan-Canadian “sharing community” (Banting and Broadway 2004). In practical terms, however, this “single-payer” framework of comprehensive universal coverage applies only to physician and hospital services. (One of the puzzles of Canadian health policy is why the popularity of the single-payer model has not created the political conditions for its expansion to other aspects of healthcare. I return to this point later in these remarks.)

The Landscape of Opinion

The design of Canadian medicare was an elite project – it was the product of contest and reconciliation among federal and provincial governments, and between the medical profession and the state. Public attitudes toward governmental health insurance prior to the establishment of universal hospital and physician insurance were vague and malleable. Indeed, the same can be said for the NHS and, for that matter, for US Medicare and Medicaid as well. These were all elite projects, and while the framers in each case were influenced by the broad zeitgeist of their times, they were not responding to public clamour for any particular option. If we look at such polling data as exist from the periods in which the NHS, Canadian medicare and American Medicare and Medicaid were established, we see that in all three countries attitudes toward various program designs for health insurance could shift according to the political context and the wording of the questions posed by pollsters.

Poll data from the 1940s indicate that roughly two-thirds of Canadian respondents who offered an opinion favoured a universal government plan – about the same proportion as in the UK and the US at the time (Figure 3).²

FIGURE 3. Support for universal health insurance, UK, US and Canada (1943–1945)*



*US and Canada refer to decided respondents only; undecided not reported for UK. Sources: CMA 1944: 33; Gallup/AIPO 1945; Jacobs 1993: 115.

But these responses were vulnerable to change depending on the wording of the question. For example, a higher proportion of Canadians (80% in the 1944 poll cited in Figure 3) responded positively when asked whether they themselves would contribute “a small part of

their income” for government insurance coverage without referring to universality (CMA 1944: 33). UK and US surveys registered higher support for universal health insurance in the US and UK when it was presented as a yes/no option without offering an alternative choice.³ Attitudes were also highly vulnerable to changes in the political context – for example, support for the Truman plan in the US dropped sharply over the 1945–1949 period as the plan was hotly contested in Congress and among interest groups (Blendon and Benson 2001).

By the 1960s, the landscape of opinion had shifted in both Canada and the US. In the US, the debate about options had narrowed to focus on governmental health insurance for the elderly, which enjoyed majority support in public opinion on the order of 62–65% in 1964 and 1965 (Blendon and Benson 2001). (Again, however, this support dropped to 46% approval when governmental insurance was pitted against a private option, which attracted 36% [Harris and Associates 1965].) In Canada, as much of the population had become accustomed to coverage under private plans, support for tax-supported universal health insurance had dropped below 60% by 1960 (Naylor 1986: 191). As the political debate continued to rage in the wake of the hotly contested introduction of universal physician services insurance in Saskatchewan in 1962, Canadians actually favoured a voluntary plan over a government plan in a 55/41 split in a 1965 poll (Naylor 1986: 236; Taylor 1979: 367).

It was therefore not public opinion that drove Canada along its distinctive course of healthcare coverage. And it is indeed distinctive: Canada’s single-payer system lies at the end of a spectrum in its almost exclusively public first-dollar coverage for physician and hospital services. The term “single payer” was in fact coined to describe the Canadian model, albeit by American advocates who wanted the US to adopt a similar approach (Tuohy 2009: 454 n. 1). The term was meant to draw attention to the fact that Canada was able to achieve universal coverage while keeping its system of private medical practice and voluntary hospitals, by restricting the role of government to that of a “single payer” – in contrast to the multiple payers of the American system and to the multiple social insurers of continental Europe. In this context, a payer is not an owner of facilities, not an employer of healthcare professionals. Although the term is now often used to refer to any system financed out of general tax revenue, it originated in this apt characterization of a uniquely Canadian compromise between – as David Naylor classically put it – private practice and public payment (Naylor 1986).

That unique compromise was a product of its time, just as other national systems bear the marks of the eras of their birth. The British NHS was founded as a national institution as part of a grand national project of post-war reconstruction. The Beveridge report of 1942 provided the touchstone for the NHS and indeed for all of the social policy agenda that the Labour party implemented after its landslide victory in the 1945 election. Beveridge very explicitly looked forward to the rebuilding of the social as well as the physical infrastructure of the nation after the war. And in that project, he urged his compatriots to think big:

Now, when the war is abolishing landmarks of every kind, is the opportunity for using experience in a clear field. A revolutionary moment in the world’s history is a time for revolutions, not for patching (Beveridge 1942: 6).

With regard to healthcare in particular, Beveridge recommended that comprehensive services would be provided for all citizens by a national health service “where needed without contribution conditions in any individual case.” It would be funded by a tax, in the form of a means-tested contribution to national insurance, but making such a contribution would not be a condition of receiving care.

For a government-commissioned product, the Beveridge report was received with an incongruous level of public enthusiasm. As Noel Whiteside reports, there were queues to buy it at the government bookshop. It eventually sold half a million copies, and a short version was distributed to British troops to boost morale. In Whiteside’s words, “The report’s reception turned its author into a public hero virtually overnight: it influenced post-war debates on social reform all over Western Europe and across the English-speaking world” (Whiteside 2014: 1) – including, I would add, Canada. With some adaptations, Beveridge’s vision became the National Health Service that the post-war Labour government enacted into being in 1946 and implemented in 1948.

The Canada–US Divergence

The post-war climate was different in Canada and the US. Neither had experienced the ravages of war in their homeland. And while the wartime experience had demonstrated the capacity of the national government in Britain, a similar aggrandizement in Canada and the US instead fed a suspicion of federal power on the part of sub-national governments (and, in the US, the representatives of the states in the federal Congress). Attempts to adopt national health insurance failed in both countries.

Instead, the founding moments of the modern Canadian and American healthcare states came in the very different circumstances of the 1960s. Two characteristics of that era were especially important: the greater buoyancy of the economy and the growth of what we have come to call a “rights consciousness” in both nations. In Canada, a third element was also definitive: the approaching date of Canada’s centenary was igniting an optimism and enthusiasm about a nation coming of age that would culminate in a grand exposition, Expo 67.

The human rights agenda began immediately after the war, with the adoption of the UN Declaration of Human Rights in 1948. The declaration of a right to health actually anticipated that declaration by two years: it was enshrined in the Constitution of the World Health Organization as adopted in 1946 (WHO 1946). And in fact, President Truman framed his doomed proposal for national health insurance in those terms, casting healthcare as one of the fundamentals of an “Economic Bill of Rights.” Truman’s bill failed in the face of implacable opposition of southern senators, and the result was a narrowing of the agenda of healthcare reform to focus on the elderly.

In the decades following the post-war failures of federal national health insurance initiatives, the evolution of “rights consciousness” took very different forms in Canada and the US. In the US, the dominant debate was about civil rights. For reasons that go beyond the scope of this paper, the civil rights agenda actually cut against the possibility of introducing

universal health insurance. Even after the 1964 election gave the Democratic party a historic landslide election victory and unified control of the White House and Congress, the best that could be accomplished was a carefully crafted “three-layer cake” compromise, establishing a two-part Medicare program for the elderly: compulsory social insurance for hospital coverage and voluntary coverage for physician services, plus (as a little remarked-upon afterthought) tax-financed coverage for certain low-income groups (Medicaid).

In Canada, however, the universal human rights agenda played a prominent role in the framing of the debate about healthcare by Justice Emmett Hall. The centrality of the 1964 report of the Royal Commission on Health Services to the history of Canadian medicare needs no elaboration for this audience. It was the adoption of universal physician services insurance in accordance with that report that constituted the founding moment of Canadian medicare.⁴

Although Justice Hall was a pragmatic man who saw a universal government plan as preferable to means-testing on efficiency grounds, he was also a man of principle. He cited the WHO constitution in his report and framed his recommendations as a Health Charter for Canadians. That charter recognized not only an individual right to healthcare from a physician of one’s choice but also the rights of “free and self-governing professions” of healthcare providers. (Anticipating some later debates, Hall also recognized a right of providers not to treat a given patient in other than emergency circumstances.) This was a quintessential Canadian approach, embedding principles in some tension with each other into constitutional and institutional arrangements and trusting that the tensions would be worked out by pragmatic compromises over time (think of the notwithstanding clause of the Canadian constitution or the federal spending power) (Tuohy 1992). The principles in Hall’s charter became the conditions set out in the elegantly simple *Medical Care Act* of 1966 for federal cost-sharing of coverage under provincial plans. To symbolize the linkage of the adoption of medicare to Canada’s centenary, the Pearson Liberal government initially planned to have the legislation come into force on July 1, 1967. Only pressure from fiscal conservatives within the Liberal Cabinet pushed that date to July 1, 1968.

Even after the publication of Hall’s report, and after the demonstration effect of the adoption of universal physician services insurance in Saskatchewan in 1962, Canadian public opinion still tilted toward a voluntary program. The adoption and implementation of Canadian medicare was driven by political elites in a process of contest and compromise. Although an alliance between the Liberal and New Democratic parties ensured passage of the *Medical Care Act* in a minority parliament in 1966, and the Conservatives bowed to that inevitability to make passage almost unanimous, several provincial governments agreed to participate only under protest. The adoption of the single-payer model at the provincial level was book-ended by physician strikes: initially in Saskatchewan in the context of that province’s pioneering adoption of the first provincial program of universal physician services insurance, and lastly in Quebec, the last province to comply with the federal framework.

Iconic Institution

What accounts, then, for the ascension of Canadian medicare to iconic status in the public imagination? And what has kept the fundamental design of the system so stable as other nations entered into major political contests over the redesign of their respective systems? Despite the various organizational changes that have roiled provincial systems as they have regionalized, re-regionalized and de-regionalized, the core of the system hasn't changed. What has stayed stable are the fundamental parameters of the system: the balance of power among the three pillars of the healthcare arena – the state, the medical profession and private finance – and the balance of command, negotiation and peer control by which power is exercised. These are the fundamental factors that determine whose interests are weighed and enforced in decisions about who gets what, when and how in healthcare.

Understanding the durability of the Canadian single-payer system means appreciating it as an institution. Political scientists understand an institution as the product of a settlement among interests at a point in time. The institutionalization of that settlement crystallizes a founding bargain that creates a set of “collectively enforced expectations” (Streeck and Thelen 2005). It establishes a balance of interest, certain rules of governance, certain organizing principles, either implicitly or explicitly, that over time come to take on a value in themselves. The ultimate enforcement mechanism for a policy framework such as Canadian medicare is the coercive authority of the state. But as the various parties to the bargain become invested in it, and as the founding myth takes hold, that enforcement becomes a mutual process.

The Canadian single-payer system can be understood as an institution, whose central defining feature is the bilateral monopoly it creates between the medical profession and the state for “medically necessary” services. Ninety-eight per cent or more of physician remuneration comes from public sources, as does more than 90% of hospital revenue. This binds the profession and the state into an accommodation that forms the central political axis of the system. (Given the centrality of the medical profession to the delivery of in-patient services, this accommodation has effectively incorporated hospitals as well.) This is an arrangement with inherent trade-offs. Excluding interests other than doctors and governments from setting the terms of access to necessary services means that coverage is based on what the profession deems to be necessary and the public fisc can sustain, not on what individuals and private insurers are willing to pay. It is this trade-off between individual choice and social equity that was litigated in the Chaoulli case in Quebec in 2005 (Flood et al. 2005) and is currently being litigated again in the Cambie case in British Columbia (Palmer n.d.) and will very likely continue to be contested at the margins of the single-payer system.

The core profession–state axis of the Canadian system has other implications. In the early years of medicare, the fact that universal coverage existed for the core of the healthcare system, amounting to about 60% of total expenditure, blunted the urgency of moving on to cover other healthcare goods and services. Later technological changes would shrink the scope of physician and hospital services (and therefore the scope of the single-payer system) to about 45% of total expenditure. Meanwhile, the rate of escalation of healthcare costs had

raised the fiscal stakes of expanding public coverage, while the entrenchment of employer-based coverage outside the physician–hospital core established political barriers to change. Expansions beyond the physician–hospital core took place on a province-by-province basis as different provinces made different trade-offs in addressing these fiscal and political challenges. The province-specific expansion therefore occurred largely on terms quite different than those of the single-payer model, typically involving targeting of certain population groups versus universality and co-pays versus first-dollar coverage.

The power of the gyroscope of the profession–state accommodation, however, can be seen in the fact that the single-payer system itself did not vary much across provinces. Notwithstanding partisan shifts in the control of governments, and the vagaries of politics within medical associations, the basic interests of governments and the profession were similar across provinces and they yielded roughly similar bargains. The scope of covered services varies only at the margins, and the terms of medical remuneration and practice organization have changed slowly, albeit at somewhat different rates across provinces.

But the strength of the profession–state accommodation doesn't fully explain the stability of the Canadian system. After all, the founding bargain of the British NHS also bound the state and the profession together – not in a bilateral monopoly but in a quasi-corporatist regionalized hierarchy in which physicians (and nurses, it must be said) were incorporated into decision-making at all levels. Nonetheless, that hierarchy was dramatically restructured into separate purchaser and provider wings in the 1990s. Subsequent adaptations of that model have moved the system closer to a single-payer model in which providers are formally independent and the state exercises its authority through the power of the purse, albeit within a regulatory framework enforced from the centre (Tuohy 2018). But those changes occurred because of conditions that arose in the broad political arena: in the first instance, a third majority mandate for the Thatcher government that emboldened them to finally take on major policy change in healthcare, and to do so through an exclusionary process that kept the profession completely outside (and offside).

In Canada, no such broad political conditions for change occurred in the three decades after the passage of the *Medical Care Act*. The growing popularity of the single-payer model, as well as the entrenched accommodation with the profession raised the political stakes for any provincial government to act alone. Any significant change in the federal framework would have required federal–provincial negotiations, but that table was dominated by constitutional wrangling over jurisdiction. The only significant action at the federal level was to reinforce the single-payer model by consolidating the founding legislation and firming its principles in the *Canada Health Act* of 1984. The provinces for their part concerned themselves largely with reorganizations within the hospital and community care sectors and with incremental expansions and contractions of coverage outside the physician–hospital ambit.

At the turn of the 21st century, however, a window of opportunity did open. Constitutional conflict had subsided, and healthcare rose to the pinnacle of the federal, provincial and territorial agenda as both the public and provincial governments clamoured for federal reinvestment after the

constraint of the previous decade. Commissions in all provinces and at the federal level canvassed a broad range of options for change, while effectively recommending various ways to reinforce the existing model. The federal Liberal government under Paul Martin was willing to make that investment. Even so, however, it appeared that any major change would occur largely outside the single-payer system. Remarkably, in the summer of 2004, all provincial premiers agreed to a proposal that the federal government should assume “full responsibility” for the financing and delivery of all pharmacare programs across the country through the establishment of a “national pharmacare program” of comprehensive coverage (Council of the Federation 2004: 1–2). But just as political conditions can create windows of opportunity, they can also abruptly shift and close those windows. The Martin government had been tipped into minority status in June of that year. With a government that could fall at any time, Martin determined that the credibility of his government hinged on reaching a deal with the premiers and judged that he did not have the luxury of time that it would take to negotiate federal pharmacare. Instead, pharmacare became a hostage to fortune through the establishment of a process to develop a National Pharmaceutical Strategy, and then fortune turned against the Martin government when it was defeated in 2006.

Report Card

We are left with essentially the model with which we started in the mid-20th century, enhanced by a variety of provincial programs outside the single-payer world. There are downsides and upsides to this situation. Let me start with the downsides so that I can conclude on the upside.

Most of us are familiar with Canada’s infamous ranking in the Commonwealth Fund’s International Health Policy Survey, in which we have consistently ranked second-worst, prevented from scraping the bottom only by the even worse performance of the US (Davis et al. 2014). But care needs to be taken in interpreting these results, which give a heavy weight to exactly those areas in which Canada performs least well: wait times, care coordination and integrated electronic information systems. Each of these failings can be laid at the door of a system that has privileged independent private practices and institutions as part of the founding profession–state bargain. Primary care reform, which would go a long way toward improving our Commonwealth Fund ranking, has been hostage to negotiations at the central negotiating table. Those negotiations have protected fee-for-service practice and have insulated medical practices from integration with other sectors. Those negotiations can go significantly off the rails, stalling even the progress that has been made.

There’s another downside: cost access problems for services outside the physician–hospital realm. By not embracing those services from the outset, the Canadian medicare model inadvertently established the conditions that would militate against its own expansion in the future. There is an analogy in this regard with the US. There, the adoption of coverage in the 1960s for those groups deemed most vulnerable – the elderly and the poor – dissipated the momentum toward broader coverage and allowed the further development of private employer-based insurance, making a universal program much more politically difficult to achieve. In Canada, as noted earlier, the coverage of a core of services that in the 1960s accounted for

a majority of healthcare expenditure reduced the pressure for further expansion and allowed an employer-based model of coverage for other services to take root (Boothe 2015).

But let's now return to the upsides of the Canadian system, which are substantial. First, financial barriers to access to physician and hospital services continue to be low. Comparisons of access, utilization and health outcomes for various conditions in Canada and the US continue to demonstrate the key importance of this fundamental achievement of the Canadian system. Second, a system that places clinical judgment at the heart of decision-making, respects what healthcare is all about. Canada does not always realize the full advantage of this model, but there is huge potential to do so through initiatives such as *Choosing Wisely* (Choosing Wisely Canada n.d.), and by building out from the current medical core of clinicians to incorporate clinicians and caregivers of other disciplines. Third, there is an enormous reservoir of public support for the system – the point with which I started. There may be an analogy here with the NHS, which has shown remarkable resilience in the face of continual reorganizations and dramatic fiscal swings over the past two-and-a-half decades, largely as a result of the dedication of its staff and the support of the public. I would not wish a similar organizational churn or fiscal whiplash for the Canadian system, although there is much to learn from some of the particular changes the British have made. But the principal lesson from the NHS and from Canada is that a system that ranks high in public priority and that places clinicians and caregivers at the heart of decision-making can withstand shifting political sands.

Let me leave you with a final observation. The Canadian healthcare model is worth defending and, yes, adapting not only for what it does for healthcare but also for what it does for Canada. Medicare has contributed to Canadian understanding of what it means to be a sharing community as much if not more than the other way around. For a time, we can count on those values to sustain Medicare in turn. It is sometimes suggested that the growth of a private sector would erode support for the public system. For the short term at least, such evidence as exists from other nations suggests the opposite: a growth in the private share of health expenditure tends to be followed by increased support for public spending (Tuohy et al. 2004: 388). But over the longer term, that relationship may not hold. Medicare has shaped our understanding of ourselves as Canadians. It could well be that an erosion of Medicare could feed back into that self-understanding in a less happy way. That is one hypothesis that we would be better not to test.

Notes

1. Figures 1 and 2 are based on differently worded questions. Figure 1 reports results when respondents are asked to rate the importance of various features of Canada as symbols of Canadian identity, indicating the proportion ranking each feature as “very” important. Figure 2 reports the five most popular features cited when respondents are asked to choose up to three options from a list of features of Britain that make them “most proud to be British.”
2. Given the lack of cross-national polling at the time, we must rely on differently worded questions for this comparison. The British and American questions are straightforwardly described in Figure 3. The Canadian question asked respondents whether they would

support a government plan that was compulsory for their whole province or whether such a plan should be left to “local option.” (An “individual option” alternative was not offered.) In order to make the Canadian results as comparable as possible to those of the US poll also reported in Figure 3, I have shown those supporting a province-wide option as a proportion of those who expressed an opinion.

3. For example, a US Gallup poll in July 1945 found that 61% of decided respondents favoured a government-run compulsory plan over a voluntary plan set up by the medical profession. Support for a universal government plan rose to 70% in a November 1945 poll in which no other option was suggested. In April 1946, when given options regarding the aegis for a universal plan of physician and hospital services insurance, 37% chose government, 26% the medical profession and 23% private insurance companies (AIPO/Gallup polls July 1945, November 1945, April 1946. Available through Roper Center for Public Opinion Research iPOLL Databank). As for the UK, although 70% of respondents in a 1943 poll believed that a “state-run medical service” would be “beneficial for the nation,” respondents in a 1944 poll offering two options chose a publicly run system over “leaving things as they are” by only 55% to 32% (Jacobs 1993: 115).
4. A federal–provincial framework of universal hospital insurance had been put in place in the late 1950s. But in the 1950s and 1960s, hospitals in Canada, as in the US, functioned essentially as “physicians’ workshops” or “physicians’ cooperatives” under the *de facto* control of their medical staffs (Pauly and Redisch 1973). Governmental hospital insurance essentially underwrote the costs of these “workshops” while still leaving patients at risk for the costs of the medical services provided therein. It was therefore the adoption of physicians’ services insurance in 1966 that transformed the profession–state relationship and instituted the modern Canadian healthcare state.

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Ontario and New Zealand Pharmaceuticals: Cost and Coverage

Politiques pharmaceutiques en Ontario et en Nouvelle-Zélande : coûts et couverture



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Abstract

Ontario is a strong candidate for a comprehensive pharmacare program, given that it has a pre-existing public drug benefit program (the Ontario Drug Benefit Program [ODBP]). This paper outlines strategies from New Zealand's national pharmacare program (the Pharmaceutical Management Agency [PHARMAC]) and compares these strategies to other international examples. It is recommended that the ODBP engage in three strategies currently utilized by the PHARMAC to achieve significant cost savings and create potential to increase their insurance coverage: (i) strict budgeting; (ii) tendering and negotiating; and (iii) reference pricing.

Résumé

L'Ontario est susceptible de se doter d'un régime complet d'assurance médicaments, et ce, en raison d'un programme public déjà en place (le Programme de médicaments de l'Ontario [PMO]). Cet article présente les stratégies du régime d'assurance médicaments de la Nouvelle-Zélande (la *Pharmaceutical Management Agency de Nouvelle-Zélande* [PHARMAC]), lesquelles sont comparées à d'autres exemples à l'étranger. On recommande que le PMO adopte trois stratégies actuellement employées par PHARMAC afin d'économiser les coûts et d'accroître le potentiel de la couverture d'assurance : (i) établissement d'un budget strict; (ii) soumission et négociation; et (iii) prix de référence.

Introduction

In 2014, Canada demonstrated public, non-catastrophic drug coverage for only 29% of its population (IBM 2014). In 2015, Canada exhibited the second highest cost per capita drug expenditure of the Organisation for Economic Co-operation and Development (OECD) countries (\$1,015/capita [all values provided in Canadian dollars]) (OECD 2015; OECD 2017). Comparatively, 21 OECD countries, including Australia, the UK and New Zealand (NZ), have 100% of their population covered by some public non-catastrophic drug insurance (Gagnon and Wolfe 2015). NZ, in particular, is known for its low expenditure (\$372/capita in 2015) on pharmaceuticals and extensive drug coverage due to its national pharmaceutical purchasing body (OECD 2017; Medicines New Zealand 2015). In Canada, National pharmacare has been discussed in many iterations over the past 20 years, usually with emphasis on provincial plans that adhere to overarching criteria set by the federal government upon which funding is contingent (Morgan et al. 2016; National Health Forum 1997). In light of the recent announcement of a federal commitment to investigating pharmacare, the procurement and cost-saving strategies laid out in this paper would permit the provinces to maximally benefit from the national pharmacare program with minimal provincial expenditure (Picard 2018).

An estimated 20% of the Ontario (ON) population has no coverage of non-catastrophic prescription drugs by public or private insurance (Gershon 2012). ON has a comprehensive pharmacare program, the Ontario Drug Benefit Program (ODBP), which began in the 1970s (McGurn 2015). The ODBP is part of the Ontario Public Drug Program (OPDP), which includes several funding programs covering areas including: residents with high drug cost to income ratios, new cancer drugs, metabolic disorders and infant respiratory infections (OPDP 2017). The ODBP provides general drug coverage based on a formulary of over 4,400 drugs to individuals under 25 or 65 years and older; residents of long-term care homes and homes for special care; and recipients of social assistance (Office of the Premier 2017).

In 2015, the ODBP provided coverage to 3.0 million people in ON (approximately 33% of the total population), costing \$4.7 billion (ODBP 2016). To contain costs and guide new

coverage decisions, the ODBP has established the Committee to Evaluate Drugs, which conducts health technology assessment (HTA) in an advisory capacity to determine if new, brand name drugs are appropriate to be funded within the ODBP. This committee is one of several levels of pharmaceutical evaluation bodies in Canada, including the Common Drug Review, pan-Canadian Oncology Drug Review and the Patented Medicine Prices Review Board (CADTH 2017a; CADTH 2017b; PMPRB 2016). The Common Drug Review and pan-Canadian Oncology Drug Review assess value based on cost-effectiveness at a federal level, producing recommendations regarding the adoption of new drugs by provincial and territorial public drug plans. The Patented Medicine Prices Review Board sets a maximum introductory drug price for new patented drugs at the manufacturer level by acting as an objective organization to determine drug pricing restrictions for drug companies, insurers and policy makers. From 2006 to 2014, through HTA and other efforts, including negotiation and price-regulation strategies, the ODBP was able to save the province over \$3.3 billion, resulting in a total expenditure of \$37.46 billion (in 2014 dollars) (McGurn 2015; ODBP 2016; OECD 2017).¹

In comparison to ON, NZ insures 100% of its population. In 1993, NZ implemented a national pharmacare program (the Pharmaceutical Management Agency [PHARMAC]), whereby one body negotiates and controls drug pricing within the country for the entire population (PHARMAC 2017). The Pharmacology and Therapeutics Advisory Committee is the only organization that oversees the national pharmaceutical HTA. From 2006 to 2014, the PHARMAC saved the District Health Boards (DHBs) \$2.87 billion, resulting in a total expenditure of \$5.33 billion (in 2014 dollars) (OECD 2017; PHARMAC 2016).¹

Comparing the PHARMAC and ODBP Cost-Containment Methods

The ODBP exhibits structural similarities to the PHARMAC: they are both tasked with price negotiation of pharmaceuticals within their regions; report to the Ministry of Health; have a HTA committee; and have continuously updated formularies of insured drugs. Furthermore, the PHARMAC began by covering out-patient prescription drugs, as does the ODBP, but has now expanded to cover all prescription, hospital and cancer drugs (PHARMAC 2017).

However, there are also significant differences between ON and NZ. The PHARMAC requires that patients pay a fixed copayment of NZ\$5 per three-month prescription per drug (Lessing et al. 2015). Those eligible for the ODBP pay a fixed deductible of \$100 per person and up to \$6.11 per drug that is filled, if their income is of a certain threshold ranging from \$19,300 to \$32,300, depending on marital status, age and dependents (Government of Ontario 2018). If their income is below, the copayment is up to \$2 per prescription filled.

ON faces obstacles in expanding its drug coverage, which, in contrast, have minimal influence in NZ. One such obstacle relates to ON being a regional entity, resulting in reduced power to negotiate pricing with generic pharmaceutical companies, compared with national efforts (Dempster et al. 2013). A substantial potential barrier for implementing

comprehensive pharmacare programs in ON is the contribution of the pharmaceutical industry to the economy. The pharmaceutical industry in ON is a significant contributor to the Canadian economy with extensive political influence. In 2011, ON pharmaceutical companies brought in over \$8 billion of revenue (Impact Consulting Group 2011). Although the pharmaceutical industry is not inherently against expansion of public coverage, it is against strategies that control costs through mechanisms that affect their revenue.

In contrast, in NZ, there is a relative absence of brand-name pharmaceuticals in the market due to strong political support towards the PHARMAC and significant barriers towards pharmaceutical companies, such as government hostility and lack of willingness to engage in long-term partnerships with biomedical research (Watson 2006). By placing market restrictions via tendering in ON, there is concern that generic pharmaceutical companies may move to other countries (Dylst and Simoens 2010). Further, the pharmaceutical industry has significant political influence which has prevented prior attempts to implement drug tendering. In July 2017, the Canadian Generic Pharmaceutical Association signed an agreement in principle to save the province \$1.5 billion on drug spending over five years by decreasing drug prices. The goal was to prevent the government from implementing tendering (Canadian Generic Pharmaceutical Association 2017; Lee 2017). Following this agreement, the pan-Canadian Pharmaceutical Association and the Canadian Generic Pharmaceutical Association developed a five-year initiative to encourage savings in prescription generic drugs for provinces outside of Quebec with the agreement that tendering will not be pursued, starting with a reduction in the price of almost 70 generic drugs by 25–40% in April 2018 (PDCI Market Access, 2018). The response of the Canadian Generic Pharmaceutical Association to reduce generic prices to assuage the threat of provincial tendering is demonstrative of the potential for cost savings associated with NZ cost-containment methods.

Notwithstanding, the PHARMAC is a suitable model for the ODBP to follow given the many similarities between the two. The PHARMAC uses two overarching methods to increase value and reduce overall drug costs: competitive tendering; and limiting drug entry into the market (based on cost-effectiveness). The primary differences between the ODBP and the PHARMAC, which present opportunities for cost savings in ON, lie in the (i) budgeting processes; (ii) tendering and negotiating; and (iii) reference pricing. This paper provides a high-level overview of the processes and potential impact of these cost-saving strategies; an in-depth analysis of merits and disadvantages is outside the scope of this paper.

Budgeting processes

At the beginning of each year, the PHARMAC, the 20 DHBs (government organizations responsible for providing health services within the districts of NZ) and the Minister of Health set an annual budget. There is a legal obligation to stay within the gross budget, thereby creating a stringent restriction on spending (Foster and Preval 2011). The PHARMAC acts as a negotiating body, even though it does not directly purchase stock and does not have control over allocating the national pharmaceutical budget. Budgeted funds

are distributed amongst the DHBs, and the PHARMAC's role is to seek the best pricing for the DHBs. To keep within the budget, the PHARMAC focuses on two main strategies: tendering of generic drugs and setting reference pricing (PHARMAC 2017).

In Europe, there has been emphasis on the need to constrain public budgets for prescription drug reimbursement by the European Commission (Directorate-General for Economic and Financial Affairs, Pharmaceutical Sector Inquiry) and other organizations (High Level Pharmaceutical Forum) (Carone et al. 2012). Equity concerns regarding setting legally binding budget constraints have been raised internationally, due to the potential lack of flexibility in providing the most cost-effective option (Ubel et al. 1996). To mediate this concern, the PHARMAC has in place a Discretionary Pharmaceutical Fund, which allows shifting of funds from future years, or pushing funds into future years if needed (PHARMAC 2017). In ON, the ODBP has power, through its Executive Officer, to negotiate volume purchase pricing with pharmaceutical companies to enable public reimbursement. However, the current pharmaceutical budget is flexible and has seen significant increases over the past few years, from \$3.56 billion in 2006–2007 to \$4.74 billion in 2014–2015 (ODBP 2016). This growth appears to be due primarily to a growing population, additional anti-cancer drugs and new drugs for rare diseases (McGurn 2015; ODBP 2016). Although the observed growth is lower than NZ's (29% in ON versus 32% in NZ from 2006–2014), the spending per capita for eligible recipients in ON is consistently approximately 10 times that of NZ (\$150.46 in NZ versus \$1,612.24 in ON in 2014). This suggests a need for cost reduction, rather than growth containment which is needed in NZ. Setting a strict annual budget (similar to the NZ model) and making the responsible committee(s) legally bound by dollar limits would be essential to reducing cost for ON.

Tendering and negotiating

Pharmaceutical purchasing used in ON differs from NZ primarily in that ON uses a regulatory approach to purchasing by setting maximum reimbursement thresholds, whereas NZ uses a competitive approach. NZ's competitive bidding and tendering for generic drugs is an intrinsic aspect within the PHARMAC: NZ has a multi-product policy, which prioritizes the best value option for treatment (PHARMAC 2017). The negotiation process allows for open bidding of contracts for generic and brand name drugs to become publicly funded on the country's public insurance plan for a fixed time period. Only select drugs in each therapeutic class are funded. The bidding process results in the purchase of half of the total volume of drugs per year (e.g., statins and angiotensin-converting enzyme [ACE] inhibitors) with only 20% of the budget. The remainder of the budget (80%; approximately \$547 million in 2016) is spent primarily on brand name and specialty drugs (Foster and Preval 2011; PHARMAC 2016). As a result of bidding and tendering, NZ saved approximately \$1.19 billion in 2015/2016 (calculated based on growth estimates from 2005) (PHARMAC 2016).

Large price differentials for brand name drugs compared with generic drugs have been tracked among European countries using competitive generic pricing (including Belgium,

Germany, the Netherlands and Denmark) (Dylst and Simoens 2010). These studies have shown that implementation of tendering can negatively impact future pharmaceutical investment. Further, there are critiques that NZ is missing innovative medicines that could provide benefit to the population; however, NZ assesses many of these drugs through their HTA process and chooses to only fund those which demonstrate significant benefit over previously funded drugs (Metcalf et al. 2003). There is no clear evidence as to whether there are health consequences as a result of lack of diverse coverage within a therapeutic class for prescription drugs. However, Cumming et al. (2010) have observed that the rate of hospital discharges for cardiovascular diseases increased at a time coinciding with a decrease in cardiovascular drug sales, likely due to the PHARMAC cost-containment processes (LeLorier and Rawson 2007).

ON, as part of the pan-Canadian Pharmaceutical Alliance (an alliance of provinces and territories for volume drug purchasing negotiations), has chosen to set regulations for prices paid for certain generic drugs. ON pays between 15% and 35% of the equivalent brand name for generic drugs under contract through the pan-Canadian Pharmaceutical Alliance (Government of Saskatchewan 2017). Law and Kratzer (2013) and Law et al. (2011) recommended that tendering and negotiating (particularly of generic drugs) be introduced as a mechanism to reduce both gross cost and the rate of increase of public drug expenditure in ON. If ON incorporated tendering and negotiating, this could generate savings that could be used to expand public drug coverage.

Reference pricing

NZ uses a reference pricing reimbursement strategy for certain drugs (adopted in 1993) (PHARMAC 2017). Drugs are classified depending on therapeutic effects, and the PHARMAC sets a “reference price” for each drug class. The low-priced drug becomes the maximum price reimbursed within a reference group. Drugs can be sold at prices above reference price; however, the difference is paid by the patient. This allows for potential formation of cross-product agreements: if a pharmaceutical company is seeking coverage for a new product, it will agree to lower the price of another product within a reference group, thereby lowering the reimbursement price for that group and resulting in additional savings (Woodfield 2001). Eighty per cent of European countries had some form of reference pricing system (including determination of a price for a multisource drug) in 2011 (Simoens 2012). As examples, Sweden, the Netherlands and Germany have seen overall cost reductions by 5–30% annually, and drug expenditure on specific drug classes for which reference pricing was used has been shown to decrease (Dylst et al. 2011).

The lack of reference pricing in ON can limit the ODBP’s bargaining power and cost-saving prospects for a given therapeutic class, thereby contributing to the inability of the ON government to publicly cover more than 23% of the population (LeLorier and Rawson 2007). British Columbia implemented a reference pricing system in 1995 for certain drug classes (BC Government 2017). This reference pricing system, which first covered only five classes of drugs, saved the province an estimated \$161 million in the first six years on a total

cumulative budget of \$3.07 billion (in 2000 Canadian dollars) (Cassels 2002). The introduction of reference pricing in ON has the potential to reduce public expenditure on commonly prescribed drug classes to allow for expanded coverage. There would be cost-containment benefits of reference pricing due to restriction of government spending and encouragement of both generic and brand name pharmaceutical company competition (by reducing profitability of me-too drugs) (Galizzi et al. 2011; Simoens 2012).

Pros and Cons of Implementing NZ Drug Purchasing Policies in ON

There are advantages and disadvantages to both the ODBP and the PHARMAC (Table 1). The PHARMAC uses several restrictions (including their overall budget, the number of drugs funded per therapeutic class and reference pricing) to achieve cost savings and universal prescription drug coverage. These restrictions have not been implemented without criticism. The PHARMAC has been criticized for its strict budgeting and assessment processes leading to delays in access to new drugs and drugs for rare diseases (Wonder and Milne 2011). A previous study indicated that in 2012, Canada covered 54% of included cancer drugs, whereas NZ covered 25%; the US, Finland, France, Germany and Sweden all covered over 90% of studied drugs (Cheema et al. 2012). The PHARMAC has an extensive HTA process, which evaluates new drugs and does not reimburse drugs if they deem to present minimal therapeutic benefit relative to comparable alternatives, resulting in its low coverage. The monopsony (one market/one buyer) market can result in potential drug shortages (Dylst and Simoens 2010); however, inclusion of clauses that require backup supplies to be paid for by suppliers can reduce this risk (Law and Kratzer 2013).

Despite criticisms, sacrificing the variety of drugs covered per therapeutic class in exchange for coverage of the entire ON population could be beneficial. Reference pricing, as an alternative to tendering, poses as a means for controlling costs. However, the resultant overall reduction in drug expenditure from reference pricing would not be as high as that associated with generic competition (Dylst and Simoens 2010; Dylst et al. 2011; Simoens 2012). This is demonstrated through comparison of BC's reference pricing to NZ's tendering of ACE inhibitors. According to Morgan et al. (2007), BC's reference pricing does not result in low prices compared to NZ. Low pricing in NZ is attributed to discounts from brand-name manufacturers and generic competition. Morgan et al. (2007) found that the cost of generic ACE inhibitors in NZ was 93% less than those in BC due to their use of tendering instead of reference pricing, which has been previously supported (Dylst and Simoens 2010; Dylst et al. 2011; Simoens 2012).

Demonstrating cost-saving potential if ON paid NZ prices

Based on potential political controversy of implementing an entirely publicly funded drug program in ON, it would be advisable to start by integrating tendering and reference pricing into select sections of the drug market, specifically for drugs purchased in large volumes. Prior cost comparisons between BC and NZ have shown up to 90% cost difference in statins, ACE inhibitors and proton pump inhibitors (PPIs) (Morgan et al. 2007).

TABLE 1. Highlights of the advantages and disadvantages of the New Zealand Pharmaceutical Management Agency and the Ontario Drug Benefit Program

Pharmaceutical body	Advantages	Disadvantages
New Zealand Pharmaceutical Management Agency (PHARMAC)	<ul style="list-style-type: none"> • Insurance covers entire population • Low per-capita costs • Tightly controlled spending • Volume purchasing leads to low per-unit pricing • Reference pricing leads to partial or complete coverage of multiple drugs within a therapeutic class 	<ul style="list-style-type: none"> • Limited options of insured medications • Lack of coverage of many new therapies • Potential for drug shortages with single supplier
Ontario Drug Benefit Program (ODBP)	<ul style="list-style-type: none"> • Insurance covers high-needs populations • Coverage of multiple drugs within each therapeutic class offers alternatives for intolerance • Coverage of many new therapies • Comprehensive coverage for insured population 	<ul style="list-style-type: none"> • Insurance covers 33% of population • High per-capita costs • Limited volume purchasing and tendering • Require private insurance to fill in gaps

Using a methodology similar to Morgan et al. (2007), we estimated what the cost savings would be in ON, if ON were able to achieve the same price points for drugs listed in NZ. The following three drug classes were included, representing 8.3% of total ON drug spending (or \$435 million): statins, ACE inhibitors and PPIs (CIHI 2016). We identified the specific drugs within each class that were reimbursed in both ON and NZ. Prices were reported in 2016 Canadian dollars from the ON Drug Benefit Formulary and from the NZ Pharmaceutical Schedule (ODBP 2017; PHARMAC 2018). The difference in price between ON and NZ was calculated as a percentage of the ON cost, and the drug in each class wherein the NZ cost represented the highest proportion of the ON cost was chosen for analysis. This was done to ensure that the most conservative estimate of savings would be calculated.

The difference in price between ON and NZ was calculated and represented as a percentage of the ON price for each drug class:

$$Price\ gap = \frac{P_{ON} - P_{NZ}}{P_{ON}}$$

P_{ON} = price of drug in ON; P_{NZ} = price of drug in NZ.

Using the drug with the conservative price gap (atorvastatin, pantoprazole and cilazapril for statins, PPIs and ACE inhibitors, respectively), the total estimated difference in price between ON and NZ for all three drug classes was calculated.

$$Total\ price\ gap = \frac{\sum \left(\frac{P_{NZ}}{P_{ON}} \times \frac{Exp_i}{TS_{ON}} \right)}{\sum \left(\frac{Exp_i}{TS_{ON}} \right)}$$

Exp_i = actual expenditure in each therapeutic drug class in ON; TS_{ON} = total program drug spending in ON.

Finally, the potential savings were calculated for each drug class:

$$Potential\ savings = \sum \left[(Exp_i) - \left(Exp_i \times \frac{P_{NZ}}{P_{ON}} \right) \right]$$

We found that the savings could be upwards of 85%: \$370 million based on the 2016 annual expenditure of \$434 million (these calculations do not account for the generic drug prices negotiated by the pan-Canadian Pharmaceutical Alliance) (see Table 2).

TABLE 2. Conservative estimate of the impact of achieving prices equivalent to NZ on ODBP TPS for three drug classes: statins, PPIs and ACE inhibitors (2016 Canadian dollars)

	2016 ON expenditure*		Potential cost savings to the ODBP	
	Proportion of TS _{ON}	Actual expenditure	Price gap (ON–NZ)	Potential savings
Statins	3.1%	\$163,512,830	–94%	\$153,345,210
PPIs	3.0%	\$154,256,130	–84%	\$130,136,000
ACE inhibitors	2.2%	\$116,680,830	–75%	\$87,294,980
Total	8.3%	\$434,449,790	–85% [§]	\$370,776,185

ACE = angiotensin-converting enzyme; NZ = New Zealand; ODBP = Ontario Drug Benefit Program; ON = Ontario; PPIs = proton pump inhibitors; TS_{ON} = total program spending. *Price conversions from OECD 2017. [§]ON expenditures from CIHI 2016.

Conclusion

ON is a strong candidate for a comprehensive pharmacare program given its pre-existing public drug benefit program (ODBP). We have outlined three main strategies focusing on budgeting, tendering/negotiating and reference pricing that could benefit ON's pharmaceutical policy, drawing upon lessons from NZ and from an international context. Future research ought to contrast the formulary recommendations in ON and NZ. For example, ON may have a comparatively low threshold for reimbursement of new drugs, resulting in a large number of drugs covered by public funding. Whether or not the strategies outlined here are accepted, it is important to note that governments need a framework for coordinated policy action to benefit Ontarians in the purchasing of medicines.

Note

1. The total budgets for the PHARMAC and the ODBP from 2006–2014 had to be calculated by the authors, as data provided in the ODBP and the PHARMAC Annual Reports were not in 2014 Canadian dollars. As such, the yearly budgets were converted to 2014 Canadian dollars and summed.

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An Exploration of the Content and Usability of Web-Based Resources Used by Individuals to Find and Access Family Physicians

Exploration du contenu et de l'utilisabilité des ressources Web employées par des particuliers pour trouver et consulter les médecins de famille



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Abstract

Background: The most commonly recommended strategy in Canada for patients wishing to find a regular family physician (FP) is through the use of websites with FP listings. We aimed to explore the content and usability of these websites.

Methods: We identified publicly available websites with FP listings in Western Canada, analyzing them thematically through open coding for website content and conducting framework analysis for website usability.

Results: Twelve unique websites were identified and grouped into three categories: (1) Physician regulatory authorities (“Colleges”); (2) Governmental; and (3) Miscellaneous. College websites provided the greatest detail about the FPs and enabled searching, though had low readability. Governmental websites listed basic contact information and were credible but contained less detail than College websites. Miscellaneous websites were narrower in focus and therefore easier to navigate but lacked updated and accurate information.

Conclusion: Many websites help patients find FPs. Their content and usability are variable, suggesting a need for guidance in the development of these resources.

Résumé

Contexte : La stratégie la plus recommandée aux patients canadiens pour trouver un médecin de famille régulier (MF) est le recours aux sites Web qui listent les MF. Notre objectif était d’explorer le contenu et l’utilisabilité de ces sites.

Méthode : Nous avons répertorié les sites Web disponibles au public dans l’Ouest canadien, nous les avons analysés au moyen du code ouvert et nous avons recouru à un cadre d’analyse pour en évaluer l’utilisabilité.

Résultats : Douze sites Web ont été répertoriés et regroupés en trois catégories : (1) organismes de réglementation (« collègues de médecins »); (2) gouvernementaux; et (3) divers. Les sites Web des collègues fournissent plus de renseignements sur les MF et permettent de mener des recherches, bien qu’ils offrent une plus faible lisibilité. Les sites Web gouvernementaux présentent les coordonnées de base et sont crédibles, mais ils contiennent moins de renseignements que les sites des collègues. Les sites Web divers sont plus ciblés et offrent donc une meilleure navigabilité, mais les renseignements y sont moins précis et moins actualisés.

Conclusion : Plusieurs sites Web permettent aux patients de trouver un MF. Leur contenu et leur utilisabilité varient, ce qui laisse croire qu’il y a un besoin en matière d’orientation pour le développement de ces ressources.

Introduction

In Canada, there are 83,159 active physicians, of whom 52% are family physicians (FPs) or General Practitioners (CMA 2017). This equates to 115 FPs per 100,000 persons in the population (CMA 2017). These FPs may work in healthcare facilities and hospitals, although most are based in community clinics. Patients of all ages present to FPs with undifferentiated medical or psychosocial problems, and the FPs use their expert clinical knowledge to diagnose and treat the patients (CMA 2017). They provide continuity of

care to patients through repeated clinical contacts (The College of Family Physicians of Canada 2017; Walter and Jan 1999). In the Canadian healthcare system, out-patient access to diagnostic testing, procedures and referrals to specialist physicians can only be obtained through the FP.

Having continuity of care through a regular FP is associated with perceived increased access to care (Stewart et al. 1997), increased patient satisfaction (Saultz and Lochner 2005), increased use of preventative services (Bindman et al. 1996), and lower rates of hospitalizations and emergency department visits (Fung et al. 2015; Saultz and Lochner 2005). Despite their importance, 15.5% of Canadians report not having a regular FP (Statistics Canada 2014). Without a standardized or centralized method of contacting available FPs, individuals must use their own time, networks, resources and acumen to find and obtain a regular FP, by asking friends or family, or by going to websites with lists of available FPs (Alberta Health 2015; Crooks et al. 2012; MOHLTC 2009).

A majority of unattached patients indicate that they want a regular FP but attempts to find one can end in failure (MOHLTC 2009; Statistics Canada 2014). Frustrations with the process of finding an FP include the lack of FPs accepting new patients (Asanin and Wilson 2008; Randall et al. 2012; Sanmartin and Ross 2006), the inability to identify FPs who are accepting new patients resulting in the need to phone many clinics (up to 84 in one account) to inquire about FP availability (Galloway 2011; Randall et al. 2012), and the presence of outdated and inaccurate information (Randall et al. 2012). The success of finally finding an FP is seen to be a combination of luck, connections and self-reliance (Randall et al. 2012), with patients feeling the need to mobilize their own resources given systemic failures. In a universal healthcare system, these barriers in accessing primary care are seen by many Canadians as a “loss of a basic right” (Freeman et al. 2013).

Despite their accessibility, availability and high frequency of use, there has not been a study that explores the web-based resources that the public uses to search for FPs. In general, the usefulness of a website depends upon its ability to meet the user’s needs by having relevant content, and also by having high usability (i.e., easy to use and is acceptable to the user) (Bevan and Maissel 1991; Interaction Design Foundation 2018; Mich et al. 2003; Nielsen 1994, 2012). There is no value in a website that is easy to use but does not meet the goal of facilitating the user in finding an available FP. Conversely, a website with valuable information that cannot be easily found or understood due to poor usability is equally inadequate (Nielsen 2017; Nielsen and Loranger 2006). We therefore undertook a research study with the dual objectives of exploring the content and usability of websites used to help individuals search for and access FPs in Western Canada (British Columbia [BC], Alberta [AB], Saskatchewan [SK] and Manitoba [MN]). An understanding of these resources is essential to develop policies and procedures related to web-based resources and begin to address some of the barriers patients face in accessing primary care.

Methods

Identification of websites

We identified websites used to help individuals find or access FPs in the four provinces in Western Canada. These provinces were specifically chosen for their similarities in size, geography, culture, and need for improved resources, given their high proportions of unattached patients at 15–20% of the population (Statistics Canada 2014). Study investigators independently identified websites for evaluation by using a Google search for the phrase “Find a family physician in ‘province’”, where “province” was substituted by British Columbia, Alberta, Saskatchewan and Manitoba. The only inclusion criterion was that the website must allow or facilitate contact by patients to FPs or vice versa. Websites that give general suggestions regarding modalities of finding an FP or that only link to other websites were excluded. All websites meeting this inclusion criterion were identified. If an organization (such as a provincial government) created similar websites within a province, one representative website from each rural and urban location in the province was analyzed. If an organization created identical websites across the four provinces with the only difference being a province-specific directory of FPs, only one representative website from one province was analyzed.

Within the included websites, the web pages that were analyzed were: (1) the home page, (2) the web pages that described the organization responsible for the website (usually “About Us”, “Mission, Vision and Values”, “Goals” and “Frequently Asked Questions” pages), and (3) the web pages used to find or search for physicians (usually “Find a Physician” or “Physician Directory” pages).

Data analysis

The websites were accessed and analyzed between February and March 2015. Two separate approaches were undertaken to address the separate objectives of exploring website content and website usability. The approach used to explore website content was thematic content analysis (Braun and Clarke 2006; Braun and Clarke 2013; Braun et al. 2015). Study investigators thoroughly read all the included web pages from all websites to familiarize themselves with the data. Both text and images were included in data analysis. The investigators independently performed open coding of each web page, where codes identified data that aligned with the study objectives and represented the most basic segment of data that could be meaningfully analyzed (Braun and Clarke 2006). Web pages were analyzed in a systematic line-by-line fashion. When new codes were generated, each team member re-reviewed previously analyzed web pages looking for these newly generated codes in an iterative way through constant comparison. After coding of the web pages was completed, the study investigators met to group the codes into potential themes and sub-themes related to website content. An inductive approach was used to explore website content, as there are no standards or framework by which to study this topic area. That is, the study team had no pre-conceived ideas of what content would be found on these websites; themes were generated through observations of the data.

The approach used for the second research objective, to explore website usability, was framework analysis. This, in contrast, was more deductive in nature, as usability has been widely studied and there are known features that are important in enhancing usability. The study team familiarized themselves with the data and performed open coding of the web pages as previously outlined. In framework analysis, additional steps were undertaken, which included the grouping of codes into pre-determined themes on website usability, then indexing these themes (that is, applying them to the entire data set), and charting or summarizing the data by this thematic framework (Gale et al. 2013; Green and Thorogood 2014; Smith and Firth 2011). The four pre-determined usability themes were: (1) ease of search; (2) ease of navigation; (3) accuracy and ease of understanding of information; and (4) typography (i.e., readability and legibility) of websites. These four themes were obtained from the literature, where empiric studies utilizing user testing have identified these as the most important features in web usability (Nielsen and Loranger 2006), especially for websites that provide medical or health information, provide educational resources or are governmental in nature (Zhang and von Dran 2001).

For both analytic approaches, the study team met consistently to compare codes, constructively question each other's coding and interpretations, and have a critical dialogue to reach a consensus about coding wherever there were coding differences. Because all websites included in data analysis were publicly available, and because there were no human participants recruited for the study, institutional ethics board approval was not required.

Results

A total of 12 unique websites were included in data analysis (Table 1). A salient theme that emerged was the "identification of the organization and individuals responsible for the website." The identified organizations fell into three groups: (1) Physician Regulatory and Licensing Authorities (also known as the "Colleges"); (2) Governmental; and (3) Miscellaneous. The College websites were those of the regulatory/licensing bodies for physicians and surgeons (College of Physicians and Surgeons of Alberta 2015; College of Physicians and Surgeons of British Columbia 2015; College of Physicians and Surgeons of Manitoba 2012; College of Physicians and Surgeons of Saskatchewan 2013). Websites created by primary care networks (Primary Care Network Calgary Foothills 2010; Primary Care Networks 2015), health regions (Saskatoon Health Region 2014; Sunrise Health Region 2015) and the ministries of health (Province of Manitoba 2015) were deemed to be governmental. Miscellaneous websites included those created by business organizations (Alberta Doctor Directory 2014) or those where no information was provided regarding the organization represented by the website (Canadian Office for Applied Research Studies 2015; FindaBCdoctor 2010). Instead of referencing websites directly, we have denoted the College websites ($n = 4$) as "C1" to "C4", governmental websites ($n = 5$) as "G1" to "G5" and miscellaneous websites ($n = 3$) as "M1" to "M3".

TABLE 1. Identified websites for inclusion into the study, by province

Province	Name of website/identifier	URL
Alberta	College of Physicians and Surgeons of Alberta	<i>www.cpsa.ab.ca</i>
	Urban Primary Care Network (representative example: Calgary)	<i>www.needadoctorcalgaryandarea.ca</i>
	Rural Primary Care Network (representative example: Alberta Heartland)	<i>www.albertaheartlandpcn.com</i>
	Alberta Doctor Directory	<i>www.albertadoctordirectory.ca*</i>
British Columbia	College of Physicians and Surgeons of British Columbia	<i>www.cpsbc.ca</i>
	Find a BC doctor	<i>www.findabcdoctor.ca</i>
	British Columbia Doctor Directory	<i>www.bcdoctordirectory.ca*</i>
Saskatchewan	College of Physicians and Surgeons of Saskatchewan	<i>www.cps.sk.ca</i>
	Urban Health Region (representative example: Saskatoon)	<i>www.saskatoonhealthregion.ca</i>
	Rural Health Region (representative example: Sunrise Health Region)	<i>www.sunrisehealthregion.sk.ca</i>
Manitoba	College of Physicians and Surgeons of Manitoba	<i>www.cpsm.mb.ca</i>
	Government of Manitoba Family Physician Finder	<i>www.gov.mb.ca/health/familydoctorfinder/index.html</i>
	Manitoba Doctor Directory	<i>www.manitobadoctordirectory.ca*</i>
National	Canada's local directory (representative example: Calgary, Alberta)	<i>www.cofars.ca[§]</i> <i>(www.calgary-ab.cofars.ca)</i>

URL = uniform resource locator. Note: The italicised URLs ($n = 12$) are those included in final analysis.

*These websites are identical, aside from a province-specific directory of doctors. Alberta Doctor Directory (www.albertadoctordirectory.ca) was selected for analysis as a representative example.

§The national home page consists of a set of links, sorted by province, leading to city-specific directories. For each of the cities in each of the provinces, the web pages are identical other than the city-specific directories. The Calgary web page (www.calgary-ab.cofars.ca) was selected for analysis as a representative example.

Content of websites

We identified five elements that comprise the content of these websites (Table 2). First, websites within each of the three categories contained similar objectives. The goal of College websites was to regulate the medical profession, while a key purpose of governmental websites was to help individuals find FPs. None of the miscellaneous websites explicitly stated their objectives. Second, the methods by which websites assisted patients in finding FPs differed. College websites tended to contain search functions such that a list of FPs matching the inputted characteristics could be obtained. Governmental and miscellaneous websites often provided an undifferentiated physician directory. Two governmental websites (G1, G5) provided a service to directly connect individuals to available FPs. Third, the extent of detail available for listed FPs varied. Although all College websites provided sufficient name, specialty and contact details, half (C1 and C4) did not contain information about whether doctors were accepting new patients, making these websites incomplete resources on their own. In contrast, governmental websites listed only FPs who were accepting new patients.

An Exploration of Web-Based Resources to Find and Access Family Physicians

TABLE 2. Key concepts emerging from thematic analysis regarding content of websites

Themes	Physician regulatory and licensing authority websites	Governmental websites	Miscellaneous websites
Primary purpose of the website	<ul style="list-style-type: none"> • Primary aim is to serve and protect the public through self-regulation of the medical profession, licensing of physicians and developing standards of practice. "Serving the public by guiding the medical profession." (C3) • Ability to search for physicians is not explicitly stated as a goal or mission of the organization, but implied through the presence of a search function for doctors on the home page. 	<ul style="list-style-type: none"> • There are two types of websites: <ul style="list-style-type: none"> – Holistic: Purpose is not explicitly stated, but websites provide news, events, announcements and information about the health region. FP search is only one function of many. (G2, G3, G4) – Targeted: Website exists solely for the purpose of registering and connecting patients with individual FPs. (G1, G5) 	<ul style="list-style-type: none"> • Provides a listing of service providers that may not be restricted to doctors. For example, directories are available for "Calgary accountants, Calgary doctors, Calgary lawyers, Calgary hairdressers, Calgary mechanics, Calgary insurance, Calgary car rental, Calgary items for sale, Calgary employment, Calgary gas stations ..." (M1)
Process required to find an FP	<ul style="list-style-type: none"> • Search fields are used to find doctors matching the search characteristics. • Most College websites also include practice- and access-related characteristics by which individuals can search for doctors if desired. For example: on the C3 website, search fields include name, physician type (FP versus specialist) postal code or city, gender, languages spoken, special interests, wheelchair accessibility and house calls. • Only 2/4 College websites allow searching only for physicians who are accepting new patients. (C2, C3). 	<ul style="list-style-type: none"> • Listing of names, sorted by town/cities within the health region (with no search fields). • Websites with purpose of registering or connecting patients with an FP require patients to fill in an application that includes personal information (name, address, postal code, phone number and e-mail, all of which are required before application can be submitted). 	<ul style="list-style-type: none"> • Ability to browse by pre-selected towns/cities or clinics only with no ability to search by any characteristic.
Extent of detail available for the listed FPs	<ul style="list-style-type: none"> • Most websites provide enough information to allow individuals to contact potential FPs (including name, address, contact information, practice discipline). • Websites that do not allow searching specifically for doctors who are accepting new patients also do not provide this information in their search results. (C1, C4). • Detailed information on FPs are available: <ul style="list-style-type: none"> – Gender of FP is available on all College websites. – Nearly all College websites have information about certification, qualifications, training, history of disciplinary action and languages spoken. – Accessibility details (wheelchair accessibility, house calls) are available on 2/4 College websites. 	<ul style="list-style-type: none"> • Websites with a listing of names provide enough information to allow individuals to contact the doctor (name, location, phone number, specialty/interest and whether accepting new patients). • Websites with purpose of registering patients with FPs do not provide any information about FPs (with no names or contact information). • Some variability for rural versus urban regions: <ul style="list-style-type: none"> – Urban regions provide gender, access-related details (languages spoken) and comments regarding special interests and restrictions. An example of such a comment is: "No Narcotics – No Marijuana. Special interests managing patients with diabetes and hypertension." (G2) – Rural regions provide no further detail beyond name, specialty and contact information of the doctors. 	<ul style="list-style-type: none"> • Variable extent of detail: <ol style="list-style-type: none"> 1. M1 provides enough information to allow individuals to contact the FP (name, location, phone number, specialty/interest and whether accepting new patients). 2. M2 provides similar information to M1, with the addition of languages spoken, and an updated monthly schedule for the doctors at each clinic. 3. M3 provides names only with no contact information and no information about whether physicians are accepting new patients. There is no information about practice discipline (FP versus specialist) for most doctors listed.

TABLE 2. Continued

Themes	Physician regulatory and licensing authority websites	Governmental websites	Miscellaneous websites
Other health-related resources for the public	<ul style="list-style-type: none"> Many of the resources are not targeted to the public, such as news, events, newsletters and recruitment information that are targeted to doctors. Information on other methods of finding an FP provided, although these tend to be vague and refer back to their own websites: "Many patients will try to find a family physician through the advice or recommendation of friends, relatives, or work associates. The online physician directory is available to assist patients in finding a new FP who is accepting new patients." (C2) 	<ul style="list-style-type: none"> Most websites have information about recent events, news, programs and campaigns in the health region: "Menu Planning Workshop: Learn how to plan nutritious meals and snacks in this workshop! Register for our Menu Planning Workshop ..." (G3) Websites with the purpose of registering patients with FPs do not provide any other health-related resources. 	<ul style="list-style-type: none"> There are no other health resources provided for 2/3 websites. M3 had articles on popular health and wellness topics: "Nutrition: the pros and cons of coconut oil." (M3)
Visual impressions and multimedia elements of websites	<ul style="list-style-type: none"> Colleges each have an emblem or logo that makes the website seem "official". The College websites tend to have minimal images and graphics. The images that are present tend to focus on the doctor and the traditional doctor-patient relationship, with images showing a single doctor with a single patient. There are few team-based images. Although the extent of diversity seen varies by individual website, each of the Colleges tends to show some racial and age diversity, and both male and female health professionals. Social media presence is variable (with links on 2/4 websites) and seems to be targeted to health professionals rather than the public, with icons that link to LinkedIn and Twitter, but not Facebook or Google Plus. Even when present, the social media links and icons are small and hard to find. No advertisements. 	<ul style="list-style-type: none"> Images tend to be community-focused, with pictures of large communities and teams of health professionals treating families. The images of health professionals are predominantly team-based, rather than showing single physician-patient encounters. Diversity in race, age, gender is shown consistently. The graphics used appeal to a wide range of ages, including the use of cartoons. For example, there is a picture on the home page of the influenza virus, drawn as a cartoon to look like a monster hiding behind a door, that accompanies the announcement "Why wait? Vaccinate." (G4) Variable social media presence, with links to Facebook, Twitter and/or YouTube on 2/5 websites. Even when present, the social media links and icons tend to be small and hard to find. Videos are used to provide information about the health region and organization, and to increase patient engagement. No advertisements. 	<ul style="list-style-type: none"> Use of images varies significantly across different websites with no clear underlying similarities. For example: The only images used outside of advertisements are Canadian landscapes on M1 with no health-related images, whereas the images used on M2 include numerous images of doctors interacting with patients. The presence of advertisements varies, although they are generally present in high volume (M1, M3). Advertisements are both health-related and non-health-related and present on every page. Social media, if present, limited to the ability to "like" the website on Facebook, Twitter or Google Plus. These social media links and icons are small and hard to find.

FP = family physician.

Miscellaneous websites were variable, although they tended to lack basic information, with practice discipline (i.e., FP versus specialist) not even being universally available. Fourth, websites contained a diverse set of health-related resources. These resources were targeted to doctors rather than the general public on the College websites, while the resources were

relevant to the public on governmental and miscellaneous websites. Lastly, websites contained varying degrees of visual and multimedia elements. There were few graphics on College websites in direct contrast to governmental websites that contained many graphics and images including cartoons that were likely to appeal to the public. Advertisements were present only on miscellaneous websites (M1 and M3) and were often not health-related.

Usability of websites

We examined website usability specifically with regard to the search function and results, navigation, accuracy and ease of understanding of information, and typography (Table 3). College websites consistently had a search function, although the ease of use of this search function was variable, with some websites having excessive options for search inputs, and others having too few search parameters. Governmental and miscellaneous websites provided a listing or directory of doctors by city. When this list was small (such as with smaller towns), it was easy and quick to browse and no additional search function was needed. However, when this list was long, the user was required to browse through many pages of FPs without the ability to select certain preferred characteristics, such as location of the clinic. This resulted in a long and tedious search, especially for urban areas where there is a large number of available FPs. Navigation on College websites was compromised by not having a clear division between physician-specific web pages and those targeted to the public. Duplication in links or having multiple ways to arrive at the same destination, as well as links not being clear (for example, a picture could act as a link, but it was not immediately clear that the picture was clickable), were issues with both governmental and miscellaneous websites. The information provided on College and governmental websites was current and credible, while the information provided on miscellaneous websites was often out of date, wrought with errors, compromised by advertisements, and lacked basic information about the organization or individuals represented and responsible for the websites. All three categories of websites had a high Flesch–Kincaid reading level (between grades 10 and 12). College websites were text heavy, while the legibility of governmental websites was weakened by the use of many different font types, colors and sizes that competed for attention. The legibility of miscellaneous websites was variable, although they tended to be low due to small font sizes and dense text.

Discussion

Given that websites are a primary way by which patients find FPs, an exploration of their content and usability is imperative in understanding how they may facilitate or hinder Canadians seeking to access primary care. To our knowledge, this is the first study to examine these websites. We classified these websites into three categories (physician regulatory authorities or the “Colleges”, governmental and miscellaneous) based on the organizations responsible for the website. There was wide variability in terms of both content and usability across websites, although some similarities existed within the three categories.

TABLE 3. Key concepts emerging from thematic analysis regarding usability of websites

Usability dimension	Physician regulatory and licensing authority websites	Governmental websites	Miscellaneous websites
Ease of search	<ul style="list-style-type: none"> • All College websites have a search function to search doctors by name and/or location and other sociodemographic attributes. • Ease of use of the search function is variable: <ul style="list-style-type: none"> – C3 and C4 have excessive search input options that may be irrelevant to the public. For example, individuals can search for physicians by "practice discipline", which consist of over 90 choices. – C1 has too few search input options, where individuals can search only by physician name. This is not helpful if patients do not have a specific physician for whom they are searching. • Search is not specific to family doctors (specialists included): <ul style="list-style-type: none"> – 2/4 websites allow users to select "Family doctor" versus "Specialist" in the search. • There is no ability to sort search output. 	<ul style="list-style-type: none"> • Minority of governmental websites have a search function but this does not present a major barrier: <ul style="list-style-type: none"> – G1, G5 provide a service to match patients to family doctors so there is no need for a search function or directory as patients do not contact the doctors themselves. – G2, G4 are websites from smaller centres that provide a physician directory. The directories are well organized, short and contain important information, so there does not appear to be a need for a search function. 	<ul style="list-style-type: none"> • Although all three websites provided a list of doctors through which users can browse (like a directory), only one site also provided a search function (M3): <ul style="list-style-type: none"> – This search function is not useful for patients who do not have a specific family doctor for whom they are searching (search function returns results only when the last name of a family doctor is inputted; there are no other fields upon which to search). • The directories on all three websites are not specific to family doctors (specialists included): <ul style="list-style-type: none"> – There is no method to sort the directory or limit the directories to family doctors only. – This is especially problematic with M3, where there is a long list of names of doctors, but users cannot determine which doctors are family doctors versus specialists without clicking on each individual name.
Ease of navigation	<ul style="list-style-type: none"> • Although all College websites have certain web pages that are intended for the public, how easy these web pages are to find is variable. For example, C1 and C4 home pages clearly state where to find web pages intended for the public, whereas the "For the Public" links are small, hidden within a drop-down menu, or at either the very top or the bottom of the page for C2 and C3. • Home pages are dense, cluttered, with many links and resources that have no clear hierarchy. • When the "Find a Physician" search box is highlighted in the centre of the home page in a different colour (such as in C3), this makes the function much easier to find compared to when the search box is small and to the side or requires scrolling below the fold (such as with C1 and C2). • Similar sounding links ("Physician profile search" versus "Physician Directory" versus "Family Doctor Finder") that lead to different pages are confusing and decrease usability (C4). 	<ul style="list-style-type: none"> • Patient-relevant web pages are easy to find. • "Find a Physician" function varies in terms of navigational ease : <ul style="list-style-type: none"> – Drop-down menus tend to be long, so having the "Find a physician" option at the top of the drop-down menu (G4) or as its own menu item (G3) makes it much easier to find than when it is in the middle of a drop-down menu (G2). • Duplication in links (having multiple ways to arrive at the same destination, or having multiple links to the same destination scattered throughout pages) results in the websites appearing disorganized and cluttered (G1, G2). • Links are not easily identifiable, with pictures often acting as links. • Websites with broad objectives are difficult to navigate. For example, G1's menu consists of general information about the province such as the governmental make-up, visitor attractions and information on how to set up a business. 	<ul style="list-style-type: none"> • Ease of navigation varies widely among the websites: <ul style="list-style-type: none"> – M1 is difficult to navigate given the attention to advertisements (with advertisements being in big orange boxes that attract attention and yet are unrelated to the content), the many steps needed to arrive at the city-specific physician directories, and that ads and content are difficult to distinguish. – M2 has no ads and is easier to navigate with a clear menu at the top of the home page. It is not immediately clear that there is a listing of family doctors from the home page though. – M3's construction is compromised by FP listing consisting of doctor names only with no information about specialty, contact information and whether doctors are accepting patients. Individuals need to click on each doctor to see this pertinent information. The list of doctors also contains duplicates and is not sorted in a consistent alphabetical manner. • Duplication in links and having multiple ways to arrive at the same destination with no clear logical pathway result in confusion.

An Exploration of Web-Based Resources to Find and Access Family Physicians

Usability dimension	Physician regulatory and licensing authority websites	Governmental websites	Miscellaneous websites
Accuracy and ease of understanding of information	<ul style="list-style-type: none"> All College websites appear credible, with much information about each College and their legislated authority and mandate. Information is current. Web pages tend to be text heavy. Features that make the content more user-friendly include: <ul style="list-style-type: none"> Use of headings and bullets and short paragraphs, which improve scannability (C3). Frequently Asked Questions section to highlight important information that is relevant to the public (C2). Overall, the text is written at high reading levels and medical jargon is used: <ul style="list-style-type: none"> All websites have a reading grade level of at least 10–12. The Physician Search fields contain medical jargon. There are often undefined abbreviations. 	<ul style="list-style-type: none"> Governmental websites appear credible, with meeting minutes, comprehensive information about the health jurisdictions and information about leadership. Information is current. For websites that match patients to family doctors (G1, G5), clear instructions are provided and a phone number is provided if patients require assistance to fill out registration forms. There is no medical jargon or undefined abbreviations, which work to improve clarity, although there is a high reading level for all the governmental websites (grade level 11–12). 	<ul style="list-style-type: none"> Credibility is low due to: <ul style="list-style-type: none"> Lack of information about the organization behind the creation of the website. High volume of advertisements. Organizational make-up of website creators (having no relevant health experience). Broken links, errors in content and inconsistencies. Unprofessional name of website developers. Clarity is compromised due to high reading levels (reading levels 10–12), use of medical or business jargon, and undefined abbreviations. It is unclear whether the physician listing is current, with no dates provided of the latest updates for the physician directories. Objectives for 2/3 websites are unclear (M1, M3).
Typography	<ul style="list-style-type: none"> Small font sizes and low contrast between font (particularly links) and background colours are prevalent. The dense text is overwhelming, with minimal images or use of colour. 	<ul style="list-style-type: none"> Font sizes are generally sufficiently large and fonts contrast well with background for good readability. The use of many different fonts, colours, font sizes, use of bolding and pictures compete for attention. Presence of different boxes containing unrelated information on home page result in a disorganized appearance. 	<ul style="list-style-type: none"> Readability is variable across the three websites: <ul style="list-style-type: none"> M2 has sufficiently large font size, font contrast with background and concise text. M1 and M3 have poorer readability, with low contrast between text and background, small font sizes, links situated at the very bottom of the page that are hard to find and long, dense paragraphs of text.

The importance of website content cannot be overstated; the “ultimate failure” of a website is the inability to provide the information that users are seeking (Nielsen 2011). Whether a listed physician is an FP (rather than a specialist) and whether FPs are accepting new patients constitute essential information for patients searching for an available FP. However, this information was not universally available. Furthermore, in contrast to College and governmental websites, which otherwise provided current, robust and credible physician information, the information provided on miscellaneous websites was outdated and replete with errors. This is a significant shortcoming of miscellaneous websites, given the importance of accurate information (Hoffmann and Worrall 2004).

Usability depends upon the target audience, which varies across the three categories of websites. Regardless of the broader context though, the function of helping patients find an FP is specifically intended for the general public. Therefore, if there are other intended target audiences, there should be a clear division between public-facing web pages versus those targeting these other audiences (such as physicians, on College websites) (Hoffmann and Worrall 2004;

Hussey 1997). Furthermore, the physician directory or “find a physician” function was at times difficult to find. Given the importance of this function, the link/search should be placed at the top of the web page (as only 12% of users will get to the bottom of a web page) (Nielsen 2013) and should be distinct, rather than being hidden within long multi-level drop-down menus (Nielsen and Loranger 2006). We also found very high reading levels for all websites, across all three categories. The average reading level of patients is 6th grade (Davis et al. 1990); websites should therefore have reading levels no higher than this (Safeer and Keenan 2005).

Our findings suggest that many websites that exist with the purpose of helping individuals search for FPs are of varying quality and usability. We have summarized the unique strengths and limitations of three categories of websites (Table 4). The ideal website would combine the strengths of each, such as by having comprehensive and up-to-date physician information and by containing a search function to allow narrowing of searches by desired characteristics such as clinic location. The weaknesses of the websites analyzed in this study also provide important lessons learned. For example, the ideal website should be written at a much lower reading level and the presence of less relevant information (such as information on specialists, which the Canadian public cannot access without a referral) minimized. This study has the potential to inform the optimization of existing websites and the creation of new ones.

TABLE 4. Strengths and limitations of websites

	Physician regulatory and licensing authority websites	Governmental websites	Miscellaneous websites
Strengths	<ul style="list-style-type: none"> Comprehensive information provided on physicians, which include accessibility details, qualifications, areas of special interest and expertise. Information on physicians is current and up to date. Presence of a search function allows the user to search for FPs based on desired characteristics, such as clinic location or gender of physician. 	<ul style="list-style-type: none"> Information provided on FPs is up to date and concise. Purpose of the websites and information about the organization represented by the website are clear, comprehensive, credible and transparent. The use of images and videos makes the websites visually attractive and increases user engagement with the content. 	<ul style="list-style-type: none"> Websites have a narrow focus (such as providing a physician directory only) making menus smaller and navigation subsequently easier.
Limitations	<ul style="list-style-type: none"> High reading level (minimum Flesch–Kincaid reading level of grade 10). There is often no clear division between the web pages that are specific to physicians versus the web pages that are for the public, resulting in cumbersome websites that are difficult to navigate. Websites are difficult to read, with long paragraphs, dense text and medical jargon. 	<ul style="list-style-type: none"> High reading level (minimum Flesch–Kincaid reading level of grade 10). Websites tend to have broad objectives, to provide general information on the health jurisdiction/health authority. The consequences of this are: <ul style="list-style-type: none"> It is often not immediately apparent on the home page that the website provides information for patients to find available FPs. The relevant web pages that are designed specifically to help patients find FPs can be difficult to find due to the broad and large menu of items offered. There can be an excessive use of colour, boxes and shapes, animation, font sizes and effects, which paradoxically results in difficulty finding important and high-priority web pages. 	<ul style="list-style-type: none"> High reading level (minimum Flesch–Kincaid reading level of grade 10). The objectives of the websites and the organizations represented by the website are unclear. This, in combination with the presence of large and distracting advertisements, results in loss of credibility. Inaccurate and irrelevant information (such as combining FPs and specialists in a directory with no ability to sort the two) limits usability.

FP = family physician.

Limitations

We recognize that there are several limitations to our study. First, our study is based on an evaluation of publicly available websites, with no input from end users. Although we feel that our data sources adequately address our research question, eliciting views of individuals who have tried using these websites may enhance our discussion on essential website elements. Second, we limited our study to websites from Western Canada. This restriction improved comparability across the provinces and allowed us to concisely synthesize a diverse and large volume of data. It does, however, limit transferability of findings to the provinces not included in the analysis, although there is no reason to believe that there are major differences in website content based on geography alone.

The current landscape of web-based resources to help patients find an FP in Western Canada is diverse and varied in both content and usability. In exploring these websites, we encountered content and usability elements that made the search for FPs difficult and time-consuming; this echoes the same frustrations that have been reported by the public (Asanin and Wilson 2008; Galloway 2011; Randall et al. 2012; Sanmartin and Ross 2006). In laying out differences in how websites present key content elements and their potential implications, our findings can inform efforts to improve the content and construction of the resources used by Canadians to find and access FPs.

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Tokenism and Mending Fences: How Rural Male Farmers and Their Health Needs Are Discussed in Health Policy and Planning Documents

Mesures symboliques et redressements de clôtures : comment les fermiers ruraux masculins et leurs besoins en matière de santé sont abordés dans les politiques et documents de planification de santé



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Abstract

Rural male farmers (RMFs) are an understudied population with high mortality, morbidity and co-morbidities due to preventable injury, most of which occur on-farm. This study examines how RMFs and their health needs are discussed in Ontario rural health policy documents. A retrospective analysis of policy was conducted to analyze the content of Ontario rural healthcare policy documents published since 2006. Discussions of RMFs were categorized by two themes: tokenism and mending fences. Tokenism refers to RMFs'

invisibility, except when farming stereotypes were used to describe rural areas. Mending fences captures the desire of rural communities to be included in healthcare decisions, and to position RMFs as key stakeholders for healthcare organizations to engage with to improve how they are perceived by rural communities. This study asserts that including RMFs in health policy formation can improve rural healthcare delivery and relationships between rural healthcare organizations and the communities they serve.

Résumé

Les fermiers ruraux masculins (FRM) constituent une population sous-étudiée où on observe de hauts taux de mortalité, morbidité et comorbidité attribuables à des blessures évitables, dont la plupart ont lieu sur la ferme. Cette étude examine comment sont abordés les FRM et leurs besoins en matière de santé dans les documents de politiques sur la santé rurale en Ontario. Une étude rétrospective a été menée afin d'analyser le contenu des documents de politiques sur la santé rurale en Ontario publiés depuis 2006. Les considérations sur les FRM ont été catégorisées selon deux thèmes : les mesures symboliques et les redressements de clôtures. Le terme « mesures symboliques » fait référence à l'invisibilité des FRM, sauf dans les cas où les stéréotypes fermiers sont utilisés pour décrire des régions rurales. Le terme « redressements de clôtures » exprime le désir des communautés rurales d'être incluses dans les décisions en matière de services de santé. Ce terme fait aussi référence aux FRM à titre de partenaires que les organisations de santé peuvent consulter pour améliorer la perception qu'en ont les communautés rurales. Cette étude fait voir qu'en incluant les FRM dans l'élaboration des politiques de santé, on peut améliorer la prestation de services en milieu rural ainsi que la relation entre les organisations rurales de santé et les communautés qu'elles desservent.

APPROXIMATELY 19% OF CANADIANS RESIDE IN RURAL AREAS (STATISTICS CANADA 2011b). Place, that is, residing in a rural or urban setting, is a noted independent determinant of health (Brundisini et al. 2013; DesMeules et al. 2012) that contributes to rural Canadians having an all-cause mortality rate that is 14.1% higher than that of urban residents (CIHI 2006; Ostry 2012). Additionally, compared to their urban counterparts, rural Canadians experience higher risks and mortality rates for a number of chronic conditions, including a 10.4% higher circulatory disease mortality rate, a 10.6% higher respiratory disease mortality rate, a 19.7% higher diabetes mortality rate, as well as a 125.8% higher accidental mortality rate due to injury and poisonings (CIHI 2006; Ostry 2012). When accounting for gender, injury and poisoning in men represent the greatest rural–urban disparity as rural men's injury-related mortality rate is 130.2% higher than that of urban men (CIHI 2006; Ostry 2012). Disproportionately high injury mortality rates are associated with high prevalence of motor vehicle accidents in rural areas (CIHI 2006; Ostry 2012; Williams and Kulig 2012) and high prevalence of workplace injuries associated with the agricultural industry (CAIR 2011; Morassaei et al. 2013; Turner and Gutmanis 2005).

Rural health inequities are often influenced by health policy decisions to regionalize healthcare services to larger urban centers in efforts to reduce system costs, streamline service delivery and improve healthcare providers' professional development (Fleet et al. 2015; Fleet et al. 2013). Despite such system improvement goals, healthcare centralization creates accessibility barriers for rural communities due to limited availability of most healthcare professionals (Nair et al. 2016; Pitblado 2012). As a result, 33.6% of rural men and 20.3% of rural women in Canada have no access to a regular primary care provider, and thus rely on rural hospitals as their main point of interaction with healthcare services (Pong et al. 2012). Rural health human resource shortages may also influence high rates of injury-related mortality and morbidity by limiting access to health promotion and information resources designed to prevent injury and illness (Haas et al. 2012; Hameed et al. 2010). Recent initiatives in Ontario have attempted to improve access to healthcare in rural areas by establishing collaborative care networks based specifically on the needs of the rural communities they serve (Multi-Sector Rural Health Hub Advisory Committee 2015). This approach has also been proposed in Alberta (Rural Health Services Review Committee 2015), British Columbia (British Columbia Ministry of Health 2015), and Nova Scotia (Health Association Nova Scotia 2013) as a viable means to improve access to rural healthcare in each of their provincial contexts.

Rural male farmers (RMFs) represent an appropriate target population for health policy designed to reduce high injury-related mortality and morbidity rates in rural areas as they account for 93% of agriculture-related mortalities and 83% of agriculture injury-related hospitalizations (CAIR 2011). In Ontario, there is a relatively low likelihood that patients from rural regions will receive timely specialized trauma care, which increases their risks of comorbidities or mortality (Haas et al. 2012; Hameed et al. 2010). Limited trauma care access for rural Ontarians reflects policy decisions that prioritize a downsized and centralized healthcare system characterized by a smaller rural healthcare workforce (Kaasalainen et al. 2014). Without access to local healthcare professionals, RMFs may rely on other sources for health information and treatment that have been utilized by rural communities to offset limited healthcare access, such as neighbours, veterinarians and naturopaths (Leipert et al. 2008; Wathen and Harris 2007). Furthermore, RMFs may be unaware of reporting procedures or wish to avoid reporting health and safety issues for fear of workplace sanctions and economic penalty from government workplace safety agencies (Hall 2007; Turner and Gutmanis 2005).

Despite healthcare system centralization remaining on the policy agenda, the Ontario Ministry of Health and Long-Term Care (MOHLTC) has prioritized the improvement of rural healthcare access and delivery in efforts to reduce geography-based health inequities (MOHLTC 2010). The MOHLTC's (2010) guiding rural healthcare reform policy, *Rural and Northern Healthcare Framework/Plan*, establishes provincial, regional and municipal priorities to improve rural healthcare, such as how to address the limited range of healthcare services used by rural communities and the need to engage rural communities in their own healthcare reform. Following the policy stages heuristic (Sabatier and Smith 1993), this study examines how RMFs are included and how their potentially high healthcare needs are

recognized in Ontario health policy and planning documents. In doing so, this study seeks to address the following questions: (1) How and in what contexts are RMFs discussed in health policy and planning documents in Ontario? and (2) How do health policy and planning documents in Ontario include RMFs in their recommendations?

Methods

A retrospective analysis of Ontario rural health policy and planning documents was conducted to examine how and in what contexts RMFs are discussed, and whether their health needs are incorporated into policy recommendations. A retrospective analysis of policy was conducted since this approach enables researchers to critically review and evaluate the content of existing health policy documents (Buse et al. 2012). In doing so, researchers can evaluate how health policy documents include and discuss the needs of various groups within the population, such as RMFs. This study followed Buse et al.'s (2012) definition of health policy, which holds that health policies “embrace courses of action (and inaction) that affect the set of institutions, organizations, services and funding arrangements of the health and healthcare system. It includes policy made in the public sector (by government) as well as policies in the private sector” (Buse et al. 2012: 6). Thus, health policies may include documents published by federal or provincial governments and subsidiaries acting on their behalf such as regional health authorities or local public health units, as well as non-government (private) organizations that aim to influence the arrangement of the healthcare system to benefit specific populations. Health policies may be analysed to gain an understanding of their content, their outcomes, the process that led to their creation or the actors involved in or excluded from their creation (Buse et al. 2012; Cheung et al. 2010). This study analyzed the content of Ontario rural health policy and planning documents since rural healthcare improvement is currently on the health policy agenda in that province, as evidenced by the creation of the *Rural and Northern Healthcare Framework/Plan* (MOHLTC 2010).

Document selection

Documents are often a primary source of data when conducting a retrospective analysis of health policy (Buse et al. 2012) as they can provide valuable insight into the contexts and values that helped inform policy decisions (Cheung et al. 2010); however, policy and planning documents should only be included in a study if they contain information that addresses the study's purpose (Bowen 2009). Concerns about sample size (for example, the number of documents) should be secondary to document relevance as a limited sample size may suggest that the policy issue under investigation is rarely on the policy agenda (Bowen 2009). This study included publicly available Canadian rural health policy and planning documents collected from grey literature resources including: formal databases including the Canadian Public Policy Collection, the Canadian Health Research Collection, the Canadian Research Index and the Cochrane Library; provincial healthcare websites, including those of the MOHLTC, Ontario's Local Health Integration Networks (LHINs)

and Ontario’s Public Health Units; and rural working group websites published by the Rural Ontario Institute. Following consultations with an academic research librarian, the following Boolean search query was used: “subject: Ontario AND farm* AND rural AND male”. Using an asterisk (*) ensured all permutations of a term, such as farmers, farmed or farming, were included in the search results. For the purposes of this study, a “farmer” is understood to be a person who performs agricultural labour in any capacity, including full-time, part-time or contract labour commitments on any size and type of family-run or commercial agricultural operation.

Initial search results yielded 131 documents that included: rural community profiles, economic reports, legal proceedings, agricultural planning documents published by both the Ontario provincial government and agriculture commodities groups, health policy and planning documents published by both the MOHLTC and LHINs, rural funding initiatives and reports on the status of healthcare and health services delivery in rural Ontario. To ensure the sample included recent and relevant policy issues, documents were included if they were published since 2006. Titles and executive summaries were scanned to include documents that held a primary focus on rural healthcare in Ontario. Finally, the full text of each document was scanned to ensure there was at least one reference to farm* or agricultur* in the document. A total of 13 documents were retained for the study sample after all inclusion criteria were applied. Figure 1 provides a detailed outline of the inclusion process, and Table 1 provides a list of the 13 documents retained for analysis. Of note, a single rural policy document published since 2013 was relevant.

FIGURE 1. Health policy and planning document inclusion and exclusion process

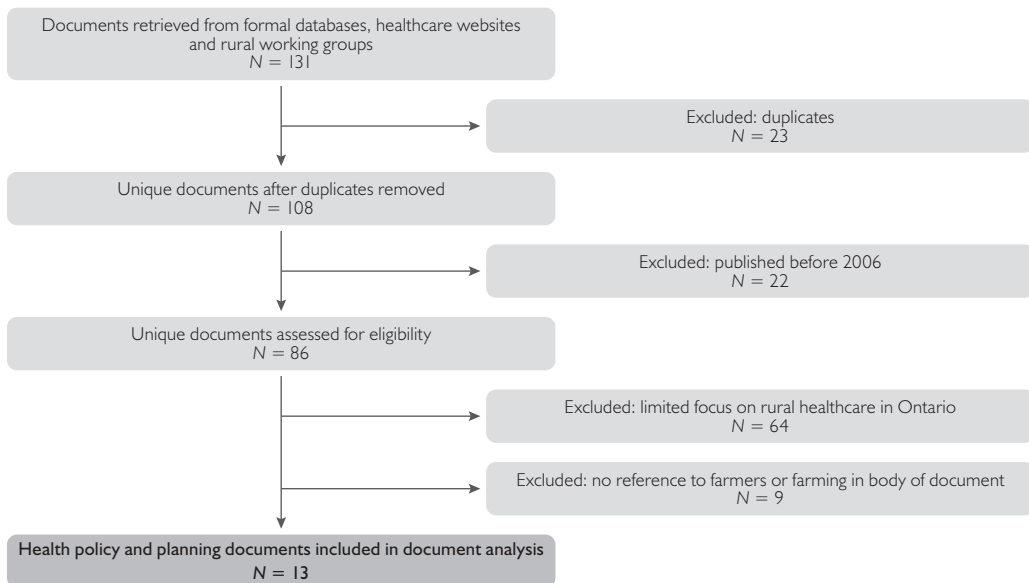


TABLE 1. Health policy and planning documents included in analysis

Document author (publisher)	Document title	Year	Document type
Caldwell, W.J., P. Kraehling, S. Kaptur and J. Huff (University of Guelph)	<i>Healthy Rural Communities Tool Kit: A Guide for Rural Municipalities</i>	2015	Public health planning report
Chase, C., R. Gallaway, F. Gelinas, T. McDonald, N. Mehra, B. Proctor and K. Tod (Ontario Health Coalition)	<i>Towards Access and Equality: Realigning Ontario's Approach to Small and Rural Hospitals to Serve Public Values</i>	2010	Healthcare service evaluation
Clark, W.F., J.J. Macnab and J.M. Sontrop (London Health Sciences Centre)	<i>The Walkerton Health Study 2002–2008 Final Report</i>	2008	Health research report
Kitty, H.L. (Haldimand-Norfolk Health Unit)	<i>Rural Health: A Qualitative Research Approach to Understanding Best Practices for Rural Health Service Delivery in a Public Health Setting</i>	2007	Public health report
Kreutzwiser, R., R.C. de Loë and K. Imgrund (Water Policy and Governance Group)	<i>Out of Sight, out of Mind: Private Water Well Stewardship in Ontario. Summary of the Findings of the Ontario Household Water Well Owner Survey 2008</i>	2010	Public health report
Mohindra, K. (Population Health Improvement Research Network)	<i>When Wildfires Burn: Towards the Development of an Appropriate Population Health and Public Safety Resource for Northeastern Ontario</i>	2013	Public health planning report
Moro, F, Z. Pasek, K. Pfaff and T. Sands (Erie-St. Clair Local Health Integration Network)	<i>Rural Emergent Healthcare: Selected Perspectives for the Erie-St. Clair Local Health Integration Network</i>	2009	Healthcare service evaluation
Rural and Northern Healthcare Panel (Ontario Ministry of Health and Long-Term Care)	<i>Rural and Northern Healthcare Framework/Plan: Stage 1 Report</i>	2010	Provincial health planning report
The Ontario Rural Council (The Rural Ontario Institute)	<i>Local Health Integration Networks (LHINs) and the Future of Rural Health: TORC Issues Paper from the Rural Health Forum Held September 25, 2006</i>	2007	Public consultation findings
The Ontario Rural Council (The Rural Ontario Institute)	<i>Summary of the Adult Working Group's Seaforth Consultations on Health and Learning with Adults Living in Rural and Remote Areas</i>	2008	Public consultation findings
The Ontario Rural Council (The Rural Ontario Institute)	<i>Rethinking Rural Healthcare: Innovations Making a Difference: Discussion and Recommended Actions Toward an Integrated Comprehensive Rural Health Strategy</i>	2009	Healthcare service evaluation
Waterloo Wellington Local Health Integration Network (Author)	<i>Waterloo Wellington Local Health Integration Network: Rural Healthcare Review</i>	2010	Healthcare service review
White, D. (Haldimand-Norfolk Health Unit)	<i>Addressing Rural Health Needs: Development of a Rural Health Framework and Application for Program Service Planning and Delivery</i>	2011	Public health planning report

Data Analysis

Conventional content analysis (Hsieh and Shannon 2005) was used to inductively code each health policy document as this process allows codes and dominant coding categories to emerge naturally from the data. The process of inductive coding enabled the researchers to immerse themselves (Hsieh and Shannon 2005) in this sample of health policy and planning documents to discover the context in which RMFs' health and healthcare needs are discussed. Data analysis and organization was conducted using N*Vivo 11 (QSR International 2016).

Eleven dominant categories of codes emerged from this sample of health policy and planning documents that help to contextualize how RMFs' health and healthcare needs are discussed. These categories include: rural healthcare service delivery, how to characterize "rural", health policy and planning recommendations, the government's role in rural healthcare, rural healthcare planning, rural health communications, rural health human resources, rural health promotion, health-related technology, farming and agriculture, and rural leadership in healthcare.

Recommendations are an important component of policy reports as they present suggested policy options to address a problem, convey government's intent to act on the problem or express the affected population's preferred methods to improve their current situation. Inductive coding (Hsieh and Shannon 2015) was also used to determine the extent to which RMFs' health and healthcare needs were included in health policy and planning recommendations. The top three categories of recommendations in this sample were: (1) improve access to rural healthcare services, (2) improve funding models that account for rural challenges, and (3) improve delivery of rural healthcare services. As part of conventional content analysis (Hsieh and Shannon 2005), the top three categories of recommendations were compared to the 11 dominant categories that contextualized how RMFs' health and their health needs were discussed to identify any relationships or overarching themes that might permeate the entire sample. Upon comparison, two overarching themes emerged to characterize the sample: (1) tokenism and (2) mending fences.

Results and Discussion

The presence of RMFs, their health and their healthcare needs in Ontario rural health policy and planning documents is limited. As such, the policy documents, coding categories and discussions of RMFs' health or healthcare needs can be described by two overarching themes: tokenism and mending fences. Tokenism refers to the general invisibility of RMFs' health and healthcare needs, except when stereotypes of a farm or farm-related injury can be used to describe rural areas. Mending fences captures both the desire of rural communities to be included in healthcare decisions, as well as the recognition by healthcare providers that improving relationships with farmers and agricultural organizations is a necessary step to improving rural health. This section will present evidence for and discuss how Ontario RMFs' health and healthcare needs are contextualized in health policy documents by the two dominant themes of tokenism and mending fences. Additionally, the limited number of documents published since 2013 will be discussed as a possible indication that RMFs and their health needs are absent from the Ontario health policy agenda.

Tokenism

Policy documents often used farming and agricultural stereotypes to symbolize rurality for a policy audience that may otherwise be unfamiliar with the complexities of the rural context. Specifically, farm-related injuries were used to highlight negative health outcomes associated with living and working in rural areas, "Another important cause of death for

rural residents is mortality from ‘external causes’ including farm accidents and traffic fatalities” (WW LHIN 2010: 40). An evaluation of hospital services in rural Ontario presents RMFs’ healthcare needs as being limited to the effects of having no workplace insurance to cover rehabilitation associated with farm injuries, “Another witness had surgery on his knee in 2008. He is self employed [sic] on farm without health insurance. His knee replacement was done in November 2009 in Toronto. He is still receiving physiotherapy” (Chase et al. 2010: 88). Additionally, an evaluation of the accessibility and delivery of rural emergency services in Ontario leveraged RMF’s farm injuries to rationalize the utility of a proposed model for emergency care (Scenario 2 in the following quote):

“A 63-year-old farmer collapses out in the field on a 38 Celsius degree summer day. His health condition may or may not require emergent care. In the event that he requires emergent care, there are three possible scenarios: Scenario 1: The farmer’s wife calls 911; Scenario 2: The farmer’s wife calls the local IRPC [Integrated Rural Priority Care] facility and asks for advice; Scenario 3: The farmer’s wife has no cellular coverage so seeks help from a neighbour and the farmer is driven by truck to the nearest hospital” (Moro et al. 2009: 84).

Relying on injury-related farming stereotypes to convey the health challenges or adverse health outcomes associated with rural communities is commonplace in government documents and presents a limited understanding of the range of the health issues faced by RMFs.

Due to the limited inclusion of RMFs in these policy documents, discussions of farmers’ health in general were also examined by the authors. Authors of government policy documents discussed farmers’ health issues in general by relying on token farm injuries and safety risks associated with the agricultural industry (Kitty 2007; Moro et al. 2009; WW LHIN 2010; White 2011). In contrast, policy documents informed by and drafted following engagement with rural communities present a full and nuanced understanding of health issues faced by farmers in general. For example, in addition to highlighting the importance of rural emergency care, bottom-up policy documents highlight that RMFs’ mental health is affected by stress, lack of sleep and prolonged bouts of isolation while working, and that limited opportunities exist for recreational physical activity (The Ontario Rural Council 2007, 2008, 2009). Despite including more health issues in the policy documents when the scope is broadened from RMFs’ health needs to the health needs of farmers in general, there was still limited discussion in health policy documents about possible policy or program solutions to address farmers’ health issues. Limited inclusion of general farmers’ health needs in the content of health policy documents suggests that, as with RMFs’ health needs, policy documents approach general farmers’ health needs as tokens that may help explicate the rural health context. For example, farmers in general only appear in lists of rural subpopulations or as a part of an example to support proposed policies and programs. The inclusion of general farmers in lists of rural subpopulations such as women, infants, children, youth, elderly,

Indigenous or Mennonites may also imply that “farmer” is synonymous with men in these documents, as men’s health needs are the only specific rural subpopulation not represented. The limited inclusion of RMFs’ health and health needs is also evident in the recommendations put forth by these policy documents.

RMFs’ health issues were rarely included in the policy and planning recommendations of the health policy documents reviewed in this study. When included, token farm injuries were used to advocate for improved healthcare service delivery to only a small number of rural communities. For example, RMFs’ injuries were leveraged to rationalize the need for improved ambulance response times in rural areas and to lobby the Ontario MOHLTC to implement and monitor response time standards:

“The panel heard that ambulance response times can be 30–45 minutes for traumas from car and farm accidents in rural areas. Thus, at optimum, baseline services should be 20 minutes from residents’ homes in average road conditions, and, at most 30 minutes from residents’ homes in average road conditions. This would allow ambulances access to a hospital emergency room within the critical ‘golden hour’ during which the intervention provided in a local emergency department can save life and improve health outcomes.” (Chase et al. 2010: 15).

In conclusion, limited inclusion of RMFs’ health needs, and general farmers’ health needs, in the recommendations put forth by rural health policy documents reinforces the proposition that farmers’ health needs are not on, and have limited ability to influence, the health policy agenda as they are either invisible or stereotyped when included.

Mending fences

To reinforce RMFs’ invisibility on the rural health policy agenda, the authors of these health policy documents did not specifically identify RMFs as a target population for community engagement. However, Ontario agricultural groups, whose membership is approximately 72% male (Statistics Canada 2011a), were identified as possible stakeholders for LHINs and rural hospital organizations to engage with to mend fractured relationships with rural communities caused by healthcare system reform and regionalization. Agricultural groups were considered “assets” to rural healthcare development due to their previous contributions to physical and social capital projects such as community health centres, local markets, hockey arenas and public water services (Caldwell et al. 2015; Kreutzwiser et al. 2010; WW LHIN 2010; White 2011).

Prioritizing improved rural community involvement in planning healthcare service delivery is a core component in the development and implementation of rural health hubs (Multi-Sector Rural Health Hub Advisory Committee 2015) and affirms recommendations put forth by Ontario’s guiding rural health policy, the *Rural and Northern Healthcare Framework/Plan* (MOHLTC 2010). Specifically, the MOHLTC (2010) recommends that

the LHINs actively engage with rural communities when making healthcare decisions about service planning, funding and delivery. In doing so, the LHINs may be able to: improve their understanding of local healthcare access needs, solve local healthcare challenges and identify methods to integrate funding across health and social services. Despite these recommendations by MOHLTC, “there have been no public consultations” (Chase et al. 2010: 84) between the LHINs and rural communities, which has contributed to rural communities’ loss of faith in the LHINs’ effectiveness and accountability to rural communities (Chase et al. 2010; Moro et al. 2009; The Ontario Rural Council 2007). Rural healthcare service removal and instatement of healthcare management personnel unfamiliar with the rural context has led rural communities to develop a “deep public anger and mistrust” toward the LHINs and rural hospitals (Chase et al. 2010: 83). Additionally, a perceived “lack of proper policy and planning ... [and] wasteful decision making” (Chase et al. 2010: 90) has further alienated the LHINs and rural hospitals from the rural communities they serve (Moro et al. 2009; The Ontario Rural Council 2009).

To restore faith in healthcare governance by the LHINs and rural hospital organizations, policy documents drafted by community-based organizations emphasized the need for LHINs and rural hospitals to provide rural communities with power and control of their healthcare services to improve community responsiveness to changes in healthcare service delivery (Chase et al. 2010). Community-based organizations suggested that LHINs and rural hospitals establish “health partnerships [that involve] faith groups, businesses, agriculture, and not-for profits” (The Ontario Rural Council 2009: 14) to transfer decision-making power back to rural communities. Authors of policy documents drafted by, or on behalf of, LHINs or public health units did not suggest methods nor identify community groups to involve in efforts to mend relationships with rural communities.

Authors of policy documents drafted by healthcare organizations and community-based organizations simultaneously recognized the challenges of engaging with RMFs since they often prefer to work in isolation and were found to avoid print materials when getting their information about local events (The Ontario Rural Council 2008; WW LHIN 2010). For engagement efforts to be effective, RMFs and healthcare organizations must establish a clear purpose and set of goals, have shared control over discussions and agenda setting, and aim to be sustainable engagements so trust can develop (Kenny et al. 2015). Therefore, despite the challenges with being reached, their community influence makes RMFs a key stakeholder group for LHINs and other rural healthcare organizations to engage with as they attempt to mend fences with rural communities.

Founded on the principle of affected interests (McKenzie and Wharf 2010), involving agricultural organizations in healthcare decision-making abilities would afford RMFs an opportunity to influence three streams that contribute to understanding the contexts that shape the formulation of rural health policy: problem, policy and politics streams (Kingdon 2010). The problem stream refers to health policy makers’ awareness of, and attentiveness to, a specific policy issue (Kingdon 2010), such as LHINs’ awareness of attentiveness to

RMFs' high mortality and morbidity rates due to agriculture-related injury (WW LHIN 2010). By consulting with agricultural organizations and RMFs about RMFs' agriculture-related injury, the LHINs may gain a broader understanding of the conditions that contribute to RMFs' farm injuries, such as fatigue, stress and other mental health issues, and thus set the rural health policy agenda to address RMFs' health needs on a broader scale than the current injury-centric approach. For example, understanding how fatigue, stress and other mental health issues affect RMFs' work behaviours may lead LHINs to include community outreach programs on the health policy agenda to provide RMFs with more community social support.

Additionally, providing agricultural groups and RMFs with power over their healthcare would enable them to influence the policy stream, which is the process of analysis and debate over how to address a specific policy issue (Kingdon 2010). Involving RMFs in the policy stream may allow them an opportunity to ensure that their, and other, rural healthcare needs are appropriately recognized and accounted for in rural health policy solutions. Due to their aforementioned involvement in rural community development projects, active and positive involvement of RMFs and agricultural groups could also influence the politics stream, which refers to the public mood on a specific policy issue (Kingdon 2010), and help improve public perception of rural healthcare organizations. Despite these possible positive policy steps, engaging RMFs in healthcare discussions may be a difficult task.

The limited sample of Ontario health policy and planning documents included for analysis may indicate that RMFs and their health needs have held a minute portion of the provincial health policy agenda (Buse et al. 2012). This portion has become smaller since 2013 as a single document (Caldwell et al. 2015) has been published that accounted for RMFs and their health needs since that time. Reduced inclusion of RMFs from rural health policy and planning documents may indicate that their health needs are not currently on the provincial health policy agenda (Buse et al. 2012), which may exacerbate existing health inequities such as disproportionately high all-cause, circulatory disease, respiratory disease, diabetes and injury-related mortality rates (CIHI 2006; Ostry 2012). Publication of a single document accounting for RMFs and their health needs may also indicate that the provincial rural health policy agenda has shifted to prioritize broader population health issues. For example, initiatives designed to improve access to healthcare for entire rural communities has remained on the provincial agenda as evidenced by the launch of rural health hubs (Multi-Sector Rural Health Hub Advisory Committee 2015; Ontario Hospital Association 2017). Such initiatives could benefit RMFs as some of their health needs may be addressed by policies that target rural healthcare improvement in general. Furthermore, since rural health hubs' guiding principles mandate community inclusion during healthcare planning (Multi-Sector Rural Health Hub Advisory Committee 2015), RMFs may have an opportunity to influence the policy stream (Kingdon 2010) by contributing to future debate regarding how to plan rural healthcare services to meet their and their communities' needs.

Conclusion

This analysis of health policy documents has revealed how RMFs' health needs were included in health policy documents and how they were included in recommendations for future policy. Policy documents predominantly relied on RMFs as tokens to symbolize rural healthcare access issues for members of the policy audience who may be unfamiliar with the diverse range of rural health needs. In doing so, authors of policy documents leveraged RMFs' agricultural injury-related needs to rationalize the need for and propose new models of rural healthcare service delivery. While this approach may improve healthcare service delivery to rural communities in general, it renders invisible other RMF health needs, such as mental health needs associated with long hours spent in isolation during farm season or chronic health needs associated with working in the agricultural industry. The authors of these policy documents also recognized the potential benefits of including RMFs and agricultural organizations in community engagement processes. Improving community engagement aligns with provincial goals established to improve rural healthcare delivery (MOHLTC 2010), and engagement with RMFs presents an ideal opportunity for impactful community participation due to their position as key stakeholders in rural communities. Therefore, sustained and meaningful consultation of RMFs by healthcare organizations may enable RMFs to ensure their healthcare needs are included on the policy agenda in the future. Sustained engagement with RMFs may also help healthcare organizations create programs and identify implementation strategies that align with the needs and preferences of RMFs, thus increasing their likelihood of accessing healthcare services.

This study is not without its limitations. Restricting the document search to include health policy and planning documents focused on rural healthcare in Ontario limited the scope of analysis to a single province within Canada and may have contributed to the small sample size. However, since each province and territory within Canada manages their own healthcare independently, restricting document analysis to a single province ensured that the findings were specific to a single healthcare context in Canada. An additional limitation is the inclusion of a single health policy document published by the Ontario MOHLTC. As previously mentioned, this limited inclusion of provincial health policy documents and small sample size may indicate that RMFs are absent from the health policy agenda in Ontario. Further research is needed to understand how RMFs and their health and healthcare needs are included in health policy and planning documents in other regions within Canada. Additionally, future research should investigate how to effectively reach out to RMFs to include them in discussions regarding the formulation of rural health policy and planning documents, and how RMFs prefer to engage with public policy makers. Doing so may enable healthcare service providers to more effectively design community engagement strategies that are better tailored to the needs and preferences of RMFs, which may improve the likelihood of sustained interactions and better health outcomes.

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Centralized Waiting Lists for Unattached Patients in Primary Care: Learning from an Intervention Implemented in Seven Canadian Provinces

Listes d'attente centralisées pour les patients orphelins dans
les soins de première ligne : leçons à tirer des interventions
mises en œuvre dans sept provinces canadiennes



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Abstract

Introduction: Centralized waiting lists (CWLs) are one solution to reduce the problematic number of patients without a regular primary care provider. This article describes different models of CWLs for unattached patients implemented in seven Canadian provinces and identifies common issues in the implementation of these CWLs.

Methods: Logic models of each province's intervention were built after a grey literature review, 42 semi-structured interviews and a validation process with key stakeholders were performed.

Results: Our analysis across provinces showed variability and common features in the design of CWLs such as same main objective to attach patients to a primary care provider; implementation as a province-wide program with the exception of British Columbia; management at a regional level in most provinces; voluntary participation for providers except in two provinces where it was mandatory for providers to attach CWL patients; fairly similar registration process across the provinces; some forms of prioritization of patients either using simple criteria or assessing for vulnerability was performed in most provinces except New Brunswick.

Conclusion: Despite their differences in design, CWLs implemented in seven Canadian provinces face common issues and challenges regarding provider capacity to address the demand for attachment, barriers to the attachment of more vulnerable and complex patients as well as non-standardized approaches to evaluating their effectiveness. Sharing experiences across provinces as CWLs were being implemented would have fostered learning and could have helped avoid facing similar challenges.

Résumé

Introduction : Les listes d'attente centralisées (LAC) constituent une solution afin de réduire les problématiques reliées au taux de patients sans affiliation à un professionnel de première ligne. Cet article décrit divers modèles de LAC pour les patients non-affiliés qui ont été implantés dans sept provinces canadiennes et recense les enjeux communs liés à leur mise en œuvre.

Méthode : Des modèles logiques pour chacune des interventions provinciales ont été élaborés suite à une revue de la littérature grise, à 42 entrevues semi-dirigées et à un processus de validation auprès d'acteurs concernés.

Résultats : Notre analyse montre une variabilité et des caractéristiques communes dans la conception des LAC, notamment un même objectif principal visant la prise en charge des patients par un professionnel de première ligne; la mise en œuvre d'un programme pour l'ensemble de la province, à l'exception de la Colombie-Britannique; la gestion au niveau régional dans la plupart des provinces; la participation volontaire des professionnels, sauf dans deux provinces où ils ont l'obligation de prendre en charge les patients inscrits à la LAC; des processus d'inscription plutôt similaires d'une province à l'autre; une certaine forme de priorisation des patients, soit à l'aide de critères simples ou en évaluant leur vulnérabilité, et ce, dans la plupart des provinces sauf au Nouveau-Brunswick.

Conclusion : Malgré les différences dans la conception, les LAC mis en œuvre dans sept provinces canadiennes font face à des enjeux et défis communs quant à la capacité de traiter les demandes de prise en charge, quant aux obstacles pour la prise en charge des patients plus vulnérables et dont l'état est complexe, et quant à la non standardisation des processus pour l'évaluation de l'efficacité. Le partage de l'expérience entre les provinces au moment de la mise en œuvre des LAC aurait favorisé l'apprentissage et aurait permis d'éviter de rencontrer des défis similaires.

Introduction

Routine and episodic access to the same individual or group of primary care providers is widely considered to be essential for realizing the benefits of primary care. Specifically, primary care nurse practitioners (NPs) or family physicians (FPs) can provide accessible, continuous and comprehensive care that is coordinated with other levels (e.g., secondary, tertiary) or types (e.g., social, community-based) of care. Patients who are “attached” to a regular primary care provider receive more preventive care (Grunfeld et al. 2006; Starfield et al. 2005), use emergency services less frequently (Burge et al. 2003) and have better care coordination (Bayliss et al. 2008; Fung et al. 2015), chronic disease management (Østbye et al. 2005) and health outcomes (Griffin et al. 2004; Oates et al. 2000) than those who are not.

In Canada, however, approximately 15% of the population reported not having a regular primary care provider, ranging from 8% in Ontario (ON) to 25% in Quebec (QC) (Commissaire à la santé et au bien être 2014). Canada's rate of unattached patients compared

poorly to other Organisation for Economic Co-operation and Development (OECD) countries, such as France, Germany and Norway, where less than 5% of the population reported lacking a regular primary care provider, ranking Canada in the more poorly performing end of the list with countries such as the UK (19%) and the US (23%) (Commissaire à la santé et au bien être 2014; Schoen et al. 2007). To address this important concern, seven provinces, British Columbia (BC), Manitoba (MB), ON, QC, New Brunswick (NB), Prince Edward Island (PEI) and Nova Scotia (NS), have implemented centralized waiting lists (CWLs) for unattached patients in primary care (Table 1). These CWLs coordinate, in a single point of access, patients' demand for attachment to a primary care provider and match unattached patients to available primary care providers, in a given jurisdiction.

TABLE 1. Centralized waiting lists for unattached patients implemented across Canada

Province	Program name	Implementation year
Prince Edward Island	Patient Registry Program	1998
Quebec	Guichets d'accès à un médecin de famille	2008
Ontario	Health Care Connect	2009
Manitoba	Family Doctor Finder	2013
New Brunswick	Patient Connect NB	2013
British Columbia	A GP for Me	2015
Nova Scotia	Need a Family Practice	2016

GP = general practitioner; NB = New Brunswick.

CWLs are implemented to improve access to care in contexts where there is asymmetry of supply and demand. The basic idea of a CWL is to have a single intake point to centralize patient demand for a given service and link patients to a provider from within a pool of providers. CWLs have been implemented in many fields of healthcare, notably in the management of wait for elective surgeries (Dew et al. 2005; Noseworthy et al. 2003). To our knowledge, there is no evidence of the use of CWLs in the context of primary care outside the Canadian context (Breton et al. 2015). Within Canada, CWLs for unattached patients are quite different in each province and there is limited knowledge exchange between provinces regarding these initiatives.

The objective of this paper is to describe the different models of CWLs for unattached patients implemented in seven Canadian provinces and to identify common issues in the implementation of these CWLs.

Methods

Design: This paper presents the results of the first step of a logic analysis. Logic analysis is a theory-based evaluation that is conducted in three steps: (1) build logic models of the interventions; (2) develop a conceptual framework based on scientific knowledge; and (3) compare the logic models to the conceptual framework (Brousselle and Champagne 2011).

In this first step, logic modelling is used to represent how the interventions' inputs and processes are intended to lead to the desired outcomes, drawing on information from documents and key informants' interviews (Brousselle and Champagne 2011). Once the logic models are built, stakeholders are consulted to identify issues (e.g., implementation difficulties) to be explored in detail in the subsequent steps of the logic analysis.

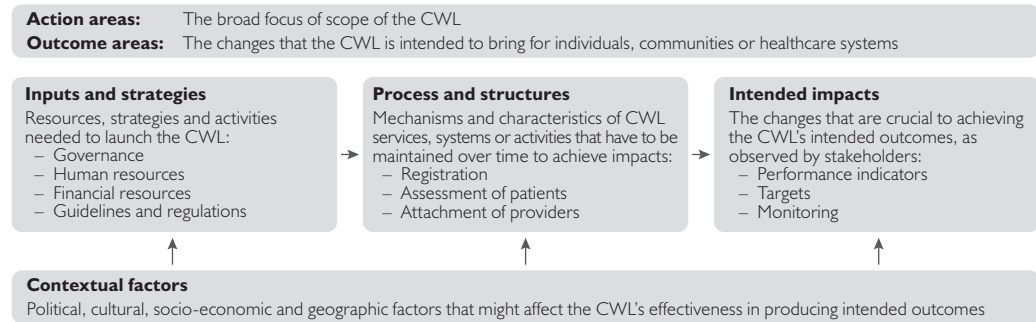
Data collection and analysis: Our data collection and analysis protocol are detailed elsewhere (Breton et al. 2017). Briefly, we first searched for documents describing the main components of each province's CWL by applying systematic search strategies to the grey literature (Godin et al. 2015). We conducted searches in grey literature databases (Canadian Research Index, TRIP database, Des Libris – The Canadian Electronic Library), Google and on targeted websites (e.g., national and provincial government websites, medical association websites, provincial newspapers, health institutions' websites). In addition, we used snowballing and asked key stakeholders in each province to identify other relevant documents. The 73 identified documents were analyzed to prepare a description of the components of the CWLs in each province. To gain a more accurate understanding of our CWL descriptions, we conducted 42 semi-structured interviews with 3–8 key stakeholders per province (BC = 3, MB = 8, ON = 8, QC = 7, NB = 4, PEI = 4 and NS = 8) in person or by telephone. The interview guide was based on the logic model components. Participants were sampled purposively based on their knowledge of CWLs for unattached patients. Participants included CWL managers and staff as well as, in ON and QC, primary care providers who attached CWL patients. Variations in the number of stakeholders interviewed per province reflect differences in the number of stakeholders involved in implementing CWLs. In BC, because CWLs were implemented only by certain Divisions of Family Practice (i.e., community-based groups of FPs in the same geographic area) rather than provincially, interviews were conducted with stakeholders in two divisions. These divisions were chosen in partnership with provincial-level BC stakeholders. Although both CWLs were similar, for the development of the logic models, only one division was studied as the information was more complete. Issues stated from stakeholders from both divisions were integrated.

Interviews were conducted between May and December 2016 in all provinces but NS, which was not originally included in our study because the CWL was still in the early stages of implementation. In response to interest from provincial stakeholders, we added NS to our study, conducting interviews between October and December 2017. Prior to the interviews, participants were provided with the preliminary description of the CWL in their province, based on the grey literature review. Interviews were conducted by an investigator from the corresponding province because of their knowledge of the provincial context. All interviews were audio recorded and transcribed.

The data were analyzed with NVivo version 11, using a codebook based on Mitchell and Lewis's logic model (Mitchell and Lewis 2003) and adapted to reflect the general components of CWLs (Figure 1). This particular model offers a simple diagram of the main components of a unique intervention and is widely used in research on primary care interventions in Canada (Haggerty et al. 2014). Two independent team members coded the data to ensure

repeatability and reliability of the process. Data from each province were summarized and a logic model for each province was built. To increase trustworthiness, the logic models were member-checked (Laperrière 1997; Mays and Pope 1995) with key stakeholders and investigators from each province during a video conference. In addition, interviews were analyzed thematically to identify common issues in the implementation of CWLs raised by stakeholders.

FIGURE 1. Logic model



CWL = centralized waiting list.

The design of CWLs was compared and contrasted by the research team to examine similarities and differences. Moreover, issues with CWLs raised during interviews with stakeholders were summarized. At a pan-Canadian symposium in February 2017, 20 stakeholders (CWL managers, providers, decision-makers) and investigators from six provinces discussed and added to the comparative analysis of the CWLs. NS stakeholders did not participate in the symposium because they joined the study later.

Results

A comparison of the CWLs' key characteristics is presented based on each dimension of the logic model, followed by a summary of the common issues identified by the stakeholders. The seven CWL logic models can be found in Appendix 1 (available at: <https://www.longwoods.com/content/25493>).

Action areas and outcome areas

The seven CWLs were implemented in the action area of improving access to primary healthcare. CWLs were implemented in every province with the primary aim of making sure that every patient in the province is attached to a primary care provider. NS stakeholders emphasized that they had implemented a “registry” rather than a formal waiting list. From their point of view, the registry was different than a waiting list as it did not guarantee that patients would be attached to a primary care provider quickly. As stated by stakeholders, the absence of formal guarantee of attachment in NS was reportedly misunderstood by the public, which created expectations from the population to be attached to a provider through the list.

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Three provinces (BC, QC and ON) had an objective of prioritizing vulnerable patients, generally defined in these provinces as those with higher health needs, in the attachment to a primary care provider. In QC, vulnerable patients were defined as those having at least one of 19 health conditions (e.g., active cancer, mental health problem, addiction, diabetes) based on self-reported information and health insurance data, or being over 70 years old and patients with more urgent health needs (e.g., palliative care, active cancer) were prioritized. In ON, patients were considered to be vulnerable if they had one or more co-morbidities or were considered frail, based on self-reported health status, chronic conditions, disability, mental status and body mass index. In BC, there were no formal definitions of vulnerable patients, but certain patients who were considered by the CWL coordinator to have complex conditions or for whom attachment could be most beneficial were prioritized and priorities were based on the community's needs. In addition, QC, PEI and NS created and used CWLs as a tool to monitor the number of unattached patients. NS used the information from the CWL to document problems regarding the geographic distribution of primary care providers and planned the allocation of additional resources based on this information.

Inputs and strategies

The main characteristics of the inputs and strategies are presented in Table 2. In all provinces except BC, the CWLs were implemented as a province-wide program, supported by staff and provincial governance structures. In BC, as part of a temporary provincial initiative called *A GP for Me* (General Practice Services Committee 2015) that aimed to help attach patients to providers and improve access to care for vulnerable populations, only certain Divisions of Family Practice chose to implement CWLs.

TABLE 2. Characteristics of the inputs and strategies in the seven provinces

Inputs and strategies	BC	MB	ON	QC	NB	PEI	NS
Governance							
Province-wide implementation		✓	✓	✓	✓	✓	✓
Management at regional level	✓	✓	✓	✓			✓
CWL implemented as a permanent measure		✓	✓	✓		✓	✓
Human resources							
CWL care connectors at regional level		✓	✓	✓			✓
Patients can be attached to nurse practitioners	✓		✓		✓		✓
Financial resources, guidelines and regulations							
Financial incentives to attach CWL patients				✓	✓	✓	
Mandatory attachment of CWL patients for certain providers					✓	✓	

BC = British Columbia; CWL = centralized waiting list; MB = Manitoba; NB = New Brunswick; NS = Nova Scotia; ON = Ontario; PEI = Prince Edward Island; QC = Quebec.

In BC and NB, CWLs were implemented as temporary programs, as opposed to other provinces where CWLs had been implemented as permanent measures. In NB, the CWL was planned to be replaced by another initiative by 2020. In BC, funding from the aforementioned *A GP for Me* program had come to an end at the time of data collection and strategies were being discussed to secure alternate funding to sustain regional CWLs in the future. In NS, the Department of Health and Wellness had reallocated human and financial resources, from within their existing resources, for the CWL's operations, rather than having a dedicated provincial budget for the CWL. Stakeholders in this province noted that the absence of dedicated managers or resources for managing and operating the CWL posed a risk for the success of its implementation.

Two provinces had a formal attachment, meaning that a patient's attachment to a primary care provider was formally recorded in the provincial health insurance database. In QC, patients and FPs had to sign an agreement officialising attachment. In ON, formalization of attachment varied according to FPs' compensation models. For instance, under capitation (e.g., in Family Health Teams – a team-based model of primary healthcare), providers were required to formally attach patients.

In all provinces, CWL patients were mainly attached to FPs. In QC and MB, patients were not eligible to be attached to an NP, and in PEI, it was reported that only one NP had her own patient panel and, consequently, used the CWL. In NS, NPs in team-based practices were considered as resources to increase capacity, allocated to the group after attaching a target number of patients and, hence, could not attach patients themselves, as opposed to NPs in solo practices who could have their own panel.

In four provinces (MB, ON, QC and NS), CWLs were regionally managed and operated, although they were implemented province-wide. General guidelines for CWL operations, financial incentives (if any), regulations and monitoring were generally defined provincially in these provinces, while human resources, such as care connectors, were employed at the regional level to operate the CWLs. Care connectors were described as professional staff, usually nurses, who were responsible for the CWLs' activities, namely from registration to attachment. Care connectors were also generally involved in developing relationships with providers and facilitating their participation in CWLs at a regional level. Other provinces (NB, BC and PEI) had smaller-scale programs involving fewer human resources and were governed, managed and operated at a provincial level. In PEI, one full-time clerk and one part-time manager worked in the CWL. In NB, the program was embedded with the provincial health information phone line. In BC, at the regional level, a medical office assistant coordinated the CWL.

In all provinces, except for certain FPs in NB and PEI, primary care providers participated in CWLs on a voluntary basis; that is, it was not mandatory for providers to attach patients from the CWLs, and providers could, for instance, choose to attach patients they had seen at walk-in clinics rather than through the CWLs. In NB, a provincial policy mandated new FPs to attach 600 patients from the CWL in their first year of practice. In PEI,

participation was mandatory for contract and salaried FPs, meaning that they had an obligation to attach patients from the CWL.

Financial incentives had been used to increase FPs' participation in CWLs in ON, QC, NB and PEI. For example, in QC, FPs received a one-time financial incentive for every patient attached through the CWL modulated by the degree of medical vulnerability, from \$23 for a healthy patient to \$300 for a patient with mental health or substance abuse problems. For FPs who had been practising for over four years, the financial incentives were limited to the first 150 newly attached patients (i.e., added to their existing patient panel) from the CWL, per year. In contrast, an unlimited number of patients could be attached from the CWL for an FP with less than four years of practice. In PEI, FPs receive a bonus of \$150 for each new patient attached after reaching a target panel of 1,200 patients, while NPs did not receive this incentive. Stakeholders expressed concern regarding the potential for providers to use the system for individual benefit (i.e., gaming the system), namely in terms of financial gain. Such behaviour was reported to have an impact on costs and led to cherry picking/creaming (e.g., selecting less complex patients for attachment), which in turn may have affected the equity of attachment to primary care providers (Breton et al. 2015; Rudoler et al. 2015a; Rudoler et al. 2015b). ON reportedly ceased the allocation of financial incentives for the attachment of patients through the CWL and observed a decrease in providers' use of the CWL to attach patients following this decision. NB also saw a reduction in FPs' use of the CWL when financial incentives were changed.

Process and structures

We present CWLs' processes and structures based on three sequential activities from the logic models: registration on the CWL, assessment of patients and attachment to a primary care provider.

REGISTRATION ON THE CWL

Characteristics of the CWLs' registration process varied across provinces (Table 3). In most provinces, being unattached was an eligibility criterion for patients to register on the CWL. In the two provinces (ON and QC) where attachment was formally recorded, patients with a provider wishing to register on the CWL (e.g., because they wanted to change providers or because they were moving to another region) had to withdraw from their current attachment, a complex process that stakeholders described as a barrier to registration. QC stakeholders also mentioned that some patients were unaware that they were already attached to a provider, which could lead to additional difficulties for patients when trying to register on the CWL. In NS, the only attached patients who were eligible for registration on the CWL were those who were moving and who wanted a provider in their new location. In MB and NB, all patients were eligible to register; however, unattached patients were prioritized over patients who wanted to change providers.

Patients could register on the CWL by telephone and online in every province except in BC where registration was only by telephone. In addition to demographic information,

patients could state their preferences regarding a provider (e.g., preference for an NP or FP, sex and region of primary care provider, preferred language); in BC, MB, NB and PEI, these were taken into account in the attachment process. Patients' medical information was collected through a self-reported questionnaire in QC, ON, BC, PEI and NB. In NS, this information was not collected and in MB, it was documented only if mentioned by the patient.

TABLE 3. Characteristics of the registration process in the seven provinces

Processes and structures	BC	MB	ON	QC	NB	PEI	NS
Eligibility criteria for registering on CWL							
Registration limited to unattached patients	✓		✓	✓		✓	✓
Ways to register on CWL							
Patients can register by telephone	✓	✓	✓	✓	✓	✓	✓
Patients can register online		✓	✓	✓	✓	✓	✓
Information collected upon registration to CWL							
Demographic information is collected	✓	✓	✓	✓	✓	✓	✓
Medical information is collected		✓	✓	✓	✓	✓	
Patient can state their preferences for providers	✓	✓			✓	✓	
Patients' registration information update while waiting for attachment							
Information updated with an automatic process			✓	✓	✓		
Information is manually verified with patients				✓		✓	✓

BC = British Columbia; CWL = centralized waiting list; MB = Manitoba; NB = New Brunswick; NS = Nova Scotia; ON = Ontario; PEI = Prince Edward Island; QC = Quebec.

An important challenge arising in some provinces (ON, QC and NB) was the large influx of patients registering on the CWL when FPs retired. Many stakeholders reported that the CWLs were being used to manage the turnover of providers (e.g., new providers, retirement), which had led to difficulties in managing the influx of patients and increased healthcare system costs. For example, stakeholders explained that, when retiring, some providers detached all their patients and had them register on the CWL, instead of directly transferring their panel to new providers as would have been the case before CWLs were implemented. To address these issues, ON and QC had implemented measures to avoid massive registration. In QC, for example, FPs had to advise their patients of their upcoming retirement two years in advance and patients from a retiring FP then became eligible to register on the CWL without having to go through the detachment process. In NB, at the time of data collection, a new program for retirement was planned to partially replace the CWL.

Five provinces (ON, QC, NB, PEI and NS) had implemented processes to verify and update patients' information. In NB and NS, there were automated phone calls to patients waiting on the list on a quarterly basis with options to update information if needed. In

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PEI, temporary staff was hired to call patients on the list, validate their unattached status and update their information. In QC, because the list was linked to the provincial health insurance database, patients' information was automatically and regularly updated.

ASSESSMENT OF PATIENTS

The assessment of patients registered on the CWLs differed across the provinces (Table 4). All provinces but NB gave certain patients priority over others; however, some provinces prioritized certain groups of patients based on a few simple criteria, such as being unattached (MB and NS), being referred by a hospital (MB and PEI), having urgent needs (PEI), being a newborn/new mother or having cancer (MB). Within these CWLs, patients were attached to a provider in the order of their date of registration with the exception of patients meeting the simple prioritization criteria, who were moved forward on the list.

TABLE 4. Characteristics of the assessment process in the seven provinces

Assessment	BC	MB	ON	QC	NB	PEI	NS
Prioritization of patients for attachment							
No prioritization – attachment based on date of registration					✓		
Simple prioritization – certain groups of patients prioritized for attachment		✓				✓	✓
Prioritization of complex/vulnerable patients – patients assessed as complex/vulnerable are prioritized for attachment	✓		✓	✓			
Alternative or transitional services during wait for attachment							
Patient can receive transitional care (during wait)	✓				✓		

BC = British Columbia; MB = Manitoba; NB = New Brunswick; NS = Nova Scotia; ON = Ontario; PEI = Prince Edward Island; QC = Quebec.

In BC, ON and QC, patients were prioritized based on the assessment of their complexity or vulnerability. The assessment of vulnerability and reasons for completing this assessment differed across provinces, which also led to differences in what was defined as vulnerability between provinces. In ON, there was an automated prioritization process with an algorithm based on patients' answers to a self-reported health questionnaire. Within this system, based on a score from 0 to 10, patients were labelled not vulnerable or "complex vulnerable." In BC and QC, the management process involved assigning patients to a category of priority. In QC, in addition to a self-reported questionnaire, the CWL was directly linked with the provincial health insurance system, and so, previous diagnoses automatically appeared in patients' files. If requested by patients upon registration, a health assessment could be conducted over the phone by a nurse. In QC, there are five formally defined categories of priority from the most urgent health conditions to the least urgent with recommended target wait times. For example, the highest category of priority (A) is for patients with urgent health conditions (target time of 7 days) such as active cancer, palliative care, psychotic state, suicidal ideas and pregnancy. In BC, based on collected information, the coordinator responsible for the CWL assigned a category

of priority. The criteria for assigning patients to each category were not formally defined; however, complex and vulnerable patients were reported to be prioritized by the coordinator. In MB, care connectors in some regions undertook their own assessment of patients' vulnerability, not for prioritization, but rather to better match patients with a suitable provider.

Additionally, to providing information to CWL patients on existing services such as health information phone lines (e.g., 8-1-1) and walk-in clinics, two provinces (BC and NB) offered transitional care to vulnerable or complex patients while they waited on the CWL. In BC, vulnerable patients were seen in access clinics with a multidisciplinary team to stabilize their chronic medical conditions, before being attached to a primary care provider. In NB, there were special clinics named "Patient Registry Clinics" in two urban centres where, on a temporary basis, care was provided to vulnerable unattached patients until they were attached to a provider.

ATTACHMENT TO A PROVIDER

The attachment process varied from one province to another. Three provinces (BC, ON and PEI) had processes in place to allow for family members to be attached to the same provider. Some provinces formally (ON) or informally (MB) asked providers about their preferences in types of patients. Stakeholders in several provinces mentioned the difficulty of finding providers willing to accept patients with certain conditions, notably substance abuse and mental health issues.

Some stakeholders stated issues regarding contacting patients for their first appointment with their new provider, particularly when an appointment was necessary to confirm attachment and to remove the patient from the CWL. NB, for example, had implemented a maximum period of two weeks for the first contact between the patients and their new provider, which was identified by stakeholders as too short of a period and, consequently, a barrier to attachment.

The distance between patients' residence and providers' practice was considered to be an important issue. For example, in QC, a policy on maximum distance between patients and providers had been implemented province-wide and had led to issues in urban areas where the maximum distance was considered too long and in rural areas where it was too short. To address this issue, it was decided that criterion related to distance was to be determined by regional management so it could be adapted to regional contexts. In all provinces except BC, patients could refuse attachment to the provider with whom they had been matched through the CWL and could return on the CWL with their original registration date. In BC, stakeholders reported that the CWL did not have the capacity to have patients unsatisfied with their attachment return to the CWL. However, it was reported that in these cases the coordinator could provide support to patients and providers to help improve their communication and relationship.

INTENDED IMPACTS

Stakeholders identified intended impacts linked with the outcome area of the CWLs. Every CWL had the intended impact of having more patients attached to a primary care provider.

Some provinces had the supplemental aim of attaching patients within a recommended wait time (MB, ON and QC) and used the average wait time as an indicator of performance. Stakeholders in MB and QC envisioned the CWL becoming the main way to meet ongoing demand for attachment to a primary care provider.

To monitor CWLs, provinces produced weekly (PEI), monthly (BC, MB, ON, NB and NS) or quarterly (QC) reports of CWL activities. Provinces used different indicators to monitor their CWLs. For example, QC monitored information such as wait times, number of patients registered, number of patients still waiting on the list, number of vulnerable and non-vulnerable patients, while ON used information such as patients' registration date, age and distance from the assigned provider as well as the number of complex and vulnerable patients. Some provinces also used this information to identify areas with specific resource needs (MB and NS) or provider availability to attach new patients (NB). ON and NS reported the proportion of patients attached through their CWL on a public website. According to the performance data reported by stakeholders, CWL performance appeared to vary widely across provinces as well as across regions within provinces. In MB, it was reported that the CWL reliably attached over 80% of unattached patients to a provider within 30 days; in PEI, typical wait times were 6–8 months in rural areas and 2–5 years in urban areas. QC reported that target wait times for each category of priority were not being reached, and 350,000 patients remained on the CWL, waiting for attachment.

CONTEXTUAL FACTORS

Most provinces had multiple paths for patient attachment; CWLs were not the sole point of entry. Stakeholders noted that providers' decision to use the CWL may be influenced by considerations of financial gain, workload, and the credibility and reputation of the CWL. For example, some stakeholders mentioned that certain providers avoid the CWL because the patients on the CWL are thought to be more complex; in contrast, other stakeholders noted that personalized contact with care connectors increased providers' trust in the CWL in knowing that the patients they would attach would not all be inordinately complex.

In five provinces (MB, ON, QC, NB and NS), stakeholders reported that provincial policies had influenced providers' use of CWL for the attachment of patients. Reforms in MB, QC and NB notably included targets of attached patients for certain providers or team practices. For example, in QC, FPs received inferior fee-for-service amounts when they had fewer than 500 attached patients and received the regular amount when this target number of attached patients was reached.

It was reported that geographical factors also had influenced the CWLs' effectiveness in increasing attachment to primary care providers. In BC, having developed the CWL in a small division was reported to be a factor that had led to the program's success. However, because the CWL was implemented at the Division of Family Practice level rather than the provincial level, not all divisions in BC had attachment policies. This was reported to be difficult to navigate for patients, as they were often unaware of the attachment policies in their division.

Also, the unequal distribution of supply of primary care providers among regions was reported as a key determinant of the success of CWLs. In PEI's urban areas, the low provider-to-population ratio was reported as a factor leading to higher wait times compared to other areas of the province. In MB, the regions that had struggled to meet the target wait time of 30 days were rural or remote communities that lacked local providers able to attach new patients. BC stakeholders also noted that providers whose panels were full were unlikely to use the CWL, even if willing to do so in theory.

Discussion

CWLs are tools readily available in many Canadian provinces that can be used to assist patients in finding a regular primary care provider or to help providers build their patient panels by centralizing the demand in a single-entry point. One major contribution of this paper is the use of logic modelling to describe the different models of CWLs for unattached patients and to identify common issues in the implementation of these CWLs.

Firstly, this approach allowed us to describe the characteristics of each CWL in a form that could easily be compared and contrasted across the seven provinces. This highlighted that while all seven provinces similarly aimed to increase attachment of patients to primary care providers through CWLs, there were large variations in their design.

All provinces, except BC and NS, had a provincially funded CWL to attach patients to FPs as well as, in the majority of the provinces, to NPs. Most were operated at the regional level by care connectors – who were mostly nurses. Incentives were provided for attaching patients from the CWL in QC, NB and PEI, but only to FPs, not NPs. Finally, only two provinces (NB and PEI) required primary care providers to attach patients from the CWL, whereas participation was on a voluntary basis in other provinces. The registration process was fairly similar across provinces. Demographic, contact information and medical information are collected in every province except in MB and NS, which did not systematically collect patients' medical information. All provinces except NB did some form of patient prioritization using either simple criteria (MB, PEI and NS) or assessing for vulnerability (BC, ON and QC). The assessment criteria for prioritization varied from province to province. While all provinces provided some information on existing programs such as walk-in clinics or health information phone lines to meet patients' healthcare needs while waiting on the CWLs, temporary primary care was offered to certain patients on the CWL in some regions of BC and NB.

Secondly, by using logic modelling, we were able to summarize the characteristics of each province's CWL in a way that allowed us to both validate our understanding of the CWL with stakeholders and to engage stakeholders from different provinces in an exchange about the common challenges they face. Three main common challenges were identified by stakeholders: (1) shortage of capacity in primary care; (2) issue of attaching complex or vulnerable patients; and (3) the non-standardized approach to evaluating the effectiveness of CWLs.

Capacity shortage in terms of providers to meet the demand for attachment was identified as a major issue. In a simple manner, CWLs were implemented to address the large demand

from patients to be attached to a primary care provider, but often there was a limited number of providers available to attach new patients. Several stakeholders proposed strategies to address the primary care capacity issue such as increasing the possibilities of attaching patients with NPs or investing resources in interdisciplinary primary healthcare teams. BC, MB, ON, QC and NS had implemented team practices where patients had access to various types of primary healthcare providers such as nurses, social workers and dietitians within the practice. In addition, in QC and NS, team-based practices received additional professional resources, namely more nurses, when reaching a target number of patients attached to the team's FPs. Although this was proposed by stakeholders as a strategy to address the capacity shortage, there is little evidence in the literature that supports team-based approaches as a way to increase attachment (Muldoon et al. 2012).

The attachment of patients with certain complex conditions, such as substance abuse, mental health issues and multiple chronic diseases, was described as challenging across provinces. According to several stakeholders, providers may be demotivated from attaching patients from CWLs if they lack information about patients' conditions as they may fear unknowingly attaching very complex and time-consuming patients. Conversely, when providers are aware of patients' conditions, a form of cherry-picking or creaming may occur as shown by a recent study conducted in QC that found patients with certain conditions such as mental health problems waited longer to be attached through CWLs (Smithman et al. 2017). As previously mentioned, two provinces (NB and BC) provided temporary care to patients while they waited for attachment. In BC, this strategy helped to stabilize vulnerable patients and was reported to be a facilitating factor for the attachment of vulnerable patients as they had a more stable condition and it was therefore easier to find a provider willing to attach them.

A third challenge lays in the lack of a common framework to evaluate the effectiveness of CWLs, their inputs and strategies, structures and processes, on the intended impacts (i.e., attaching patients to primary care providers and increasing access). Although all the provinces implemented CWLs to address the same objective, namely patients' need for attachment to a primary care provider, every province implemented a different model of CWL. Our findings show, although different in design, CWLs share similar challenges. An important observation from this study is that there has been little learning between provinces, in part, due to the fact that most CWLs were developed independently and that no common framework or methods were used to evaluate the intended impact of CWLs. The lack of a common or standardized approach makes it difficult to measure and compare the effectiveness of the different CWLs as provinces do not monitor and report the same indicators (e.g., not all provinces monitored and reported wait times for attachment) and similar indicators are often measured differently.

In summary, this study was the first of a three-step logic analysis. This article highlighted key components of CWLs across seven Canadian provinces. The study was conducted in collaboration with stakeholders in each province to address a concern for the large number of unattached patients. One limitation is the small number of stakeholders who participated in some provinces; however, we note that all key stakeholders identified as having in-depth

knowledge of the CWLs design in each province were recruited and participated in this study. Also, in order to support the validity of our findings in the context of limited participation, we used grey literature from every province and we validated our findings with stakeholders. A second limitation is that we did not solicit the perspectives of patients (e.g., those attached, or waiting to be attached, through CWLs) as the focus was to describe the design of the CWL; future evaluation of CWLs' effectiveness should include patients. Finally, an important limitation is that this study only aimed to describe CWLs' design and implementation challenges; data collection on the actual impacts of these models will be a crucial component of future research.

Conclusion

CWLs are widely used in many fields of healthcare to better coordinate the demand and supply of care. To our knowledge, CWLs to attach patients to primary care providers have only been implemented in Canada. The findings of our study showed that CWLs have been implemented in seven Canadian provinces to attach patients to a primary care provider, with large variations in the design of CWLs between provinces. Comparing logic models of these CWLs allowed us to compare their design and helped us identify common challenges in their implementation. Although contextual factors may have influenced the design of CWLs in each province, engaging stakeholders in sharing experiences may foster cross-jurisdictional learning and may help more newly implemented CWLs avoid facing the same challenges.

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