HEALTHCARE POLICY
Politiques de Santé

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

Volume 18 • Number 1

Pan-Canadian Registration and Licensure of Health Professionals: A Path Forward Emerging from a Best Brains Exchange Policy Dialogue

KATHLEEN LESLIE, CHANTAL DEMERS, RICHARD STEINECKE AND IVY LYNN BOURGEAULT

Leaving the Walkman and ICD-9 Behind: Modernizing the Disease Classification System Used by Canadian Physicians

STEPHANIE GARIES, PHOEBE NG, JAMES A. DICKINSON, TERRENCE MCDONALD, MAEVE O'BEIRNE, KERRY A. MCBRIEN, CATHERINE EASTWOOD, DANIELLE A. SOUTHERN, NEIL DRUMMOND AND HUDE QUAN

Are Family Medicine Clinics Improving Access to Care through Organizational Changes Driven by Healthcare Reform?

ISABEL RODRIGUES AND MARIE AUTHIER

Data Matters • *Discussion and Debate* • *Research Papers*

A LONGWOODS PUBLICATION Fonds WWW.HEALTHCAREPOLICY.NET

HEALTHCARE QUARTERLY: Best practices, policy and innovations in the administration of healthcare. For administrators, academics, insurers, suppliers and policy leaders. *Co-Edited by* Anne Wojtak, Lead, East Toronto Health Partners, Adjunct Faculty, Institute of Health Policy, Management and Evaluation, University of Toronto, Toronto and Neil Stuart, Adjunct Professor, Institute of Health Policy, Management and Evaluation, University of Toronto, Toronto

◆

CANADIAN JOURNAL OF NURSING LEADERSHIP: Covering politics, policy, theory and innovations that contribute to leadership in nursing administration, practice, teaching and research. Peer reviewed. *Edited by* Ruth Martin-Misener, Director and Professor, School of Nursing, Assistant Dean, Research, Faculty of Health, Dalhousie University, Co-Director, Canadian Centre for Advanced Practice Nursing Research, Affiliate Scientist, Nova Scotia Health, Affiliate Scientist, Maritime SPOR Support Unit, Halifax

◆

HEALTHCARE PAPERS: Review of new models in healthcare. Bridging the gap between the world of academia and the world of healthcare management and policy. Authors explore the potential of new ideas. *Edited by* Audrey Laporte, Director, Institute of Health Policy, Management and Evaluation, Dalla Lana School of Public Health, University of Toronto, Toronto and Arjumand Siddiqi, Professor, Division Head of Epidemiology, Dalla Lana School of Public Health, Canada Research Chair in Population Health Equity, University of Toronto, Toronto

◆

HEALTHCARE POLICY: Healthcare policy research and translation. Peer reviewed. For health system managers, practitioners, politicians and their administrators, and educators and academics. Authors come from a broad range of disciplines including social sciences, humanities, ethics, law, management sciences and knowledge translation. *Edited by* Dr. Jason Sutherland, Professor, Centre for Health Services and Policy Research, University of British Columbia, Vancouver.

Longwoods Publishing | *Enabling Excellence*

HEALTHCARE
POLICY
Politiques de Santé

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

VOLUME 18 NUMBER 1 • AUGUST 2022

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.

CONTENTS

FROM THE EDITOR-IN-CHIEF

DISCUSSION AND DEBATE

RESEARCH PAPERS

Peer Reviewed

TABLE DES MATIÈRES

DU RÉDACTEUR EN CHEF

DISCUSSION ET DÉBAT

RAPPORTS DE RECHERCHE

Examen par les pairs

HEALTHCARE
POLICY
Politiques de Santé

EDITOR-IN-CHIEF
JASON M. SUTHERLAND
Professor, Centre for Health Services and Policy Research, University of British Columbia, Vancouver, BC

SENIOR EDITOR
FRANÇOIS BÉLAND, PhD
Professor, Department of Health Administration,
Faculté de médecine, Université de Montréal,
Member, Groupe de recherche interdisciplinaire en santé (GRIS),
Co-Director, Groupe de recherche
Université de Montréal–Université McGill sur les personnes âgées,
Montréal, QC

EDITORS
RAISA B. DEBER, PhD
Professor, Institute of Health Policy, Management & Evaluation,
University of Toronto, Toronto, ON

FIONA CLEMENT, PhD
Director, Health Technology Assessment Unit
Associate Professor
O'Brien Institute for Public Health
University of Calgary
Calgary, AB

JOEL LEXCHIN, MSc, MD
Professor and Associate Chair, School of Health Policy and
Management, Faculty of Health, York University, Emergency
Department, University Health Network, Toronto, ON

CLAUDE SICOTTE, PhD
Professor, Department of Health Administration, Faculty of medicine,
Université de Montréal
Researcher, Groupe de recherche interdisciplinaire en santé (GRIS),
Montréal, QC

CONTRIBUTING EDITORS
STEVEN LEWIS
President, Access Consulting Ltd., Saskatoon (temporarily in Melbourne,
Australia); Adjunct Professor of Health Policy, Simon Fraser University,
Burnaby, BC

SABRINA WONG, RN, PhD, FAAN
Faculty, Centre for Health Services and Policy Research;
Professor, UBC School of Nursing,
Vancouver, BC

EDITORIAL DIRECTOR
DIANNE FOSTER-KENT
dkent@longwoods.com

COPY EDITING
KNOWLEDGEWORKS GLOBAL LTD.

TRANSLATOR
ÉRIC BERGERON

PROOFREADER
NATHALIE LEGROS

EDITORIAL ADVISORY BOARD
TONI ASHTON
Associate Professor Health Economics, School of Population Health,
The University of Auckland, Auckland, NZ

LUC BOILEAU, MD, MSc, FRCPC
President and Chief Executive Officer, Agence de la santé et des
services sociaux de la Montérégie, Montréal, QC

PHILIP DAVIES
Government Social Research Unit, London, UK

MICHAEL DECTER
Founding and Former Chair, Health Council of Canada, Toronto, ON

ROBERT G. EVANS
Professor, Department of Economics, University of British Columbia,
Member, Centre for Health Services and Policy Research, University
of British Columbia, Vancouver, BC

KENNETH FYKE
Victoria, BC

STEFAN GREß
Department of Health Sciences, University of Applied Sciences
Fulda, Germany

CHRIS HAM
Professor of Health Policy and Management, Health Services
Management Centre, The University of Birmingham,
Birmingham, UK

PAUL LAMARCHE
Professor, Departments of Health Administration & Social and
Preventive Medicine, Director, GRIS, Faculté de médecine, Université
de Montréal, Montréal, QC

DAVID LEVINE
Président directeur général, Agence de développement de réseaux
locaux de services de santé et de services sociaux de Montréal-Centre,
Montréal, QC

CHRIS LOVELACE
Senior Manager, World Bank, Kyrgyz Republic Country Office,
Central Asia Human Development, Bishkek, Kyrgyz Republic

THEODORE R. MARMOR
Professor of Public Policy and Management, Professor of Political
Science, Yale School of Management, New Haven, CT

VICENTE ORTÚN
Economics and Business Department and Research Center on Health
and Economics (CRES), Pompeu Fabra University, Barcelona, Spain

ROBIN OSBORN
Vice President and Director, International Program in Health Policy
and Practice, Commonwealth Fund, New York, NY

DOROTHY PRINGLE
Professor Emeritus and Dean Emeritus, Faculty of Nursing, University
of Toronto, Toronto, ON

MARC RENAUD
Lisbon, Portugal (on sabbatical)

JEAN ROCHON
Expert associé, Systèmes de soins et services, Institut national de santé
publique du Québec, Sainte-Foy, QC

LONGWOODS PUBLISHING CORPORATION

FOUNDING PUBLISHER AND CHAIRMAN (RETIRED)
W. ANTON HART

PUBLISHER & CEO
MATTHEW HART
mhart@longwoods.com

PUBLISHER & COO
REBECCA HART
rhart@longwoods.com

EDITORIAL DIRECTOR
DIANNE FOSTER-KENT
dkent@longwoods.com

ASSOCIATE PUBLISHER, CAREERS & WEB
SUSAN HALE
shale@longwoods.com

ASSOCIATE PUBLISHER, CUSTOMER SERVICE & ADMINISTRATION
BARBARA MARSHALL
bmarshall@longwoods.com

PRODUCTION MANAGER & SOCIAL MEDIA COORDINATOR
SUSMITA DEY
sdey@longwoods.com

DESIGN
BEN HARRIS

CREATIVE
ERIC HART

HOW TO REACH THE EDITORS AND PUBLISHER
Telephone: 416-864-9667; fax: 416-368-4443

ADDRESSES
All mail should go to: Longwoods Publishing Corporation, 260 Adelaide Street East, No. 8, Toronto, Ontario M5A 1N1, Canada.

For deliveries to our studio: 54 Berkeley St., Suite 305, Toronto, Ontario M5A 2W4, Canada.

SUBSCRIPTIONS
Individual subscription rates for one year are [C] $124 for online only and [C] $214 for print + online. Institutional subscription rates are [C] $540 for online only and [C] $739 for print + online. For subscriptions contact Barbara Marshall at telephone 416-864-9667, ext. 100 or by e-mail at bmarshall@longwoods.com.

Subscriptions must be paid in advance. An additional tax (GST/HST) is payable on all Canadian transactions. Rates outside of Canada are in US dollars. Our GST/HST number is R138513668.

SUBSCRIBE ONLINE
Go to www.healthcarepolicy.net and click on "Subscribe."

REPRINTS
Reprints can be ordered in lots of 100 or more. For reprint information call Barbara Marshall at 416-864-9667 or fax 416-368-4443 or e-mail to bmarshall@longwoods.com.

Return undeliverable Canadian addresses to: Circulation Department, Longwoods Publishing Corporation, 260 Adelaide Street East, No. 8, Toronto, Ontario M5A 1N1, Canada.

EDITORIAL
To submit material or talk to our editors please contact Dianne Foster Kent by e-mail at dkent@longwoods.com. Author guidelines are available online at longwoods.com/pages/hpl-for-authors.

ADVERTISING
For advertising rates and inquiries, please contact Matthew Hart at 416-864-9667, ext. 113 or by e-mail at mhart@longwoods.com.

PUBLISHING
To discuss supplements or other publishing issues contact Rebecca Hart at 416-864-9667, ext. 114 or by e-mail at rhart@longwoods.com.

Healthcare Policy/Politiques de Santé is published four times per year by Longwoods Publishing Corp., 260 Adelaide St. East, No. 8, Toronto, ON M5A 1N1, Canada. Manuscripts are reviewed by the editors and a panel of peers appointed by the editors. Information contained in this publication has been compiled from sources believed to be reliable. While every effort has been made to ensure accuracy and completeness, these are not guaranteed. The views and opinions expressed are those of the individual contributors and do not necessarily represent an official opinion of *Healthcare Policy* or Longwoods Publishing Corporation. Readers are urged to consult their professional advisors prior to acting on the basis of material in this journal.

Healthcare Policy/Politiques de Santé is indexed in the following: PubMed/Medline, CINAHL, CSA (Cambridge), Ulrich's, Embase, IndexCopernicus, Scopus, ProQuest, EBSCO Discovery Service, is archived in PubMed Central, and is a partner of HINARI.

ISSN No. 1715-6572
eISSN No. 1715-6580

Publications Mail Agreement No. 40069375

EDITORIAL

Provincial Health Systems: Are They Imploding?

Recently, we have all seen myriad articles in the national newspapers announcing that provinces' healthcare systems are imploding, with authors describing systems in states of "crisis" (Laverly 2022), "visibly coming apart" (Tumilty 2022), "broken" (Urback 2022) and "a travesty" (Picard 2022). Without minimizing the hardships or frustrations that some patients and their families have been experiencing at the hands of provincial health systems, are the harsh descriptors apt or fair?

Granted that wait times for surgery and emergency department treatment have been problems for a long time, is what we are witnessing in provinces really representative of healthcare systems imploding? Before the COVID-19 pandemic, there were instances of patients' health deteriorating while waiting, and even a small risk of death. Hallway medicine was such a problem in Ontario pre-pandemic that a commission was struck to solve the problems that caused the practice (Premier's Council on Improving Healthcare and Ending Hallway Medicine 2019). So, it seems fair to ask whether recent events tip the scale from "serious problems" to "implosion?"

If the serious nature of the claim is unpacked, what does health system implosion look like in Canada? It would not be financial in nature as governments would continue to pay their bills. This means that hospitals would continue to be open, their staff would continue to be paid, equipment would be purchased and serviced, physicians would be remunerated and provincial drug plans would continue insuring pharmaceuticals. Publicly funded healthcare – hospitals and physician care – would continue as we now know it, for better or worse.

Stepping away from the direst descriptions, serious healthcare delivery problems remain but have to come from directions other than financial. The most likely candidates include shortages of specialized staff, a "quality" catastrophe where many perish due to inattentiveness or lack of clinical oversight, a widespread technology failure affecting critical healthcare infrastructure or, possibly, a combination of all these causes.

The Real Problem

Given what is being reported about the health of the healthcare workforce, I expect that specialized staff shortages will cause many of the serious problems that we are witnessing and some are experiencing. Shortages could cause isolated or regional breakdowns in care delivery, exacerbating patients' and families' hardships through longer waits for emergency care or surgery, necessitating travel between communities to access primary or specialty care and prolonging suffering or anxiety for emergent cases.

Based on what we have seen over the past decades, breakdowns in healthcare delivery are also much more likely to occur in rural or isolated communities, which have long struggled to fill vacancies. The prevalence or intensity of the problems with accessing care may increase as absences or retirements increase, possibly in relation to the COVID-19 pandemic.

I do not consider the current events a public versus private problem. The private sector that provides critical healthcare in the community is not unscathed – private home care, assisted living or long-term care are likewise expected to experience staffing shortages. However, nobody really knows – the size, composition and working hours of the healthcare workforce are not consistently measured or reported.

Health systems and their most important inputs – skilled people produced by provinces' universities and college systems – are both funded by provincial governments. In the name of containing expenses, government funders of neither healthcare nor education have invested in the structures that lead to health system resiliency, one component of which is excess or fungible labour. Provinces are now in a state of skilled labour scarcity. This is a dilemma that the public may struggle with: they want more from their delivery system or at least the same as before the pandemic. At the same time, many people who work in healthcare are tired from the pressures or trauma of the COVID-19 pandemic and want to work less.

In the short and medium term, we have the people we have now. It takes years to train a specialist nurse who can effectively assist in the operating room and chip away at wait times. I see provincial decision makers with two stark choices: import more labour from other countries, including the US, or move people to different roles in the programs that are deemed most important or critical. I see many barriers to labour mobility between sectors and clinical programs so I do not expect the latter to be a viable option.

Is More Money the Solution?

Premiers are asking for billions more in funding that they can use for healthcare. This begs the question of whether more money will solve the current problems.

Canada is already among the highest spenders in healthcare in the world, and spending it in the same way will not "transform" the delivery system as touted by premiers (Harnett 2022). Furthermore, history is not kind in its assessment of past provincial healthcare reform efforts, and blue-ribbon panels' recommendations for reform have gone ignored. A case in point is the very recent federal multi-billion-dollar top-up to provinces for reducing surgical wait times; this funding has not been effective, and wait times languish. The causes in this case are complex, though they often lead back to a fixed pool of skilled people, some of whom do not want to work more.

While the devil is in the details, I am skeptical that more money will achieve meaningful change unless that magnitude is in the tens of billions and is accompanied by a significant overhaul of regulations and policies across all sectors.

There is, however, one possible route forward to guide healthcare investments. Provinces could make hard choices of how and where to spend the money by the amount of health they generate, expressed as "value." This change would be hard for governments because it removes some of the politics from decision making. Unfortunately, however, there is a shocking lack of information and evidence to compare the "value" that different investments bring to the provinces' residents and healthcare systems (Coyne 2022).

In my opinion, provinces' healthcare systems are not yet in a state of calamity, even though there are persistent and serious problems. As provincial governments buy time to shore up structural problems and the health of the healthcare workforce, I do not foresee significant changes without massive investments.

Should the federal and provincial governments proceed with large expenditures in healthcare, we can only hope that they spend the money in high-value areas where it generates the most health for Canadians. Otherwise, we are going to be dealing with the same healthcare systems we have for decades and will need to get used to reading about it in the newspapers.

In This Issue

The initial Discussion and Debate paper in this issue of *Healthcare Policy* was written by Leslie et al. (2022), whose discussion focuses on the regulatory frameworks for licensure and registration of health professionals across Canada. No such common framework exists today between provinces, and progress has been very slow. The authors present a multi-step path to harmonize licensure and registration, articulating the benefits of doing so, including that this infrastructure will facilitate labour mobility, patient safety and workforce planning.

Based on deep professional experiences in northern Ontario and through participation on national and federal health workforce initiatives, Strasser (2022) provides a rejoinder and takes aim at two premises of the paper by Leslie et al. (2022). First, he questions whether patient care will meaningfully change attributable to standardized licensure and registration and is, thus, worth the effort and cost. Second, the discussion questions whether the multi-step plan outlined is feasible due to recalcitrant provinces with differing agendas. Nonetheless, Strasser (2022) concludes that health professional regulation should be an integral component of larger healthcare reform.

A second Discussion and Debate paper focuses on the backbone of provincial physician remuneration systems – the International Classification of Diseases, Ninth Revision (ICD-9) classification system– by Garies et al. (2022). They argue that ICD-9 has not matured with medical and technological advances over the decades, nor does it reflect the complexity of modern patient care. The authors describe that the code's limitations render them incapable of supporting health services research and disease surveillance or measuring physicians' work intensity. The authors conclude that Canada's provinces need to initiate work to transition to a new classification system.

Denny's (2022) rejoinder to Garies and colleagues' (2022) paper suggests that classification systems have evolved in a number of directions, though each alternative to ICD-9 should be considered relative to its intended uses – not all of which are synonymous with physician billing. The author concludes that while ICD-9 indeed has significant limitations for physician billing, selecting from the options will require careful consideration of its uses, and provinces may differ in their priorities for classification systems.

This issue's first research paper by Rodrigues and Authier (2022) is a cross-sectional observational descriptive study measuring changes in access and interdisciplinary collaboration among family medicine units in Québec. Based on surveys of the units' directors, the study reported that the Family Medicine Group was associated with significant clinical changes and improved access to family physicians. The study concludes with describing some gaps in knowledge and directions for future primary care reforms.

In a qualitative study in British Columbia, Kornelsen and Koepke (2022) focus on system- and clinical-level factors associated with sustaining low-volume rural maternity care. In the context of providing maternity care as close to home as possible, this study measures barriers faced by providers and healthcare administrators in providing maternity care and, in turn, the system-level supports needed for sustaining rural maternity care programs. The discussion concludes that policies are needed in several areas, including interprofessional care and institutional and governance models, among others.

The final paper in this issue explores the contemporaneous problem of public health messaging and its impact on family caregivers' knowledge of COVID-19 (McCaughey et al. 2022). This paper is based on a cross-sectional study of family caregivers for people living with dementia and focuses on their assessment of public health messaging during the COVID-19 pandemic. Perhaps not unexpectedly, family caregivers described a lack of information from public health officials regarding how to care for those with dementia during the pandemic. The discussion provides specific recommendations for public health officials on how to effectively share information with their intended audiences.

JASON M. SUTHERLAND, PHD
Editor-in-Chief

References

Coyne, A. 2022, July 13. If the Premiers Want More Money, They'll Also Have to Take More Responsibility. *The Globe and Mail*. Retrieved July 19, 2022. <https://www.theglobeandmail.com/opinion/article-if-the-premiers-want-more-money-theyll-also-have-to-take-more/>.

Denny, K. 2022. Commentary: From Mixtapes to Playlists – Evolving Options for Capturing Diagnoses in Canadian Physicians' Data. *Healthcare Policy* 18(1): 40–45. doi:10.12927/hcpol.2022.26906.

Garies, S., P. Ng, J.A. Dickinson, T. McDonald, M. O'Beirne, K.A. McBrien et al. 2022. Leaving the Walkman and ICD-9 Behind: Modernizing the Disease Classification System Used by Canadian Physicians. *Healthcare Policy* 18(1): 32–39. doi:10.12927/hcpol.2022.26907.

Harnett, C.E. 2022, July 11. Agreement at Premiers' Meeting that Health System Needs to be Rebuilt. *Times Colonist*. Retrieved July 19, 2022. <https://www.timescolonist.com/local-news/agreement-at-premiers-meeting-that-health-system-needs-to-be-rebuilt-5569164>.

Kornelsen, J. and K. Koepke. 2022. Building Blocks to Sustainable Rural Maternity Care: Toward a Systems Approach to Service Planning. *Healthcare Policy* 18(1): 60–74. doi:10.12927/hcpol.2022.26904.

Laverly, I. 2022, July 10. Canada's Health-Care System Is in 'Crisis.' Are Employers, Leaders Up for the Task? *Global News*. Retrieved July 19, 2022. <https://globalnews.ca/news/8980038/canadas-health-care-political-leaders/>.

Leslie, K., C. Demers, R. Steinecke and I.L. Bourgeault. 2022. Pan-Canadian Registration and Licensure of Health Professionals: A Path Forward Emerging from a Best Brains Exchange Policy Dialogue. *Healthcare Policy* 18(1): 17–25. doi:10.12927/hcpol.2022.26909.

McCaughey, D., G. McGhan, K. Flemons, W. Hindmarch and K. Brundrit. 2022. Public Health Messaging during the COVID-19 Pandemic and Its Impact on Family Caregivers' COVID-19 Knowledge. *Healthcare Policy* 18(1): 75–89. doi:10.12927/hcpol.2022.26903.

Picard, A. 2022. June 13. Reality Check: Airport Waits Are an Inconvenience. Health Care Waits Are a Travesty. *The Globe and Mail*. Retrieved July 19, 2022. <https://www.theglobeandmail.com/opinion/article-reality-check-airport-waits-are-an-inconvenience-health-care-waits-are/>.

Premier's Council on Improving Healthcare and Ending Hallway Medicine. 2019, June. *A Healthy Ontario: Building a Sustainable Health Care System: 2nd Report from the Premier's Council on Improving Healthcare and Ending Hallway Medicine*. Government of Ontario. Retrieved July 19, 2022. <https://files.ontario.ca/moh-healthy-ontario-building-sustainable-health-care-en-2019-06-25.pdf>.

Rodrigues, I. and M. Authier. 2022. Are Family Medicine Clinics Improving Access to Care through Organizational Changes Driven by Healthcare Reform? *Healthcare Policy* 18(1): 46–59. doi:10.12927/hcpol.2022.26905.

Strasser, R. 2022. Commentary: Burning Platforms, Icebergs and Tipping Points – Canada Needs a Single Socially Accountable Healthcare System. *Healthcare Policy* 18(1): 26–31. doi:10.12927/hcpol.2022.26908.

Tumilty, R. 2022, July 11. As Canada's Health System Burns, Trudeau and the Provinces Debate the Firehose. *National Post*. Retrieved July 19, 2022. <https://nationalpost.com/news/politics/as-canadas-health-system-burns-trudeau-and-the-provinces-debate-the-firehose>.

Urback, R. 2022, July 14. Canadians Are Delusional Captives to a Broken Health Care System. *The Globe and Mail*. Retrieved July 19, 2022. <https://www.theglobeandmail.com/opinion/article-canadians-are-delusional-captives-to-a-broken-health-care-system/>.

ÉDITORIAL

Les systèmes de santé provinciaux sont-ils en train d'imploser?

Nous avons tous vu, récemment, une myriade d'articles dans les journaux nationaux annonçant que les systèmes de santé des provinces étaient en train d'imploser. Les auteurs y décrivent des systèmes en état de « crise » (Laverly 2022), « visiblement en train de s'effondrer » (Tumilty 2022), « brisés » (Urback 2022) ou les qualifient de «parodie » (Picard 2022). Sans minimiser les difficultés ou les frustrations que certains patients et familles ont pu expérimenter dans les systèmes de santé provinciaux, la sévérité de ces articles est-elle appropriée et juste?

Bien que les temps d'attente pour les chirurgies et les traitements aux urgences soient des problèmes de longue date, est-ce que ce que nous constatons dans les provinces correspond véritablement à un implosion des systèmes de santé? Avant la pandémie de COVID-19, il y avait des cas où la santé des patients se détériorait pendant l'attente, avec même un petit risque de décès. La médecine de couloir était un tel problème en Ontario avant la pandémie qu'une commission a été créée pour résoudre les problèmes à l'origine de la pratique (Conseil du premier ministre pour l'amélioration des soins de santé et l'élimination de la médecine de couloir 2019). Il semble donc juste de se demander si les récents événements ont fait passer l'indicateur de « problèmes graves » à « implosion »?

Si la gravité des accusations se confirme, à quoi ressemblerait alors une implosion du système de santé au Canada? Ce n'est pas une question financière puisque les gouvernements continuent à payer les factures. Les hôpitaux restent ouverts, le personnel reçoit son salaire, l'équipement est acheté et entretenu, les médecins sont rémunérés et les régimes provinciaux d'assurance médicaments continuent d'assurer les produits pharmaceutiques. Les services de santé financés par l'État – hôpitaux et soins médicaux – continuent tels que nous les connaissons, pour le meilleur ou pour le pire.

En s'éloignant des scénarios les plus désastreux, de graves problèmes subsistent tout de même dans la prestation de soins de santé, mais leurs sources doivent être autres que financières. Les candidats les plus probables comprennent les pénuries de personnel spécialisé, un problème sérieux de « qualité » où beaucoup de patients périssent en raison d'une inattention ou d'un manque de surveillance clinique, une défaillance technologique généralisée affectant les infrastructures essentielles ou, éventuellement, une combinaison de toutes ces causes.

Le vrai problème

Compte tenu de ce qu'on rapporte sur la santé du personnel de santé, je m'attends à ce que les pénuries de personnel spécialisé causent bon nombre des problèmes sérieux que plusieurs observent ou vivent. Les pénuries pourraient entraîner des ruptures de service isolées ou régionales, exacerber les difficultés des patients et des familles en raison d'attentes plus longues pour les soins d'urgence ou la chirurgie, obliger des déplacements entre les communautés pour accéder aux soins primaires ou spécialisés et, finalement, prolonger la souffrance ou l'anxiété chez les cas émergents.

Après ce que nous avons vu ces dernières décennies, les risques de rupture des services de santé dans les communautés rurales ou isolées, qui luttent déjà depuis longtemps pour pourvoir les postes vacants, sont beaucoup plus grands. La prévalence ou l'intensité des problèmes d'accès aux soins pourrait s'accroître alors que les absences et les départs à la retraite augmentent, possiblement en raisonde la COVID-19.

Je ne considère pas la question comme un problème de friction entre les domaines public et privé. Le secteur privé, qui fournit des soins de santé essentiels, n'est pas épargné : les soins à domicile privés, l'aide à la vie autonome ou les soins de longue durée devraient également connaître des pénuries de personnel. Cependant, personne ne le sait vraiment; la taille, la composition et les heures de travail du personnel de santé ne sont pas systématiquement mesurées ou consignées.

Les systèmes de santé ainsi que leurs intrants les plus importants – à savoir, le personnel qualifié formé par les universités et les systèmes collégiaux – sont tous deux financés par les gouvernements provinciaux. Soucieux de contrôler les dépenses, les bailleurs de fonds gouvernementaux – qui ne financent ni les services de santé ni l'éducation – n'ont pas investi dans les structures qui mènent à la résilience du système de santé, dont l'une des composantes est une main-d'œuvre excédentaire ou interchangeable. Les provinces sont présentement en situation de pénurie de main-d'œuvre qualifiée. C'est un problème qui peut affecter la population, qui s'attend à ce que les services de santé soient meilleurs ou, du moins, aussi bons qu'avant la pandémie. En parallèle, de nombreuses personnes qui travaillent dans le secteur de la santé sont fatiguées des pressions ou des traumatismes de la pandémie de COVID-19 et souhaiteraient travailler moins.

À court et à moyen terme, nous devons composer avec l'effectif en place. Ça prend des années pour former une infirmière spécialisée qui peut aider efficacement dans la salle d'opération et réduire ainsi les temps d'attente. Je vois les décideurs provinciaux devant un dilemme : importer plus de main-d'œuvre d'autres pays, dont les États-Unis, ou déplacer le personnel vers d'autres rôles dans les programmes jugés les plus importants ou essentiels. Je vois de nombreux obstacles à la mobilité de la main-d'œuvre entre les secteurs et les programmes cliniques, donc je ne m'attends pas à ce que la deuxième option soit viable.

La solution viendra-t-elle avec plus d'argent?

Les premiers ministres demandent des milliards de plus pour les soins de santé. Cela soulève la question à savoir si plus d'argent résoudra les problèmes actuels.

Le Canada figure déjà parmi les plus dépensiers en soins de santé au monde. Dépenser l'argent de la même manière ne « transformera » pas le système comme le prétendent les premiers ministres (Harnett 2022). De plus, l'histoire n'est pas tendre dans son évaluation des efforts provinciaux pour réformer les soins de santé, et les recommandations des groupes d'experts en matière de réforme ont été ignorées. Un bon exemple est le tout récent supplément fédéral de plusieurs milliards de dollars aux provinces pour réduire les temps d'attente en chirurgie. Ce financement n'a pas été efficace et les temps d'attente se prolongent. Dans ce cas précis, les causes sont complexes, bien qu'elles renvoient souvent à un bassin fixe de personnes qualifiées, dont certaines ne veulent pas travailler davantage.

Bien que le diable soit dans les détails, je doute que plus d'argent apportera des changements significatifs, à moins que l'argent ne se chiffre en dizaines de milliards et ne s'accompagne d'une refonte importante des réglementations et des politiques dans tous les secteurs.

Il existe cependant une voie à suivre pour les investissements dans les soins de santé. Les provinces pourraient faire face à des choix difficiles sur la façon et l'endroit où dépenser l'argent en fonction de la quantité de santé qu'il génère, exprimée en « valeur ». Ce changement serait difficile pour les gouvernements car il supprime une partie de la politique de la prise de décision. Malheureusement, il y a un manque choquant d'informations et de données pour comparer la « valeur » que différents investissements apportent aux résidents et aux systèmes de santé des provinces (Coyne 2022).

À mon avis, les systèmes de santé des provinces ne sont pas encore dans un état de calamité, même s'il existe des problèmes persistants et graves. Alors que les gouvernements provinciaux tardent à consolider les problèmes structurels et à protéger la santé de la main-d'œuvre de la santé, je n'entrevois pas de changements importants sans investissements massifs.

Si les gouvernements fédéral et provinciaux apportent d'importantes dépenses dans les services de santé, nous ne pouvons qu'espérer qu'ils dépensent l'argent dans des domaines de grande valeur, où il générera le plus de santé pour les Canadiens et les Canadiennes. Sinon, nous aurons affaire aux mêmes systèmes de santé que nous connaissons depuis des décennies et nous devrons nous habituer à voir ce sujet dans les journaux.

Dans le présent numéro

Le premier article de la section Discussion et débat du présent numéro de *Politiques de Santé*, signé par Leslie et ses collègues (2022), porte sur les cadres réglementaires pour l'inscription et le permis d'exercice des professionnels de la santé dans tout le Canada. Il n'y a actuellement pas de cadre réglementaire commun entre les provinces et les progrès en ce sens demeurent très lents. Les auteurs proposent une voie en plusieurs étapes pour harmoniser l'inscription et le permis d'exercice des professionnels de la santé. Ils en décrivent aussi les avantages, notamment que cette infrastructure faciliterait la mobilité de la main-d'œuvre, la sécurité des patients et la planification de la main-d'œuvre.

Fort d'une profonde expérience professionnelle dans le nord ontarien et de sa participation à des initiatives nationales et fédérales sur la main-d'œuvre de la santé, Strasser (2022) propose une réplique et vise deux prémisses de l'article de Leslie et ses collègues (2022). Tout d'abord, il se demande si les soins aux patients seraient effectivement transformés grâce à une normalisation de l'inscription et du permis d'exercice, ce qui justifierait les efforts et les coûts investis. Deuxièmement, il se demande si le plan en plusieurs étapes décrit est réalisable, étant donné la réticence des provinces qui ont des programmes différents les uns des autres. Néanmoins, Strasser (2022) conclut que la réglementation des professionnels de la santé devrait faire partie intégrante d'une réforme plus large des services de santé.

Le deuxième article de la section Discussion et débat porte sur l'épine dorsale des systèmes provinciaux de rémunération des médecins, c'est-à-dire le système de Classification internationale des maladies, neuvième révision (CIM-9) de Garies et ses collègues (2022). Ils soutiennent que la *CIM-9* n'a pas évolué avec les progrès médicaux et technologiques au fil des décennies et ne reflète plus la complexité des soins modernes. Les auteurs expliquent que les limites du code font obstacle à la recherche sur les services de santé et à la surveillance des maladies, mais aussi aux façons de mesurer l'intensité du travail des médecins. Les auteurs concluent que les provinces canadiennes devraient entreprendre des travaux pour passer à un nouveau système de classification.

La réplique de Denny (2022) à l'article de Garies et ses collègue (2022) suggère que les systèmes de classification ont évolué dans plusieurs directions, mais que chaque choix de remplacement de la CIM-9 doit être considéré par rapport à l'utilisation prévue; ce n'est pas toujours une question de facturation pour les médecins. L'auteur conclut que même si la CIM-9 présente effectivement des limites importantes pour la facturation, le choix des options demandera un examen attentif des utilisations prévues, et les provinces peuvent avoir des priorités différentes face aux systèmes de classification.

Le premier article de recherche de ce numéro, signé par Rodrigues et Authier (2022), est une étude descriptive observationnelle transversale qui fait état des changements dans l'accès et la collaboration interdisciplinaire entre les unités de médecine familiale au Québec. Basée sur des sondages auprès des directeurs d'unités, l'étude rapporte que le groupe de médecine de famille connaît des changements cliniques importants ainsi qu'un meilleur accès aux médecins de famille. L'étude conclut en soulignant certaines lacunes en matière de connaissances et d'orientation pour d'éventuelles réformes des soins primaires.

Dans une étude qualitative effectuée en Colombie-Britannique, Kornelsen et Koepke (2022) se penchent sur les facteurs systémiques et cliniques associés au maintien de soins de maternité ruraux à faible volume. Dans l'idée d'une prestation de soins de maternité aussi près que possible du domicile, cette étude mesure les obstacles auxquels sont confrontés les administrateurs et les fournisseurs de soins de maternité et, par conséquent, évalue le soutien nécessaire au niveau du système pour maintenir les programmes de soins de maternité en milieu rural. L'article conclut en soulignant que des politiques sont nécessaires dans plusieurs domaines, notamment les soins interprofessionnels et les modèles institutionnels ou de gouvernance, entre autres.

Le dernier article explore le problème des messages de santé publique et leur impact sur les connaissances des proches aidants au sujet de la COVID-19 (McCaughey et al. 2022). L'article se base sur une étude transversale auprès des proches aidants de personnes atteintes de démence et se concentre sur l'évaluation qu'ils font des messages de santé publique émis pendant la pandémie de COVID-19. Il n'est sans doute pas surprenant que les proches aidants aient indiqué un manque d'information, de la part des responsables de la santé publique, sur la façon de prendre soin des personnes atteintes de démence pendant la pandémie. L'article formule des recommandations, à l'intention des responsables de la santé publique, sur la manière de partager efficacement les informations avec les populations cibles.

JASON M. SUTHERLAND, PHD
Rédacteur en chef

Références

Conseil du premier ministre pour l'amélioration des soins de santé et l'élimination de la médecine de couloir. Juin 2019. Pour un Ontario en santé : Création d'un système de soins de santé durable : 2^e^ rapport du Conseil du premier ministre pour l'amélioration des soins de santé et l'élimination de la médecine de couloir. Gouvernement de l'Ontario. Consulté le 19 juillet 2022. <https://files.ontario.ca/moh-pour-un-ontario-en-sante-2019-06-25.pdf>.

Coyne, A. 13 juillet 2022. If the Premiers Want More Money, They'll Also Have to Take More Responsibility. *The Globe and Mail*. Consulté le 19 juillet 2022. <https://www.theglobeandmail.com/opinion/article-if-the-premiers-want-more-money-theyll-also-have-to-take-more/>.

Denny, K. 2022. Commentaire : Des compilations aux listes de lecture – options évolutives pour saisir les diagnostics dans les données des médecins canadiens. *Politiques de Santé* 18(1): 40–45. doi:10.12927/hcpol.2022.26906.

Garies, S., P. Ng, J.A. Dickinson, T. Mcdonald, M. O'Beirne, K.A. McBrien et al. 2022. Abandonner le baladeur et la *CIM-9* : modernisation du système de classification des maladies utilisé par les médecins canadiens. *Politiques de Santé* 18(1): 32–39. doi:10.12927/hcpol.2022.26907.

Harnett, C.E. 11 juillet 2022. Agreement at Premiers' Meeting that Health System Needs to be Rebuilt. *Times Colonist*. Consulté le 19 juillet 2022. <https://www.timescolonist.com/local-news/agreement-at-premiers-meeting-that-health-system-needs-to-be-rebuilt-5569164>.

Kornlesen, J. et K. Koepke. 2022. Blocs de construction pour des soins de maternité durables en milieu rural : vers une approche systémique de la planification des services. *Politiques de Santé* 18(1): 60–74. doi:10.12927/hcpol.2022.26904.

Laverly, I. 10 juillet 2022. Canada's Health-Care System Is in 'Crisis.' Are Employers, Leaders Up for the Task? *Global News*. Consulté le 19 juillet 2022. <https://globalnews.ca/news/8980038/canadas-health-care-political-leaders/>.

Leslie, K., C. Demers, R. Steinecke et I.L. Bourgeault. 2022. Inscription et permis d'exercice pancanadiens pour les professionnels de la santé : une voie à suivre issue d'un échange Meilleurs Cerveaux. *Politiques de Santé* 18(1): 17–25. doi:10.12927/hcpol.2022.26909.

McCaughey, D., G. McGhan, K. Flemons, W. Hindmarch et K. Brundrit. 2022. Messages de santé publique pendant la pandémie de COVID-19 et leur impact sur les connaissances des proches aidants en matière de COVID-19. *Politiques de Santé* 18(1): 75–89. doi:10.12927/hcpol.2022.26903.

Picard, A. 13 juin 2022. Reality Check: Airport Waits Are an Inconvenience. Health Care Waits Are a Travesty. *The Globe and Mail*. Consulté le 19 juillet 2022. <https://www.theglobeandmail.com/opinion/article-reality-check-airport-waits-are-an-inconvenience-health-care-waits-are/>.

Rodrigues, I. et M. Authier. 2022. Les cliniques de médecine familiale améliorent-elles l'accès aux soins grâce aux changements organisationnels entraînés par les réformes des soins de santé? *Politiques de Santé* 18(1): 46–59. doi:10.12927/hcpol.2022.26905.

Strasser, R. 2022. Commentaire – Plateformes en feu, icebergs et points de basculement : le Canada a besoin d'un système de santé unique socialement responsable. *Politiques de Santé* 18(1): 26–31. doi:10.12927/hcpol.2022.26908.

Tumilty, R. 11 juillet 2022. As Canada's Health System Burns, Trudeau and the Provinces Debate the Firehose. *National Post*. Consulté le 19 juillet 2022. <https://nationalpost.com/news/politics/as-canadas-health-system-burns-trudeau-and-the-provinces-debate-the-firehose>.

Urback, R. 14 juillet 2022. Canadians Are Delusional Captives to a Broken Health Care System. *The Globe and Mail*. Consulté le 19 juillet 2022. <https://www.theglobeandmail.com/opinion/article-canadians-are-delusional-captives-to-a-broken-health-care-system/>.

DISCUSSION AND DEBATE

Pan-Canadian Registration and Licensure of Health Professionals: A Path Forward Emerging from a Best Brains Exchange Policy Dialogue

Inscription et permis d'exercice pancanadiens pour les professionnels de la santé : une voie à suivre issue d'un échange Meilleurs Cerveaux

KATHLEEN LESLIE, PhD, JD, RN
Assistant Professor
Athabasca University
Athabasca, AB

RICHARD STEINECKE, BA, LLB
Counsel
Steinecke Maciura LeBlanc
Toronto, ON

CHANTAL DEMERS, BSc
Global MBA candidate
University of London
London, UK

IVY LYNN BOURGEAULT, PhD
Professor and Research Chair
Gender, Diversity and the Professions
University of Ottawa
Ottawa, ON

Abstract

The regulation of health professions differs across Canadian provinces and territories, often resulting in an unstandardized approach to licensure and registration. These siloed regulatory frameworks hinder health workforce mobility and virtual care – with implications for patient safety and equitable access to healthcare – and pose a barrier to integrated health workforce planning. The authors report on a Best Brains Exchange policy dialogue held in October 2019 on pan-Canadian registration and licensure (CIHR 2019), highlighting leading practices and presenting a potential path forward through pan-Canadian regulatory mechanisms. Situating these findings within the context of the COVID-19 pandemic demonstrates the urgency for governments to move on this reform.

Résumé

Au Canada, la réglementation des professions de la santé diffère d'une province et d'un territoire à l'autre, ce qui entraîne souvent une approche non normalisée en matière de permis d'exercice et d'inscription. Ce cloisonnement des cadres réglementaires entrave la mobilité du personnel de santé ainsi que les soins virtuels – ce qui a des répercussions sur la sécurité des patients et sur l'accès équitable aux soins de santé – et constitue un obstacle à la planification intégrée de la main-d'œuvre. Les auteurs rendent compte d'un échange Meilleurs Cerveaux, tenu en octobre 2019, sur l'inscription et le permis d'exercice pancanadiens. Ils mettent en évidence les pratiques exemplaires et présentent une voie à suivre selon les mécanismes de réglementation pancanadiens. Dans le contexte de la pandémie de COVID-19, ces résultats font voir l'urgence pour les gouvernements d'aller de l'avant avec cette réforme.

Background and Policy Context

Professional regulatory bodies operate under the statutory mandate to protect public interest. In most Canadian jurisdictions, meeting the requirements to become registered with a professional regulatory body provides practitioners the authority to practise a specific profession within that jurisdiction. Because the regulation of health professions is considered to be the constitutional responsibility of the provincial and territorial governments, there are jurisdictional differences in regulatory approaches and practice requirements that have implications for patient safety, equitable access to care and workforce mobilization. These regulatory differences also complicate the provision of virtual care (Laverdière 2021; Oetter 2019) and translate into variability in health workforce data, which poses a significant barrier to integrated health workforce planning (Bourgeault et al. 2019).

In October 2019, the Canadian Health Workforce Network – in collaboration with the British Colombia and Yukon members of the Federal/Provincial/Territorial Committee on Health Workforce – co-organized a Canadian Institutes of Health Research (CIHR) Best Brains Exchange (BBE) policy dialogue on the topic of pan-Canadian licensure and registration of health professionals (CIHR 2019). The goals of this BBE policy dialogue were to explore leading practices from other federated jurisdictions that have implemented coordinated approaches, examine the unique Canadian context that may facilitate or hinder the implementation of these leading practices and identify the steps required to advance the dialogue around pan-Canadian registration and licensure (CIHR 2019). Participants included representatives from provincial/territorial regulators, pan-Canadian regulatory consortiums, provincial/territorial governments, Indigenous health professional organizations, health practitioners, researchers, pan-Canadian health organizations and other key stakeholders.

This paper highlights the insights generated from this BBE and presents a path forward for a unified pan-Canadian approach to licensure and a transparent single pan-Canadian register of health professionals. BBE participants stated that a *burning platform* would be required to catalyze this movement: the COVID-19 pandemic and the worsening health workforce crisis have now provided this burning platform.

Insights from the BBE

Promising international practices

THE UNITED STATES

Jean Moore from the Center for Health Workforce Studies at the State University of New York at Albany presented American practices. These include the National Practitioner Data Bank – a federally mandated database with information on malpractice claims and disciplinary action for certain health professionals (https://www.npdb.hrsa.gov/). Similarly, a national provider enumeration system provides unique identifying numbers linked to publicly available information such as provider name, practice address and license number. National registers exist for certain professions to verify credentials and practice privileges. There are also interstate licensing compacts that provide licence portability across certain states. Model of practice acts offer a point of reference for profession-specific scope of practice regulation.

AUSTRALIA

Chris Robertson from the Australia Health Practitioner Regulation Agency (Ahpra) presented on the nationally coordinated regulatory scheme that has been in place in Australia since 2010. The national scheme consists primarily of Ahpra (the national body responsible for administering the regulatory scheme) and 15 profession-specific national boards. Ahpra maintains a comprehensive national public register for over 769,000 health professionals (Ahpra and National Boards 2020). The online public register provides up-to-date information about the registration status of Australian health professionals, including any adverse findings made by the national boards. Australia-wide registration data are collected to inform health workforce planning, including supporting Ahpra's mandate to improve access to care for Aboriginal peoples. Ahpra also has significant research infrastructure that facilitates the use of its national dataset, enabling research that may help inform regulatory policy on a global scale.

Promising Canadian changes

THE CANADIAN FREE TRADE AGREEMENT AND CONSTITUTIONAL JURISDICTION

The *Canadian Free Trade Agreement* (CFTA; https://www.cfta-alec.ca/canadian-free-trade-agreement/) – a policy that came into force in 2017 as a follow-up to the *Agreement on Internal Trade* – was established to promote regulatory cooperation (CFTA 2015, 2017). The CFTA specifies that workers regulated in one jurisdiction should be recognized as qualified by other regulatory authorities without going through significant training, work experience, examination or assessment unless an exception applies. Pan-Canadian coordination of health professional registration and licensure would lay the groundwork for greater responsiveness to the CFTA.

Constitutional jurisdiction is often raised as a barrier to pan-Canadian licensure or registration, given the provincial/territorial authority over health profession regulation. However, a recent case law from the Supreme Court of Canada paved the way for a pan-Canadian cooperative regulatory regime for securities, which also falls under provincial/territorial jurisdiction. In its decision, *Reference re Pan-Canadian Securities Regulation*, 2018, the Supreme Court unanimously upheld the constitutionality of a cooperative national securities regulatory regime. While this national scheme has since been put on hold, the Supreme Court's decision provides support for the constitutional validity of a pan-Canadian approach to health profession regulation in Canada.

PROFESSION-SPECIFIC PRECEDENTS

Certain professions in Canada have made efforts to harmonize standards across provincial and territorial boundaries. At the BBE, Diana Sinnige, on behalf of the Canadian Alliance of Physiotherapy Regulators in Canada (CAPR), presented how CAPR has established a centralized portal for exams and licensing assessment, a pan-Canadian standard for entry to practice, a code of ethics adopted by 10 of 11 jurisdictions and a cross-border physiotherapy memorandum of understanding to facilitate access to physiotherapists through mobility and tele-rehabilitation (CAPR 2019).

Heidi Oetter, on behalf of the Federation of Medical Regulatory Authorities of Canada (FMRAC), discussed the FMRAC's model standards for medical registration in Canada (FMRAC 2018) and the proposal for three licensure agreements to address the need for interjurisdictional mobility for physicians in the absence of pan-Canadian licensure: a locum or short duration license agreement, a fast-tracked licence agreement for physicians already licensed in another Canadian jurisdiction and a specific telemedicine licence agreement (Oetter 2019).

Identifying key principles and strategies to mitigate barriers

Participants in the BBE agreed that achieving unified pan-Canadian licensure and a transparent single pan-Canadian register could help address several key issues and benefit the public, regulators, governments and health practitioners. The discussion across workshop groups identified six key principles (Table 1).

TABLE 1. Key principles for moving to a coordinated pan-Canadian approach

Key principles	Description
Increasing public safety	• A single point for registration with a centralized publicly accessible portal for registry of regulated health professionals across the country to increase transparency and access to necessary information for the public to make informed decisions about their healthcare providers • Providers subject to restricted licences or disciplinary actions would be prevented from avoiding sanction – and potentially perpetuating patient harm – by changing jurisdictions
Greater regulatory efficiency	• Potential reduction of duplication of costs associated with disciplinary functions • Smaller jurisdictions and regulators with fewer registrants would benefit from harmonizing the work involved in the currently siloed task of maintaining their public registers
Integrated health workforce planning and responsiveness	• A single registration point could enable the collection of standardized data for more immediate and coordinated interjurisdictional responses to workforce issues and to inform planning for both the steady state and future public health crises

Key principles	Description
Coordinated action on pan-Canadian healthcare priorities	• Standardized data and approaches across professions and across provinces/territories could improve our ability to develop accurate integrated health workforce planning in priority areas, such as access to mental health services
Health workforce mobility	• Standardized entry-to-practice requirements, scopes of practices and protected titles across Canadian jurisdictions and facilitated credential recognition
Pan-Canadian fee structure	• Single Canadian registration fee with potential to increase equity between jurisdictions and improve cost-effectiveness for practitioners

Participants in the BBE also raised potential barriers or risks that may arise from moving to pan-Canadian registration of health professions. They also discussed strategies to help address these (Table 2).

TABLE 2. Potential risks or barriers of moving to a coordinated pan-Canadian approach and strategies to address these as identified by BBE participants

Potential risks or barriers	Strategies to address
Provincial constitutional jurisdiction over regulation of health professions	• Look to the model of pan-Canadian cooperative regime for securities regulation, which the Supreme Court of Canada held as constitutionally valid in *Reference re Pan-Canadian Securities Regulation,* 2018 (similar to the Australian model for health professional regulation). • Consider the federal government's role in pan-Canadian registration as part of supporting integrated health workforce planning. • Consider a need for greater responsiveness to the CFTA.
Potential for reduced regulatory accountability	• Consider the Australian model of accountability to ministerial council, which is composed of all jurisdictional health ministers. • Develop a national oversight agency (step four in path approach described below).
Siloed mentality entrenched within governments, regulators or professions	• Focus on risks inherent in status quo and the need for change to protect the public. • Consider the reduced benefits of siloed reform measures without pan-Canadian cooperation. • Ensure representation of stakeholders (e.g., federal and provincial/territorial governments, regulators, practitioners and public) in the steering committee as a pan-Canadian approach takes shape. • Review international models for determining an appropriate funding mechanism for the body responsible for maintaining a pan-Canadian register.

Mitigating the risks of the status quo and overcoming the obstacles to reform are not insurmountable but will require careful planning and commitment, including involvement with representatives from various professional and public stakeholders. Participants noted that initial resistance to change might require a paradigm shift to align federal and provincial/territorial priorities and demonstrate that ensuring equitable access to health services and providers falls within the regulatory mandate of public protection.

A path forward for pan-Canadian registration and licensure

A potential path forward to achieve unified pan-Canadian registration and licensure was presented and discussed at the BBE by Richard Steinecke, a Canadian legal expert on professional regulation:

1. *Create a pan-Canadian database for sharing information between regulators:* All Canadian regulators would have access to this database, which would contain registration, complaints, discipline and compliance information on all registered health professionals.

2. *Develop a single pan-Canadian public registry:* This registry would provide consistent information about the regulatory history of health professionals. The registry would become an easily accessible source of information about health professionals for the public and a preferred alternative to less reliable social media sources.
3. *Impose automatic disciplinary restrictions:* This would mean that limitations imposed in one Canadian jurisdiction would immediately take effect in any other Canadian jurisdiction in which the health professional is registered. The current system of sequential discipline hearings in separate jurisdictions is costly and allows health professionals to avoid sanction through *jurisdiction-hopping*.
4. *Establish a pan-Canadian oversight agency for regulators*: This would be similar to the Professional Standards Authority for Health and Social Care in the UK, an independent body accountable to the UK parliament that oversees and evaluates health profession regulators in the UK (https://www.professionalstandards.org.uk/home). There already exists a trend within Canada to establish such oversight bodies. Anticipating this trend now – before multiple provincial and territorial oversight bodies are entrenched – will facilitate consistency of oversight and the development of pan-Canadian standards.
5. *Foster uniform registration requirements:* In addition to partially achieving the goal of establishing mutual recognition agreements set out by the CFTA, this initiative could bridge the remaining hurdles to essentially identical pan-Canadian standards and true mobility for practitioners.

To move this initiative forward, we anticipate the need for a collaborative funding model between federal/provincial/territorial governments and regulatory authorities, with a coordinated partnership between these and other stakeholders. We also suggest that the Canadian Institute for Health Information with its well-developed data governance arrangements would be a logical place for the pan-Canadian database to be housed.

The *Burning Platform* in Canada Provided by the COVID-19 Pandemic

Participants in the BBE highlighted the need for a *burning platform* to catalyze the necessary measures required for mobilizing a unified pan-Canadian approach to licensure and registration. The COVID-19 pandemic – and the worsening health workforce crisis – has become this burning platform. Within the context of the pandemic, pan-Canadian registration and licensure could have facilitated coordinated interjurisdictional strategies that align with the regulatory mandate to protect public interest as was seen in the international jurisdictions presented at the BBE. The variation in Canadian licensure and registration requirements has hindered cross-jurisdictional mobility and access to care, both virtual and in person, particularly in rural and remote communities (CADTH 2020; Laverdière 2021; Tang and Zhou 2020).

During the pandemic, American regulatory responses to the COVID-19 pandemic used the coordinated mechanisms presented at the BBE by, for example, increasing the transparency of information about health professionals on national registers to expedite assessment of credentials by emergency response organizations (NCSBN 2020). Licensure compacts have also been instrumental in facilitating telehealth across state boundaries and other workforce responses (NCSBN 2021). In Australia, the national coordination of health professional regulation and national health workforce data were key to a nimble pandemic response, including the creation of the national short-term pandemic sub-register, which was then extended to ensure coordinated vaccination workforce mobilization (Australian Government Department of Health and Aged Care 2021; Robertson 2021).

Some changes are also notable in Canada. The FMRAC approved a statement on fast-tracked licensure in February 2021 but has since suspended activity on telemedicine licensure and license portability agreements (FMRAC 2021). The FMRAC's virtual care working group is (at the time of writing) focused on updating its Framework on Telemedicine to reflect a post-pandemic environment, anticipated to be released in early 2022 (FMRAC 2021). Nursing regulators in Canada also began making progress on interjurisdictional registration. In mid-2021, the College and Association of Registered Nurses of Alberta and the Saskatchewan Registered Nurses Association developed a memorandum of agreement to facilitate cross-provincial nursing practice (CRNA 2021). Nursys Canada, also under development, is slated to begin as a pilot between the College of Nurses of Ontario and the British Columbia College of Nurses and Midwives, creating a Canadian version of the National Council of State Boards of Nursing's centralized system to track nursing registrants nationally (NPAC 2021).

The pandemic has demonstrated the capacity to change in the presence of a critical threat to public health. Despite concerns around constitutional responsibilities for health professional regulation as discussed in the BBE, the response to the COVID-19 pandemic has demonstrated the federal government's important role in mobilizing a pan-Canadian approach to regulatory reform. Collaborative approaches initiated by the Canadian and provincial/territorial governments and regulators helped increase the health workforce capacity in response to the pandemic. While these measures facilitated certain health workforce responses, many are time-limited emergency measures. Strong federal and provincial/territorial political leadership is required to provide the momentum needed to overcome initial resistance or inertia and propel political will to move forward on pan-Canadian reform.

Conclusion

Various regulatory responses have become evident as the scale of the global COVID-19 pandemic and its impact on the health workforce became clearer (Bourgeault et al. 2020). The pandemic has also underscored the capacity of many nations to expedite health workforce reforms to respond to emerging public health crises that challenge patient safety and accessibility (Gruben and Czarnowski 2020; Gupta et al. 2021; Julia et al. 2020). At the time of writing, regulatory frameworks in various Canadian jurisdictions were undergoing legislative reform, and interjurisdictional registration was being piloted by single professions in certain provinces. Rather than continuing down the path of these patchwork responses, now is the time for a pan-Canadian reform. Building on leading practices within Canada and internationally will help develop the necessary infrastructure to proactively respond to current and future health workforce challenges. Potential benefits resulting from cooperative pan-Canadian regulatory approaches include increasing patient safety, facilitating health workforce mobility, improving access to telehealth or virtual care, supporting data collection for integrated health workforce planning and achieving cost savings through improved regulatory efficiency. The COVID-19 pandemic has crystallized the importance and timeliness of these implications. The insights garnered from the BBE policy dialogue provide a path forward to create a unified pan-Canadian approach to licensure and a transparent single pan-Canadian register that would be in the interests of the public, governments and regulators to pursue.

Acknowledgement

The authors wish to thank the BBE participants for their valuable time and contributions to the dialogue on this issue. In addition, they acknowledge Sarah Simkin and Caroline Chamberland-Rowe for their helpful review of an earlier draft of this manuscript.

Funding

The BBE was supported by CIHR. CIHR did not have any role in the preparation, review or approval of the manuscript. Open access publication was supported by Athabasca University's Academic Research Fund.

Declaration

Richard Steinecke's law firm acts for numerous professional regulators and national umbrella organizations of regulators.

Correspondence may be directed to: Ivy Lynn Bourgeault. Ivy can be reached by e-mail at ivy.bourgeault@uottawa.ca.

References

Australian Government Department of Health and Aged Care. 2021, April 8. Extension of COVID-19 Pandemic Health Workforce. Retrieved April 8, 2021. <https://www.health.gov.au/news/extension-of-covid-19-pandemic-health-workforce>.

Australian Health Practitioner Regulation Agency (Ahpra) and National Boards. 2020, November 12. *Annual Report 2019/20: Ten Years of Your National Scheme for Safer Healthcare*. Retrieved March 15, 2021. <https://www.ahpra.gov.au/Publications/Annual-reports/Annual-Report-2020/Registration.aspx>.

Bourgeault, I.L., C.B. Maier, M. Dieleman, J. Ball, A. MacKenzie, S. Nancarrow et al. 2020. The COVID-19 Pandemic Presents an Opportunity to Develop More Sustainable Health Workforces. *Human Resources for Health* 18: 83. doi:10.1186/s12960-020-00529-0.

Bourgeault, I., S. Simkin and C. Chamberland-Rowe. 2019. Poor Health Workforce Planning Is Costly, Risky and Inequitable. *CMAJ* 191(42): E1147–48. doi:10.1503/cmaj.191241.

Canadian Agency for Drugs and Technologies in Health (CADTH). 2020, August 6. *CADTH Policy Brief: Inter-Jurisdictional Medical Licensing to Support Telemedicine*. Retrieved April 8, 2021. <https://www.cadth.ca/sites/default/files/hta-he/cadth-policy-brief-interjurisdictional-licensing-final.pdf>.

Canadian Alliance of Physiotherapy Regulators (CAPR). 2019. Cross-Border Physiotherapy within Canada. Retrieved March 16, 2021. <https://www.alliancept.org/licensure/cross-border-physiotherapy-within-canada/>.

Canadian Free Trade Agreement (CFTA). 2015. Agreement on Internal Trade. Retrieved April 8, 2021. <https://www.cfta-alec.ca/agreement-on-internal-trade/>.

Canadian Free Trade Agreement (CFTA). 2017. Canadian Free Trade Agreement (CFTA). Retrieved April 8, 2021. <https://www.cfta-alec.ca/canadian-free-trade-agreement/>.

Canadian Institutes of Health Research (CIHR). 2019, October 25. Advancing a Dialogue towards Pan Canadian Licensure and Registration of Health Professionals. Retrieved March 16, 2021. <https://cihr-irsc.gc.ca/e/51804.html>.

College of Registered Nurses of Alberta (CRNA). 2021, October 27. Supporting Virtual Care Across Provincial Borders. Retrieved July 23, 2022. <https://nurses.ab.ca/news/supporting-virtual-care-across-provincial-borders/>.

Federation of Medical Regulatory Authorities of Canada (FMRAC). 2018, June. *Model Standards for Medical Registration in Canada*. Retrieved March 18, 2021. <https://fmrac.ca/wp-content/uploads/2019/06/FMRAC-Model-Standards-June-2018.pdf>.

Federation of Medical Regulatory Authorities of Canada (FMRAC). 2021. *Snapshot 2020–2021: Year in Review*. Retrieved September 12, 2021. <https://fmrac.ca/wp-content/uploads/2021/08/FMRAC-Snapshot-2020-2021-year-in-review-EN-Final.pdf>.

Gruben, V. and A. Czarnowski. 2020, April 1. What Are the Rights and Responsibilities of Healthcare Providers in a Pandemic? *Policy Options*. Retrieved April 8, 2021. <https://policyoptions.irpp.org/magazines/april-2020/what-are-the-rights-and-responsibilities-of-healthcare-providers-in-a-pandemic/>.

Gupta, N., S.A. Balcom, A. Gulliver and R.L. Witherspoon. 2021. Health Workforce Surge Capacity during the COVID-19 Pandemic and Other Global Respiratory Disease Outbreaks: A Systematic Review of Health System Requirements and Responses. *The International Journal of Health Planning and Management* 36(S1): 26–41. doi:10.1002/hpm.3137.

Julia, C., Y. Saynac, C. Le Joubioux, J. Caihold, P. Lombrail and O. Bouchaud. 2020. Organising Community Primary Care in the Age of COVID-19: Challenges in Disadvantaged Areas. *The Lancet Public Health* 5(6): e313. doi:10.1016/S2468-2667(20)30115-8.

Laverdière, M. 2021, February 18. What the Rise of Telemedicine Means for Canada's Legal System. *The Conversation*. Retrieved April 8, 2021. <https://theconversation.com/what-the-rise-of-telemedicine-means-for-canadas-legal-system-155126>.

National Council of State Boards of Nursing (NCSBN). 2020, April 9. NSCBN Offers Free Fast-Track Nurse License Verification for State and Federal Emergency Response Organizations. *Cision*. Retrieved April 1, 2021. <https://www.prnewswire.com/news-releases/ncsbn-offers-free-fast-track-nurse-license-verification-for-state-and-federal-emergency-response-organizations-301038342.html>.

National Council of State Boards of Nursing (NCSBN). 2021. NCSBN's Environmental Scan: COVID-19 and Its Impact on Nursing Regulation. *Journal of Nursing Regulation* 11(4): S1–S36. doi:10.1016/S2155-8256(21)00002-8.

Nurse Practitioners Association of Canada (NPAC). 2021. *NPAC-AIIPC March e-Newsletter*. Retrieved September 12, 2021. <https://npac-aiipc.org/wp-content/uploads/2021/03/March-issue-01-03-2021.pdf>.

Oetter, H.M. 2019. Registrar's Message: Telemedicine and Licence Portability – The Future of Medical Regulation in Canada. *College Connector* 7(2).

Reference re Pan-Canadian Securities Regulation, 2018 SCC 48, [2018] 3 S.C.R. 189. Retrieved July 15, 2022. <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/17355/index.do>.

Robertson, C. 2021, June. The Australian National Registration and Accreditation Scheme by Chris Robertson – Ahpra [Youtube video]. Canadian Health Workforce Network. *Youtube*. Retrieved August 5, 2021. <https://www.youtube.com/watch?v=tKepecKZaYA>.

Tang, B. and L.L. Zhou. 2020. COVID-19: An Accidental Catalyst for Change in the Canadian Health Care System. *British Columbia Medical Journal* 62(7): 242–43, 246.

DISCUSSION AND DEBATE

Commentary: Burning Platforms, Icebergs and Tipping Points – Canada Needs a Single Socially Accountable Healthcare System

Commentaire : Plateformes en feu, icebergs et points de basculement – le Canada a besoin d'un système de santé unique socialement responsable

ROGER STRASSER, AM, MBBS, MCLSC, FCAHS
Emeritus Professor of Rural Health
University of Waikato
Hamilton, New Zealand
Founding Dean Emeritus
NOSM University
Sudbury, ON

Abstract

Leslie et al.'s (2022) article caused me to reflect on the complexities and contradictions that are Canada. Healthcare in Canada is a hodgepodge of different health systems all assembled under the umbrella of the *Canada Health Act* (1985). Canadians expect medicare to deliver high-quality healthcare close to home wherever they live. For this aspiration to become a reality, there needs to be a single pan-Canadian health system focussed on the health needs of the populations being served. This socially accountable healthcare system is likely to be achieved only if there is a chorus of support across Canada for meaningful pan-Canadian health reforms.

Résumé

L'article de Leslie et al. (2022) me porte à réfléchir aux complexités et contradictions qui caractérisent le Canada. Les soins de santé y sont un méli-mélo de plusieurs systèmes de santé, tous réunis sous l'égide de la Loi canadienne sur la santé (1985). Les Canadiens s'attendent à ce que l'assurance maladie fournisse des soins de haute qualité près de chez eux, où qu'ils vivent. Pour que ce souhait devienne réalité, il faut un système de santé pancanadien unique axé sur les besoins des populations desservies. Ce système de santé socialement responsable ne sera atteint que si les grandes réformes pancanadiennes de la santé bénéficient du soutien d'une pluralité de personnes au Canada.

This Is Canada

Leslie et al. (2022) present the case for pan-Canadian regulation and licensure of health professionals, drawing on the Canadian Institutes of Health Research's Best Brains Exchange sessions of October 2019, and suggest that now is the time to act in the context of the COVID-19 pandemic. As I read the article, I began to reflect on the complexities and contradictions that are Canada.

I was visiting Ontario in 2001 at the time that the Ontario government announced that there would be a Northern Ontario School of Medicine (NOSM). The announcement came when I was attending the Annual Rural and Remote Conference of the Society of Rural Physicians of Canada (SRPC). It was notable that one of the most attended sessions in the conference was on the topic of portable licensure. Rural physicians in Canada and around the world like to travel and work in other rural settings (SRPC 2021).

In 2002, I moved to Canada from Australia to take up the role of founding dean of NOSM (Krotz 2021; Tesson et al. 2009;). It soon became clear to me that the term "national" cannot be applied to Canada unless all 14 governments agree. The Ontario government's decision was to establish one school of medicine for the whole of Northern Ontario under the auspices of two universities: Lakehead University in Thunder Bay and Laurentian University in Sudbury, 1,000 km apart. I well remember the comment in an early meeting with leaders of health professional training in Northern Ontario that bringing the northwest and the northeast together was "against the natural order of things."

Also in 2002, the report by the Commission on the Future of Health Care in Canada (Romanow 2002) was long on endorsement of Canadian values and the continuation of Medicare, and short on recommendations for structural reform to ensure the long-term viability of Canada's universal health insurance program. The reality is that Canada has 17 health systems, including three federal government–run health services. Essentially, healthcare in Canada is a hodgepodge of different health systems, all assembled under the umbrella of the *Canada Health Act* (1985).

People living in remote, rural and Indigenous communities in Canada are at the margins of healthcare access and health outcomes (PHAC, CRaNHR and CIHI 2006). In addition, people living near provincial and territorial borders, as well as the health professionals who serve them, are subject to complicated cross-border arrangements. There is clearly a strong case for a pan-Canadian health system that delivers on the promise of the *Canada Health Act* (1985).

Pan-Canadian health professional regulation is likely to facilitate cross-border movement and service delivery of health professionals in remote, rural and Indigenous communities; however, most people will not notice improvements in access to or quality of care. My question is whether pan-Canadian regulation of health professionals will really make any material difference for most people in Canada, particularly those in remote, rural and Indigenous communities.

Engineering Durable Change

Leslie et al.'s (2022) article suggests that the COVID-19 pandemic presents a "*burning platform* to catalyze the necessary measures required for mobilizing a unified pan-Canadian approach to licensure and registration" (p. 22). They highlight short-term changes that were instituted in the context of the pandemic. However, they also acknowledge that "[w]hile these measures facilitated certain health workforce responses, many are time-limited emergency measures" (Leslie et al. 2022: 23).

It seems that the pandemic has helped with short-term changes. However, it is not certain if the fact that these changes that occurred will provide the impetus for meaningful long-term change. Rather than the "burning platform" analogy, the phrase "melting iceberg" may provide the basis for genuine reforms. As Leslie et al. (2022) note, "[s]trong federal and provincial/territorial political leadership is required to provide the momentum needed to overcome initial resistance or inertia and propel political will to move forward on pan-Canadian reform" (p. 23). This aligns with Kotter and Rathgeber's (2006) message in their fable *Our Iceberg Is Melting: Changing and Succeeding Under Any Circumstances*, which is a tale of "resistance to change and heroic action, seemingly intractable obstacles and the most clever tactics for dealing with those obstacles" (Book Cover).

During my 17 years as NOSM's dean, I participated in multiple provincial and federal initiatives that focused on health workforce planning and production, health services delivery and addressing health inequities. NOSM was established as an Ontario government strategy to address the health needs of the region, improve access to quality care and contribute to the economic development of Northern Ontario. Its Social Accountability mandate to improve the health of the people of Northern Ontario provided the basis of developing "Distributed Community Engaged Learning" as its distinctive model of medical education and health research (NOSM University 2018). NOSM has been successful in graduating physicians and other health professionals who have the skills and commitment to provide care where it is most needed in rural and underserved communities (Hogenbirk et al. 2021; Mian et al. 2017; Strasser et al. 2018). Many NOSM graduates are now faculty members, and an increasing number have taken on academic leadership roles in the school.

Actual Experience

Meanwhile, I was a member of the Ontario advisory tables on health workforce and equity in health quality, as well as the Federal/Provincial/Territorial (FPT) Physician Resource Planning Advisory Committee (PRPAC), the Postgraduate Medical Education (PGME) Collaborative Governance Council and the SRPC College of Family Physicians of Canada (CFPC) Task Force that developed the Rural Roadmap for Action (Advancing Rural Family Medicine: The Canadian Collaborative Taskforce 2017). Both at provincial and pan-Canadian levels, forecasting and planning of the physician workforce were hampered by inconsistent and incomplete data availability within and between jurisdictions, and generally a lack of agreed common ground and clarity regarding the desired outcomes. For example, the PRPAC – a subcommittee of the FPT Committee on Health Workforce (Government of Canada 2016) – oversaw the development of a pan-Canadian physician resource tool (Slade et al. 2014) that itself was building on previous work undertaken by the Ontario Ministry of Health and Long-Term Care. When I stepped away in 2019, there had been over a decade of development work but the planning tool was not yet being utilized because not all provinces and territories had agreed to supply the data. In addition, there were ongoing considerations as to which organization would be responsible for the ongoing collection of data and management of the database, although the Canadian Institute of Health Information was the most likely candidate.

The PGME Collaborative Governance Council (https://pgme-cgc.afmc.ca/node/21) was established as a result of a recommendation in the 2012 Future of Medical Education in Canada Postgraduate Vision to "Establish Effective Collaborative Governance in PGME" (CFPC, Collège des médecins du Québec and Royal College of Physicians and Surgeons of Canada 2012: 6). This recommendation stated that "[r]ecognizing the complexity of PGME and the health delivery system within which it operates, integrate the multiple bodies (regulatory and certifying colleges, educational and healthcare institutions) that play a role in PGME into a collaborative governance structure in order to achieve efficiency, reduce redundancy, and provide clarity on strategic directions and decisions" (CFPC, Collège des médecins du Québec and Royal College of Physicians and Surgeons of Canada 2012: 6). The PGME Collaborative Governance Council was developed to resolve contentious issues across organizations. The council was dissolved after four years because of tensions between organizational autonomy and priorities and the collective vision. In their article on the PGME Collaborative Governance Council, Herbert et al. (2021) concluded by asking the fundamental question as to whether a consensus-based decision-making process can ever be achieved among organizations with overlapping mandates and, in some cases, hierarchical structures.

The Rural Roadmap for Action – Directions (Advancing Rural Family Medicine: The Canadian Collaborative Taskforce 2017) was developed over three years by the SRPC-CFPC Task Force and endorsed in Ottawa at the 2017 Rural Health Summit (CFPC and SRPC 2017). In 2018, the SRPC-CFPC Rural Roadmap Implementation Committee (RRMIC) was established to monitor progress and encourage implementation of the 20 recommended actions in the Rural Roadmap. The RRMIC final report card in 2021 showed that not a single one of the recommended actions had been implemented in full and that the recommendation for a standardized measurement system demonstrating the impact of rural health service delivery models was rated as *minimal progress* (Rural Road Map Implementation Committee 2021).

Drawing on these examples, it seems clear that the strategies listed in Leslie et al.'s (2022) Table 2 are unlikely to ensure the successful implementation of pan-Canadian health professional regulation. Success is more likely if strategies are embedded in wider health system reforms that are enabled by broad FPT political and bureaucratic commitments.

Socially Accountable Healthcare

Canadians expect medicare to deliver high-quality healthcare close to home wherever they live.

In Northern Ontario, NOSM's Social Accountability mandate translated into active community participation through community engagement so that NOSM and its programs were developed by Northern Ontario, in Northern Ontario, for Northern Ontario (Strasser et al. 2018). NOSM's success is based on a facilitated career pathway approach that involves recruiting students from underserved, underrepresented populations and delivering undergraduate and postgraduate immersive community-engaged education that prepares NOSM graduates to provide healthcare where it is most needed (Strasser 2021).

Similarly, accessible high-quality healthcare close to home is most likely to be achieved through the socially accountable "start local" approach focused on addressing the health needs of the population being served (Strasser and Strasser 2020). The Health Partnership Pentagram Plus at the local, regional and provincial levels has been used with success in British Columbia (BC) through a collaboration between the BC Rural Coordination Centre and the First Nations Health Authority (Markham et al. 2021).

Leslie et al. (2022) conclude that "[r]ather than continuing down the path of these patchwork responses, now is the time for a pan-Canadian reform" (pp. 23–24). I contend that health professional regulation reform is necessary but not sufficient to achieve the single socially accountable health system that Canada needs. Kotter and Rathgeber's (2006) eight steps provide the way to generate a chorus of support across Canada that brings us from the melting iceberg to the tipping point (Gladwell 2000), which creates the political will to implement meaningful pan-Canadian health reforms, including health professional regulation.

Correspondence may be directed to: Roger Strasser. Roger can be reached by e-mail at roger.strasser@waikato.ac.nz.

References

Advancing Rural Family Medicine: The Canadian Collaborative Taskforce. 2017. *The Rural Roadmap for Action – Directions*. The College of Family Physicians of Canada. Retrieved July 23, 2022. <https://srpc.ca/resources/Documents/PDFs/Rural_Road_Map_Directions_ENG.pdf>.

Canada Health Act, R.S.C., 1985, c. C-6. Retrieved July 23, 2022. <https://laws-lois.justice.gc.ca/eng/acts/c-6/page-1.html>.

The College of Family Physicians of Canada (CFPC), Collège des médecins du Québec and the Royal College of Physicians and Surgeons of Canada. 2012. *A Collective Vision for Postgraduate Medical Education in Canada*. Retrieved August 10, 2022. <https://www.afmc.ca/future-of-medical-education-in-canada/postgraduate-project/pdf/FMEC_PG_Final-Report_EN.pdf>.

The College of Family Physicians of Canada (CFPC) and Society of Rural Physicians of Canada (SRPC). 2017, July. *Final Report: Summit to Improve Health Care Access and Equity for Rural Communities in Canada: The Rural Roadmap for Action*. Retrieved July 23, 2022. <https://srpc.ca/resources/Documents/PDFs/ARFM_Summit_Report_ENG_Final_Web.pdf>.

Gladwell, M. 2000. *The Tipping Point: How Little Things Can Make a Big Difference*. Little, Brown.

Government of Canada. 2016, April 14. Committee on Health Workforce (CHW). Retrieved July 23, 2022. <https://www.canada.ca/en/health-canada/services/health-care-system/health-human-resources/committee-health-workforce.html>.

Herbert, C.P., N. Busing and L. Nasmith. 2021. Collaborative Governance of Postgraduate Medical Education: Can It Be Achieved? *Medical Teacher* 43(12): 1413–18. doi:10.1080/0142159X.2021.1951691.

Hogenbirk, H.C., D.R. Robinson and R.P. Strasser. 2021. Distributed Education Enables Distributed Economic Impact: The Economic Contribution of the Northern Ontario School of Medicine to Communities in Canada. *Health Economics Review* 11(1): 20. doi:10.1186/s13561-021-00317-z.

Kotter, J. and H. Rathgeber. 2006. *Our Iceberg Is Melting: Changing and Succeeding Under Any Conditions*. Pam Macmillan.

Krotz, L. 2021. *Nothing Ordinary: The Story of the Northern Ontario School of Medicine*. Cormorant Books.

Leslie, K., C. Demers, R. Steinecke and I.L. Bourgeault. 2022. Pan-Canadian Registration and Licensure of Health Professionals: A Path Forward Emerging from a Best Brains Exchange Policy Dialogue. *Healthcare Policy* 18(1): 17–25. doi:10.12927/hcpol.2022.26909.

Markham, R., M. Hunt, R. Woollard, N. Oelke, D. Snadden, R. Strasser et al. 2021. Addressing Rural and Indigenous Health Inequities in Canada through Socially Accountable Health Partnerships. *BMJ Open* 11: e048053. doi:10.1136/bmjopen-2020-048053.

Mian, O., W. Warry and R. Strasser. 2017. How Underserviced Rural Communities Approach Physician Recruitment: Changes Following the Opening of a Socially Accountable Medical School in Northern Ontario. *Canadian Journal of Rural Medicine* 22(4): 139–47.

NOSM University. 2018, June 13. Social Accountability. Retrieved August 3, 2022. <https://www.nosm.ca/2018/06/13/social-accountability/>.

Public Health Agency of Canada (PHAC), Centre for Rural and Northern Health Research (CRaNHR) and Canadian Institute of Health Information (CIHI). 2006, September. *How Healthy Are Rural Canadians? An Assessment of Their Health Status and Health Determinants*. Retrieved July 23, 2022. <https://secure.cihi.ca/free_products/rural_canadians_2006_report_e.pdf>.

Romanow, R.J. 2002, November. *Building on Values: The Future of Health Care in Canada – Final Report*. Commission on the Future of Health Care in Canada. Retrieved July 23, 2022. <https://publications.gc.ca/collections/Collection/CP32-85-2002E.pdf>.

Rural Road Map Implementation Committee. 2021, April. *Rural Road Map: Report Card on Access to Health Care in Rural Canada*. The College of Family Physicians of Canada and the Society of Rural Physicians of Canada. Retrieved July 23, 2022. <https://www.cfpc.ca/CFPC/media/PDF/Rural-Road-Map-Report-Card-EN-final.pdf>.

Slade, S., C. Moffatt and G. Moineau. 2014. Pan-Canadian Physician Resources and Planning Tools/Ressources Pancanadiennes me dicales et outils de planification [Canadian Health Workforce Conference]. Canadian Health Workforce Network. Retrieved August 10, 2022. <https://www.hhr-rhs.ca/en/tools/chwn-resources/library/english-french/pan-canadian-physician-resources-and-planning-tools-ressources-pancanadiennes-me-dicales-et-outils-de-planification.html>.

Society of Rural Physicians of Canada (SRPC). 2021, July. Advocacy on National Licensure. *SRPC Newsletter for July And August*. Retrieved July 23, 2022. <https://srpc.ca/newsletter_jul_aug>.

Strasser, R. 2021. "Immersive Community Engaged Education: Community Engaged Learning than Work-Integrated Learning." In A. Stirling and J. Pretti, eds., *The Practice of Co-op and Work-Integrated Learning in the Canadian Context* (pp. 72–81). CEWIL Canada.

Strasser, R., J. Hogenbirk, K. Jacklin, M. Maar, G. Hudson, W. Warry et al. 2018. Community Engagement: A Central Feature of NOSM's Socially Accountable Distributed Medical Education. *Canadian Medical Education Journal* 9(1): e33–e43.

Strasser, R. and S. Strasser. 2020, August. *Reimagining Primary Health Care Workforce in Rural and Underserved Settings* [Discussion Paper]. World Bank Group. Retrieved July 23, 2022. <http://documents.worldbank.org/curated/en/304851606975759118/Reimaging-Primary-Health-Care-Workforce-in-Rural-and-Underserved-Settings>.

Tesson, G., G. Hudson, R. Strasser and D. Hunt (eds.). 2009. *The Making of the Northern Ontario School of Medicine: A Case Study in Medical Education*. McGill Queens University Press.

DISCUSSION AND DEBATE

Leaving the Walkman and ICD-9 Behind: Modernizing the Disease Classification System Used by Canadian Physicians

Abandonner le baladeur et la CIM-9 : modernisation du système de classification des maladies utilisé par les médecins canadiens

STEPHANIE GARIES, PhD
Research Associate
Department of Family Medicine
University of Calgary, Calgary, AB

PHOEBE NG, BSc, MD
Psychiatry Resident
University of British Columbia
Vancouver, BC

JAMES A. DICKINSON, MBBS, PhD
Professor
Departments of Family Medicine and
Community Health Sciences
University of Calgary, Calgary, AB

TERRENCE MCDONALD, MD, MSc
Assistant Professor
Departments of Family Medicine and
Community Health Sciences
University of Calgary, Calgary, AB

MAEVE O'BEIRNE, MD, PhD
Associate Professor
Departments of Family Medicine and
Community Health Sciences
University of Calgary, Calgary, AB

KERRY A. MCBRIEN, MD, MPH
Associate Professor
Departments of Family Medicine and
Community Health Sciences
University of Calgary, Calgary, AB

CATHERINE EASTWOOD, PhD
Operations Manager
Centre for Health Informatics
University of Calgary, Calgary, AB

DANIELLE A. SOUTHERN, MSc
Research Associate
Department of Community Health Sciences
University of Calgary, Calgary, AB

NEIL DRUMMOND, PhD
Professor Emeritus
Department of Family Medicine, University of Alberta
Adjunct Professor
School of Public Health, University of Alberta
Departments of Family Medicine and
Community Health Sciences
University of Calgary, Calgary, AB

HUDE QUAN, MD, PhD
Professor
Department of Community Health Sciences
University of Calgary, Calgary, AB

Abstract

The International Classification of Diseases, Ninth Revision (ICD-9) was released in the 1970s and adopted in Canada for physician billing claims in 1979 (CIHI n.d.b.; WHO & International Conference for the Ninth Revision of the International Classification of Diseases 1977). ICD-9 is no longer adequate for representing our modern healthcare environment and patient needs. We summarize the findings from a small survey of ICD-9 users across Canada – such as family physicians, researchers and decision makers – who describe the limitations of ICD-9 and the features that they would desire in a new or updated classification system.

Résumé

La neuvième version de la Classification internationale des maladies, neuvième révision (CIM-9) a été publiée dans les années 1970 et adoptée au Canada, en 1979, pour les demandes de paiement faites par les médecins (CIHI n.d.b.; WHO & International Conference for the Ninth Revision of the International Classification of Diseases 1977). La CIM-9 ne correspond plus à l'environnement actuel des soins de santé ni aux besoins des patients. Nous résumons les résultats d'un bref sondage auprès d'utilisateurs de la CIM-9 au Canada, soit des médecins de famille, des chercheurs et des décideurs. Les répondants décrivent les limites de la CIM-9 et présentent les caractéristiques qu'ils souhaiteraient voir dans un système de classification renouvelé ou mis à jour.

Overview

Physicians in Canada are required to use the International Classification of Diseases, Version 9 (ICD-9) for submitting billing claims to provincial/territorial governments to obtain reimbursement for medical services or for shadow billing (WHO & International Conference for the Ninth Revision of the International Classification of Diseases 1977). The coded claims are made available as an administrative database, which is widely used for secondary purposes, such as research, surveillance, costing and policy decision making (Quan et al. 2012). ICD-9 was implemented in Canada beginning in 1979 (CIHI n.d.b.), the same year the Sony Walkman was released, which, for the first time, allowed us to listen to cassette tapes while on the move (Sony Global 1999). The next version of ICD (International Classification of Diseases, Tenth Revision [ICD-10]) was implemented across Canada beginning in 2001 for reporting in hospitals and facility-based ambulatory care (Walker et al. 2012), but ICD-9 continues for physician billing. Similar to its now-defunct contemporary, ICD-9 is long outdated.

The latest version – International Classification of Diseases, 11th Revision (ICD-11) – was recently released by the World Health Organization (WHO) and is available for worldwide implementation (WHO 2019). Canada has begun preparations for the eventual adoption of ICD-11 in hospitals (CIHI n.d.a.), but the decision to replace ICD-9 for physician billing has yet to be made. While this choice and the subsequent implementation of a new classification is the responsibility of each provincial and territorial government as updates to their diagnostic coding requirements for billing, other stakeholders are also critical to the process. The Canadian Institute for Health Information (CIHI) sets national recommendations for the adoption of new classification systems and ensures that they are evaluated for a Canadian context. Healthcare providers who submit billing claims and those who use or administer these codes in analyzing, managing and evaluating health systems should be consulted in order to select an appropriate system and support an efficient, well-informed transition to it. This is a timely opportunity to engage these stakeholders in the discussion around the importance and benefit of replacing ICD-9 with a modern, clinically relevant classification system.

Using a non-representative convenience sample of individuals across Canada with the knowledge and/or experience of the ICD-9 system, our team conducted a short online survey between October and December 2020 to obtain feedback on their use of and satisfaction with ICD-9 (approved by the University of Calgary Conjoint Health Research Ethics Board [REB20-1494]). In this paper, we use the findings from this survey to discuss why it is imperative to shift away from ICD-9 and outline future considerations for a new system.

ICD-9 is inadequate for today's healthcare system

ICD was originally created in the late 1800s as a way to classify causes of death; subsequent versions evolved to incorporate morbidity coding designed for use in hospitals (WHO 2021). Hence, it is not surprising that ICD-9 lacks codes for early disease states, for disease complexity or severity and for many conditions that were not formally defined in earlier years (e.g., fibromyalgia, body dysmorphic disorder, metabolic syndrome, newly differentiated viruses). In addition, some of the terminology used in ICD-9 is archaic and unacceptable (e.g., mental retardation, impotence of organic origin, sexual deviations and disorders).

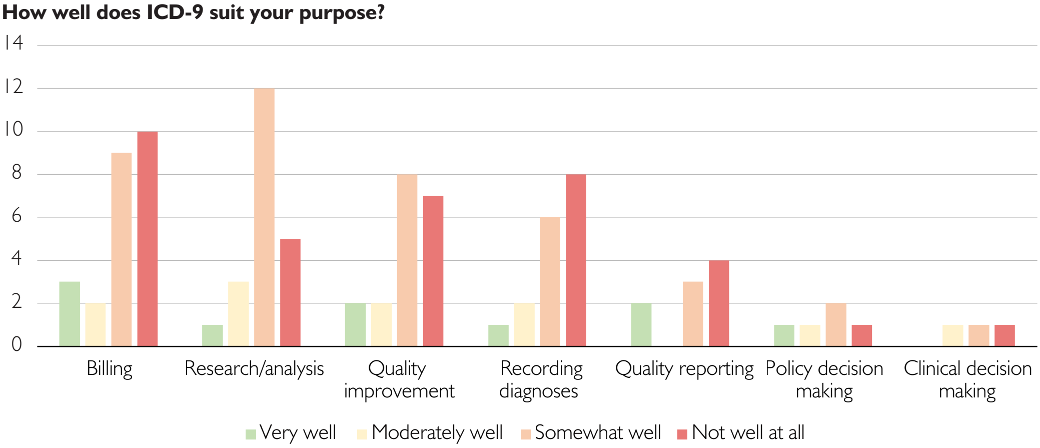
The legacy of ICD development disproportionately affects primary healthcare settings, where many encounters are symptom-based or undifferentiated and where preventive activities are common. Previous research has shown that neither do ICD-9 codes consistently capture the main problems addressed during a primary care encounter nor do they reflect the true complexity of a primary care visit (Katz et al. 2012; Ryan et al. 2019). This becomes a problem when physician claims databases are used to describe complex patients, assess family physician workloads or inform the reorganization of primary care (e.g., alternative remuneration models, value-based care, Patient's Medical Home models). To adequately serve these purposes, a comprehensive, robust and up-to-date classification system is essential.

Users of ICD-9 report dissatisfaction and poor suitability for their purposes

Our survey elicited responses from a variety of ICD-9 users (*N* = 40 respondents; 57.5% female) in seven Canadian provinces and territories. Respondents reported working in clinical practice, academic institutions, government and regional health authorities in roles such as family physician, clinical support staff, researcher/analyst, project/program coordinator or lead and senior executive management. Most respondents indicated that they were moderately or extremely familiar with ICD-9 (85%). Few reported that ICD-9 was very suitable for their purpose (Figure 1).

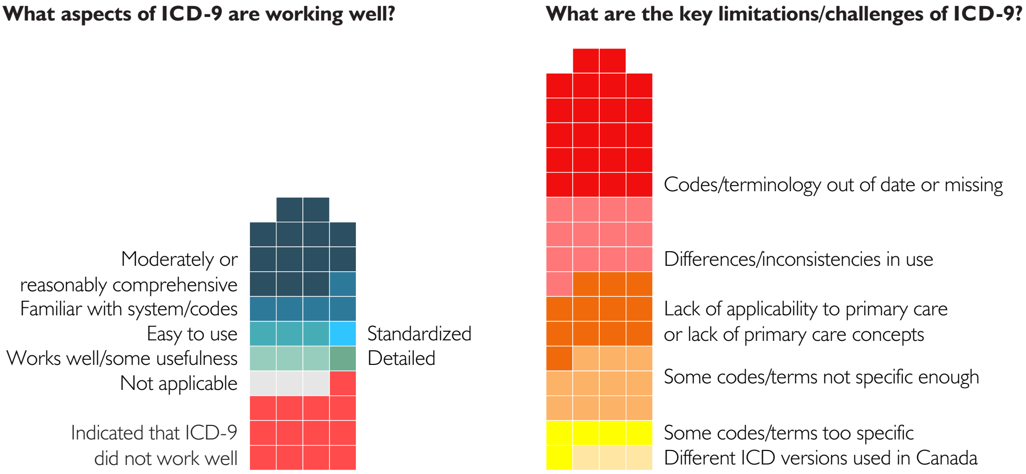
FIGURE 1. Survey feedback on the suitability, advantages and limitations of ICD-9 for their specified purposes

FIGURE 1a.



Respondents were permitted to select more than one purpose of ICD-9 use or offer multiple open-ended responses.

FIGURE 1b.



When asked about the aspects of ICD-9 that work well, one-third of the respondents indicated that it is reasonably comprehensive, others reported that it was familiar, easy to use and standardized (Figure 1a). Interestingly, despite the question asking about the positive attributes, a third of the responses to this question included negative aspects of ICD-9. A separate question about key limitations identified many more, such as missing or out-of-date codes/terminology, inconsistencies in use, lack of applicability to primary care and codes that were either too specific or not specific enough (Figure 1b).

ICD-9 is not designed for technological innovation or advancements in medicine

Electronic medical records (EMRs) are used by the majority of physicians across Canada (Collier 2015) and the rich data contained within have become valuable for quality improvement, research, surveillance and health informatics (Birtwhistle and Williamson 2015; Kueper et al. 2020). However, ICD-9 was not designed to be compatible with electronic systems or support clinical documentation. This becomes problematic when physicians record details about patient visits in their EMR: open text, rather than a code, is often used to capture relevant information and observations, which is more difficult to search for or utilize for secondary uses. Furthermore, the development of advanced features within EMRs, such as predictive or automated coding, is not possible with ICD-9, given that many encounters, conditions and symptoms do not have a corresponding ICD-9 code that accurately reflects the primary care visit (Bhise et al. 2018; Katz et al. 2012; Ryan et al. 2019). Another limitation is that ICD-9 is not extensible, which means that new conditions (e.g., COVID-19) cannot be easily added; most of its disease categories are considered full.

Finally, when considering the key components needed to advance learning health systems in Canada, access to high-quality and easily analyzable health data that can quickly inform clinical decision making and quality improvement is paramount (Menear et al. 2019). While coded diagnostic data would be ideal, ICD-9 may not sufficiently capture the nuances of complex patient care. This means that the processing of other EMR data, such as text, is needed to supplement the information gaps, but this requires highly trained technical personnel and larger computational resources.

Future Considerations

While our survey was small and not generalizable to all ICD-9 users in Canada, every respondent indicated that they would consider adopting a new system if it fully met their needs, and 90% reported that they would support a change even if the new system only *partially* met their needs. Despite this, implementing a new classification system for physician billing in Canada will be a monumental task with a number of important questions and issues that need to be addressed. First, a cost-benefit assessment will be important for decision makers that should account for implementation costs (including physician and staff training, revising billing fee schedules and requirements and updating EMR systems), as well as the wide-ranging impact on subsequent uses of codes and its impact on data quality.

Second, a rigorous investigation is needed to determine the most suitable system to replace ICD-9 and assess its utility for a Canadian context. This process should incorporate the perspectives of all ICD users, such as clinicians, billing clerks, management, researchers, analysts and policy makers, which can also serve as a way to prepare users for a future transition. To address expected challenges, such as path dependency and operational issues, we can learn from previous coding system transitions and digital transformations in Canada and other countries (Castle-Clarke and Hutchings 2019; Monestime et al. 2019; Moskal 2004). For instance, training and education are emphasized as some of the most significant prerequisites, which should include adequate resources and ongoing support for physicians and clinical staff. A commitment from all levels of stakeholders is fundamental, as is having strong and consistent communication and engagement, including clearly articulating the purpose and benefits of the new system. Technological readiness is also important, which will be eased by the digital compatibility of ICD-11 (and other newer classification systems) with clinical information systems.

Finally, it would be ideal to develop a map that links ICD-9 codes to the new system to support time-trend analyses or any future use that requires codes over a time period during the transition. However, this is likely to be a complex process due to the major differences between ICD-9 and newer systems, and the utility of this is uncertain.

When we asked the survey respondents about key features that they desired in a new or enhanced classification system, many responses were unsurprising, such as the need for codes to reflect new or updated diagnoses, better comprehensiveness and a system more suited to general practice by describing reasons for visits, symptom presentation, prevention and screening activities and capturing complex patient presentations (e.g., frailty). Other requests were more general to a well-functioning classification system, such as one that is flexible, extensible, easy to use and able to integrate with EMR systems. Some respondents indicated a preference for a system similar to ICD-9, likely due to users' familiarity with ICD-9, as well as a map between new and old systems. ICD-11 remains a highly relevant replacement for ICD-9 for physician billing and will eventually become the coding standard in Canadian hospitals. ICD-11 was designed for modern medicine, is compatible with EMRs, offers advanced search capabilities and the ability to cluster-code multiple diagnoses/symptoms and includes supplementary codes for functioning and future extensions (Harrison et al. 2021). The WHO's updated International Classification of Health Interventions (ICHI) was also recently released in 2021 and is intended to be used alongside ICD-11 for coding medical procedures (WHO 2022). ICHI may eventually replace or augment the current Canadian Classification of Health Intervention (CCI) system used in Canadian hospital settings (CIHI n.d.c.); however, CCI (or older versions) is generally not used outside of acute care. For the purposes of physician billing, each province and territory has determined their own coding structure used for procedures.

An alternative for family physicians, in particular, is the International Classification of Primary Care (ICPC), which released its third version (International Classification of Primary Care – 3rd Revision [ICPC-3]) in December 2020 (ICPC-3 Consortium 2019). ICPC was designed to reflect the workflow of general practice, where symptoms or complaints are initially recorded using "Reason for Encounter" codes, and these "reasons" can evolve over time as the diagnostic process develops or is clarified. Multiple visits can be linked to describe the episode of care over time, including procedures, diagnoses (if any) and treatment. ICPC contains a smaller number of codes than ICD but includes activities that are relevant to family medicine. This system would be appropriate for both clinical documentation and billing in primary care settings; however, its use in Canada is sporadic. Only a small number of practices have adopted ICPC for use in their EMR systems, thus requiring further exploration of its utility and desirability. ICPC can also map to ICD, ensuring that the two coding systems are able to work harmoniously across different care settings. This means that it may not be necessary to implement the same classification system for all types of physician billing (e.g., primary care and specialists), although it may be more efficient to do so.

Conclusion

Canada is long overdue for an updated disease classification system. As healthcare and patient-centric models continue to evolve here, it is crucial that they are supported by up-to-date systems for appropriate and accurate information capture. Adopting consistent, standardized terminology and coding for EMRs could improve data quality, interoperability, provider communication, clinical decision making and the validity of findings from research and surveillance. Given the recent releases of ICD-11 and ICPC-3 (Ten Napel et al. 2022), we have an ideal opportunity to prepare for a transition to physician billing requirements in Canada. The 1970s' era of medicine is as out of date as portable cassette tape players – it is time for our national disease classification system to reflect a modern understanding of health, diseases and patient care.

Correspondence may be directed to: Stephanie Garies. Stephanie can be reached by e-mail at sgaries@ucalgary.ca.

References

Bhise, V., S.S. Rajan, D.F. Sittig, V. Vaghani, R.O. Morgan, A. Khanna et al. 2018. Electronic Health Record Reviews to Measure Diagnostic Uncertainty in Primary Care. *Journal of Evaluation in Clinical Practice* 24(3): 545–51. doi:10.1111/jep.12912.

Birtwhistle, R. and T. Williamson. 2015. Primary Care Electronic Medical Records: A New Data Source for Research in Canada. *CMAJ* 187(4): 239–40. doi:10.1503/cmaj.140473.

Canadian Institute for Health Information (CIHI). n.d.a. ICD-11 (International Statistical Classification of Diseases and Related Health Problems, 11th Revision). Retrieved March 17, 2021. <https://www.cihi.ca/en/submit-data-and-view-standards/codes-and-classifications/icd-11-international-statistical>.

Canadian Institute for Health Information (CIHI). n.d.b. ICD-9/CCP and ICD-9-CM. Retrieved March 17, 2021. <https://www.cihi.ca/en/submit-data-and-view-standards/icd-9ccp-and-icd-9-cm>.

Canadian Institute for Health Information (CIHI). n.d.c. Codes and Classifications. Retrieved July 23, 2022. <https://www.cihi.ca/en/submit-data-and-view-standards/codes-and-classifications>.

Castle-Clarke, S. and R. Hutchings. 2019, May. *Achieving a Digital NHS: Lessons for National Policy from the Acute Sector*. Nuffield Trust. Retrieved April 25, 2022. <https://www.nuffieldtrust.org.uk/files/2019-05/digital-report-br1902-final.pdf>.

Collier, R. 2015. National Physician Survey: EMR Use at 75%. *CMAJ* 187(1): E17–18. doi:10.1503/cmaj.109-4957.

Harrison, J.E., S. Weber, R. Jakob and C.G. Chute. 2021. ICD-11: An International Classification of Diseases for the Twenty-First Century. *BMC Medical Informatics and Decision Making* 21(Suppl 6): 206. doi:10.1186/s12911-021-01534-6.

International Classification of Primary Care (ICPC)-3 Consortium. 2019. International Classification of Primary Care – 3rd Revision. Retrieved January 4, 2021. <https://www.icpc-3.info>.

Katz, A., G. Halas, M. Dillon and J. Sloshower. 2012. Describing the Content of Primary Care: Limitations of Canadian Billing Data. *BMC Family Practice* 13: 7. doi:10.1186/1471-2296-13-7.

Kueper, J.K., A.L. Terry, M. Zwarenstein and D.J. Lizotte. 2020. Artificial Intelligence and Primary Care Research: A Scoping Review. *Annals of Family Medicine* 18(3): 250–58. doi:10.1370/afm.2518.

Menear, M., M.A. Blanchette, O. Demers-Payette and D. Roy. 2019. A Framework for Value-Creating Learning Health Systems. *Health Research Policy and Systems* 17(1): 79. doi:10.1186/s12961-019-0477-3.

Monestime, J.P., R.W. Mayer and A. Blackwood. 2019. Analyzing the ICD-10-CM Transition and Post-Implementation Stages: A Public Health Institution Case Study. *Perspectives in Health Information Management* 16(Spring): 1a.

Moskal, L. 2004. Implementation of ICD-10-CA and CCI in Canada. 2004 IFHRO Congress and AHIMA Convention Proceedings, October 20. Retrieved April 25, 2022. <https://library.ahima.org/doc?oid=58259#.Ymaue5PMKrO>.

Quan, H., M. Smith, G. Bartlett-Esquilant, H. Johansen, K. Tu and L. Lix. 2012. Mining Administrative Health Databases to Advance Medical Science: Geographical Considerations and Untapped Potential in Canada. *Canadian Journal of Cardiology* 28(2): 152–54. doi:10.1016/j.cjca.2012.01.005.

Ryan, B.L., H.L. Maddocks, S. McKay, R. Petrella, A.L. Terry and M. Stewart. 2019. Identifying Musculoskeletal Conditions in Electronic Medical Records: A Prevalence and Validation Study Using the Deliver Primary Healthcare Information (DELPHI) Database. *BMC Musculoskeletal Disorders* 20(1): 187. doi:10.1186/s12891-019-2568-2.

Sony Global. 1999, July 1. Sony Celebrates Walkman® 20th Anniversary [Press release]. Retrieved July 23, 2022. <https://www.sony.com/en/SonyInfo/News/Press_Archive/199907/99-059/>.

Ten Napel, H., K. van Boven, O.A. Olagundoye, E. van der Haring, M. Verbeke, M. Härkönen et al. 2022. Improving Primary Health Care Data With ICPC-3: From a Medical to a Person-Centered Perspective. *Annals of Family Medicine* 20(4): 358–61. doi:10.1370/afm.2830.

Walker, R.B., D.A. Hennessy, H. Johansen, C. Sambell, L. Lix and H. Quan. 2012. Implementation of ICD-10 in Canada: How Has It Impacted Coded Hospital Discharge Data? *BMC Health Services Research* 12: 149. doi:10.1186/1472-6963-12-149.

World Health Organization (WHO). 2019. International Statistical Classification of Diseases and Related Health Problems (ICD). Retrieved March 23, 2021. <https://www.who.int/classifications/icd/en/>.

World Health Organization (WHO). 2021, January 1. *History of the Development of the ICD*. Retrieved April 20, 2020. <https://www.who.int/publications/m/item/history-of-the-development-of-the-icd>.

World Health Organization (WHO). 2022. International Classification of Health Interventions (ICHI). Retrieved April 7, 2022 <https://www.who.int/standards/classifications/international-classification-of-health-interventions>.

World Health Organization (WHO) & International Conference for the Ninth Revision of the International Classification of Diseases. 1977. *Manual of the International Classification of Diseases: Based on the Recommendations of the Ninth Revision Conference, 1975, and Adopted by the Twenty-Ninth World Health Assembly, 1975 Revision*. Retrieved July 23, 2022. <https://apps.who.int/iris/handle/10665/40492>.

DISCUSSION AND DEBATE

Commentary: From Mixtapes to Playlists – Evolving Options for Capturing Diagnoses in Canadian Physicians' Data

Commentaire : Des compilations aux listes de lecture – options évolutives pour saisir les diagnostics dans les données des médecins canadiens

KEITH DENNY, PhD
Director
Population and Indigenous Health, and Classifications and Terminologies
Canadian Institute for Health Information
Head
WHO Collaborating Centre for the WHO Family of International Classifications
Ottawa, ON

Abstract

Physician billing claims are rich sources of administrative health data. However, diagnostic codes in billing claims are drawn from the International Classification of Diseases, Ninth Revision (WHO & International Conference for the Ninth Revision of the International Classification of Diseases 1977), which has not been updated by the World Health Organization in three decades. With its updated and expanded content and its digital tooling, the International Classification of Diseases 11th Revision (ICD-11) (WHO n.d.a.) could be considered for this purpose. Primary care practitioners have always found the ICD inadequate for their needs. This may change with ICD-11, with which the International Classification of Primary Care (ICPC) (van Boven and Ten Napel 2021) is more closely aligned. ICD-11, ICPC and the Systematized Nomenclature of Medicine Clinical Terms present evolving options for capturing diagnoses in physician data.

Résumé

Les demandes de paiement faites par les médecins constituent de riches sources de données administratives sur la santé. Cependant, les codes de diagnostic utilisés pour ces demandes proviennent de la Classification internationale des maladies, neuvième révision (WHO & International Conference for the Ninth Revision of the International Classification of

Diseases 1977), qui n'a pas été mise à jour par l'Organisation mondiale de la santé depuis une trentaine d'années. Avec son contenu mis à jour et ses outils numériques, la Classification internationale des maladies, onzième révision (CIM-11) (WHO n.d.a.) pourrait être envisagée à cette fin. Les fournisseurs de soins primaires ont toujours trouvé la CIM-9 inadéquate pour leurs besoins. Cela pourrait changer avec la CIM-11, qui est plus étroitement alignée avec la Classification internationale des soins primaires (CISP) (van Boven et Ten Napel 2021). Ainsi, la CIM-11, la CISP et la Systematized Nomenclature of Medicine Clinical Terms présentent des options évolutives pour saisir les diagnostics dans les données des médecins.

Introduction

The problem with an analogy is that, similar to an ill-fitting shoe, it can feel somewhat forced. Cassette tapes never really went away, and recently they have been making something of a comeback (Taylor 2021). Apparently, the Walkman is also experiencing a resale resurgence. Still, the point is well taken: International Classification of Diseases, Ninth Revision (ICD-9) (WHO & International Conference for the Ninth Revision of the International Classification of Diseases 1977) should be consigned to history. In what follows, I tease out some details of the two linked but discrete issues addressed by Garies et al. (2022): physician billing and terminological tools for use in primary care.

Diagnosis Codes for Physician Billing

The expansion of the ICD in 1948 to encompass morbidity for the tabulation of hospital statistics was the culmination of a lengthy history of efforts. In Canada, a committee formed to guide the discussion at a Dominion-Provincial Conference on Hospital Statistics – convened to improve "the scope and quality of hospital statistics" – immediately recommended the newly expanded ICD for coding diagnoses (Statistics Canada 1949: 7). Standardization was not ultimately realized until the early 2000s, when the International Classification of Diseases, 10th Revision, with Canadian Enhancements (ICD-10-CA) (CIHI 2022) was implemented in hospitals across the country.

Unlike hospital data, for which multiple applications had always been envisaged, physician billing code sets are designed to meet a narrowly instrumental purpose. They are not designed with a secondary use in mind, though the data that they generate constitute a remarkably rich resource.

The *Canada Health Act* (1985) requires that costs for "medically necessary" services are universally covered by publicly funded provincial health insurance plans. Fee-for-service (FFS) physicians across Canada, accounting for about 70% of gross clinical payments (CIHI 2020a), must submit claims for payments that include a code for the service provided that is selected from billing code sets unique to each jurisdiction. Billing claims must also include ICD codes to identify the health conditions for which the service was provided.

Billing claims databases include information on most insured services for residents enrolled in their provincial insurance system. The service and diagnostic codes, as well as the associated physician and patient demographic data in billing submissions, make physicians claims databases among the largest and richest sources of administrative health data in Canada. Claims data can be used for health services analyses and for surveillance and have, with caveats, been found fit for these uses (Cunningham et al. 2014; Hwee et al. 2018; Lasry et al. 2018; Lix et al. 2012, 2018).

However, diagnostic codes in billing claims systems are drawn from ICD-9 code sets, and ICD-9 has not been updated by the World Health Organization (WHO) since the early 1990s, when ICD-10 became the new international version. Medical knowledge and terminology has, of course, evolved considerably in the interim. Consequently, much of the content of ICD-9 is archaic and, in some cases, anachronistic. Canadian jurisdictions have introduced their own code adaptations (creating the "mixtapes" of my title) as circumstances required, but this has not been coordinated or standardized across the country.

When the SARS-CoV-2 virus came along, there was obviously no ICD-9 code for COVID-19. For billing purposes, some provinces released new codes or repurposed existing ones. Others simply denoted codes to support remuneration for virtual care. But the upshot is that there is no consistent national diagnostic code for COVID-19 in the billing data. Throughout the pandemic, the WHO has released emergency COVID-19–related codes for ICD-10 and International Classification of Diseases 11th Revision (ICD-11) (described in the following text), including a code for the post-COVID-19 condition, known more colloquially as "long COVID".

In 2022, ICD-11 (WHO n.d.a.) became the official version of the ICD. The WHO's constitution requires member states to compile mortality and morbidity statistics, "in accordance with the current revision of the [ICD] as adopted from time to time by the World Health Assembly" (World Health Assembly 1967). Member states are now, to varying degrees, engaged in assessing their readiness and feasible timelines for implementation. The content of ICD-11 has been modernized and expanded considerably and is designed to accommodate speedier enhancements than its predecessors. Unlike previous revisions, ICD-11 is also built such that it can be integrated with electronic health information systems. The new revision includes a package of online and digital resources. ICD-11 has its own smart online coding tool (https://icd.who.int/en) that enables computer-assisted coding. A back-end electronic index finds matches to terms typed into the search engine.

An obvious question is this: Can ICD-11 be used for billing claims? Compensation and billing arrangements are negotiated by provincial and territorial ministries of health with their provincial and territorial medical associations (CIHI 2020b). There is no obvious mechanism for considering a pan-Canadian change, though jurisdictions could explore the possibility of adopting ICD-11 for this purpose. An evaluation such as the one recommended by Garies et al. (2022) would be extremely valuable, and it would complement the range of activities that currently comprise the Canadian Institute for Health Information's (CIHI)'s assessment of ICD-11 for health system implementation. This is work on which we are collaborating with colleagues at the Universities of Calgary and Ottawa and the Canadian Health Information Management Association.

Options for Primary Care

As billing claims must be submitted by all FFS physicians, the data encompass specialist and primary care physicians. But claims data are probably most useful in domains that cannot be studied easily through other data sources such as primary care (CIHI 2015), where Canada has yet to attain a standardized approach to the generation of comparable diagnosis/reason for encounter data (CIHI 2019).

Primary care practitioners have always found ICD inadequate for their needs (Armstrong 2011; van Boven and Ten Napel 2021). Dissatisfaction with the ICD in the 1970s led the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA) to create what is now the International Classification of Primary Care (ICPC), recently released in its third edition version (International Classification of Primary Care – 3rd Revision [ICPC-3]) (van Boven and Ten Napel 2021). ICPC has been adopted in primary care settings in parts of Europe and elsewhere.

Thanks to collaboration between the WHO and WONCA, the editors of ICPC-3 assert that "the ICPC and the ICD are complementary rather than in competition" (van Boven and Ten Napel 2021: 5). This may be even truer with ICD-11. An innovation of ICD-11 is that it is built on an underlying knowledge base known as the Foundation (Chute and Çelik 2021), a multidimensional collection of entities: diseases, disorders, injuries and other concepts. Think of the Foundation layer as similar to a store of videos or songs. Elements in the Foundation can be used to build a selection somewhat similar to how playlists are compiled. The technical term for a "playlist" built from the Foundation is "linearization" (Chute and Çelik 2021: 4). Various ICD-11 linearizations could be built at different levels of granularity or for different use cases.

The previous edition of ICPC (International Classification of Primary Care, 2nd edition) (WHO n.d.b.) has been incorporated into the Foundation (Kühlein et al. 2018), and there is hope that ICD-11 will be fit for use in the primary care context, perhaps in the form of a primary care linearization (Chute and Çelik 2021). Garies et al. (2022) are right to emphasize the need for rigorous testing of ICD-11 in primary care contexts to explore the possibilities it may offer over and above its use for billing.

Finally, what of the role of the Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT)? Classifications such as the ICD have been designed to support statistical reporting, not clinical record keeping. SNOMED CT is designed to facilitate comprehensive capture of data at point of care and their electronic exchange. It is used increasingly in electronic health records (EHRs) and electronic medical records (EMRs) across Canada. SNOMED's content goes beyond diagnoses to describe all aspects of clinical encounters. Terminologies and classifications will play complementary roles in the health information environment for the foreseeable future. SNOMED International (the publisher) and the WHO are collaborating to develop maps between SNOMED CT and ICD-11, and

SNOMED International and WONCA have been working together to ensure linkage between SNOMED CT and ICPC.

In the meantime, CIHI has developed a comprehensive set of maps between SNOMED CT and ICD-10-CA for implementation in EHRs to support faster data capture while reducing coding burden. We hope to begin road-testing the maps soon. To support physician billing and other uses (including preparation for ICD-11), we are collaborating with colleagues in British Columbia and Newfoundland and Labrador to develop a pan-Canadian health concern value set mapped from SNOMED CT to ICD-9 and ICD-10-CA for implementation in EMRs.

Conclusion

ICD-9 in the context of today's health information needs is clearly suboptimal, notwithstanding the ongoing value of billing data coded with it. Between ICD-11, SNOMED CT and possibly ICPC, there are options for upgrading and standardizing the capture of diagnosis information in physician billing data generally and in primary care specifically. The options are not mutually exclusive, given their ontological alignments and mapping relationships, but all hold the potential to enhance the value of physician-generated data. At the end of the day, code assignment should be a background technical process. The standards themselves should be invisible to physicians, requiring no special knowledge of codes on their part.

Correspondence may be directed to: Keith Denny. Keith can be reached by e-mail at kdenny@cihi.ca.

References

Armstrong, D. 2011. Diagnosis and Nosology in Primary Care. *Social Science and Medicine*, 73(6): 801–07. doi:10.1016/j.socscimed.2011.05.017.

Canada Health Act, R.S.C., 1985, c. C-6. Retrieved July 18, 2022. <https://laws-lois.justice.gc.ca/eng/acts/c-6/page-1.html>.

Canadian Institute for Health Information (CIHI). 2015, January. *Patient-Level Physician Billing Repository Privacy Impact Assessment*. Retrieved June 23, 2022. <https://www.cihi.ca/sites/default/files/document/plpb-pia-2015-en.pdf>.

Canadian Institute for Health Information (CIHI). 2019. *Forging the Path: Toward a Shared Standard for EMR Data: Highlights and Recommendations from CIHI's Primary Care Forum*. Retrieved June 10, 2022. <https://www.cihi.ca/sites/default/files/document/primary-care-forum-highlights-report_en.pdf>.

Canadian Institute for Health Information (CIHI). 2020a. A Profile of Physicians in Canada, 2020. Retrieved June 24, 2022. <https://www.cihi.ca/en/a-profile-of-physicians-in-canada-2020>.

Canadian Institute for Health Information (CIHI). 2020b. *National Physician Database Data Release, 2019–2020: Methodology Notes*. Retrieved June 24, 2022. <https://www.cihi.ca/sites/default/files/document/national-physician-database-data-release-2019-2020-methodology-notes-en.pdf>.

Canadian Institute for Health Information (CIHI). 2022. International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada. Author.

Chute, C.G. and C. Çelik. 2021. Overview of ICD-11 Architecture and Structure. *BMC Medical Informatics and Decision Making* 21: 378. doi:10.1186/s12911-021-01539-1.

Cunningham, C.T., P. Cai, D. Topps, L.W. Svenson, N. Jetté and H. Quan. 2014. Mining Rich Health Data from Canadian Physician Claims: Features and Face Validity. *BMC Research Notes* 7(1): 682. doi:10.1186/1756-0500-7-682.

Garies, S., P. Ng, J.A. Dickinson, T. McDonald, M. O'Beirne, K.A. McBrien et al. 2022. Leaving the Walkman and ICD-9 Behind: Modernizing the Disease Classification System Used by Canadian Physicians. *Healthcare Policy* 18(1): 32–39. doi:10.12927/hcpol.2022.26907.

Hwee, J., L. Sung, J.C. Kwong, R. Sutradhar, K. Tu and J.D. Pole. 2018. Use of Physician Billing Claims to Identify Infections in Children. *PLoS ONE* 13(11): e0207468. doi:10.1371/journal.pone.0207468.

Kühlein, T., M. Virtanen, C. Claus, U. Popert and van K. Boven. 2018. [Coding in General Practice – Will the ICD-11 be a step forward?]. [Article in German]. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz*, 61(7): 828–35. doi:10.1007/s00103-018-2750-y.

Lasry, O., N. Dendukuri, J. Marcoux and D.L. Buckeridge. 2018. Accuracy of Administrative Health Data for Surveillance of Traumatic Brain Injury: a Bayesian Latent Class Analysis. *Epidemiology* 29(6): 876–84. doi:10.1097/EDE.0000000000000888.

Lix, L.M., J. Ayles, S. Bartholomew, C.A. Cooke, J. Ellison, V. Emond et al. 2018. The Canadian Chronic Disease Surveillance System: A Model for Collaborative Surveillance. *International Journal of Population Data Science* 3(3): 433. doi:10.23889/ijpds.v3i3.433.

Lix, L.M., R. Walker, H. Quan and R. Nesdole. 2012. Features of Physician Services Databases in Canada. *Chronic Diseases and Injuries in Canada* 32(4): 186–93.

Statistics Canada. 1949. Proceedings of the Dominion-Provincial Conference on Hospital Statistics, Ottawa February 14–16, 1949. Retrieved July 20, 2022. <https://publications.gc.ca/collections/collection_2017/statcan/CS83-D-57-1949-eng.pdf>.

Taylor, I. 2021, March 19. Audio Cassettes: Despite Being 'A Bit Rubbish', Sales Have Doubled during the Pandemic – Here's Why. *The Conversation*. Retrieved June 10, 2022. <https://theconversation.com/audio-cassettes-despite-being-a-bit-rubbish-sales-have-doubl ed-during-the-pandemic-heres-why-157097>.

van Boven, K. and H. Ten Napel. 2021. *ICPC-3 International Classification of Primary Care: User Manual and Classification*. CRC Press.

World Health Assembly. 1967. WHO Nomenclature Regulations. World Health Organization. Retrieved June 10, 2022. <https://apps.who.int/iris/handle/10665/89478>.

World Health Organization (WHO) & International Conference for the Ninth Revision of the International Classification of Diseases. 1977. *Manual of the International Classification of Diseases: Based on the Recommendations of the Ninth Revision Conference, 1975, and Adopted by the Twenty-Ninth World Health Assembly, 1975 Revision*. Retrieved July 23, 2022. <https://apps.who.int/iris/handle/10665/40492>.

World Health Organization (WHO). n.d.a. ICD-11: International Classification of Diseases 11th Revision. Retrieved July 18, 2022. <https://icd.who.int/en>.

World Health Organization (WHO). n.d.b. International Classification of Primary Care, 2nd edition (ICPC-2). Retrieved August 16, 2022. <https://www.who.int/standards/classifications/other-classifications/international-classification-of-primary-care>.

RESEARCH PAPER

Are Family Medicine Clinics Improving Access to Care through Organizational Changes Driven by Healthcare Reform?

Les cliniques de médecine familiale améliorent-elles l'accès aux soins grâce aux changements organisationnels entraînés par les réformes des soins de santé?

ISABEL RODRIGUES, MD, MPH, FCMFC
Associate Clinical Professor
Faculty of Medicine
Department of Family Medicine and Emergency Medicine
University of Montreal
Montreal, QC

MARIE AUTHIER, PhD
Assistant Clinical Professor
Faculty of Medicine
Department of Family Medicine and Emergency Medicine
University of Montreal
Montreal, QC

Abstract

Purpose: This observational descriptive study reports organizational changes after the last reform in 18 family medicine units (FMUs) affiliated with the University of Montreal in Québec.
Method: Two self-administered surveys on access to care were administered to FMU directors between December 2016 and January 2017, and in August 2018.
Results: Between surveys, the number of registered patients increased substantially. All clinics recruited new patients, and most offered walk-in services (89%) and moved toward an advanced access scheduling model (83%). For licensed practical nurses, there was a median increase from 0 to 3 and for nurse clinicians, from 2 to 3, that helped the development of collaborative teamwork.

Conclusion: Despite the added teaching mission, the response of the FMU network has been dynamic, has adapted to the major changes and has continued to actively improve access to care for their communities. Challenges still remain regarding work on key priorities for improving access management.

Résumé

Objectif : Cette étude descriptive observationnelle fait état des changements organisationnels, après la dernière réforme, dans 18 unités de médecine de famille (UMFs) affiliées à l'Université de Montréal au Québec.

Méthode : Deux questionnaires auto-administrés sur l'accès aux soins ont été soumis aux directeurs des UMFs entre décembre 2016 et janvier 2017, et en août 2018.

Résultats : Entre les deux questionnaires, le nombre de patients inscrits a considérablement augmenté. Toutes les cliniques ont recruté de nouveaux patients et la plupart ont offert des services sans rendez-vous (89 %) et ont adopté un modèle avancé pour la planification de l'accès (83 %). Il y a eu une augmentation médiane de 0 à 3 des infirmières auxiliaires et de 2 à 3 des infirmières cliniciennes, ce qui a favorisé le développement du travail d'équipe collaboratif.

Conclusion : Malgré la mission d'enseignement supplémentaire, la réaction du réseau des UMFs a été dynamique, s'est adaptée aux changements majeurs et a permis d'améliorer activement l'accès aux soins pour les communautés concernées. Il reste des défis quant aux priorités clés pour améliorer la gestion de l'accès.

Introduction

Timely and efficient access to primary healthcare (PHC) is a major challenge for many countries around the world, and there is no exception for Canada. Results from the 2016 Commonwealth Fund Survey ranked Canada last in terms of access to timely care among 10 other Western countries (Commissaire à la Santé et au Bien-être 2017).

In 2019, 14.5% of Canadians aged 12 and over reported that they do not have a regular healthcare provider to see or consult with if they need care or advice about their health (Statistics Canada 2020), despite the increase in family physicians. Although there has been an improvement for Canada from 2015 to 2019 (16.8% vs. 14.5%), the province of Québec ranks last (27.8% vs. 21.5%).

A medical model of PHC services called the family medicine group (FMG) has been proposed and scarcely experimented with in early 2000. It has been modified through the years until adding nurse clinicians in 2015–2016 (Dion 2015; Plourde 2017). The addition of healthcare professionals allowed for interdisciplinary work, which has been associated with improved access and quality of care (Beaulieu et al. 2012).

The extent of funding for FMG administrative and professional resources is based on the number of patients enrolled. The minimum funding scale (Level 1) required a minimum of 6,000 patients. As the number of registered patients increases and reaches pre-set levels, the funding increases and provides the resources to hire more professionals and administrative personnel (MSSS 2017). Since then, other professionals (licensed practical nurses, social workers, pharmacists, nutritionists, less often physiotherapists, kinesiologists, and psychologists) were added to FMGs according to their funding scale. Other criteria are required to obtain funding, such as a minimum of 68 hours/week of services, including weekends and holidays, and the use of electronic medical records.

Access to family physicians was the cornerstone of another reform introduced in 2015 in Québec: Bill 20 (Barette 2015). It specifically addressed access, setting the target of having 85% of the population registered with a family physician by 2023, up from 70.5% in 2015 (ISQ 2021; MSSS 2021). Family physicians were required to provide medical follow-up to a minimum number of patients and work a minimum number of hours (12 hours/week) in an institution (long-term care facilities, hospital services, etc.) or face penalties of up to 30% of their remuneration. Bill 20 also made FMGs responsible for ensuring that registered patients obtained at least 80% of their care at the FMG, with funding cuts threatened if more than 20% of patients went elsewhere (another walk-in clinic, emergency visit). The bill was adopted in November 2016, but after tough discussions, the minister reached an agreement with the Fédération des médecins omnipraticiens du Québec, and the application of penalties was suspended until December 2017 (MSSS 2015).

At the same time, with the same concern of improving access to care, many clinics in Québec were adopting the advanced access (AA) scheduling model, which aims to offer patients visits with their physicians within a very short time frame, unlike the traditional approach where all available appointments are booked several weeks in advance. An evaluation of the implementation of AA is being completed (Breton et al. 2020).

In April 2017, it became mandatory for all family medicine units (FMUs) in Québec to adopt the FMG model (MSSS 2020), in addition to complying with the requirements of Bill 20 (Barette 2015). FMUs are clinics affiliated with a university. They provide comprehensive care for patients and academic training for medical students, family medicine residents, nurse practitioners and other healthcare professionals. This new bill forced the FMUs to quickly implement a variety of measures to meet the FMG's requirements while fulfilling their clinical and educational mandates and creating an exemplary model in which to train future family physicians and other PHC providers. Faced with these new requirements, the threat of discontinuation of funding and closure of some small teaching clinics in rural and urban areas that did not initially meet the required criteria for an FMG (such as having 6,000 patients registered), a request to better assess the current picture of access to the teaching network was made by the group of directors of teaching clinics headed by the director of the Department of Family Medicine and Emergency Medicine at the University of Montreal. This study presents the organizational changes undertaken in the academic family medicine network, with a focus on the evolution of access to care.

Method

Study design and settings

This observational descriptive study was conducted in all 18 FMUs affiliated with the Department of Family Medicine and Emergency Medicine at the University of Montreal. A presentation of the project was made to the 18 FMU directors (one per FMU) during one of their regular meetings. All of them were invited to participate and asked to complete a self-administered electronic survey. The electronic link to the survey was sent first in December 2016 and January 2017 (up to three reminders were sent by e-mail) and was repeated in August 2018.

Questionnaire

The questionnaire was developed to describe and monitor changes enacted by FMUs between 2016 and 2018. Lévesque et al. (2013) reviewed the literature on the conceptual aspects of accessibility to care and proposed a comprehensive, dynamic theoretical framework that included the main characteristics of PHC, taking into account the perspectives of the health system, clinical groups, health professionals and patients. Five dimensions characterize accessibility from an organizational perspective: approachability; availability and accommodation; affordability; appropriateness; and acceptability. The first four dimensions were considered in this study.

The 2016 questionnaire included 46 questions: 26 questions related to these four dimensions were taken from the 59-question PHC Organizational Survey (CIHI 2008; Haggerty et al. 2006; Lévesque et al. 2014). Permission to use and adapt the questionnaire was obtained from the Canadian Institute for Health Information. The remaining 20 questions collected information about the clinic; number of patients; medical, professional and physical resources; process of accessing care; and services offered (Haggerty and Lévesque 2016; Lévesque et al. 2013). To allow tracking of changes over time, a three-level response scale was chosen for some questions (i.e., change planned for the coming year, change under discussion, no change planned).

In 2018, the questionnaire was adapted by adding questions on their AA scheduling system. In addition, consistent with the methods used in AA, which many FMUs had adopted, timely access was measured for each family physician or resident in the practice using the third-next available appointment indicator. At each clinic, a secretary took responsibility for this measurement after receiving instructions from the researchers. Calculations included weekends and holidays. If family physicians were absent for an extended period (e.g., maternity leave, sick leave and rural rotation for second-year residents), their data were not included.

Statistical analyses

Descriptive analyses using frequencies and measures of central tendencies were used for each characteristic and to globally describe the 18 clinics in 2016 and 2018. Because all FMUs participated in the study, no statistical inference was made. The application used to create the survey was SurveyMonkey. Data were analyzed using Excel (14.7.1).

Ethics approval

The research and ethics committee of the Centre intégré de santé et de services sociaux de Laval approved the study (#2017-2018 / 04-01-E).

Results

Results presented in this paper focus mainly on change in availability/accommodation (Lévesque et al. 2013), increasing access for new patients without a family physician, improving timely access and barriers to improving access and improving adequacy of services (interdisciplinary collaboration).

Clinic characteristics

All 18 FMUs' directors affiliated with the University of Montreal participated in the survey. Four were in rural areas, two in cities farther than 150 km from Montreal, six in Montreal and six in suburbs around Montreal.

AVAILABILITY AND ACCOMMODATION

Increasing access to orphan patients

1. *Organizational changes*: Before the 2016 survey, 12 of the 18 FMUs (67%) had undergone major structural changes – such as an association or a merger with another medical clinic to meet the FMG funding criteria (reaching a minimum of 6,000 patients and offering a minimum of 68 hours/week of services) or a dissociation after reaching the requirements. In 2018, nine of the 18 FMUs (50%) had undertaken structural changes since 2016, some for the second time. Only three of the 18 clinics remained stable in their administrative structure.

TABLE 1. Evolution of the number of staff physicians and full-time professionals in the family medicine clinics network

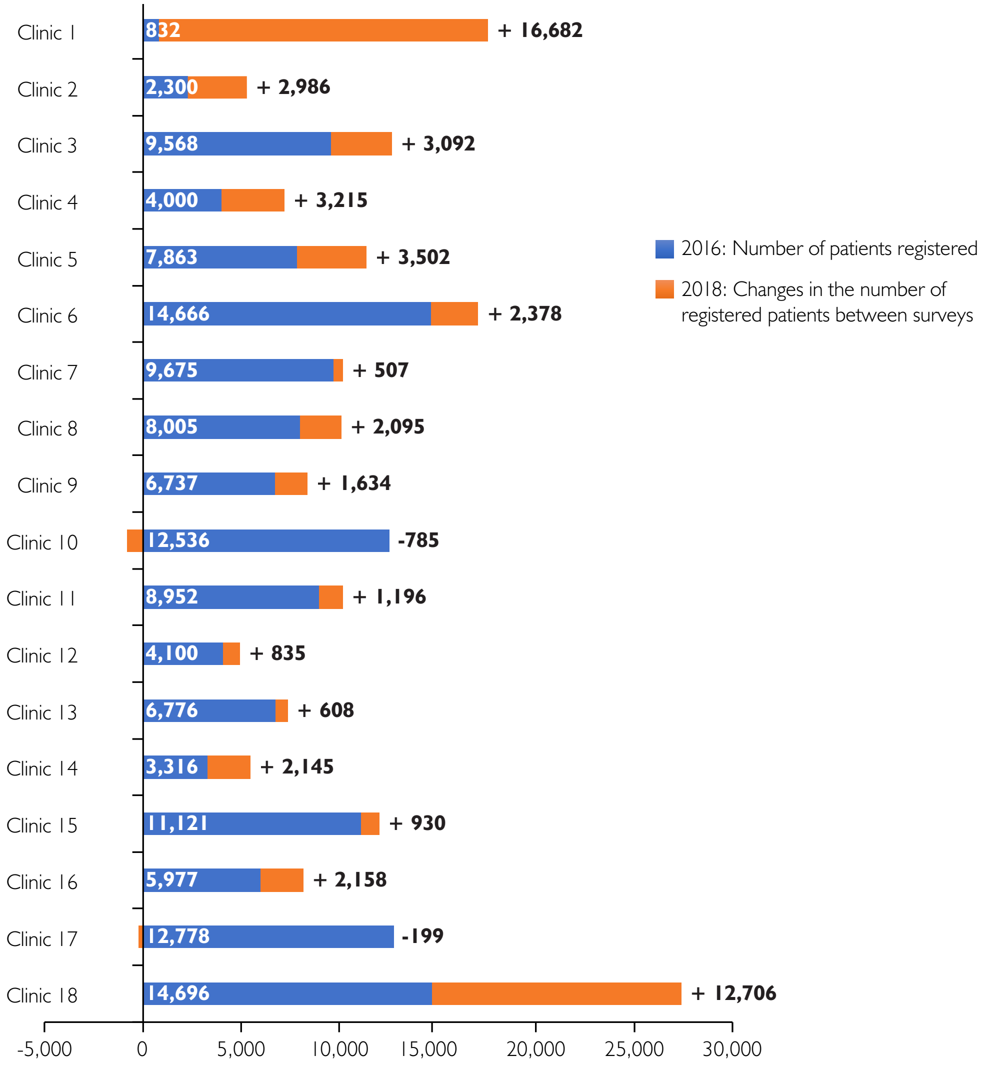
Type of professional per clinic	2016 Median (range)**	2018 Median (range)**
Staff physicians*	12.5 (0–22)	16 (5–29)
Staff across network	218	309
Clinical nurses	2 (0.4–9.3)	3 (0.7–6)
Assistant nurses	0 (0–1.9)	3 (1.6–5)
Nurse practitioners	1 (0–5)	2 (0–4)
Pharmacists	0.2 (0–1)	0.2 (0–1)
Nutritionists	0 (0–0.5)	0 (0–0.5)
Social workers	0.25 (0–2)	1 (0–2)

* Staff: Number of physicians having their own practice in the same family medicine unit. Total number across the network was 218 in 2016 and 309 in 2018.
**1 = Full-time.

2. *New staff physicians*: The median number of staff family physicians per clinic was 12.5 in 2016, increasing to 16 in 2018 (Table 1).
3. *Number of patients registered:* All clinics continued to register new patients at the time of the second survey. Two clinics merged with another clinic into

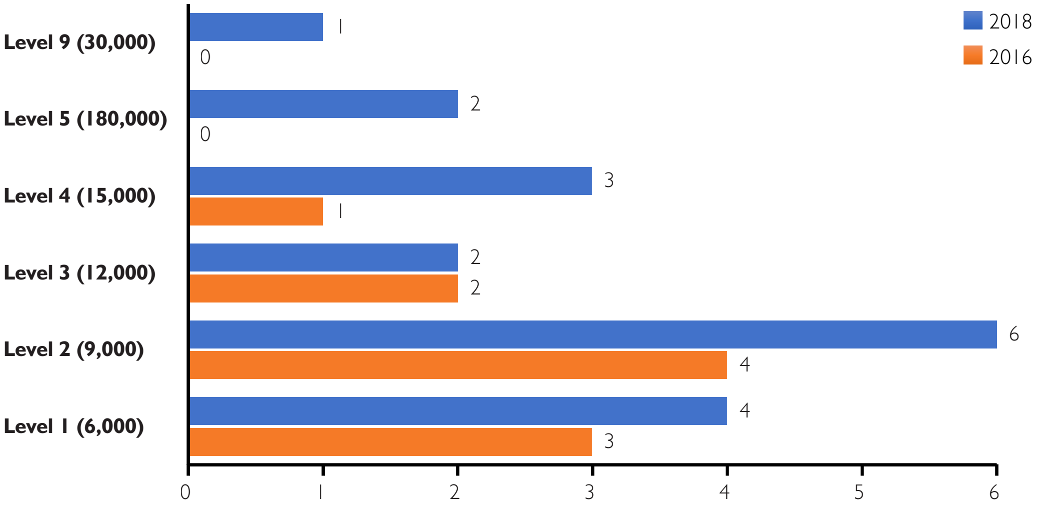
a single administrative and clinical entity. Therefore, combining their registered patients inflated and biased the real increase in new patients. Three clinics associated with another clinic kept their administrative functions separate and only shared community tasks, such as hours of operation either on evenings or weekends. The median increase in the number of registered patients was 16%, which represents approximately 2,120 patients per clinic. The total number of patients registered with network FMUs increased by more than 50,000. Larger increases (greater than 30%) were more common in clinics that merged (clinics 1 and 2) or associated with another clinic (clinics 3, 4 and 5) (Figure 1).

FIGURE 1. Number of registered patients in 2016 and changes between 2016 and 2018



4. *Level of funding*: In 2018, all the FMUs in the network met the minimum criteria for FMG funding (level 1 = 6,000 patients) compared to 8 of the 18 in 2016. Addtionally, in 2018, six of the 18 clinics reached a higher funding level (4 to 9), compared to 2016 when only one reached funding level 4 (Figure 2).

FIGURE 2. Changes in the level of funding (according to the number of registered patients)



Improving timely access

1. *Shift to the AA scheduling system*: Two clinics had adopted the AA scheduling systems in 2015. Ten other FMUs had implemented AA by the end of 2016 (67%). While two additional clinics had implemented the change by 2018, most of the remaining clinics were either undertaking planning or discussing changes for the coming year. All clinics not using (or intending to use) AA used a "carved-out" model (Bennett and Baxley 2009: 52), with slots for urgent care in their regular scheduling. In 2018, 14 clinics were in advanced access, and most clinicians had signed on. In addition, eight clinics had implemented AA for residents; four more FMUs were planning to do so. The open schedule used in AA differed among FMUs: half opened their schedule two weeks at a time and the other half in either three- or four-week blocks. Five clinics had developed plans to balance patient needs (demand for appointments and services) and service offering (number of slots offered by the clinical team). Plans were under development in seven other FMUs. Moreover, seven clinics had developed algorithms to help administrative staff orient patient calls (e.g., who should a patient be referred to for a same-day appointment when their family physician was not available).
2. *Extending access to care after hours and on weekends and holidays:* In 2018, walk-in services were offered in 16 of the 18 clinics (89%). After-hours access to care and services during weekends remained stable for on-site services between surveys. Seven clinics could not offer extended access to care (weekends/evenings) on site and, therefore,

collaborated with another site to offer this service. Up to 94% of clinics provided after-hours access to care within their clinic. In 2018, clinics were open on a median of 12 hours on weekdays and four hours on weekends.

Communication with the PHC team

In 2018, 16 FMUs offered patients the opportunity to speak with professionals by phone to quickly address their one-time concern. Patients could expect a return call the same day. Each FMU had its own care pathway, which may be different from one clinic to another. The receptionist, according to the locally developed algorithm, may transfer the message to either a family physician or a nurse clinician depending on the reason for the call. The professional would return the call and decide if the telephone advice was sufficient or if an appointment with the best professional was required to complete the assessment of the patient's need. In 2016, leaving a message was offered by 10 clinics and was planned by three additional clinics. In 2018, 13 clinics were offering this service, and one was in the process of implementing it. E-mail communication was seldom used in 2016 (2/18) and barely increased by 2018 (4/18).

The third-next available appointment

The third-next available appointment was measured on an *ad hoc* basis in each FMU with each survey. In 2016, the delay was shorter for FMUs with AA scheduling systems (15.5 vs. 19.2 days for FMUs using traditional scheduling). The difference persisted in 2018, but both groups improved (11.2 vs. 15.3 days). The number of days to the third appointment was reduced for both staff clinicians and residents between surveys in AA clinics (Table 2). It should be noted that the 2016 measurement was made in the winter, whereas the 2018 measurement was made in the summer.

TABLE 2. Delay for the third-next available appointment according to the type of professional

Delay for the third-next appointment (Days) 17/18 FMUs	2016 Median (range)	2018 Median (range)
Staff physicians	15.9 (7.5–41)	12.3 (8.8–26.7)
Residents	17.7 (9.5–38.3)	11.95 (7.7–28.4)

ADEQUACY OF SERVICES AND INTERDISCIPLINARY COLLABORATION

Licensed practical nurses, professionals prioritized for funding in the FMG model, were absent in 2016; the median in 2018 was three full-time licensed practical nurses per clinic. The median number of full-time nurse clinicians increased from two to three between 2016 and 2018 (Table 1).

Interdisciplinary collaboration is an important element in increasing accessibility. It allows the delivery of care to the population to be optimized by complementary and more efficient use of the skills of different health professionals. It can take many forms, such as collective prescription (CP), which allows other health professionals to perform certain activities reserved for the physicians. CPs cover the medications, treatments, examinations or care to be given, the circumstances in which they may be given and any contraindications. Québec allows a large number of CPs. However, only three CPs were adopted by a majority of the 18 FMUs – diabetes (13/18), hypertension (13/18) and dyslipidemia (11/18) – and almost no changes were observed between 2016 and 2018. Only a few FMUs were planning to implement additional CPs in the coming year.

IMPROVING BARRIERS TO ACCESS

In 2018, the majority of FMUs (78%) still lacked medical teaching staff or attending physicians (14/18). Their teams also lacked healthcare professionals (78%) and office staff (67%). Most lacked space (61%) to improve patient care and access to care. When asked about specific staffing needs, most mentioned medical staff not only for teaching (61%) but also for research (50%) and patient care (28%).

Discussion

Compliance with the requirements of Bill 20 (Barette 2015), as well as the changes mandatory for Québec FMUs to adopt the FMG model, has led to significant changes in the organization of clinics, which have had a positive impact on access to our network.

For several years, family physicians from FMUs have mobilized to adapt their service offerings to the requirements of the reform and the imposed FMG program, to improve accessibility. The University of Montreal's network of FMUs participated in this study to track the evolution of improved access to care while going through a turbulent period of transitions in 2016–2018. To our knowledge, no published studies have explored the changes experienced by clinical settings during the last reform.

The results of our study are not generalizable. However, the Department of Family Medicine and Emergency Medicine's process of monitoring changes would be. Indeed, it provides data that help determine whether the requirements of reforms or legislative demands are being met and allow a family medicine (FM) department to support clinics in achieving their goals. Moreover, an FM department or a clinic could continue to collect data and act on the results in a continuous quality improvement perspective. In order to better monitor the improvements in their access to care, new indicators could be privileged: the number of orphan patients and the number of vulnerable patients among them. Also, the regular recording of the time to the third available appointment would allow their data to be compared to the regional statistics used as benchmarks.

Availability and accommodation

Availability and accommodation refer to health services being sufficient and offered in a timely manner. Because FMG funding is based on the number of patients enrolled, it is possible that the increase in administrative and professional resources has been, and still is, an incentive to enroll additional patients. However, government funding for FMGs does not provide for physical expansion of clinics, and lack of space may slow down and hinder the fulfillment of FMUs' clinical and academic missions.

In order to optimize accessibility, several clinics have adopted an AA scheduling system, which is associated with better patient-reported accessibility (Paré-Plante et al. 2018). A few clinics have also implemented AA for their residents even if it is more challenging in a PHC teaching setting (Hudon et al. 2019; Malham et al. 2018). Moreover, most clinics are offering walk-in type services and same-day appointments for more urgent care.

The third-next available appointment is a recognized and widely used measure of access (Rose et al. 2011). In our study, all FMUs reduced the time to the third-next appointment between surveys, and, as expected, delays were shorter for clinics using AA than intermediate type of scheduling (inserting more slots for urgent care) (Bennet and Baxley 2009). However, this result should be interpreted with caution as this measurement was made only once in our study.

Adequacy of services and challenges to improving access

This reform has contributed to the improvement of accessibility in the FMUs. Two main indicators are held over the heads of clinicians to remind them to check whether they are meeting their targets. The first indicator used by the Ministère de la Santé et des Services sociaux (MSSS) is the percentage of the population enrolled with a family physician (targeted by Bill 20 to 85%). For this indicator, clinics had no control on their performance other than verifying the regional percentage of patients registered on the centralized waiting list (Breton et al. 2014). After five years, it has still not reached its objective as, according to the latest MSSS publication (MSSS 2021), 80.8% of people were registered with a family physician.

The second indicator is the attendance or assiduity rate with a family physician (targeted by Bill 20 at 80%) defined as the percentage of visits of a patient to his family physician or another physician at the same clinic out of the total healthcare visits (to any other clinic or emergency department) during the last year. At least each clinic received their assiduity rate and could try to act on it. Assiduity met the target and even surpassed it, reaching 84% (MSSS 2021).

Champagne et al. (2018) noted that these two indicators have slightly improved between 2015 and 2017. However, they pointed out that these indicators cannot provide a clear picture of accessibility. These two indicators do not address the multiple causes involved in the lack of access to care. Rubenstein et al. (2020) identified eight key priorities for improving access management, six of which involve organizational structures: (1) interdisciplinary PHC site leadership, (2) clearly identified group practice management structure, (3) telephone management of patients, (4) contingency staffing, (5) managing nurses' demands through care coordination and (6) proactive demand management by optimizing provider visit schedules. Several changes observed in Québec's FMUs related to these targets appear to increase the likelihood of improving patient access to care.

In a study comparing new models, such as the FMG model, with more traditional models of care, patients reported easier access to other physicians in the same clinic even if they declared that they could see their own doctor more often in traditional models of care (Miedema et al. 2016). The FMG model predisposes to the development of a team service offer often referred to team-based care, which requires that a minimum of two professionals or healthcare providers work in a collaborative way and share goals and decisions with the patient (Mitchel et al. 2019). One of the keys is by increasing interdisciplinary collaboration. The increase in the number of registered patients will lead to an increase in chronic diseases at follow up. Strategies, such as the development of CPs and more effective interdisciplinary working (Jacobson and HDR Inc. 2012), as well as respecting the autonomy of professionals by allowing them to respond directly to patients' needs without medical referral would improve timely access. In a systematic review of interventions to reduce wait times, AA and the presence of nurses and nurse practitioners were identified as promising measures (Ansell et al. 2017). In the network, there is still room for improvement in terms of managing interdisciplinary follow up, increasing the number of CPs and sharing the call management algorithms that work best. With more time, we expect FMUs will consolidate collaborative teamwork, share tools across FMUs (e.g., algorithms for patient triage), improve timeliness of care and expose more medical residents to best care and role models (Ansell et al. 2017).

Study limitations

This cross-sectional design provides only a snapshot of the situation. However, the repeated measurement over a period of 18 months, as well as the enriched selection of response to some questions provided insight into the clinics' plans for change, as well as the current situation.

In our study, the third-next available appointment was the indicator chosen to measure accessibility to family physicians as it is considered in many studies. Serial measures over time would have provided a more accurate assessment of access. Our comparison of measurements taken 18 months apart, one in winter and one in summer, likely does not reflect team adaptation or improvement. Moreover, this indicator alone cannot truly measure accessibility in primary care because it does not take into account interdisciplinary work. Many patients with chronic diseases are followed up by a healthcare team. Thus, the third available appointment may underestimate follow up at the clinic.

The development of an indicator that takes this teamwork into account would allow for better measurement of real access to care.

Strength of the study

The participation of all 18 FMUs affiliated with the University of Montreal allowed us to draw a good picture of the changes introduced and improvements achieved in the network. The development of a questionnaire with answers allowing for tracking of changes over time, made it possible to draw a dynamic picture of current and future structural changes in clinical practice. It allowed the Department of Family Medicine and Emergency Medicine and each clinic to see the deployment of measures over time to increase accessibility. Each clinic was able to check on what was previously planned and whether it was achieved.

Conclusion

This study's results reveal that the latest policy reform and imposed FMG program stimulated clinics to commit to changes in a short period of time. The response of the FMU network, despite the added challenges, such as the teaching mission, has been dynamic as FMUs have adapted to the major changes and continue to actively improve access to care for their communities. Despite this, the goal set by the MSSS of getting 85% of the population of the province registered with a family physician is still not being met. Challenges still remain regarding work on key priorities for improving access management.

Comprehensive plans to evaluate the implementation of future reforms should be developed and included in the rollout.

Future research using stronger methods could develop a better measurement of access and determine whether improved access not only reduces the number of orphan patients but also impacts outcomes, such as preventable hospitalizations and emergency department utilization.

An ongoing study of patients' perspectives of access to care will identify additional solutions to better address unmet health needs.

Acknowledgement

The authors would like to thank Geneviève Martel as a research assistant; Jean Pelletier (past) and Nathalie Caire Fon (present), department heads of Family Medicine at the University of Montreal, for their support; and all the 18 clinic directors of the network from our Department of Family Medicine and Emergency Medicine, University of Montreal, who agreed to participate.

Correspondence may be directed to: Isabel Rodrigues. Isabel can be reached by e-mail at isabel.rodrigues@umontreal.ca.

References

Ansell, D,J.A.G. Crispo, B. Simard and L.M. Bjerre. 2017. Interventions to Reduce Wait Time for Primary Care Appointments: A Systematic Review. *BMC Health Services Research* 17: 295. doi:10.1186/s12913-017-2219-y.

Barette, G. 2015. Bill 20: An Act to Enact the Act to Promote Access to Family Medicine and Specialized Medicine Services and to Amend Various Legislative Provisions Relating to Assisted Procreation. *Assemblée Nationale du Québec*. Retrieved July 19, 2022. <http://m.assnat.qc.ca/fr/travaux-parlementaires/projets-loi/projet-loi-20-41-1.html>.

Beaulieu, M., J. Barnsley, L. Bonin, J.L. Denis, R. Duplain, R. Geneau et al. 2012. Facteurs organisationnels qui soutiennent des pratiques cliniques de qualité en première ligne. Résultats d'une étude québécoise. University of Montreal. Retrieved July 23, 2022. <https://www.yumpu.com/fr/document/view/20331826/facteurs-organisationnels-qui-soutiennent-des-pratiques-cliniques-de/28>.

Bennett, K.J. and E.G. Baxley. 2009. The Effect of a Carve-Out Advanced Access Scheduling System on No-Show Rates. *Family Medicine* 41(1): 51–56.

Breton, M., A. Brousselle, A. Boivin, C. Loignon, N. Touati, C.-A. Dubois et al. 2014. Evaluation of the Implementation of Centralized Waiting Lists for Patients without a Family Physician and Their Effects across the Province of Québec. *Implementation Science* 9: 117. doi: 10.1186/s13012-014-0117-9.

Breton, M., L. Maillet, A. Duhou, S.A. Malham, I. Gaboury, L.M. Manceau et al. 2020. Evaluation of the Implementation and Associated Effects of Advanced Access in University Family Medicine Groups: A Study Protocol. *BMC Family Practice* 21: 41. doi:10.1186/s12875-020-01109-w.

Canadian Health Institute for Health Information (CIHI). 2008. *Primary Health Care (PHC) Indicators Chartbook: An Illustrative Example of Using PHC Data for Indicators Reporting.* Retrieved July 19, 2022. <https://secure.cihi.ca/free_products/phc_chartbook_en.pdf>.

Champagne, F., A.-P. Contandriopoulos, G. St-Marie, É. Chartran. 2018. *L'accessibilité aux services de santé et aux services sociaux au Québec: Portrait de la situation.* École de santé publique (ESPUM) et Institut de recherche en santé publique (IRSPUM) Université de Montréal. Retrieved July 19, 2022. <https://santepop.qc.ca/fr/posts/publications/laccessibilite-aux-services-de-sante-et-aux-services-sociaux-au-quebec>.

Commissaire à la Santé et au Bien-être. 2017. *Perceptions et experiences des personnes de 65 ans et plus: le québec comparé: Recueil des résultats pour chacune des questions de l'enquête internationale sur les politiques de santé du Commonwealth Fund de 2017.* Retrieved March 24, 2022. <https://www.csbe.gouv.qc.ca/fileadmin/www/2017/CWF/CSBE_CWF_2017_Rapport_Recueil.pdf>.

Dion, J.-P. 2015, May 26. *A New FMG Management Framework Better Suited to Reality.* Fédération des médecins omnipraticiens du Québec. Retrieved July 19, 2022. <https://fmoq-legacy.s3.amazonaws.com/en/Press%2R0oom/2015/CommuniqueFMOQCadreGestionGMF26mai2015_EN_v1.pdf>.

Haggerty, J., F. Burge, D. Gass, D. Santor, J.-F. Lévesque, M.-D. Beaulieu et al. 2006. *Primary Health Care Instruments to Measure Client Experience. Overview of Instrument Psychometrics and Mapping of Sub-Scales to Primary Health Care Attributes.* Canadian Institutes for Health Research. Retrieved May 2016. <https://www.smhc.qc.ca/ignitionweb/data/media_centre_files/624/Mapping%20of%20PHC%20Attributes%20to%20Questionaries%20_%20final%20report%202006.pdf>.

Haggerty, J and J.-F. Lévesque. 2016. Validation of a New Measure of Availability and Accommodation of Health Care That Is Valid for Rural and Urban Contexts. *Health Expectation* 20(2): 321–34. doi: 10.1111/hex.12461.

Hudon, C, M. Luc, M.-C. Beaulieu, M. Breton, I. Bouliane, L. Champagne et al. 2019. Implementing Advanced Access to Primary Care in an Academic Family Medicine Network. *Canadian Family Physician* 65: 641–47.

Institut de la statistique du Québec (ISQ). 2021. *Proportion de la population inscrite auprès d'un médecin de famille.* Institut de la statistique du Québec. Retrieved December 2021. <https://statistique.quebec.ca/docs-ken/vitrine/occupation-vitalite-territoire/documents/services_proximite_03.pdf>.

Jacobson, M. and HDR Inc. 2012, June. *Evidence Synthesis for the Effectiveness of Interprofessional Teams in Primary Care.* Canadian Health Services Research Foundation. Retrieved December 2021. <https://hl-prod-ca-oc-download.s3-ca-central-1.amazonaws.com/CNA/66561cd1-45c8-41be-92f6-e34b74e5ef99/UploadedImages/documents/SynthesisInterProfTeams_Jacobson_EN_Web.pdf>.

Lévesque, J.-F., S. Descôteaux, N. Demers and M. Benigeri. 2014, February. *Measuring Organizational Attributes of Primary Healthcare: A Scanning Study of Measurements Items Used in International Questionnaires.* Institut national de santé publique du Québec. Retrieved July 19, 2022. <https://www.inspq.qc.ca/pdf/publications/1857_Measuring_Organizational_Primary_HealthCare.pdf>.

Lévesque, J.-F., M.F. Harris and G. Russell. 2013. Patient-Centred Access to Health Care: Conceptualising Access at the Interface of Health Systems and Populations. *International Journal for Equity in Health* 12: 18. doi:10.1186/1475-9276-12-18.

Malham, S.A., N. Touati, L. Maillet and M. Breton. 2018. The Challenges of Implementing Advanced Access for Residents in Family Medicine in Québec. Do Promising Strategies Exist? *Medical Education Online* 23(1): 1438719. doi:10.1080/10872981.2018.1438719.

Miedema, B, J. Easley, A.E. Thompson, A. Boivin, K. Aubrey-Bassler, A. Katz et al. 2016. Do New and Traditional Models of Primary Care Differ with Regard to Access? *Canadian Family Physician* 62(1): 54–61. <http://www.ncbi.nlm.nih.gov/pmc/articles/pmc4721842/>.

Ministère de la Santé et des Services sociaux (MSSS). 2015. Entente de principe intervenue entre la FMOQ et le MSSS afin d'accroître et d'améliorer l'accessibilité aux services médicaux de première ligne. Retrieved July 19, 2022. <https://www.msss.gouv.qc.ca/professionnels/documents/cibles-medecins/Entente.pdf>.

Ministère de la Santé et des Services sociaux (MSSS). 2017. Integration Sheets for Professionals in GMF. Department of Health and Social Services Publications. Retrieved July 19, 2022. <https://publications.msss.gouv.qc.ca/msss/document-001529/?&txt=guides d%27int%C3%A9gration&msss_valpub&date=DESC>.

Ministère de la Santé et des Services sociaux (MSSS). 2020, February. Cadre de gestion des groupes de médecine de famille universitaires (GMF-U). Retrieved July 19, 2022. <https://publications.msss.gouv.qc.ca/msss/fichiers/2019/19-920-01W.pdf>.

Ministère de la Santé et des Services sociaux (MSSS). 2021. *Plan stratégique 2019–2023*. Government of Québec. Retrieved December 2021. <https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/sante-services-sociaux/publications-adm/plan-strategique/PL_20-717-01W_MSSS.pdf

Mitchel, J.D., J.D. Haag, E. Klavetter, R. Beldo, N.D. Shah, L.J.Baumbach et al. 2019. Development and Implementation of a Team-Based, Primary Care Delivery Model: Challenges and Opportunities. *Mayo Clinic Proceedings* 94(7): 1298–1303. doi:10.1016/j.mayocp.2019.01.038.

Paré-Plante, A.-A., A. Boivin, D. Berbiche, M. Breton and M. Guay. 2018. Primary Health Care Organizational Characteristics Associated with Better Accessibility: Data from the QUALICO-PC Survey in Québec. *BMC Family Practice* 19(1): 188. doi:10.1186/s12875-018-0871-x.

Plourde, A. 2017, May 18. CLSC ou GMF? Comparison of the two models and impact of resource transfer. *IRIS*. Retrieved July 19, 2022. <https://iris-recherche.qc.ca/publications/clsc-ou-gmf-comparaison-des-deux-modeles-et-impact-du-transfert-de-ressources/>.

Rose, K.D., J.S. Ross and L.I. Horwitz. 2011. Advanced Access Scheduling Outcomes: A Systematic Review. *Archives of Internal Medicine* 171(13): 1150–59. doi:10.1001/archinternmed.2011.168.

Rubenstein, L., S. Hempel, M. Danz, D. Rose, S. Stockdale, I. Curtis et al. 2020. Eight Priorities for Improving Primary Care Access Management in Healthcare Organizations: Results of a Modified Delphi Stakeholder Panel. *Journal of General Internal Medicine* 35: 523–30.doi:1007/s11606-019-05541-2.

Statistics Canada. 2020, October 22. *Health Fact Sheets: Primary Health Care Providers, 2019*. Catalogue no. 82-625-X. Retrieved December 2020. <https://www150.statcan.gc.ca/n1/pub/82-625-x/2020001/article/00004-eng.pdf>.

RESEARCH PAPER

Building Blocks to Sustainable Rural Maternity Care: Toward a Systems Approach to Service Planning

Blocs de construction pour des soins de maternité durables en milieu rural : vers une approche systémique de la planification des services

JUDE KORNELSEN, PhD
Co-Director
Centre for Rural Health Research
Department of Family Practice
University of British Columbia
Vancouver, BC

KIRA KOEPKE, MSc
Research Coordinator
Department of Family Practice
University of British Columbia
Vancouver, BC

Abstract

This qualitative study aimed to understand, document and analyze system supports needed to sustain rural maternity care in communities without local access to Caesarean section. In-depth interviews and focus groups with 58 healthcare providers and administrators from rural British Columbia were conducted in 2017/2018. Themes from the data led to the development of five systems interventions necessary to stabilize local maternity care: (1) building nursing confidence; (2) supporting interprofessional teams; (3) efficient transport to referral sites; (4) clear inclusion criteria for local deliveries; and (5) enhanced relationships with referral centres.

Résumé

Cette étude qualitative vise à comprendre, documenter et analyser les systèmes de soutien nécessaires pour maintenir les soins de maternité en milieu rural dans les communautés sans accès local à la césarienne. Des entrevues approfondies et des groupes de discussion réunissant 58 administrateurs et fournisseurs de soins, provenant de régions rurales en Colombie-Britannique, ont été menés en 2017 et 2018. Les thèmes issus des données ont mené au développement de cinq interventions systémiques nécessaires pour stabiliser les soins de maternité locaux : (1) renforcer la confiance des infirmières, (2) soutenir les équipes interprofessionnelles, (3) assurer un transport efficace vers les sites de services, (4) établir des critères d'inclusion clairs pour les accouchements locaux, et (5) améliorer les relations avec les services centraux.

Introduction

The centralization of healthcare in British Columbia (BC) over the past 20 years has resulted in the closure of many maternity services, especially in rural settings with low birth numbers (Hutcheon et al. 2017). When hospitals close or stop offering intrapartum services, childbearing people need to leave their communities to give birth and may experience stress associated with the social, psychological and financial consequences of leaving their home communities (Grzybowski et al. 2007; Kornelsen et al. 2011).

The maternity care needs of rural childbearing people, their families and communities have been well documented across Canada, including the necessity to access safe care as close to home as possible (BC Ministry of Health 2022, 2015; *Canada Health Act* 1985; Seaton 1991; SOGC 2010). There is consolidated evidence on the health, psycho-social and cultural consequences of *not* providing this care. The Canadian policy context, starting with the *Canada Health Act* (1985) and including province-specific issuances such as the Royal Commission on Healthcare and Costs (Seaton 1991) and successive provincial ministry of health service plans (Alberta Health Services 2012; BC Ministry of Health 2022; Government of New Brunswick 2008; Government of Saskatchewan 2015) emphasize the need for such care. Moreover, our national obstetrical organization, the Society of Obstetricians and Gynecologists of Canada (SOGC), endorses this through two policy statements: "Returning Birth to Rural, Remote and Aboriginal Communities" (SOGC 2010) and the "Joint Position Paper on Rural Maternity Care" (Miller et al. 2012). More recently, both the national Truth and Reconciliation Commission of Canada (2015) and Canada's commitment to the United Nations Declaration on the Rights of Indigenous Peoples (2007) have paved the way for actioning local birth as a cultural mandate and a part of the reconciliation process. Within this supportive policy context and clear articulation of community desire, however, there remains a gap: understanding the system supports needed to sustain local care providers.

In order to address this gap, a two-year project undertaken in BC aimed to understand, document and analyze the system supports needed to sustain rural maternity care in communities without local access to Caesarean section. Groundwork was done to understand and document the needs of birthers and their families. Once this foundation was established, system supports necessary to actualize the local care desired by the community were identified by care providers. While intensive work was done in a focal study community, the third phase involved engagement with all provincial sites without local access to Caesarean section through telephone interviews and a provincial symposium. This project was built on existing evidence gathered between 2009 and 2016 (Table 1).

TABLE 1. Data sources that informed the building blocks to sustainable rural maternity care

Description	Output/Source	Year	Reference
The need for local maternity care in the study community	Report based on community consultation	November 2008–July 2009	Grzybowski et al. 2009a
Primary evidence derived from BC – and Canada – on the safety of rural maternity care without local access to Caesarean section	Peer-reviewed publications, based on analysis of provincial perinatal data	2011 2015	Grzybowski et al. 2011, 2015
A metric for determining the appropriate level of maternity services in rural settings and indications for health system planning	Peer-reviewed publications	2005 2009 2010 2016	Grzybowski et al. 2009b, 2016; Kornelsen and Grzybowski 2005; Kornelsen and Grzybowski 2010
Systematic realist review on the safety of maternity services without local access to Caesarean section	Report commissioned by the BC Ministry of Health and Perinatal Services, BC	2015	Kornelsen and McCartney 2015b
Systematic realist review on models of distributed maternity care for Indigenous communities	Report commissioned by the First Nations Health Authority	2015	Kornelsen and McCartney 2015a

Understanding how to better support rural maternity services is understood in the context of current cross-jurisdictional political priorities, such as a focus on team-based primary care to achieve seamless patient care. This commitment to interprofessional practice (IPC) reflects the growing international literature on the relationship between teamwork and optimal outcomes (Cornthwaite et al. 2013; Raab et al. 2013; Siassakos et al. 2013). This is particularly crucial in low-volume isolated communities that are supported by a generalist skill set and require close professional collaboration to mitigate the tyranny of distance to specialized care. Interprofessional collaboration must be understood on a continuum from collegial relationships between healthcare professionals co-existing in a defined geography and extending to fully integrated practice and a shared patient load (Reeves et al. 2018).

Current rural maternity service delivery indicates that sustainable care is not a problem unique to low-resource sites. Challenges are felt across the continuum, including at regional referral centres burdened with additional volume due to closures at smaller sites. Interventions to sustain a *system* of maternity care must be understood and applied at all levels of care to mitigate the “domino effect” that the closure of small sites has on the larger ones. This requires a jurisdictional, evidence-informed approach to planning services within a framework of iterative evaluation to "course correct," should it be necessary. One-off solutions to quell the impact of local closures without appreciation of the interconnectedness of system parts will not offer a robust solution. Results from this work provide a starting point for this larger discussion in many jurisdictions struggling with maintaining local access to maternity care.

Background to Current Study

The study focused on a cluster of small communities (population <1,000–4,434) over 21,157 km^2 of North Vancouver Island, BC. The two largest centres in the region account for approximately 77.3% of the population, and 31.2% of the population identify as Indigenous (Statistics Canada 2017). There were two hospitals in the region with 24/7 emergency coverage: one of the hospitals supported low-risk, vaginal deliveries, although the service supported less than five annual deliveries during 2012–2017 out of an annual birthing population of ~115 over the same time frame. The hospital with undesignated maternity services supported 5–10 annual deliveries during this time. No midwives were practising in the community at the time of data collection.

The birth rate in the study region was substantially higher than the provincial average: between 2011 and 2015, there were on average 78.2 births per 1,000 annually, while in the province as a whole, 57.0 births per 1,000 occurred annually in the same time frame (Centre for Rural Health Research 2019).

Geographic isolation posed a significant challenge regarding access to healthcare for residents in the study communities. Road access to the region is limited to a single lane highway, and the nearest regional referral centre lies 200 km to the south, which is over two hours of travel time by road in ideal conditions. Although there is a local airport in the region, flights can be subject to delays and cancellations due to poor weather conditions. Interviews with 62 birthers in 2017/2018 who live on the North Island revealed that there is a strong interest in local birth. Participants envisioned culturally safe care, local access to midwifery, a space for local traditions and birth in their home community (Centre for Rural Health Research 2019).

Method and Approach

The objectives of this qualitative study were as follows:

1. to understand barriers local care providers and administrators face in providing sustainable maternity services to the community; and
2. to determine the system supports needed to allow for the provision of sustainable maternity services to childbearing people and their families on the North Vancouver Island.

Participants were recruited from the local communities and invited to key informant interviews or focus groups. Data were collected over 18 months, with seven field trips made to the communities between September 2017 and December 2018. In total, 58 participants were recruited, with the majority of participants being nurses. We included community members and key decision makers on an advisory committee that directed the progress of the study, meeting biweekly. The project leads also worked closely with local physicians through physician leaders, who served as our liaison with the larger physician community. We validated local findings provincially by interviewing physician, nursing, midwifery and administrative representatives from all of the provincial sites offering maternity care without local access to Caesarean section and by presenting and discussing results at a provincial symposium (see Table 2 for a detailed description of the iterative study process).

TABLE 2. Data collection and validation phases

Data collection phase		
This phase consisted of interviews and focus groups with childbearing people ($n = 62$), nurses ($n = 33$), physicians ($n = 10$), community health workers ($n = 8$) and others – i.e., nurse practitioners, administrators, paramedics and midwifery leaders ($n = 7$). As there were no local midwives practising during the study period, the research team interviewed provincial midwifery leadership representing the regulatory college and professional association, including a discrete rural midwifery committee and the university-based educational program.	Field work with people on the North Island	2017–2018
Validation phase		
Interviews were conducted with physician, nursing, midwifery and administrative representatives from all of the provincial sites offering maternity care without local access to Caesarean section ($n = 14$).	Interviews	2018
Group discussions were held with symposium attendees ($n = 26$) where the foundational "building blocks" were endorsed as relevant to all low-resource maternity sites and actions to stabilize maternity care were prioritized.	Provincial symposium	2018

In-depth interviews and homogeneous focus groups took place in local hospitals, health centres or coffee shops, as per the preference of the participants. All interviews and focus groups were audio recorded with participants' permission and transcribed. Transcriptions underwent thematic analysis using a hybrid model of inductive and deductive coding to interpret raw data based on the principles of social phenomenology as described in detail by Fereday and Muir-Cochrane (2006). The research project was granted approval through the University of British Columbia's Behavioural Research Ethics Board.

Results

Care providers' experiences and challenges with maternity care

Participants recognized the practice consequences of low procedural volume including solo or dyad practices and the attendant lack of wider professional community of practice. All participants articulated the undesirability of solo practice but saw it as an inevitable recourse in low-volume settings in the course of a care billing model.

Outside financial concerns, most participants did not see low procedural volume as a barrier to practice efficacy once consolidation of skills had been achieved. However, all participants noted the importance of ensuring provider fit with the local community: "You have to find the right people."

System challenges

Most of the overarching system challenges identified were common among all participants and included inadequate procedural volume to maintain confidence, resentment around inequitable payment and lack of transparency and expediency regarding hospital privileging. Midwifery participants identified the challenges of participation in discussion tables around maternity care due to the lack of negotiated funds to support such meetings, and several noted that when funds were forthcoming, they were not on par with physician funding.

All midwifery participants referred to challenges of gaining hospital privileges, a necessary part of full-scope practice. Several felt that there was a lack of transparency on how privileging decisions were made, giving the impression that in communities without a history of local midwifery practice, decisions were heavily weighted toward the preferences of existing physician providers.

An overarching concern, throughout most nurses' narratives, was the lack of clinical preparedness for local delivery, precipitated by their experience of lack of support. Participants stated, "At the best of times, we are hanging on by our fingernails" and "it is scarier than trauma (cases) …" Several nurses voiced medico-legal concerns due to high staff turnover and the challenge of consistently meeting standards that this leads to, suggesting that these concerns lead to "fear" of local deliveries.

In juxtaposition, almost all nurses interviewed recognized the importance of local birth to the community, particularly for populations in vulnerable situations. Participants connected lack of local care to several concomitant risks (such as pregnant people going "underground" and presenting at the hospital in labour). The risks identified here are highlighted by social risks: "One woman['s] kids had to go into foster care so [that] she could go and deliver her baby … She had no family, and there was no one to care for her children." The inevitability of precipitous local deliveries underscored many participant narratives: "We can't close because people are going to have unexpected babies [in the community], period. You can't stop that process."

Nurses clearly expressed their professional needs, which included increased on-the-ground training (mock simulations and practice sessions) and rotating through high-volume maternity exposure.

Building blocks to sustainable rural maternity care

The experience of care providers gave rise to the iterative development of a set of system interventions necessary to stabilize local maternity care, including increased attention to building nursing confidence, interprofessional teams (IPTs), efficient transport to referral sites, clear inclusion criteria for local deliveries and enhanced relationship with referral centres. Each one is described briefly below.

NURSING CONFIDENCE

In small communities with low incidences of birth and the concomitant lack of maternity experience afforded to nurses, maintenance of confidence is challenging (Kenny and Duckett 2003; MacKinnon 2008). Front-line nursing confidence is multifactorial, including initial nursing training, nursing management, professional development opportunities, health authority infrastructure and supports, team work and support from physician colleagues (MacKinnon 2008; Onlock 2014). The following were identified as priorities to stabilize rural maternity nursing: (1) exchange programs to train in higher volume communities that provide relevant experience (e.g., mentoring with a midwife); (2) relevant ongoing education and practical experience and the development of a corresponding curriculum that can be delivered locally; and (3) increased education and funding for training and maintaining nurse competencies in maternity care, ideally on site.

Interprofessional teams

Nurses and allied healthcare providers in the community expressed support for building a local interprofessional maternity care team. There was near unanimous support among nurses and physicians for working with midwives locally. Several participants identified the advantage of midwives' focus on and expertise with maternity care and the key role they could play in education and training. This was underscored by the normalizing approach midwives have to birth and their "most responsible person" role in deliveries.

NURSING PERSPECTIVES

Many nurses pointed out the positive impact midwives would have on their own maternity practice: "I think it [midwifery] would make a significant difference. A significant positive difference … I just love the energy that comes from them." One of the attributes of midwifery that nursing staff recognized and valued was the midwife's active role and presence throughout delivery, relieving nursing staff of being the most responsible provider during labour. One participant explained:

> They [the midwife] would come in and they would do the birth, and the nurse could assist them, but they would be the primary [care provider], and I think all the nurses would be perfectly happy to do that.

Nursing staff also expressed the importance of having a local midwife with cultural context and understanding of the community.

PHYSICIANS' PERSPECTIVES

From the local physician perspective, there was a clear articulation of the desire for team-based care, with midwives playing an integral role on the team, including a potential for midwives to "lead the maternity program for the region." Some physician participants noted their desire to continue performing deliveries with the understanding that if difficulties are encountered by the midwife, "all hands will be on deck," thus underscoring the importance for all providers to maintain their skills. Others pointed out financial implications of physicians staying within a maternity care team, including receiving incentive fees (General Practice Services Committee 2021).

Several participants suggested that unsupported midwifery would "be a struggle" for existing providers in the region and the midwife who, given the potential caseload, could be at risk for burnout. Others emphasized midwives would not only "take a lot of pressure off" existing providers but could also play an important role in community outreach activities (e.g., sexual health education) and a key role in educating nurses. Concerns were expressed about "losing the (maternity) service to midwifery" instead of midwifery working within a team framework. To this end, emphasis was placed on the need to ensure local input in the midwifery hiring process. This referred to IPC, marked by clear communication between physicians and midwives. As this framework was theoretical and had not yet been developed, explication was limited.

Efficient emergency transport

Interviews and focus groups with providers and administrators revealed emergency maternal and newborn transport as a significant concern for local deliveries, specifically delayed transport and not being able to transfer high-acuity childbearing people during labour efficiently. Transport was consistently described in the focus groups as "not working" due to overarching system characteristics such as difficulty arranging a care provider escort and complex inter-organizational communication. This diminished participants' comfort with offering the option of local birth. Subthemes included challenges of the dilation cut-offs for safe transport (currently at 4 cm), inclement weather conditions and shift change concerns. All physicians expressed concerns regarding the inefficient transport of maternity patients within the context of wider concerns about patient transport. One physician stated: "We [have] come to expect that transport will be complicated" – underscoring a widespread frustration with the current system.

A shortage in health human resources (through escorts) was noted as an additional transport challenge. Having a nurse or designated care provider who could accompany the transport team was suggested to help alleviate this delay. However, pulling a nurse or physician from the hospital creates a potential staffing shortage in the local community. Additionally, there is no funding mechanism for care providers who escort a patient to an accepting site to return to their community. Delays due to complex inter-organizational communication arose as another prominent issue. There were experiences of miscalculated reporting of a situation between organizing bodies, which led to delays when the transport team arrived:

> The biggest challenge for us in our entire province is acceptance … It's about accepting that patient and handing over the confidence from one physician to another to get that acceptance [from] the hospital.

Participants expressed frustrations regarding the many phone calls needed to make decisions around transport, which led to further delays. These frustrations were voiced with the recognition and understanding of the immutable challenges that weather and geography pose to efficient transport; these are challenges that cannot be resolved. There was consensus, however, that system-level interventions described earlier could mitigate some of the overarching challenges with rural patient transport.

Appropriate inclusion criteria for local deliveries

Being "risked-out" or considered "high risk" was a reccurring response we heard from community members and care providers as a rationale for birth outside the community. Many mothers and community members indicated that they were "high risk," though the understanding of what their risk factors were was unclear. Although care provider participants had an awareness of the social risks that leaving the community for birth incurred (financial risks and separation from family and community), the propensity to err on the side of caution in response to any potential risk factors was common to most providers.

Strengthened relationships with regional specialists

We heard from care providers on the North Vancouver Island and midwives working across the province in communities without a Caesarean section backup that stronger networks of regional care would augment their capacity to provide sustainable, safe care. Nurses in low-resource sites expressed a desire to link with maternity nurses at referral centres for ongoing mentorship and support. Likewise, there was consensus among providers from all low-resource sites that there is a need for networking with specialist colleagues to influence, participate and add to the dialogue around sustaining rural maternity care. Participants also expressed a desire for mentorship and interprofessional learning between rural providers and providers at referral sites in order to engage in reciprocal learning and alert the referral sites to the unique challenges of working in a rural setting. Participants identified "trust" as a key determinant of successful relationships. Attention and resources need to focus on building and strengthening networks of care between rural sites and their referral sites as well as between all rural sites.

Provincial validation

Findings from the field work were validated through interviews with physician, nursing, midwifery and administrative representatives from all of the provincial sites offering maternity care without local access to Caesarean section (n = 14) and through discussions at a provincial symposium where the foundational "building blocks" were endorsed as relevant to all low-resource maternity sites. In addition, actions to stabilize maternity care were prioritized. The overarching provincial priorities included alternative compensation for midwifery (i.e., salaried rather than fee for service) and additional funding for recruitment and retention to support rural nurses involved in maternity care (including funding for skills development in high-volume centres and local simulation training). There was consensus regarding the need to address larger systems challenges with rural transport and interest in building lateral networks between rural sites and with regional referral centres. Lastly, participants also identified the need for developing more functional models of IPTs between physicians and midwives and mechanisms to fund such models. The disparate provider funding sources for maternity care has resulted in inequity between provider groups and barriers to collaborative practice. Participants noted that new interprofessional fund-holding mechanisms needed to be developed to allocate regional funding for maternity care, enabling regional geographies to determine the most responsive application of the funds to meet community needs.

Discussion and Conclusion

Despite the well-documented need for maternity care close to home for rural childbearing people across Canada, and the psycho-social, cultural and health-related consequences of not providing this care, little research has examined the system supports needed to sustain rural maternity care from the perspectives of local care providers

It is important to view challenges in low-resource rural maternity care sites as a systems issue. When a rural maternity service closes or is struggling, the impact is felt at surrounding hospitals because of an influx of maternity patients. An evidence-informed approach to planning services that involves stakeholders from across the region is essential and should be evaluated regularly.

Actions to stabilize maternity care that were identified and prioritized by participants included alternative compensation for fee-for-service providers including on-call funding for maternity care, additional support for rural nurses and other practitioners involved in maternity care, addressing rural transport system challenges, progress in building lateral networks between rural sites and regional referral centres and further need for functional models of IPTs. Following a provincial symposium of healthcare stakeholders, these foundational "building blocks" were validated as relevant to all low-resource (no local Caesarean section service) maternity sites.

The Canadian rural maternity care landscape, akin to other jurisdictions internationally, is shifting dramatically with both the continued erosion of primary maternity care sites without local access to Caesarean section and destabilization of larger services due to the influx of additional rural birthing families. Although midwives have made significant contributions in many of the rural jurisdictions across Canada, for most provinces and territories, supply has not kept up with demand. At a systems level, the model of remuneration and extant challenges to IPC has stymied progress. However, differences in the way midwives and physicians are compensated makes interprofessional collaboration difficult. For example, in the study jurisdiction (BC), midwives get paid per course of care and provide continuity of care through pregnancy, birth and up to six weeks postpartum. Unlike physicians, midwives are not compensated for providing additional care for people with more complex social and/or medical needs, and they do not receive adequate payment for committee work and other interprofessional activities. In addition, the provincial ministry of health needs to create a provincial strategic framework that values rural maternity care as part of an integrated, wraparound system of care. Key to this is the recognition that closures or understaffing of rural hospitals result in more emergency transfers, put more pressure on referral centres and can lead to referral hospitals reaching capacity and turning away childbearing people. Perturbations in one system stratum have a ripple effect throughout the system. Unabated, perturbations in larger sites may lead to consequences – both anticipated and unanticipated – in tertiary settings. In short, the challenges in low-volume rural maternity sites lead to whole-system challenges.

In BC, interprofessional care has been theoretically embraced through the Patient's Medical Home model and Primary Care Networks based on aspirational collaboration between professions to provide seamless patient care. When applied to maternity care, this implies collaboration between physicians, midwives and nurses at the centre, where collaboration is understood on a continuum to mean anything from respectful collegiality between professions practising in a shared location to full integration of practice responsibilities including sharing patient load. Unfortunately, there is a lack of system infrastructure to actualize such relationships, making implementation troublesome. In small rural maternity services, there needs to be system recognition and incentivization that interprofessional care is essential for safe patient care. This must not limit the autonomy of any profession nor the capacity to work to full scope of practice, but it must instead recognize that safe practice is contingent on having a local community of practice for support should challenges be encountered.

Midwifery scope extension such as well-woman care and skills such as surgical assist with Caesarean sections would contribute to better meeting the needs of rural communities. However, it is essential that additional skills and scope be accompanied by discrete billing codes that allow for appropriate compensation.

The characteristics of successful IPTs and the mechanisms to support IPC are well described in the literature and codified in international, evidence-based frameworks (WHO 2010). There is consensus that interprofessional education is a "necessary step in preparing a 'collaborative practice-ready' health workforce to respond to local health needs" (WHO 2010: 7). Achieving this goal requires an openness to revise and renew curricula in medicine, nursing and midwifery and address how professional cultures and stereotypes impede successful interprofessional education. Curricula should also provide education about the roles and scope of other health professions and opportunities for interprofessional placements (WHO 2013).

Successful IPTs are characterized by leaders and champions who role model and actively support IPC and facilitate mentorship and learning opportunities for members of the IPT. A clear definition of IPC, role clarity and articulation of a shared vision for successful collaboration are important steps in the development of successful IPTs. Other enabling factors include administrative, institutional and work culture support and physical environment and space design (e.g., appropriate spaces for interprofessional learning) (WHO 2013).

Several mechanisms facilitate the ability of a collaborative practice-ready workforce to provide high-quality care. Institutional mechanisms include governance models, structured protocols, shared operating resources, personnel policies and supportive management practices. Strategies to promote a positive work culture include conflict resolution policies and supports, shared decision-making processes and regular opportunities to reflect on successes and failures of IPC (WHO 2010).

More resources are needed at the regional level to implement local support for maternity care, such as funding enough nursing lines, improving hospital infrastructure and resources and fostering a culture of acceptance for rural maternity care without Caesarean section backup. A significant body of evidence documents the safety of birth in these communities (Kornelsen and McCartney 2015a, 2015b) as long as comprehensive risk assessment and a well-functioning referral system are in place.

Another barrier to sustainable rural maternity care is care provider burnout and lack of system support (Stoll and Gallagher 2019). Midwives in most Canadian jurisdictions lack appropriate critical incident support and a comprehensive retention strategy. Likewise, physicians have limited support for professional retention and re-entry. The programs that were implemented by BC Emergency Health Services to support paramedics in BC are good examples of successful and comprehensive mental health, critical incident and retention strategies. For example, BC Emergency Health Services has an award-winning peer counselling program and an extensive network of vetted counsellors with expertise in supporting vicarious trauma and other mental health issues common among healthcare providers (BC Emergency Health Services 2017). We can look to models such as this for best practices.

Although the focus of this study is on the needs of healthcare providers and administrators, it is essential to appreciate that it responds to *the needs of local community members* (alongside a growing and robust evidence base on safety within a supportive policy context). The question of sustainable rural – and urban – maternity care is one that needs to be addressed in a timely way with accountability to communities, including healthcare providers, and to our pan-Canadian commitment to respond to the *Calls to Action* of the Truth and Reconciliation Commission of Canada (2015) and the United Nations (2007) *Declaration on the Rights of Indigenous Peoples*. We have enough evidence to support maternity care for low-risk childbearing people in settings without local access to Caesarean section; it is time to address the community skepticism regarding the decades of inaction and show that improvements are possible.

Findings from this study support the stabilization of rural maternity care in Canadian jurisdictions and other low-resource maternity sites around the world.

Correspondence may be directed to: Jude Kornelsen. Jude can be reached by e-mail at jude.kornelsen@familymed.ubc.ca.

References

Alberta Health Services. 2012, March 15. *Strategic Direction 2012–2015: Defining Our Focus/Measuring Our Progess.* Retrieved August 18, 2021. <https://docplayer.net/5964730-Strategic-direction-defining-our-focus-measuring-our-progress.html>.

BC Emergency Health Services. 2017, June 29. Health Employers Honour Critical Incident Stress Program. Retrieved December 9, 2021. <http://www.bcehs.ca/about/news-stories/stories/health-employers-honour-cis-program>.

BC Ministry of Health. 2015. *Primary and Community Care in B.C.: A Strategic Policy Framework Executive Summary.* Retrieved May 22, 2022. <https://www.health.gov.bc.ca/library/publications/year/2015_a/primary-and-community-care-policy-paper-exec.pdf>.

BC Ministry of Health. 2022, February. *2022/23 – 2024/25 Service Plan*. Retrieved July 23, 2022. <https://www.bcbudget.gov.bc.ca/2022/sp/pdf/ministry/hlth.pdf>.

Canada Health Act, R.S.C., 1985, c. C-6. Retrieved July 18, 2022. <https://laws-lois.justice.gc.ca/eng/acts/c-6/page-1.html>.

Centre for Rural Health Research. 2019, March. *Building Blocks to Sustainable Rural Maternity Care: The North Island Project: Final Report*. Retrieved May 20, 2022. <https://med-fom-crhr.sites.olt.ubc.ca/files/2019/09/Building_Blocks__FINAL.pdf >.

Cornthwaite, K., S. Edwards and D. Siassakos. 2013. Reducing Risk in Maternity by Optimising Teamwork and Leadership: An Evidence-Based Approach to Save Mothers and Babies. *Best Practice and Research Clinical Obstetrics and Gynaecology* 27(4): 571–81. doi:10.1016/j.bpobgyn.2013.04.004.

Fereday, J. and E. Muir-Cochrane. 2006. Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods* 5(1): 80–92. doi:10.1177/160940690600500107.

General Practice Services Committee. 2021. Family Physician Obstetrical Premiums (PG14004, PG14005, PG14008, PG14009) and Maternity Care Risk Assessment (PH14002). Retrieved August 18, 2021. <https://gpscbc.ca/sites/default/files/uploads/GPSC-Maternity-Billing-Guide-20210101.pdf>.

Government of New Brunswick. 2008. *Transforming New Brunswick's Health-Care System: The Provincial Health Plan 2008–2012*. Retrieved August 18, 2021. <https://www.mindbank.info/item/1751>.

Government of Saskatchewan. 2015. Patient First Review Update: The Journey So Far and the Path Forward. Retrieved August 18, 2021. <https://www.saskatchewan.ca/government/health-care-administration-and-provider-resources/saskatchewan-health-initiatives/patient-first-review>.

Grzybowski, S., J. Fahey, B. Lai, S. Zhang, N. Aelicks, B.M. Leung et al. 2015. The Safety of Canadian Rural Maternity Services: A Multi-Jurisdictional Cohort Analysis. *BMC Health Service Research* 15(1): 410. doi:10.1186/s12913-015-1034-6.

Grzybowski, S., J. Kornelsen and L. Barclay. 2016. Closing Rural Maternity Services: Is It Worth the Risk? *Canadian Journal of Rural Medicine* 21(1): 17–19.

Grzybowski, S., J. Kornelsen and E. Cooper. 2007. Rural Maternity Care Services under Stress: The Experiences of Providers. *Canadian Journal of Rural Medicine* 12(2): 89–94.

Grzybowski, S., J. Kornelsen, M. McDonald, B. Westlake, D. Hawkins, P. Dickinson and A. Mcintyre-Smith. 2009a, August. *Providing a Birth Support Program for Women of the North Island Region, Vancouver Island. An Aboriginal Midwifery Demonstration Project.* Centre for Rural Health Research. Retrieved June 14, 2022. <https://med-fom-crhr.sites.olt.ubc.ca/files/2013/08/aboriginal-midwifery-community-consultation-final-report-aug-10-2009.pdf>.

Grzybowski, S., J. Kornelsen and N. Schuurman. 2009b. Planning the Optimal Level of Local Maternity Service for Small Rural Communities: A Systems Study in British Columbia. *Health Policy* 92(2–3): 149–57. doi:10.1016/j.healthpol.2009.03.007.

Grzybowski, S., K. Stoll and J. Kornelsen. 2011. Distance Matters: A Population Based Study Examining Access to Maternity Services for Rural Women. *BMC Health Services Research* 11(1): 147. doi:10.1186/1472-6963-11-147.

Hutcheon, J.A., C.A. Riddell, E.C. Strumpf, L. Lee and S. Harper. 2017. Safety of Labour and Delivery Following Closures of Obstetric Services in Small Community Hospitals. *CMAJ* 189(11): E431–36. doi:10.1503/cmaj.160461.

Kenny, A. and S. Duckett. 2003. Educating for Rural Nursing Practice. *Journal of Advanced Nursing* 44(6): 613–22. doi:10.1046/J.0309-2402.2003.02851.X.

Kornelsen, J. and S. Grzybowski. 2005. Safety and Community: The Maternity Care Needs of Rural Parturient Women. *Journal of Obstetrics and Gynaecology Canada* 27(6): 554–61. doi: 10.1016/s1701-2163(16)30712-5.

Kornelsen, J. and S. Grzybowski. 2010. Rural Maternity Practice: How Can We Encourage Family Physicians to Stay Involved? *Canadian Journal of Rural Medicine* 15(1): 33–35.

Kornelsen, J. and K. McCartney. 2015a, April 24. *System Enablers of Distributed Maternity Care for Aboriginal Communities in British Columbia: Findings from a Realist Review.* First Nations Health Authority. Retrieved July 23, 2022. <https://med-fom-crhr.sites.olt.ubc.ca/files/2015/05/apru_fnha_system-enablers-of-distributed-maternity-care-for-aboriginal-communities-in-bc_report_final.pdf>.

Kornelsen, J. and K. McCartney. 2015b, November 3. *The Safety of Rural Maternity Services without Local Access to Caesarean Section: An Applied Policy Research Unit Review.* Retrieved July 19, 2022. <https://med-fom-crhr.sites.olt.ubc.ca/files/2015/11/apru_the-safety-of-rural-maternity-services-without-local-access-to-c-section_2015.pdf>.

Kornelsen, J., K. Stoll and S. Grzybowski. 2011. Stress and Anxiety Associated with Lack of Access to Maternity Services for Rural Parturient Women. *Australian Journal of Rural Health* 19(1): 9–14. doi:10.1111/j.1440-1584.2010.01170.x.

MacKinnon, K. 2008. Labouring to Nurse: The Work of Rural Nurses Who Provide Maternity Care. *Rural and Remote Health* 8(4): 1047. doi:10.22605/RRH1047.

Miller, K.J., C. Couchie, W. Ehman, L. Graves, S. Grzybowski, J. Medves et al. 2012. Rural Maternity Care. *Journal of Obstetrics and Gynaecology Canada* 34(10): 984–91. doi:10.1016/S1701-2163(16)35414-7.

Onlock, S. 2014. *Designing an On-Line Course on Traumatic Childbirth: Considerations for Rural Nurse Educators* [MSN Thesis]. Retrieved July 19, 2022. <http://dspace.library.uvic.ca:8080/bitstream/handle/1828/5682/Onlock_Susan_MN_2014.pdf?s>.

Raab, C.A., S.E.B. Will, S.L. Richards and E. O'Mara. 2013. The Effect of Collaboration on Obstetric Patient Safety in Three Academic Facilities. *Journal of Obstetric, Gynecologic and Neonatal Nursing* 42(5): 606–16. doi:10.1111/1552-6909.12234.

Reeves, S., A. Xyrichis and M. Zwarenstein. 2018. Teamwork, Collaboration, Coordination, and Networking: Why We Need to Distinguish between Different Types of Interprofessional Practice. *Journal of Interprofessional Care* 32(1): 1–3. doi:10.1080/13561820.2017.1400150.

Seaton, P.D. 1991. *Closer to Home: The Report of the British Columbia Royal Commission on Health Care and Costs*. Crown Publications.

Siassakos, D., R. Fox, K. Bristowe, J. Angouri, H. Hambly, L. Robson et al. 2013. What Makes Maternity Teams Effective and Safe? Lessons from a Series of Research on Teamwork, Leadership and Team Training. *Acta Obstetricia et Gynecologica Scandinavica* 92(11): 1239–43. doi:10.1111/AOGS.12248.

Society of Obstetricians and Gynecologists of Canada (SOGC). 2010. Returning Birth to Aboriginal, Rural, and Remote Communities. *Journal of Obstetrics and Gynecology Canada* 32(12): 1186–88.

Statistics Canada. 2017, February 8. Census Profile, 2016 Census. Retrieved August 12, 2021. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>.

Stoll, K. and J. Gallagher. 2019. A Survey of Burnout and Intentions to Leave the Profession among Western Canadian Midwives. *Women and Birth* 32(4): e441–49. doi:10.1016/j.wombi.2018.10.002.

Truth and Reconciliation Commission of Canada. 2015. *Truth and Reconciliation Commission of Canada: Calls to Action*. Retrieved August 18, 2021. <https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/indigenous-people/aboriginal-peoples-documents/calls_to_action_english2.pdf>.

United Nations. 2007, September 13. *United Nations Declaration on the Rights of Indigenous Peoples*. Retrieved May 22, 2022. <https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf>.

World Health Organization (WHO). 2010. *Framework for Action on Interprofessional Education and Collaborative Practice*. Retrieved May 20, 2022. <http://apps.who.int/iris/bitstream/handle/10665/70185/WHO_HRH_HPN_10.3_eng.pdf?sequence=1>.

World Health Organization (WHO). 2013. *Interprofessional Collaborative Practice in Primary Health Care: Nursing and Midwifery Perspectives: Six Case Studies*. Retrieved May 19, 2022. <https://apps.who.int/iris/bitstream/handle/10665/120098/9789241505857_eng.pdf?sequence=1&isAllowed=y>.

RESEARCH PAPER

Public Health Messaging during the COVID-19 Pandemic and Its Impact on Family Caregivers' COVID-19 Knowledge

Messages de santé publique pendant la pandémie de COVID-19 et leur impact sur les connaissances des proches aidants en matière de COVID-19

DEIRDRE McCAUGHEY, PhD, MBA
Associate Professor
Cumming School of Medicine
Faculty of Medicine
University of Calgary
Calgary, AB

GWEN McGHAN, PhD, RN, GNC(C)
Associate Professor
Faculty of Nursing
University of Calgary
Calgary, AB

KRISTIN FLEMONS, MA
Research Associate
Ward of the 21st Century (W21C) Research and Innovation Centre
University of Calgary
Calgary, AB

WHITNEY HINDMARCH, PhD
Research Associate
Ward of the 21st Century (W21C) Research & Innovation Centre
University of Calgary
Calgary, AB

KIM BRUNDRIT, MBA
Collective Impact Lead
Dementia Network Calgary
Alzheimer Society of Calgary
Calgary, AB

Abstract

Background: Enabling accurate, accessible public health messaging is a critical role of public health officials during a pandemic, but family caregivers of people living with dementia (PLWD) have rarely been specifically addressed in public health messaging.
Objective: The objective of this study was to examine how family caregivers for people living with dementia access and evaluate public health messaging in Alberta.
Method: An online survey was conducted with family caregivers for PLWD (n = 217).
Results: Most respondents rated public health messaging as good or excellent (63.9%), but specific information about how to access caregiving information (69.5%) and what to expect in the future (49.1%) was rated as less than good. Family caregivers also identified how to care for a PLWD during the pandemic (57.5%) as a key information need. Healthcare providers/workers were the least frequently used source of public health messaging. Almost all family caregivers (94.4%) rated their own COVID-19 knowledge as good or excellent.
Discussion: Tailored, context-driven public health messaging for family caregivers of PLWD is critically needed.

Résumé

Contexte : Communiquer des messages de santé publique précis et accessibles est un rôle essentiel des responsables de la santé publique pendant une pandémie, mais les proches aidants des personnes atteintes de démence en sont rarement les destinataires spécifiques.
Objectif : L'objectif de cette étude est d'examiner comment les proches aidants des personnes atteintes de démence prennent connaissances et évaluent les messages de santé publique en Alberta.
Méthode : Un sondage en ligne a été mené auprès de proches aidants de personnes atteintes de démence (n = 217).
Résultats : La plupart des répondants qualifient les messages de santé publique de bons ou d'excellents (63,9 %), mais ils qualifient de moins bon les renseignements précis sur la façon d'obtenir des informations concernant les soins (69,5 %), ou encore les messages concernant les perspectives d'avenir (49,1 %). Les proches aidants ont également indiqué que la façon de prendre soin d'une personne atteinte de démence pendant la pandémie (57,5 %) était une information nécessaire. Les fournisseurs de soins et les travailleurs de la santé constituent les sources d'information sur la santé publique les moins fréquemment utilisées. Presque tous les proches aidants (94,4 %) ont évalué leurs propres connaissances sur la COVID-19 comme étant bonnes ou excellentes.
Discussion : Il est nécessaire de formuler des messages de santé publique adaptés et axés sur le contexte des proches aidants des personnes atteintes de démence.

Introduction

The COVID-19 pandemic, now well into its third year, remains a global focus and continues to challenge governments across multiple jurisdictions to manage public safety and minimize disease transmission through a myriad of ever-changing public health measures (Government of Canada 2022a). Since the first reported case in Canada in January 2020, 12% of all Canadian media headlines have been related to the COVID-19 pandemic (ProQuest n.d.). The sheer volume of information has proven to be overwhelming, as has the amount of misinformation (Bridgman et al. 2020; Caulfield 2020). Misinformation about the COVID-19 virus is especially problematic as false cures, incorrect transmission and risk information and confusion around usage of masks and personal protective equipment can deter protective health behaviours (van der Linden et al. 2020). The proliferation of misinformation may prevent effective virus containment and may reduce widespread public adoption of critical health measures (Harvey 2021). To that, government agencies have responded accordingly with 18.7% of the Public Health Agency of Canada's (PHAC's) current online literature (2015–present) being related to COVID-19. In comparison, only 6.72% of PHAC's current online content is related to influenza, and 1.73% is related to the recent Zika virus outbreak (Government of Canada n.d.).

The availability of accurate, accessible and comprehendible public health information is a primary responsibility of public health officials (WHO 2005). During a health crisis or natural disaster, effective public health messaging can ease a nervous public, deliver much needed information, encourage societal cooperation and ultimately save lives (WHO 2005). In Canada, public health is overseen at federal, provincial and regional levels. Provinces, however, retain healthcare jurisdiction, resulting in each province implementing its own COVID-19 response strategy, including public health recommendations, policies and messaging (Detsky and Bogoch 2020). The Province of Alberta, similar to many Canadian provinces, has engaged in a multi-phased media strategy to support key COVID-19 public health measures and provincial pandemic responses, including (1) COVID-19 information, (2) economic relaunch strategy, (3) provincial recovery plan and (4) protecting at-risk Albertans (Government of Alberta 2022). The last phase has been directed at strategies and information for vulnerable older adults with underlying medical conditions, including those living with dementia.

Older adults are most at risk of mortality from COVID-19 infection. In Canada, older adults over the age of 60 account for only 36% of COVID-19 cases, but 95% of the country's COVID-19–related deaths, with 82% of those deaths occurring in supportive living facilities (PHAC 2020). Alberta rates are similar, with the average age of a COVID-19 hospitalization being 60, approximately 90% of COVID-19 cases occurring in adults over the age of 70 and approximately 90% of deceased Albertans having two or more underlying medical conditions (Government of Canada 2022b). One of the common chronic health conditions is dementia, with over 564,000 older Canadians living with dementia (Chambers et al. 2016). In Alberta, there are over 50,000 people living with dementia (PLWD), which exceeds 1% of the province's population (Alberta Health Services 2016). The progressive cognitive decline that defines dementia means that PLWD become increasingly reliant on family caregivers as their disease progresses. Family caregivers of PLWD have been shown to report higher associated burden and spend more time caring than other, non-dementia caregivers (Brodaty and

Donkin 2009). Caregiving burden is not surprising as family caregivers provide an average of 26 hours of care per week for their family member with dementia, and 45% of these caregivers experience significant distress (CIHI 2016b). The COVID-19 public health measures have further complicated their challenging caregiving roles by reducing available services and supports (Hoffman et al. 2020).

Historically, family caregivers have been largely unacknowledged in times of crises despite being valuable "first responders" who protect the vulnerable populations for whom they provide care (Elkins et al. 2014). The COVID-19 pandemic has been no exception. Recognizing this gap, Dang et al. (2020) drafted policy recommendations for US health systems on how to communicate with and support caregivers during the COVID-19 pandemic. In contrast, the provincial government of Alberta has directed resource- and communication-assistance documents to operators of care facilities for older adults and support agencies, rather than to the family caregivers themselves (Government of Alberta 2020a, 2020b). Given that Alberta family caregivers face service and support challenges similar to those of their American counterparts (Dang et al. 2020), it is important to examine the clarity and usefulness of the current public health messaging system, as well as the health information needs of family caregivers of PLWD during the COVID-19 pandemic. Doing so will support family caregivers in providing critically needed care for their family members with dementia while maintaining their own health.

As such, the purpose of this study is to examine how family caregivers of PLWD evaluate public health messaging in Alberta. In this study, we use the term *public health messaging* to delineate health messages and health restrictions about the COVID-19 pandemic that have been generated by or are being disseminated by a provincial government, typically shared with the public by either designated provincial leaders (e.g., the health minister, the premier) or the provincial health officer/chief medical officer. The objectives of the study are to examine (1) where family caregivers are getting COVID-19–related public health information and (2) if the information is meeting their needs. The goal is to aid public health officials at the regional, provincial and federal levels in (a) providing clear and applicable information through the ongoing COVID-19 pandemic about the changing disease itself and dynamic public health measures and (b) understanding the clarity and usefulness of public health messaging in future public health emergencies.

Method

In partnership with our community partners, the Alzheimer Society of Calgary and the Dementia Network Calgary, a community advisory committee (CAC) including participatory members from our study (family caregivers) was convened to guide this study. The CAC provided the research team with input and direction through the survey design, implementation of the survey and the interpretation of the final results. Research ethics approval for this study was attained from the University of Calgary Research Ethics Board (REB20-0855).

Participants

The study population included those living in large and small population centres in Alberta (Statistics Canada 2017) and are family caregivers of PLWD across the care continuum: at home in the community, in assisted/supportive living and in long-term care. Informed consent was obtained from all study participants. Participant eligibility included family caregivers over the age of 18 providing care for a PLWD. Study participants were recruited through the family caregivers' networks of our community partners.

Data collection

Using the SurveyMonkey platform, an online survey was conducted in late spring of 2020, just after the peak of the first wave in Alberta. A link to the survey was distributed to family caregivers for PLWD through our community partners using electronic newsletters, organization web pages and social media pages. The study discussed here is a part of a parent study, which also included focus groups to further explore the experiences of family caregivers.

Measures

Survey questions were adapted from published scales that collect data regarding public risk perception, behaviour, knowledge and trust, as well as caregiver burden. The scales were adapted specifically for this study with the guidance of our CAC. We also included two single-item questions in this survey to assess respondents' rating of personal wellness (health and quality of life). The scales are as follows:

PUBLIC HEALTH MESSAGING

This scale was adapted from the Lewy Body Dementia: Caregiver Burden and Unmet Needs (Galvin et al. 2010) questionnaire, which asks about needs of family caregivers for PLWD. Measured on a five-point Likert scale (1 = *very poor*, 5 = *excellent*), higher scores indicate greater approval rating of public health messaging, while lower scores indicate lower approval. Coefficient α for this six-item scale in this study is 0.87.

SELF-RATED COVID-19 KNOWLEDGE

This scale was adapted from the WHO Regional Office for Europe's (2020) COVID-19 Snapshot Monitoring (COSMO Standard) questionnaire, which asks about COVID-19 knowledge and information confidence. It is measured on a five-point Likert scale (1 = *very poor*, 5 = *excellent*). Higher scores indicate greater knowledge levels about COVID-19, while lower scores indicate lower knowledge levels. Coefficient α for this four-item scale in this study is 0.90.

PUBLIC HEALTH INFORMATION SOURCES

This scale was adapted from the WHO Regional Office for Europe's (2020) COSMO Standard questionnaire, which asks about COVID-19 knowledge across nine common information sources. It is measured on a five-point Likert scale (1 = *never*, 5 = *multiple times per day*). Higher scores indicate higher use of media sources for information, while lower scores indicate less frequent use of media sources for information.

COVID-19 INFORMATION NEEDS

This scale was adapted from the Behavioural Insights for COVID-19 scale (Betsch et al. 2020). The seven questions ask what specific knowledge about COVID-19 is needed. Responses are yes or no.

SELF-RATED HEALTH

A single item question was used to assess self-rated health, measured on a five-point Likert scale (1 = *poor*, 5 = *excellent*). Higher scores indicate better self-rated health, while lower scores indicate poorer self-rated heath.

SELF-RATED QUALITY OF LIFE CHANGE

A single item question was used to assess self-rated quality of life change during the pandemic, measured on a three-point Likert scale (1 = *less than usual*, 3 = *more than usual*). Higher scores indicate better self-rated quality of life, while lower scores indicate poorer self-rated heath during the pandemic.

CONTROL VARIABLES

Seven control variables were included in the data analyses: five individual family caregiver variables and two variables about the PLWD the participant cares for. The individual family caregiver variables include (a) gender, (b) age, (c) relationship to PLWD, (d) highest level of education and (e) length of time as a caregiver (in years). The variables about the PLWD include (a) gender and (b) age.

Data analysis

Survey data were analyzed quantitatively with IBM Statistical Package for Social Sciences Software (IBM SPSS) version 26 using descriptive and correlation statistics (Field 2017).

Results

A total of 217 surveys were completed and used for analysis. A survey was considered complete if at least 75% of the questions were answered. The majority of the respondents (Table 1) were female caregivers (77.8%), had a university degree (56.5%) and were either 51–60 years of age (28.7%) or 61–70 years of age (28.7%). The majority of the PLWD they cared for were women (61.1%), 81 years of age or older (54.6%) and either a spouse/partner (46.1%) or a parent (40.6%). Zero-order correlations, sample means, standard deviations, as well as internal consistency alphas for the study variables, are provided in Table 2. An analysis of the descriptive table identified no multi-collinearity issues (Field 2017).

TABLE 1. Sample demographics

	N	Percentage
Gender		
Female	168	77.4
Male	47	21.7
Age		
≤ 50 years	26	12.0
51–60 years	62	28.7
61–70 years	62	28.7
71–80 years	49	22.7
> 80 years	17	7.9
Relationship to PLWD		
Spouse/partner	100	46.1
Child/child-in-law	88	40.6
Other relative	26	12.0
Neighbour/friend	3	1.4
Education		
High school diploma/equivalent or less	32	14.8
Community/technical college	62	28.7
University degree	90	41.7
Graduate degree	32	14.8
Length of time as a caregiver		
< 1 year	15	6.9
1–2 years	30	13.8
2–4 years	63	29.0
> 4 years	109	50.2
PLWD's gender		
Female	132	61.1
Male	84	38.9
PLWD's age		
≤ 50 years	0	0
51–60 years	3	1.4
61–70 years	27	12.5
71–80 years	68	31.5
> 80 years	118	54.6

N = 217. Columns may not total exactly due to rounding and/or missing information.
PLWD = people living with dementia.

TABLE 2. Descriptive statistics, correlations and scale reliabilities

Variable	M	SD	α	1	2	3	4
Alberta public health messaging	3.66	0.70	0.87		0.51**	0.27**	0.16*
Self-rated COVID-19 knowledge	4.31	0.57	0.90	0.51**		0.13	0.08
Self-rated health	3.14	0.99	n/a	0.23**	0.13		0.06
Quality of life	1.49	0.58	n/a	0.16*	0.08	0.06	

*$p < 0.05$. **$p < 0.01$ (two-tailed test).

Regarding public health information sources, the majority of the respondents reported using the television (79%), family/friends (68.1%) and websites (63.4%) for information. Information sources *not used* by the sample respondents included social media (70.4%), newspapers (63%), colleagues (61.6%), radio (57.3%) and search engines (55.9%). Healthcare providers/workers were *the least frequently used source* of public health information (79.2% do not use). Sources for public health information are shown in Table 3.

TABLE 3. Public health information sources

	Used (Number/percentage)			
Source	**Never**	**Occasionally**	**Weekly**	**Daily**
Television	19/8.9%	26/12.1%	13/6.1%	**156/72.9%**
Newspaper	**95/45%**	38/18%	8/3.8%	70/33.2%
Family/friend	4/1.9%	63/30%	69/32.9%	**74/ 35.2%**
Colleague	**70/33.2%**	60/28.4%	52/24.6%	29/13.8%
Healthcare provider/ worker	56/26.4%	**112/52.8%**	31/14.6%	13/6.1%
Websites	21/9.9%	57/26.8%	32/15%	**103/48.3%**
Social media	**94/44.1%**	56/26.3%	15/7%	48/22.6%
Search engines	46/21.6%	**73/34.3%**	42/19.7%	52/ 24.5%
Radio	**74/35.1%**	47/22.3%	21/10%	69/32.7%

$N = 217$. Rows may not total exactly due to rounding and/or missing information. Bolded items represent the most frequently chosen response by media sources.

Regarding needed COVID-19 information (Table 4), the majority of respondents identified scientific progress in both vaccine development (61.8%) and COVID-19 treatment (57.6%) and in how to care for a PLWD during the pandemic (57.5%) as the most needed information. In addition, the majority of respondents identified the following information as not being needed: personal coping stories (68.2%), COVID-19 symptoms (63.1%), travel restrictions (62.7%) and COVID-19 transmission prevention (57.6%).

Overall, public health messaging was rated good or excellent by the majority (63.9%) of respondents. Public health messaging around COVID-19 infection, including the spread and symptoms, were rated good or excellent by 87.9% and 84.1% of family caregivers, respectively. Almost half of family caregivers (49.1%) rated public health messaging around what to expect about COVID-19 in the future as less than good. Although the majority (76.9%)

TABLE 4. Information needs

Information needs	Number/percentage	
	No	**Yes**
COVID-19 symptoms	137/63.1%	80/36.9%
Personal coping stories	148/68.2%	69/31.8%
Scientific progress in vaccine development	83/38.2%	**134/61.8%**
Scientific progress in COVID-19 treatment	92/42.4%	**125/57.6%**
COVID-19 transmission prevention	125/57.6%	92/42.4%
How to take care of PLWD	92/42.4	**125/57.6%**
Travel restrictions	136/62.7%	81/37.3%

N = 217. Rows may not total exactly due to rounding and/or missing information.
PLWD = people living with dementia.
Bolded items represent information needs identified by the majority of respondents.

of family caregivers rated public health messaging on where to find COVID-19–related information as good or excellent, 69.5% of family caregivers rated messaging around where to find caregiving-related information as less than good. Caregiving-related information in this instance reflects information about how to provide care for a PLWD in the event of a COVID-19 diagnosis.

Regarding family caregivers' self-rating of their knowledge about COVID-19 (including knowledge about the virus, how it spreads and how to protect themselves and the PLWD they care for from infection), almost all family caregivers (94.4%) rated their own knowledge as good or excellent. The majority of family caregivers also rated their own health as good (40.3%) or very good/excellent (37.1%). Conversely, the majority of family caregivers rated their quality of life during the pandemic as lower than usual (55.3%).

Discussion

Our study found that the majority of family caregivers for PLWD rated their knowledge about COVID-19 as good/excellent overall, but public health messaging could be improved in specific areas to better support their needs during the ongoing COVID-19 pandemic. Public health officials should pay additional attention to (1) providing information on scientific progress of vaccine development, (2) treatment options for COVID-19 and (3) the provision of care for a PLWD during the pandemic. These findings align with other studies that have investigated the experiences of family caregivers in Canada and found that role recognition of family caregivers, improved communication needs, more timely communication and navigation support to access needed resources are lacking (Parmar et al. 2021; Weeks et al. 2021). Furthermore, the findings suggest that tailored public health messaging is needed in both a short-term context (such as COVID-19 transmission strategies) and in a long-term context (such as caring for PLWD who contract COVID-19) and future public health emergencies, which aligns well with public health emergency communication models (Seeger et al. 2018) that emphasize the importance of transparency, clarity and focus in public health messaging.

Family caregivers' rating of public health messaging on information about COVID-19 and their rating of self-knowledge about COVID-19 was found to have a significant relationship. A higher rating of public health messaging equating to a higher self-knowledge rating offers insights into effective strategies for health messaging dissemination. Public health messaging provides healthcare policy makers and decision makers with a critical avenue to disseminate accurate and scientific knowledge while also building the public's confidence in their own knowledge about managing a novel virus. Effective communication to the public regarding emergency health threats is an ongoing requirement (Wray et al. 2008), both during successive COVID-19 infection surges and in future public health emergencies. While individual characteristics are often a factor in health literacy and how public messaging is interpreted (Freedman et al. 2009), it is important to note that the overarching finding of public health messaging being related to higher self-knowledge was not a factor of individual attributes. Neither self-rated health nor quality of life were significant with COVID-19 self-knowledge ratings. Moreover, gender, education and length of time spent caregiving were also non-significant. As such, this suggests that consistent and tailored public health messaging may be able to mitigate barriers to public health communication/knowledge acquisition, such as level of education (Ghio et al. 2020) and language barriers (Lin et al. 2014).

For family caregivers, tailored public health messaging, with information that addresses personalized needs and is context driven, is critically required (Daellenbach et al. 2018). Specifically, a key information need of our respondents was how to continue to provide care for a PLWD during the pandemic. Many public health guidelines – such as mandatory masking, handwashing, social distancing and the restrictions placed on accessing supportive living and long-term care facilities – disproportionately impacted PLWD and, therefore, changed the nature of providing care for family caregivers (CIHI 2016a, 2020; Wang et al. 2020). For PLWD, cognitive impairment makes it difficult to follow public health guidelines and places another layer of complexity and burden on family caregivers when providing care. For family caregivers in the community, many of the services available pre-pandemic – such as home care and adult day programs – were either stopped or severely limited, likewise contributing to family caregivers' burden (Alberta Health Services 2020; Hoffman et al. 2020). Targeted information about ongoing changes to public health measures, how to address the changes and what to expect in the future for when/how services will be reinstituted would assist family caregivers of PLWD in their care provision role.

Typically, family caregivers over the age of 60 have been found to infrequently utilize online sources, such as web pages and search engines, to obtain information in comparison with their younger counterparts (Hesse et al. 2005). While the majority of our respondents reported accessing websites for COVID-19 information daily, that same majority reported never accessing social media platforms. As such, provincial governments should remain aware that social media should be considered as one but not the only venue for successfully disseminating public health messaging, with the source being tailored to the preferences of the individual (Toppenberg-Pejcic et al. 2019).

One of the surprising findings from our study was that the majority of our respondents had not engaged with a healthcare provider to gain information about COVID-19. This is contrary to typical healthcare concerns, in which most individuals rate their healthcare provider as a key source of information. However, it does mirror Canadian data that show a significant decline in physician services during the opening months of the pandemic (Statistics Canada 2021). While family physicians were able to shift to *virtual visits* during the pandemic, it may be that the respondents in our survey did not have the need for physician consult or were not comfortable using a virtual service and thus chose to not seek healthcare provider consultation. Therefore, providing caregiving information through venues that are frequently used by older adults, such as television, might greatly increase the likelihood that key public health information is received by its intended audience. As such, it is evident that governments and healthcare systems should consider the sources perceived as trustworthy and consistent to convey key information to family caregivers (Rebmann et al. 2008).

Based on these findings, our key recommendations to public health and government authorities are as follows:

- *Utilize diverse media sources* to communicate messaging, including television, radio and print media, in addition to online sources.
- *Tailor information* to the needs of specific vulnerable populations, such as family caregivers for PLWD, including information and advice on topics such as explaining public health measures to people with dementia and cognitive impairment, accessing respite if the caregiver contracts COVID-19 and accessing long-term care, as well as how and when community resources are being adapted/reinstated.
- *Focus on building capacity* in healthcare providers of family caregivers for PLWD with regard to care communication methods during public health emergencies. Provide education, training and support tools to aid healthcare providers in both offering alternative care services (e.g., virtual care) and helping transition their clients/patients/families to using alternative care services.

With the aggressive dynamism of the COVID-19 virus, the ongoing pandemic will likely continue to be a public health emergency for the near future. As such, it is inevitable that public health restrictions and related messages by provincial governments will continue to be in the forefront of government communications to protect public safety, maintain the efficacy of provincial health systems, combat vaccine hesitancy and safeguard the vulnerable from this disease. Future research examining the effect of public health messaging and measures is needed to understand how family caregivers of older adults access and use public health information and how the pandemic continues to challenge their critical role as caregivers.

Study limitations

As this study examined family caregivers for PLWD in only one province and used a small sample, the results are not necessarily generalizable to other family caregivers across other provinces and at all government levels, all of which have faced unique challenges related to the COVID-19 pandemic and the resulting public health messaging. However, the results do offer overarching insight into where family caregivers access public health messaging and what they see as communication gaps. As such, many government entities can garner insight into optimizing the use of media channels and public health messaging content. In addition, the study only examined family caregivers for PLWD, so the findings are not representative of family caregivers for individuals with other chronic diseases. Yet it is known that family caregivers for frail older adults experience many of the same challenges that their family caregiver peers do while caring for PLWD (Sinha 2012; Walston et al. 2006). Thus, the findings of this study offer guidance in communicating with family caregivers caring for individuals across the care/disease spectrum. A final limitation in this study reflects the time passage since the data were collected in the first wave of the COVID-19 pandemic. Moreover, the findings reflect the most restrictive phase of public health measures and may not reflect family caregivers' viewpoints through the successive waves and loosening of public health measures. However, COVID-19 continues to be a dominant force in our society due to virus mutations and infection surges, as well as the vaccine hesitancy evident in many provinces. It is, therefore, ever more important for governments to pursue effective public health messaging, for which this study's findings offer guidance.

Conclusion

A key component of PHAC's mission statement is *providing information to support informed decision making*. This is challenging amid an unprecedented global health crisis and constant mutations of the COVID-19 virus because the information and public health policies must likewise continuously evolve. Although Canadian and provincial public health agencies have made great strides in providing COVID-19 information, vulnerable populations, such as PLWD and their caregivers, have not been specifically targeted. The findings from this study highlight the importance of tailored messaging and information sources, which can assist public health messaging to better support the needs of family caregivers and the PLWD for whom they provide care.

Acknowledgement

The authors offer a special thank you to the Alzheimer Society of Calgary for their generous financial support of this study. They also thank the Alzheimer Society of Calgary and Dementia Network Calgary for their instrumental guidance through all stages of the design and implementation of this research study. They thank the members of CAC, whose insight and knowledge were instrumental in guiding the study. Finally, they thank all of the family caregivers who participated in the study and shared their time and expertise.

Correspondence may be directed to: Deirdre McCaughey. Deirdre can be reached by e-mail at deirdre.mccaughey@ucalgary.ca.

References

Alberta Health Services. 2016. *Population Estimates of Dementia in Alberta (PEDA).* Retrieved July 23, 2022. <https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-srs-addma-2016-peda-update.pdf>.

Alberta Health Services. 2020. Continuing Care Services. Retrieved July 23, 2022. <https://www.albertahealthservices.ca/cc/Page15339.aspx>.

Betsch, C., L. Wieler, K. Habersaat and COSMO Group. 2020. Monitoring Behavioural Insights Related to COVID-19. *The Lancet* 395(10232): 1255–56. doi:10.1016/S0140-6736(20)30729-7.

Bridgman, A., E. Merkley, P. Loewen, T. Owen, D. Ruths, L. Teichmann et al. 2020. The Causes and Consequences of COVID-19 Misperceptions: Understanding the Role of News and Social Media. *Harvard Kennedy School Misinformation Review.* doi:10.37016/mr-2020-028.

Brodaty, H. and M. Donkin. 2009. Family Caregivers of People with Dementia. *Dialogues in Clinical Neuroscience* 11(2): 217–28. doi:10.31887/DCNS.2009.11.2/hbrodaty.

Canadian Institute for Health Information (CIHI). 2016a. Dementia in Long-Term Care. Retrieved July 23, 2022. <https://www.cihi.ca/en/dementia-in-canada/dementia-care-across-the-health-system/dementia-in-long-term-care>.

Canadian Institute for Health Information (CIHI). 2016b. Unpaid Caregiver Challenges and Supports. Retrieved July 23, 2022. <https://www.cihi.ca/en/dementia-in-canada/unpaid-caregiver-challenges-and-supports>.

Canadian Institute for Health Information (CIHI). 2020, June. *Pandemic Experience in the Long-Term Care Sector: How Does Canada Compare with Other Countries?* Retrieved Jule 23, 2022. <https://www.cihi.ca/sites/default/files/document/covid-19-rapid-response-long-term-care-snapshot-en.pdf?emktg_lang=en&emktg_order=1>.

Caulfield, T. 2020. Pseudoscience and COVID-19 — We've Had Enough Already. *Nature.* doi: 10.1038/d41586-020-01266-z.

Chambers, L.W., C. Bancej and I. McDowell (eds.). 2016. *Prevalence and Monetary Cost of Dementia in Canada.* Alzheimer Society of Canada. Retrieved July 23, 2022. <https://alzheimer.ca/sites/default/files/files/national/statistics/prevalenceandcostsofdementia_en.pdf>.

Daellenbach, K., J. Parkinson and J. Krisjanous. 2018. Just How Prepared Are You? An Application of Marketing Segmentation and Theory of Planned Behavior for Disaster Preparation. *Journal of Nonprofit & Public Sector Marketing* 30(4): 413–43. doi:10.1080/10495142.2018.1452830.

Dang, S., L.S. Penney, R. Trivedi, P.H. Noel, M.J. Pugh, E. Finley et al. 2020. Caring for Caregivers during COVID-19. *Journal of the American Geriatrics Society* 68(10): 2197–201. doi:10.1111/jgs.16726.

Detsky, A.S. and I.I. Bogoch. 2020. COVID-19 in Canada: Experience and Response. *JAMA* 324(8): 743–44. doi:10.1001/jama.2020.14033.

Elkins, J., J. Holt and T.P. Miles. 2014. The Role of Informal Caregivers for Frail Elders in Disasters. In C. Cefalu, ed., *Disaster Preparedness for Seniors: A Comprehensive Guide for Healthcare Professionals* (pp. 89–99). Springer.

Field, A. 2017. *Discovering Statistics Using IBM SPSS Statistics*. Sage.

Freedman, D.A., K.D. Bess, H.A. Tucker, D.L. Boyd, A.M. Tuchman and K.A. Wallston. 2009. Public Health Literacy Defined. *American Journal of Preventive Medicine* 36(5): 446–51. doi:10.1016/j.amepre.2009.02.001.

Galvin, J.E., J.E. Duda, D.I. Kaufer, C.F. Lippa, A. Taylor and S.H. Zarit. 2010. Lewy Body Dementia: Caregiver Burden and Unmet Needs. *Alzheimer Disease and Associated Disorders* 24(2): 177–81. doi:10.1097/WAD.0b013e3181c72b5d.

Ghio, D., S. Lawes-Wickwar, M.Y. Tang, T. Epton, N. Howlett, E. Jenkinson et al. 2020. What Influences People's Responses to Public Health Messages for Managing Risks and Preventing Infectious Diseases? A Rapid Systematic Review of the Evidence and Recommendations. *BMJ Open* 11(11): e048750. doi:10.1136/bmjopen-2021-048750.

Government of Alberta. 2020a, September 30. COVID-19 Information: Guidance for Seniors Centres and Seniors Serving Organizations [Archived]. Retrieved July 23, 2022. <https://open.alberta.ca/publications/covid-19-information-guidance-for-seniors-centres-and-seniors-serving-organizations>.

Government of Alberta. 2020b, September 30. *COVID-19 Information: Common Topics for Seniors' Centres and Seniors-Serving Organizations*. Retrieved July 23, 2022. <https://open.alberta.ca/dataset/985e3c69-fefa-4014-9287-bd4bea8af0a8/resource/76dc441d-96de-4441-aad3-216ae46d927d/download/covid-19-relaunch-guidance-seniors-centres-serving-orgs-common-topics-2020-0930.pdf>.

Government of Alberta. 2022. Alberta's COVID-19 Response. Retrieved July 23, 2022. <https://www.alberta.ca/covid-19-information.aspx>.

Government of Canada. n.d. Open Government Portal. Retrieved July 23, 2022. <https://open.canada.ca/data/en/dataset?portal_type=dataset&_organization_limit=0&organization=phac-aspc>.

Government of Canada. 2022a, June 27. Adjusting Public Health Measures in the Context of COVID-19 Vaccination. Retrieved July 23, 2022. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/adjusting-public-health-measures-vaccination.html>.

Government of Canada. 2022b, July 22. COVID-19 Epidemiology Update. Retrieved July 23, 2022. <https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html>.

Harvey, A. 2021, November 23. Combatting Health Misinformation and Disinformation: Building an Evidence Base. *Health Affairs Blog*. Retrieved July 23, 2022. <https://www.healthaffairs.org/do/10.1377/forefront.20211118.932213/>.

Hesse, B.W., D.E. Nelson, G.L. Kreps, R.T. Croyle, N.K. Arora, B.K. Rimer et al. 2005. Trust and Sources of Health Information: The Impact of the Internet and its Implications for Health Care Providers: Findings from the First Health Information National Trends Survey. *Archives of Internal Medicine* 165(22): 2618–24. doi:10.1001/archinte.165.22.2618.

Hoffman, G.J., N.J. Webster and J.P.W. Bynum. 2020. A Framework for Aging-Friendly Services and Supports in the Age of COVID-19. *Journal of Aging and Social Policy* 32(4-5): 450–59. doi:10.1080/08959420.2020.1771239.

Lin, L., E. Savoia, F. Agboola and K. Viswanath. 2014. What Have We Learned about Communication Inequalities during the H1N1 Pandemic: A Systematic Review of the Literature. *BMC Public Health* 14(1): 484. doi:10.1186/1471-2458-14-484.

Parmar, J., S. Anderson, B. Dobbs, P.G.J. Tian, L. Charles, J. Triscott et al. 2021. Neglected Needs of Family Caregivers during the COVID-19 Pandemic and What They Need Now: A Qualitative Study. *Diseases* 9(4): 70. doi:10.3390/diseases9040070.

ProQuest. n.d. Canadian Newsstream. Retrieved July 23, 2022. <https://about.proquest.com/products-services/canadian_newsstand.html>.

Public Health Agency of Canada (PHAC). 2020, April 9. *COVID-19 in Canada: Using Data and Modelling to Inform Public Health Action. Technical Briefing for Canadians*. Retrieved July 23, 2022. <https://www.canada.ca/content/dam/phac-aspc/documents/services/diseases/2019-novel-coronavirus-infection/using-data-modelling-inform-eng.pdf>.

Rebmann, T., R. Carrico and J.F. English. 2008. Lessons Public Health Professionals Learned from Past Disasters. *Public Health Nursing* 25(4): 344–52. doi:10.1111/j.1525-1446.2008.00715.x.

Seeger, M.W., L.E. Pechta, S.M. Price, K.M. Lubell, D.A. Rose, S. Sapru et al. 2018. A Conceptual Model for Evaluating Emergency Risk Communication in Public Health. *Health Security* 16(3): 193–203. doi:10.1089/hs.2018.0020.

Sinha, S. 2012, December 20. *Living Longer, Living Well: Report Submitted to the Minister of Health and Long-Term Care and the Minister Responsible for Seniors on Recommendations to Inform a Seniors Strategy for Ontario*. Government of Ontario. Ministry of Health and Long-Term Care. Retrieved July 23, 2022. <https://www.health.gov.on.ca/en/common/ministry/publications/reports/seniors_strategy/docs/seniors_strategy_report.pdf>.

Statistics Canada. 2017. Population Centre and Rural Area Classification 2016. Retrieved July 23, 2022. <https://www.statcan.gc.ca/en/subjects/standard/pcrac/2016/introduction>.

Statistics Canada. 2021, December 9. COVID-19's Impact on Physician Services. Retrieved July 23, 2022. <https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/physician-services>.

Toppenberg-Pejcic, D., J. Noyes, T. Allen, N. Alexander, M. Vanderford and G. Gamhewage. 2019. Emergency Risk Communication: Lessons Learned from a Rapid Review of Recent Gray Literature on Ebola, Zika, and Yellow Fever. *Health Communication* 34(4): 437–55. doi:10.1080/10410236.2017.1405488.

van der Linden, S., J. Roozenbeek and J. Compton. 2020. Inoculating against Fake News about COVID-19. *Frontiers in Psychology* 11: 566790. doi:10.3389/fpsyg.2020.566790.

Walston, J., E.C. Hadley, L. Ferrucci, J.M. Guralnik, A.B. Newman, S.A. Studenski et al. 2006. Research Agenda for Frailty in Older Adults: Toward a Better Understanding of Physiology and Etiology: Summary from the American Geriatrics Society/National Institute on Aging Research Conference on Frailty in Older Adults. *Journal of the American Geriatrics Society* 54(6): 991–1001. doi:10.1111/j.1532-5415.2006.00745.x.

Wang, H., T. Li, S.G. Barbarino, H. Brodaty, J.L. Molinuevo, E. Yu et al. 2020. Dementia Care during COVID-19. *The Lancet* 395(10231): 1190–91. doi:10.1016/S0140-6736(20)30755-8.

Weeks, L.E., S. Nesto, B. Hiebert, G. Warner, W. Luciano, K. Ledoux et al. 2021. Health Service Experiences and Preferences of Frail Home Care Clients and Their Family and Friend Caregivers during the COVID-19 Pandemic. *BMC Research Notes* 14: 271. doi:10.1186/s13104-021-05686-6.

WHO Regional Office for Europe. 2020. COVID-19 Snapshot Monitoring (COSMO Standard): Monitoring Knowledge, Risk Reception, Preventive Behaviours, and Public Trust in the Current Coronavirus Outbreak – WHO Standard Protocol. *PsychArchives*. doi:10.23668/psycharchives.2782.

World Health Organization (WHO). 2005. *Effective Media Communication during Public Health Emergencies: A WHO Field Guide*. Retrieved July 23, 2022. <https://www.who.int/csr/resources/publications/WHO_CDS_2005_31/en/>.

Wray, R.J., S.M. Becker, N. Henderson, D. Glik, K. Jupka, S. Middleton et al. 2008. Communicating with the Public about Emerging Health Threats: Lessons from the Pre-Event Message Development Project. *American Journal of Public Health* 98(12): 2214–22. doi:10.2105/AJPH.2006.107102.

Policy is always in the making. This journal is designed to serve readers from diverse backgrounds including health system managers, practitioners, politicians and their administrators, educators and academics. Our authors come from a broad range of disciplines including social sciences, humanities, ethics, law, management sciences and knowledge translation. They want good policy – a foundation for best practices.

www.healthcarepolicy.net