HEALTHCARE

POLICY

Politiques de Santé

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

Volume 18 • Number 3

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 3 • FEBRUARY 2023

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

 Peer Reviewed

ERRATUM

The authors of the article "Optimizing Community Participation in Healthcare Planning, Decision Making and Delivery through Rural Health Councils" in the most recent issue of *Healthcare Policy* (Volume 18, Issue 2) sincerely regret the inadvertent omission of co-author Zeena Yesufu who made a significant contribution to the work described therein. This error has now been corrected in the digital versions and Dr. Yesufu is listed as the third author.

TABLE DES MATIÈRES

 Examen par les pairs

HEALTHCARE
POLICY
Politiques de Santé

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] $127 for online only and [C] $225 for print + online. Institutional subscription rates are [C] $550 for online only and [C] $753 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.

Longwoods Publishing was founded by Publisher Anton Hart (1946–2022).

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

Provinces and Territories Are Overdue for an Update in Healthcare Funding Policies

Even before the recent funding announcement, the provinces had money earmarked for spending on health services, therapies and devices. Canadians expect that this money will be put to work to improve access to scheduled services and emergency care, to increase capacity of primary care to manage complex conditions and to begin the assembly of patients' health information. This does not represent an exhaustive list as most provinces also have other pressing needs, including access to and quality of long-term care and mental healthcare services.

As noted by health system scholars, the pressing needs have been largely unaddressed over the past decades (Government of Canada 2015; Lazar et al. 2013). COVID-19 is not to blame for the current problems or for the provinces' lack of solutions except possibly for exacerbating the magnitude of the pre-existing issues. Successive ministers of health have not tackled the modernization of the federal *Canada Health Act* (1985) to reflect evolving needs of residents or new modalities of healthcare delivery, nor have provinces significantly broadened the narrow basket of services, products or devices that the Act ensures even though its narrowness enshrines inequities for some.

Yes, there may be some light at the end of this tunnel. In contrast with decades of decrying fiscal austerity, the provinces are in a unique position – they now have new federal money to spend on healthcare. While there are some that question the wisdom of provinces spending this money on healthcare (Coyne 2023), most posit that provinces need to spend more in ways that generate health and well-being for their residents.

There is one important piece missing: What policies should provinces and territories use to spend the money and improve the health and well-being of their residents?

If provinces spend the new funding using the policies that are in place now, the public should not expect much return on health or well-being. Using the idiom "throwing good money after bad" to describe this situation is probably harsh, but it is clear that spending more in the same ways as they have been spent in the past will not fix the major problems underlying provinces' healthcare delivery systems.

Modernizing Healthcare Funding Policy

As healthcare delivery is evolving quickly and provinces are flush with new cash, it is my opinion that provincial governments should design new funding policies that link their objectives with the way they pay for healthcare. Funding policies are rules, regulations and laws that provinces apply to disburse their money to healthcare organizations such as hospitals, individuals such as physicians and products such as prescribed drugs. Funding policies are not associated with the "size" of government spending, but rather with how the money is spent.

Provinces should design and implement innovative funding policies that conjointly support:

- the development of 'systems' of healthcare that are accountable for residents' access to care, health outcomes and public spending,
- new policies for attracting and retaining vibrant and healthy workforces and
- new policies that reduce inequalities in health and health outcomes.

Canadians can look elsewhere for inspiration and experience. For the past 10 years, the US has been the global hotspot for healthcare funding policy innovation. Although funding policies from the US require "handle with care" labels when considered in the Canadian context, public and commercial insurers in the US are focused on the concept of improving value.

These US policies take aim at different aspects of healthcare delivery systems. Major cross-sector initiatives include Medicare Shared Savings Program's Accountable Care Organizations (ACOs) (Jacobs et al. 2022) and Bundled Payments for Care Improvement (BPCI) (Agarwal et al. 2020). Both programs are designed to reduce fragmentation and ineffective care and improve health outcomes. Concurrently, there are sector-specific funding policies that target single sectors. These include Medicare's hospital-focused Readmissions Reduction Program (RRP) (Kocakulah et al. 2021) and the physician-focused Merit-based Incentive Payment System (MIPS) (Centers for Medicare and Medicaid Services 2016). These programs target improvements in hospital quality and physician care, respectively; in Canada, provinces and territories do not use analogous policies as a financial "stick" to improve quality.

There are similar international policy experiences to draw from, such as bundled payments in the Netherlands (Karimi et al. 2021). There are also outcome-based funding policies focused on expensive therapies (Carlson et al. 2010), with some evidence that these policies are being adapted and applied by provinces (Real-World Evidence and Outcomes-Based Agreements Working Group 2022).

The Next Steps

Priorities for healthcare are unique to each province and territory. To make the most of the new money, each will have to design, implement and evaluate the effectiveness of their own funding policies. This is risky but necessary business. Weak or ambiguous policies will have

no impact on outcomes the provinces seek. Poor or conflicting policies could enrich private providers with no obvious gain in health, improvement in health outcomes or reduction in health inequalities.

By projecting the international funding policies onto provinces, it is possible to envision ambitious funding policies that build on capitation-style funding for primary care, such as those that have appeared in limited forms in Alberta and Ontario, and expand these policies to include multiple disciplines and sectors of the delivery system (Blomqvist and Wyonch 2019). Possibly, new funding policies could roll these efforts into the nascent Ontario Health Team initiative, focused on "systems" of care (Embuldeniya et al. 2021).

In provinces unaccustomed to creating or enforcing funding policies that traverse sectors or provider types, policies that cross sectors are likely overly ambitious in the near-term. These provinces may find bundled payment-type policies – that incorporate a single payment for episodes of care including hospitals, physicians and community-based healthcare providers – less risky for beginning funding policy transformation.

Even with modest steps, however, there may be limited political, analytic or operational capacity within provinces to implement new funding policies (Denis et al. 2023). If this is true, funding policy reforms will at best be modest and expectations for health system transformation will be dampened.

Funding policy reform has largley been absent from deliberations pertaining to the delivery system reform. In my opinion, its importance has been overlooked. Its time is nigh.

In This Issue

This issue is led by a Discussion and Debate article examining whether Canada has been shortchanged by pharmaceutical companies' research and investment spending. The authors take care to describe the history of patent protection policies and pharmaceutical companies' commitments to invest in Canada (Lee et al. 2023). The article concludes that pharmaceutical companies have not kept their commitments and the authors offer possible remedies, including an independent biomedical research trust fund or a surtax on a pharmaceutical company's promotional spending.

In a rejoinder to the Discussion and Debate article, Gagnon (2023) concurs that pharmaceutical companies' research and investment spending has been below agreed-upon levels. The rejoinder furthers the argument by noting that Canada's basis for measuring pharmaceutical companies' spending on research and development is wider than that of our peers, the impact of which is to credit spending that does not produce new or additional knowledge. The rejoinder also reports an unacceptably close relationship between Statistics Canada and Innovative Medicines Canada that erodes trust in Statistics Canada's reporting.

This issue's first Research Paper examines the impact of mobile radiography in the context of new ways to deliver services and technologies. For the goal of reducing medical transports for nursing home residents to hospitals for imaging, mobile radiography has not been widely adopted across Canada. Plant et al. (2023) conclude that in order for mobile

radiography to be effective in improving access to radiography among nursing home residents, targeted policies that support mobile radiography are needed, including communication protocols and physician payment policies.

In a survey-based study assessing Canadian's legal planning for incapacity and death, Plaisance et al. (2023) found that many respondents had inadequate legal preparation for incapacity or death. Facilitators of preparing included not wanting to burden others or a milestone life event, while barriers included expectation of high legal fees, being young or healthy and a lack of confidence in lawyers. The article highlights the need for legal planning for incapacity and death while concluding that collaborations are needed between lawyers and experts to address the gap among Canadians.

Based on a review of extensive records in 10 provinces, Foong et al. (2023a) studied the incidence of disciplinary action involving pharmacists. While the authors concluded that the rate was low, the most common reason for disciplinary action was professional misconduct and occurred most commonly among community pharmacists. The article concludes that additional research is needed to understand provincial variation in policy and the impact on disciplinary action.

The final article of this issue, Foong et al. (2023b) reports on disciplinary action against, and its consequences for, dentists in Canada. The most common reason for disciplinary action was clinical incompetence, though provincial variation was observed. The research highlights that regulatory body discipline against dentists is not common, though more research is needed to understand the effect of regulatory policy on disciplinary action.

JASON M. SUTHERLAND, PHD
Editor-in-Chief

References

Agarwal, R., J.M. Liao, A. Gupta and A.S. Navathe. 2020. The Impact of Bundled Payment on Health Care Spending, Utilization, and Quality: A Systematic Review. *Health Affairs* (Millwood) 39(1): 50–57. doi:10.1377/hlthaff.2019.00784.

Blomqvist, A. and R. Wyonch. 2019. *Health Teams and Primary Care Reform in Ontario: Staying the Course*. C.D. Howe Institute Commentary 551. doi:10.2139/ssrn.3457483.

Canada Health Act, R.S.C., 1985, c. C-6. Government of Canada. Retrieved February 21, 2023. <https://laws-lois.justice.gc.ca/eng/acts/c-6/page-1.html>.

Carlson, J.J., S.D. Sullivan, L.P. Garrison, P.J. Neumann and D.L. Veenstra. 2010. Linking Payment to Health Outcomes: A Taxonomy and Examination of Performance-Based Reimbursement Schemes between Healthcare Payers and Manufacturers. *Health Policy* 96(3): 179–90, 2010. doi:10.1016/j.healthpol.2010.02.005.

Centers for Medicare and Medicaid Services. 2016, November 4. Medicare Program; Merit-Based Incentive Payment System (MIPS) and Alternative Payment Model (APM) Incentive under the Physician Fee Schedule, and Criteria for Physician-Focused Payment Models. Retrieved February 8, 2023. <https://www.federalregister.gov/documents/2016/11/04/2016-25240/medicare-program-merit-based-incentive-payment-system-mips-and-alternative-payment-model-apm>.

Coyne, A. 2023, January 26. How Ottawa Can Help Fix Health Care: First, Send Less Money. *The Globe and Mail*. Retrieved February 5, 2023. <https://www.theglobeandmail.com/opinion/article-how-ottawa-can-help-fix-health-care-first-send-less-money/>.

Denis, J.-L., S. Usher and J. Préval. 2023. Health Reforms and Policy Capacity: The Canadian Experience. *Policy and Society* 42(1): 64–89. doi:10.1093/polsoc/puac010.

Embuldeniya, G., J. Gutberg, S.S. Sibbald and W.P. Wodchis. 2021. The Beginnings of Health System Transformation: How Ontario Health Teams are Implementing Change in the Context of Uncertainty. *Health Policy* 125(12): 1543–49. doi:10.1016/j.healthpol.2021.10.005.

Foong-Reichert, A.-L., K.A. Grindrod, D.J. Edwards, Z. Austin and S.K.D. Houle. 2023a. Pharmacist Disciplinary Action: What Do Pharmacists Get in Trouble for? *Healthcare Policy* 18(3): 60–71. doi:10.12927/hcpol.2023.27034.

Foong-Reichert, A.-L., S.K.D. Houle, Z. Austin, D.J. Edwards and K.A. Grindrod. 2023b. Dentist Disciplinary Action: What Do Dentists Get in Trouble for? *Healthcare Policy* 18(3): 72–83. doi:10.12927/hcpol.2023.27033.

Gagnon, M.-A. 2023. Commentary: Reconsidering Pharmaceutical Research and Development Investments. *Healthcare Policy* 18(3): 25–30. doi:10.12927/hcpol.2023.27037.

Government of Canada. 2015, July. *Unleashing Innovation: Excellent Healthcare for Canada*. Report of the Advisory Panel on Healthcare Innovation. Retrieved February 21, 2023. <http://www.hc-sc.gc.ca/hcs-sss/innovation/index-eng.php>.

Jacobs, D., E. Fowler, L. Fleisher and M. Seshamani. 2022, July 21. The Medicare Value-Based Care Strategy: Alignment, Growth, and Equity. *Health Affairs*. doi:10.1377/forefront.20220719.558038.

Karimi, M., A. Tsiachristas, W. Looman, J. Stokes, M. van Galen and M. Rutten-van Mölken 2021. Bundled Payments for Chronic Diseases Increased Health Care Expenditure in the Netherlands, Especially for Multimorbid Patients. *Health Policy* 125(6): 751–59. doi:10.1016/j.healthpol.2021.04.004.

Kocakulah, M.C., D. Austill and E. Henderson. 2021. Medicare Cost Reduction in the US: A Case Study of Hospital Readmissions and Value-Based Purchasing. *International Journal of Healthcare Management* 14(1): 203–18. doi:10.1080/20479700.2019.1637068.

Lazar, H., J. Lavis, P.G. Forest and J. Church (Eds.). 2013. *Paradigm Freeze: Why It Is So Hard to Reform Health Care In Canada*. McGill-Queen's Press.

Lee, S.K., S.K. Mahl, J.J. Green and J. Lexchin. 2023. Multinational Pharmaceutical Companies Shortchange Canada in Research and Development Investments: Is It Time to Pursue Other Options? *Healthcare Policy* 18(3): 17–24. doi:10.12927/hcpol.2023.27039.

Plaisance, A., J. Stilson, A. Benadiba and D.K. Heyland. 2023. How Engaged in Legal Planning for Incapacity and Death Are Canadians? A Mixed-Methods Survey. *Healthcare Policy* 18(3): 47–59. doi:10.12927/hcpol.2023.27035.

Plant, E., R. McCloskey, I.C. Shamputa, K. Chandra, P. Atkinson, J. Fraser et al. 2023. Nursing Home Residents' Use of Radiography in New Brunswick: A Case for Mobile Radiography? *Healthcare Policy* 18(3): 31–46. doi:10.12927/hcpol.2023.27036.

Real-World Evidence and Outcomes-Based Agreements Working Group. 2022, December 5. *2022 Research and Outputs: Executive Summary*. Retrieved February 5, 2023. <https://static1.squarespace.com/static/61d708f9587415184afa9452/t/638caef656227f270c12f11e/1670164214402/2022_RWE_OBA_WorkingGroup_ExecSummary.pdf>.

ÉDITORIAL

Les provinces et les territoires accusent un retard dans la mise à jour des politiques de financement des soins de santé

Même avant la récente annonce de financement, les provinces avaient des fonds réservés pour les dépenses en soins, thérapies et autres instruments de santé. Les Canadiens s'attendent à ce que cet argent serve à améliorer l'accès aux services réguliers et aux soins d'urgence, à accroître la capacité des soins primaires dans la gestion des problèmes de santé complexes et à commencer à rassembler les données sur la santé des patients. Il ne s'agit pas là d'une liste exhaustive, car la plupart des provinces ont également d'autres besoins urgents, notamment l'accès et la qualité des soins de longue durée et des services de santé mentale.

Comme l'ont noté les spécialistes du système de santé, les besoins pressants ont été largement ignorés au cours des dernières décennies (Gouvernement du Canada 2015; Lazar et al. 2013). La COVID-19 n'est pas à blâmer pour les problèmes actuels ou pour le manque de solutions, mais elle est peut-être venue exacerber l'ampleur des problèmes préexistants. Les ministres de la Santé successifs n'ont jamais abordé la modernisation de la Loi canadienne sur la santé (1985) en tenant compte de l'évolution des besoins ou des nouvelles modalités de prestation des services de santé, et les provinces n'ont pas non plus élargi de manière significative l'étroit panier de services, de produits ou de dispositifs que la Loi garantit, même si cette étroitesse cristallise les inégalités pour certains.

Oui, il y a peut-être de la lumière au bout du tunnel. Après des décennies d'austérité fiscale décriée, les provinces se trouvent dans une position unique – elles disposent maintenant de nouveaux fonds fédéraux pour les soins de santé. Bien que certains remettent en question la sagesse des provinces dans l'utilisation de cet argent (Coyne 2023), la plupart postulent qu'elles devraient dépenser davantage dans les façons de favoriser la santé et le bien-être de la population.

Il manque pourtant un élément important. En effet, quelles politiques les provinces et les territoires devraient-ils employer pour dépenser l'argent et améliorer la santé et le bien-être des résidents?

Si les provinces utilisent le nouveau financement avec les politiques actuellement en place, on ne devrait pas s'attendre à beaucoup de retombées en matière de santé ou de bien-être. L'expression « jeter l'argent par les fenêtres » pour décrire cette situation est probablement trop forte, mais il est clair que dépenser davantage de la même manière que par le passé ne résoudra pas les principaux problèmes qui sous-tendent les systèmes de santé des provinces.

Modernisation de la politique de financement des soins de santé

Comme la prestation des soins de santé évolue rapidement et que les provinces regorgent de nouveaux fonds, je suis d'avis que les gouvernements provinciaux devraient concevoir de nouvelles politiques de financement qui lient leurs objectifs à la façon dont ils dépensent pour les soins de santé. Les politiques de financement sont des règles et des lois que les provinces appliquent pour verser l'argent aux organismes (par exemple, les hôpitaux), aux particuliers (par exemple, les médecins) ou aux produits (par exemple, les médicaments sur ordonnance). Les politiques de financement ne sont pas associées à l'« ampleur » des dépenses publiques, mais plutôt à la façon dont l'argent est dépensé.

Les provinces devraient concevoir et mettre en œuvre des politiques de financement innovantes qui, ensemble, favoriseront les éléments suivants :

- le développement de « systèmes » de santé responsables de l'accès aux soins, responsables des résultats de santé et responsables des dépenses publiques
- de nouvelles politiques pour attirer et retenir une main-d'œuvre dynamique et en bonne santé
- de nouvelles politiques pour réduire les inégalités en matière de santé et de résultats

Les Canadiens peuvent chercher ailleurs l'inspiration et l'expérience nécessaires. Au cours des 10 dernières années, les États-Unis ont été le point névralgique de l'innovation en matière de politique de financement des soins de santé dans le monde. Bien que pour appliquer au Canada les politiques de financement des États-Unis il faille garder en tête l'étiquette « à manipuler avec soin », les assureurs publics et commerciaux de nos voisins du sud s'intéressent au concept d'amélioration de la valeur.

Ces politiques américaines visent divers aspects des systèmes de santé. Les principales initiatives intersectorielles en place comprennent les organisations de soins responsables (ACO) du programme d'épargne partagée de Medicare (Jacobs et al. 2022) ainsi que les paiements groupés pour l'amélioration des soins (BPCI) (Agarwal et al. 2020). Ces deux programmes sont conçus pour réduire la fragmentation des soins et les soins inefficaces et pour améliorer les résultats de santé. Parallèlement, il existe des politiques de financement sectorielles qui ciblent des secteurs particuliers. Il s'agit notamment du programme de réduction des réadmissions (RRP) axé sur les hôpitaux de Medicare (Kocakulah et al. 2021) et du système de paiement incitatif basé sur le mérite (MIPS) pour les médecins (Centers for Medicare and

Medicaid Services 2016). Ces programmes visent respectivement l'amélioration de la qualité des hôpitaux et des soins médicaux; au Canada, aucune province ni aucun territoire n'utilise des politiques analogues comme « bâton » financier pour améliorer la qualité.

Il existe des expériences politiques internationales similaires sur lesquelles s'appuyer, comme les paiements groupés aux Pays-Bas (Karimi et al. 2021). Il y a aussi des politiques de financement basées sur les résultats pour les thérapies coûteuses (Carlson et al. 2010), avec certaines preuves que ces politiques sont adaptées par les provinces (Real-World Evidence and Outcomes-Based Agreements Working Group 2022).

Les prochaines étapes

Les priorités en matière de soins de santé sont propres à chaque province et territoire. Pour tirer le meilleur parti des nouveaux fonds, chacun devra concevoir, mettre en œuvre et évaluer l'efficacité de ses propres politiques de financement. C'est une entreprise risquée mais nécessaire. Des politiques faibles ou ambiguës n'auront aucune incidence sur les résultats escomptés par les provinces. Des politiques médiocres ou contradictoires pourraient enrichir les prestataires privés sans gain évident en matière de santé, sans amélioration des résultats de santé ou sans réduction des inégalités en matière de santé.

En projetant les politiques de financement internationales sur les provinces, il est possible d'envisager des politiques ambitieuses qui s'appuient sur un financement par capitation pour les soins primaires – comme celles qui sont apparues sous des formes limitées en Alberta et en Ontario – et d'étendre ces politiques à plusieurs disciplines ou secteurs du système de soins (Blomqvist et Wyonch 2019). De nouvelles politiques de financement pourraient intégrer ces efforts dans l'initiative naissante des équipes Santé Ontario, axée sur les « systèmes » de soins (Embuldeniya et al. 2021).

Dans les provinces qui n'ont pas l'habitude de créer ou d'appliquer des politiques de financement qui touchent un ensemble de secteurs ou de types de fournisseurs, ce genre de politiques est possiblement trop ambitieux à court terme. Ces provinces pourraient s'intéresser aux politiques de paiement groupés – qui intègrent un paiement unique pour les épisodes de soins, y compris les hôpitaux, les médecins et les fournisseurs de soins communautaires –, lesquelles seraient moins risquées pour amorcer la transformation des politiques de financement.

Même avec des étapes modestes, cependant, les provinces peuvent avoir une moindre capacité politique, analytique ou opérationnelle, ce qui limite la mise en œuvre de nouvelles politiques de financement (Denis et al. 2023). Si tel est le cas, le financement des réformes politiques sera au mieux modeste et les attentes concernant la transformation du système de santé seront atténuées.

La réforme de la politique de financement a été largement absente des délibérations relatives à la réforme du système de prestation. À mon avis, son importance a été négligée. Mais son heure est venue.

Dans ce numéro

Le présent numéro commence par un article qui se penche sur la question à savoir si le Canada a été berné par les sociétés pharmaceutiques au sujet de leurs dépenses dans la recherche et l'investissement. Les auteurs prennent soin de décrire l'historique des politiques de protection des brevets et celui des engagements des compagnies pharmaceutiques à investir au Canada (Lee et al. 2023). L'article conclut que les entreprises pharmaceutiques n'ont pas tenu leurs engagements et les auteurs proposent des solutions, notamment un fonds fiduciaire indépendant pour la recherche biomédicale ou une surtaxe sur les dépenses promotionnelles d'une entreprise pharmaceutique.

Dans une réplique à cet article, Gagnon (2023) convient que les dépenses des sociétés pharmaceutiques dans la recherche et le développement ont été inférieures aux niveaux convenus. La réplique développe l'argument en notant que la base pour mesurer les dépenses des sociétés pharmaceutiques en recherche et développement au Canada est plus large que celle de nos pairs, et cela a pour conséquence de créditer des dépenses qui ne produisent pas de nouvelles connaissances. La réplique fait également état d'une relation étroite inacceptable, entre Statistique Canada et Médicaments novateurs Canada, qui érode la confiance dans les rapports de Statistique Canada.

Le premier rapport de recherche de ce numéro examine de nouvelles façons de fournir des services et des technologies dans le contexte de la radiographie mobile. La radiographie mobile n'a pas été largement adoptée au Canada pour réduire le transport de résidents des foyers de soins vers les hôpitaux pour une imagerie. Plant et al. (2023) concluent que pour améliorer l'accès à l'imagerie parmi les résidents des foyers de soins grâce à la radiographie mobile, des politiques ciblées seront nécessaires, notamment avec des protocoles de communication et des politiques de paiement des médecins.

Dans une étude basée sur un sondage qui évalue la planification légale en cas d'incapacité ou de décès au Canada, Plaisance et al. (2023) constatent que la préparation juridique de nombreux répondants est inadéquate. Les facteurs favorables à ce type de préparation comprennent le fait de ne pas vouloir causer d'accablement aux proches ou de ne pas perturber un événement important dans le parcours de vie, tandis que les obstacles comprennent l'anticipation de frais juridiques élevés, le fait d'être jeune ou en bonne santé et le manque de confiance envers les avocats. L'article souligne la nécessité d'une planification juridique en cas d'incapacité ou de décès tout en concluant que des collaborations seront nécessaires entre les avocats et les experts pour combler l'écart parmi les Canadiens.

Sur la base de l'examen de nombreux dossiers dans 10 provinces, Foong et al. (2023a) ont étudié l'incidence des mesures disciplinaires imposées aux pharmaciens. Bien que les auteurs concluent que le taux de sanctions disciplinaires est faible, la raison la plus couramment invoquée pour de telles mesures est la faute professionnelle, qui survient le plus souvent chez les pharmaciens communautaires. L'article conclut que des recherches supplémentaires sont nécessaires pour comprendre les variations provinciales en matière de politique ainsi que leur impact sur les mesures disciplinaires.

Le dernier article de ce numéro, Foong et al. (2023b), rapporte les mesures disciplinaires prises à l'encontre des dentistes au Canada, et leurs conséquences. La raison la plus couramment invoquée pour la prise de mesures disciplinaires est l'incompétence clinique, bien que des variations provinciales aient été observées. La recherche souligne que les mesures disciplinaires prises par les organismes de réglementation à l'encontre des dentistes n'est pas chose courante, bien que des recherches supplémentaires soient nécessaires pour comprendre l'effet de la politique de réglementation sur les mesures disciplinaires.

JASON M. SUTHERLAND, PhD
Rédacteur en chef

Références

Agarwal, R., J.M. Liao, A. Gupta et A.S. Navathe. 2020. The Impact of Bundled Payment on Health Care Spending, Utilization, and Quality: A Systematic Review. *Health Affairs* (Millwood) 39(1): 50–57. doi:10.1377/hlthaff.2019.00784.

Blomqvist, A. et R. Wyonch. 2019. *Health Teams and Primary Care Reform in Ontario: Staying the Course*. C.D. Howe Institute Commentary 551. doi:10.2139/ssrn.3457483.

Carlson, J.J., S.D. Sullivan, L.P. Garrison, P.J. Neumann and D.L. Veenstra. 2010. Linking Payment to Health Outcomes: A Taxonomy and Examination of Performance-Based Reimbursement Schemes between Healthcare Payers and Manufacturers. *Health Policy* 96(3): 179–90, 2010. doi:10.1016/j.healthpol.2010.02.005.

Centers for Medicare and Medicaid Services. 2016, November 4. Medicare Program; Merit-Based Incentive Payment System (MIPS) and Alternative Payment Model (APM) Incentive under the Physician Fee Schedule, and Criteria for Physician-Focused Payment Models. Consulté le 8 février 2023. <https://www.federalregister.gov/documents/2016/11/04/2016-25240/medicare-program-merit-based-incentive-payment-system-mips-and-alternative-payment-model-apm>.

Coyne, A. 2023, 26 janvier. How Ottawa Can Help Fix Health Care: First, Send Less Money. *The Globe and Mail*. Consulté le 5 février 2023. <https://www.theglobeandmail.com/opinion/article-how-ottawa-can-help-fix-health-care-first-send-less-money/>.

Denis, J.-L., S. Usher et J. Préval. 2023. Health Reforms and Policy Capacity: The Canadian Experience. *Policy and Society* 42(1): 64–89. doi:10.1093/polsoc/puac010.

Embuldeniya, G., J. Gutberg, S.S. Sibbald et W.P. Wodchis. 2021. The Beginnings of Health System Transformation: How Ontario Health Teams are Implementing Change in the Context of Uncertainty. *Health Policy* 125(12): 1543–49. doi:10.1016/j.healthpol.2021.10.005.

Foong-Reichert, A.-L., K.A. Grindrod, D.J. Edwards, Z. Austin et S.K.D. Houle. 2023a. Mesures disciplinaires imposées aux pharmaciens : pour quelles raisons les pharmaciens ont-ils des ennuis? *Politiques de Santé* 18(3): 60–71. doi:10.12927/hcpol.2023.27034.

Foong-Reichert, A.-L., S.K.D. Houle, Z. Austin, D.J. Edwards et K.A. Grindrod. 2023b. Mesures disciplinaires imposées aux dentistes : pour quelles raisons les dentistes ont-ils des ennuis? *Politiques de Santé* 18(3): 72–83. doi:10.12927/hcpol.2023.27033.

Gagnon, M.-A. 2023. Commentaire : Reconsidérer les investissements dans la recherche et le développement pharmaceutiques. *Politiques de Santé* 18(3): 25–30. doi:10.12927/hcpol.2023.27037.

Gouvernement du Canada. Juillet 2015. *Libre cours à l'innovation : Soins de santé excellents pour le Canada*. Rapport final du Groupe consultatif sur l'innovation des soins de santé. Consulté en février 2023. <https://www.canada.ca/fr/sante-canada/services/systeme-soins-sante/groupe-consultatif-innovation-soins-sante.html>.

Jacobs, D., E. Fowler, L. Fleisher et M. Seshamani. 21 juillet 2022. The Medicare Value-Based Care Strategy: Alignment, Growth, and Equity. *Health Affairs*. doi:10.1377/forefront.20220719.558038.

Karimi, M., A. Tsiachristas, W. Looman, J. Stokes, M. van Galen et M. Rutten-van Mölken 2021. Bundled Payments for Chronic Diseases Increased Health Care Expenditure in the Netherlands, Especially for Multimorbid Patients. *Health Policy* 125(6): 751–59. doi:10.1016/j.healthpol.2021.04.004.

Kocakulah, M.C., D. Austill et E. Henderson. 2021. Medicare Cost Reduction in the US: A Case Study of Hospital Readmissions and Value-Based Purchasing. *International Journal of Healthcare Management* 14(1): 203–18. doi:10.1080/20479700.2019.1637068.

Lazar, H., J. Lavis, P.G. Forest et J. Church (Eds.). 2013. *Paradigm Freeze: Why It Is So Hard to Reform Health Care In Canada*. McGill-Queen's Press.

Lee, S.K., S.K. Mahl, J.J. Green et J. Lexchin. 2023. Les sociétés pharmaceutiques multinationales bernent le Canada en matière d'investissements en recherche et développement : est-il temps de rechercher de nouvelles façons de faire? *Politiques de Santé* 18(3): 17–24. doi:10.12927/hcpol.2023.27039.

Loi canadienne sur la santé, L.R.C., 1985, ch. C-6. Gouvernement du Canada. Consulté le 21 février 2023. <https://laws-lois.justice.gc.ca/fra/lois/c-6/page-1.html>.

Plaisance, A., J. Stilson, A. Benadiba et D.K. Heyland. 2023. Dans quelle mesure les Canadiens s'intéressent-ils à la planification juridique en cas d'incapacité ou de décès? Une enquête à méthodes mixtes. *Politiques de Santé* 18(3): 47–59. doi:10.12927/hcpol.2023.27035.

Plant, E., R. McCloskey, I.C. Shamputa, K. Chandra, P. Atkinson, J. Fraser et al. 2023. Utilisation de la radiographie pour les résidents des foyers de soins au Nouveau-Brunswick : un argument en faveur de la radiographie mobile? *Politiques de Santé* 18(3): 31–46. doi:10.12927/hcpol.2023.27036.

Real-World Evidence and Outcomes-Based Agreements Working Group. 2022, December 5. *2022 Research and Outputs: Executive Summary*. Consulté le 5 février 2023. <https://static1.squarespace.com/static/61d708f9587415184afa9452/t/638caef656227f270c12f11e/1670164214402/2022_RWE_OBA_WorkingGroup_ExecSummary.pdf>.

Multinational Pharmaceutical Companies Shortchange Canada in Research and Development Investments: Is It Time to Pursue Other Options?

Les sociétés pharmaceutiques multinationales bernent le Canada en matière d'investissements en recherche et développement : est-il temps de rechercher de nouvelles façons de faire?

SHOO K. LEE, MBBS, FRCPC, PhD, DHC, OC
Professor Emeritus
University of Toronto
Honorary Staff Physician
Mount Sinai Hospital
Toronto, ON

SUKHY K. MAHL, MBA
Assistant Director
MiCare Research Centre
Mount Sinai Hospital
Toronto, ON

JESSICA J. GREEN, MSc, PhD
Writer
MiCare Research Centre
Mount Sinai Hospital
Toronto, ON

JOEL LEXCHIN, MSc, MD
Professor Emeritus
School of Health Policy and Management
York University
Toronto, ON

Abstract

In 1987, the government passed legislation to protect brand-name pharmaceutical firms against competition from generic drug brands in exchange for economic investment in Canadian pharmaceutical research and development (R&D). Since 2002, brand-name pharmaceutical companies' R&D investments have fallen short of their commitment, while Canadians now pay the fourth highest drug prices of all the Organisation for Economic Co-operation and Development member countries. In this article, we examine the degree to which brand-name pharmaceutical companies have fallen short of their promises, discuss whether a patent policy is the best strategy to secure Canadian pharmaceutical R&D funding and propose practical alternatives to this arrangement.

Résumé

En 1987, le gouvernement adoptait une loi pour protéger les entreprises pharmaceutiques de médicaments de marque contre la concurrence des médicaments génériques, en échange d'investissements économiques dans la recherche et le développement (R et D) pharmaceutiques au Canada. Depuis 2002, les investissements en R et D effectués par les sociétés pharmaceutiques de médicaments de marque ont été inférieurs à leurs engagements, alors que le Canada figure en quatrième position des prix les plus élevés pour les médicaments parmi les pays membres de l'Organisation de coopération et de développement économiques. Dans cet article, nous examinons dans quelle mesure les sociétés pharmaceutiques de médicaments de marque ont brisé leurs promesses. Nous nous demandons aussi si une politique sur les brevets constitue la meilleure stratégie pour garantir le financement canadien dans la R et D pharmaceutique et nous proposons des alternatives pratiques à cet arrangement.

Introduction

The affordability of medicines represents a natural conflict between profit for pharmaceutical companies and cost to consumers. To balance these conflicts, the Canadian government has implemented policies to ensure that pharmaceutical companies are successful and drug prices are affordable.

In 1987, the government passed legislation (Bill C-22) to protect brand-name pharmaceutical firms against competition from generic drug brands (Lexchin 1993). In exchange, the Pharmaceutical Manufacturers Association of Canada (PMAC), now Innovative Medicines Canada (IMC) – which represents all the major brand-name pharmaceutical companies in Canada – entered into an agreed-upon but legally unenforceable promise of economic investment in Canadian pharmaceutical research and development (R&D) (Lexchin 1993), as a trade-off against higher medicine costs.

The IMC pledged to grow their R&D investments to 10% of the total revenue in return for increased patent protection of their brand-name drugs. However, since 2002, IMC companies' R&D investments have declined steadily and fallen significantly short of their

commitments. Meanwhile, Canadians now pay the fourth highest drug prices of all countries in the Organisation for Economic Co-operation and Development (OECD).

The IMC publicly defends its position by claiming that the original definition of R&D (based on the 1987 Scientific Research and Experimental Development [SR&ED] tax credit eligibility) is outdated (IMC 2022). Instead, they choose to use the Frascati Manual definition of R&D and data collected by Statistics Canada (OECD 2015). In this article, we examine the validity of the IMC's claims and discuss options available to the Canadian government to ensure that the pharmaceutical industry upholds its end of the Bill C-22 bargain.

Did Government Policy Changes Favour IMC Companies?

In the 1960s, three government reports concluded that Canadian drug prices were among the highest in the world and that patent protection was the primary cause for this (Canada, Restrictive Trade Practices Commission 1963; Hall 1964; Harley 1967). To combat this, the Canadian government introduced a bill in 1969 to extend the use of compulsory licences (CLs) (Lexchin 1993). CLs essentially negate patents, allowing generic companies to procure licences upon payment of appropriate royalties, to manufacture versions of the brand-name drugs with imported active pharmaceutical ingredients (APIs).

Under CLs, the generic drug industry in Canada grew rapidly, and many more generic drugs were produced at more affordable prices (Lexchin 1993). From 1975 to 1982, Canada had some of the lowest drug prices, deflated by national gross domestic product, among all the member nations of the OECD (Jacobzone 2000). Canadian consumers saved approximately $211 million on prescription drugs in 1983 alone (Eastman 1985), whereas multinational pharmaceutical companies lost only 3.1% of the Canadian market to generic drugs that year (Eastman 1985).

PMAC lobbied the government against compulsory licensing throughout the 1970s, despite CLs posing no significant threat to their economic position (Eastman 1985). In 1985, the Canadian government committed to negotiating a free-trade agreement with the US, which led to pressure from the US government to eliminate compulsory licensing. In 1987, the Canadian government passed Bill C-22, which eliminated CLs for the first seven years of a new drug being in the market, or 10 years if components of the drug were imported, which was the case for most generic drugs (Lexchin 1993).

The extended patent protection provided by Bill C-22 resulted in a delay in the introduction of generic drugs into the market, leading to increased drug costs. In 1993, Bill C-91 was passed following the signing of the North American Free Trade Agreement (NAFTA) and the Trade Related Aspects of Intellectual Property Rights agreement, eliminating all forms of compulsory licensing (Lexchin 1997). The outcome of this step was a further increase in drug costs for Canadians (Lexchin 1993). From 1985 to 2000, average drug prices increased by 296%, more than double the percentage increases in total healthcare expenditures of 144% (CIHI 2003).

To comply with NAFTA, Canada also extended patents from 17 years from the time patents were granted to 20 years after patent filing. The 2014 Comprehensive Economic and Trade Agreement (CETA) between Canada and the European Union further extended patent life by up to two years (Lexchin and Gagnon 2014), and has been estimated to eventually cost Canadians over $500 million annually (Lexchin and Gagnon 2014).

Promises Made by the PMAC in Exchange for Patent Protection Policies

In exchange for extended patent protection, PMAC (now IMC) pledged to increase their member companies' investments in Canadian pharmaceutical R&D from less than 5% of the total revenues to 10%, thereby growing the industry through job creation and innovation. In a 1993 letter sent to the minister of Industry, Science & Technology, Michael Wilson, the president of PMAC, Judith Erola, pledged that member companies would invest 10% of revenues into R&D by 1996 (Statistics Canada, Personal Communication, March 21, 2022) and that the commitment would stand as long as the provisions of Bill C-22 remained in effect. According to the letter, IMC member companies were projected to spend $2 billion on Canadian pharmaceutical R&D between 1992 and 1996 and $3 billion between 1997 and 2002. In addition, in hearings before the House of Commons Legislative Committee on Bill C-22, John Zabriskie, the then-president of Merck Frosst Canada, testified that the industry would create 2,000 new R&D jobs between 1988 and 1995 (Library of Parliament 1987). Although the legislation would cause drug prices to increase, this cost was predicted to be offset by economic benefits from R&D growth. R&D investments would be reported annually by the Patented Medicine Prices Review Board (PMPRB), an independent body established under the *Patent Act* as part of Bill C-22 (Lexchin 1997).

Canada Kept Its Part of the Agreement, Has the IMC?

Bill C-22 is still in effect, but according to the PMPRB, pharmaceutical R&D expenditures peaked in 1997 at 12.9% of revenue and remained above 10% until 2002, when they began declining (PMPRB 2020). By 2019, the PMPRB reported that IMC member companies spent only 3.9% of their revenues funding Canadian pharmaceutical R&D. By examining sales revenues and R&D spending of IMC member companies between 2010 and 2020 (PMPRB 2020), we estimated that the shortfall in R&D investment over this time period exceeds $7 billion. Consequently, the expected benefits to Canadians from increased R&D investments, including increased employment and research advancement, have not materialized.

Differing Claims from PMPRB and IMC about R&D Expenditures

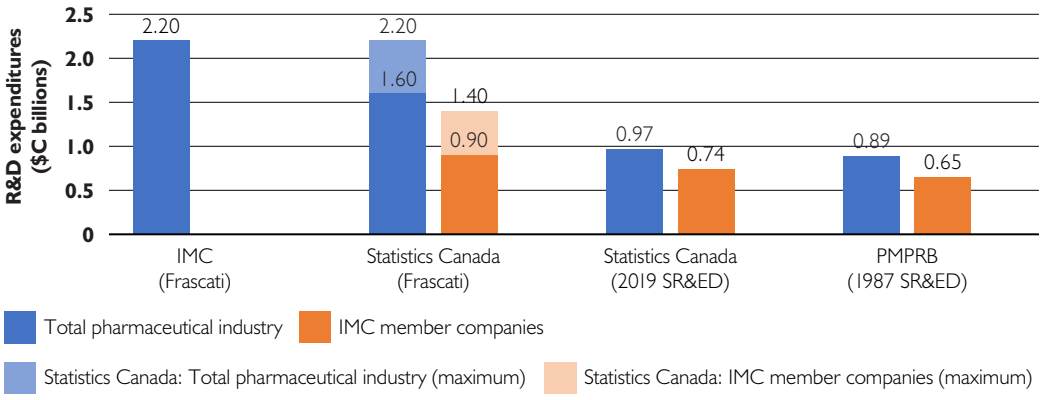
The PMPRB reports annually on IMC members companies' R&D spending by drug patentees. The IMC disputes these reports, claiming their R&D investments are underestimated owing to the PMPRB using what IMC terms an "outdated" definition of R&D. However, the PMPRB's definition is the one that the IMC originally committed to in 1993: R&D

activities that are eligible for SR&ED tax credits under the 1987 tax guidelines. The IMC's commitment should therefore be upheld to this original definition. The PMPRB reported that the R&D spending in 2019 for all pharmaceutical patentees was $893.2 million and $652.6 million for the 32 IMC companies that held patents that year (PMPRB 2019).

In contrast, the IMC claimed that in 2019, $2.2 billion was spent by pharmaceutical companies on R&D, quoting data published by Statistics Canada (IMC 2022), which uses the Frascati Manual definition of R&D that includes activities in the social sciences and humanities, including donations and grants given to organizations that support community programs, education and environmental activism, as well as research in the social sciences, such as bioethics. The Frascati definition also includes research performed outside Canada, usually clinical trials, and spending on routine regulatory affairs and administration expenses for phases I to III of clinical trials, as well as pharmacovigilance studies. These are all activities that do not qualify for SR&ED tax credits under the 1987 guidelines. Though supportive of research in other ways, these activities do not fulfill the original objectives of the agreement with IMC to create research jobs, advance science and grow the Canadian pharmaceutical R&D industry.

Statistics Canada estimated R&D expenditures by the entire Canadian pharmaceutical industry (including IMC members, non-IMC brand-name companies and generic firms) in 2019 as being within a range of $1.6–$2.2 billion (Figure 1) (Statistics Canada 2022). The IMC used the upper bound of the Statistics Canada estimate and did not disclose the fact that this amount included R&D expenditures by non-IMC companies. In fact, Statistics Canada separately reported that the R&D expenditures of only IMC companies was between $0.9 and $1.4 billion in 2019 (Figure 1), nearly a billion dollars less than what the IMC claims (IMC 2022; Statistics Canada 2022).

FIGURE 1: R&D expenditure reports for the pharmaceutical industry and IMC member companies in 2019



Figures are reported by the IMC, Statistics Canada and the PMPRB, using definitions as stated in parentheses. Statistics Canada reports a range of values, depicted by the lighter shaded areas of the bars (IMC 2022; PMPRB 2019; Statistics Canada 2022).
IMC = Innovative Medicines Canada; PMPRB = Patented Medicine Prices Review Board; R&D = research and development; SR&ED = Scientific Research and Experimental Development.

In addition to publishing R&D expenditures using the Frascati Manual method, Statistics Canada also reports expenditures eligible for SR&ED tax credits (using the updated 2014 definition). Statistics Canada estimates that SR&ED expenditures by IMC companies were $738 million, including both in-house and out-sourced R&D (Figure 1) (Statistics Canada 2022). The PMPRB reports that R&D expenditures by IMC companies that qualified for the 1987 SR&ED tax credits were $652.6 million in 2019 (Figure 1) (PMPRB 2019). Both the PMPRB and Statistics Canada estimates are well below the $2.2 billion that the IMC quoted, and well short of their 1987 commitment (IMC 2022).

Is Patent Policy the Best Strategy to Secure Pharmaceutical Investment in R&D?

The Canadian government's agreement with PMAC was based on the premise that strong patent protection leads to higher revenues and greater local R&D investment by pharmaceutical companies. This reasoning was based on industry claims that the ability of PMAC to invest in pharmaceutical R&D was limited due to the revenue lost to the generic drug industry and that more robust patent protection would enable them to increase their investments.

However, data from multiple OECD countries show that patent protections and the resulting higher drug prices are not correlated with R&D investments (see Appendix 1, available online at www.longwoods.com/content/27038), both in 1987 (Figure A1), when Bill C-22 was passed, and more recently in 2017 (Figure A2) (OECD 2009, 2022, 2023a, 2023b). There is no support for the industry's claim that patent protection leads to greater R&D investments. Canada has the fourth highest drug prices among OECD member countries, yet it has one of the lowest contributions toward R&D investments from pharmaceutical companies. The patent policy should, therefore, not be used to secure local pharmaceutical investment. Instead, policies directed toward this goal should target public investment in R&D, tax incentives and innovation infrastructure such as hospitals and university research facilities.

What Should Be Done about the IMC's Unfulfilled Commitment?

The IMC made a commitment on behalf of its member companies to invest 10% of their revenues into Canadian pharmaceutical R&D in response to Bill C-22. The bill has remained in effect since its passing in 1987 and resulted in significantly increased drug spending by Canadians. Yet, the IMC R&D funding commitments were met only until 2002. Clearly, this approach of naively accepting non-enforceable commitments from industry does not work, and future policy must be enforced by legislation.

To redress the broken IMC promises, we propose two non-mutually exclusive policy options. First, companies can be required to contribute a percentage of revenues to an independent biomedical research trust fund, akin to the UK-based Wellcome Trust (https://wellcome.org/), for future Canadian R&D. The Wellcome Trust is a global charitable foundation with a portfolio that stands at £38.2 billion and that funds vaccine and

antibiotic development, mental health research and climate change strategies through support for both basic research and clinical trials (Wellcome n.d.). This approach will establish a sustainable and growing research fund that can truly spur innovative research, create jobs, develop the pharmaceutical industry and strengthen the economy in Canada.

A second alternative is to impose a surtax on promotional spending by companies that would be directed into a research fund similar to that launched by the Agenzia Italiana del Farmaco (AIFA) in Italy (Italian Medicines Agency [AIFA] Research & Development Working Group 2010). AIFA is a regulatory institution operating within the Italian Ministry of Health to promote and fund independent research on drugs. Financing for this program comes through a unique policy that requires all international and national pharmaceutical companies operating in Italy to contribute 5% of their yearly promotional expenditures to a national fund for independent research. The program generated €45 million in the first three years.

Conclusion

In conclusion, pharmaceutical companies have benefited from high drug prices resulting from increased patent protection, but they have not fulfilled their commitments to increase pharmaceutical R&D investment in Canada. Legislation should be passed to enforce their commitments, and the Canadian government should consider alternative strategies to grow the pharmaceutical R&D industry, such as those successfully implemented in other countries.

Note

All currencies are in Canadian dollars unless noted otherwise.

Correspondence may be directed to: Shoo K. Lee. Shoo can be reached by e-mail at shoo.lee@sinaihealth.ca.

References

Canada, Restrictive Trade Practices Commission. 1963. *Report Concerning the Manufacture, Distribution and Sale of Drugs*. Department of Justice. Retrieved April 15, 2021. <https://catalog.hathitrust.org/Record/000964039/Home>.

Canadian Institute of Health Information (CIHI). 2003. *Drug Expenditure in Canada, 1985–2003*. Retrieved February 6, 2023. <https://publications.gc.ca/collections/Collection/H115-27-2003E.pdf>.

Eastman, H.C. 1985. *Report of the Commission of Inquiry on the Pharmaceutical Industry (HD9670/.C2/C2)*. Minister of Supply and Services Canada. Retrieved April 15, 2021. <https://publications.gc.ca/collections/collection_2016/bcp-pco/CP32-46-1985-1-eng.pdf>.

Hall, E.M. 1964. *Royal Commission on Health Services: Volume I*. Retrieved April 15, 2021. <https://publications.gc.ca/collections/collection_2016/bcp-pco/Z1-1961-3-1-1-eng.pdf>.

Harley, H.C. 1967. *Second (Final) Report of the Special Committee of the House of Commons on Drug Costs and Prices*. House of Commons Committees, 27th Parliament, 1st Session: Special Committee on Drug Costs and Prices, Report. Retrieved April 15, 2021. <https://parl.canadiana.ca/view/oop.com_HOC_2701_3_5/3?r=0&s=1>.

Innovative Medicines Canada (IMC). 2022, March 31. PMPRB Continues to Ignore the Value of Innovative Medicines for Canadians. Retrieved April 20, 2022. <http://innovativemedicines.ca/pmprb-continues-ignore-value-innovative-medicines-canadians/>.

Italian Medicines Agency (AIFA) Research & Development Working Group. 2010. Feasibility and Challenges of Independent Research on Drugs: The Italian Medicines Agency (AIFA) Experience. *European Journal of Clinical Investigation* 40(1): 69–86. doi:10.1111/j.1365-2362.2009.02226.x.

Jacobzone, S. 2000. Pharmaceutical Policies in OECD Countries: Reconciling Social and Industrial Goals. *OECD Labour Market and Social Policy Occasional Papers* No. 40. OECD Publishing. doi:10.1787/323807375536.

Lexchin, J. 1993. Pharmaceuticals, Patents, and Politics: Canada and Bill C-22. *International Journal of Social Determinants of Health and Health Services* 23(1): 147–60. doi:10.2190/UCWG-YBR3-X3L0-NWYT.

Lexchin, J. 1997. After Compulsory Licensing: Coming Issues in Canadian Pharmaceutical Policy and Politics. *Health Policy* 40 (1): 69–80. Lexchin, J. 1997. doi:10.1016/S0168-8510(96)00886-X.

Lexchin, J. and M.-A. Gagnon. 2014. CETA and Pharmaceuticals: Impact of the Trade Agreement between Europe and Canada on the Costs of Prescription Drugs. *Globalization and Health* 10: 30. doi:10.1186/1744-8603-10-30.

Library of Parliament. 1987. Canadian Parliamentary Historical Resources. House of Commons Committees, 34th Parliament, 3rd Session: Legislative Committee on Bill C-91. Retrieved January 31, 2023. <https://parl.canadiana.ca/view/oop.com_HOC_3403_80_1/498>.

Organisation for Economic Co-operation and Development (OECD). 2009. ANBERD: Business Enterprise R&D by Industry (ISIC Rev. 2) [Archived]. Retrieved August 24, 2022. <https://stats.oecd.org/Index.aspx?DataSetCode=ANBERD_REV2#>.

Organisation for Economic Co-operation and Development (OECD). 2015. *Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development*. The Measurement of Scientific, Technological and Innovation Activities. OECD Publishing. doi:10.1787/9789264239012-en.

Organisation for Economic Co-operation and Development (OECD). 2022. ANBERD (Analytical Business Enterprise R&D) database (ISIC Rev. 4). Retrieved August 24, 2022. <https://stats.oecd.org/Index.aspx?DataSetCode=ANBERD_REV4>.

Organisation for Economic Co-operation and Development (OECD). 2023a. Pharmaceutical Spending (Indicator). Retrieved August 23, 2022. <https://data.oecd.org/healthres/pharmaceutical-spending.htm?wpmobileexternal=true&wpmobileexternal=true>.

Organisation for Economic Co-operation and Development (OECD). 2023b. Population (Indicator). Retrieved August 23, 2022. <https://data.oecd.org/pop/population.htm>.

Patented Medicine Prices Review Board (PMPRB). 2019. *Annual Report 2019*. Government of Canada. Retrieved June 17, 2021. <https://www.canada.ca/content/dam/pmprb-cepmb/documents/reports-and-studies/annual-report/2019/pmprb-ar-2019-en.pdf>.

Patented Medicine Prices Review Board (PMPRB). 2020. *Annual Report 2020*. Retrieved June 17, 2021. <https://www.canada.ca/content/dam/pmprb-cepmb/documents/reports-and-studies/annual-report/2020/pmprb-ar-2020-en.pdf>.

Statistics Canada. 2022. *The Canadian Research and Development Pharmaceutical Sector, 2019*. Catalogue No. 11-621-M. Retrieved July 1, 2021. <https://www150.statcan.gc.ca/n1/en/pub/11-621-m/11-621-m2022002-eng.pdf?st=mzM2Z7ge>.

Wellcome. n.d. Who We Are. Retrieved January 31, 2023. <https://wellcome.org/who-we-are>.

Commentary: Reconsidering Pharmaceutical Research and Development Investments

Commentaire : Reconsidérer les investissements dans la recherche et le développement pharmaceutiques

MARC-ANDRÉ GAGNON, PhD
Associate Professor
School of Public Policy and Administration
Carleton University
Ottawa, ON

Abstract

Following Lee and colleagues' (2023) article explaining how Canadians are being shortchanged by drug companies when it comes to investments in research and development (R&D), this rejoinder adds context and appends two other very problematic elements in the debate between wishful narratives over the industry's contribution in R&D and actual numbers. First, even the current stricter definition of R&D investment might simply be too large considering that elements such as seeding trials – a well-known marketing device – can be accounted for as R&D expenditures. Second, this rejoinder identifies how Statistics Canada acted in concert with Innovative Medicines Canada to reinforce the industry's preferred narratives around R&D expenditures. This situation puts into question the trustworthiness of Canada's statistical agency.

Résumé

Suite à l'article de Lee et ses collègues (2023) expliquant comment les Canadiens sont bernés par les compagnies pharmaceutiques en matière d'investissements dans la recherche et le développement (R et D), cette réplique apporte du contexte et ajoute deux autres éléments très problématiques dans le débat entre, d'une part, les discours pieux sur la contribution de l'industrie dans la R et D et, d'autre part, les chiffres réels. Premièrement, même la définition la plus stricte de l'investissement en R et D semble tout simplement trop large, puisque des éléments tels que les essais cliniques promotionnels – un outil de marketing bien connu –

peuvent être comptabilisés comme des dépenses en R et D. Deuxièmement, cette réplique indique comment Statistique Canada a agi de concert avec Médicaments novateurs Canada pour renforcer les discours de prédilection de l'industrie concernant les dépenses en R et D. Cette situation remet en question la fiabilité de l'organisme statistique du Canada.

Overview

Lee et al. (2023) emphasize how, in spite of lobbyists' claims, Canadians are being shortchanged by drug companies when it comes to investments in research and development (R&D). There is nothing new in having drug lobbies push narratives to boast the "greatness" of their contribution to the Canadian economy, but a reminder about the discrepancy between wishful narratives and actual numbers is important.

Lee et al. (2023) argue that the ways Innovative Medicines Canada (IMC) and Statistics Canada use to calculate R&D investments are problematic and that these calculations should be made by adhering to the original definition of R&D investments, which includes R&D activities eligible for Scientific Research and Experimental Development (SR&ED) tax credits. The Patented Medicine Prices Review Board (PMPRB) uses the same definition, and drug companies have also committed to the 10% R&D-to-sales ratio based on this definition.

Should we narrow down the definition of R&D?

It must be asked if the current definition of R&D investment might simply be too large. Considering that R&D investments in the Canadian pharmaceutical sector benefit from generous tax credits of around 48% (Gagnon 2012), it is important that what falls under the definition of R&D actually benefits Canadian taxpayers. The problem is that, too often, drug research is designed for marketing purposes, with no intent of producing any new or additional knowledge (Klemperer 2010; Matheson 2008; Sismondo 2018). This includes much of the "research" that qualifies for SR&ED tax credits.

An example of these practices would be post-marketing (or phase IV) clinical trials, ostensibly designed as a way to monitor drug safety and adverse effects over a large population. Post-marketing trials, however, are often used as "seeding trials" to alter physicians' prescribing habits, and the results often go unpublished (Hill et al. 2008; Kessler et al. 1994; Lexchin 2011). After analyzing 558 industry-sponsored phase IV clinical trials, Spelsberg et al. (2017) found that less than 1% of the studies could be verified as published in scientific journals. None of the studies reported any evidence of adverse drug reactions – an interesting observation, considering that these studies were seemingly designed, at least in part, to report adverse events. These post-marketing trials are costly as the company will pay physicians a median remuneration of $300 (€200) for each patient they prescribe the new and more expensive product to (Spelsberg et al. 2017). In the PMPRB's "Patentee's Guide to Reporting" updated in 2015, these payments to doctors to influence prescribing habits without producing any relevant knowledge fall under the category of "other qualifying research" (PMPRB 2014) and can benefit from R&D tax credits. Phase IV clinical trials can

be relevant and important, but their current design by private companies to serve marketing purposes should not allow them to qualify as R&D. The same critique can be applied to many phase III clinical trials as well (Jureidini and McHenry 2020).

SR&ED is casting too wide a net

The current way of calculating R&D costs is highly complex, creating opportunities for third-party consultants to exploit loopholes in order to qualify activities that do not produce new or additional knowledge as tax credit-eligible R&D (Gagnon 2012). The 2011 Jenkins Report (Industry Canada 2011), which reviewed federal support to R&D, explained that Canada's basis for measuring qualifying R&D was wider than that of most Organisation for Economic Co-operation and Development countries. The report noted that too many non-R&D activities were qualifying to be included in the SR&ED definition of R&D, and as a result, it recommended narrowing down eligible R&D costs to labour-related R&D costs only (Industry Canada 2011).

In 2017, the Naylor Report (Advisory Panel on Federal Support for Fundamental Science 2017), which reviewed support for research in Canada, explained that even if the SR&ED program was downsized after the publication of the Jenkins Report (Industry Canada 2011), Canada remained an outlier by relying too much on indirect supports (tax credits) for R&D. The new report asserted that this approach was far from optimal, especially considering that the high profits of research companies following the application of tax credits were not translating into higher rates of R&D investments. Instead, the Naylor Report recommended relying more on direct public funding of R&D in order to be able to pull research in directions more in line with the public interest of Canadians. While the direct funding of R&D by the federal Liberal government slightly increased after the publication of the report (Owens 2022), the level of tax credits and the formula for the calculation of business expenditures in R&D were not significantly modified.

Statistics Canada: Siding with Big Pharma

With many ongoing debates highlighting the public policy impacts of the ways in which R&D is defined, it was more than surprising to see Statistics Canada publishing two consecutive reports in 2021 and 2022 (Statistics Canada 2021, 2022). The reports embraced the industry narrative regarding the need for the widest possible redefinition of R&D in the pharmaceutical sector. More surprisingly still, the results of the first report (Statistics Canada 2021) were published by mistake in an IMC (2021) press release on April 12, 2021 – one month before the publication of the report by Statistics Canada – revealing that the lobby group had privileged access to data and results.

In many ways, the reports published by Statistics Canada read much like uncritical infomercials for the pharmaceutical industry. With little apparent analytical consideration, these reports measure R&D investments, pharmaceutical companies' contributions to employment

and value added based on the widest possible definitions, as if these definitions had not already been widely criticized as problematic for the sector. These reports also do not mention or reference the high level of tax credits enjoyed by Canadian pharmaceutical sector companies. The contribution of the Canadian pharmaceutical sector is measured by adding up employment and value added that was created directly by drug companies indirectly (outsourced activities) or that was induced (payroll for direct and indirect employment allowing employees to spend money, which is implied to stimulate further positive gains in the economy). This calculation of induced impact implies that (directly or indirectly) employees in the Canadian pharmaceutical sector would not have been able to find employment elsewhere if these companies did not exist. Such an assumption is highly problematic, especially in times of acute labour shortage in the Canadian economy.

The Agreement between IMC and Statistics Canada

To understand the reasons behind such non-critical reporting by Statistics Canada, I used an Access to Information and Privacy (ATIP) request to obtain a copy of all the communications from January 2020 to May 2022 between Statistics Canada and the Canadian pharmaceutical drug lobby group IMC. The findings were somewhat troubling.

Based on the information released through the ATIP request, it appears that the two studies were commissioned by IMC for $161,072 ($85,649 for the first report and $75,423 for the second report) (Statistics Canada and IMC, personal communications, September 29, 2020 and September 16, 2021). Statistics Canada saw no apparent issue with using the numbers provided by IMC to publish reports that endorse the pharmaceutical industry's narrative about R&D investments.

In the letters of agreement between IMC and the minister of Innovation, Science and Economic Development (for the purpose of the *Statistics Act* [1985]), it was apparent that IMC maintained veto power over the reports, as it had the right to provide final approval over which indicators and concepts were to be used in the analysis. For example, in a communication between IMC and Statistics Canada on December 22, 2021 (document obtained through the ATIP request), IMC was concerned that Statistics Canada wanted to include the intensity measures for in-house R&D in section 2.2.2. This measure of R&D intensity is the above-mentioned R&D-to-sales ratio; the inclusion of these numbers would clearly show how IMC was shortchanging Canadians on R&D investments as compared with their commitments. In the communication dated December 22, 2021, IMC asserted that such an indicator "is not aligned with the scope of the work […] We would request it not to be included." Statistics Canada replied that they "will immediately action the changes." Accordingly, the final report (Statistics Canada 2022) does not include any mention of R&D intensity or R&D-to-sales ratio in section 2.2.2.

Conclusion

Lee et al. (2023) are right to claim that IMC's commitment to R&D investments is unfulfilled and that measures to redress broken IMC promises should be considered. However, by adding context and analysis, this rejoinder appends two other very problematic elements. First, it is important to initiate a thorough investigation into the nature of R&D in the Canadian pharmaceutical sector. While some R&D expenditures are indeed part of real efforts to achieve therapeutic advances, Canada's current basis for defining R&D allows the subsidization of marketing expenditures and financial incentives for influencing physicians' prescribing habits, such as seeding trials. A potential solution could be to allow R&D tax credits only for researchers' payroll, as recommended by the Jenkins Report (Industry Canada 2011), while increasing the direct public funding of R&D activities, as recommended by the Naylor Report (Advisory Panel on Federal Support for Fundamental Science 2017).

Second, the rejoinder identifies a seriously concerning intimacy between Statistics Canada and an industrial lobby group by showing how the federal agency acted in concert with IMC to reinforce IMC's preferred narratives around R&D. This situation is completely unacceptable. Statistics Canada must be able to build trustworthiness with all stakeholders, which requires providing information and data as neutrally as possible. Statistics Canada should never appear to be acting as a paid public relations agency for the industry or to uncritically promote narratives, indicators and concepts that serve commercial interests. By doing so in this case, Statistics Canada failed its explicit raison d'être (as explained on their website) of providing the trusted data, statistical services and insights required to support good decision making in public policy.

In this context, critical appraisal of the R&D investments in the Canadian sector, as proposed by Lee et al. (2023), is completely relevant and necessary.

Note

All currencies are in Canadian dollars unless noted otherwise.

Correspondence may be directed to: Marc-André Gagnon. Marc-André can be reached by e-mail at ma_gagnon@carleton.ca.

References

Advisory Panel on Federal Support for Fundamental Science. 2017. *Investing in Canada's Future: Strengthening the Foundations of Canadian Research*. Canada's Fundamental Science Review. Retrieved February 6, 2023. <http://cins.ca/docs/ScienceReview_April2017.pdf>.

Gagnon, M.-A. 2012. Financial Assistance to the Quebec Pharmaceutical Industry: Is It Worth It? *Revue Interventions économiques* 44. doi:10.4000/interventionseconomiques.1611.

Hill, K.P., J.S. Ross, D.S. Egilman and H.M. Krumholz. 2008. The ADVANTAGE Seeding Trial: A Review of Internal Documents. *Annals of Internal Medicine* 149(4): 251–58. doi:10.7326/0003-4819-149-4-200808190-00006.

Industry Canada. 2011. *Innovation Canada: A Call to Action. Executive Summary*. Government of Canada. Retrieved February 6, 2023. <https://publications.gc.ca/collections/collection_2011/ic/Iu4-149-1-2011-eng.pdf>.

Innovative Medicines Canada (IMC). 2021, April 12. New Statistics Canada Research Shows the Full Extent of the Innovative Pharmaceutical Sector's Investments in Canada. Retrieved December 19, 2022. <https://innovativemedicines.ca/newsroom/all-news/new-statistics-canada-research-shows-the-full-extent-of-the-innovative-pharmaceutical-sectors-investments-in-canada/>.

Jureidini, J. and L.B. McHenry. 2020. *The Illusion of Evidence-Based Medicine: Exposing the Crisis of Credibility in Clinical Research*. Wakefield Press.

Kessler, D.A., J.L. Rose, R.J. Temple, R. Schapiro and J.P. Griffin. 1994. Therapeutic-Class Wars–Drug Promotion in a Competitive Marketplace. *New England Journal of Medicine* 331(20): 1350–53. doi:10.1056/NEJM199411173312007.

Klemperer, D. 2010. Drug Research: Marketing before Evidence, Sales before Safety. *Deutsches Arzteblatt International* 107(16): 277–78. doi:10.3238/arztebl.2010.0277.

Lee, S.K., S.K. Mahl, J.J. Green and J. Lexchin. 2023. Multinational Pharmaceutical Companies Shortchange Canada in Research and Development Investments: Is It Time to Pursue Other Options? *Healthcare Policy* 18(3): 17–24. doi:10.12927/hcpol.2023.27038.

Lexchin, J. 2011. Those Who Have the Gold Make the Evidence: How the Pharmaceutical Industry Biases the Outcomes of Clinical Trials of Medications. *Science and Engineering Ethics* 18(2): 247–61. doi:10.1007/s11948-011-9265-3.

Matheson, A. 2008. Corporate Science and the Husbandry of Scientific and Medical Knowledge by the Pharmaceutical Industry. *BioSocieties* 3(4): 355–82. doi:10.1017/S1745855208006297.

Owens, B. 2022, March 2. Taking Stock of the Naylor Report, 5 Years On. *University Affairs*. Retrieved January 15, 2023. <https://www.universityaffairs.ca/features/feature-article/taking-stock-of-the-naylor-report-5-years-on/>.

Patented Medicines Price Review Board (PMPRB). 2014. Patentee's Guide to Reporting – Updated July 2015. Retrieved December 19, 2022. <http://www.pmprb-cepmb.gc.ca/view.asp?ccid=523>.

Sismondo, S. 2018. *Ghost-Managed Medicine: Big Pharma's Invisible Hands*. Mattering Press.

Spelsberg, A., C. Prugger, P. Doshi, K. Ostrowski, T. Witte, D. Hüsgen et al. 2017. Contribution of Industry Funded Post-Marketing Studies to Drug Safety: Survey of Notifications Submitted to Regulatory Agencies. *BMJ* 356: j337. doi:10.1136/bmj.j337.

Statistics Act, R.S.C., 1985, c. S-19. Government of Canada. Retrieved February 6, 2023. <https://laws-lois.justice.gc.ca/eng/acts/s-19/fulltext.html>.

Statistics Canada. 2021, May 7. *The Canadian Research and Development Pharmaceutical Sector*. Catalogue No. 11-621-M. Retrieved February 6, 2023. <https://publications.gc.ca/collections/collection_2021/statcan/11-621-m/11-621-m2021003-eng.pdf>.

Statistics Canada. 2022, January 28. *The Canadian Research and Development Pharmaceutical Sector, 2019*. Catalogue No. 11-621-M. Retrieved February 6, 2023. <https://www150.statcan.gc.ca/n1/en/pub/11-621-m/11-621-m2022002-eng.pdf?st=UEIWOrwl>.

RESEARCH PAPER

Nursing Home Residents' Use of Radiography in New Brunswick: A Case for Mobile Radiography?

Utilisation de la radiographie pour les résidents des foyers de soins au Nouveau-Brunswick : un argument en faveur de la radiographie mobile?

ERIC PLANT, BA
MD Candidate
Dalhousie University Medicine
Saint John, NB
Primary Care Paramedic
Ambulance New Brunswick

ROSE MCCLOSKEY, PHD, RN, GNC(C)
Professor
Department of Nursing and Health Sciences
University of New Brunswick
Saint John, NB

ISDORE CHOLA SHAMPUTA, PHD, RMCCM, RN
Associate Professor
Department of Nursing and Health Sciences
University of New Brunswick
Saint John, NB

KAVISH CHANDRA, MD, MSC, CCFP(EM)
Assistant Professor
Department of Emergency Medicine
Saint John Regional Hospital
Dalhousie University
Director of Research
Department Emergency Medicine
Saint John Regional Hospital
Saint John, NB

PAUL ATKINSON, MB, MA, FRCPC
Professor
Department of Emergency Medicine
Saint John Regional Hospital
Dalhousie University
Head
Department of Emergency Medicine
Horizon Health Network
Saint John, NB

JACQUELINE FRASER, RNBN, ENCC
Emergency Department Research Coordinator
Saint John Regional Hospital
Saint John, NB
Assistant Managing Editor
Canadian Journal of Emergency Medicine

TUSHAR PISHE, BSC, MD, CCFP(EM), FCFP CCPE
Provincial Medical Director
Ambulance and Transport Services
Department of Health, New Brunswick
Assistant Professor
Department of Emergency Medicine
Saint John Regional Hospital
Dalhousie University
Saint John, NB

PATRICK PRICE, MD, BN
Researcher
Dalhousie University Medicine
Saint John, NB

Abstract

Introduction: Identifying ways to eliminate unnecessary transfer of nursing home (NH) residents to hospitals provides an opportunity to improve outcomes and use scarce healthcare resources more efficiently. This study's goal was to better understand where NH residents access X-ray (XR) and computed tomography (CT) scans and to determine if there was a case for mobile radiography policies in New Brunswick.

Methods: A retrospective analysis of all the visits to the emergency department (ED) and outpatient imaging departments in two hospitals in Saint John, New Brunswick, in 2020, that involved XR or CT investigations was conducted.

Results: There were 521 visits by 311 unique NH residents and 920 investigations (688 XR and 232 CT scans). Most investigations were ordered in the ED (696 of 920; 75.6%; confidence interval: 72.8–78.3%). Of the NH residents who visited the ED and received either an XR or a CT scan, 33.2% received only XR imaging and were discharged back to the NH after a mean ED stay of 5.15 hours.

Discussion: The pattern of NH residents' use of the ED for their imaging needs supports the creation of mobile XR policies to deliver more safe and efficient care in a Canadian medium population urban centre.

Résumé

Introduction : L'identification de moyens pour éliminer le transfert inutile des résidents des maisons de soins infirmiers (MSI) vers les hôpitaux permet d'améliorer les résultats et d'utiliser plus efficacement les ressources de santé qui sont plutôt limitées. L'objectif de cette étude est de mieux comprendre l'endroit où les résidents des MSI peuvent accéder aux rayons X (XR) et à la tomodensitométrie (TDM) et de déterminer s'il y a lieu de mettre en place des politiques pour la radiographie mobile au Nouveau-Brunswick.

Méthode : Nous avons effectué une analyse rétrospective de toutes les visites aux services des urgences (SU) et aux services d'imagerie en consultation externe, pour des examens par XR ou TDM, dans deux hôpitaux de Saint John (Nouveau-Brunswick) en 2020.

Résultats : Il y a eu 521 visites de 311 résidents de MSI pour 920 examens (688 XR et 232 TDM). La plupart des examens avaient lieu aux services des urgences (696 sur 920 ; 75,6 % ; intervalle de confiance : 72,8–78,3 %). Parmi les résidents des MSI qui se sont rendus à l'urgence pour un XR ou une TDM, 33,2 % n'ont reçu qu'une imagerie par XR et ont été renvoyés à leur MSI après une attente moyenne de 5,15 heures à l'urgence.

Discussion : Le modèle d'utilisation du service des urgences par les résidents des MSI pour une imagerie plaide en faveur de l'élaboration de politiques de radiographie mobile pour fournir des soins plus sûrs et plus efficaces dans un centre urbain canadien à population moyenne.

Introduction

The transfer of nursing home (NH) residents to hospitals and emergency departments (EDs) has been a topic of discussion for decades (Aryal et al. 2021; Castle and Mor 1996;

McCloskey and van Den Hoonaard 2007) but more so since the COVID-19 pandemic (Atkinson et al. 2022; Curtis et al. 2021; McNamara et al. 2022; Pathak et al. 2021; Pulst et al. 2021; Sundaram et al. 2021). It is acknowledged that NH residents are generally frail, have multiple chronic health conditions and are at a high risk for injury and the development of new illnesses (Carron et al. 2017; Zhang et al. 2019). Therefore, transferring them to hospitals for health services can be problematic for both residents and the healthcare system (Lemoyne et al. 2019; McCloskey and van Den Hoonaard 2007). For NH residents, hospital transfers increase the risk of harm such as delirium and infections and can compromise safety (Boncea et al. 2021; Lemoyne et al. 2019). Moreover, transfers back and forth between NHs and hospitals consume considerable human and financial resources. Since most NH residents are sent to hospitals by ambulance, transfers can be emotionally difficult and can involve several hours of waiting time for paramedic services to become available to transport residents back to the NH (McCloskey 2011). Identifying avoidable hospital transfers offers the potential to prevent unnecessary harm to residents and utilization of scarce healthcare resources.

Background

Discussions regarding resident transfers between NHs and hospitals are often part of the greater discourse around hospital and ED crowding and the negative outcomes associated with the hospitalization of older adults (Dozet et al. 2016; Wang et al. 2011). There are reports stating that 16–62% of NH residents are transferred to a hospital each year, with upwards of 40% potentially avoidable (Lemoyne et al. 2019; Rolland et al. 2021) transfers. Primary reasons for transporting NH residents to the hospital are accessing radiography services, confirming a suspected diagnosis or monitoring the status of pre-existing conditions (Kjelle and Lysdahl 2017). Wang et al. (2011) reported that 90% of NH residents transferred to an ED receive a chest X-ray (XR).

The COVID-19 pandemic has increased pressure to improve NH care and to increase capacity to respond to changing health needs on site. Calls for protective measures to safeguard the health and well-being of NH residents include the increased availability of preventative, supportive, diagnostic and curative healthcare within NHs (Grabowski and Mor 2020; Webster 2021; WHO 2020). Improving access to care within NHs is thought to not only enhance care but also reduce the need to transport residents to hospitals for services that could be provided in NHs (Razak et al. 2020). Yet, limited medical coverage and a lack of diagnostic services in the homes create challenges in providing care on site when changes arise in residents' health status (Brühmann et al. 2019; Curtis et al. 2021). Residents themselves often prefer to have their care focus primarily on quality of life and wish to avoid hospital transfers (Arendts et al. 2015).

Mobile radiography services have been used in some jurisdictions to improve NH residents' access to diagnostic imaging services and to improve diagnostic accuracy (Kjelle and Lysdahl 2017; Kjelle et al. 2019). Mobile radiographic services involve a certified radiography

technician bringing a portable XR machine into the NH to perform diagnostic imaging. The XR performed by the portable equipment is then sent electronically to an appropriate medical service to be analyzed. Currently, this service is available in many countries including Norway, Australia, Italy, Sweden and Switzerland (Kjelle and Lysdahl 2017) and in some areas of Canada (Kobes et al. 2020). The earliest documented use of mobile XR in Canada was in 2006 when Loeb and colleagues (2006) conducted a cluster of randomized control trials in 22 NHs in Ontario. Although results showed an estimated cost savings of $1,046 per resident enrolled in the study and a 12% reduction in hospital transfers, it is unknown if the mobile service remained after the trials were over. A grey literature search of mobile XR in Canada does suggest the service is available in Ontario, Alberta and British Columbia; however, it is unclear whether these services are publicly funded, how they operate and who can access them; no academic literature is available on these services. A systematic review of international studies on the outcomes associated with mobile XR has shown reduced hospitalizations, enhanced outpatient examinations and treatments, reduced hospital transfers and wait times, increased access to diagnostic imaging services and more efficient use of resources (Kjelle and Lysdahl 2017). A cost analysis of diagnostic services for NH residents was conducted in Norway, and a 30% cost reduction was found when radiography was provided in NHs compared to the same service provided in a hospital (Kjelle et al. 2019).

Limited Canadian data on NH residents' use of radiography services – mobile or otherwise – make it difficult to determine the magnitude of demand or potential benefit that a mobile service might provide. The most recent data on the use of the ED by NH residents in Atlantic Canada are from 2004; however, this study did not examine outpatient radiography patterns (McCloskey 2004). While mobile radiography services are offered in larger Canadian cities such as Calgary, Edmonton and Ottawa, there is no academic literature on the scope or nature of the use of these services. Mobile computed tomography (CT) and magnetic resonance imaging (MRI) scans are currently used throughout Canada but operate mostly as travelling "fixed" locations that are set up in communities for a week at a time (CADTH 2021). Therefore, these modalities operate in a very different way than the mobile radiography services that bring diagnostics to the bedside of NH residents.

There are still many situations where transporting NH residents to hospitals is appropriate, and strategies aiming at addressing hospital transfers must acknowledge that some transfers are unavoidable. Trahan et al. (2016) argued that attempts to eliminate all transfers of NH residents to hospitals are unrealistic. Efforts to identify the demand for mobile radiography services must therefore consider emergent transfers that would likely be unavoidable, even if a mobile service existed. Likewise, transfers that result in residents being admitted to the hospital for a level of care unavailable in the NH must be considered. Therefore, the aims of this study were twofold. First, to understand the use of radiography services by NH residents in one city in New Brunswick. Second, to characterize the outcomes of NH residents who received diagnostic imaging services in the ED, including length of stay, disposition, discharge diagnosis and specialized medical services consulted.

Methods

A retrospective review of radiography services obtained by NH residents in two hospitals in one city in New Brunswick from January 1, 2020, to December 31, 2020, was conducted. The review analyzed the radiography services of every NH resident who received either an XR or a CT scan at either hospital during this time as either an outpatient (including those who had imaging conducted during a visit to an ambulatory clinic) or an ED patient. Imaging investigations that were ordered after the resident was admitted were not included in the analysis. If a resident visited the ED and was later admitted, only the XR and CT scans that were ordered in the ED were included.

Participants

All participants who resided in an NH and received an imaging service at one of the city's two hospitals between January 1, 2020, and December 31, 2020, were included in the study. NHs in the province where this study took place are licensed facilities for people who are medically stable but who need full-time nursing services 24 hours a day. Participants were 37.2% male and 62.8% female, with no attempts made to select for or correct typical demographic sex or gender demographics of this age group.

Setting

The study took place in one medium population urban centre in New Brunswick (Statistics Canada 2021). The census metropolitan area has a population of 130,613 (Statistics Canada 2021) and two hospitals; one is a large tertiary care hospital with outpatient radiography services, approximately 444 in-patient beds and an ED that operates 24 hours each day; the second is a community hospital with outpatient radiography services, approximately 104 in-patient specialized geriatric beds and an urgent care centre that offers non-emergency medical services to the general population 11 hours each day. There are 14 NHs within the hospitals' catchment area with a total of 944 residents. All the NHs in the catchment area are publicly funded, not for profit and run by independent boards of directors. They must have at least one registered nurse on duty at all times and medical coverage by a physician (Province of New Brunswick 2014).

Data collection

Data were obtained from the Health Authority's administrative database of patients who registered from one of the NHs located in the region. Data extracted from the record of each visit included the NH, age, sex, "current care level" (outpatient or ED/urgent care) and the "current location," which described the location of the hospital that the patient was discharged from. In the case of residents who obtained imaging in the ED or at an urgent care centre, additional information was collected, such as presenting complaint, medical consultations and discharge diagnosis.

Data analysis

Data were presented to the team in a Microsoft Excel 365 file, and all analyses were conducted in this file. Descriptive statistics were used to describe study data. Categorical data were summarized using frequencies and percentages. Continuous data were summarized using means and standard deviations.

Results

There were 521 visits for radiography services from 311 NH residents. Although 128 residents visited the hospital and/or ED more than once, each visit was examined as a separate unit of analysis. Residents ranged in age from 36 years to 100 years (mean = 80.9 years; median = 80.0 years) and 62.8% were female. Residents were from 14 different NHs, with four of these homes accounting for 52% or 271 of the visits.

The number of XR or CT scans performed on each resident ranged from 1 (n = 183) to 10 (n = 10), with a mean of 1.7 per resident. There was a total of 920 XR and CT scans performed, with 688 XR and 232 CT scans. As indicated in Table 1, of the 521 visits, 359 (68.9%) were ED visits, 160 (30.7%) were outpatient visits and two (0.4%) occurred in the urgent care clinic. Of the ED visits, 171 (47.6%) resulted in the resident returning to the NH and 188 (52.4%) resulted in the resident being admitted to the hospital. Of the 160 visits classified as outpatient, 121 (74.7%) occurred in a radiography department, and 39 occurred in an ambulatory outpatient clinic (24.1%).

TABLE 1. Location of resident visits and orders made

Location of visit	Total visits (n = 521)	Total radiography orders (n = 920)	Types of orders	
			XR scans (n = 688)	CT scans (n = 232)
ED visits	359 (68.9%)	695 (75.5%)	528 (76.7%)	167 (72.0%)
Returned to NH	171 (47.6%)	303 (32.9%)	233	70
Admitted to hospital	188 (52.4%)	392 (42.6%)	295	97
Outpatient visits	160 (30.7%)	222 (24.1%)	157 (22.8%)	65 (28.0%)
Radiography department*	121 (23.7%)	172 (18.7%)	116	56
Ambulatory outpatient clinic	39 (7.5%)	50 (5.4%)	41	9
Urgent care visits	2 (0.4%)	3 (0.4%)	3 (0.4%)	0 (0.0%)

*Radiography department in hospital A and hospital B combined.
CT = computed tomography; ED = emergency department; NH = nursing home; XR = x-ray.

Radiography performed in ED

XR and CT scans performed on residents were placed in 18 different categories, including 11 categories of XR scans and 7 categories of CT scans (Table 2). Of these categories, the most common was chest XR (n = 307) and hip/pelvis XR (n = 142) scans, which made up nearly half (n = 449; 49.3%) of all radiography orders. Of the CT scans performed, the majority were of the head (n = 114; 49.3%). A total of 120 of the ED visits (33.4%) resulted in an XR but no CT scan or hospital admission.

TABLE 2. Imaging order counts by category

Imaging order counts	
General category	**Count**
Chest XR	307 (33.4%)
Hip/pelvis XR	142 (15.4%)
Head CT scan	114 (12.4%)
Upper limb XR	79 (8.6%)
Lower limb XR	77 (8.4%)
Hip/pelvis/abdomen CT scan	47 (5.1%)
Abdomen XR	41 (4.5%)
Spine XR	28 (3.0%)
Spine CT scan	23 (2.5%)
Carotids/Circle of Willis CT scan	22 (2.4%)
Chest CT scan	21(2.3%)
Foreign body extraction XR	5 (0.5%)
Radiology isolation XR	5 (0.5%)
Lower limb CT scan	3 (0.3%)
Soft tissue neck XR	2 (0.2%)
Upper limb CT scan	2 (0.2%)
Skull XR	1 (0.1%)
Urodynamics XR	1 (0.1%)

CT = computed tomography; XR = x-ray.

Reason for ED visit

Data were obtained and analyzed on the reasons for the ED (n = 359) visits. The most common reason for NH residents' visits was shortness of breath (n = 56; 15.6%), lower extremity injury (n = 49; 13.6%) and general weakness (n = 49; 13.6%). The top 10 reasons for ED visits account for 73.8% of the total visits and include shortness of breath, lower extremity injury, general weakness, extremity weakness/symptoms of cerebrovascular accident, head injury, altered level of consciousness, upper extremity injury, fever, lower extremity pain and nausea and vomiting.

Discharge diagnosis from ED

Discharge diagnoses for NH residents who were admitted to the hospital (n = 188) or sent back to the NH (n = 171) after visiting the ED are outlined in Table 3. The most common diagnosis assigned to residents in the ED was fracture or dislocation (n = 61), followed by pneumonia (n = 31), cerebrovascular accident/transient ischemic attack (TIA) (n = 17) and congestive heart failure (n = 15). Unfortunately, 32 records had no diagnosis documented. Nearly 17% of the diagnoses ranging from intracerebral hemorrhage to social problems were assigned to no more than two residents.

TABLE 3. Discharge diagnosis from the emergency department

Discharge diagnosis	Total	Discharged	Admitted	Percentage (%) admitted
Fracture/dislocation	61	28	33	55.1
Pneumonia	31	7	24	77.4
Congestive heart failure	15	3	12	80
Cerebrovascular accident/transient ischemic attack	17	4	13	76.5
Septicemia	10	1	9	90
Urinary tract infection	12	4	8	66.7
Weakness/fatigue	11	7	4	36.5
Bowel obstruction/cholecystitis/ constipation/liver	11	4	7	63.7
Altered level of consciousness	9	5	4	44.4
Delirium	9	0	9	100
Chest pain	5	4	1	20
Seizures/convulsions	8	7	1	87.5
Laceration/contusion	8	8	0	0
Chronic obstructive pulmonary disease	9	3	6	66.7
Medical device issue	8	8	0	0
Shortness of breath – dyspnea	8	5	3	37.5
Cardiac – myocardial infarction, bradycardia, pericarditis	9	5	4	44.4
Dementia	5	3	2	40
Concussion	5	4	1	20
Back pain	5	4	1	20
Neoplasm	4	3	1	25
Pleural effusion	3	0	3	100
Gastrointestinal hemorrhage	3	1	2	66.7
Misc ≤2 residents with the Dx*	61	43	18	10.3
No diagnosis listed	32	10	22	68.8
Total	**359**	**171**	**188**	**52.4**

*Miscellaneous diagnosis (Dx) assigned to no more than two residents included issues such as dysphagia, renal failure, subdural hematoma, social problems, COVID-19 concerns, mobility problems, Parkinson's disease, intracerebral hemorrhage and pulmonary hypertension.

Specialists consulted

Of the 359 visits to the ED, only 24.0% (n = 86) visits resulted in one or more specialists being consulted for a total of 101 consults. Of these consults, orthopaedic surgery was the most common, accounting for 23.5% (n = 24) of the total consults, with general surgery (n = 16), internal medicine (n = 13) and cardiology (n = 11) resulting in a combined 39.6% of the other consults.

Time in ED

NH resident stays in the ED ranged from 1 to 18 hours, with the mean length of stay being five hours. More than half of the residents remained in the ED for three to six hours (n = 102; 59.9%), 11.7% (n = 20) were in the ED for less than two hours, 19.8% (n = 38) remained for 7 to 10 hours, 4.1% (n = 7) remained for 11 to 14 hours and 1.8% (n = 3) remained in the ED for 15 to 18 hours.

Discussion

Identifying ways to improve healthcare for frail older adults is important. Long-term care, including NH care, is excluded from the *Canada Health Act* (1985), which only ensures coverage for necessary medical services that are provided in a hospital or by a physician. Coverage for services beyond physician and hospital services, such as those that take place in an NH, is left to the discretion of individual provinces. While NH residents can be assessed by physicians without leaving the NH, many essential diagnostic services, such as XRs, require transportation to a hospital. While the allocation of health and long-term care services falls under provincial jurisdictions, finding ways to improve system efficiencies, enhance quality of care and be responsive to the needs of frail older adults is a national concern (Hajdu 2021). There are calls for a more holistic approach to meeting the needs of vulnerable older adults (Stall et al. 2019) including using assistive technologies to deliver more care in community environments that do not disrupt the daily routines and help prevent episodes of delirium (Wang and Wilson 2022). Such an approach requires policy makers and clinicians to reimagine how care is organized and delivered in NHs, given the high prevalence of dementia in these settings.

Findings show that nearly 70% of residents receive radiography in the ED, and that nearly half of these residents are later transported back to the NH. The fact that the most common categories of imaging received (chest, hip/pelvis, upper limb and lower limb XRs) are often performed by portable XR services for in-patients suggests that some NH residents' transfers to the hospital could have been avoided if a mobile radiography service was available. It is also possible that NH residents who were transported and later admitted could have received their imaging in the NH prior to the transfer, thus expediting their ED care, or alternatively, could have been admitted directly to the hospital and bypassed the ED altogether.

The possibility that some ED and outpatient hospital visits could likely be avoided is significant and worthy of exploration. Over the past decade, several reports and investigations have documented the prevalence and severity of overcrowding in Canadian hospitals and in EDs (CIHI 2014; Jeyaraman et al. 2021). Overcrowding is defined as a situation where the demand for services exceeds the ability of hospitals and EDs to provide high-quality care within a reasonable time-frame (Affleck et al. 2013). Overcrowding is recognized as one of the most pressing issues faced by the Canadian healthcare system. Overcrowding not only compromises access to high-quality care but can also be stressful for healthcare providers and can create challenges with the recruitment and retention of staff (Fraser Institute 2021).

While NH residents may represent only a small proportion of all hospital and ED visits, their use of these essential healthcare services is nonetheless significant. NH residents are generally frail with multiple and overlapping health conditions (Dwyer et al. 2014). The care provided in Canadian NHs is considered extended healthcare services and is not insured under the *Canada Health Act* (1985) (Government of Canada 2004). As a result, residents are often required to transfer to hospitals for medical services. Earlier research conducted in the jurisdiction where this study took place reported that each visit consumes an average of 110 minutes of ambulance and paramedic time (McCloskey 2004). Once at the hospital, vulnerable NH residents often experience anxiety, increased confusion, falls and iatrogenic illnesses (Cunha et al. 2019; Dwyer et al. 2014). In addition, hospitals and EDs are often ill equipped to care for NH residents due to the challenges associated with communicating with individuals with cognitive impairment, difficulties in determining residents' goals of care and a lack of specialized knowledge in geriatric care (Gettel et al. 2019; Houghton et al. 2016; Trahan et al. 2016). There is a need to rethink traditional approaches to delivering medical services to NH residents.

While our data show a demand for XR and CT scans by NH residents, our primary interest is in XR, as it is viewed that this service could be offered with current resources in the jurisdiction where the study took place. To this end, it is certain that mobile radiography machines on their own will not be successful and will require a complementary policy. We believe that policies that seek to provide mobile or decentralized diagnostic services can address issues such as overcrowding and excessive healthcare spending, while also improving outcomes for NH residents. While NHs in New Brunswick are non-profit, the care is overseen primarily by physicians who spend a designated number of hours per week overseeing NH residents. Our study chose to examine NHs because they currently offer limited services on site and often rely on hospital transport for diagnostic services.

For mobile XR to be implemented, policies would need to ensure that the images are read by radiologists with the appropriate level of urgency for the situation, as well as ensure that the ordering practitioner is prompted to remotely respond to the imaging results. These policies would also need to provide procedures for after-hours ordering and treatment of NH residents who have mobile imaging performed — most commonly those with falls. Especially in after-hours cases, policies that might allow registered nurses to order these images in specific circumstances should be considered as many nurses who already practise with expanded scopes can order XRs.

Implementation of a mobile radiography policy is a significant change from current practice in providing urgent care in NHs, and the barriers to such policies have been described in the literature as organizational, financial and structural (Toppenberg et al. 2020). We recently had direct experience with this by being involved in a mobile radiography pilot project for NH residents in Saint John, New Brunswick. Starting this program involved acquiring the upfront funds required for equipment and training radiography staff, recruiting local NHs for the project, securing buy-in from the local radiology department, coordinating technological interfaces between NHs and the local health authority and educating local providers about the presence of the service. These essential components of the service had to be addressed

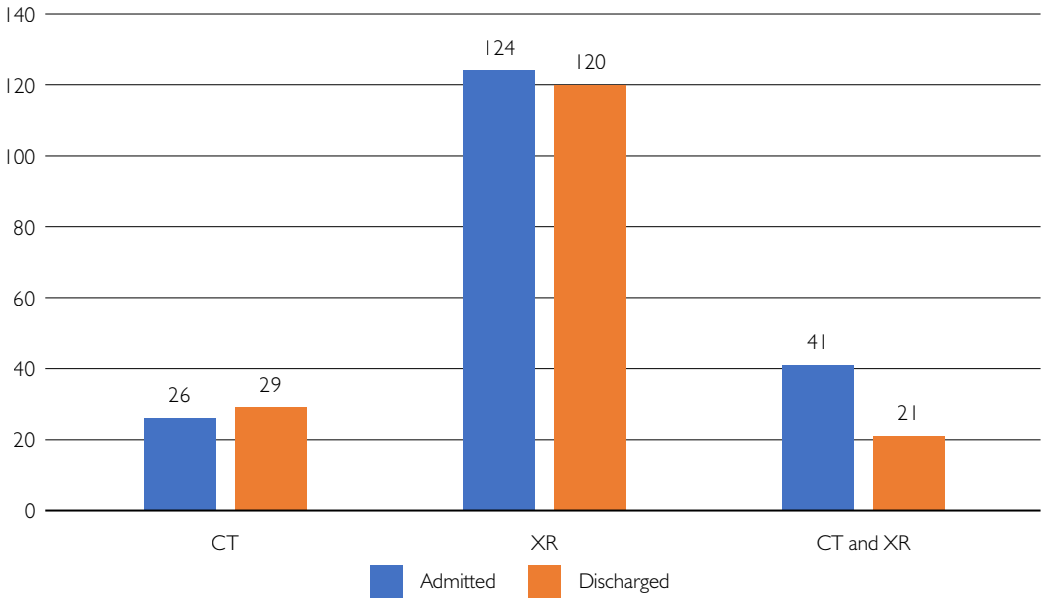
and, in some cases, took several months to accomplish. However, once the service was in place, stakeholders quickly embraced the program, and initial feedback has been very positive. Residents, families, physicians and front-line staff have seen the potential for improvements in care and were eager to utilize the service. This momentum has been recognized by the local government, which is currently struggling with ED overcrowding and access blocks to long-term care. Toppenberg et al. (2020) concluded in their study that good relations between the mobile radiography provider and NHs are important, and we attribute much of our success in overcoming the barriers to cultivating these organizational relationships.

When investigating the radiography services performed on NH residents and the reasons for the ED visits, we found that shortness of breath, lower extremity injuries and general weakness were the most common presenting complaints, with chest and hip/pelvis XR scans being the most frequent diagnostic images ordered. These findings are consistent with previous studies reporting that the main reasons for NH resident transfers to hospital are shortness of breath, falls/accidents/injuries, infections and fever (Blackburn et al. 2020; Pulst et al. 2021). Unlike the investigation conducted by Pulst and colleagues (2021), our study did not examine the involvement of physicians in transfer decisions. While a medical order is required for a resident to receive XR, it is not required for an ED transfer. This means that at least 30% of residents in this study were transferred to the hospital as per an outpatient medical order, and the remaining received an order for radiography services by an ED physician who was unfamiliar with the resident. This finding is noteworthy for several reasons. First, it is likely that XRs obtained in the outpatient settings were required to assist with the medical management of residents in the NHs. This understanding underscores the need to augment diagnostic supports in NHs and assist physicians in their efforts to provide high-quality care to residents in their own environments. Second, it is unclear if the ED transfers were initiated by physicians, NH staff, residents or families. It is possible that some of these visits could have been avoided with appropriate medical oversight. Previous investigations report a direct relationship between physician and/or nurse practitioner access and ED transfers (Jeyaraman et al. 2021; Kobewka et al. 2020), with increased access resulting in fewer hospital transfers. Other studies report that unnecessary ED transfers can occur because of inadequate staffing in NHs, staff inexperience and/or lack of training and unrealistic expectations by families (Lemoyne et al. 2019). Irrespective of the origin, NH residents have been reported to be among the most complex, time consuming and resource intensive of all ED patients (Ringer et al. 2018; Snider et al. 2017). With a focus on rapid assessment and flow of patients, it is possible that ED physicians' efforts to provide high-quality care resulted in NH residents' use of radiographical services that would otherwise not be required. Future studies should examine decisions around radiographical orders and NH residents.

Perhaps the most striking finding in this study is the fact that 33.2% of all NH residents who visited the ED received an XR scan but neither did they receive a CT scan nor were they admitted to the hospital. Furthermore, many residents spent less than two hours in the ED. Given that residents must wait for ambulances to be available to transport them

back to the NH, it appears that these residents obtained an ED assessment with imaging investigation and then were promptly discharged back to the NH. This population was 23% of all visits by NH residents for radiography and is exactly the profile of patients who could have benefited from a mobile radiography service. The 30.7% of residents with scheduled outpatient radiography appointments also appear to have been appropriate for mobile radiography service. When combining outpatient appointments with the population of quick visits to the ED for an XR scan followed by swift discharge, we believe that a significant portion (53.7%) of all the NH residents' visits for imaging would have been appropriate for mobile radiography (Figure 1).

FIGURE 1. Investigation by disposition



CT = computed tomography; XR = x-ray.

Identifying the demand for mobile radiography in New Brunswick has national implications because other mobile radiography programs in Canada primarily serve larger urban areas such as Calgary, Ottawa and Edmonton. While Saint John is an urban area, Statistics Canada (2021) classifies Saint John as a medium population centre. Identifying the demand for mobile radiography in a medium population centre opens the door for this service to be introduced in new communities across Canada as the challenge of identifying more efficient and therapeutic ways to deliver care is ubiquitous. The findings from our study have already resulted in a research grant to fund the above-mentioned mobile radiography pilot project in Saint John, which so far has been very well utilized and received. Part of this new investigation has involved exploring the experiences of residents, providers and families who have utilized the service. Collecting the perspectives of residents, families and providers is critical

to evaluating whether mobile radiography services will be accepted by communities and/or identifying targets for future improvements. Furthermore, it is our ultimate hope that local governments will be incentivized to implement mobile radiography services for vulnerable populations, and evidence of support from patients and families is critical to this end. Finally, given mobile radiography's potential to improve important patient outcomes and it currently being established in other Canadian jurisdictions, we believe that implementing mobile radiography in medium population centres would align with *Canada Health Act's* (1985) principles of universality and accessibility.

Limitations

While our findings suggest that the region could benefit from a mobile radiography service, the study is not without limitations. Reliance on retrospective data obtained from health records limits the data available for study. This includes the omission of diagnostic data in 32 records and the absence of any rationale for why or where radiography procedures were performed. Data captured in this study reflect radiography procedures that took place during the COVID-19 pandemic. Fortunately, the region had few incidences of COVID-19 during the study period, so the pandemic may have had minimal effect on the data collected. This study focused exclusively on NH residents from one health region who utilize services in two hospitals located in the same city. It is possible that the examination of NH residents located in other regions or who access services in other hospitals would have different results. This study focuses exclusively on NH residents. Other cohorts that may benefit from mobile radiography were not included in this study, including individuals confined to private homes due to disabilities, those in palliative care or hospice, residents of special care homes or individuals detained in correctional facilities. Future studies should consider an in-depth analysis of the use of radiography by NH residents, including the rationale for having them performed and their outcomes. For example, although our study analyzed the number and types of radiography received by residents, identification of the reason for the exams or the outcome was beyond the scope of the investigation.

Conclusion

Transportation of NH residents to the hospital or ED can be challenging for residents and costly to the healthcare system. While admission to the hospital and visits to the ED/urgent care will always be an important part of care for NH residents, finding new ways to deliver services, which avoid unnecessary transport, will improve resident care and healthcare efficiency. Given the number of NH residents who received radiography in an outpatient department, or in the ED before being quickly transported back to the NH, it is reasonable to conclude that there is a demand for a mobile radiography service in the region. Further work is needed to establish protocols for a mobile service, such as the type of radiography best suited for a mobile service, the payment structure for physicians reviewing the imaging and how results are communicated back to the NH.

Correspondence may be directed to: Eric Plant. Eric can be reached by e-mail at eric.plant@dal.ca.

References

Affleck, A., P. Parks, A. Drummond, B.H. Rowe and H.J. Ovens. 2013. Emergency Department Overcrowding and Access Block. *Canadian Journal of Emergency Medicine* 15(6): 359–70. doi:10.2310/8000.CAEPPS.

Arendts, G., A. Popescu, D. Howting, S. Quine and K. Howard. 2015. 'They Never Talked to Me About…': Perspectives on Aged Care Resident Transfer to Emergency Departments. *Australasian Journal on Ageing* 34(2): 95–102. doi:10.1111/ajag.12125.

Aryal, K., F. Mowbray, A. Gruneir, L.E. Griffith, M. Howard, A. Jabbar et al. 2021. Nursing Home Resident Admission Characteristics and Potentially Preventable Emergency Department Transfers. *Journal of the American Medical Directors Association* 23(8): 1291–96. doi:10.1016/j.jamda.2021.11.020.

Atkinson, P., K. McGeorge and G. Innes. 2022. Saving Emergency Medicine: Is Less More? *Canadian Journal of Emergency Medicine* 24(1): 9–11. doi:10.1007/s43678-021-00237-1.

Blackburn, J., T. Stump, J. Carnahan, S. Hickman, W. Tu, N. Fowler et al. 2020. Reducing the Risk of Hospitalization for Nursing Home Residents: Effects and Facility Variation from OPTIMISTIC. *Journal of the American Medical Directors Association* 21(4): 545–49. doi:10.1016/j.jamda.2020.02.002.

Boncea, E.E., P. Expert, K. Honeyford, A. Kinderlerer, C. Mitchell, G.S. Cooke et al. 2021. Association between Intrahospital Transfer and Hospital-Acquired Infection in the Elderly: A Retrospective Case–Control Study in a UK Hospital Network. *BMJ Quality & Safety* 30(6): 457–66. doi:10.1136/bmjqs-2020-012124.

Brühmann, B.A., C. Reese, K. Kaier, M. Ott, C. Maurer, S. Kunert et al. 2019. A Complex Health Services Intervention to Improve Medical Care in Long-Term Care Homes: Study Protocol of the Controlled Coordinated Medical Care (CoCare) Study. *BMC Health Service Research* 19: 332. doi:10.1186/s12913-019-4156-4.

Canada Health Act, R.S.C., 1985, c. C-6. Government of Canada. Retrieved February 2, 2023. <https://laws-lois.justice.gc.ca/eng/acts/c-6/page-1.html>.

Canadian Agency for Drugs and Technologies in Health (CADTH). 2021, November 23. *Canadian Medical Imaging Inventory Service Report: Mobile CT and MRI Units in Canada, 2019–2020*. Retrieved October 3, 2022. <https://www.cadth.ca/sites/default/files/attachments/2021-08/cmii_service_mobile_units.pdf>.

Canadian Institute for Health Information (CIHI). 2014, November. So*urces of Potentially Avoidable Emergency Department Visits*. Retrieved February 10, 2022. <https://secure.cihi.ca/free_products/ED_Report_ForWeb_EN_Final.pdf>.

Carron, P.-N., C. Mabire, B. Yersin and C. Büla. 2017. Nursing Home Residents at the Emergency Department: A 6-Year Retrospective Analysis in a Swiss Academic Hospital. *Internal and Emergency Medicine* 12(2): 229–37. doi:10.1007/s11739-016-1459-x.

Castle, N.G. and V. Mor. 1996. Hospitalization of Nursing Home Residents: A Review of the Literature, 1980–1995. *Medical Care Research and Review* 53(2): 123–48. doi:10.1177/107755879605300201.

Cunha, A.I.L., N. Veronese, S. de Melo Borges and N.A. Ricci. 2019. Frailty as a Predictor of Adverse Outcomes in Hospitalized Older Adults: A Systematic Review and Meta-Analysis. *Ageing Research Reviews* 56: 100960. doi:10.1016/j.arr.2019.100960.

Curtis, F., W.I.U. Jayawickrama, D. Laparidou, D. Weligamage, W.K.W.S. Kumarawansha, M. Ortega et al. 2021. Perceptions and Experiences of Residents and Relatives of Emergencies in Care Homes: A Systematic Review and Metasynthesis of Qualitative Research. *Age and Ageing* 50(6): 1925–34. doi:10.1093/ageing/afab182.

Dozet, A., B. Ivarsson, K. Eklund, R. Klefsgård and M. Geijer. 2016. Radiography on Wheels Arrives to Nursing Homes – An Economic Assessment of a New Health Care Technology in Southern Sweden. *Journal of Evaluation Clinical Practice* 22(6): 990–97. doi:10.1111/jep.12590.

Dwyer, R., B. Gabbe, J.U. Stoelwinder and J. Lowthian. 2014. A Systematic Review of Outcomes Following Emergency Transfer to Hospital for Residents of Aged Care Facilities. *Age and Ageing* 43(6): 759–66. doi:10.1093/ageing/afu117.

Fraser Institute. 2021 December 16. COVID Exacerbates—Not Creates—Canada's Long Health-Care Wait Times. Retrieved February 11, 2022. <https://www.fraserinstitute.org/article/covid-exacerbates-not-creates-canadas-long-health-care-wait-times>.

Gettel, C.J., R. Merchant, Y. Li, S. Long, A. Tam, S.J. Marks et al. 2019. The Impact of Incomplete Nursing Home Transfer Documentation on Emergency Department Care. *Journal of the American Medical Directors Association* 20(8): 935–41.e3. doi:10.1016/j.jamda.2018.09.008.

Government of Canada. 2004, October 1. Long-Term Facilities-Based Care. Retrieved February 10, 2022. <https://www.canada.ca/en/health-canada/services/home-continuing-care/long-term-facilities-based-care.html>.

Grabowski, D. and V. Mor. 2020. Nursing Home Care in Crisis in the Wake of COVID-19. *JAMA* 324(1): 23–24. doi:10.1001/jama.2020.8524.

Hajdu, P. 2021. *Public Health Agency of Canada 2021–2022 Departmental Plan*. Retrieved February 3, 2023. <https://www.canada.ca/content/dam/phac-aspc/documents/corporate/transparency/corporate-management-reporting/reports-plans-priorities/2021-2022-departmental-plan/2021-22-departmental-plan-eng.pdf>.

Houghton, C., K. Murphy, D. Brooker and D. Casey. 2016. Healthcare Staffs' Experiences and Perceptions of Caring for People with Dementia in the Acute Setting: Qualitative Evidence Synthesis. *International Journal of Nursing Studies* 61: 104–16. doi:10.1016/j.ijnurstu.2016.06.001.

Jeyaraman, M.M., L. Copstein, N. Al-Yousif, R.N. Alder, S.W. Kirkland, Y. Al-Yousif et al. 2021. Interventions and Strategies Involving Primary Healthcare Professionals to Manage Emergency Department Overcrowding: A Scoping Review. *BMJ Open* 11(5): e048613. doi:10.1136/bmjopen-2021-048613.

Kjelle, E. and K.B. Lysdahl. 2017. Mobile Radiography Services in Nursing Homes: A Systematic Review of Residents' and Societal Outcomes. *BMC Health Services Research* 17(1): 231. doi:10.1186/s12913-017-2173-8.

Kjelle, E., K.B. Lysdahl and H.M. Olerud. 2019. Impact of Mobile Radiography Services in Nursing Homes on the Utilisation of Diagnostic Imaging Procedures. *BMC Health Service Research* 19(1): 428. doi:10.1186/s12913-019-4276-x.

Kobes, K.J., A. Budau-Bymoen, Y. Thakur and C.J. Yong-Hing. 2020. Multidisciplinary Development of Mobile Radiography Guidelines Reduced the Number of Inappropriate Mobile Exams in Patients Receiving Chest Radiographs in British Columbia. *Canadian Association of Radiologists Journal* 71(1): 110–16. doi:10.1177/0846537119888357.

Kobewka, D.M., E. Kunkel, A. Hsu, R. Talarico and P. Tanuseputro. 2020. Physician Availability in Long-Term Care and Resident Hospital Transfer: A Retrospective Cohort Study. *Journal of the American Medical Directors Association* 21(4): 469–75.e1. doi:10.1016/j.jamda.2019.06.004.

Lemoyne, S., H. Herbots, D. de Blick, R. Remmen, K. Monsieurs and P. van Bogaert. 2019. Appropriateness of Transferring Nursing Home Residents to Emergency Departments: A Systematic Review. *BMC Geriatrics* 19(1): 17. doi:10.1186/s12877-019-1028-z.

Loeb, M., S.C. Carusone, R. Goeree, S.D. Walter, K. Brazil, P. Krueger et al. 2006. Effect of a Clinical Pathway to Reduce Hospitalizations in Nursing Home Residents with Pneumonia: A Randomized Controlled Trial. *JAMA* 295(21): 2503–10. doi:10.1001/jama.295.21.2503.

McCloskey, R. 2004. Use of one ER by Nursing Home Residents in New Brunswick. *Geriatrics Today* 7(2): 53–58.

McCloskey, R.M. 2011. A Qualitative Study on the Transfer of Residents between a Nursing Home and an Emergency Department. *Journal of the American Geriatrics Society* 59(4): 717–24. doi:10.1111/j.1532-5415.2011.03337.x.

McCloskey, R. and D. van Den Hoonaard. 2007. Nursing Home Residents in Emergency Departments: A Foucauldian Analysis. *Journal of Advanced Nursing* 59(2): 186–94. doi:10.1111/j.1365-2648.2007.04319.x.

McNamara, L.A., R.E. Wiegand, R.M. Burke, A.J. Sharma, M. Sheppard, J. Adjemian et al. 2022. Estimating the Early Impact of the US COVID-19 Vaccination Programme on COVID-19 Cases, Emergency Department Visits, Hospital Admissions, and Deaths among Adults Aged 65 Years and Older: An Ecological Analysis of National Surveillance Data. *The Lancet* 399(10320): 152–60. doi:10.1016/S0140-6736(21)02226-1.

Pathak, E.B., R.B. Garcia, J.M. Menard and J.L. Salemi. 2021. Out-of-Hospital COVID-19 Deaths: Consequences for Quality of Medical Care and Accuracy of Cause of Death Coding. *American Journal of Public Health* 111(S2): S101–06. doi:10.2105/AJPH.2021.306428.

Province of New Brunswick. 2014. *Chapter 125: Nursing Homes Act*. Retrieved May 26, 2022. <http://laws.gnb.ca/en/ShowPdf/cs/2014-c.125.pdf>.

Pulst, A., A.M. Fassmer and G. Schmiemann. 2021. Unplanned Hospital Transfers from Nursing Homes: Who Is Involved in the Transfer Decision? Results from the HOMERN Study. *Aging Clinical and Experimental Research* 33(8): 2231–41 doi:10.1007/s40520-020-01751-5.

Razak, F., S. Shin, F. Pogacar, H. Jung, L. Pus, A. Moser et al. 2020. Modelling Resource Requirements and Physician Staffing to Provide Virtual Urgent Medical Care for Residents of Long-Term Care Homes: A Cross-Sectional Study. *CMAJ* 8(3): E514–21. doi:10.9778/cmajo.20200098.

Ringer, T., M. Dougherty, C. McQuown, D. Melady, K. Ouchi, L.T. Southerland et al. 2018. White Paper—Geriatric Emergency Medicine Education: Current State, Challenges, and Recommendations to Enhance the Emergency Care of Older Adults. *AEM Education and Training* 2(S1): S5–16. doi:10.1002/aet2.10205.

Rolland, Y., C. Mathieu, N. Tavassoli, E. Berard, C.L. de Mazières, S. Hermabessière et al. 2021. Factors Associated with Potentially Inappropriate Transfer to the Emergency Department among Nursing Home Residents. *Journal of the American Medical Directors Association* 22(12): 2579–86. doi:10.1016/j.jamda.2021.04.002.

Snider, T., D. Melady and A.P. Costa. 2017. A National Survey of Canadian Emergency Medicine Residents' Comfort with Geriatric Emergency Medicine. *Canadian Journal of Emergency Medicine* 19(1): 9–17. doi.10.1017/CEM.2016.27.

Stall, N.M., P. Tardif and S.K. Sinha. 2019. Ensuring Canada's First Dementia Strategy Is not Shelved and Forgotten. *CMAJ* 191(31): E851–52. doi:10.1503/cmaj.190929.

Statistics Canada. 2021. Table 98-10-0006-01 Population Counts, for Census Metropolitan Areas, Census Agglomerations, Population Centres and Rural Areas. doi:10.25318/9810000601-eng.

Sundaram, M., S. Nasreen, A. Calzavara, S. He, H. Chung, S.E. Bronskill et al. 2021. Background Rates of All-Cause Mortality, Hospitalizations, and Emergency Department Visits among Nursing Home Residents in Ontario, Canada to Inform COVID-19 Vaccine Safety Assessments. *Vaccine* 39(37): 5265–70. doi:10.1016/j.vaccine.2021.07.060.

Toppenberg, M.D., T.E.M. Christiansen, F. Rasmussen, C.P. Nielsen and E.M. Damsgaard. 2020. Mobile X-Ray Outside the Hospital: A Scoping Review. *BMC Health Services Research* 20(1): 767. doi:10.1186/s12913-020-05564-0.

Trahan, L., J. Spiers and G. Cummings. 2016. Decisions to Transfer Nursing Home Residents to Emergency Departments: A Scoping Review of Contributing Factors and Staff Perspectives. *Journal of the American Medical Directors Association* 17(11): 994–1005. doi:10.1016/j.jamda.2016.05.012.

Wang, H.E., M.N. Shah. R.M. Allman and M. Kilgore. 2011. Emergency Department Visits by Nursing Home Residents in the United States. *Journal of the American Geriatrics Society* 59(10): 1864–72. doi:10.1111/j.1532-5415.2011.03587.x.

Wang, R.H. and M.G. Wilson. 2022. It Is Time for a National Strategy on Equitable Access to Assistive Technology in Canada. *Healthcare Management Forum* 35(6): 356–62. doi:10.1177/08404704221113742.

Webster, P. 2021. COVID-19 Highlights Canada's Care Home Crisis. *The Lancet* 397(10270): P183. doi:10.1016/S0140-6736(21)00083-0.

World Health Organization (WHO). 2020, June 1. Maintaining Essential Health Services: Operational Guidance for the COVID-19 Context Interim Guidance. Retrieved February 8, 2022. <https://www.who.int/publications/i/item/WHO-2019-nCoV-essential-health-services-2020.1>.

Zhang, X., Q. Dou, W. Zhang, C. Wang, X. Xie, Y. Yang et al. 2019. Frailty as a Predictor of All-Cause Mortality among Older Nursing Home Residents: A Systematic Review and Meta-Analysis. *Journal of the American Medical Directors Association* 20(6): 657–63.e4. doi:10.1016/j.jamda.2018.11.018.

RESEARCH PAPER

How Engaged in Legal Planning for Incapacity and Death Are Canadians? A Mixed-Methods Survey

Dans quelle mesure les Canadiens s'intéressent-ils à la planification juridique en cas d'incapacité ou de décès? Une enquête à méthodes mixtes

ARIANE PLAISANCE, PhD
Post-Doctoral Fellow
Department of Health Sciences
University of Quebec at Rimouski
Lévis, QC

JESSIE STILSON, BMGT
Communication Officer
Dhillon School of Business
University of Lethbridge
Lethbridge, AB

AURORE BENADIBA, PhD
Professor
Faculty of Law
Laval University
Quebec City, QC

DAREN K. HEYLAND, MD, MSc
Professor
Department of Critical Care Medicine
Queen's University
Kingston, ON

Abstract

Background: This study aimed to measure the level of involvement of Canadians in preparing for incapacity and death and to explore facilitators and barriers.
Method: The authors used an online survey based on the social cognitive theory and the Stages of Change model.
Results: One-hundred and forty-eight participants took part. The main facilitators were avoiding burdening others and reducing conflicts. Some respondents thought legal planning did not apply to young and healthy people. Some did not trust lawyers.
Conclusion: The authors suggest that more people would trust lawyers if they knew the limits of legal documents and if they worked with medical experts.

Résumé

Contexte : Cette étude vise à mesurer le degré d'implication des Canadiens dans la préparation en cas d'incapacité ou de décès, et à en explorer les facteurs favorables et les obstacles.
Méthode : Les auteurs ont eu recours à une enquête en ligne fondée sur la théorie cognitive sociale et sur le modèle des étapes du changement.
Résultats : Cent quarante-huit participants ont répondu à l'enquête. Les principaux facteurs favorables étaient d'éviter l'accablement pour les proches et de réduire les possibilités de conflits. Certains répondants estimaient que la planification légale ne s'appliquait pas aux personnes jeunes et en bonne santé. Certains ne faisaient pas confiance aux avocats.
Conclusion : Les auteurs suggèrent que davantage de personnes feraient confiance aux avocats s'ils connaissaient mieux la portée des documents juridiques et s'ils faisaient affaire avec des experts médicaux.

Introduction

Individuals should have a medical plan in place, name someone to speak for them and make decisions for them if they are unable to do so and leave instructions for this person in case they become incapacitated or die. Legal documentation regarding incapacity and death enables individuals to make and record decisions in advance (Orsatti 2022). Studies conducted in Canada and the US demonstrated that people are more likely to talk to a lawyer regarding their medical plan than to a physician (Orsatti 2022; Ries et al. 2018). A survey completed by 104 lawyers based in Alberta (Canada) demonstrated that these legal professionals think that assisting clients with preparing relevant legal documents related to healthcare is an important part of their role (Ries et al. 2018). However, despite survey after survey, less than half of Canadians have completed their incapacity and death planning (Hewson 2021). So, why do Canadians not plan for incapacity and death, even though there are government and private campaigns to get people to make a will and plan ahead for healthcare?

Decades of research in behavioural psychology have shown that human behaviour is complicated and that measuring only the result of a process can be misleading when it comes to judging the success of an intervention, such as public campaigns to get more people to

make legal plans for incapacity and death. Indeed, complex behaviours are made up of many smaller behaviours, or "micro-behaviours," which should be tracked to figure out where a person is in the process of changing their behaviour and to create targeted interventions (Glanz and Bishop 2010; Michie and Abraham 2004; Sheeran et al. 2017).

The social cognitive theory posits that humans can learn new behaviours either through direct experience or by observing others. According to the social cognitive theory, adopting a new behaviour involves four processes: (1) knowledge or understanding of the significance of the behaviour, (2) contemplation of engaging in the behaviour, (3) confidence or self-efficacy to complete the behaviour and (4) readiness to complete the behaviour. External and internal factors and the nature of the behaviour also influence whether the person will learn the new behaviour at a specific moment (Bandura 1977). Another well-established theory – the Stages of Change Model – posits that humans go through five iterative steps to achieve behaviour changes: pre-contemplation, contemplation, preparation, action and maintenance (Prochaska and Velicer 1997).

Research in implementation science suggests that a crucial first step when implementing a new behaviour is to assess the facilitators and barriers to the adoption of the behaviour (Bennett et al. 2010; Graham and Tetroe 2010). Indeed, in order to develop targeted strategies aimed at improving legal planning for incapacity and death, we must first assess people's current level of engagement. To our knowledge, no studies have assessed lay people's level of engagement with legal planning for incapacity and death and their perceived facilitators and barriers to adopting the targeted behaviour.

Our main objective was to assess the level of engagement of a sample of Canadians in seeking legal services to plan for incapacity and death. Our secondary objective was to explore facilitators leading to action and barriers hindering action.

Methods

This is a mixed-methods secondary analysis of anonymous data collected through an online survey for quality improvement purposes. Research ethics board review is not required for research that relies exclusively on the secondary use of anonymous information (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council 2019).

Survey context

In the survey, we defined legal planning for incapacity and death as the completion of legal documents (e.g., advance medical directive, power of attorney and will) with a lawyer aiming to plan for incapacity and death. Data were collected from July 2019 to April 2021. The study population comprised a convenience sample of users of our planning tool, Plan Well Guide (www.planwellguide.com). The Plan Well Guide is a free online tool with easy-to-use educational exercises that helps people discover their values, define their goals and communicate their wishes for future medical and personal care with their loved ones, decision makers

and healthcare providers (Heyland et al. 2020). An unknown number of people who used our online services got an e-mail inviting them to take the survey.

Development of the legal planning engagement survey

We developed the legal planning engagement survey based on the Advance Care Planning Engagement Survey (Sudore et al. 2014). The Advance Care Planning Engagement Survey uses the social cognitive theory (Bandura 1977) and the Stages of Change Model (Prochaska and Velicer 1997). With the help of several legal experts, we first conducted an exercise aimed at breaking down the broad concept of planning for incapacity and death into subdomains and targeted actions (Table 1).

TABLE 1. Survey development

Subdomains	Behavioural process changes	Desired actions
• The options of protecting loved ones and assets during life (trusts) and post death (wills) • The consequences of inadequate legal planning • The importance of preparing for periods of incapacity (advance medical directive, power of attorney)	Knowledge Contemplation Confidence Readiness	• Start thinking about how to best protect loved ones and assets • Decide on who can best represent your interests and act for you in case of incapacity • Seek out related information • Ask questions of lawyers • Finalize legal planning documents

Based on the social cognitive theory and the Stages of Change Model, we conceptualized that the behaviour change-related factors of knowledge, contemplation, confidence and readiness are required to complete each subdomain. For each subdomain, we developed closed-ended questions to find out how involved the participants were and open-ended questions to find out what stopped them from moving forward with the desired behaviour or why they did it.

Final survey

The final survey contained six sections (See Appendix 1, available online at www.longwoods.com/content/27035):

- *Section 1*: This section included the respondent's perception of their knowledge of the legal procedures and documents necessary to protect themselves, their loved ones and their assets in the event of their incapacity or death using a five-level Likert scale (scale range: 5–25 [high–better knowledge]).
- *Section 2*: This section included the respondent's level of contemplation of the behaviours we aimed to influence using a five-frequency Likert scale (scale range: 5–25 [high–better level of contemplation]).
- *Section 3*: This section included the respondent's self-confidence to move forward in the three desired behaviours using a five-level Likert scale (scale range: 3–15 [high–better confidence]) and an open field about the reasons for their lack of confidence.

- *Section 4*: This section included the respondent's readiness to engage in the desired behaviours using a five-level Likert scale (scale range: 3–15 [high–better readiness]) and three open fields about their lack of readiness to move forward with the desired behaviours, if applicable.
- *Section 5*: This section included the open questions about the respondent's reasons for not hiring a lawyer to draft and finalize legal forms or their main motivations for not doing so.
- *Section 6*: This section included socio-demographic questions (gender, age, level of education and province).

Analysis

To reach our first objective – i.e., to assess the level of engagement of a sample of Canadians in seeking legal services to plan for incapacity and death (advance medical directive, power of attorney and will), we measured basic descriptive statistics to calculate the score for each Likert scale for each behavioural process change and the overall score (mean, standard deviation, median, interquartile range and minimum–maximum).

To reach our second objective – i.e., to explore facilitators and barriers, we completed a two-phase summative thematic analysis inspired by the Framework Method (Ritchie et al. 2013). With this method, the content of the open fields could be turned into a structured dataset. In the first phase, the main researcher developed one list of barriers (e.g., costs, competing priorities) and one list of motivations or facilitators (e.g., significant life events, advanced age). Then, two researchers independently classified the material. Afterward, the main researcher reduced the lists to keep only the five most frequent barriers and five most frequent facilitators. In the second phase, the two researchers independently determined the barriers and motivations applicable to each of the participants. Then, we merged similar items, creating themes (e.g., facilitators related to others, barriers related to finance).

Results

In our sample of 148 participants, most (59.5%) were female. The mean age was 60.4 years (standard deviation: 13.2). Three-quarters of the participants (75%) had completed a university degree. Residents of seven out of 10 Canadian provinces participated in the study (Table 2).

Level of engagement

Most of the people who took the survey were very involved in making legal plans for incapacity and death. In all, 108 respondents (73%) indicated that they had hired a lawyer to assist with drafting and finalizing their legal preparation, but 40 (27%) indicated that they did not get involved in this behaviour. The median scores for all items were 4 or 5 (maximum score being 5), except for the items about the respondent's knowledge about "what questions to ask

TABLE 2. Participants' demographics

	Participants, *N* = 148
Gender	
Female, *n* (%) Male, *n* (%)	88 (59.5) 60 (40.5)
Age	
25–49, *n* (%) 50–64, *n* (%) 65–79, *n* (%) 80+, *n* (%) Mean, median (SD)	30 (20.3) 58 (39.2) 54 (36.5) 6 (4.1) 60.4 (13.2)
Education	
Secondary or high school, *n* (%) Some university or completed a college degree, *n* (%) University degree, *n* (%)	3 (2.0) 34 (23.0) 111 (75.0)
Province	
Alberta, *n* (%) Ontario, *n* (%) British Columbia, *n* (%) Quebec, *n* (%) Saskatchewan, *n* (%) Manitoba, *n* (%) New Brunswick, *n* (%)	66 (44.6) 52 (35.1) 24 (16.2) 2 (1.4) 2 (1.4) 1 (0.7) 1 (0.7)

a lawyer about planning for incapacity or death" and contemplation of the micro-behaviour of "asking a lawyer about planning for incapacity or death," both of which yielded a median score of 4 (maximum score being 5) (see Table 3, available online at longwoods.com/content/27035).

Facilitators leading to action

In total, 137 participants (92.5%) replied to the open question about their main reasons (or motivations) for hiring a lawyer to draft and finalize legal forms regarding incapacity and death (advance medical directive, power of attorney and will).

FACILITATORS RELATED TO IMPACT ON OTHERS

A frequent motivation was to avoid burdening others and reduce family conflicts:

> The less stress my family has to experience in an unexpected or critical situation the better.

> I don't want to be a burden to my family/friends who I am asking to assist in the event of severe illness or death.

FACILITATORS RELATED TO A LIFE MILESTONE

Another frequent theme was that a personal life event or health condition (death of a loved one and having children, disease or advanced age) triggered respondents to seek legal help for planning for incapacity and death:

> The loss of my wife in ICU made me realize the importance of having a will and personal directive and ensuring both are up-to-date.

> Long-term chronic disease and illness [made me do it]. [I a]lso take medication that can cause lower immunity and [increase risks of] infection.

Some also referred to the COVID-19 pandemic:

> Turning 71 plus the added threat of COVID-19 [made me do it]. [I h]ave realized that situations change very quickly and being unprepared can make a bad situation worse.

FACILITATORS RELATED TO FUTURE ILLNESS SCENARIOS

Wishing to be involved in care decisions was also stated as a motivation to seek legal help for planning for incapacity and death:

> If I am incapacitated, I want my family to know what my wishes are.

> I want to be in control, until I am no longer able to do so.

Barriers hindering action

Fifty (33.8%) of the people who took the survey answered the open-ended question about why they did not hire a lawyer to write and finalize their legal plans for incapacity and death.

FINANCES

One of the major themes emerging from the analysis was a lack of financial resources and the expectation of high lawyer fees:

> Despite being aware of its value, financial costs prohibit me from pursuing legal advice at this time.

> I'm worried it would be terribly expensive.

APPLICATION TO SELF

Being young and healthy or not having assets or dependents was also a frequent reason not to have hired a lawyer to draft and finalize legal planning regarding incapacity and death:

> Death is a non-issue as I have no dependents or significant assets.

> I don't need a will as I have no assets and no dependents.

> I guess I am healthy and young, and it has never become a priority yet.

LACK OF CONFIDENCE IN LAWYERS

Another emerging theme was the lack of confidence in lawyers in general or in their capacity to help them plan for incapacity or death:

> Lawyers are good with estate and financial planning but not health directives.
>
> Most lawyers do not do a good job on [planning for incapacity and death] and don't give enough advice on these documents unless the client is rich.
>
> Lawyers are evil, not trustworthy.

Discussion

Level of engagement

In our sample of 148 respondents, 108 (73%) indicated that they had hired a lawyer to assist with drafting and finalizing their legal preparation for incapacity and death. In Canadian surveys conducted in 2020 and 2021, the proportion of Canadians who reported having an up-to-date will ranged from 33% to 46% (Hewson 2021; Yih 2020). This difference between our results and those observed in previous surveys may be linked to our recruitment method through a website dedicated to advance serious illness planning (ASIP). Since they had just finished planning ahead for a serious illness, our participants were likely to be more proactive in their planning. Nevertheless, their responses to other questions yielded important insights.

Except for the items regarding the respondent's knowledge about "what questions to ask a lawyer about planning for incapacity or death" and contemplation of the micro-behaviour of "asking a lawyer about planning for incapacity or death," both of which yielded a median score of 4 (maximum score being 5), all other items yielded a median score of 5. These results suggest that the professional–client relationships in the law field are still a traditional model where clients go passively to lawyers and do what they tell them to do and are not actively involved in the process. However, legal professionals and their clients would benefit from embracing participatory models of professional–client relationships. The participatory model involves the client's active effort to be informed and to share responsibility, leading to mutually agreed-upon choices (Kidder and Rosenthal 1976). From our results, it appears that people may need more support in learning what questions to ask and how to best engage with lawyers in planning for incapacity or death.

Facilitators leading to action

We found that a frequent motivation for legal planning was a life milestone, such as having children or the death of a loved one. These results are consistent with those of a survey that showed that Canadians tend to complete a will when they experience one of life's major events, such as having a child or experiencing a change in marital status (Yih 2020). Another frequent motivation to seek legal help to plan for incapacity and death was the wish to be involved in care decisions in case of incapacity and to avoid putting a decisional burden on

others. This is consistent with the social cognitive theory, which states that environmental factors such as social norms are facilitators leading to action (Bandura 1977). Nowadays, avoiding burdening others is a strong social norm. Self-perceived burden is linked to suffering, loss of dignity and a "bad death." It has also been noted as a significant factor in clinical decisions, such as advance directives and the decision regarding where to receive care at the end of life, among patients who have life-threatening illnesses (McPherson et al. 2007).

Barriers hindering action

One thing that kept coming up as a barrier to action was that people thought the behaviour being targeted did not apply to them because they were young, were healthy or did not have much money. According to the social cognitive theory, such barriers are linked to misconceptions or a lack of knowledge regarding the targeted behaviour and may prevent further action (Bandura 1977). According to an article (Bruineman 2018) about the Canadian Legal Fees Survey, the cost of a simple will is around $300–$400, while the cost of a single power of attorney is around $150–$200, and the cost of a healthcare power of attorney is around $100–$200 (Bruineman 2018). Whether these fees are fair or not depends on an individual's budget and values. However, the perceived loss of money that cannot be gained back (as opposed to an investment) is a well-documented barrier to the adoption of a new behaviour (Gaspar 2013).

Another emerging theme was clients' lack of trust in lawyers in general or in their ability to help them plan for incapacity and death. For the past two years, the Institute for Trust in Organizations (https://institutdelaconfiance.org/) – a Canadian non-profit, neutral and independent think tank – has been measuring how much Canadians trust different professions. In 2021, the job of a lawyer was ranked at 27 out of 40 jobs, which was six points lower than in 2020 (Institut de la confiance dans les organisations 2020).

Application for Research and Practice

In 2004, in a ground-breaking publication, the American philosopher Angela Fagerlin and the law specialist Carl E. Schneider called for the abandonment of advance medical directives, except for patients whose health crisis is imminent. However, they emphasized the importance of naming a supportive decision maker (Fagerlin and Schneider 2004). More than a decade later, the American Bar Association on Law and Aging stated that the most important legal element of incapacity planning is to attentively select and appoint a supportive decision maker in a valid document. They also emphasized that discussions (with lawyers) should focus on one's values, goals and priorities in the event of worsening health rather than on specific treatments or clinical interventions for distant hypothetical situations (American Bar Association 2017).

Indeed, advance medical directives might be important for patients with incurable cancer at the end of their lives, but they are not relevant during a serious illness. In situations

such as a heart attack or bad COVID-19 pneumonia when patients are hospitalized, there is a probability of dying but also a probability of surviving (Heyland et al. 2020), but most patients are not capable of communicating (Bibas et al. 2019) during these serious illnesses. Healthcare providers will turn to the patient's supportive decision maker to help them make informed goals-of-care decisions. However, legal planning documents completed under conditions of certainty are not helpful to inform clinical decisions during a serious illness and may result in medical errors and certainly add to the stress of the family members (Moorman et al. 2020; Periyakoil et al. 2022). The misalignment between a patient's values and preferences and the decisions made by their supportive decision maker is well-documented (Heyland et al. 2017). Indeed, what do "severe, permanent impairment," "no heroic measures" or "vegetative state" mean? There are many "shades" of neurological impairment, and healthcare providers will have difficulty operationalizing these wishes. As such, legal planning documents do not allow the patient's wish to be involved in care decisions to come true. To truly realize its fundamental purpose of extending individual autonomy beyond one's ability to maintain their competence (Sabatino 2010), we recommend that lay people, who are planning for incapacity, gain understanding of the various types of care, elucidate their own values and preferences and empower a supportive decision maker for future meaningful communication with healthcare professionals.

We recommend lawyers to improve their practice through the concept of ASIP. Started at any age or health condition, ASIP engages people to reflect on their values and highlight the trade-off with competing values. Questions such as these are asked: "Are you the kind of person who wants medical treatments to focus on prolonging your life or enhancing the quality of your remaining days?" "Are you the kind of person who prefers a natural death or are you willing to accept the use of machines, such as breathing machines, to prolong your life for as long as possible?" The answers to these questions will allow their future physicians, during a health crisis, to link stated values to medical treatments that could be proposed to treat serious illness in a reliable and transparent way, thus reducing medical errors. As part of serious illness preparations, we suggest a more systematic use of decision aids, such as the Plan Well Guide, that are useful in informing patients about the risks, benefits and possible outcomes of the different treatment options. In a recent randomized trial, this approach was shown to improve decisional quality, reduce physician time and resulted in both physician and patient ratings of satisfaction and endorsement (Heyland et al. 2020).

In a close relationship, like the one between a lawyer and their client, trust is an important part. Lawyers must recognize that their skills differ from those of medical professionals and ensure that each client consults with a qualified medical professional to discuss and develop their advance healthcare plans. However, lawyers can help normalize ASIP discussions, make such planning more widely available and offer an alternative way to start end-of-life conversations and prepare documents (Orsatti 2022).

Strengths and Limitations

This is the first study, to our knowledge, to scientifically assess the level of engagement of Canadians to plan for incapacity and death with a lawyer. We applied well-known behavioural theories to explore a new field of research, namely, empirical research, on lay people's level of engagement regarding planning for incapacity and death. The body of literature regarding the level of engagement of patients in planning for incapacity was created mostly in the context of healthcare. A similar body of literature is yet to be developed within the legal context (Ries et al. 2016, 2018) or in collaboration between experts in the two fields. Ries proposed a continuum for interprofessional collaboration that eventually connects the health and legal professions (Ries et al. 2016).

Our population sample was highly educated and was recruited following the completion of ASIP. Our results might therefore not be representative of the Canadian population. Due to our recruitment method, it was not possible to estimate how many people were invited to reply to the survey; thus, it is not possible to calculate the proportion of those who responded.

Conclusion

In our sample, respondents were moderately engaged in planning for incapacity and death. A frequent motivation to seek legal advice was to avoid placing a decisional burden on others and to wish to be involved in care decisions in the event of incapacity. This is consistent with the global objective of the advance directives movement, which is to extend autonomy beyond an individual's ability to maintain their competence. But research shows that choosing and empowering a supportive decision maker is the most important part of legal planning for incapacity. However, legal professionals are not well informed on how to empower a supportive decision maker to get them ready for future medical decisions (neither on types of care available to prolong life nor on the risks, benefits and outcomes of such life-sustaining technologies). An emerging barrier to planning for incapacity was the lack of trust in lawyers in general or in their capacity to help them plan for incapacity. We suggested that acknowledging the limits of legal documents to inform medical decisions and collaborating with medical experts in this field could help enhance the trust the population holds toward lawyers. Medical decision aids for advance serious illness preparations and planning, such as the Plan Well Guide, aim to overcome many of these barriers by working with lawyers and lay people to better prepare for future incapacitation and death.

Correspondence may be directed to: Ariane Plaisance. Ariane can be reached by e-mail at arianeplaisance@gmail.com.

References

American Bar Association. 2017. *Advance Care Planning Practice Principles*. Retrieved July 13, 2021. <https://www.americanbar.org/content/dam/aba/administrative/law_aging/acp-practice-prinicples-final.pdf>.

Bandura, A. 1977. Self-Efficacy: Toward a Unifying Theory of Behavioral Change. *Psychological Review* 84(2): 191–215. doi:10.1037/0033-295X.84.2.191.

Bennett, C., I.D. Graham, E. Kristjansson, S.A. Kearing, K.F. Clay and A.M. O'Connor. 2010. Validation of a Preparation for Decision Making Scale. *Patient Education and Counseling* 78(1): 130–33. doi:10.1016/j.pec.2009.05.012.

Bibas, L., M. Peretz-Larochelle, N.K. Adhikari, M.J. Goldfarb, A. Luk, M. Englesakis et al. 2019. Association of Surrogate Decision-Making Interventions for Critically Ill Adults with Patient, Family, and Resource Use Outcomes: A Systematic Review and Meta-Analysis. *JAMA Network Open* 2(7): e197229. doi:10.1001/jamanetworkopen.2019.7229.

Bruineman, M. 2018. The Right Price. *Law Office Management*. Retrieved July 13, 2021. <https://www.canadianlawyermag.com/staticcontent/AttachedDocs/CL_Apr_18_LegalFeesSurvey.pdf>.

Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council. 2019. *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2018).* <https://ethics.gc.ca/eng/documents/tcps2-2018-en-interactive-final.pdf>.

Fagerlin, A. and C.E. Schneider. 2004. Enough. The Failure of the Living Will. *The Hastings Center Report* 34(2): 30–42. doi:10.2307/3527683.

Gaspar, R. 2013. Understanding the Reasons for Behavioral Failure: A Process View of Psychosocial Barriers and Constraints to Pro-Ecological Behavior. *Sustainability* 5(7): 2960–75. doi:10.3390/su5072960.

Glanz, K. and D.B. Bishop. 2010. The Role of Behavioral Science Theory in Development and Implementation of Public Health Interventions. *Annual Review of Public Health* 31(1): 399–418. doi:10.1146/annurev.publhealth.012809.103604.

Graham, I.D. and J.M. Tetroe. 2010. The Knowledge to Action Framework. In J. Rycroft-Malone and T. Bucknall, eds., *Models and Frameworks for Implementing Evidence-Based Practice: Linking Evidence to Action* (pp. 207–22). Wiley-Blackwell.

Hewson, T. 2021, April 27. Trends in Canadian Will Writing – 2021 Will Survey. *The Canadian Legal Wills Blog*. Retrieved 13, 2021. <https://www.legalwills.ca/blog/will-survey/>.

Heyland, D.K., R. Heyland, A. Bailey and M. Howard. 2020. A Novel Decision Aid to Help Plan for Serious Illness: A Multisite Randomized Trial. *CMAJ Open* 8(2): E289–96. doi:10.9778/cmajo.20190179.

Heyland, D.K., R. Heyland, P. Dodek, J.J. You, T. Sinuff, T. Hiebert et al. 2017. Discordance between Patients' Stated Values and Treatment Preferences for End-of-Life Care: Results of a Multicentre Survey. *BMJ Supportive and Palliative Care* 7(3): 292–99. doi:10.1136/bmjspcare-2015-001056.

Institut de la confiance dans les organisations. 2020, September 21. How Much Confidence Do Quebecers Have in Your Profession? Retrieved July 16, 2021. <https://institutdelaconfiance.org/quel-est-le-niveau-de-confiance-des-quebecois-envers-votre-metier/>.

Kidder, R.L. and D.E. Rosenthal. 1976. Lawyer and Client: Who's in Charge? *Contemporary Sociology* 5(4): 431–32. doi:10.2307/2063780.

McPherson, C.J., K.G. Wilson and M.A. Murray. 2007. Feeling Like a Burden to Others: A Systematic Review Focusing on the End of Life. *Palliative Medicine* 21(2): 115–28. doi:10.1177/0269216307076345.

Michie, S. and C. Abraham. 2004. Identifying Techniques that Promote Health Behaviour Change: Evidence Based or Evidence Inspired? *Psychology & Health* 19(1): 29–49. doi:10.1080/0887044031000141199.

Moorman, S., K. Boerner and D. Carr. 2020. Rethinking the Role of Advance Care Planning in the Context of Infectious Disease. *Journal of Aging and Social Policy* 33(4–5): 493–99. doi:10.1080/08959420.2020.1824540.

Orsatti, G.W. 2022. Attorneys as Healthcare Advocates: The Argument for Attorney-Prepared Advance Healthcare Directives. *Journal of Law, Medicine and Ethics* 50(1): 157–68. doi:10.1017/jme.2022.20.

Periyakoil, V.S., C.F. von Gunten, R. Arnold, S. Hickman, S. Morrison and R. Sudore. 2022. Caught in a Loop with Advance Care Planning and Advance Directives: How to Move Forward? *Journal of Palliative Medicine* 25(3): 355–60. doi:10.1089/jpm.2022.0016.

Prochaska, J.O. and W.F. Velicer. 1997. The Transtheoretical Model of Health Behavior Change. *American Journal of Health Promotion* 12(1): 38–48. doi:10.4278/0890-1171-12.1.38.

Ries, N.M., M. Douglas, J. Simon and K. Fassbender. 2016. Doctors, Lawyers and Advance Care Planning: Time for Innovation to Work Together to Meet Client Needs. *Healthcare Policy* 12(2): 13–18. doi:10.12927/hcpol.2016.24944.

Ries, N.M., M. Douglas, J. Simon and K. Fassbender. 2018. How Do Lawyers Assist Their Clients with Advance Care Planning: Findings from a Cross-Sectional Survey of Lawyers in Alberta. *Alberta Law Review* 55(3): 683. doi:10.29173/alr2456.

Ritchie, J., J. Lewis, C.M. Nicholls and R. Ormston (eds.). 2013. *Qualitative Research Practice: A Guide for Social Science Students and Researchers (2nd ed.).* SAGE Publications.

Sabatino, C.P. 2010. The Evolution of Health Care Advance Planning Law and Policy. *The Milbank Quarterly* 88(2): 211–39. doi:10.1111/j.1468-0009.2010.00596.x.

Sheeran, P., W.M.P. Klein and A.J. Rothman. 2017. Health Behavior Change: Moving from Observation to Intervention. *Annual Review of Psychology* 68(1): 573–600. doi:10.1146/annurev-psych-010416-044007.

Sudore, R., S. Knight, A. Stewart, R. McMahan, D. Barnes and M. Feuz. 2014. Development and Validation of a Questionnaire to Detect Behavior Change in Multiple Advance Care Planning Behaviors (SA522-A). *Journal of Pain and Symptom Management* 47(2): 459–60. doi:10.1016/j.jpainsymman.2013.12.217.

Yih, J. 2020, January 22. Too Many Canadians Have No Will. *Estate Planning*. Retrieved July 13, 2021. <https://retirehappy.ca/too-many-canadians-have-no-will/>.

RESEARCH PAPER

Pharmacist Disciplinary Action: What Do Pharmacists Get in Trouble for?

Mesures disciplinaires imposées aux pharmaciens : pour quelles raisons les pharmaciens ont-ils des ennuis?

AI-LENG FOONG-REICHERT, BSc, PharmD
PhD Candidate
School of Pharmacy
University of Waterloo
Kitchener, ON

KELLY A. GRINDROD, BScPharm, PharmD, MSc
Associate Professor
School of Pharmacy
University of Waterloo
Kitchener, ON
Professor in Pharmacy Innovation
Ontario College of Pharmacists
Toronto, ON

DAVID J. EDWARDS, BScPhm, PharmD, MPH
Professor
School of Pharmacy
University of Waterloo
Kitchener, ON

ZUBIN AUSTIN, BScPhm, MBA, MISc, PhD, FCAHS
Professor
Leslie Dan Faculty of Pharmacy
University of Toronto
Toronto, ON

SHERILYN K.D. HOULE, BSP, PhD
Assistant Professor
School of Pharmacy
University of Waterloo
Kitchener, ON

Abstract

Objective: This study aims to determine the reasons for disciplinary action and resultant consequences for Canadian pharmacists and any associations with demographic factors.
Methods: Regulatory body disciplinary action cases from 10 Canadian provinces were coded. Demographic information was coded.
Results: There were 665 pharmacist cases from nine provinces between January 2010 and December 2020. The rate of disciplinary action was low (1.37 cases/1,000 practitioners/year). Professional misconduct was the most common category of violation. Male pharmacists were overrepresented in disciplinary action cases. Most cases involved community pharmacists.
Conclusion: This study is the first, to our knowledge, in Canada to analyze the demographic factors of pharmacists subjected to disciplinary action. It updates a previous review of pharmacist disciplinary action (Foong et al. 2018).

Résumé

Objectif : Cette étude vise à déterminer les raisons pour lesquelles sont prises des mesures disciplinaires envers les pharmaciens canadiens et les conséquences qui en résultent ainsi que toute association avec des facteurs démographiques.
Méthodes : Les cas de sanctions disciplinaires d'organismes de réglementation de 10 provinces canadiennes ont été codés. Les renseignements démographiques ont été codés.
Résultats : Il y a eu 665 cas de sanctions disciplinaires envers des pharmaciens dans neuf provinces entre janvier 2010 et décembre 2020. Le taux de mesures disciplinaires est faible (1,37 cas/1 000 pharmaciens/an). La faute professionnelle constitue la catégorie de violation la plus courante. Les hommes pharmaciens sont surreprésentés dans les cas de mesures disciplinaires. La plupart des cas concernent des pharmaciens communautaires.
Conclusion : Cette étude est la première au Canada, à notre connaissance, à analyser les facteurs démographiques des pharmaciens qui font l'objet de mesures disciplinaires. Elle met à jour un examen précédent des mesures disciplinaires prises à l'encontre des pharmaciens (Foong et al. 2018).

Introduction

Regulatory body complaints and disciplinary action processes exist to protect the public. In Canada, most complaints are resolved at a lower level committee, and serious cases of professional misconduct or clinical incompetence are heard by a higher level disciplinary committee. Such processes provide the public with a channel to voice their concerns and are crucial to protect the public from practitioners providing unsafe care or those who are conducting themselves unethically.

In an effort to increase accountability and transparency to better protect the public, recent changes have been recommended to improve regulation in some provinces. For example, British Columbia plans to make significant changes to health professional regulation,

including a reduction in the number of regulators, the creation of an oversight body and the creation of a new disciplinary process that is separate from the regulatory body (Steering Committee on Modernization of Health Professional Regulation 2020). In addition, Quebec, Ontario and Alberta have enacted legislations in recent years implementing mandatory penalties for health professionals found guilty of sexual abuse, and the physician regulator in Saskatchewan has adopted a similar approach (*An Act to Protect Patients* 2018; College of Physicians and Surgeons of Saskatchewan 2020; Inquiries Division 2018; Owens 2018; *Protecting Patients Act* 2017). However, the impact of different legislations and regulatory policies across Canada is not known, and the impact of these specific policy changes on disciplinary outcomes remains to be seen.

Previous work reviewed disciplinary action cases for Canadian pharmacists from 2010 to 2017 and found that most violations involved unprofessional conduct or dishonest business practices, and that disciplinary action for an isolated, clinical incident was uncommon (Foong et al. 2018). Reviews of Canadian physician disciplinary action cases have also been conducted, which found that sexual misconduct was the most frequent violation, followed by standard of care issues and unprofessional conduct (Alam et al. 2011). The objective of this study was to characterize disciplinary action cases for pharmacists by identifying the reasons for being disciplined, penalties applied and any associations with demographic factors. This study updates our previous review of pharmacist disciplinary action, seeks to identify changes in disciplinary outcomes in recent years and analyzes demographic factors, which the previous study did not conduct (Foong et al. 2018).

Methods

Inclusion and exclusion criteria

Regulatory body disciplinary action cases for pharmacists from 10 Canadian provinces published between January 2010 and December 2020 were included. Cases from the three Canadian territories were excluded because pharmacists are typically regulated by a branch of the government rather than an independent regulatory body (National Association of Pharmacy Regulatory Authorities n.d.). Disciplinary cases from most provinces were publicly available and accessed from regulatory body websites or online from the Canadian Legal Information Institute. Ethics approval was not required for publicly available cases. For cases that were not publicly available, ethics approval was obtained from the University of Waterloo Research Ethics Board (REB #43844) and/or the researchers entered into a research agreement with the regulator.

Only cases that described both a violation and a penalty were included; disciplinary cases that involved an appeal, a request for reinstatement or a request to remove conditions on a licence were excluded. Cases were also excluded if either the initial hearing or the penalty decision was before 2010 or after 2020, if the case involved pharmacy students or if the case involved a pharmacy and not a pharmacist. Cases that described a violation and a penalty for

multiple pharmacists found guilty of the same violation were counted as separate cases under each health professional. For pharmacists who held active licences in more than one province and were disciplined for the same violation in these provinces, the case was counted only in the province that conducted the original investigation.

Of note, in our previous review of pharmacist disciplinary action, the sample included 74 cases from British Columbia, which included lower level complaints, as well as higher level disciplinary cases, while in this study, we included only the disciplinary cases, which totalled three cases (Foong et al. 2018).

Case coding

Violations, penalties and demographic factors of the pharmacists subjected to disciplinary action were coded for each case. Violations were coded into three categories that were adapted from our previous pharmacist review (Foong et al. 2018): (1) professional misconduct, (2) clinical incompetence and (3) dishonest business practices. Professional misconduct was defined as violating the standards of practice or legislation governing pharmacy practice but did not include clinical incompetence. Clinical incompetence included any violation involving clinical performance or treatment. Dishonest business practices included any violation with financial gain as a motive, such as inappropriate advertising or fraudulent billing. Codes within each category were adapted from codes from our previous research (Foong et al. 2018). Information on the following demographic factors were coded from the case or obtained online from the regulatory body's online register of professionals: age, gender, practice setting, practice specialty, number of years in practice, country of education and previous disciplinary action. Due to limited demographic information available, not all demographic factors were analyzed further.

The author AFR inductively coded a selection of cases, adding and revising codes. AFR and another researcher, Ariane Fung (AF), then independently coded 50 cases. Discrepancies were solved by discussion, and the coding framework was adjusted as necessary. The final coding framework was used by AFR and AF to independently code the data using Microsoft Excel. Due to unavailability of a research assistant, the first 51% of the cases were coded independently by both AFR and AF, and the remaining cases were coded by AFR alone. Cases from Quebec were read in English using Google Translate.

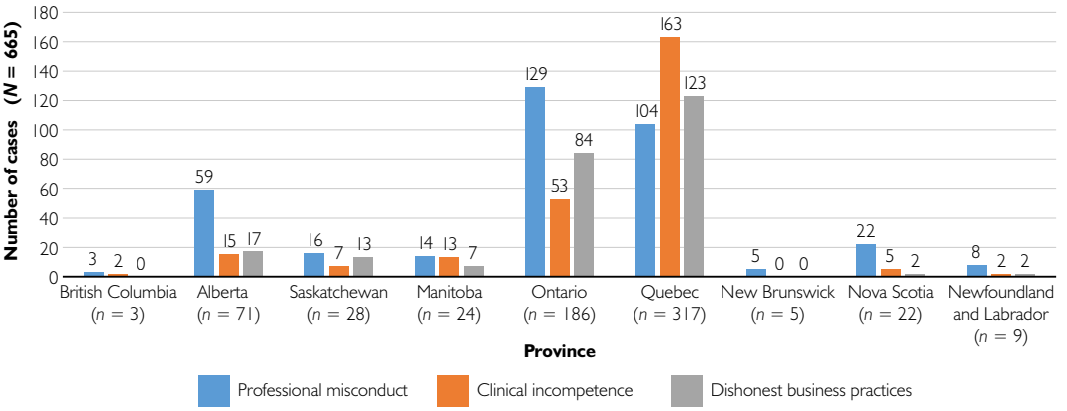
The rate of disciplinary action was calculated using pharmacist workforce data from the Canadian Institute for Health Information (CIHI 2011, 2021). Since pharmacist workforce data for Quebec in 2010 were not available, the overall rate was calculated from 2011 to 2020. Pearson's correlation coefficient was calculated in Microsoft Excel to determine any association between the rate of disciplinary action over time and the rate of disciplinary action and certain penalties. We hypothesized that provinces with lower rates of disciplinary action would reserve only the most serious cases for disciplinary action and would, therefore, be more likely to use severe penalties such as licence revocation and licence suspension. Similarly, we hypothesized that provinces with higher rates of disciplinary action hear less

serious cases at the disciplinary level and would be more likely to use less severe penalties such as fines or professional development.

Results

A total of 665 pharmacist cases from nine provinces were included in this study. Cases from Prince Edward Island were not available, and a research agreement or freedom of information request was needed to access cases from British Columbia and New Brunswick. The distribution of cases and occurrence of each category of disciplinary action by province is illustrated in Figure 1.

FIGURE 1. Disciplinary action cases against pharmacists according to province



Reasons for disciplinary action

Overall, the most common category of disciplinary action was professional misconduct (54%), followed by clinical incompetence (39%) and dishonest business practices (37%) (as many cases involved multiple violations that often fell into more than one category of disciplinary action, the percentages exceed a sum of 100%). Quebec differed from the other provinces, in that clinical incompetence was the most common category. Quebec also had many more cases than the other provinces, comprising 48% of the sample. When the other nine provinces were analyzed separately from Quebec, professional misconduct remained as the most common category (72%), followed by dishonest business practices (36%) and clinical incompetence that was the least common (28%). The most common categories and reasons for disciplinary action are listed in Table 1, available online at www.longwoods.com/content/27034.

Isolated incidents

Overall, 129 cases involved isolated, one-time incidents that resulted in disciplinary action. Of these, 109 were clinical incidents, 100 of which were from Quebec. Of the 109 cases, the most common reasons for disciplinary action were dispensing the wrong dose of a medication

(40), dispensing the wrong drug (34) and inappropriate dispensing of non-controlled drugs (17). Fines and/or costs of the investigation were the most common penalties and were used in 98 cases. The next most common penalties were reprimands (17) and professional development (14).

Rate of disciplinary action

The rate of disciplinary action was low: 1.37 cases/1,000 practitioners/year. Disciplinary rate varied by province, with Quebec having the highest rate and British Columbia having the lowest rate – a 57-fold variation. Ontario and Alberta had the highest correlation between year and rate of disciplinary action, demonstrating a moderate correlation between rate of disciplinary action and time. Manitoba, New Brunswick, Nova Scotia and Newfoundland and Labrador showed no or very weak correlation. Rate of disciplinary action and correlation coefficients are outlined in Table 2.

TABLE 2. Rate of disciplinary action and Pearson's correlation coefficient values

Province	Pharmacists (cases/1,000 practitioners/year)	*r* value
British Columbia	0.06	-0.33
Alberta	1.25	0.60
Saskatchewan	1.67	0.40
Manitoba	1.47	-0.07
Ontario	1.16	0.66
Quebec	3.42	-0.41
New Brunswick	0.53	-0.0047
Nova Scotia	1.52	0.26
Newfoundland and Labrador	1.28	0.014
Overall	**1.37**	**0.021**

$r < 0.3$: no correlation/very weak; $0.3 < r < 0.5$: weak correlation; $0.5 < r < 0.7$: moderate correlation; $r > 0.7$: strong correlation.

Source of complaint

Information on the source that/who lodged the complaint with the regulatory body and triggered the investigation was not reported in 40% (265/665) of the cases. After "unknown," the most common sources were the regulatory body (108 cases, 16%), healthcare providers (92 cases, 14%) and the patient or the patient's family/agent (72 cases, 11%). Other sources included the police, government sources (e.g., publicly funded insurance) and self-reporting. Cases in which the regulatory body identified the violation often involved cases of previous disciplinary action where the practitioner was being monitored or violations that were detected on pharmacy practice site visits.

Sexual misconduct cases

Sexual misconduct was not a common reason for disciplinary action. Sexual abuse was the

reason for disciplinary action in 19 cases (2.9%), and sexual harassment was the reason in 10 cases (1.5%). Cases originated from British Columbia, Alberta, Ontario and Quebec. Pearson's correlation coefficient (r) for sexual misconduct cases was 0.50, indicating a moderate correlation between sexual misconduct cases over time. However, only Ontario had a moderate correlation (r = 0.57), with the other provinces having no/very weak correlation, suggesting that the Ontario cases were responsible for the trend in increased sexual misconduct cases.

We were unable to assess whether harsher penalties were administered as a result of the new legislation since most sexual misconduct cases involved violations that were committed before the legislation change. Only one case from Ontario fell under the updated legislation; this case ended in licence revocation.

Penalties

Across provinces, the types of penalties used were similar, but provinces varied in the frequency with which types of penalties were used (Table 3, available online at www.longwoods.com/content/27034). Most cases used multiple types of penalties. Penalties included fines and/or payment of costs of the investigation, apology, publication, reprimand, conditions placed on a licence to practice, professional development, attending counselling/ongoing fitness to practice assessments, suspension (temporary loss of a licence) and licence revocation (permanent loss of a licence).

Rate and licence revocation had a moderate negative correlation (r = -0.56), where provinces with lower rates were more likely to use licence revocation as a penalty. There was a strong, negative relationship (r = -0.78) between professional development and rate of disciplinary action, where provinces with lower rates of disciplinary action were more likely to use professional development as a penalty. We excluded British Columbia from the professional development and conditions on licence calculations, since British Columbia had three cases in total, all of which involved licence revocation, so it is understandable that other penalties would be less likely to be used. There was also a strong, negative relationship (r = -0.90) between rate of disciplinary action and conditions placed on a licence to practice, where provinces with lower rates of disciplinary action were more likely to place conditions on the pharmacist's licence to practice. No significant correlation was found between rate of disciplinary action and fines (r = 0.39), rate of disciplinary action and costs of the investigation (r = -0.36) or rate of disciplinary action and suspension (r = -0.36).

Characteristics of those disciplined

GENDER

Information on gender was available for 659 of the 665 cases. Male pharmacists were disciplined in 467 of the 659 cases (71%), while females were disciplined in 192 of the 659 (29%) cases. Male pharmacists are overrepresented in disciplinary action cases as they make up only 40% of the Canadian pharmacist workforce (CIHI 2021).

PRACTICE SETTING

Community pharmacists were involved in 652 of the 665 (98%) cases. Three cases involved hospital pharmacists, one case involved a pharmacist practising in both hospital and community and nine cases involved other/unknown practice settings.

YEARS IN PRACTICE

To estimate the number of years that a pharmacist has been practising, we used two metrics. First, we used "number of years licensed," which captures the number of years that the professional has been licensed with that particular regulatory body but does not capture past registrations in other jurisdictions. Information on number of years licensed was available for 504 of 665 (76%) pharmacist cases, with a median of 18 years (range: 1–58).

The second metric used was "number of years since graduation," which assumes that professionals practised continuously since graduation from their entry-to-practice pharmacy education. This information was available for 215 of 665 (32%) cases, with a median of 26 years.

PREVIOUS DISCIPLINARY ACTION

Previous disciplinary action for pharmacists was a factor in 66 (10%) cases. This does not include cases in which pharmacists had a previous finding at a lower level committee. Of these 66 cases, 59 received a suspension or licence revocation or resigned their licence. Licence revocations were overrepresented, compared with the overall sample, where 17 out of 41 (41%) cases involving previous disciplinary action resulted in revocation. An additional three cases involved resignation of the pharmacist's licence to practice, where the pharmacist agreed to not seek licensure again.

The most common violations among those with previous disciplinary action were breaching a condition on one's licence to practice (24/66, 36%), failing to follow college requirements for practice site (15/26, 23%), failing to co-operate with college investigation (13/66, 20%) and fraudulent billing (11/36, 17%).

Discussion

This review of pharmacist disciplinary action found that professional misconduct was the most common category for disciplinary action across nine Canadian provinces and that the rate of disciplinary action was low and consistent over the study period. This review is the first, to our knowledge, in Canada to describe the demographic factors associated with disciplinary action for pharmacists, and it updates a previous review of pharmacist disciplinary action (Foong et al. 2018).

Reviews of pharmacist disciplinary action have found that fraudulent billing practices (Foong et al. 2018) and medication-related offences (Walton et al. 2019) were the most common reasons for disciplinary action, while studies of physicians have shown that sexual misconduct was the most common reason (Alam et al. 2011). However, many differences

between professions such as practice setting, scope of practice and regulatory practices/regulatory legislation could influence disciplinary outcomes.

Regarding demographics, our study agrees with other research in pharmacy and other health professions, which report that men are overrepresented in disciplinary action cases compared with the general workforce (Foong-Reichert et al. 2021; Spittal et al. 2016; Tullett et al. 2003; Unwin et al. 2015). Our research also agrees with the research by Tullett et al. (2003) concerning UK pharmacists, where most cases involved community pharmacists and multiple reasons for disciplinary action. While our finding that more years since graduation was associated with disciplinary action agrees with the research from other professions (Foong-Reichert et al. 2021), Walton et al. (2019) found that age was not associated with the increased risk of disciplinary action in pharmacists.

Rate of disciplinary action

Since a disciplinary action is typically reserved for only the most serious cases, it was not surprising that the rate of disciplinary action overall was low, which agrees with research from other professions. Our research adds to the literature by demonstrating that the rate of disciplinary action overall has remained steady. Some provinces did see an increase in disciplinary action cases, which have also been reported on regulators' annual reports (Alberta College of Pharmacy 2022; Ontario College of Pharmacists 2018, 2021). However, as not all provinces had an increase in disciplinary action, it is possible that more complaints are being lodged with regulators, but that these are being resolved before the case progresses to the higher level disciplinary committee. Reasons behind why more complaints are being lodged are unknown.

We noted a marked variation in disciplinary action rates across provinces that is not due to workforce changes. Variation in disciplinary action rates across jurisdictions has been previously described in dentistry and medicine (Damiano et al. 1993; Harris and Byhoff 2017; Munk 2016), with researchers speculating the possible reasons for these variations. These include different thresholds for deciding what types of cases should be resolved at a lower level committee versus what types of cases should be escalated to a higher level committee (Harris and Byhoff 2017). Different college agendas also influence the types of disciplinary cases that are heard, such as in our previous work (Foong et al. 2018) where Quebec disciplined many pharmacists for accepting kickbacks from pharmaceutical companies, or where many New Brunswick pharmacists were disciplined for practising outside their scope of practice by administering injections (Foong et al. 2018). Different compositions of members on the panels and committees that decide how a case should be processed might also influence outcomes, especially as more public members are being included in the decision-making process.

Rate of disciplinary action and penalties

We found that only professional development and conditions on licence had a strong correlation with the rate of disciplinary action, where provinces with lower rates of disciplinary

action were more likely to use these penalties. The reasons behind this finding are unknown. Professional development involves not only clinical skill development but also attending ethics courses or business courses or retaking a jurisprudence exam. While Quebec had many clinical cases, only 1% of the cases used professional development as a penalty. In many cases, regulatory legislation dictates the possible penalties that can be used so it is possible that intra-provincial factors, such as legislation or case precedent, affect which penalties are used.

Other trends

It is too early to determine whether there has been an increase in sexual misconduct cases or harsher penalties after the passage of new legislation. This could be due to a few reasons. First, it can take months or years before a decision and penalty are determined, meaning that the impact of the legislation change is yet to be seen. Second, the legislation that is applied to a case is the legislation that was in place at the time of the offence, and most of the cases heard after the legislative change were for offences committed before the change. Third, sexual misconduct cases in pharmacists are low overall, especially when compared with other professions, such as medicine (Alam et al. 2011), so it is possible that the sample size is too small to draw conclusions.

Transparency

Although we were able to include nine out of 10 provinces in this study, transparency in disciplinary action against pharmacists in Canada continues to be a more significant problem than for other health professions. At the time of this study, disciplinary cases from the 10 provincial physician regulatory bodies in Canada were publicly available online. Regarding online registers of professionals, all provinces have an online database where a health professional may be searched. However, each province includes varying levels of information on these registers, ranging from the simplest that might include whether the professional's licence is active or suspended and their place of practice to others that might include educational institution attended, previous disciplinary action or extra services that the pharmacist can provide, such as injection administration. It remains to be seen whether the lack of transparency in access to disciplinary cases and in online registers of pharmacists is due to a lack of legislation encouraging transparent publishing practices or due to a lack of compliance with the existing legislation. If it is the former, then changes in provincial legislation governing health professionals could mandate increased transparency and more detailed online registers.

Limitations

A few limitations impacted this study. First, the drawing of associations between demographic factors and disciplinary action was limited due to inconsistent reporting of demographic information on online college registers or in case documents. Second, this study included regulatory body disciplinary action cases but was unable to capture the differences in complaints and

disciplinary processes among colleges in Canada as most complaints' data are not publicly available. Since each college could have a different process for deciding how to move complaints through these two levels, it is possible that two colleges might process similar cases differently, resulting in more disciplinary cases in one province compared with another. As mentioned in the Methods section, this study included only higher level disciplinary cases from British Columbia, while our previous pharmacist review included cases from the lower level committee as well; this accounts for some differences in results compared with those from the previous review (Foong et al. 2018).

Conclusion

While this study identified that the rate of disciplinary action is low across Canada and confirmed the most common reasons for disciplinary action for Canadian pharmacists, the influence of legislation and regulation policy on the regulatory body complaints and disciplinary action processes is unknown. Areas for future research are numerous. More research on the types of penalties assigned in a disciplinary case, as well as whether these penalties are effective, is needed. Future research could investigate the factors driving the variation in disciplinary processes and outcomes and the influence of policy and legislation on disciplinary outcomes. In addition, access to data from lower level complaint committees would expand our knowledge of how the lower level processes and higher level disciplinary processes work together. Characterizing and understanding current disciplinary practices is necessary in order to evaluate and improve regulatory practices and protection of the public.

Funding

Ai-Leng Foong-Reichert was funded by the Ontario Graduate Scholarships and the Canadian Institutes for Health Research.

Acknowledgment

The authors gratefully acknowledge Ariane Fung for her work in coding disciplinary cases.

Correspondence may be directed to: Sherilyn K.D. Houle. Sherilyn can be reached by e-mail at sherilyn.houle@uwaterloo.ca.

References

Alam, A., J. Klemensberg, J. Griesman and C.M. Bell. 2011. The Characteristics of Physicians Disciplined by Professional Colleges in Canada. *Open Medicine* 5(4): e166–72.

Alberta College of Pharmacy. 2022. *Complaints Resolution*. Retrieved February 1, 2023. <https://www.acpannualreport2021.com/complaints-resolution>.

An Act to Protect Patients, SA 2018, c 15. Alberta. Retrieved February 1, 2023. <https://www.canlii.org/en/ab/laws/stat/sa-2018-c-15/latest/sa-2018-c-15.html>.

Canadian Institute for Health Information (CIHI). 2011, October. *Pharmacists in Canada, 2010: National and Jurisdictional Highlights and Profiles*. Retrieved February 1, 2023. <https://publications.gc.ca/collections/collection_2011/icis-cihi/H118-70-2011-eng.pdf>.

Canadian Institute for Health Information (CIHI). 2021. Pharmacists in Canada, 2020 – Data Tables. Retrieved February 1, 2023. <https://secure.cihi.ca/free_products/pharmacists-in-canada-2011-2020-data-tables-en.xlsx>.

College of Physicians and Surgeons of Saskatchewan. 2020. *Policy: Sexual Boundaries*. Retrieved February 1, 2023. <https://www.cps.sk.ca/imis/Documents/Legislation/Policies/POLICY%20-%20Sexual%20Boundaries.pdf>.

Damiano, P.C., D.A. Shugars and J.R. Freed. 1993. Assessing Quality in Dentistry: Dental Boards, Peer Review Vary on Disciplinary Actions. *Journal of the American Dental Association* 124(5): 113–31. doi:10.14219/jada.archive.1993.0124.

Foong, E.A.-L., K.A. Grindrod and S.K.D. Houle. 2018. Will I Lose My License for That? A Closer Look at Canadian Disciplinary Hearings and What It Means for Pharmacists' Practice to Full Scope. *Canadian Pharmacists Journal* 151(5): 332–44. doi:10.1177/1715163518790773.

Foong-Reichert, A.-L., A. Fung, C.A. Carter, K.A. Grindrod and S.K.D. Houle. 2021. Characteristics, Predictors and Reasons for Regulatory Body Disciplinary Action in Health Care: A Scoping Review. *Journal of Medical Regulation* 107(4): 17–31. doi:10.30770/2572-1852-107.4.17.

Harris, J.A. and E. Byhoff. 2017. Variations by State in Physician Disciplinary Actions by US Medical Licensure Boards. *BMJ Quality and Safety* 26(3): 200–08. doi:10.1136/bmjqs-2015-004974.

Inquiries Division. 2018, March. *Sexual Misconduct*. Collège des médecins du Québec. Retrieved February 1, 2023. <http://www.cmq.org/publications-pdf/p-3-2018-02-28-en-inconduite-sexuelle.pdf>.

Munk, L.K. 2016. Implications of State Dental Board Disciplinary Actions for Teaching Dental Students About Emotional Intelligence. *Journal of Dental Education* 80(1): 14–22. doi:10.1002/j.0022-0337.2016.80.1.tb06053.x.

National Association of Pharmacy Regulatory Authorities. n.d. Pharmacy Regulatory Authorities. Retrieved February 1, 2023. <https://napra.ca/pharmacy-regulatory-authorities>.

Ontario College of Pharmacists. 2018. *Why an Increase in Fee Revenue Is Needed*. Retrieved February 1, 2023. <https://www.ocpinfo.com/library/other/download/fee-adjustment-infographic-standalone.pdf>.

Ontario College of Pharmacists. 2021. *Supplementary Data for the 2021 Annual Report*. Retrieved February 1, 2023. <https://www.ocpinfo.com/wp-content/uploads/2022/04/Supplementary-Data-2021-Annual-Report.pdf>.

Owens, B. 2018. Tightening Sanctions for Physician Sexual Conduct. *CMAJ* 190(47): E1398–99. doi:10.1503/cmaj.109-5687.

Protecting Patients Act, 2017, S.O. 2017, c. 11 - Bill 87. Government of Ontario. Retrieved February 1, 2023. <https://www.ontario.ca/laws/statute/s17011>.

Spittal, M.J., D.M. Studdert, R. Paterson and M.M. Bismark. 2016. Outcomes of Notifications to Health Practitioner Boards: A Retrospective Cohort Study. *BMC Medicine* 14(1): 198. doi:10.1186/s12916-016-0748-6.

Steering Committee on Modernization of Health Professional Regulation. 2020, August. *Recommendations to Modernize the Provincial Health Profession Regulatory Framework*. Government of British Columbia. Retrieved February 1, 2023. <https://www2.gov.bc.ca/assets/gov/health/practitioner-pro/professional-regulation/recommendations-to-modernize-regulatory-framework.pdf>.

Tullett, J., P. Rutter and D. Brown. 2003. A Longitudinal Study of United Kingdom Pharmacists' Misdemeanours – Trials, Tribulations and Trends. *Pharmacy World and Science* 25(2): 43–51. doi:10.1023/a:1023288712923.

Unwin, E., K. Woolf, C. Wadlow, H.W.W. Potts and J. Dacre. 2015. Sex Differences in Medico-Legal Action against Doctors: A Systematic Review and Meta-Analysis. *BMC Medicine* 13: 172. doi:10.1186/s12916-015-0413-5.

Walton, M., P.J. Kelly, E.M. Chiarella, T. Carney, B. Bennett, M. Nagy et al. 2019. Profile of the Most Common Complaints for Five Health Professions in Australia. *Australian Health Review* 44(1): 15–23. doi:10.1071/AH18074.

RESEARCH PAPER

Dentist Disciplinary Action: What Do Dentists Get in Trouble for?

Mesures disciplinaires imposées aux dentistes : pour quelles raisons les dentistes ont-ils des ennuis?

AI-LENG FOONG-REICHERT, BSc, PharmD
PhD Candidate
School of Pharmacy
University of Waterloo
Kitchener, ON

SHERILYN K.D. HOULE, BSP, PhD
Assistant Professor
School of Pharmacy
University of Waterloo
Kitchener, ON

ZUBIN AUSTIN, BScPhm, MBA, MISc, PhD, FCAHS
Professor
Leslie Dan Faculty of Pharmacy
University of Toronto
Toronto, ON

DAVID J. EDWARDS, BScPhm, PharmD, MPH
Professor
School of Pharmacy
University of Waterloo
Kitchener, ON

KELLY A. GRINDROD, BScPharm, PharmD, MSc
Associate Professor
School of Pharmacy
University of Waterloo
Kitchener, ON
Professor in Pharmacy Innovation
Ontario College of Pharmacists
Toronto, ON

Abstract

Objective: This study aims to determine the reasons for disciplinary action, the consequences and any associations with demographic factors for Canadian dentists.

Methods: Publicly available regulatory body disciplinary action cases from 10 Canadian provinces were coded. Demographic factors were also coded.

Results: There were 344 dentist cases from five provinces between January 2010 and December 2020. The rate of disciplinary action was low (1.38 cases/1,000 practitioners/year). Clinical incompetence was the most common category of disciplinary action, followed by professional misconduct and dishonest business practices. Male dentists were overrepresented in the disciplinary action cases compared to the rest of the workforce.

Conclusion: This study is the first, to our knowledge, to describe the outcomes of regulatory body disciplinary action for Canadian dentists.

Résumé

Objectif : Cette étude vise à déterminer les raisons pour lesquelles sont prises des mesures disciplinaires envers les dentistes canadiens et les conséquences qui en résultent ainsi que toute association avec des facteurs démographiques.

Méthodes : Les cas, publiquement accessibles, de sanctions disciplinaires d'organismes de réglementation de 10 provinces canadiennes ont été codés. Les facteurs démographiques ont également été codés.

Résultats : Il y a eu 344 cas de sanctions disciplinaires envers des dentistes provenant de cinq provinces entre janvier 2010 et décembre 2020. Le taux de mesures disciplinaires est faible (1,38 cas/1 000 dentistes/an). L'incompétence clinique constitue la catégorie la plus courante liée aux mesures disciplinaires, suivie des fautes professionnelles et des pratiques commerciales malhonnêtes. Les hommes dentistes sont surreprésentés dans les cas de mesures disciplinaires par rapport au reste de la main-d'oeuvre.

Conclusion : Cette étude est la première, à notre connaissance, à décrire les résultats des mesures disciplinaires prises par les organismes de réglementation à l'encontre des dentistes canadiens.

Introduction

In Canada, health professional regulatory bodies handle disciplinary action processes when practitioners are clinically incompetent or act unprofessionally. In recent years, the Canadian media has put pressure on physicians and physician regulators to increase transparency at work. In 2016, the Canadian Broadcasting Corporation (CBC) published a series on physician disciplinary action, highlighting the lack of transparency in disciplinary action reporting, which often leads to physicians being given a "second chance" to practise after committing serious patient violations (Kubinec 2016). In 2018, the *Toronto Star* criticized regulators for allowing physicians who were disciplined in the US for serious clinical incompetence or sexual abuse to practise in Canada without a public record of past disciplinary

concerns (Zlomislic et al. 2018). Characterizing the current disciplinary action processes is an important step toward transparency, but it also offers the opportunity to guide improvements to policy and disciplinary processes.

Research focusing on dentist disciplinary action is scant. A scoping review of health professional disciplinary action identified only seven papers that focused specifically on dentist disciplinary action; none of which was from Canada (Foong-Reichert et al. 2021a). Some of these publications focused on a single type of complaint (e.g., complaints about local anaesthetic use [Scofield et al. 2005], social media use [Neville 2017] or inappropriate delegation of controlled acts to dental assistants [Feine 1991]) but did not capture overall reasons for disciplinary action. Other papers were published over two decades ago and did not reflect recent changes to disciplinary processes (Damiano et al. 1993; Feine 1991).

Research from Australia has found that compared with other professions, dentists are at the highest risk of a complaint (Spittal et al. 2016; Thomas et al. 2018), with another study finding that both dentists and physicians had the highest rates of complaints (Walton et al. 2020). Australian researchers agreed that the most common reasons for complaints against dentists are issues related to clinical incompetence, such as clinical performance and treatment (Thomas et al. 2018; Walton et al. 2020), but a US review of 21 state dental boards found that most cases involved emotional intelligence concerns, defined as violations of moral turpitude, followed by clinical incompetence concerns (Munk 2016). In Canada, reviews of pharmacist and physician disciplinary activity have been conducted (Alam et al. 2011; Foong et al. 2018), but a similar review has not been conducted for dentists. In order to broaden our understanding of the disciplinary practices of health professional regulators in Canada, this study analyzed disciplinary action cases in order to determine the reasons for disciplinary action, the resultant consequences and any differences based on demographic factors for dentists in Canada.

Methods

Inclusion and exclusion criteria

In Canada, health professions are regulated at the provincial level (Government of Canada 2019). In this study, regulatory body disciplinary action cases for dentists from 10 Canadian provinces were included. The three Canadian territories were excluded as they do not have profession-specific regulatory bodies but are often regulated by a branch of the government such as the Department of Health (National Association of Pharmacy Regulatory Authorities n.d.).

Publicly available disciplinary action cases were obtained from regulatory body websites or online from the Canadian Legal Information Institute. Ethics approval was not required as the cases were publicly available. Cases were included if they described both a violation and a penalty and if they were heard from January 2010 to December 2020. Cases were excluded if they involved students, if the initial hearing was before 2010 but subsequent

hearings or penalty decisions were after 2010 or if the hearing involved an appeal, a request for reinstatement or a motion to remove conditions on a licence. In cases where the healthcare professional was regulated and disciplined for the same violation in more than one province, the case was counted only in the province that conducted the full investigation. Instances where a disciplinary hearing involved the same violations and penalties for more than one healthcare professional were counted as separate cases in order to capture the total number of professionals who were disciplined.

Case coding

Codes from our previous research on pharmacist disciplinary action (Foong et al. 2018) were revised to ensure applicability to dentists. Using this preliminary set of codes, AFR coded a selection of cases in an inductive approach, adding and refining codes as needed. AFR and research assistant Ariane Fung independently coded 50 cases to further refine codes. The finalized codes were used by AFR and research assistant Karolina Suszek to independently code the data in a deductive approach using Microsoft Excel. Differences in coding were resolved through discussion.

For each case, violations, demographic factors of the professionals and penalties were recorded. Violations were coded according to three categories, adapted from the categories used in our previous review of pharmacist disciplinary action (Foong et al. 2018): (1) professional misconduct, (2) clinical incompetence and (3) dishonest business practices. Professional misconduct was defined as a violation of the professional standards of practice or legislations governing practice, excluding clinical incompetence, such as improper use of health information, sexual abuse, failure to obtain informed consent or intentionally stealing narcotics/drug trafficking. Clinical incompetence involved any violations involving clinical skills and incompetent practice. Dishonest business practices involved violations with financial gain as a motive, such as fraudulent billing.

Demographic factors (age, gender, practice setting, practice specialty, number of years in practice, country of education and previous disciplinary action) were also extracted from the case and/or from each regulatory body's online register of professionals. Analysis of some demographic factors was limited due to the lack of publicly available information. For this reason, age, practice setting and country of entry-to-practice education were not examined further.

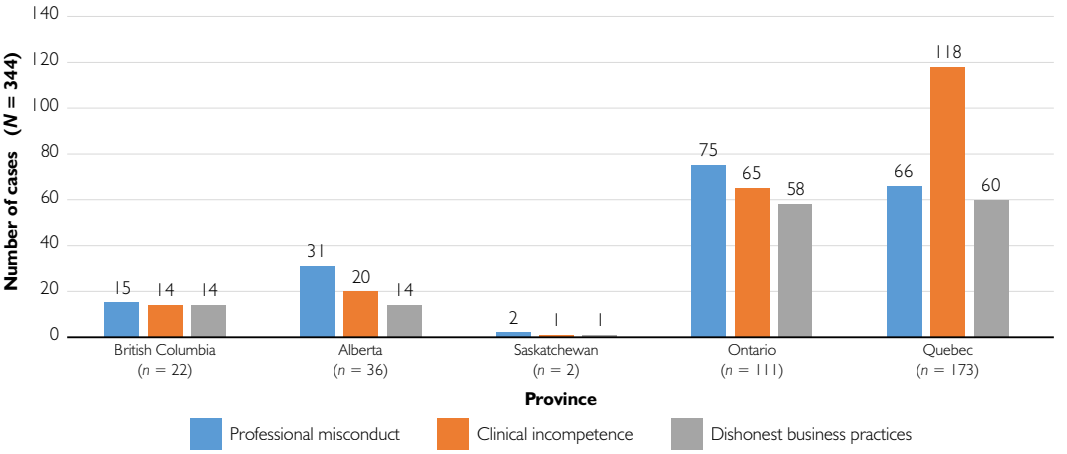
The rate of disciplinary action was calculated using the average total number of practising clinicians from 2010 to 2020 from the Canadian Institute for Health Information (CIHI 2021, 2022). The number of practising clinicians was calculated using the provinces that were included in the sample.

Results

Overall, 344 dentist cases from five Canadian provinces were included in this study: British Columbia, Alberta, Saskatchewan, Ontario and Quebec. Distribution by province is

illustrated in Figure 1. Despite multiple e-mails to each regulatory body, we were unable to obtain disciplinary cases from the remaining five dental regulators. In addition, information available on regulatory bodies' online registers of professionals was not consistent, which limited the information that could be collected on demographic factors.

FIGURE 1. Disciplinary action cases against dentists according to province



Rate of disciplinary action

Overall, the rate of disciplinary action for dentists was low: 1.38 cases/1,000 practitioners/year. This rate varied by province, with an eightfold variation between Saskatchewan with the lowest rate and Quebec with the highest rate. The rate of disciplinary action for each province is listed in Table 1.

TABLE 1. Rate of disciplinary action against dentists by province, reported as number of cases per 1,000 practitioners per year

Province	Rate
British Columbia	0.55
Alberta	1.22
Saskatchewan	0.35
Manitoba	–
Ontario	0.96
Quebec	2.94
New Brunswick	–
Nova Scotia	–
Newfoundland and Labrador	–
Prince Edward Island	–
Overall	**1.38**

Source of complaint

Information on the source of the complaint was not included in the disciplinary case report in 51% of the cases (174/344). For cases where a source was indicated, the most common sources were the patient or the patient's family/agent (109/344 cases, 32%), the regulatory body (32/344 cases, 9%) and third-party insurance companies (11/344 cases, 3%).

Reasons for disciplinary action

Reasons for disciplinary action were divided into three categories: professional misconduct, clinical incompetence and dishonest business practices. Many cases involved multiple violations and two or more categories of disciplinary action, meaning that the overall percentages sum up to more than 100%. As seen in Table 2 (available online at www.longwoods.com/content/27033), clinical incompetence was the most common category overall (64%), followed by professional misconduct (55%) and dishonest business practices (43%). However, just over 50% (173/344) of the cases in this study were from Quebec, where 68% of the cases involved clinical incompetence. When the cases from British Columbia, Alberta, Saskatchewan and Ontario are analyzed separately from the cases from Quebec, professional misconduct becomes the most frequent category of disciplinary action, with 71% of the cases involving professional misconduct, 59% involving clinical incompetence and 51% involving dishonest business practices. Twenty-five cases involved a one-time incident that resulted in disciplinary action, and 15 of these cases involved clinical violations.

Penalties

Types of penalties were similar across provinces and included reprimand, publication of the case details, fines, payment of the costs of the investigation, conditions placed on the licence to practice, professional development, ongoing fitness to practice assessments or counselling, temporary licence suspension and permanent revocation of a licence. The frequency of use of certain penalties varied across provinces. Penalties are outlined in Table 3, available online at www.longwoods.com/content/27033.

Characteristics of those disciplined

GENDER

Information on gender was available in 99% (342/344) of the cases. Male dentists were disciplined in 79% (272/344) of the cases. Female dentists were disciplined in 20% (70/344) of the cases, and gender was unknown in two cases. In comparison, male dentists comprise 52% of the general dentist population in these five provinces combined (CIHI 2022).

PRACTICE SPECIALTY/PRACTICE SETTING

Practice specialty for dentists was known in only 194 of 344 (56%) cases. The most common specialty was general dentistry (163), followed by orthodontics/dentofacial orthopaedics (10),

oral and maxillofacial surgery (10), paediatrics (5), periodontics (2), prosthodontics (2) and endodontics (1), and one case with both prosthodontic and periodontic specialties.

YEARS IN PRACTICE

We used both "years licensed" and "years since graduation" to estimate the professional's years of experience, where "years licensed" is the number of years the professional has been licensed with that particular regulatory body but does not capture previous periods of licensure in other jurisdictions. Information on years licensed was available for 97 of 171 (57%) dentists, with a median of 24 years (range: 2–52).

Information on years since graduation was available for 100% of the cases involving Ontario dentists and 64% (14/22) of the cases involving British Columbia dentists. The mean and median years since graduation was 25 years for Ontario dentists. For British Columbia dentists, the mean years since graduation was 24 years and the median was 25.5 years.

Previous disciplinary action

Among dentists, 32 (9%) cases involved previous disciplinary action. Of the cases where a defendant had been disciplined previously, all repeat offenders were required to pay the costs of the investigation, 23 (72%) had their licence suspended for a median length of six months, 5 (16%) had their licence revoked, 5 (16%) were required to pay a fine, 21 (66%) were required to complete professional development training and 22 (69%) had their offence(s) published on the regulatory college's website or newsletter. Men were involved in 91% of the cases where there was a repeat offence, while women were involved in 9% of the cases with a repeat offence.

Most cases where there was a repeat offence involved multiple violations. The most common reasons for repeated disciplinary action were inadequate documentation (11), fraudulent billing (11), breaching a condition on the licence (8), substandard technique or conditions (9), inadequate/inappropriate treatment (8) and failing to cooperate with college investigations/communications (7).

Discussion

This review of regulatory body disciplinary action cases found that disciplinary action impacts only a small number of dentists in five Canadian provinces. Clinical incompetence was the most common category of discipline for dentists overall, but professional misconduct was the most common category for dentists from British Columbia, Alberta, Saskatchewan and Ontario. This study is the first to describe the outcomes of regulatory body disciplinary action for Canadian dentists.

In contrast to our findings, Walton et al. (2020) and Thomas et al. (2018) found that most dentist cases involved performance or clinical incompetence concerns. However, this difference in findings could be due to these researchers analyzing complaint cases, while we looked only at the higher level disciplinary cases. Previous research on Canadian physicians

found that sexual misconduct was the most common reason for disciplinary action (Alam et al. 2011). However, this was not a common reason for disciplinary action against dentists. In previous work on pharmacists, professional misconduct was the most common category overall, similar to that reported for dentists, but fraudulent billing was found to be the most common reason for disciplinary action, which was not found to be a common reason for dental disciplinary action (Foong et al. 2018).

Our research agrees with research from other professions, which report that the dentists disciplinary rate is low overall (Foong-Reichert et al. 2021a). This is an expected finding since disciplinary action is typically reserved for serious cases or repeated violations. Our research also agrees with previous work stating that there is a variation in disciplinary cases and rates across provinces (Damiano et al. 1993; Harris and Byhoff 2017; Munk 2016). However, this variation in disciplinary rates and outcomes across Canada despite the same goal of public protection begs this question: Why are there differences? Researchers hypothesize that differences in medical board composition in different jurisdictions and differences in thresholds for disciplinary action could result in different decisions being made at each step of the disciplinary process (Harris and Byhoff 2017). As regulators increasingly include public members on disciplinary panels, it is possible that different disciplinary decisions could be made in the future. Differences in time and resources might also influence which cases are pursued through the disciplinary process and which cases might be resolved at a lower level or dismissed (Damiano et al. 1993; Harris and Byhoff 2017). Researchers also suggest that differences in education could lead to differences in clinical competence (Damiano et al. 1993) or emotional intelligence (Munk 2016); such differences could produce variations in reasons for disciplinary action between states or provinces, assuming that most graduates remained in the jurisdiction in which they were educated.

Since legislation governing health professionals outlines the disciplinary process, differences in legislation between provinces or within a province could also influence disciplinary outcomes. Depending on the province, such legislation can encompass multiple regulated health professions or there can be different legislations for each profession resulting in differences between professions within a province. Legislations outlining mandatory penalties for certain offences also affect disciplinary outcomes compared with provinces without mandatory penalties – for example, Alberta, Ontario and Quebec have legislations about how cases of sexual misconduct should be handled, with minimum punishments outlined in law (*An Act to Protect Patients* 2018; Inquiries Division 2018; Owens 2018; *Protecting Patients Act* 2017). Similar to legislative differences, internal regulatory body policies could affect disciplinary action or transparency as could differences in case precedents within a province that might perpetuate certain practices. More research into the influence of legislation, policy and processes across provinces or within provinces on disciplinary outcomes is needed.

Demographic factors

GENDER

Our finding that male dentists were overrepresented in disciplinary action cases is similar to previous research on dentists (Walton et al. 2020) and research on physicians (Alam et al. 2011; Unwin et al. 2015).

PRACTICE SPECIALTY

This study is the first to report associations with dental specialty, to our knowledge, as existing research has analyzed only the risk of disciplinary action according to the licence type (e.g., dentists, dental prosthetists, dental hygienists and dental therapists; Thomas et al. 2018). Most dentists subjected to disciplinary action were general dentists, which likely reflects the proportion of general dentists in the workforce. This could be similar to research showing that most pharmacists disciplined are community pharmacists versus hospital pharmacists (Foong et al. 2018) and similar to research showing that family medicine is one of the highest risk physician specialties (Alam et al. 2011).

YEARS IN PRACTICE

Years in practice, years since graduation and age are different ways of attempting to capture a similar measure. Other studies on dentists have reported age in cases of disciplinary action (Foong-Reichert et al. 2021a; Thomas et al. 2018; Walton et al. 2020), but not years in practice, finding that older practitioners had a higher risk of facing disciplinary action than younger practitioners. This finding could be due to a higher cumulative risk over time as someone who is older has had more patient encounters than someone who is younger.

PREVIOUS DISCIPLINARY ACTION

Our findings on previous disciplinary action agree with the literature, in that those who have been subjected to disciplinary action in the past tend to be dealt harsher penalties if disciplined again. Dentists in our study who had been previously disciplined were more likely to be punished with a suspension or licence revocation than those who had not been disciplined before. Research on physicians has shown that men are more likely to be repeat offenders and that breaching a condition on a licence was a common reason for being disciplined, which is consistent with our findings. While we found that 9% of the cases involved previous disciplinary action, it is possible that this number is underestimated as not all regulatory body registers of professionals have a full disciplinary action history available online and not all disciplinary case transcripts included this information. This value of 9% is similar to that reported for other professions, although it is likely on the lower end of the range (Foong-Reichert et al. 2021a).

Transparency

Although the aim of this study was to characterize disciplinary cases, an unexpected but highly important finding was the significant difficulty we had in obtaining cases from half of the Canadian dental regulators. This is not the same as with physician regulators or pharmacist regulators, where previous Canadian reviews of disciplinary action have been conducted using publicly available data from all 10 provinces for physicians (Alam et al. 2011) and nine provinces for pharmacists (Foong et al. 2018). For regulators and policy makers, findings from this study suggest that transparency is limited. Implementation of transparent practices could better protect the public and keep regulators accountable. Of note, there has been some attention to the need for more transparency in nursing as highlighted in the public inquiry into the Ontario healthcare serial killer Elizabeth Wettlaufer (Foong-Reichert et al. 2021b). The Wettlaufer case identified a lack of transparency as a contributing factor in the failure to detect her criminality earlier. However, little has been written about the need for transparency in dentistry. The impact of transparency in hiring practices should not be underestimated, and regulatory body records of complaints and disciplinary action are key tools for employers to use. Health professional regulators, especially dental regulators, should ensure that complaints and disciplinary action information is publicly available and that a comprehensive register of health professionals is maintained online. In Canada, the more comprehensive registers include details, such as academic training, practice specialty and disciplinary history, while the simplest registers include only the professional's place of practice and status of their licence (e.g., active, non-practising or suspended). Such registers give the appearance of being transparent while not actually providing the public with useful information, such as history of past complaints or disciplinary action. The information that must be published on online registers is often dictated by provincial health professional regulations, meaning that changes may be required in legislation in order for regulators to change their practices.

Limitations

In addition to the limitations associated with the lack of transparency of some regulatory colleges, the ability of this study to determine associations with demographic factors was limited due to inconsistent and low reporting of demographic factors by regulatory bodies. Also, this study does not take into account variations in regulatory body disciplinary processes that might affect the types of cases that are disciplined. For example, some regulatory bodies have a lower level complaint committee that handles most complaints, while cases with certain criteria (e.g., repeated violations, sexual abuse) are handled by a higher level disciplinary committee. In addition, different regulatory bodies might have different thresholds for processing complaints at the lower level, meaning that one regulator might resolve a case at the lower level but another might refer it to the higher level disciplinary committee, leading to a higher number of disciplinary cases at the latter college.

Conclusion

This study is the first, to our knowledge, to describe regulatory body disciplinary action outcomes for Canadian dentists. However, gaps in the reporting of disciplinary cases and practitioner characteristics limit the conclusions that can be drawn for Canadian dentists. While this study and others have identified associations with certain demographic factors or characteristics, future studies could focus on a professional's motives or psychosocial factors that might be relevant to why a professional might misbehave and be subjected to disciplinary action. In addition, future research using data about complaints could complement our findings on disciplinary action. Such research, together with existing research, could demystify the disciplinary action process, improving the clarity of the process for both professionals and the public.

Funding

Ai-Leng Foong-Reichert was funded by the Ontario Graduate Scholarships and the Canadian Institutes for Health Research.

Acknowledgment

The authors gratefully acknowledge Ariane Fung and Karolina Suszek for their work in coding disciplinary cases.

Correspondence may be directed to: Kelly A. Grindrod. Kelly can be reached by e-mail at kelly.grindrod@uwaterloo.ca.

References

Alam, A., J. Klemensberg, J. Griesman and C.M. Bell. 2011. The Characteristics of Physicians Disciplined by Professional Colleges in Canada. *Open Medicine* 5(4): e166–72.

An Act to Protect Patients, SA 2018, c 15. Alberta. Retrieved February 1, 2023. <https://www.canlii.org/en/ab/laws/stat/sa-2018-c-15/latest/sa-2018-c-15.html>.

Canadian Institute for Health Information (CIHI). 2021. A Profile of Selected Mental Health and Substance Use Health Care Providers in Canada, 2021 [Infographic]. Retrieved January 27, 2023. <https://www.cihi.ca/en/a-profile-of-health-care-providers-in-canada-2020>.

Canadian Institute for Health Information (CIHI). 2022. Canada's Health Care Providers, 2016 to 2020 – Data Tables. Retrieved February 1, 2023. <https://www.cihi.ca/sites/default/files/document/canada-health-care-providers-2016-2020-data-tables-en.xlsx>.

Damiano, P.C., D.A. Shugars and J.R. Freed. 1993. Assessing Quality in Dentistry: Dental Boards, Peer Review Vary on Disciplinary Actions. *Journal of the American Dental Association* 124(5): 113–31. doi:10.14219/jada.archive.1993.0124.

Feine, J.S. 1991. The Enforcement of Regulations Restricting Expanded Duties by Dental Auxiliaries: An Analysis of the Recent Disciplinary Actions of the Texas State Board of Dental Examiners. *Journal of Public Health Dentistry* 51(2): 73–77. doi:10.1111/j.1752-7325.1991.tb02184.x.

Foong, E.A.-L., K.A. Grindrod and S.K.D. Houle. 2018. Will I Lose My License for That? A Closer Look at Canadian Disciplinary Hearings and What It Means for Pharmacists' Practice to Full Scope. *Canadian Pharmacists Journal* 151(5): 332–44. doi:10.1177/1715163518790773.

Foong-Reichert, A.-L., A. Fung, C.A. Carter, K.A. Grindrod and S.K.D. Houle. 2021a. Characteristics, Predictors and Reasons for Regulatory Body Disciplinary Action in Health Care: A Scoping Review. *Journal of Medical Regulation* 107(4): 17–31. doi:10.30770/2572-1852-107.4.17.

Foong-Reichert, A., K.A. Grindrod and S.K.D. Houle. 2021b. Exploring Health Professional Criminality and Competence Using the Case of Canadian Health Care Serial Killer Elizabeth Wettlaufer. *Journal of Medical Regulation* 107(3): 19–27. doi:10.30770/2572-1852-107.3.19.

Government of Canada. 2019, September 17. Canada's Health Care System. Retrieved February 1, 2023. <https://www.canada.ca/en/health-canada/services/health-care-system/reports-publications/health-care-system/canada.html>.

Harris, J.A. and E. Byhoff. 2017. Variations by State in Physician Disciplinary Actions by US Medical Licensure Boards. *BMJ Quality and Safety* 26(3): 200–08. doi:10.1136/bmjqs-2015-004974.

Inquiries Division. 2018, March. *Sexual Misconduct. Collège des médecins du Québec*. Retrieved February 1, 2023. <http://www.cmq.org/publications-pdf/p-3-2018-02-28-en-inconduite-sexuelle.pdf>.

Kubinec, V.-L. 2016, January 21. Disciplined Doctors Often Given 2nd Chance to Practise. *CBC News*. Retrieved February 1, 2023. <https://www.cbc.ca/news/canada/manitoba/doctors-discipline-patient-boundaries-1.3405780>.

Munk, L.K. 2016. Implications of State Dental Board Disciplinary Actions for Teaching Dental Students about Emotional Intelligence. *Journal of Dental Education* 80(1): 14–22. doi:10.1002/j.0022-0337.2016.80.1.tb06053.x.

National Association of Pharmacy Regulatory Authorities. n.d. Pharmacy Regulatory Authorities. Retrieved February 1, 2023. <https://napra.ca/pharmacy-regulatory-authorities>.

Neville, P. 2017. Social Media and Professionalism: A Retrospective Content Analysis of Fitness to Practise Cases Heard by the GDC Concerning Social Media Complaints. *British Dental Journal* 223(5): 353–57. doi:10.1038/sj.bdj.2017.765.

Owens, B. 2018. Tightening Sanctions for Physician Sexual Conduct. *CMAJ* 190(47): E1398–99. doi:10.1503/cmaj.109-5687.

Protecting Patients Act, 2017, S.O. 2017, c. 11 – Bill 87. Government of Ontario. Retrieved February 1, 2023. <https://www.ontario.ca/laws/statute/s17011>.

Scofield, J.C., M.E. Gutmann, J.P. DeWald and P.R. Campbell. 2005. Disciplinary Actions Associated with the Administration of Local Anesthetics Against Dentists and Dental Hygienists. *Journal of Dental Hygiene* 79(1): 8.

Spittal, M.J., D.M. Studdert, R. Paterson and M.M. Bismark. 2016. Outcomes of Notifications to Health Practitioner Boards: A Retrospective Cohort Study. *BMC Medicine* 14(1): 198. doi:10.1186/s12916-016-0748-6.

Thomas, L.A., H. Tibble, L.S. Too, M.S. Hopcraft and M.M. Bismark. 2018. Complaints about Dental Practitioners: An Analysis of 6 Years of Complaints about Dentists, Dental Prosthetists, Oral Health Therapists, Dental Therapists and Dental Hygienists in Australia. *Australian Dental Journal* 63(3): 285–93. doi:10.1111/adj.12625.

Unwin, E., K. Woolf, C. Wadlow, H.W.W. Potts and J. Dacre. 2015. Sex Differences in Medico-Legal Action against Doctors: A Systematic Review and Meta-Analysis. *BMC Medicine* 13: 172. doi:10.1186/s12916-015-0413-5..

Walton, M., P.J. Kelly, E.M. Chiarella, T. Carney, B. Bennett, M. Nagy et al. 2020. Profile of the Most Common Complaints for Five Health Professions in Australia. *Australian Health Review* 44(1): 15–23. doi:10.1071/AH18074.

Zlomislic, D., R. Mendleson, R. Cribb and M.C. Oved. 2018, May 1. Bad Doctors Who Cross the Border Can Hide Their Dirty Secrets. We Dug Them Up. Medical Disorder, Part 1. *Toronto Star*. Retrieved February 1, 2023. <https://projects.thestar.com/doctor-discipline/>.

Healthcare Quarterly

Volume 25 • Number 4 • 2023

Available at longwoods.com

FEATURING

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