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Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

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Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

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Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

Abstract

Introduction

Many Canadians struggle to access the primary care they need while at the same time primary care providers report record levels of stress and overwork. There is an urgent need to understand factors contributing to the gap between a growing per-capita supply of primary care providers and declines in the availability of primary care services. The assumption of responsibility by primary care teams for services previously delivered on an in-patient basis, along with a rise in administrative responsibilities may be factors influencing reduced access to care.

Methods

In this mixed methods study our first objective is to determine how the volume of services requiring primary care coordination has changed over time in the Canadian provinces of Nova Scotia and New Brunswick. We will collect quantitative administrative data to investigate how services have shifted in ways that may impact administrative workload in primary care. Our second objective is to use qualitative interviews with family physicians, nurse practitioners, and administrative team members providing primary care to understand how administrative workload has changed over time. We will then identify priority issues and practical response strategies using two deliberative dialogue events convened with primary care providers, clinical and system leaders, and policy makers.

Analysis

We will analyze changes in service use data between 2001/2 and 2021/22 using annual total counts, rates per capita, rates per primary care provider, and per primary care service. We will conduct reflexive thematic analysis to develop themes and to compare and contrast participant responses reflecting differences across disciplines, payment and practice models, and practice settings. Areas of concern and potential solutions raised during interviews will inform deliberative dialogue events.

Ethics and Dissemination

We received research ethics approval from Nova Scotia Health (#1028815). Knowledge translation will occur through dialogue events, academic papers, and presentations at national and international conferences.

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Strengths & Limitations

- This is the first study to collect qualitative research data from Canadian primary care physicians, nurse practitioners and administrative staff about changes in administrative workload.
- The study aims to identify priority issues and develop practical response strategies to make administrative work more efficient.
- A population level analysis will be conducted rather than an individual level analysis due to logistical data collection challenges, and time and budget constraints.
- Data brought together in this study can support future cross-provincial work involving individual-level quantitative analysis exploring the intersecting effects of aging and complexity of medical management on primary care capacity.

Introduction

There are more primary care providers per person than ever before in Canada.[1] At the same time, primary care is described as being in crisis,[2–4] as Canadians struggle to access needed care[5] and primary care providers report record levels of stress and overwork.[6] There is an urgent need to understand factors contributing to the gap between a growing per-capita supply of primary care providers and declines in the availability of primary care services.[7] Shifts in service provision that have moved care and its coordination out of acute facilities and into the community, along with increases in administrative activity that include work related to caring for individual patients as well as clinic administration have changed the workload in primary care. Neither the extent of these changes, nor their impact on provider experience and patient access have been carefully studied.[6]

Beyond patient visits, primary care providers (including family physicians (FPs) and nurse practitioners (NPs)) are responsible for indirect patient care activities such as arranging prescriptions, lab tests, imaging, specialist referrals, and medical forms, as well as maintaining a longitudinal patient record.[8] Over the past 20 years we have seen a shift in care from hospitals to communities,[9] a proliferation of guidelines and increased complexity in the management of common chronic conditions,[10–13] and accelerating population aging.[14,9,15] The intersecting effects of these trends may mean that there is greater need than ever for care coordination or indirect patient care, contributing to expanding administrative workload in primary care. Navigating electronic medical records, complicated referral processes, and cumbersome forms, may be increasing the time needed to complete indirect patient related tasks. Patients may be referred by primary care providers to programs or specialists as part of the overall care plan. These referrals however often result in additional administrative work and record-keeping responsibilities. Paperwork and tasks flow back to primary care from referral sources, further increasing workload. In addition to administrative responsibilities related to care coordination, primary care providers play varied roles in clinic administration, depending on service delivery model.

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Administrative workload has been described as a source of burnout and reduced access to care for patients, and may push family physicians to choose options other than comprehensive community-based practice.[16] This has been casually called "death by a thousand papercuts" or more recently "death by a thousand clicks."[17] Under this view, time spent on a variety of administrative tasks is secondary to the 'real' work of primary care. Indeed administration has been broadly characterized as taking away from other patient care activities, thereby making health systems less efficient and also less equitable, as people who most need coordinated care may struggle to access it.[7,18] At the same time, administrative work is central to delivering coordinated and integrated care to patients and to clinic operations.

Outcomes of a survey conducted by Doctors Nova Scotia published in December 2021 revealed that administrative burdens were included among the top three challenges facing primary care physicians in that province.[19] The magnitude of this problem led to the involvement of the Office of Regulatory Affairs and Service Effectiveness (ORASE) of the Nova Scotia government to investigate and implement concrete action plans to address unnecessary administrative burdens on physicians.[20] With the support of Doctors Nova Scotia, a survey administered by ORASE found that 38% of physicians' time was spent on unnecessary administrative tasks, and that 24% of that work could have been done by someone in a different role/profession.[20] The survey also found that physicians believed that 14% of that work could be entirely eliminated.[20] The report on the survey noted that the main contributors to unnecessary administrative tasks were: the completion of medical forms, doctor's notes, business operations, billing, including shadow billing, licensing, privileging, and tasks associated with requirements of government and oversight entities. Importantly, physicians indicated that administrative burdens significantly contributed to burnout, and that reductions of time spent on these tasks would allow time for improved work/life balance and improved patient care.[20] While administrative burden is a problem for all acute, specialist, and primary care physicians in Nova Scotia, given the unique role primary care physicians play in coordinating care, we need detailed information about, and solutions for, this setting.

The impact of administrative burdens in primary care are complex. It is not simply a problem of too much paperwork. Family physicians and nurse practitioners are also increasingly responding to issues related to patients' social determinants of health without adequate support and resources, often resulting in frustration, stress, and emotional burden.[20] Wait times for specialist referrals translate to lengthier periods of patient management, additional paperwork, follow-up on referrals, and carrying the emotional burden of patients' unmet needs. Added to these pressures are expectations to take on more 'unattached' patients, while not having the time or capacity to do so because of the complexity of care required by existing patients coupled with heavy administrative burdens. While the emotional toll of administrative burden on primary care providers is not the focus of this study, it is important to recognize that there are many concerning ripple effects that accompany this problem.

A 2023 study[21] built on the findings of the ORASE's Physician Administrative Burden Survey conducted in Nova Scotia. Study outcomes demonstrated that a 10% reduction of unnecessary paperwork for primary care physicians in New Brunswick would equal an additional 119,726

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patient visits annually.[22] While increased recognition of this problem and attempts to address it are welcome, it comes with an implicit expectation that primary care providers will have the capacity to see new patients and/or increase the number of visits for existing patients. This expectation may add to primary care provider stress and emotional burden.

While there is some limited qualitative research with primary care physicians in the United States,[23] none yet exists in Canada. We also need information drawing on the experience and expertise of nurse practitioners, clinic managers, medical office assistants, and other primary care team members with administrative responsibilities. New information to understand the extent and drivers of administrative workload, as well as the strategies required to make this activity more efficient are urgently needed.

Study Objectives

This project will address three objectives and nested research questions**,** with the overarching goal of adjusting administrative workload, while ensuring efficient, accountable, and well-coordinated care:

1. Determine how the volume of services requiring primary care coordination has changed over time
   a. How has service volume shifted from inpatient services to outpatient and community-based services requiring coordination through primary care?
   b. How has the volume of outpatient services requiring primary care coordination and oversight (i.e., prescriptions, testing, imaging, and specialist consultations) changed over time?

2. Use interviews with primary care providers (family physicians and nurse practitioners) and administrative team members to understand how administrative workload has changed:
   a. What are current experiences of administrative workload, including work related to patient care and clinic administration?
   b. How has administrative workload changed over time? What factors have shaped changes?
   c. What are areas of particular concern and how might these be addressed?

3. Drawing on the findings of Objectives 1 and 2, with primary care providers and service planners, co-identify priority issues and co-develop practical response strategies to make administrative work more efficient:
   a. Which areas of concern are addressable in the short, medium and long term?
   b. What actions would be needed, who is in a position to act, and what resources would be involved?

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Methods

This two-year study (June 2023 - May 2025) will use different data sources and methodologies to address each project objective within two study provinces, Nova Scotia and New Brunswick. Findings of descriptive quantitative analysis under Objective 1 and in-depth qualitative interviews under Objective 2 will inform deliberative dialogues used to address Objective 3.

Objective 1 - Quantitative administrative data

To address Objective 1 we will seek out and combine administrative data from multiple sources to create a more complete picture of shifts in service use over time, accessing data from 2001/2 (or earliest available, depending on dataset) and 2021/2022 (or most recent available). This time frame will allow us to explore long-term trends, as well as changes since March 2020 due to the pandemic. We do not need access to individual, record-level data to meet study objectives and plan only population-level analysis. To address question 1a we will combine publicly-available data accessible through the Canadian Institutes of Health Information at the provincial level to examine trends in hospital services use as well as services delivered on an outpatient basis or in the community. To examine trends in hospitalizations, we will count the number of discharges recorded in the Discharge Abstract Database (DAD) and the number of days patients spent in hospital. To capture outpatient service use, we will use the National Physician Database (NPD) to track number of visits with primary care physicians, as well as with medical specialists and surgical specialists. We will use the DAD to count the number of day surgery procedures. Finally, we will use the National Health Expenditures Database to triangulate findings about service volume, examining shifts in spending between hospitals and other categories of healthcare over time.

To address question 1b we will track total laboratory tests and imaging services completed for outpatients, as FP/NPs have a role in reviewing and coordinating these even when ordered by other physicians. Public prescription data for seniors will be used to count the number of different drugs dispensed per year, at the level of the first 5 digits of the Anatomical Therapeutic Chemical classification (ATC) code.[24] We will exclude vaccines (J07), vitamins (A11), mineral supplements (A12), tonics (A13) and various (V) categories. As with lab tests, as FP/NPs have a role in managing all prescriptions, we will report the total. We will use MSI data to refine measures of specialist physician visit data, focusing on those seen as outpatients with FP/NPs as referrers, as reports would go back to them for patient follow-up.

Quantitative Analysis: Our approach is descriptive; it is not necessary to link datasets at the individual level. We will present service use data as annual total counts (to capture how total workload has changed), as rates per capita (to capture how patient-level care has changed), as well as rates per primary care provider, and per primary care service (to capture how changes in workload map onto primary care workforce supply and practice volume).

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Objective 2 - In-depth video interviews

Interviews: We will use interviews with primary care providers (FPs, NPs, and other team members involved in administration (clinic managers and/or medical office assistants) to understand their current administrative workload (including care coordination and other administrative activities), how this has changed over time, and what opportunities exist to manage this differently. We will conduct interviews via a secure online video platform. Interviews will last approximately one hour and will be scheduled at a time that is convenient and acceptable to study participants. This will allow us to reach a geographically varied set of participants at a lower cost than conducting in-person interviews. Video interviews have been shown to produce similar data richness when compared with in-person interviews.[25,26] Interviews will be conducted by Master's or PhD trained qualitative research staff. Interview data will be digitally recorded, professionally transcribed, quality checked for accuracy, and anonymized prior to analysis.

We will be interviewing primary care providers and administrative staff in New Brunswick as well as Nova Scotia to compare narratives between the two provinces, and to inform a planned Pan-Canadian study on this topic in the future.

Recruitment: We will purposively recruit primary care providers who are funded through a range of payment models (fee-for-service and alternate payment plans), who work in a range of clinic models (independent, health authority partnered, turn-key health authority operated), and who work in a range of geographic locations (urban and rural locations throughout each province). Specifically, we will recruit from Nova Scotia Health Primary Care Clinics, Dalhousie Family Medicine teaching sites, Doctors Nova Scotia, and Nurse Practitioners of New Brunswick. We plan sample sizes of 20 FP/NP and 20 administrative team member interviews to investigate differences by models and locations. The total sample size is forty (40). This sample size is consistent with recommendations for similar study designs.[27-29] Previous research we conducted concerning primary care practice was received with strong interest;[30] we anticipate similarly strong interest in this topic.

The project research associate will contact key individuals at recruitment organizations to explain the study and coordinate outreach. Key individuals at each site will distribute introductory emails along with a study poster. There will be a link from the poster to a brief screening survey. Potential participants selected for interviews will be contacted by the research associate. A participant information sheet will be provided at that time, and participants will have an opportunity to ask any questions they have before interviews are scheduled.

Gender is of central importance in this project. A substantial body of evidence shows that physician practice patterns are gendered, as are expectations with respect to care provision, including potentially administrative workload.[31–33] We will be attentive to gender in both interview recruitment and qualitative analysis. As an increasing proportion of family physicians are women, and 92% of nurse practitioners in Canada[34] are female we will actively recruit men

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and ensure there are no barriers to participation for people with other genders. We will ask participants about how they perceive relationships between gender and administrative workload, and our analysis will explore how responses and experiences vary by gender.

Informed Consent: Consent is implied by completion of the online survey. This is clearly articulated in the introductory text to the survey. Before interviews commence, the research associate will review study aims, participant rights, and obtain verbal consent. The consent process will be audiotaped for documentation purposes.

Data Management: Quantitative and qualitative data and consent forms will be securely stored on encrypted password-protected computers.

Qualitative Analysis: We will employ Braun and Clarke's reflexive thematic analysis[35] which fits well with our critical qualitative approach[36,37] and relativist epistemology.[38] Our analysis will also be guided by social constructionism.[39] This blended approach reflects our positionality as active participants in the research process, our understanding that meaning is socially constructed, and the key role of reflexivity throughout the research process. We will use NVivo software as a tool in this work. We will begin by generating a detailed description of administrative workload (research question 2a). Analysis will occur concurrently with data collection and the interview guide will be iteratively adjusted if needed as our understanding of experiences of administrative workload develops. We will then expand analysis to explore changes over time (question 2b), and to make comparisons between FP/NP and administrative team member interviews, as well as to explore variation across payment model, practice model, and practice setting. To address research question 2c, and in preparation for Objective 3, we will group and compile areas of concern and potential solutions raised by participants.

Objective 3 - Integration of findings and knowledge exchange

We will work with partners on the team to identify relevant participants for a final two-phase dialogue event, designed to integrate and interpret both scientific and contextual data for the purpose of informing policy development,[40] in this case, strategies to address administrative workload. We will include 1) a subset of interview participants (primary care providers and administrative team members) working in varied contexts, 2) clinical leaders who can make changes within primary care service delivery environments, and 3) system administrators and policymaker leaders who can change processes that involve both primary care and other parts of the health system or sectors.

Prior to the first meeting, the study team will review quantitative findings and the initial list of areas of concern identified through qualitative interviews. These will be integrated into a background document circulated in advance of the dialogue process. Quantitative findings will inform changing administrative workload over time, and qualitative findings will provide context for areas of concern and potential solutions that will be explored during dialogue events. Dialogues will be conducted via video-conference in two stages. In the first stage, Nominal Group Technique (NGT)[41,42] will be used to guide discussion and prioritization of issues

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and solutions. Nominal Group Technique has been used since the 1960s for the identification of problems, priority ranking of issues, action items, or questions in small group in-person sessions. One of the technique's key strengths is it is designed for equal representation among participants and is non-hierarchical in nature. In this study, areas of concern generated and recorded in qualitative interviews will serve as a starting point for discussion, with participants invited to add topics not yet mentioned. In a ranking exercise, participants will be invited to consider which tasks are time consuming and/or offer lower value to patients and the system. Then participants will be asked to discuss and explain the reasons for their ranking.

The second stage will focus on feasibility and actions needed to address high-priority areas of concern identified in the first event. Prior to the second stage, we will identify any additional participants with knowledge specific to areas of concern. Participants will be asked to consider which could be addressable in the short term (<3 months), medium term (3-12 months), and long term (one year or more). In breakout groups focusing on individual areas of concern, participants will be asked to consider what action would be needed and who would need to be involved. Each breakout group will be led by a facilitator briefed and prepared by the research team. After the breakout group discussions, there will be a debriefing with the full group of participants. The dialogue process will provide concrete and actionable strategies tailored to the primary care setting, that complement other ongoing work within Nova Scotia and New Brunswick health systems.

Impact on equity in recruitment and retention of healthcare professionals

Administrative workload directly impacts recruitment and retention of healthcare professionals, at times influencing family physicians to choose options other than community-based primary care as a strategy to circumvent burnout.[16] Expectations for coordination may vary by how primary care providers are gendered and racialized[43] ; women form a growing proportion of the primary care workforce.[44]Addressing coordination workload can therefore play a role in supporting equity in recruitment and retention of health care professionals. Understanding and supporting coordination of care is central to people-centred, flexible, quality healthcare. Identifying practical strategies to make coordination more efficient can support innovative healthcare models, and more seamless integration of virtual care into patients' journeys.

Patient and Public Involvement

Patients or members of the public were not involved in the design of this study and will not be involved during implementation. While our research questions respond to topics of patient and public interest, research approaches focus on routinely collected health system data and research participants are primary care providers and administrative staff. We therefore focus on including a range of policy and provider expertise and experience within the research team. Inclusion of patients in the deliberative dialogue events is not currently planned.

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Study Limitations

Available quantitative data sources capture variables labeled "sex," but there is no measure of gender, and administrative or legal sex may not correspond to sex assigned at birth. This is a limitation of secondary analysis of these data. Where possible, we will distinguish between patterns plausibly shaped by sex or gender in interpretation.

Care coordination activities are not recorded in administrative billing data. It is not possible to directly capture time spent on care coordination or other administrative work. Instead, we focus broadly on shifts in care delivery between hospital and community, as well as changes in services that require coordination, review, and/or administration on the part of primary care providers. It is beyond the scope and budget of this project to obtain access to linked, record-level data or to collect detailed time use data. Study objectives can be addressed through aggregate data that can be shared with no risk of identification. This project will form the groundwork for a future grant proposal that will use record-level data from the same sources to analyze changes over time by population age and generate projections of future primary care capacity.

Ethics

Research ethics approval for this protocol was received from Nova Scotia Health (REB # 1028815) for research activities in both Nova Scotia and New Brunswick. This study conforms to the Declaration of Helsinki (June 1962; amended October 2013) and the Belmont Report (1979).

Dissemination

We are taking an integrated knowledge translation approach[45] and have assembled a team that includes varied perspectives. Primary care provider co-investigators and policy partners affirm the urgent need to address administrative workload. We will present findings and seek feedback from the groups represented by partners and team members following completion of Objectives 1 and 2. Deliberative dialogues under Objective 3 are themselves a method for knowledge translation, designed to integrate and interpret data to inform strategies addressing administrative workload. This project will also yield traditional academic outputs crossing multiple disciplines and results will be disseminated to a range of audiences.

Results will inform healthcare delivery excellence that addresses opportunities for team-based care and the ability of healthcare providers to work to their full scope of practice**.** New or expanded roles for administrative and other primary care team members are being piloted in Nova Scotia. This pilot research will enrich the understanding of our research outcomes and also support ongoing innovation. Finally, a robust system of primary care is fundamental to addressing health inequalities in access to care. There is evidence of declining equity in access to primary care in Canada.[7] Limited primary care capacity and inadequate systems of coordination impact patients with more complex health and social needs most severely. High-performing systems of primary care can connect health care with other community resources.

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This coordination is needed to support collaborative approaches to address the social determinants of health.

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References

1. Canadian Institute for Health Information. *Supply, Distribution and Migration of Physicians in Canada, 2020- Data Tables*. CIHI; 2021.

2. Walsh M, Pearson H. *Nova Scotia Doctor Calls Family Doctor Shortage a "Crisis."* Accessed June 6, 2017. http://globalnews.ca/news/3270444/nova-scotia-doctor-calls-family-doctor-shortage-a-crisis/

3. The evolving crisis in primary care. *British Columbia Medical Journal*. Accessed August 16, 2022. https://bcmj.org/editorials/evolving-crisis-primary-care

4. Opinion: Canada has a primary-care crisis. Here are three steps we must take to solve this problem. *The Globe and Mail*. https://www.theglobeandmail.com/opinion/article-canada-has-a-primary-care-crisis-here-are-three-steps-w e-must-take-to/. Published July 16, 2022. Accessed August 16, 2022.

5. Canadian Institute for Health Information. *How Canada Compares: Results from the Commonwealth Fund's 2020 International Health Policy Survey of the General Population in 11 Countries*. CIHI; 2021.

6. Sovran V, Ytsma A, Johnson LH and T. Coordination of Care Could Improve: Canadian Results from the Commonwealth Fund International Health Policy Survey of Primary Care Physicians. *Healthcare Quarterly*. 2020;23(2). Accessed March 28, 2022. https://www.longwoods.com/content/26283/coordination-of-care-could-improve-canadian-results-from-the-commonwealth-fund-international-health

7. Lavergne MR, Bodner A, Peterson S, et al. Do changes in primary care service use over time differ by neighbourhood income? Population-based longitudinal study in British Columbia, Canada. *Int J Equity Health*. 2022;21(1):80. doi:10.1186/s12939-022-01679-4

8. College of Family Physicians of Canada. *Family Medicine Professional Profile*. College of Family Physicians of Canada; 2018.

9. Chappell N, Hollander M. An Evidence-Based Policy Prescription for An Aging Population. *Healthcare Papers*. 2011;11(1):8-18. doi:10.12927/hcpap.2011.22246

10. Adams WL, McIlvain HE, Lacy NL, et al. Primary care for elderly people: Why do doctors find it so hard? *The Gerontologist*. 2002;42(6):835-842. doi:10.1093/geront/42.6.835

11. Mangin D, Sweeney K, Heath I. Preventive health care in elderly people needs rethinking. *BMJ*. 2007;335(7614):285-287. doi:10.1136/bmj.39241.630741.BE1

12. Korownyk C, McCormack J, Kolber MR, Garrison S, Allan GM. Competing demands and opportunities in primary care. *Canadian Family Physician*. 2017;63(9):664-668.

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13. Millar E, Stanley J, Gurney J, et al. Effect of multimorbidity on health service utilisation and health care experiences. *J Prim Health Care*. 2018;10(1):44-53. doi:10.1071/HC17074

14. Barer ML, Evans RG, Hertzman C. Avalanche or glacier?: Health care and the demographic rhetoric. *Canadian Journal on Aging / La Revue canadienne du vieillissement*. 1995;14(2):193-224. doi:10.1017/S0714980800011818

15. Canadian Institute for Health Information. *Health Care in Canada, 2011: A Focus on Seniors and Aging.* Canadian Institute for Health Information; 2012. Accessed April 20, 2022. https://www.deslibris.ca/ID/230734

16. Kabir M, Randall E, Mitra G, et al. Resident and early-career family physicians' focused practice choices in Canada: a qualitative study. *Br J Gen Pract*. 2022;72(718):e334-e341. doi:10.3399/BJGP.2021.0512

17. Fortune FS Erika Fry. Death By 1,000 Clicks: Where Electronic Health Records Went Wrong. Kaiser Health News. Published March 18, 2019. Accessed June 17, 2022. https://khn.org/news/death-by-a-thousand-clicks/

18. Starfield B. The hidden inequity in health care. *International Journal for Equity in Health*. 2011;10(1):15. doi:10.1186/1475-9276-10-15

19. McKay M. The future of family medicine: Nova Scotia family physicians' visions and priorities. Final research report. Doctors Nova Scotia;2023.

20. Office of Regulatory Affairs and Service Effectiveness. *Physician Administrative Burden Survey – Final Report*. Government of Nova Scotia; 2020. Accessed August 18, 2022. https://doctorsns.com/sites/default/files/2020-11/admin-burden-survey-results.pdf

21. Alegbeh A. Patients before paperwork. Nova Scotia's approach to improving patient care by reducing physician red tape. Canadian Federation of Independent Business; 2023. Accessed March 31, 2023. https://www.cfib-fcei.ca/en/research-economic-analysis/patients-before-paperwork-nova-scotias-approach-to-improving-patient-care-by-reducing-physician-red-tape https://20336445.fs1.hubspotusercontent-na1.net/hubfs/20336445/research/reports/2023/Patients_Before_Paperwork_Report_2023.pdf

22. CBC News. Fredericton family doctor calls on province to help cut paperwork, free up time for patients. https://www.cbc.ca/news/canada/new-brunswick/family-doctors-paperwork-new-brunswick-will-stymiest-medical-society-1.6734457

23. Apaydin E. Administrative work and job role beliefs in primary care physicians: An analysis of semi-structured interviews. *SAGE Open*. 2020;10(1):2158244019899092. doi:10.1177/2158244019899092

24. WHO Collaborating Centre for Drug Statistics Methodology: International language for drug utilization research. Accessed April 10, 2023. https://www.whocc.no

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25. Archibald MM, Ambagtsheer RC, Casey MG, Lawless M. Using zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*. 2019;18:1609406919874596. doi:10.1177/1609406919874596

26. Gruber M, Eberl JM, Lind F, Boomgaarden HG. Qualitative Interviews with irregular migrants in times of COVID-19: Recourse to remote interview techniques as a possible methodological adjustment. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*. 2021;22(1). doi:10.17169/fqs-22.1.3563

27. Sandelowski M. Sample size in qualitative research. *Research in Nursing & Health*. 1995;18(2):179-183. doi:10.1002/nur.4770180211

28. Morse JM. Analytic Strategies and Sample Size. *Qualitative Health Research*. 2015;25(10):1317-1318. doi:10.1177/1049732315602867

29. Morse JM. Designing funded qualitative research. In: *Handbook of Qualitative Research*. Sage Publications, Inc; 1994:220-235.

30. Lavergne MR, Goldsmith LJ, Grudniewicz A, et al. Practice patterns among early-career primary care (ECPC) physicians and workforce planning implications: protocol for a mixed methods study. *BMJ Open*. 2019;9(9):e030477. doi:10.1136/bmjopen-2019-030477

31. Hedden L. *Beyond Full-Time Equivalents: Gender Differences in Activity and Practice Patterns for BC's Primary Care Physicians*. PhD Thesis. University of British Columbia; 2015.

32. Buddeberg-Fischer B, Stamm M, Buddeberg C, et al. The impact of gender and parenthood on physicians' careers - professional and personal situation seven years after graduation. *BMC Health Services Research*. 2010;10(1):40. doi:10.1186/1472-6963-10-40

33. Jolly S, Griffith KA, DeCastro R, Stewart A, Ubel P, Jagsi R. Gender differences in time spent on parenting and domestic responsibilities by high-achieving young physician-researchers. *Annals of internal medicine*. 2014;160(5):344-353. doi:10.7326/M13-0974

34. Canadian Institute for Health Information. 2022. https://www.cihi.ca/en/nurse-practitioners

35. Braun V, Clarke V. *Thematic Analysis: A Practical Guide*. Sage Publications Ltd; 2021.

36. Flick U. Challenges for a New Critical Qualitative Inquiry: Introduction to the Special Issue. *Qualitative Inquiry*. 2017;23(1):3-7. doi:10.1177/1077800416655829

37. Denzin NK. Critical Qualitative Inquiry. *Qualitative Inquiry*. 2017;12(1). doi:doi.org/10.1177/1077800416681864

38. Al-Amoudi I, Willmott H. Where constructionism and critical realism converge: Interrogating the domain of epistemological relativism. *Organization Studies*. 2011;32(1):27-46. doi:10.1177/0170840610394293

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39. Burr V. *Social Constructionism*. 3rd ed. Routledge; 2015. Accessed August 18, 2022. https://www.routledge.com/Social-Constructionism/Burr/p/book/9781848721920

40. Boyko JA, Lavis JN, Abelson J, Dobbins M, Carter N. Deliberative dialogues as a mechanism for knowledge translation and exchange in health systems decision-making. *Social Science & Medicine*. 2012;75(11):1938-1945. doi:10.1016/j.socscimed.2012.06.016

41. Harvey N, Holmes CA. Nominal Group Technique: An effective method for obtaining group consensus. *International Journal of Nursing Practice*. 2012;18(2):188-194.

42. Potter M, Gordon S, Hamer P. The Nominal Group Technique: a useful consensus methodology in physiotherapy research. *New Zealand Journal of Physiotherapy*. 2004;3(2):70-74.

43. Guerra CE, McDonald VJ, Ravenell KL, Asch DA, Shea JA. Effect of race on patient expectations regarding their primary care physicians. *Family Practice*. 2007;25(1):49-55. doi:10.1093/fampra/cmn005

44. Hedden, L., Barer, ML, Cardiff, K, McGrail, KM, Law, MR, Bourgeault, IL. The implications of the feminization of the primary care physician workforce on service supply: a systematic review. *Human Resources Health*. 2014;12:32. http://www.human-resources-health.com/content/12/1/32

45. Bowen S, Graham I. Integrated knowledge translation. In: *Knowledge Translation in Health Care*. John Wiley & Sons, Ltd; 2013:14-23.

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Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

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Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

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Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

Abstract

Introduction

Many Canadians struggle to access the primary care they need while at the same time primary care providers report record levels of stress and overwork. There is an urgent need to understand factors contributing to the gap between a growing per-capita supply of primary care providers and declines in the availability of primary care services. The assumption of responsibility by primary care teams for services previously delivered on an in-patient basis, along with a rise in administrative responsibilities may be factors influencing reduced access to care.

Methods and Analysis

In this mixed methods study our first objective is to determine how the volume of services requiring primary care coordination has changed over time in the Canadian provinces of Nova Scotia and New Brunswick. We will collect quantitative administrative data to investigate how services have shifted in ways that may impact administrative workload in primary care. Our second objective is to use qualitative interviews with family physicians, nurse practitioners, and administrative team members providing primary care to understand how administrative workload has changed over time. We will then identify priority issues and practical response strategies using two deliberative dialogue events convened with primary care providers, clinical and system leaders, and policymakers.

We will analyze changes in service use data between 2001/2 and 2021/22 using annual total counts, rates per capita, rates per primary care provider, and per primary care service. We will conduct reflexive thematic analysis to develop themes and to compare and contrast participant responses reflecting differences across disciplines, payment and practice models, and practice settings. Areas of concern and potential solutions raised during interviews will inform deliberative dialogue events.

Ethics and Dissemination

We received research ethics approval from Nova Scotia Health (#1028815). Knowledge translation will occur through dialogue events, academic papers, and presentations at national and international conferences.

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Strengths & Limitations

- Administrative work may play a substantial role in understanding changing primary care workload and is receiving policy attention, but has not been carefully studied.
- This study will involve both quantitative and qualitative data complemented by deliberative dialogue events for robust description, analysis, and actionable recommendations.
- Trustworthiness of qualitative methods and analysis will be demonstrated through inclusion of three professional groups working in two provinces, the positionality and reflexivity of diverse research team members, the use of constant comparison throughout concurrent data collection, thick description, and an audit trail.
- A population-level analysis of factors shaping changing workload will inform trends for system-wide planning, but won't provide detailed clinician-level information

Introduction

There are more primary care providers per person than ever before in Canada(1). At the same time, primary care is described as being in crisis,(2-4) as Canadians struggle to access needed care(5) and primary care providers report record levels of stress and overwork.(6) There is an urgent need to understand factors contributing to the gap between a growing number of primary care providers per person and declines in the availability of primary care services.(7) To some extent this gap may reflect declining hours worked(8)or service volume(9) per physician, but evidence also points to broader health system changes that may impact workload in primary care(10) over and above visit volume. Neither the extent of these changes, nor their impact on provider experience and patient access have been carefully studied.(6)

Beyond patient visits, primary care providers (including family physicians (FPs) and nurse practitioners (NPs)) are responsible for indirect patient care activities such as arranging prescriptions, lab tests, imaging, specialist referrals, and medical forms, as well as maintaining a longitudinal patient record.(11) Over the past 20 years we have seen a shift in care from hospitals to communities,(12) a proliferation of guidelines and increased complexity in the management of common chronic conditions,(13-16) and accelerating population aging.(17, 12, 18) The intersecting effects of these trends may mean that there is greater need than ever for care coordination or indirect patient care, contributing to expanding administrative workload in primary care. Navigating electronic medical records, complicated referral processes, and cumbersome forms, may be increasing the time needed to complete indirect patient related tasks. Patients may be referred by primary care providers to programs or specialists as part of the overall care plan. These referrals, however, often result in additional administrative work

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and record-keeping responsibilities. Paperwork and tasks flow back to primary care from referral sources, further increasing workload. In addition to administrative responsibilities related to care coordination, primary care providers play varied roles in clinic administration, depending on service delivery model.

Administrative workload has been described as a source of burnout and reduced access to care for patients, and may push family physicians to choose options other than comprehensive community-based practice.(19) This has been casually called “death by a thousand papercuts” or more recently “death by a thousand clicks.”(20) Under this view, time spent on a variety of administrative tasks is secondary to the ‘real’ work of primary care. Indeed administration has been broadly characterized as taking away from other patient care activities, thereby making health systems less efficient and also less equitable, as people who most need coordinated care may struggle to access it.(10, 21) At the same time, administrative work is central to delivering coordinated and integrated care to patients and to clinic operations.

Outcomes of a survey conducted by Doctors Nova Scotia published in December 2021 revealed that administrative burdens were included among the top three challenges facing primary care physicians in that province.(22) The magnitude of this problem led to the involvement of the Office of Regulatory Affairs and Service Effectiveness (ORASE) of the Nova Scotia government to investigate and implement concrete action plans to address unnecessary administrative burdens on physicians.(23) With the support of Doctors Nova Scotia, a survey administered by ORASE found that 38% of physicians’ time was spent on unnecessary administrative tasks, and that 24% of that work could have been done by someone in a different role/profession.(23) The survey also found that physicians believed that 14% of that work could be entirely eliminated(23) The report on the survey noted that the main contributors to unnecessary administrative tasks were: the completion of medical forms, doctor’s notes, business operations, billing, including shadow billing, licensing, privileging, and tasks associated with requirements of government and oversight entities. Importantly, physicians indicated that administrative burdens significantly contributed to burnout, and that reductions of time spent on these tasks would allow time for improved work/life balance and improved patient care.(23) While administrative burden is a problem for all acute, specialist, and primary care physicians in Nova Scotia, given the unique role primary care physicians play in coordinating care, we need detailed information about, and solutions for, this setting.

The impact of administrative burdens in primary care are complex. It is not simply a problem of too much paperwork. Family physicians and nurse practitioners are also increasingly responding to issues related to patients’ social determinants of health without adequate support and resources, often resulting in frustration, stress, and emotional burden.(23) Wait times for specialist referrals translate to lengthier periods of patient management, additional paperwork, follow-up on referrals, and carrying the emotional burden of patients’ unmet needs. Added to these pressures are expectations to take on more ‘unattached’ patients, while not having the time or capacity to do so because of the complexity of care required by existing patients coupled with heavy administrative burdens. While the emotional toll of administrative

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burden on primary care providers is not the focus of this study, it is important to recognize that there are many concerning ripple effects that accompany this problem.

A 2023 study(24) built on the findings of the ORASE's Physician Administrative Burden Survey conducted in Nova Scotia. Study outcomes demonstrated that a 10% reduction of unnecessary paperwork for primary care physicians in New Brunswick would equal an additional 119,726 patient visits annually.(25) While increased recognition of this problem and attempts to address it are welcome, it comes with an implicit expectation that primary care providers will have the capacity to see new patients and/or increase the number of visits for existing patients. This expectation may add to primary care provider stress and emotional burden.

While there is some limited qualitative research with primary care physicians in the United States,(26) none yet exists in Canada. We also need information drawing on the experience and expertise of nurse practitioners, clinic managers, medical office assistants, and other primary care team members with administrative responsibilities. New information to understand the extent and drivers of administrative workload, as well as the strategies required to make this activity more efficient are urgently needed.

Study Objectives

This project will address three objectives and nested research questions**,** with the overarching goal of adjusting administrative workload, while ensuring efficient, accountable, and well-coordinated care:

1. Determine how the volume of services requiring primary care coordination has changed over time
   a. How has service volume shifted from inpatient services to outpatient and community-based services requiring coordination through primary care?
   b. How has the volume of outpatient services requiring primary care coordination and oversight (i.e., prescriptions, testing, imaging, and specialist consultations) changed over time?

2. Use interviews with primary care providers (family physicians and nurse practitioners) and administrative team members to understand how administrative workload has changed:
   a. What are current experiences of administrative workload, including work related to patient care and clinic administration?
   b. How has administrative workload changed over time? What factors have shaped changes?
   c. What are areas of particular concern and how might these be addressed?

3. Drawing on the findings of Objectives 1 and 2, with primary care providers and service planners, co-identify priority issues and co-develop practical response strategies to make administrative work more efficient:
   a. Which areas of concern are addressable in the short, medium and long term?

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b. What actions would be needed, who is in a position to act, and what resources would be involved?

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Methods

This two-year study (June 2023 - May 2025) will use different data sources and methodologies to address each project objective within two study provinces, Nova Scotia and New Brunswick (Figure 1). Findings of descriptive quantitative analysis under Objective 1 and in-depth qualitative interviews under Objective 2 will inform deliberative dialogues used to address Objective 3.

Objective 1 - Quantitative administrative data

To address Objective 1 we will seek out and combine administrative data from multiple sources to create a more complete picture of shifts in service use over time, accessing data from 2001/2 (or earliest available, depending on dataset) and 2023/2024 (or most recent available). This time frame will allow us to explore long-term trends, as well as changes since March 2020 due to the pandemic. We do not need access to individual, record-level data to meet study objectives and plan only population-level analysis, using population-based data that captures service delivery for all insured residents of the study provinces (approximately 1 million residents in NS and 800,000 in NB). To address question 1a we will combine publicly-available data accessible through the Canadian Institutes of Health Information at the provincial level to examine trends in hospital services use as well as services delivered on an outpatient basis or in the community. To examine trends in hospitalizations, we will count the number of discharges recorded in the Discharge Abstract Database (DAD) and the number of days patients spent in hospital.(27) The DAD captures administrative, clinical, and demographic information on all hospital discharges (including deaths, sign-outs and transfers). To capture outpatient physician service use, we will use the National Physician Database (NPD) to track number of visits with primary care physicians, as well as with medical specialists and surgical specialists. The NPD contains information on both the demographic characteristics, and their payments and activities within the health care system. We will use the DAD to count the number of day surgery procedures. Finally, we will use the National Health Expenditures Database to triangulate findings about service volume, examining shifts in spending between hospitals and other categories of healthcare over time(28).

To address question 1b we will track total laboratory tests and imaging services completed for outpatients, as FP/NPs have a role in reviewing and coordinating these even when ordered by other physicians. Public prescription data for seniors will be used to count the number of different drugs dispensed per year, at the level of the first 5 digits of the Anatomical Therapeutic Chemical classification (ATC) code.(29) We will exclude vaccines (J07), vitamins (A11), mineral supplements (A12), tonics (A13) and various (V) categories. As with lab tests, as FP/NPs have a role in managing all prescriptions, we will report the total. We will use NPD to track specialist physician visit data, focusing on those seen as outpatients, as, as reports would go back to NPs/FPs for patient follow-up.

Quantitative Analysis: Our approach is primarily descriptive and it is not necessary to link datasets at the individual level. We will present service use data as annual total counts (to

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capture how total workload has changed), as rates per capita (to capture how patient-level care has changed), as well as rates per primary care provider, and per primary care service (to capture how changes in workload map onto primary care workforce supply and practice volume). Following visual inspection of trends over time, we will use segmented regression to quantify changes in level or trend of service use over time, including in the context of the COVID-19 pandemic.(30)

Objective 2 - In-depth video interviews

Our approach most closely resembles a mixed methods multi-level plan in which quantitative and qualitative data will be concurrently collected and analyzed, each with equal weight. The research questions we are attempting to answer through the use and analysis of quantitative data while complementary, are distinct from the research questions we are exploring though qualitative interviews and analysis. Findings from both methods will contribute to knowledge generation and may enhance each other, however it is impossible to know in advance of data collection and analysis precisely how this will evolve. We anticipate that findings from quantitative data on changes in service volume requiring primary care coordination will be better understood when complemented by narratives from the interviews that add important contextual information

Interviews: We will use interviews with primary care providers (FPs, NPs, and other team members involved in administration (clinic managers and/or medical office assistants) to understand their current administrative workload (including care coordination and other administrative activities), how this has changed over time, and what opportunities exist to manage this differently. See supplementary material for interview guides. We will be interviewing primary care providers and administrative staff in New Brunswick as well as Nova Scotia to compare narratives between the two provinces, and to inform a planned Pan-Canadian study on this topic in the future.

We will conduct interviews via a secure online video platform. Interviews will last approximately one hour and will be scheduled at a time that is convenient and acceptable to study participants. This will allow us to reach a geographically varied set of participants at a lower cost than conducting in-person interviews. Video interviews have been shown to produce similar data richness when compared with in-person interviews.(31,32) Interviews will be conducted by Master's or PhD trained qualitative research staff. Interview data will be digitally recorded, professionally transcribed, quality checked for accuracy, and de-identified prior to analysis. Each interviewer will complete field notes shortly after interviews take place. Field notes will be reviewed prior to and during analysis. The research associate will document all analytic decisions for the audit trail.

Recruitment: We will purposively recruit primary care providers who are funded through a range of payment models (fee-for-service and alternate payment plans), who work in a range of

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clinic models (independent, health authority partnered, turn-key health authority operated), and who work in a range of geographic locations (urban and rural locations throughout each province). Specifically, we will recruit from Nova Scotia Health Primary Care Clinics, Dalhousie Family Medicine teaching sites, Doctors Nova Scotia, and Nurse Practitioners of New Brunswick. Potential participants will complete a brief on-line screening survey (see supplementary information.) We plan sample sizes of 20 FP/NP and 20 administrative team member interviews to investigate differences by models and locations. The total sample size is forty. This sample size is consistent with recommendations for similar study designs.(33-35) Previous research we conducted concerning primary care practice was received with strong interest;(36) we anticipate similarly strong interest in this topic.

The project research associate will contact key individuals at recruitment organizations to explain the study and coordinate outreach. Key individuals at each site will distribute introductory emails along with a study poster. There will be a link from the poster to the screening survey. Our aim is to interview participants from various geographical settings, practice types, remuneration models, discipline (nurse practitioner, family physician, administration) and with varying lengths of practice experience and roles in primary care clinic settings. Sampling from the results of the screening survey will involve selection of interview participants with the greatest number of diverse characteristics. Sampling will depend on the number and diversity of survey responses. Additional recruitment will take place until sampling goals have been reached.

Gender is of central importance in this project. A substantial body of evidence shows that physician practice patterns are gendered, as are expectations with respect to care provision, including potentially administrative workload.(37-39) We will be attentive to gender in both interview recruitment and qualitative analysis. As an increasing proportion of family physicians are women, and 92% of nurse practitioners in Canada(40) are female we will actively recruit men and ensure there are no barriers to participation for people with other genders. We will ask participants about how they perceive relationships between gender and administrative workload, and our analysis will explore how responses and experiences vary by gender.

Informed Consent. Consent is implied by completion of the online survey. This is clearly articulated in the introductory text to the survey, and has been approved by the local research ethics board. Potential participants selected for interviews will be contacted by the research associate. A participant information sheet covering all the topics typically included in consent forms will be provided at that time, and participants will have an opportunity to ask any questions they have before interviews are scheduled. At the beginning of each interview the research associate will review study aims, participant rights, and obtain verbal consent. The consent process will be audiotaped for documentation purposes.

Each participant will be assigned an identification number in place of their name. All interview transcripts will bear the identification number. Participant quotes will be included in presentations and publications emanating from this study, however there will not be any personal identifiers. Quotes will be attributed to the type of professional, gender and province

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in which the person is practicing, with attention to any contextual details of practice that could be identifying.

Data Management: Quantitative and qualitative data and consent forms will be securely stored on encrypted password-protected computers. Files are backed up monthly on an external drive. Both quantitative and qualitative data will be stored for a period of seven years after which it will be permanently destroyed in accordance with the policies of Dalhousie University.

Qualitative Analysis: We will employ Braun and Clarke's reflexive thematic analysis(41) which fits well with our critical qualitative approach(42-43) and relativist epistemology.(44) Our analysis will also be guided by social constructionism.(45) This blended approach reflects our positionality as active participants in the research process, our understanding that meaning is socially constructed, and the key role of reflexivity throughout the research process. There are six fluid phases involved when conducting reflexive thematic analysis. The first phase is becoming familiar with the interview data by reading through transcripts on several occasions. The next phase involves initial coding of data related to the research question. We plan to employ an inductive approach to analysis at that stage. This will be followed by the generation of preliminary themes. We will then return to the data, further develop and revise themes. Depending on the analysis in progress, we may continue with the inductive analysis, or we may decide to conduct a deductive analysis based on a concept or framework that we determine at that point may provide greater depth to the findings. In the latter case, we will return to the data and commence a new phase of coding deductively. This is what is meant by the fluidity of analytic phases. Once that phase has been completed, we will further refine and name themes and develop definitions for the themes. The final stage involves written preparation of the results including a discussion of their relevance to the existing literature.

Initially each member of the qualitative working group will review 2-3 transcripts each. Working group members will meet weekly to discuss the transcripts and potential codes. The research associate will use NVivo software to begin the inductive coding process based on those discussions. We will begin by generating a detailed description of administrative workload (research question 2a). Analysis will occur concurrently with data collection and the interview guide will be iteratively adjusted if needed as our understanding of experiences of administrative workload develops. We will then expand analysis to explore changes over time (question 2b), and to make comparisons between FP/NP and administrative team member interviews, as well as to explore variation across payment model, practice model, and practice setting. To address research question 2c, and in preparation for Objective 3, we will group and compile areas of concern and potential solutions raised by participants.

The qualitative working group will continue to meet bi-weekly or as needed throughout the analytic process. The diverse perspectives and expertise of group members will ensure a robust and meticulous analysis of qualitative data. We will have representation from family medicine, nursing, health administration and health policy, as well as expertise in qualitative research

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methods, ethnography and medical anthropology. Each interviewer will prepare field notes shortly after interviews take place. This may result in modifications to the interview guides. Field notes will be reviewed prior to and during analysis. The research associate will document all analytic decisions as part of the audit trail.

Time Frame: We expect the recruitment period and interviews to begin in September and be complete by the end December 2023. Qualitative analysis will also commence in September 2023 and is expected to continue through to June 2024.

Objective 3 - Integration of findings and knowledge exchange

We will work with partners on the team to identify relevant participants for a final two-phase dialogue event, designed to integrate and interpret both scientific and contextual data for the purpose of informing policy development,(46) in this case, strategies to address administrative workload. We will include 1) a subset of interview participants (primary care providers and administrative team members) working in varied contexts, 2) clinical leaders who can make changes within primary care service delivery environments, and 3) system administrators and policymaker leaders who can change processes that involve both primary care and other parts of the health system or sectors.

Prior to the first meeting, the study team will review quantitative findings and the initial list of areas of concern identified through qualitative interviews. These will be integrated into a background document circulated in advance of the dialogue process. Quantitative findings will inform changing administrative workload over time, and qualitative findings will provide context for areas of concern and potential solutions that will be explored during dialogue events. Dialogues will be conducted via video-conference in two stages. In the first stage, Nominal Group Technique (NGT)(47-48) will be used to guide discussion and prioritization of issues and solutions. Nominal Group Technique has been used since the 1960s for the identification of problems, priority ranking of issues, action items, or questions in small group in-person sessions. One of the technique's key strengths is it is designed for equal representation among participants and is non-hierarchical in nature. In this study, areas of concern generated and recorded in qualitative interviews will serve as a starting point for discussion, with participants invited to add topics not yet mentioned. In a ranking exercise, participants will be invited to consider which tasks are time consuming and/or offer lower value to patients and the system. Then participants will be asked to discuss and explain the reasons for their ranking.

The second stage will focus on feasibility and actions needed to address high-priority areas of concern identified in the first event. Prior to the second stage, we will identify any additional participants with knowledge specific to areas of concern. Participants will be asked to consider which could be addressable in the short term (<3 months), medium term (3-12 months), and long term (one year or more). In breakout groups focusing on individual areas of concern,

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participants will be asked to consider what action would be needed and who would need to be involved. Each breakout group will be led by a facilitator briefed and prepared by the research team. After the breakout group discussions, there will be a debriefing with the full group of participants. The dialogue process will provide concrete and actionable strategies tailored to the primary care setting, that complement other ongoing work within Nova Scotia and New Brunswick health systems.

Impact on equity in recruitment and retention of healthcare professionals

Administrative workload directly impacts recruitment and retention of healthcare professionals, at times influencing family physicians to choose options other than community-based primary care as a strategy to circumvent burnout.(19) Expectations for coordination may vary by how primary care providers are gendered and racialized (49) ; women form a growing proportion of the primary care workforce.(50) Addressing coordination workload can therefore play a role in supporting equity in recruitment and retention of health care professionals. Understanding and supporting coordination of care is central to people-centred, flexible, quality healthcare. Identifying practical strategies to make coordination more efficient can support innovative healthcare models, and more seamless integration of virtual care into patients' journeys.

Patient and Public Involvement

Patients or members of the public were not involved in the design of this study and will not be involved during implementation. While our research questions respond to topics of patient and public interest, research approaches focus on routinely collected health system data and research participants are primary care providers and administrative staff. We therefore focus on including a range of policy and provider expertise and experience within the research team. Inclusion of patients in the deliberative dialogue events is not currently planned.

Study Limitations

Available quantitative data sources capture variables labeled "sex," but there is no measure of gender, and administrative or legal sex may not correspond to sex assigned at birth. This is a limitation of secondary analysis of these data. Where possible, we will distinguish between patterns plausibly shaped by sex or gender in interpretation.

Care coordination activities are not recorded in administrative billing data. It is not possible to directly capture time spent on care coordination or other administrative work. Instead, we focus broadly on shifts in care delivery between hospital and community, as well as changes in services that require coordination, review, and/or administration on the part of primary care providers. It is beyond the scope and budget of this project to obtain access to linked, record-level data or to collect detailed time use data. Study objectives can be addressed through aggregate data that can be shared with no risk of identification. This project will form the groundwork for a future grant proposal that will use record-level data from the same sources to

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analyze changes over time by population age and generate projections of future primary care capacity.

Ethics and Dissemination

Research ethics approval for this protocol was received from Nova Scotia Health (REB # 1028815) for research activities in both Nova Scotia and New Brunswick. This study conforms to the Declaration of Helsinki (June 1962; amended October 2013) and the Belmont Report (1979).

We are taking an integrated knowledge translation approach (51) and have assembled a team that includes varied perspectives. Primary care provider co-investigators and policy partners affirm the urgent need to address administrative workload. We will present findings and seek feedback from the groups represented by partners and team members following completion of Objectives 1 and 2. Deliberative dialogues under Objective 3 are themselves a method for knowledge translation, designed to integrate and interpret data to inform strategies addressing administrative workload. This project will also yield traditional academic outputs crossing multiple disciplines and results will be disseminated to a range of audiences.

Results will inform healthcare delivery excellence that addresses opportunities for team-based care and the ability of healthcare providers to work to their full scope of practice**.** New or expanded roles for administrative and other primary care team members are being piloted in Nova Scotia. This pilot research will enrich the understanding of our research outcomes and also support ongoing innovation. Finally, a robust system of primary care is fundamental to addressing health inequalities in access to care. There is evidence of declining equity in access to primary care in Canada.[7] Limited primary care capacity and inadequate systems of coordination impact patients with more complex health and social needs most severely. High-performing systems of primary care can connect health care with other community resources. This coordination is needed to support collaborative approaches to address the social determinants of health.

Figure 1. Study overview

4,388 (excluding title page, abstract, strengths & limitations, flow chart and references)

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Author Contributions:
RL originally conceived the study, wrote the first draft of the Introduction and Objective 1 methods. CM wrote the first draft of Objective 2 methods. FB, RB, JE, AG, LH, ML, MM, EGM, RMM, MM, EP and JT provided feedback for revisions to the interview guides, screening questionnaire, and the draft protocol, and approved the final version for submission.

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References

1. Canadian Institute for Health Information. *Supply, Distribution and Migration of Physicians in Canada, 2020- Data Tables*. CIHI; 2021.

2. Walsh M, Pearson H. *Nova Scotia Doctor Calls Family Doctor Shortage a "Crisis."* Accessed June 6, 2017. http://globalnews.ca/news/3270444/nova-scotia-doctor-calls-family-doctor-shortage-a-crisis/

3. The evolving crisis in primary care. *British Columbia Medical Journal*. Accessed August 16, 2022. https://bcmj.org/editorials/evolving-crisis-primary-care

4. Opinion: Canada has a primary-care crisis. Here are three steps we must take to solve this problem. *The Globe and Mail*. https://www.theglobeandmail.com/opinion/article-canada-has-a-primary-care-crisis-here-are-three-steps-w e-must-take-to/. Published July 16, 2022. Accessed August 16, 2022.

5. Canadian Institute for Health Information. *How Canada Compares: Results from the Commonwealth Fund's 2020 International Health Policy Survey of the General Population in 11 Countries*. CIHI; 2021.

6. Sovran V, Ytsma A, Husak, L, and Johnson, T. Coordination of Care Could Improve: Canadian Results from the Commonwealth Fund International Health Policy Survey of Primary Care Physicians. *Healthcare Quarterly*. 2020;23(2). Accessed March 28, 2022. https://www.longwoods.com/content/26283/coordination-of-care-could-improve-canadian-results-from-the-commonwealth-fund-international-health

7. Lavergne MR, Bodner A, Peterson S, et al. Do changes in primary care service use over time differ by neighbourhood income? Population-based longitudinal study in British Columbia, Canada. *Int J Equity Health*. 2022;21(1):80. doi:10.1186/s12939-022-01679-4

8. Islam, R, Kraij, B and Sweetman, A. Physician workforce planning in Canada: the importance of accounting for population aging and changing physician hours of work. *Canadian Medical Association Journal.* 2023;195(9). doi: 10.1503/cmaj.221239

9. Rudlor, D, Perterson, S, Stock, D, et al. Changes over time in patient visits and continuity of care among graduating cohorts of family physicians in four Canadian provinces. *Canadian Medical Association Journal*. 2022;194(48). doi: 10.1503/cmaj.220439

10. Lavergne, R, Peterson S, Rudoler, D, et al. Productivity decline or administrative avalanche? Examining factors that shape changing workloads in primary care. *Healthcare Policy.* 2023;19(1):114-129

11. College of Family Physicians of Canada. *Family Medicine Professional Profile*. College of Family Physicians of Canada; 2018.

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12. Chappell N, Hollander M. An Evidence-Based Policy Prescription for An Aging Population. *Healthcare Papers*. 2011;11(1):8-18. doi:10.12927/hcpap.2011.22246

13. Adams WL, McIlvain HE, Lacy NL, et al. Primary care for elderly people: Why do doctors find it so hard? *The Gerontologist*. 2002;42(6):835-842. doi:10.1093/geront/42.6.835

14. Mangin D, Sweeney K, Heath I. Preventive health care in elderly people needs rethinking. *BMJ*. 2007;335(7614):285-287. doi:10.1136/bmj.39241.630741.BE1

15. Korownyk C, McCormack J, Kolber MR, Garrison S, Allan GM. Competing demands and opportunities in primary care. *Canadian Family Physician*. 2017;63(9):664-668.

16. Millar E, Stanley J, Gurney J, et al. Effect of multimorbidity on health service utilisation and health care experiences. *J Prim Health Care*. 2018;10(1):44-53. doi:10.1071/HC17074

17. Barer ML, Evans RG, Hertzman C. Avalanche or glacier?: Health care and the demographic rhetoric. *Canadian Journal on Aging / La Revue canadienne du vieillissement*. 1995;14(2):193-224. doi:10.1017/S0714980800011818

18. Canadian Institute for Health Information. *Health Care in Canada, 2011: A Focus on Seniors and Aging.* Canadian Institute for Health Information; 2012. Accessed April 20, 2022. https://www.deslibris.ca/ID/230734

19. Kabir M, Randall E, Mitra G, et al. Resident and early-career family physicians' focused practice choices in Canada: a qualitative study. *Br J Gen Pract*. 2022;72(718):e334-e341. doi:10.3399/BJGP.2021.0512

20. Fortune FS Erika Fry. Death By 1,000 Clicks: Where Electronic Health Records Went Wrong. Kaiser Health News. Published March 18, 2019. Accessed June 17, 2022. https://khn.org/news/death-by-a-thousand-clicks/

21. Starfield B. The hidden inequity in health care. *International Journal for Equity in Health*. 2011;10(1):15. doi:10.1186/1475-9276-10-15

22. McKay M. The future of family medicine: Nova Scotia family physicians' visions and priorities. Final research report. Doctors Nova Scotia;2023.

23. Office of Regulatory Affairs and Service Effectiveness. *Physician Administrative Burden Survey – Final Report*. Government of Nova Scotia; 2020. Accessed August 18, 2022. https://doctorsns.com/sites/default/files/2020-11/admin-burden-survey-results.pdf

24. Alegbeh A. Patients before paperwork. Nova Scotia's approach to improving patient care by reducing physician red tape. Canadian Federation of Independent Business; 2023. Accessed March 31, 2023. https://www.cfib-fcei.ca/en/research-economic-analysis/patients-before-paperwork-nova-scotias-approach-to-improving-patient-care-by-reducing-physician-red-tape https://20336445.fs1.hubspotusercontent-na1.net/hubfs/20336445/research/reports/2023/Patients_Before_Paperwork_Report_2023.pdf

For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml

25. CBC News. Fredericton family doctor calls on province to help cut paperwork, free up time for patients. https://www.cbc.ca/news/canada/new-brunswick/family-doctors-paperwork-new-brunswick-will-stymiest-medical-society-1.6734457

26. Apaydin E. Administrative work and job role beliefs in primary care physicians: An analysis of semi-structured interviews. *SAGE Open*. 2020;10(1):2158244019899092. doi:10.1177/2158244019899092

27. Canadian Institute for Health Information. Discharge Abstract Database (DAD) metadata. Accessed October 3, 2023.

28. Canadian Institute for Health Information. National Health Expenditure Trends, 2022 — Methodology Notes. Ottawa, ON: CIHI; 2022.

29. WHO Collaborating Centre for Drug Statistics Methodology: International language for drug utilization research. Accessed April 10, 2023. https://www.whocc.no

30. Wagner, AK, Spumerai, SB, Zhang, F and Ross-Degnan, D. Segmented regression analysis of interrupted time series in medication use research. Journal of Cinical Pharmacology and Therapeutics. 2002;Aug 27(4):299-309.

31. Archibald MM, Ambagtsheer RC, Casey MG, Lawless M. Using zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*. 2019;18:1609406919874596. doi:10.1177/1609406919874596

32. Gruber M, Eberl JM, Lind F, Boomgaarden HG. Qualitative Interviews with irregular migrants in times of COVID-19: Recourse to remote interview techniques as a possible methodological adjustment. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*. 2021;22(1). doi:10.17169/fqs-22.1.3563

33. Sandelowski M. Sample size in qualitative research. *Research in Nursing & Health*. 1995;18(2):179-183. doi:10.1002/nur.4770180211

34. Morse JM. Analytic Strategies and Sample Size. *Qualitative Health Research*. 2015;25(10):1317-1318. doi:10.1177/1049732315602867

35. Morse JM. Designing funded qualitative research. In: *Handbook of Qualitative Research*. Sage Publications, Inc; 1994:220-235.

36. Lavergne MR, Goldsmith LJ, Grudniewicz A, et al. Practice patterns among early-career primary care (ECPC) physicians and workforce planning implications: protocol for a mixed methods study. *BMJ Open*. 2019;9(9):e030477. doi:10.1136/bmjopen-2019-030477

37. Hedden L. *Beyond Full-Time Equivalents: Gender Differences in Activity and Practice Patterns for BC's Primary Care Physicians*. PhD Thesis. University of British Columbia; 2015.

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38. Buddeberg-Fischer B, Stamm M, Buddeberg C, et al. The impact of gender and parenthood on physicians' careers - professional and personal situation seven years after graduation. *BMC Health Services Research*. 2010;10(1):40. doi:10.1186/1472-6963-10-40

39. Jolly S, Griffith KA, DeCastro R, Stewart A, Ubel P, Jagsi R. Gender differences in time spent on parenting and domestic responsibilities by high-achieving young physician-researchers. *Annals of internal medicine*. 2014;160(5):344-353. doi:10.7326/M13-0974

40. Canadian Institute for Health Information. 2022. https://www.cihi.ca/en/nurse-practitioners

41. Braun V, Clarke V. *Thematic Analysis: A Practical Guide*. Sage Publications Ltd; 2022.

42. Flick U. Challenges for a New Critical Qualitative Inquiry: Introduction to the Special Issue. *Qualitative Inquiry*. 2017;23(1):3-7. doi:10.1177/1077800416655829

43. Denzin NK. Critical Qualitative Inquiry. *Qualitative Inquiry*. 2017;12(1). doi:doi.org/10.1177/1077800416681864

44. Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2018). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. K. Denzin & Y. S. Lincoln (Eds.), The Sage handbook of qualitative research (5th ed., pp. 108–150). Thousand Oaks, CA: Sage

45. Boyland. J. A social constructivist approach to the gathering of empirical data. *Australian Counselling Research Journal*. 2019;30-34.

46. Boyko JA, Lavis JN, Abelson J, Dobbins M, Carter N. Deliberative dialogues as a mechanism for knowledge translation and exchange in health systems decision-making. *Social Science & Medicine*. 2012;75(11):1938-1945. doi:10.1016/j.socscimed.2012.06.016

47. Harvey N, Holmes CA. Nominal Group Technique: An effective method for obtaining group consensus. *International Journal of Nursing Practice*. 2012;18(2):188-194.

48. Potter M, Gordon S, Hamer P. The Nominal Group Technique: a useful consensus methodology in physiotherapy research. *New Zealand Journal of Physiotherapy*. 2004;3(2):70-74.

49. Guerra CE, McDonald VJ, Ravenell KL, Asch DA, Shea JA. Effect of race on patient expectations regarding their primary care physicians. *Family Practice*. 2007;25(1):49-55. doi:10.1093/fampra/cmn005

50. Hedden, L., Barer, ML, Cardiff, K, McGrail, KM, Law, MR, Bourgeault, IL. The implications of the feminization of the primary care physician workforce on service supply: a systematic review. *Human Resources Health*. 2014;12:32. http://www.human-resources-health.com/content/12/1/32

51. Bowen S, Graham I. Integrated knowledge translation. In: *Knowledge Translation in Health Care*. John Wiley & Sons, Ltd; 2013:14-23.

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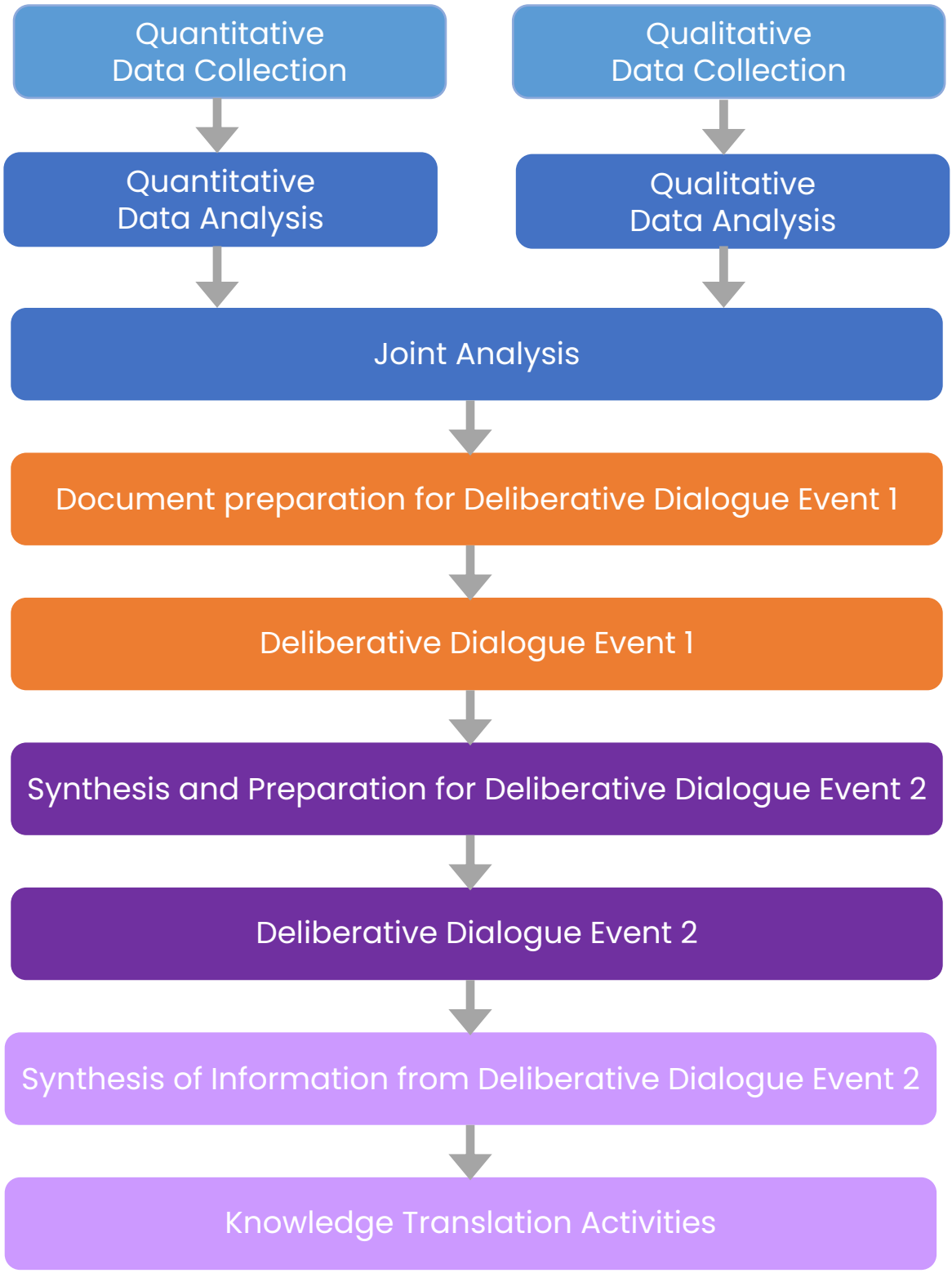
Quantitative Data Collection
Qualitative Data Collection
Quantitative Data Analysis
Qualitative Data Analysis
Joint Analysis
Document preparation for Deliberative Dialogue Event 1
Deliberative Dialogue Event 1
Synthesis and Preparation for Deliberative Dialogue Event 2
Deliberative Dialogue Event 2
Synthesis of Information from Deliberative Dialogue Event 2
Knowledge Translation Activities

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LANDING PAGE for survey
https://surveys.dal.ca/opinio/s?s=71694

STUDY TITLE:	A Thousand papercuts: Understanding and addressing changing administrative workload in primary care
PRINCIPAL INVESTIGATOR:	M. Ruth Lavergne, Faculty Researcher Dalhousie University, ruth.lavergne@Dal.ca

Thank you for your interest in participating in an interview for our research study called "A Thousand papercuts: Understanding and addressing changing administrative workload in primary care." In this study we would like to better understand the breadth and distribution of administrative workload in primary care. We would like to learn more about the administrative tasks that family physicians, nurse practitioners, office managers, and office staff perform and how this work has changed over time. We hope that this study will help others to become more aware of the important work that you do and how valuable it is.

To be considered for an interview, please complete this survey and provide us with your contact information and profession. The survey has a short series of optional questions for you to answer. Please answer as many questions as you like. You are not obligated to answer any, although your answers will help us to select participants representing a diversity of practices and locations.

Your completion of the survey implies that you have consented to participate in this research. The information you provide in the survey will be kept confidential. You may exit the survey at any time and your information will not be saved. The survey is administered by Opinio, a tool hosted and supported by Dalhousie University. The survey data from Opinio is stored on Dalhousie University servers in Halifax, Nova Scotia, Canada and is endorsed for use by the Dalhousie Research Ethics Board. The information you give during the survey will be destroyed after the recruitment process has been completed.

If you are invited to participate in an interview, you will be provided with an information sheet about the study and the interview.

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Contact for Questions or Complaints

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, you may contact: the Research Ethics Board: ResearchEthics@nshealth.ca

CONTACT INFO

Thank you for sharing your information. Please include your name and email address below so that if you are selected for an interview, we can contact you.

1. Name:

2. Please enter your email address. If email is not a suitable method of contact for you, please provide your preferred method and contact information:

INFORMATION ABOUT YOURSELF

3. Please select the statement that applies to you:

- ☐ I am a practising family physician based in Nova Scotia
- ☐ I am a practising family physician based in New Brunswick
- ☐ I am a practising nurse practitioner based in Nova Scotia
- ☐ I am a practising nurse practitioner based in New Brunswick
- ☐ I am currently an administrative manager of a primary care clinic in Nova Scotia*
- ☐ I am currently an administrative manager of a primary care clinic in New Brunswick*
- ☐ I currently provide administrative support in a primary care clinic in Nova Scotia*
- ☐ I currently provide administrative support in a primary care clinic in New Brunswick*
- ☐ None of the above

Administrative staff will be re-directed to question 6.

If none of the above is selected, an automatic message will pop up: "Thank you for your interest in this study, however we are currently focusing on family physicians, nurse practitioners and administrative staff in primary care clinics in Nova Scotia and New Brunswick for this survey. If you would like to receive information about study findings, please indicate below the email address we can use to follow up with you."
_____ You may also visit our website https://www.healthsystemsresearch.ca/papercuts for information about study outcomes.

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4a. Do you spend some of your time working in a community-based, longitudinal, comprehensive primary care clinic (i.e., traditional clinic-based family medicine practice)?

- ☐ Yes
- ☐ No

4b. If yes to question 4a, are you responsible for managing or co-managing any/all practice operations (for example hiring and managing staff, dealing with building maintenance, overseeing all aspects of running the practice)?

- ☐ Yes
- ☐ No

5. What type of payment model are you on when providing community based longitudinal primary care?
Check all that apply:

- ☐ Fee for service (FFS)
- ☐ Alternative payment plan (APP)
- ☐ Alternative funding plan (AFP)
- ☐ Capitation
- ☐ Salary
- ☐ Blended
- ☐ Other

If other, please specify _____

6. Is your clinic location:

- ☐ Urban
- ☐ Suburban
- ☐ Rural
- ☐ Other

If other, please specify _____

7. If you practice/work in Nova Scotia, which health zone is your clinic located in?

- ☐ Not applicable to me
- ☐ Central
- ☐ Eastern
- ☐ Northern
- ☐ Western
- ☐ Other

If other, please specify _____

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8. If you practice/work in New Brunswick, which health zone is your clinic located in?
   - ☐ Not applicable to me
   - ☐ Zone 1
   - ☐ Zone 2
   - ☐ Zone 3
   - ☐ Zone 4
   - ☐ Zone 5
   - ☐ Zone 6
   - ☐ Zone 7
   - ☐ Other

     If other, please specify _____

9. How many years have you been working at your current clinic?
   - ☐ less than 2 years
   - ☐ between 2-5 years
   - ☐ between 6-10 years
   - ☐ more than 10 years

The following question is optional. It will help our study team ensure breadth of interview participants.

10. What gender to you identify with?
    - ☐ Woman
    - ☐ Man
    - ☐ Transgender Woman/Trans Feminine
    - ☐ Transgender Man/Trans Masculine
    - ☐ Gender nonconforming/Nonbinary
    - ☐ Gender queer/Gender Fluid
    - ☐ Two-spirit
    - ☐ Prefer to self-describe _____
    - ☐ Prefer not to answer

Thank you for sharing your time and experiences with us. If you are selected for an interview, you will be contacted by a member of our team in the near future.

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Supplemental Study Information

Papercuts Project

Interview Guide

Family Physicians & Nurse Practitioners

Introduction

Thank you for taking the time to participate in this interview today. Have you read through the information sheet about the study? [If no, the RA will provide verbal overview.] Do you have any questions? [RA responds to questions raised].

The interview questions will help us to better understand administrative work in primary care. I will begin with some questions about administrative tasks you do in your day-to-day work. We are interested in learning about tasks which are directly related to patient care as well as those which are not (for example, broader clinic operations). We'd also like to discuss how administrative practices have changed over time.

We'll then talk more about what work feels productive in that it contributes to clinic operations or patient care, and what feels unproductive or unnecessarily time consuming. We'd like to hear your thoughts about what changes could be made so that your time is used efficiently, and what the impact of administrative burdens have been on you and the office team. Just so you know, there are about 17 main questions in this interview.

If you are ready, I would like to begin recording the interview now. [RA begins recording of Zoom call]. For our records, do I have your consent to start the interview? Thank you.

PART ONE

RA reviews participant's screening summary sheet and notes any clarifications/changes.

1. **Can we start off with you briefly describing your practice setting?**

2. **Can you tell me about your administrative work – what does that include?**

3. **Have these tasks changed from when you started practicing? In what ways? Why?**
   - ➔ Prompt: Has there been an increase or decrease in time spent on those tasks from when you started practicing to now?
   - ➔ Prompt: Why do you think that is?

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- Changing patient demographics
- Increasing chronic illness or patient complexity
- Changing patient expectations
- Changing administrative processes required by other parts of the health system (e.g., forms, referral processes, IT platforms)
- Needs related to non-medical determinants of health and access to social supports

→ Prompt: Can you tell me about changes to admin tasks during COVID-19?

4. **What role does gender play, if any, with respect to administrative workload?**
   - → Prompt: Do you think gender shapes patient expectations? How?
   - → Prompt: Do you think gender shapes expectations for how work is shared among colleagues? Why is that?

5. **Can you think of anything else about how others may perceive you - that could affect your administrative work**? (age, languages spoken, ethnicity in Canada, race, etc.)

6. **Does administrative work impact the level of morale in your office**? **How so?**
   - → Prompt: Does administrative work impact your own morale?
   - → Prompt: Has this changed over time? How? Why?

7. **How has technology impacted your experiences coordinating administrative tasks?**
   - → Prompt: What are the barriers, if any, to using technology more efficiently in your practice?
   - → Prompt: How does your EHR system shape your administrative work?
   - → Prompt: Have you identified areas in which the system could be improved? Can you tell me more about that?

8. **Do you spend time on administrative tasks outside of your regular work day? What does that look like for you?**
   - → Prompt: How do you feel about that?
   - → Prompt: What strategies have you used in the past to decrease your "extra/overtime" hours?
   - → Prompt: How did that go? What could be done differently if you tried something similar again?

9. **Can you comment on whether or not your administrative work impacts your ability to engage in other professional interests? (for example: supervising/mentoring learners, *engaging in advocacy activities, *having time for your own professional development, *community involvement/public health education)**
   - → Prompt: Have you taken on more or fewer learners in your practice as the administrative burden has changed?
   - → Prompt: Do you mentor your medical learners differently to adapt to administrative demands?
   - → Prompt: If you have had to cut back or cut out *those activities altogether, how has that impacted you? How have others responded to this change?

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10. Can you tell me if other team members work with you to manage administrative tasks? What does that look like?

- → Prompt: How do you communicate about this work within your team?
- → Prompt: Are there additional roles other team members could take on?
- → Prompt: What would need to happen to make that possible?

11. Who makes decisions about changes to administrative processes? How do changes play out?

- → Prompt: Can you give me an example within your practice setting?
- → Prompt: Can you give me an example of changes to administrative processes that were initiated by external organizations or practices?
- → Prompt: Who is consulted about these changes?

Now, I'd like to go into further detail about some of the administrative work we've been discussing.

PART TWO

12. Reflecting back on what we just talked about, could you tell me which areas of administrative work feels most productive to you? (By productive, we mean good use of your time)

- → Prompt: This could include tasks that:
  - Support access to care for patients
  - Strengthen clinical relationships
  - Increase efficiency of your practice
  - Increase efficiency for the broader system

13. Which aspects of your administrative work are of greatest concern for you?

For each area of concern:

- What makes this an area of concern for you?
- How would you say the volume of this work has changed over time since you've been in practice?
- Do other team members help with this work?

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14. Can you suggest any strategies that would make this more efficient for you?

- → Are there low-value processes that can be reduced/eliminated/redirected?
- → Are there ways to improve efficiency of processes?
- → Are there opportunities to optimize distribution of workload within teams?

15. Are there strategies that could be implemented within your workplace, or would other systems or agencies need to be involved?

16. Have you tried 'new' strategies in the past? How did that go?

17. Do you feel that the administrative work you do is recognized and valued by others? Why? Why not?

WRAP UP

Do you have anything else you'd like to say about the administrative aspects of your practice?

RESEARCH ADMINISTRATION

We'd like to send you a cheque as a token of our appreciation for your time today.

Interviewer records mailing address

Thank you for speaking with me today.

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Papercuts project

Interview Guide

Administrative Staff

Introduction

Thank you for taking the time to participate in this interview today. Have you read through the information sheet about the study? [If no, the RA will provide verbal overview.] Do you have any questions? [RA responds to questions raised.]

The interview questions will help us to better understand administrative work in primary care. I will begin with some questions about administrative tasks you do in your day-to-day work. We are interested in learning about tasks which are directly related to patient care as well as those which are not (for example, broader clinic operations). We'd also like to discuss how administrative practices have changed over time.

We'll then talk more about what work feels productive in that it contributes to clinic operations or patient care, and what feels unproductive or unnecessarily time consuming. We'd like to hear your thoughts about what changes could be made so that your time is used efficiently, and what the impact of administrative burdens have been on you and the office team. Just so you know, there are about 17 main questions in this interview.

I would like to begin recording this session now. Is that alright with you? [RA begins recording of Zoom call]. For our records, do I have your consent to start the interview? Thank you.

PART ONE

RA reviews participant's screening summary sheet and notes any clarifications/changes

1. **What is your job title?**
   - Does that title fit with what you actually do in your role? Why, why not?

2. **Could you tell me about the office where you work?**
   - How long have you been working there?
   - Is it just you, or are there others on the administrative team?
   - Briefly, how do their roles differ from yours?
   - What training is provided?

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3. **We'll go into the details of your specific work responsibilities a little later, but for now, could you give me a brief overview of your tasks? Could you tell me what a typical work week is like for you?**

4. **Have these tasks changed over time since you've been working there? In what ways? Why?**
   - ➔ Prompt: Has there been an increase or decrease in time spent on those tasks from when you started working there to now?
   - ➔ Prompt: Why do you think that is?
     - ◆ Changing patient demographics
     - ◆ Increasing chronic illness or patient complexity
     - ◆ Changing patient expectations
     - ◆ Changing administrative processes required by other parts of the health system (e.g., forms, referral processes, IT platforms)
     - ◆ Needs related to non-medical determinants of health and access to social supports
   - ➔ Prompt: Can you tell me about changes to admin tasks during COVID-19?

5. **What role does gender play, if any, with respect to administrative workload?**
   - ➔ Prompt: Do you think gender shapes patient expectations or how patients treat you?
   - ➔ Prompt: Do you think gender shapes expectations for how work is shared among colleagues?

6. **Can you think of anything else about how others may perceive you - that could affect your administrative work**? (age, languages spoken, ethnicity in Canada, race, etc.)

7. **Do you feel that the administrative work you do is recognized and valued by others? Why? Why not?**

8. **Back to administrative tasks now - Which of your administrative activities do you enjoy most? Why?**

9. **Which of your tasks, if any, do you find challenging? Why?**

10. **How has technology impacted your experiences coordinating those administrative tasks?**
    - ➔ Prompt: What are the barriers, if any, to using technology more efficiently in your office?
    - ➔ Prompt: How does your EHR system shape your administrative work?
    - ➔ Prompt: Have you identified areas in which the system could be improved? Can you tell me more about that?

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11. Is anyone else in the office familiar enough with your admin responsibilities to cover for you?

➔ Prompt: How has that worked? What was the impact?

12. What happens when staff who have administrative responsibilities come and go?

➔ Prompts: Who manages the training?

- ◆ How has that gone in the past?

➔ Prompts: Do you have an office procedures manual? Can you tell me more about that?

- ◆ Who maintains it?
- ◆ How is that going?/ Is it used often?
- ◆ Have there been any challenges along the way? Can you tell me more about that?

13. Do you have team meetings?

If yes

➔ Prompt: How often; what topics are discussed?

➔ Prompt: Are your comments/suggestions listened to and acted on?

➔ Prompt: Can you tell me more about that?

➔ Prompt: What kinds of changes have been made to office procedures as a result of these meetings and who initiated the changes?

➔ Prompt: Anything else you'd like to say about team meetings?

If no

➔ Prompt: Why is that?

➔ Prompt: Did you ever have team meetings – what happened and why?

➔ Prompt: Do you chat informally and does that work well for you? Why, Why not?

➔ Prompt: Is there anything else you'd like to say about office communication and how it affects your work?

PART TWO

14. Reflecting back on what we just talked about, could you tell me which areas of administrative work feels most productive to you?

a. Prompt: This could include tasks that:

i. Support access to care for patients

ii. Strengthen patient and other relationships

iii. Increase efficiency of the office / practice

iv. Increase efficiency for the broader system

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15. Which areas of administrative work are of greatest concern for you?

For each area of concern:

a. What makes this an area of concern for you?

b. How would you say the volume of this work has changed over time since you've been working there?

c. What is your process?

d. Do other team members help with this work?

e. Can you suggest any strategies that would make this more efficient for you?

- Are there low-value processes that can be reduced/eliminated?
- Are there ways to improve efficiency of processes?

f. Are there opportunities to optimize distribution of workload within teams?

g. Are these strategies that could be implemented within your workplace, or would other systems or agencies need to be involved?

h. Have you tried new strategies in the past? How did that go?

16. Do you have anything else you'd like to tell us about your work in the office?

17. Is there anything else you think is important for us to know?

Research Administration:

We'd like to send you a token of our appreciation for your time today.

What address should we send it to?

Thank you so much for speaking with me today.

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BMJ Open

Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

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Manuscripts

Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

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Understanding and addressing changing administrative workload in primary care in Canada: Protocol for a mixed method study

Abstract

Introduction

Many Canadians struggle to access the primary care they need while at the same time primary care providers report record levels of stress and overwork. There is an urgent need to understand factors contributing to the gap between a growing per-capita supply of primary care providers and declines in the availability of primary care services. The assumption of responsibility by primary care teams for services previously delivered on an in-patient basis, along with a rise in administrative responsibilities may be factors influencing reduced access to care.

Methods and Analysis

In this mixed methods study our first objective is to determine how the volume of services requiring primary care coordination has changed over time in the Canadian provinces of Nova Scotia and New Brunswick. We will collect quantitative administrative data to investigate how services have shifted in ways that may impact administrative workload in primary care. Our second objective is to use qualitative interviews with family physicians, nurse practitioners, and administrative team members providing primary care to understand how administrative workload has changed over time. We will then identify priority issues and practical response strategies using two deliberative dialogue events convened with primary care providers, clinical and system leaders, and policymakers.

We will analyze changes in service use data between 2001/2 and 2021/22 using annual total counts, rates per capita, rates per primary care provider, and per primary care service. We will conduct reflexive thematic analysis to develop themes and to compare and contrast participant responses reflecting differences across disciplines, payment and practice models, and practice settings. Areas of concern and potential solutions raised during interviews will inform deliberative dialogue events.

Ethics and Dissemination

We received research ethics approval from Nova Scotia Health (#1028815). Knowledge translation will occur through dialogue events, academic papers, and presentations at national and international conferences.

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Strengths & Limitations

- This study will involve both quantitative and qualitative data complemented by deliberative dialogue events for robust description, analysis, and actionable recommendations.
- Trustworthiness of qualitative methods and analysis will be demonstrated through inclusion of three professional groups working in two provinces, the positionality and reflexivity of diverse research team members, the use of constant comparison throughout concurrent data collection, thick description, and an audit trail.
- A population-level analysis of factors shaping changing workload will inform trends for system-wide planning, but won't provide detailed clinician-level information

Introduction

There are more primary care providers per person than ever before in Canada.(1) At the same time, primary care is described as being in crisis,(2-4) as Canadians struggle to access needed care(5) and primary care providers report record levels of stress and overwork.(6) There is an urgent need to understand factors contributing to the gap between a growing number of primary care providers per person and declines in the availability of primary care services.(7) To some extent this gap may reflect declining hours worked(8) or service volume (9) per physician, but evidence also points to broader health system changes that may impact workload in primary care(10) over and above visit volume. Neither the extent of these changes, nor their impact on provider experience and patient access have been carefully studied.(6)

Beyond patient visits, primary care providers (including family physicians (FPs) and nurse practitioners (NPs)) are responsible for indirect patient care activities such as arranging prescriptions, lab tests, imaging, specialist referrals, and medical forms, as well as maintaining a longitudinal patient record.(11) Over the past 20 years we have seen a shift in care from hospitals to communities,(12) a proliferation of guidelines and increased complexity in the management of common chronic conditions,(13-16) and accelerating population aging. (17, 12, 18) The intersecting effects of these trends may mean that there is greater need than ever for care coordination or indirect patient care, contributing to expanding administrative workload in primary care. Navigating electronic medical records, complicated referral processes, and cumbersome forms, may be increasing the time needed to complete indirect patient related tasks. Patients may be referred by primary care providers to programs or specialists as part of the overall care plan. These referrals, however, often result in additional administrative work and record-keeping responsibilities. Paperwork and tasks flow back to primary care from referral sources, further increasing workload. In addition to administrative responsibilities related to care coordination, primary care providers play varied roles in clinic administration, depending on service delivery model.

Administrative workload has been described as a source of burnout and reduced access to care for patients, and may push family physicians to choose options other than comprehensive community-based practice.(19) This has been casually called "death by a thousand papercuts"

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or more recently “death by a thousand clicks.”(20) Under this view, time spent on a variety of administrative tasks is secondary to the ‘real’ work of primary care. Indeed administration has been broadly characterized as taking away from other patient care activities, thereby making health systems less efficient and also less equitable, as people who most need coordinated care may struggle to access it.(10,21) At the same time, administrative work is central to delivering coordinated and integrated care to patients and to clinic operations.

Outcomes of a survey conducted by Doctors Nova Scotia published in December 2021 revealed that administrative burdens were included among the top three challenges facing primary care physicians in that province.(22) The magnitude of this problem led to the involvement of the Office of Regulatory Affairs and Service Effectiveness (ORASE) of the Nova Scotia government to investigate and implement concrete action plans to address unnecessary administrative burdens on physicians.(23) With the support of Doctors Nova Scotia, a survey administered by ORASE found that 38% of physicians’ time was spent on unnecessary administrative tasks, and that 24% of that work could have been done by someone in a different role/profession.(23) The survey also found that physicians believed that 14% of that work could be entirely eliminated.(23) The report on the survey noted that the main contributors to unnecessary administrative tasks were: the completion of medical forms, doctor’s notes, business operations, billing, including shadow billing, licensing, privileging, and tasks associated with requirements of government and oversight entities. Importantly, physicians indicated that administrative burdens significantly contributed to burnout, and that reductions of time spent on these tasks would allow time for improved work/life balance and improved patient care.(23) While administrative burden is a problem for all acute, specialist, and primary care physicians in Nova Scotia, given the unique role primary care physicians play in coordinating care, we need detailed information about, and solutions for, this setting.

The impact of administrative burdens in primary care is complex. It is not simply a problem of too much paperwork. Family physicians and nurse practitioners are also increasingly responding to issues related to patients’ social determinants of health without adequate support and resources, often resulting in frustration, stress, and emotional burden.(23) Wait times for specialist referrals translate to lengthier periods of patient management, additional paperwork, follow-up on referrals, and carrying the emotional burden of patients’ unmet needs. Added to these pressures are expectations to take on more ‘unattached’ patients, while not having the time or capacity to do so because of the complexity of care required by existing patients coupled with heavy administrative burdens. While the emotional toll of administrative burden on primary care providers is not the focus of this study, it is important to recognize that there are many concerning ripple effects that accompany this problem.

A 2023 study(24) built on the findings of the ORASE’s Physician Administrative Burden Survey conducted in Nova Scotia. Study outcomes demonstrated that a 10% reduction of unnecessary paperwork for primary care physicians in New Brunswick would equal an additional 119,726 patient visits annually.(25) While increased recognition of this problem and attempts to address it are welcome, it comes with an implicit expectation that primary care providers will have the

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capacity to see new patients and/or increase the number of visits for existing patients. This expectation may add to primary care provider stress and emotional burden.

While there is some limited qualitative research with primary care physicians in the United States,(26) none yet exists in Canada. We also need information drawing on the experience and expertise of nurse practitioners, clinic managers, medical office assistants, and other primary care team members with administrative responsibilities. New information to understand the extent and drivers of administrative workload, as well as the strategies required to make this activity more efficient are urgently needed.

Study Objectives

This project will address three objectives and nested research questions**,** with the overarching goal of adjusting administrative workload, while ensuring efficient, accountable, and well-coordinated care:

1. Determine how the volume of services requiring primary care coordination has changed over time
   a. How has service volume shifted from inpatient services to outpatient and community-based services requiring coordination through primary care?
   b. How has the volume of outpatient services requiring primary care coordination and oversight (i.e., prescriptions, testing, imaging, and specialist consultations) changed over time?

2. Use interviews with primary care providers (family physicians and nurse practitioners) and administrative team members to understand how administrative workload has changed:
   a. What are current experiences of administrative workload, including work related to patient care and clinic administration?
   b. How has administrative workload changed over time? What factors have shaped changes?
   c. What are areas of particular concern and how might these be addressed?

3. Drawing on the findings of Objectives 1 and 2, with primary care providers and service planners, co-identify priority issues and co-develop practical response strategies to make administrative work more efficient:
   a. Which areas of concern are addressable in the short, medium and long term?
   b. What actions would be needed, who is in a position to act, and what resources would be involved?

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Methods

This two-year study (June 2023 - May 2025) will use different data sources and methodologies to address each project objective within two study provinces, Nova Scotia and New Brunswick (Figure 1). Findings of descriptive quantitative analysis under Objective 1 and in-depth qualitative interviews under Objective 2 will inform deliberative dialogues used to address Objective 3.

Objective 1 - Quantitative administrative data

To address Objective 1 we will seek out and combine administrative data from multiple sources to create a more complete picture of shifts in service use over time, accessing data from 2001/2 (or earliest available, depending on dataset) and 2023/2024 (or most recent available). This time frame will allow us to explore long-term trends, as well as changes since March 2020 due to the pandemic. We do not need access to individual, record-level data to meet study objectives and plan only population-level analysis, using population-based data that captures service delivery for all insured residents of the study provinces (approximately 1 million residents in NS and 800,000 in NB). To address question 1a we will combine publicly-available data accessible through the Canadian Institutes of Health Information at the provincial level to examine trends in hospital services use as well as services delivered on an outpatient basis or in the community. To examine trends in hospitalizations, we will count the number of discharges recorded in the Discharge Abstract Database (DAD) and the number of days patients spent in hospital.(27) The DAD captures administrative, clinical, and demographic information on all hospital discharges (including deaths, sign-outs and transfers). To capture outpatient physician service use, we will use the National Physician Database (NPD) to track number of visits with primary care physicians, as well as with medical specialists and surgical specialists. The NPD contains information on both the demographic characteristics, and their payments and activities within the health care system. We will use the DAD to count the number of day surgery procedures. Finally, we will use the National Health Expenditures Database to triangulate findings about service volume, examining shifts in spending between hospitals and other categories of healthcare over time.(28)

To address question 1b we will track total laboratory tests and imaging services completed for outpatients, as FP/NPs have a role in reviewing and coordinating these even when ordered by other physicians. Public prescription data for seniors will be used to count the number of different drugs dispensed per year, at the level of the first 5 digits of the Anatomical Therapeutic Chemical classification (ATC) code.(29) We will exclude vaccines (J07), vitamins (A11), mineral supplements (A12), tonics (A13) and various (V) categories. As with lab tests, as FP/NPs have a role in managing all prescriptions, we will report the total. We will use NPD to track specialist physician visit data, focusing on those seen as outpatients, as, as reports would go back to NPs/FPs for patient follow-up.

Quantitative Analysis: Our approach is primarily descriptive and it is not necessary to link datasets at the individual level. We will present service use data as annual total counts (to

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capture how total workload has changed), as rates per capita (to capture how patient-level care has changed), as well as rates per primary care provider, and per primary care service (to capture how changes in workload map onto primary care workforce supply and practice volume). Following visual inspection of trends over time, we will use segmented regression to quantify changes in level or trend of service use over time, including in the context of the COVID-19 pandemic.(30)

Objective 2 - In-depth video interviews

Our approach most closely resembles a mixed methods multi-level plan in which quantitative and qualitative data will be concurrently collected and analyzed, each with equal weight. The research questions we are attempting to answer through the use and analysis of quantitative data while complementary, are distinct from the research questions we are exploring though qualitative interviews and analysis. Findings from both methods will contribute to knowledge generation and may enhance each other, however it is impossible to know in advance of data collection and analysis precisely how this will evolve. We anticipate that findings from quantitative data on changes in service volume requiring primary care coordination will be better understood when complemented by narratives from the interviews that add important contextual information

Interviews: We will use interviews with primary care providers (FPs, NPs, and other team members involved in administration (clinic managers and/or medical office assistants) to understand their current administrative workload (including care coordination and other administrative activities), how this has changed over time, and what opportunities exist to manage this differently. See supplementary material for interview guides. We will be interviewing primary care providers and administrative staff in New Brunswick as well as Nova Scotia to compare narratives between the two provinces, and to inform a planned Pan-Canadian study on this topic in the future.

We will conduct interviews via a secure online video platform. Interviews will last approximately one hour and will be scheduled at a time that is convenient and acceptable to study participants. This will allow us to reach a geographically varied set of participants at a lower cost than conducting in-person interviews. Video interviews have been shown to produce similar data richness when compared with in-person interviews.(31,32) Interviews will be conducted by Master's or PhD trained qualitative research staff. Interview data will be digitally recorded, professionally transcribed, quality checked for accuracy, and de-identified prior to analysis. Each interviewer will complete field notes shortly after interviews take place. Field notes will be reviewed prior to and during analysis. The research associate will document all analytic decisions for the audit trail.

Recruitment: We will purposively recruit primary care providers who are funded through a range of payment models (fee-for-service and alternate payment plans), who work in a range of clinic models (independent, health authority partnered, turn-key health authority operated), and who work in a range of geographic locations (urban and rural locations throughout each

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province). Specifically, we will recruit from Nova Scotia Health Primary Care Clinics, Dalhousie Family Medicine teaching sites, Doctors Nova Scotia, and Nurse Practitioners of New Brunswick. Potential participants will complete a brief on-line screening survey (see supplementary information.) We plan sample sizes of 20 FP/NP and 20 administrative team member interviews to investigate differences by models and locations. The total sample size is forty. This sample size is consistent with recommendations for similar study designs.(33-35) Previous research we conducted concerning primary care practice was received with strong interest;(36) we anticipate similarly strong interest in this topic.

The project research associate will contact key individuals at recruitment organizations to explain the study and coordinate outreach. Key individuals at each site will distribute introductory emails along with a study poster. There will be a link from the poster to the screening survey. Our aim is to interview participants from various geographical settings, practice types, remuneration models, discipline (nurse practitioner, family physician, administration) and with varying lengths of practice experience and roles in primary care clinic settings. Sampling from the results of the screening survey will involve selection of interview participants with the greatest number of diverse characteristics. Sampling will depend on the number and diversity of survey responses. Additional recruitment will take place until sampling goals have been reached.

Gender is of central importance in this project. A substantial body of evidence shows that physician practice patterns are gendered, as are expectations with respect to care provision, including potentially administrative workload.(37-39) We will be attentive to gender in both interview recruitment and qualitative analysis. As an increasing proportion of family physicians are women, and 92% of nurse practitioners in Canada(40) are female we will actively recruit men and ensure there are no barriers to participation for people with other genders. We will ask participants about how they perceive relationships between gender and administrative workload, and our analysis will explore how responses and experiences vary by gender.

Informed Consent. Consent is implied by completion of the online survey. This is clearly articulated in the introductory text to the survey and has been approved by the local research ethics board. Potential participants selected for interviews will be contacted by the research associate. A participant information sheet covering all the topics typically included in consent forms will be provided at that time, and participants will have an opportunity to ask any questions they have before interviews are scheduled. At the beginning of each interview the research associate will review study aims, participant rights, and obtain verbal consent. The consent process will be audiotaped for documentation purposes.

Each participant will be assigned an identification number in place of their name. All interview transcripts will bear the identification number. Participant quotes will be included in presentations and publications emanating from this study, however there will not be any personal identifiers. Quotes will be attributed to the type of professional, gender and province in which the person is practicing, with attention to any contextual details of practice that could be identifying.

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Data Management: Quantitative and qualitative data and consent forms will be securely stored on encrypted password-protected computers. Files are backed up monthly on an external drive. Both quantitative and qualitative data will be stored for a period of seven years after which it will be permanently destroyed in accordance with the policies of Dalhousie University.

Qualitative Analysis: We will employ Braun and Clarke's reflexive thematic analysis(41) which fits well with our critical qualitative approach(42,43) and relativist epistemology.(44) Our analysis will also be guided by social constructivism.(45) This blended approach reflects our positionality as active participants in the research process, our understanding that meaning is socially constructed, and the key role of reflexivity throughout the research process. There are six fluid phases involved when conducting reflexive thematic analysis. The first phase is becoming familiar with the interview data by reading through transcripts on several occasions. The next phase involves initial coding of data related to the research question. We plan to employ an inductive approach to analysis at that stage. This will be followed by the generation of preliminary themes. We will then return to the data, further develop and revise themes. Depending on the analysis in progress, we may continue with the inductive analysis, or we may decide to conduct a deductive analysis based on a concept or framework that we determine at that point may provide greater depth to the findings. In the latter case, we will return to the data and commence a new phase of coding deductively. This is what is meant by the fluidity of analytic phases. Once that phase has been completed, we will further refine and name themes and develop definitions for the themes. The final stage involves written preparation of the results including a discussion of their relevance to the existing literature.

Initially each member of the qualitative working group will review 2-3 transcripts each. Working group members will meet weekly to discuss the transcripts and potential codes. The research associate will use NVivo software to begin the inductive coding process based on those discussions. We will begin by generating a detailed description of administrative workload (research question 2a). Analysis will occur concurrently with data collection and the interview guide will be iteratively adjusted if needed as our understanding of experiences of administrative workload develops. We will then expand analysis to explore changes over time (question 2b), and to make comparisons between FP/NP and administrative team member interviews, as well as to explore variation across payment model, practice model, and practice setting. To address research question 2c, and in preparation for Objective 3, we will group and compile areas of concern and potential solutions raised by participants.

The qualitative working group will continue to meet bi-weekly or as needed throughout the analytic process. The diverse perspectives and expertise of group members will ensure a robust and meticulous analysis of qualitative data. We will have representation from family medicine, nursing, health administration and health policy, as well as expertise in qualitative research methods, ethnography and medical anthropology. Each interviewer will prepare field notes shortly after interviews take place. This may result in modifications to the interview guides.

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Field notes will be reviewed prior to and during analysis. The research associate will document all analytic decisions as part of the audit trail.

Time Frame: We expect the recruitment period and interviews to begin in September and be complete by the end December 2023. Qualitative analysis will also commence in September 2023 and is expected to continue through to June 2024.

Objective 3 - Integration of findings and knowledge exchange

We will work with partners on the team to identify relevant participants for a final two-phase dialogue event, designed to integrate and interpret both scientific and contextual data for the purpose of informing policy development,(46) in this case, strategies to address administrative workload. We will include 1) a subset of interview participants (primary care providers and administrative team members) working in varied contexts, 2) clinical leaders who can make changes within primary care service delivery environments, and 3) system administrators and policymaker leaders who can change processes that involve both primary care and other parts of the health system or sectors. We anticipate 12-15 participants will be involved in both the first and second stages of dialogue events.

Prior to the first meeting, the study team will review quantitative findings and the initial list of areas of concern identified through qualitative interviews. These will be integrated into a background document circulated in advance of the dialogue process. Quantitative findings will inform changing administrative workload over time, and qualitative findings will provide context for areas of concern and potential solutions that will be explored during dialogue events. Dialogues will be conducted via video-conference in two stages. In the first stage, Nominal Group Technique (NGT)(47,48) will be used to guide discussion and prioritization of issues and solutions. Nominal Group Technique has been used since the 1960s for the identification of problems, priority ranking of issues, action items, or questions in small group in-person sessions. One of the technique's key strengths is it is designed for equal representation among participants and is non-hierarchical in nature. In this study, areas of concern generated and recorded in qualitative interviews will serve as a starting point for discussion, with participants invited to add topics not yet mentioned. In a ranking exercise, participants will be invited to consider which tasks are time consuming and/or offer lower value to patients and the system. Then participants will be asked to discuss and explain the reasons for their ranking.

The second stage will focus on feasibility and actions needed to address high-priority areas of concern identified in the first event. Prior to the second stage, we will identify any additional participants with knowledge specific to areas of concern. Participants will be asked to consider which could be addressable in the short term (<3 months), medium term (3-12 months), and long term (one year or more). In breakout groups focusing on individual areas of concern, participants will be asked to consider what action would be needed and who would need to be involved. Each breakout group will be led by a facilitator briefed and prepared by the research team. After the breakout group discussions, there will be a debriefing with the full group of

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participants. The dialogue process will provide concrete and actionable strategies tailored to the primary care setting, which complement other ongoing work within Nova Scotia and New Brunswick health systems.

Impact on equity in recruitment and retention of healthcare professionals

Administrative workload directly impacts recruitment and retention of healthcare professionals, at times influencing family physicians to choose options other than community-based primary care as a strategy to circumvent burnout.(19) Expectations for coordination may vary by how primary care providers are gendered and racialized(49); women form a growing proportion of the primary care workforce.(50) Addressing coordination workload can therefore play a role in supporting equity in recruitment and retention of health care professionals. Understanding and supporting coordination of care is central to people-centred, flexible, quality healthcare. Identifying practical strategies to make coordination more efficient can support innovative healthcare models, and more seamless integration of virtual care into patients' journeys.

Patient and Public Involvement

Patients or members of the public were not involved in the design of this study and will not be involved during implementation. While our research questions respond to topics of patient and public interest, research approaches focus on routinely collected health system data and research participants are primary care providers and administrative staff. We therefore focus on including a range of policy and provider expertise and experience within the research team. Inclusion of patients in the deliberative dialogue events is not currently planned.

Study Limitations

Available quantitative data sources capture variables labeled "sex," but there is no measure of gender, and administrative or legal sex may not correspond to sex assigned at birth. This is a limitation of secondary analysis of these data. Where possible, we will distinguish between patterns plausibly shaped by sex or gender in interpretation.

Care coordination activities are not recorded in administrative billing data. It is not possible to directly capture time spent on care coordination or other administrative work. Instead, we focus broadly on shifts in care delivery between hospital and community, as well as changes in services that require coordination, review, and/or administration on the part of primary care providers. It is beyond the scope and budget of this project to obtain access to linked, record-level data or to collect detailed time use data. Study objectives can be addressed through aggregate data that can be shared with no risk of identification. This project will form the groundwork for a future grant proposal that will use record-level data from the same sources to analyze changes over time by population age and generate projections of future primary care capacity.

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Ethics and Dissemination

Research ethics approval for this protocol was received from Nova Scotia Health (REB # 1028815) for research activities in both Nova Scotia and New Brunswick. This study conforms to the Declaration of Helsinki (June 1962; amended October 2013) and the Belmont Report (1979).

We are taking an integrated knowledge translation approach(51) and have assembled a team that includes varied perspectives. Primary care provider co-investigators and policy partners affirm the urgent need to address administrative workload. We will present findings and seek feedback from the groups represented by partners and team members following completion of Objectives 1 and 2. Deliberative dialogues under Objective 3 are themselves a method for knowledge translation, designed to integrate and interpret data to inform strategies addressing administrative workload. This project will also yield traditional academic outputs crossing multiple disciplines and results will be disseminated to a range of audiences.

Results will inform healthcare delivery excellence that addresses opportunities for team-based care and the ability of healthcare providers to work to their full scope of practice**.** New or expanded roles for administrative and other primary care team members are being piloted in Nova Scotia. This pilot research will enrich the understanding of our research outcomes and also support ongoing innovation. Finally, a robust system of primary care is fundamental to addressing health inequalities in access to care. There is evidence of declining equity in access to primary care in Canada.(7) Limited primary care capacity and inadequate systems of coordination impact patients with more complex health and social needs most severely. High-performing systems of primary care can connect health care with other community resources. This coordination is needed to support collaborative approaches to address the social determinants of health.

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RL originally conceived the study, wrote the first draft of the Introduction and Objective 1 methods. CM wrote the first draft of Objective 2 methods. FB, RB, JE, AG, LH, ML, MM, EGM, RMM, MM, EP and JT provided feedback for revisions to the interview guides, screening questionnaire, and the draft protocol, and approved the final version for submission.

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References

1. Canadian Institute for Health Information. *Supply, Distribution and Migration of Physicians in Canada, 2020- Data Tables*. CIHI; 2021.

2. Walsh M, Pearson H. *Nova Scotia Doctor Calls Family Doctor Shortage a "Crisis."* Accessed June 6, 2017. http://globalnews.ca/news/3270444/nova-scotia-doctor-calls-family-doctor-shortage-a-crisis/

3. The evolving crisis in primary care. *British Columbia Medical Journal*. Accessed August 16, 2022. https://bcmj.org/editorials/evolving-crisis-primary-care

4. Opinion: Canada has a primary-care crisis. Here are three steps we must take to solve this problem. *The Globe and Mail*. https://www.theglobeandmail.com/opinion/article-canada-has-a-primary-care-crisis-here-are-three-steps-w e-must-take-to/. Published July 16, 2022. Accessed August 16, 2022.

5. Canadian Institute for Health Information. *How Canada Compares: Results from the Commonwealth Fund's 2020 International Health Policy Survey of the General Population in 11 Countries*. CIHI; 2021.

6. Sovran V, Ytsma A, Husak, L, and Johnson, T. Coordination of Care Could Improve: Canadian Results from the Commonwealth Fund International Health Policy Survey of Primary Care Physicians. *Healthcare Quarterly*. 2020;23(2). Accessed March 28, 2022. https://www.longwoods.com/content/26283/coordination-of-care-could-improve-canadian-results-from-the-commonwealth-fund-international-health

7. Lavergne MR, Bodner A, Peterson S, et al. Do changes in primary care service use over time differ by neighbourhood income? Population-based longitudinal study in British Columbia, Canada. *Int J Equity Health*. 2022;21(1):80. doi:10.1186/s12939-022-01679-4

8. Islam, R, Kraij, B and Sweetman, A. Physician workforce planning in Canada: the importance of accounting for population aging and changing physician hours of work. *Canadian Medical Association Journal.* 2023;195(9). doi: 10.1503/cmaj.221239

9. Rudlor, D, Perterson, S, Stock, D, et al. Changes over time in patient visits and continuity of care among graduating cohorts of family physicians in four Canadian provinces. *Canadian Medical Association Journal*. 2022;194(48). doi: 10.1503/cmaj.220439

10. Lavergne, R, Peterson S, Rudoler, D, et al. Productivity decline or administrative avalanche? Examining factors that shape changing workloads in primary care. *Healthcare Policy.* 2023;19(1):114-129

11. College of Family Physicians of Canada. *Family Medicine Professional Profile*. College of Family Physicians of Canada; 2018.

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12. Chappell N, Hollander M. An Evidence-Based Policy Prescription for An Aging Population. *Healthcare Papers*. 2011;11(1):8-18. doi:10.12927/hcpap.2011.22246

13. Adams WL, McIlvain HE, Lacy NL, et al. Primary care for elderly people: Why do doctors find it so hard? *The Gerontologist*. 2002;42(6):835-842. doi:10.1093/geront/42.6.835

14. Mangin D, Sweeney K, Heath I. Preventive health care in elderly people needs rethinking. *BMJ*. 2007;335(7614):285-287. doi:10.1136/bmj.39241.630741.BE1

15. Korownyk C, McCormack J, Kolber MR, Garrison S, Allan GM. Competing demands and opportunities in primary care. *Canadian Family Physician*. 2017;63(9):664-668.

16. Millar E, Stanley J, Gurney J, et al. Effect of multimorbidity on health service utilisation and health care experiences. *J Prim Health Care*. 2018;10(1):44-53. doi:10.1071/HC17074

17. Barer ML, Evans RG, Hertzman C. Avalanche or glacier?: Health care and the demographic rhetoric. *Canadian Journal on Aging / La Revue canadienne du vieillissement*. 1995;14(2):193-224. doi:10.1017/S0714980800011818

18. Canadian Institute for Health Information. *Health Care in Canada, 2011: A Focus on Seniors and Aging.* Canadian Institute for Health Information; 2012. Accessed April 20, 2022. https://www.deslibris.ca/ID/230734

19. Kabir M, Randall E, Mitra G, et al. Resident and early-career family physicians' focused practice choices in Canada: a qualitative study. *Br J Gen Pract*. 2022;72(718):e334-e341. doi:10.3399/BJGP.2021.0512

20. Fortune FS Erika Fry. Death By 1,000 Clicks: Where Electronic Health Records Went Wrong. Kaiser Health News. Published March 18, 2019. Accessed June 17, 2022. https://khn.org/news/death-by-a-thousand-clicks/

21. Starfield B. The hidden inequity in health care. *International Journal for Equity in Health*. 2011;10(1):15. doi:10.1186/1475-9276-10-15

22. McKay M. The future of family medicine: Nova Scotia family physicians' visions and priorities. Final research report. Doctors Nova Scotia;2023.

23. Office of Regulatory Affairs and Service Effectiveness. *Physician Administrative Burden Survey – Final Report*. Government of Nova Scotia; 2020. Accessed August 18, 2022. https://doctorsns.com/sites/default/files/2020-11/admin-burden-survey-results.pdf

24. Alegbeh A. Patients before paperwork. Nova Scotia's approach to improving patient care by reducing physician red tape. Canadian Federation of Independent Business; 2023. Accessed March 31, 2023. https://www.cfib-fcei.ca/en/research-economic-analysis/patients-before-paperwork-nova-scotias-approach-to-improving-patient-care-by-reducing-physician-red-tape https://20336445.fs1.hubspotusercontent-na1.net/hubfs/20336445/research/reports/2023/Patients_Before_Paperwork_Report_2023.pdf

For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml

25. CBC News. Fredericton family doctor calls on province to help cut paperwork, free up time for patients. https://www.cbc.ca/news/canada/new-brunswick/family-doctors-paperwork-new-brunswick-will-stymiest-medical-society-1.6734457

26. Apaydin E. Administrative work and job role beliefs in primary care physicians: An analysis of semi-structured interviews. *SAGE Open*. 2020;10(1):2158244019899092. doi:10.1177/2158244019899092

27. Canadian Institute for Health Information. Discharge Abstract Database (DAD) metadata. Accessed October 3, 2023.

28. Canadian Institute for Health Information. National Health Expenditure Trends, 2022 — Methodology Notes. Ottawa, ON: CIHI; 2022.

29. WHO Collaborating Centre for Drug Statistics Methodology: International language for drug utilization research. Accessed April 10, 2023. https://www.whocc.no

30. Wagner, AK, Spumerai, SB, Zhang, F and Ross-Degnan, D. Segmented regression analysis of interrupted time series in medication use research. Journal of Cinical Pharmacology and Therapeutics. 2002;Aug 27(4):299-309.

31. Archibald MM, Ambagtsheer RC, Casey MG, Lawless M. Using zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*. 2019;18:1609406919874596. doi:10.1177/1609406919874596

32. Gruber M, Eberl JM, Lind F, Boomgaarden HG. Qualitative Interviews with irregular migrants in times of COVID-19: Recourse to remote interview techniques as a possible methodological adjustment. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*. 2021;22(1). doi:10.17169/fqs-22.1.3563

33. Sandelowski M. Sample size in qualitative research. *Research in Nursing & Health*. 1995;18(2):179-183. doi:10.1002/nur.4770180211

34. Morse JM. Analytic Strategies and Sample Size. *Qualitative Health Research*. 2015;25(10):1317-1318. doi:10.1177/1049732315602867

35. Morse JM. Designing funded qualitative research. In: *Handbook of Qualitative Research*. Sage Publications, Inc; 1994:220-235.

36. Lavergne MR, Goldsmith LJ, Grudniewicz A, et al. Practice patterns among early-career primary care (ECPC) physicians and workforce planning implications: protocol for a mixed methods study. *BMJ Open*. 2019;9(9):e030477. doi:10.1136/bmjopen-2019-030477

37. Hedden L. *Beyond Full-Time Equivalents: Gender Differences in Activity and Practice Patterns for BC's Primary Care Physicians*. PhD Thesis. University of British Columbia; 2015.

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38. Buddeberg-Fischer B, Stamm M, Buddeberg C, et al. The impact of gender and parenthood on physicians' careers - professional and personal situation seven years after graduation. *BMC Health Services Research*. 2010;10(1):40. doi:10.1186/1472-6963-10-40

39. Jolly S, Griffith KA, DeCastro R, Stewart A, Ubel P, Jagsi R. Gender differences in time spent on parenting and domestic responsibilities by high-achieving young physician-researchers. *Annals of internal medicine*. 2014;160(5):344-353. doi:10.7326/M13-0974

40. Canadian Institute for Health Information. 2022. https://www.cihi.ca/en/nurse-practitioners

41. Braun V, Clarke V. *Thematic Analysis: A Practical Guide*. Sage Publications Ltd; 2022.

42. Flick U. Challenges for a New Critical Qualitative Inquiry: Introduction to the Special Issue. *Qualitative Inquiry*. 2017;23(1):3-7. doi:10.1177/1077800416655829

43. Denzin NK. Critical Qualitative Inquiry. *Qualitative Inquiry*. 2017;12(1). doi:doi.org/10.1177/1077800416681864

44. Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2018). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. K. Denzin & Y. S. Lincoln (Eds.), The Sage handbook of qualitative research (5th ed., pp. 108–150). Thousand Oaks, CA: Sage

45. Boyland. J. A social constructivist approach to the gathering of empirical data. *Australian Counselling Research Journal*. 2019;30-34.

46. Boyko JA, Lavis JN, Abelson J, Dobbins M, Carter N. Deliberative dialogues as a mechanism for knowledge translation and exchange in health systems decision-making. *Social Science & Medicine*. 2012;75(11):1938-1945. doi:10.1016/j.socscimed.2012.06.016

47. Harvey N, Holmes CA. Nominal Group Technique: An effective method for obtaining group consensus. *International Journal of Nursing Practice*. 2012;18(2):188-194.

48. Potter M, Gordon S, Hamer P. The Nominal Group Technique: a useful consensus methodology in physiotherapy research. *New Zealand Journal of Physiotherapy*. 2004;3(2):70-74.

49. Guerra CE, McDonald VJ, Ravenell KL, Asch DA, Shea JA. Effect of race on patient expectations regarding their primary care physicians. *Family Practice*. 2007;25(1):49-55. doi:10.1093/fampra/cmn005

50. Hedden, L., Barer, ML, Cardiff, K, McGrail, KM, Law, MR, Bourgeault, IL. The implications of the feminization of the primary care physician workforce on service supply: a systematic review. *Human Resources Health*. 2014;12:32. http://www.human-resources-health.com/content/12/1/32

51. Bowen S, Graham I. Integrated knowledge translation. In: *Knowledge Translation in Health Care*. John Wiley & Sons, Ltd; 2013:14-23.

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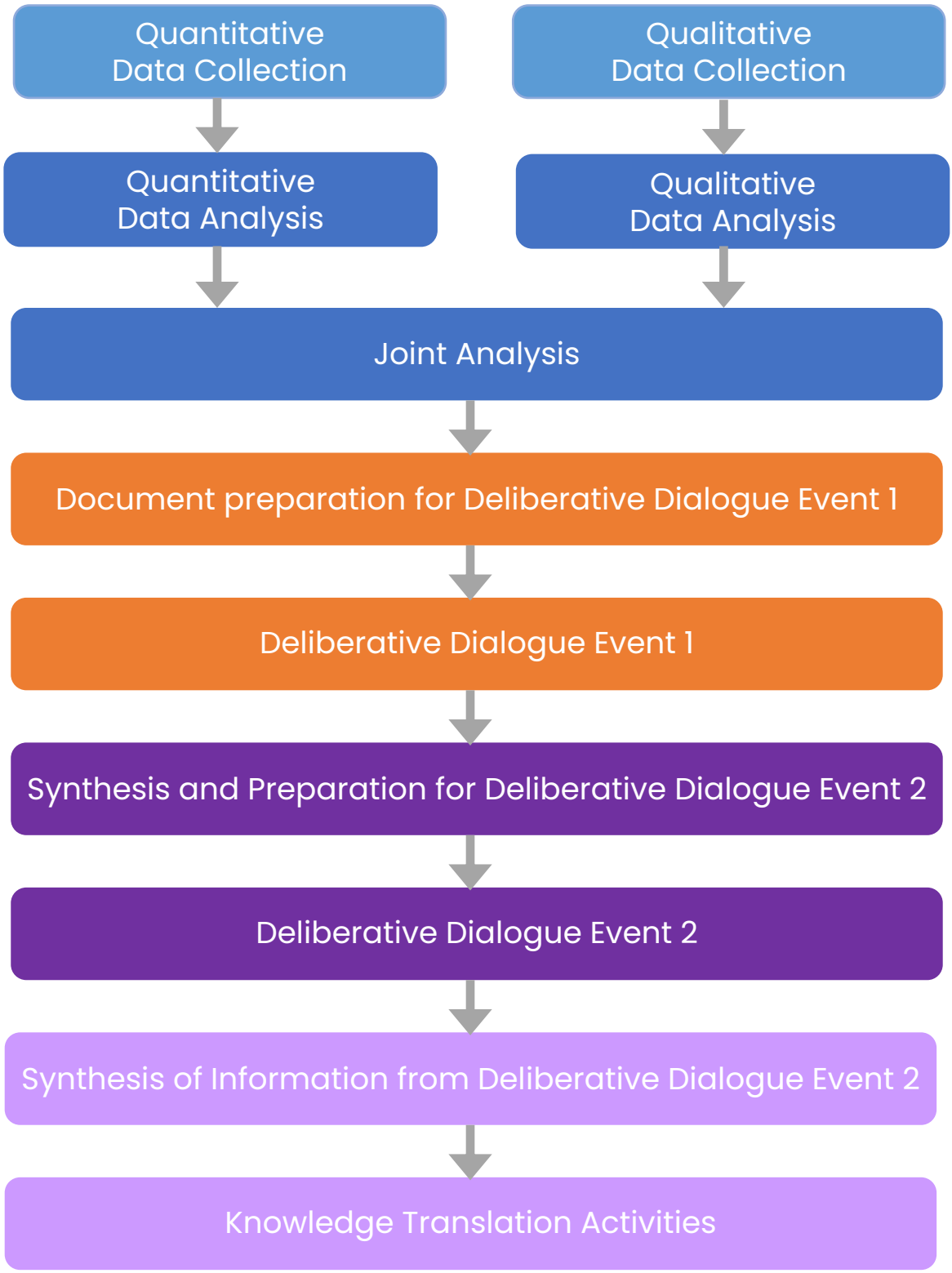
Quantitative Data Collection
Qualitative Data Collection
Quantitative Data Analysis
Qualitative Data Analysis
Joint Analysis
Document preparation for Deliberative Dialogue Event 1
Deliberative Dialogue Event 1
Synthesis and Preparation for Deliberative Dialogue Event 2
Deliberative Dialogue Event 2
Synthesis of Information from Deliberative Dialogue Event 2
Knowledge Translation Activities

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LANDING PAGE for survey
https://surveys.dal.ca/opinio/s?s=71694

STUDY TITLE:	A Thousand papercuts: Understanding and addressing changing administrative workload in primary care
PRINCIPAL INVESTIGATOR:	M. Ruth Lavergne, Faculty Researcher Dalhousie University, ruth.lavergne@Dal.ca

Thank you for your interest in participating in an interview for our research study called "A Thousand papercuts: Understanding and addressing changing administrative workload in primary care." In this study we would like to better understand the breadth and distribution of administrative workload in primary care. We would like to learn more about the administrative tasks that family physicians, nurse practitioners, office managers, and office staff perform and how this work has changed over time. We hope that this study will help others to become more aware of the important work that you do and how valuable it is.

To be considered for an interview, please complete this survey and provide us with your contact information and profession. The survey has a short series of optional questions for you to answer. Please answer as many questions as you like. You are not obligated to answer any, although your answers will help us to select participants representing a diversity of practices and locations.

Your completion of the survey implies that you have consented to participate in this research. The information you provide in the survey will be kept confidential. You may exit the survey at any time and your information will not be saved. The survey is administered by Opinio, a tool hosted and supported by Dalhousie University. The survey data from Opinio is stored on Dalhousie University servers in Halifax, Nova Scotia, Canada and is endorsed for use by the Dalhousie Research Ethics Board. The information you give during the survey will be destroyed after the recruitment process has been completed.

If you are invited to participate in an interview, you will be provided with an information sheet about the study and the interview.

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Contact for Questions or Complaints

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, you may contact: the Research Ethics Board: ResearchEthics@nshealth.ca

CONTACT INFO

Thank you for sharing your information. Please include your name and email address below so that if you are selected for an interview, we can contact you.

1. Name:

2. Please enter your email address. If email is not a suitable method of contact for you, please provide your preferred method and contact information:

INFORMATION ABOUT YOURSELF

3. Please select the statement that applies to you:

- ☐ I am a practising family physician based in Nova Scotia
- ☐ I am a practising family physician based in New Brunswick
- ☐ I am a practising nurse practitioner based in Nova Scotia
- ☐ I am a practising nurse practitioner based in New Brunswick
- ☐ I am currently an administrative manager of a primary care clinic in Nova Scotia*
- ☐ I am currently an administrative manager of a primary care clinic in New Brunswick*
- ☐ I currently provide administrative support in a primary care clinic in Nova Scotia*
- ☐ I currently provide administrative support in a primary care clinic in New Brunswick*
- ☐ None of the above

Administrative staff will be re-directed to question 6.

If none of the above is selected, an automatic message will pop up: "Thank you for your interest in this study, however we are currently focusing on family physicians, nurse practitioners and administrative staff in primary care clinics in Nova Scotia and New Brunswick for this survey. If you would like to receive information about study findings, please indicate below the email address we can use to follow up with you."
_____ You may also visit our website https://www.healthsystemsresearch.ca/papercuts for information about study outcomes.

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4a. Do you spend some of your time working in a community-based, longitudinal, comprehensive primary care clinic (i.e., traditional clinic-based family medicine practice)?

- ☐ Yes
- ☐ No

4b. If yes to question 4a, are you responsible for managing or co-managing any/all practice operations (for example hiring and managing staff, dealing with building maintenance, overseeing all aspects of running the practice)?

- ☐ Yes
- ☐ No

5. What type of payment model are you on when providing community based longitudinal primary care?

Check all that apply:

- ☐ Fee for service (FFS)
- ☐ Alternative payment plan (APP)
- ☐ Alternative funding plan (AFP)
- ☐ Capitation
- ☐ Salary
- ☐ Blended
- ☐ Other

If other, please specify _____

6. Is your clinic location:

- ☐ Urban
- ☐ Suburban
- ☐ Rural
- ☐ Other

If other, please specify _____

7. If you practice/work in Nova Scotia, which health zone is your clinic located in?

- ☐ Not applicable to me
- ☐ Central
- ☐ Eastern
- ☐ Northern
- ☐ Western
- ☐ Other

If other, please specify _____

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8. If you practice/work in New Brunswick, which health zone is your clinic located in?
   - ☐ Not applicable to me
   - ☐ Zone 1
   - ☐ Zone 2
   - ☐ Zone 3
   - ☐ Zone 4
   - ☐ Zone 5
   - ☐ Zone 6
   - ☐ Zone 7
   - ☐ Other

     If other, please specify _____

9. How many years have you been working at your current clinic?
   - ☐ less than 2 years
   - ☐ between 2-5 years
   - ☐ between 6-10 years
   - ☐ more than 10 years

The following question is optional. It will help our study team ensure breadth of interview participants.

10. What gender to you identify with?
    - ☐ Woman
    - ☐ Man
    - ☐ Transgender Woman/Trans Feminine
    - ☐ Transgender Man/Trans Masculine
    - ☐ Gender nonconforming/Nonbinary
    - ☐ Gender queer/Gender Fluid
    - ☐ Two-spirit
    - ☐ Prefer to self-describe _____
    - ☐ Prefer not to answer

Thank you for sharing your time and experiences with us. If you are selected for an interview, you will be contacted by a member of our team in the near future.

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Supplemental Study Information

Papercuts Project

Interview Guide

Family Physicians & Nurse Practitioners

Introduction

Thank you for taking the time to participate in this interview today. Have you read through the information sheet about the study? [If no, the RA will provide verbal overview.] Do you have any questions? [RA responds to questions raised].

The interview questions will help us to better understand administrative work in primary care. I will begin with some questions about administrative tasks you do in your day-to-day work. We are interested in learning about tasks which are directly related to patient care as well as those which are not (for example, broader clinic operations). We'd also like to discuss how administrative practices have changed over time.

We'll then talk more about what work feels productive in that it contributes to clinic operations or patient care, and what feels unproductive or unnecessarily time consuming. We'd like to hear your thoughts about what changes could be made so that your time is used efficiently, and what the impact of administrative burdens have been on you and the office team. Just so you know, there are about 17 main questions in this interview.

If you are ready, I would like to begin recording the interview now. [RA begins recording of Zoom call]. For our records, do I have your consent to start the interview? Thank you.

PART ONE

RA reviews participant's screening summary sheet and notes any clarifications/changes.

1. **Can we start off with you briefly describing your practice setting?**

2. **Can you tell me about your administrative work – what does that include?**

3. **Have these tasks changed from when you started practicing? In what ways? Why?**
   - ➔ Prompt: Has there been an increase or decrease in time spent on those tasks from when you started practicing to now?
   - ➔ Prompt: Why do you think that is?

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- Changing patient demographics
- Increasing chronic illness or patient complexity
- Changing patient expectations
- Changing administrative processes required by other parts of the health system (e.g., forms, referral processes, IT platforms)
- Needs related to non-medical determinants of health and access to social supports

→ Prompt: Can you tell me about changes to admin tasks during COVID-19?

4. **What role does gender play, if any, with respect to administrative workload?**
   - → Prompt: Do you think gender shapes patient expectations? How?
   - → Prompt: Do you think gender shapes expectations for how work is shared among colleagues? Why is that?

5. **Can you think of anything else about how others may perceive you - that could affect your administrative work**? (age, languages spoken, ethnicity in Canada, race, etc.)

6. **Does administrative work impact the level of morale in your office**? **How so?**
   - → Prompt: Does administrative work impact your own morale?
   - → Prompt: Has this changed over time? How? Why?

7. **How has technology impacted your experiences coordinating administrative tasks?**
   - → Prompt: What are the barriers, if any, to using technology more efficiently in your practice?
   - → Prompt: How does your EHR system shape your administrative work?
   - → Prompt: Have you identified areas in which the system could be improved? Can you tell me more about that?

8. **Do you spend time on administrative tasks outside of your regular work day? What does that look like for you?**
   - → Prompt: How do you feel about that?
   - → Prompt: What strategies have you used in the past to decrease your "extra/overtime" hours?
   - → Prompt: How did that go? What could be done differently if you tried something similar again?

9. **Can you comment on whether or not your administrative work impacts your ability to engage in other professional interests? (for example: supervising/mentoring learners, *engaging in advocacy activities, *having time for your own professional development, *community involvement/public health education)**
   - → Prompt: Have you taken on more or fewer learners in your practice as the administrative burden has changed?
   - → Prompt: Do you mentor your medical learners differently to adapt to administrative demands?
   - → Prompt: If you have had to cut back or cut out *those activities altogether, how has that impacted you? How have others responded to this change?

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10. Can you tell me if other team members work with you to manage administrative tasks? What does that look like?

- → Prompt: How do you communicate about this work within your team?
- → Prompt: Are there additional roles other team members could take on?
- → Prompt: What would need to happen to make that possible?

11. Who makes decisions about changes to administrative processes? How do changes play out?

- → Prompt: Can you give me an example within your practice setting?
- → Prompt: Can you give me an example of changes to administrative processes that were initiated by external organizations or practices?
- → Prompt: Who is consulted about these changes?

Now, I'd like to go into further detail about some of the administrative work we've been discussing.

PART TWO

12. Reflecting back on what we just talked about, could you tell me which areas of administrative work feels most productive to you? (By productive, we mean good use of your time)

- → Prompt: This could include tasks that:
  - Support access to care for patients
  - Strengthen clinical relationships
  - Increase efficiency of your practice
  - Increase efficiency for the broader system

13. Which aspects of your administrative work are of greatest concern for you?

For each area of concern:

- What makes this an area of concern for you?
- How would you say the volume of this work has changed over time since you've been in practice?
- Do other team members help with this work?

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14. Can you suggest any strategies that would make this more efficient for you?

- → Are there low-value processes that can be reduced/eliminated/redirected?
- → Are there ways to improve efficiency of processes?
- → Are there opportunities to optimize distribution of workload within teams?

15. Are there strategies that could be implemented within your workplace, or would other systems or agencies need to be involved?

16. Have you tried 'new' strategies in the past? How did that go?

17. Do you feel that the administrative work you do is recognized and valued by others? Why? Why not?

WRAP UP

Do you have anything else you'd like to say about the administrative aspects of your practice?

RESEARCH ADMINISTRATION

We'd like to send you a cheque as a token of our appreciation for your time today.

Interviewer records mailing address

Thank you for speaking with me today.

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Papercuts project

Interview Guide

Administrative Staff

Introduction

Thank you for taking the time to participate in this interview today. Have you read through the information sheet about the study? [If no, the RA will provide verbal overview.] Do you have any questions? [RA responds to questions raised.]

The interview questions will help us to better understand administrative work in primary care. I will begin with some questions about administrative tasks you do in your day-to-day work. We are interested in learning about tasks which are directly related to patient care as well as those which are not (for example, broader clinic operations). We'd also like to discuss how administrative practices have changed over time.

We'll then talk more about what work feels productive in that it contributes to clinic operations or patient care, and what feels unproductive or unnecessarily time consuming. We'd like to hear your thoughts about what changes could be made so that your time is used efficiently, and what the impact of administrative burdens have been on you and the office team. Just so you know, there are about 17 main questions in this interview.

I would like to begin recording this session now. Is that alright with you? [RA begins recording of Zoom call]. For our records, do I have your consent to start the interview? Thank you.

PART ONE

RA reviews participant's screening summary sheet and notes any clarifications/changes

1. **What is your job title?**
   - Does that title fit with what you actually do in your role? Why, why not?

2. **Could you tell me about the office where you work?**
   - How long have you been working there?
   - Is it just you, or are there others on the administrative team?
   - Briefly, how do their roles differ from yours?
   - What training is provided?

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3. **We'll go into the details of your specific work responsibilities a little later, but for now, could you give me a brief overview of your tasks? Could you tell me what a typical work week is like for you?**

4. **Have these tasks changed over time since you've been working there? In what ways? Why?**
   - ➔ Prompt: Has there been an increase or decrease in time spent on those tasks from when you started working there to now?
   - ➔ Prompt: Why do you think that is?
     - ◆ Changing patient demographics
     - ◆ Increasing chronic illness or patient complexity
     - ◆ Changing patient expectations
     - ◆ Changing administrative processes required by other parts of the health system (e.g., forms, referral processes, IT platforms)
     - ◆ Needs related to non-medical determinants of health and access to social supports
   - ➔ Prompt: Can you tell me about changes to admin tasks during COVID-19?

5. **What role does gender play, if any, with respect to administrative workload?**
   - ➔ Prompt: Do you think gender shapes patient expectations or how patients treat you?
   - ➔ Prompt: Do you think gender shapes expectations for how work is shared among colleagues?

6. **Can you think of anything else about how others may perceive you - that could affect your administrative work**? (age, languages spoken, ethnicity in Canada, race, etc.)

7. **Do you feel that the administrative work you do is recognized and valued by others? Why? Why not?**

8. **Back to administrative tasks now - Which of your administrative activities do you enjoy most? Why?**

9. **Which of your tasks, if any, do you find challenging? Why?**

10. **How has technology impacted your experiences coordinating those administrative tasks?**
    - ➔ Prompt: What are the barriers, if any, to using technology more efficiently in your office?
    - ➔ Prompt: How does your EHR system shape your administrative work?
    - ➔ Prompt: Have you identified areas in which the system could be improved? Can you tell me more about that?

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11. Is anyone else in the office familiar enough with your admin responsibilities to cover for you?

➔ Prompt: How has that worked? What was the impact?

12. What happens when staff who have administrative responsibilities come and go?

➔ Prompts: Who manages the training?

- ◆ How has that gone in the past?

➔ Prompts: Do you have an office procedures manual? Can you tell me more about that?

- ◆ Who maintains it?
- ◆ How is that going?/ Is it used often?
- ◆ Have there been any challenges along the way? Can you tell me more about that?

13. Do you have team meetings?

If yes

➔ Prompt: How often; what topics are discussed?

➔ Prompt: Are your comments/suggestions listened to and acted on?

➔ Prompt: Can you tell me more about that?

➔ Prompt: What kinds of changes have been made to office procedures as a result of these meetings and who initiated the changes?

➔ Prompt: Anything else you'd like to say about team meetings?

If no

➔ Prompt: Why is that?

➔ Prompt: Did you ever have team meetings – what happened and why?

➔ Prompt: Do you chat informally and does that work well for you? Why, Why not?

➔ Prompt: Is there anything else you'd like to say about office communication and how it affects your work?

PART TWO

14. Reflecting back on what we just talked about, could you tell me which areas of administrative work feels most productive to you?

a. Prompt: This could include tasks that:

i. Support access to care for patients

ii. Strengthen patient and other relationships

iii. Increase efficiency of the office / practice

iv. Increase efficiency for the broader system

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15. Which areas of administrative work are of greatest concern for you?

For each area of concern:

a. What makes this an area of concern for you?

b. How would you say the volume of this work has changed over time since you've been working there?

c. What is your process?

d. Do other team members help with this work?

e. Can you suggest any strategies that would make this more efficient for you?

- Are there low-value processes that can be reduced/eliminated?
- Are there ways to improve efficiency of processes?

f. Are there opportunities to optimize distribution of workload within teams?

g. Are these strategies that could be implemented within your workplace, or would other systems or agencies need to be involved?

h. Have you tried new strategies in the past? How did that go?

16. Do you have anything else you'd like to tell us about your work in the office?

17. Is there anything else you think is important for us to know?

Research Administration:

We'd like to send you a token of our appreciation for your time today.

What address should we send it to?

Thank you so much for speaking with me today.

For peer review

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