




# BMJ Open Development of a primary care pandemic plan informed by in-depth policy analysis and interviews with family physicians across Canada during COVID-19: a qualitative case study protocol

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## ABSTRACT

**Introduction** Given the recurrent risk of respiratory illness-based pandemics, and the important roles family physicians play during public health emergencies, the development of pandemic plans for primary care is imperative. Existing pandemic plans in Canada, however, do not adequately incorporate family physicians' roles and perspectives. This policy and planning oversight has become increasingly evident with the emergence of the novel coronavirus disease, COVID-19, pandemic. This study is designed to inform the development of pandemic plans for primary care through evidence from four provinces in Canada: British Columbia, Newfoundland and Labrador, Nova Scotia, and Ontario.

**Methods and analysis** We will employ a multiple-case study of regions in four provinces. Each case consists of a mixed methods design which comprises: (1) a chronology of family physician roles in the COVID-19 pandemic response; (2) a provincial policy analysis; and (3) qualitative interviews with family physicians. Relevant policy and guidance documents will be identified through targeted, snowball and general search strategies. Additionally, these policy documents will be analysed to identify gaps and/or emphases in existing policies and policy responses. Interviews will explore family physicians' proposed, actual and potential roles during the pandemic, the facilitators and barriers they have encountered throughout and the influence of gender on their professional roles. Data will be thematically analysed using a content analysis framework, first at the regional level and then through cross-case analyses.

**Ethics and dissemination** Approval for this study has been granted by the Research Ethics of British Columbia, the Health Research Ethics Board of Newfoundland and Labrador, the Nova Scotia Health Authority Research Ethics Board and the Western University Research Ethics Board. Findings will be disseminated via conferences and peer-reviewed publications. Evidence and lessons learnt will

## Strengths and limitations of this study

- Our interdisciplinary research team includes experienced primary care researchers, family physicians and public health experts, allowing us to draw on their expert knowledge in the development of study tools and the interpretation and dissemination of findings.
- The use of a multiple-case study approach will aid in making distinctions between localised issues specific to a single case and cross-cutting themes present across health regions.
- While maximum variation sampling will facilitate the recruitment of participants along a wide variety of characteristics in the selected regions and provinces, the transferability of findings may be limited by provincial variation in primary care and health policy in Canada.
- We anticipate this study will highlight gaps in current pandemic response plans and identify promising practices and key facilitators to incorporate in future pandemic response plans for family physicians.

be used to develop tools for government ministries, public health units and family physicians for improved pandemic response plans for primary care.

## INTRODUCTION

Family physicians have an important role to play during a pandemic, with responsibilities including sentinel surveillance, screening, testing, health education, monitoring individuals and providing follow-up care, contributing to hospital and emergency room surge capacity and providing vaccinations.<sup>1-5</sup>

Additionally, family physicians are expected to continue providing routine primary care to individuals through their community-based practices.<sup>4-6</sup> Community members who are particularly reliant on primary care to maintain their health under normal circumstances may have increased care needs during and following a pandemic.<sup>7</sup>

There are attributes of family practice that call for clear, well-considered pandemic preparedness plans specific to primary care. Family physicians may be the first point of contact in a community-based outbreak. This requires that family physicians deal with new diseases when there is limited information about those diseases, such as their means of transmission, effective prevention practices and therapeutic options.<sup>8</sup> Family physicians must also minimise the potential risk of transmission to other community members, staff and trainees in their clinics, as well as themselves and their families.<sup>9</sup>

In December 2019, the SARS-CoV-2 which causes COVID-19 appeared in China. On 30 January 2020, the WHO determined COVID-19 to be a public health emergency of international concern, and on 11 March 2020 they declared a pandemic.<sup>10</sup>

Canada confirmed its first presumptive case of COVID-19 on 25 January 2020.<sup>11</sup> Since then, the pandemic has been experienced differently across and within provinces. Nationally, there have been two distinct 'waves' of COVID-19 cases to date. The first 'wave', from April to June 2020, peaked in May 2020 at nearly 70 new daily cases per million people; the second 'wave', which started in September 2020, has seen cases increase nationally to nearly 120 new daily cases per million people in November 2020.<sup>12</sup> While some provinces have, to varying degrees, followed the national trend (eg, British Columbia, Ontario, Quebec), others have avoided a large first (eg, Manitoba, Saskatchewan) or second (eg, Newfoundland and Labrador, Nova Scotia) wave.<sup>12</sup>

Healthcare delivery in Canada is within the jurisdiction of individual provinces, while the federal government has responsibilities for general public health guidance. Much of primary care across Canada is publicly funded through provincial health insurance while care is delivered through family physicians operating as private businesses.<sup>13</sup> Such provincial control facilitates contextualised responses while reinforcing provincially varied experiences of a pandemic. This primary care model makes communication and coordination with practices challenging—particularly where physicians are not formally linked with regional or institutional networks.

In the early months of the COVID-19 pandemic in Canada, some family physicians were hesitant to screen community members in their clinics due to inadequate supplies of the appropriate personal protective equipment (PPE), improperly equipped examination rooms and concerns regarding proper cleaning during clinic hours.<sup>14</sup> Eventually, designated COVID-19 assessment centres,<sup>15 16</sup> community-based PPE distribution<sup>17</sup> and government control of supply chains<sup>18</sup> were implemented to address some of these concerns.

The prolonged nature of physical distancing and 'stay-at-home' orders have disrupted community primary care visits. Fewer community members sought primary care—either delaying or forgoing routine visits—and few individuals were willing to have in-person visits.<sup>19</sup> For fee-for-service practices, the decrease in service volumes reduced revenues, leaving some practices struggling to pay fixed overhead costs.<sup>14 20-22</sup>

Prior to the pandemic, virtual and telehealth services were only minimally offered by family physicians in Canada.<sup>23</sup> In response to the pandemic, synchronous virtual care has been adopted widely, facilitated by the introduction or modification of billing codes.<sup>24</sup> Because the need for virtual visits emerged so quickly, some physicians and community members have encountered barriers to adapting to this change due to a variety of factors such as technology and platform concerns, a lack of prior training in virtual clinical assessments and care, access to internet and private spaces and the health literacy of individuals seeking care.<sup>25</sup>

Many family physicians also work in a variety of other healthcare settings that are directly affected by or involved in the pandemic response (eg, hospitals, long-term care homes, non-profit community services).<sup>14</sup> Family physicians with institutional affiliations (eg, hospital privileges) may be expected to add to surge capacity in these institutions, while other physicians may be redeployed to assessment and testing centres or to provide care beyond their traditional scope of practice.<sup>26</sup>

Outbreaks of COVID-19 in long-term care facilities prompted orders for residential caregivers to work in a single setting in some provinces,<sup>27-29</sup> though it is unclear how these orders will affect the roles of physicians as the pandemic proceeds. Family physicians, in particular those working in rural communities who provided care to multiple settings prior to the pandemic, may be particularly hard pressed to operate community-based practices while meeting their obligations to hospitals and long-term care homes if they are limited to a single setting.

Finally, given that women make up a growing proportion of the family physician workforce,<sup>30</sup> and as caregiving roles evolve, pandemic plans struggled to incorporate gender considerations. Family physicians may care for children or older relatives and may therefore be unable or unwilling to participate in some or all pandemic roles due to a lack of care support, isolation protocols following exposure and their desire to minimise exposure risk to their loved ones.

In the absence of clearly defined pandemic plans for primary care, it is uncertain how family physicians have informed their care provision and role fulfilment during the current pandemic. With multiple sources of information providing updates and guidance as the pandemic unfolds, it is possible that family physicians may hold varied and potentially competing views on their responsibilities. Further, with minimal recent experience with primary care provision during a pandemic, policymakers have limited evidence of family physicians' professional

and personal experiences with implementing the policies envisioned for them and their communities of care. As deployment of primary care and COVID-19 are provincial responsibilities, Canada offers a strong opportunity to conduct case studies comparing approaches and outcomes to inform future pandemic planning in primary care.

In this study, we will draw on the experiences of family physicians throughout the COVID-19 pandemic to guide the ongoing response to COVID-19 and develop primary care response plans for future pandemics. We anticipate this study will highlight gaps in current pandemic response plans; identify variation along traits such as urban/rural location, affiliation with regional organisational structures, funding models and gender; and illustrate promising practices and key facilitators. The findings will help ensure physicians are supported to fulfil their roles during a pandemic and that community members' access to primary care is minimally disrupted throughout all stages of a pandemic.

### Objectives

This research seeks to understand the formal and informal roles of family physicians during a pandemic, and the facilitators and barriers family physicians encounter in fulfilling those roles. Specifically, our objectives are to:

1. Describe the proposed, actual and potential roles of family physicians during different stages of the COVID-19 pandemic.
2. Describe the facilitators and barriers to the proposed, actual and potential family physician roles during different stages of the COVID-19 pandemic.
3. Describe gender differences in the roles, facilitators and barriers of family physicians during different stages of the COVID-19 pandemic.
4. Compare and contrast the proposed, actual and potential roles of family physicians and the facilitators and barriers to these family physician roles across four Canadian provinces.

'Roles' in this context refers to specific tasks and/or responsibilities that family physicians are asked or required to perform during the stages of the pandemic. These roles are expected to cease once the pandemic is over and 'normal' operations resume.

## METHODS

### Overall study design

This study comprises multiple mixed methods case studies,<sup>31</sup> with each case examining the pandemic response of family physicians in one of four regions of Canada: the Vancouver Coastal Health region in British Columbia, the Eastern Health region of Newfoundland and Labrador, the province of Nova Scotia and Ontario Health West region.

Vancouver Coastal Health is one of five regional health authorities in British Columbia, providing care to a quarter of the provincial populace (1.25 million

individuals) through primary, residential and acute care, public health, mental health and substance use programmes.<sup>32</sup> The Eastern Health region is the largest of four regional health authorities in Newfoundland and Labrador, providing a full spectrum of health services to over half of the province's residents (more than 300 000 community members).<sup>33</sup> Nova Scotia Health provides a range of healthcare through hospitals, health centres and community-based programmes to all (nearly 1 million) residents of the province of Nova Scotia, as well as some specialised services for Atlantic Canadians.<sup>34</sup> The Ontario Health West region includes the areas served by the four westernmost Local Health Integration Networks, which are responsible for coordination of primary, home and community care, community health centres, hospitals, long-term care and mental health and addiction support for roughly 2.6 million residents.<sup>35</sup> The newly formed Ontario Health West agency is coordinating the COVID-19 response in the region.<sup>36</sup> These regions, while pragmatically representing the locations of our pre-existing research team, have variation in their numbers of COVID-19 cases and deaths, include urban and rural communities, link to acute care and represent varied regional structures and primary care funding and practice models that are characteristic of primary care models and reforms implemented across Canada.

Each case study will consist of a mixed methods design, including: (1) a chronology of family physician roles in the COVID-19 pandemic response; (2) a provincial policy analysis; and (3) qualitative interviews with family physicians. We will compare and contrast findings across cases to identify comprehensive themes, shared lessons learnt and promising practices.

### Chronology

#### Approach

Each provincial team will compile a chronology to describe key milestones in the COVID-19 pandemic and family physicians' roles and responsibilities in each pandemic stage. We will also identify policies that influenced how family physicians performed pandemic-related roles. A comprehensive document review of grey literature including federal, provincial and regional health policy documents, government briefings and news reports, and policies and communications from health professional organisations (eg, provincial colleges of physicians and surgeons and colleges of family medicine, Canadian Medical Association, College of Family Physicians of Canada) will be used to inform the chronology and a policy analysis.

Relevant documents will be identified using a combination of targeted and general search strategies. Through our targeted search, we will review government, public health and health professional organisation, health institution and medical school websites throughout all four regions. These targeted websites will facilitate snowball searches of linked and/or referenced websites, documents and resources. As part of a general search, we will

conduct ongoing online searches using the following terms and logic: province or region name or abbreviation (eg, 'BC' or 'British Columbia' or 'VCH' or 'Vancouver Coastal Health'); and 'covid' or 'COVID-19' or 'coronavirus'; and 'primary care' or 'family physician' or 'family doctor' or 'general practitioner'.

In the chronology, we will note the progression of the pandemic (eg, number of cases, number of deaths); declarations, actions and ministerial orders (eg, declarations of a pandemic and/or public health emergency, closures, stay-at-home orders, essential work definitions, reopenings); and directives, supports, programmes and guidance for community members, institutions and healthcare workers. While the primary focus for each provincial study team will be their selected health region, we will also document pivotal milestones and policies at the provincial, national and international levels to provide the appropriate context for the chronologies.

Chronologies will be verified by public health, family physicians and primary care professionals in each region to ensure completeness, establish face validity and identify missing events or data sources. Provided that the project will take place throughout the current COVID-19 pandemic, the document review will be ongoing and verification will occur at multiple points in the study.

We will use the chronologies to identify the distinct stages in the pandemic response in each region and the proposed roles of family physicians outlined in pandemic plans and guiding documents. The chronology will be used as a common frame of reference in the qualitative interviews, helping to create an initial portrait of the actual roles and reveal facilitators and barriers encountered by family physicians.

### Policy analysis

The document search, criteria and review used to develop the regional chronologies will also form the basis for provincial policy analyses that will characterise the policies that have influenced family physicians throughout the pandemic. These analyses will identify gaps and emphases within pre-existing policies and supports and those that emerged in response to COVID-19.

To be included in the policy analysis, a policy must relate (directly or indirectly) to the roles of family physicians and/or primary care practices at any point during the COVID-19 pandemic. Policies may be pre-existing, a modification of existing policy or new policy in response to the COVID-19 pandemic. The policy may apply to any sites where family physicians routinely work, including office-based care, long-term care, hospitals, home or walk-in clinics, but must pertain specifically to family physicians or their practice staff and to activities at all locations (rather than a single location).

Each policy from the chronology document review will be assessed for inclusion and coded according to the following:

- ▶ The jurisdiction targeted by the policy (eg, region, province, national, international or other).

- ▶ The reported start and end dates (where applicable) of the policy.
- ▶ The pandemic stage when the policy was issued.
- ▶ A summary of the policy, including a description of the corresponding family physician role to which the policy relates.
- ▶ The type of organisation issuing the policy (eg, government, public health agency, medical professional association, health region/institution) and the level at which the organisation operates (eg, international, national, provincial, regional).
- ▶ The level of the policy's application (eg, international, national (ie, to all Canadian residents), provincial (ie, to all residents of a province), etc).
- ▶ The type of policy instrument: 'do nothing', 'exhortation', 'expenditure', 'regulation' and 'public ownership'.<sup>37</sup>

Each policy will be coded using a Qualtrics (SAP Software Solutions) survey. An initial set of 20 policies (five from each case) will be selected randomly and completed by all coders to identify additional codes, coding categories, to clarify instructions, ensure consistent application of procedures and resolve any coding disputes. Frequencies and cross-tabulations will be derived to describe the types of policy instruments issued in each jurisdiction, by different organisations, and to support the different roles of family physicians.

### Qualitative interviews

Following the development and verification of initial provincial chronologies and in parallel with the policy analysis, we will conduct semistructured qualitative interviews with family physicians working in each study region. Interviews will be 45–60 min in length and, due to the ongoing COVID-19 pandemic, will be conducted by Zoom (Zoom Video Communications) or telephone, depending on participant preference. With the permission of participants, interviews will be audio recorded and transcribed verbatim and notes will be taken for analysis.

For each interview, participants will be provided a copy of the region-specific chronology and we will ask that they describe for each pandemic stage: the facilitators and barriers they experienced in performing the proposed roles outlined in the chronology; their actual role and the facilitators and barriers they encountered in its fulfilment; the potential roles that family physicians could have filled at each stage of the pandemic, as well as the facilitators and barriers to fulfilment; and how their gender influences their proposed, actual and potential roles as family physicians during the pandemic. Interviews will involve background questions on participants' gender, years of practice, work settings, clinic roles and the demographics of their practice populations.

Given the dynamic nature of the pandemic and the evolving roles of family physicians, and that data collection will be ongoing as the pandemic persists, each participant will be asked if we may contact them for a potential second interview of a similar format.



### Study sample and recruitment

Consistent with maximum variation sampling,<sup>38</sup> we will recruit family physicians along a wide range of characteristics, such as family physicians with and without an academic appointment, of different genders, from different primary care funding and practice models, with and without team/regional health authority affiliations and with varied community demographics. We anticipate recruiting approximately 24–30 physicians in each region (around 120 overall); however, we will continue recruiting until we have sufficient data to allow for rigorous analysis and to accurately represent the experiences of family physicians with shared characteristics as noted above (ie, saturation).

To be included in the study, family physicians must have been licensed to practise in 2020 and be either clinically active or eligible to be clinically active in the applicable region of the study province during the pandemic. Eligibility to be clinically active is intended to include participants who may have changed their work plans in response to the pandemic (eg, return from parental, medical or other types of leave or travel). We will include family physicians who work solely in institutional settings, including long-term care facilities and hospitals.

We will exclude postgraduate medical residents, as well as international medical graduates permitted to practise solely during the pandemic since the latter's roles may be influenced by educational or licensing policies. Physicians in solely academic, research or administrative roles will also be excluded.

To recruit family physicians, a research assistant will email or fax a study invitation to prospective participants providing information about the study and requesting their participation in an interview. Family physicians will be identified through faculty lists, lists of teams and practices (eg, family health teams, community health centres), privileging lists and provincial College of Physicians and Surgeons' physician search portals. Due to provincial variance in access to lists of family physicians, we will also advertise through professional organisations' newsletters, social media posts, and employ third-party recruitment (ie, snowballing). In the case of snowballing, we will encourage participants to share our study and contact information with their professional networks, allowing interested physicians to initiate contact with the study team to obtain further details, confirm eligibility and schedule an interview.

### Analysis

The interview recordings will be transcribed verbatim, proofread and validated for accuracy with the participants as necessary. Field notes will also be taken during interviews by the researchers. All data will be thematically analysed for themes related to the research objectives using a content analysis framework. Employing a comparative analysis approach, at least two members of the research team will independently read each transcript and the interviewer's corresponding notes to identify key

themes and develop a robust coding framework around which further analysis will be structured.<sup>39 40</sup> A codebook will be developed to list and define all codes, to aid in the consistency of their application.

Through subsequent iterations of the coding process, we will move from more descriptive to more analytic codes, developing broader conceptual themes from the interview data. The researchers will determine codes for all data and harmonise the key themes. Analysis of transcripts will then be conducted using NVivo V.12 (QSR International) software for qualitative data analysis.<sup>39 40</sup> Descriptive statistics will be extracted from the demographic data and used to summarise the characteristics of the study participants.

### Cross-case analysis

As results from each regional case—including chronology, policy analysis and interviews—emerge, we will compare and contrast findings across cases to identify comprehensive themes, shared lessons learnt and promising practices. The use of a multiple-case study approach facilitates the distinction between localised issues specific to a single case and cross-cutting themes present across multiple health regions.<sup>31</sup> Given the differences in primary healthcare systems across Canadian provinces, cross-case analyses will also allow us to examine plausible or rival explanations by contrasting responses and exploring varying contextual conditions in the four cases.

### Study rigour

To enhance the rigour of this multiple-case study, we will draw on evidence gathered in the chronology, policy analysis and qualitative interviews which will be conducted using consistent methods across all four cases.<sup>31 41</sup> We will prepare interview guides and pretest questions, document our interviewing and transcription protocols, use experienced interviewers and member check with the participants during interviews. Further, our interdisciplinary team includes family physicians and public health experts, allowing us to draw on prior expert knowledge in the development of our research tools and the interpretation of our results.<sup>31</sup>

The research will also be conducted and presented in accordance with the Consolidated Criteria for Reporting Qualitative Research.<sup>42</sup> We will keep detailed records of the interviews (ie, audio recordings, transcripts), field notes, drafts of the coding template, and document coding disagreements and their resolutions. We will look for negative cases and encourage and document self-reflection among all members of the research team. In our dissemination of findings, we will provide thick descriptions<sup>43</sup> and use illustrative quotes.

### Patient and public involvement

Neither patients nor the public have been involved in the development of this research.

## ETHICS AND DISSEMINATION

### Ethics approval

We have obtained approval from the Research Ethics Boards at Simon Fraser University and the University of British Columbia (through harmonised Research Ethics of British Columbia), the Health Research Ethics Board of Newfoundland and Labrador, Nova Scotia Health and the University of Western Ontario.

### Informed consent

The research coordinator will contact interested participants by email or fax, provide them with study information and the study consent form and ask them to complete and return the form. The research coordinator and principal investigator in each region are available to answer any questions and will only proceed with an interview once written consent has been received. Individuals may refuse to participate, refuse to answer any questions or withdraw from the study at any point until their data have been combined with other participants for analysis. Participants do not waive any legal rights by signing the consent form.

### Confidentiality

All measures will be taken to reduce the risk of a privacy breach and maintain participant confidentiality. Audio recordings will be kept on secure storage provided by the affiliated academic institutions until they have been transcribed and the transcripts verified by the interviewer and/or participant.

Participants' full name and contact information will be used to schedule their interview, and additional demographic information, such as gender and type of practice, will be used to ensure variation in interview participants; however, this information will be kept separate from audio files and transcribed interviews by using unique participant codes. The master list of participants' names and their unique codes will be kept separate from study data and will not be shared with other regional study teams. All other identifying information that may be mentioned will be obscured during the transcription process. Participants' names will not be used in any published findings.

### Knowledge translation

In alignment with an integrated knowledge translation model,<sup>44</sup> this project was motivated by conversations with physicians and health system administrators during the early stages of the pandemic. Family physicians voiced questions and concerns about implementing guidelines from local public health organisations and emphasised the necessity of a coordinated pandemic response plan for primary care. To maintain this integration of knowledge users throughout the study, and to ensure that our data collection, analysis and dissemination is reflective of family physicians' perspectives and information needs, our team includes community-based family physicians as coinvestigators and collaborators within each region.

We will disseminate our findings throughout the 12-month project. Emergent findings will be shared through the communication channels (eg, websites, newsletters) of the four principal investigators and through our study team's knowledge user and collaborator partners. Results will provide government ministries, public health units, other health organisations and family physicians with evidence and tools to better inform their ongoing and future pandemic responses. We will prepare articles for publication in peer-reviewed open-access journals, write op-eds, conduct media interviews, participate in online discussions (eg, healthydebate.ca) and employ social media. We will also share findings through regional, national and international conferences both virtually and in person, once current pandemic-related travel restrictions are lifted.

Although there are many other healthcare providers in primary healthcare, this study focuses on family physicians because physician-led practices remain the most prevalent form of primary healthcare organisation in Canada. Similarly, we recognise that our project is a single, although important, step in the creation of primary care pandemic preparedness plans which will ultimately require the engagement of a broader range of health professionals, and government, professional and regional organisations.

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**Contributors** MMA is the lead and corresponding author. Contributions to the paper are described using the CRediT taxonomy (Brand *et al* (2015), Learned Publishing 28(2)). Writing—original draft: MMA, SS. Writing—review and editing: SS, LH, MMA, JL, EGM, LM, DR, RB, TL, EV, SLS, RM, MMc, TRF, EW, JBB, PSG, BR, GS, JW. Conceptualisation: MMA, LH, EGM, JL. Methodology: MMA, LH, EGM, JL, LM, SS, RB, DR, TL, EV, SLS, RM, MMc, TRF, EW, JBB, PSG, BR, GS, JW. Supervision: MMA, LH, EGM, JL. Project administration: MMA, LM, LH, SS, EGM, JL, RB, DR. Funding acquisition: MMA, LH, EGM, JL. All authors have read and approved the final manuscript.

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**Patient consent for publication** Not required.

**Ethics approval** This study has been approved by the Western University Research Ethics Board (Project ID 116315), Nova Scotia Health Authority Research Ethics Board (File No. 1026085), Research Ethics British Columbia (No. H20-02998), and Health Research Ethics Board of Newfoundland and Labrador (No. 2020.251).

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