

Practice- and System-Based Interventions to Reduce COVID-19 Transmission in Primary Care Settings: A Qualitative Study

Interventions axées sur la pratique et le système pour réduire la transmission de COVID-19 dans les milieux de soins primaires : une étude qualitative



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Abstract

Using qualitative interviews with 68 family physicians (FPs) in Canada, we describe practice- and system-based approaches that were used to mitigate COVID-19 exposure in primary care settings across Canada to ensure the continuation of primary care delivery. Participants described how they applied infection prevention and control procedures (risk assessment, hand hygiene, control of environment, administrative control, personal protective equipment) and relied on centralized services that directed patients with COVID-19 to settings outside of primary care, such as testing centres. The multi-layered approach mitigated the risk of COVID-19 exposure while also conserving resources, preserving capacity and supporting supply chains.

Résumé

À l'aide d'entrevues qualitatives auprès de 68 médecins de famille au Canada, nous décrivons les approches au niveau de la pratique et du système qui ont été utilisées pour atténuer

l'exposition à la COVID-19 dans les milieux de soins primaires partout au Canada afin d'assurer la continuité de la prestation des soins primaires. Les participants ont décrit comment ils ont appliqué les procédures de prévention et de contrôle des infections (évaluation des risques, hygiène des mains, contrôle de l'environnement, contrôle administratif, équipement de protection individuelle) et comment ils comptaient sur des services centralisés qui dirigeaient les patients atteints de la COVID-19 vers d'autres établissements que les soins primaires, comme les centres de dépistage. L'approche à plusieurs niveaux a atténué le risque d'exposition à la COVID-19 tout en ménageant les ressources, en préservant les capacités et en soutenant les chaînes d'approvisionnement.

Introduction

As the often first point of contact in the healthcare system for infected individuals during disease outbreaks, family physicians (FPs) must deal with new diseases when there is little information about the nature of the disease and how it spreads (Hogg et al. 2006; Westfall et al. 2021). Moreover, FPs play a key role in infectious disease surveillance, alerting public health officials about unusual disease activity in the community. During the early stages of the COVID-19 pandemic in 2020, efforts to enhance infection prevention and control (IPAC) (Table 1) in primary care settings were hindered by various factors, including shortages of personal protective equipment (PPE) across Canada and internationally (Hoernke et al. 2021; Houghton et al. 2020; Kea et al. 2021; Shah et al. 2020; Snowdon and Forest 2021; Snowdon and Saunders 2021; Snowdon et al. 2021; Wanat et al. 2021). In addition to increasing IPAC, pandemic preparedness plans in Canada recommend diverting patients away from family practices through the use of telephone advice and assessment lines, centralized testing and assessment centres, alternate treatment sites for infected individuals and fee codes for virtual (telephone or video) visits (Government of Canada 2018; Ontario Ministry of Health 2019; Ontario Ministry of Health and Long-Term Care 2013).

TABLE 1. Summary of IPAC elements

IPAC element	Example IPAC practices to limit spread of COVID-19 in primary care
Risk assessment	Screening patients prior to and upon arrival at a family practice
Hand hygiene	Routine cleaning of hands before and after interaction with patients or high-risk materials
Control of environment	Routine cleaning; cleaning for repurposing equipment surfaces and rooms; changing the layout of a practice to allow for physical distancing; placement of protective barriers; creation of segregated spaces for high-risk activities and/or patients; disposal of sharps and contaminated materials; changes to heating ventilation and air conditioning
Administrative controls	Staff education; healthy workplace policies; audit of IPAC practices
PPE	Access to supplies of appropriate PPE

Sources: Ontario Agency for Health Protection and Promotion and Provincial Infectious Diseases Advisory Committee (2012, 2015).

IPAC = infection protection and control; PPE = personal protective equipment.

FPs must manage conflicting priorities during a pandemic; they must limit potential exposure of the infectious disease to other patients, staff and themselves while at the same time ensuring that routine care remains available (Government of Canada 2018). Statistics from severe acute respiratory syndrome (SARS) and COVID-19 illustrate the risks: in 2003, several FPs contracted SARS from patients, and one FP died (Government of Canada 2003). In 2020, the first year of the pandemic, 171 FPs (of the 16,990 FPs in Ontario [CIHI 2021]) tested positive for COVID-19, representing 47.8% of all physicians who tested positive for COVID-19 (Liu et al. 2022). The COVID-19 pandemic was the first instance when system-wide measures were implemented to address these conflicting priorities. Provinces across Canada used different system-based interventions to minimize the risk of spreading COVID-19 in primary care settings. Regional variations in practice- and system-based approaches provide rich data on the pandemic response in primary care. Using a multiple-case study of four regions in Canada, we examined FPs' experiences in adapting office-based IPAC procedures and their perceptions of system-based interventions to divert potentially infectious patients away from family practices. The study provides evidence with which to evaluate pandemic response, specifically with respect to IPAC interventions, during the COVID-19 pandemic and improve planning for future pandemics as well as periods of high levels of circulating disease, such as seasonal influenza. Identifying measures shown to be acceptable and effective to providers are needed to safeguard the health and well-being of both providers and patients while ensuring that essential services remain available to patients during health emergencies.

Methodology

As described in our published protocol (Mathews et al. 2021), using a multiple-case study design (Yin 2014), we conducted semi-structured qualitative interviews with FPs and used a document review to create a chronology of the pandemic response related to primary care in four regions: the Vancouver Coastal Health region in British Columbia (BC), the Eastern Health region of Newfoundland and Labrador (NL), the province of Nova Scotia (NS) and the Ontario (ON) Health West region.

We recruited FPs from October 2020 to June 2021 using maximum variation sampling (Creswell 2014) along a wide range of characteristics until we reached saturation (Berg 1995; Creswell 2014). We included FPs who were licensed to practise in 2020. Participants could work in different primary care settings, including long-term care facilities and hospitals. We excluded postgraduate medical trainees and FPs on temporary licences or in exclusively academic, research or administrative roles. In each region, research assistants e-mailed study invitations to FPs identified from lists of academic faculty and physicians with hospital privileges, as well as the public physician search portals of provincial medical regulators. We also posted recruitment notices in medical organizations' newsletters and social media posts and, where permitted by local ethical boards, used snowball sampling.

The research assistants who sent out study invitations (LMe, LMo, RB, SS) and one investigator (MM) conducted interviews. In each interview, we asked FPs to describe the various pandemic-related roles they performed over different stages of the pandemic and the facilitators and barriers they experienced in performing these roles, as well as other potential roles that FPs could have filled. We conducted interviews by Zoom (Zoom Video Communications Inc.) or telephone depending on participant preference. We audio-recorded interviews, which we then transcribed verbatim, and also included interviewer field notes in the analysis.

Using a thematic analysis approach, at least two members of the research team in each region read two to three transcripts independently to identify key words and codes, which were organized into a preliminary coding scheme (Berg 1995; Creswell 2014). To create a uniform coding template across the four regions, each regional team coded a set of four transcripts (one from each region) using their own coding template and then met to compare coding, refine the meaning of each code and develop a unified template with consistent code labels and descriptions. The regional teams used the unified coding template to code all transcripts and field notes for their respective regions using NVivo 12 (QSR International). We summarized participant demographic and practice data using descriptive statistics.

To ensure the rigour of our analyses (Berg 1995; Creswell 2014; Guest 2012), we pre-tested interview questions, documented procedures, used experienced interviewers and verified meaning with the participants during interviews, looked for negative cases and provided context to situate illustrative quotations. Furthermore, our interdisciplinary team included FPs and public health experts, allowing us to draw on previous expert knowledge in the development of our interview guide and the interpretation of our results (Yin 2014).

We compiled publicly available documents dating back to/published in March 2020 onward in each region to record primary care-related aspects of the pandemic response through a combination of targeted and general search strategies, including a review of grey literature. In each region, we documented the interventions to divert patients away from family practices and verified our list of interventions with public health officials, FPs and primary care researchers to ensure completeness and accuracy.

We obtained approval from the research ethics boards at all participating institutions. Participants provided informed consent before interviews were scheduled. To reduce the risk of a privacy breach and to maintain confidentiality, we used passwords for electronic files, including recordings, concealed identifying information during the transcription process and identified participants by study numbers.

Positionality

We are an interdisciplinary team of primary care researchers with training in health administration, epidemiology, social work, anthropology, nursing and family medicine. Co-authors include FPs directly involved in pandemic response, including those in leadership positions.

Through the discussion of node reports and review of article drafts, we reached a description and interpretation of findings that balanced our individual views and reflected the data (quotations and policy documents). Our broader research team includes FPs, public health officials, health system administrators and policy makers who confirmed that the findings reflected their own experiences.

Results

We interviewed a total of 68 FPs across the four regions (BC = 15; ON = 20; NS = 21; NL = 12). Study participants were composed of 41 women and 27 men, 22 FPs paid by fee-for-service, 49 FPs with hospital privileges and 20 FPs who practised exclusively in rural settings (Table 2). All FPs in the sample described steps taken to limit exposure to COVID-19 in their practices. We used the five elements of IPAC (see Table 1) to organize and label these steps. The five elements are outlined in practice management guidelines and IPAC manuals available to community-based physicians in Canada.

TABLE 2. Characteristics of study participants

Characteristics of study participants (N = 68)	n (%)
Province	
British Columbia	15 (22.1)
Ontario	20 (29.4)
Nova Scotia	21 (30.9)
Newfoundland and Labrador	12 (17.6)
Gender^a	
Men	27 (39.7)
Women	41 (60.3)
Remuneration model	
Fee-for-service	22 (32.4)
Alternate payment plan ^b	46 (67.6)
Academic/hospital affiliation	
No	18 (26.5)
Yes	49 (73.5)
Community size^c	
Rural	20 (29.4)
Small urban	1 (1.5)
Urban	44 (64.7)
Mix ^d	3 (4.4)
Years in practice (mean [standard deviation])	16.9 (9.72)

a Gender was asked as an open-ended question.

b Alternate payment includes all non-fee-for-service or enhanced fee-for-service payment types.

c Rural < 10,000 population; small urban = 10,000-99,999 population; urban > 100,0000 population.

d Participants had more than one practice location, which were located in both urban and rural settings.

Participants described the context in which they implemented IPAC, how they implemented the five elements of IPAC in their practices and their perceptions of system-based interventions that diverted potentially infectious patients away from primary care practices.

Context of IPAC in Primary Care Practices during the COVID-19 Pandemic

Participants felt that they received little guidance from provincial public health authorities at the onset of the pandemic (March 2020) in terms of reorganizing their practices to safely see patients:

There was no true guidance, really, at that time ... in terms of how to manage our family practices. We just honestly took it upon ourselves ... to [create] a patient flow care plan on how to manage ... the incoming calls, to triaging, to who do we bring in? You know, if they have infectious symptoms, what do we do? (ON07)

Additionally, participants felt that much of the initial guidance was not directly applicable to primary care settings:

I think people in general practice felt not as guided by the health authority as other parts of the health system. ... [T]here was no guidance about how should I redesign my waiting room if I'm in a general practice office They did build processes for sharing that information and guidance over time, but it was pretty bumpy at the start; the first few weeks were pretty sketchy on the primary care side. (NS01)

In the first months of the pandemic, FPs initially based IPAC procedures on their own understanding of COVID-19 derived from journal and media articles and, once it became available (fall 2020), official guidance from public health or regional authorities.

Implementing IPAC

RISK ASSESSMENT

Participants described screening patients after hearing public health advisories in January 2020 about patients with influenza-like symptoms who had recently travelled to China (“[With regard to] the screening questions, [w]e made our own initially. ... [O]nce they started publishing ... screening questions, we used those” [NS15]) and adopted more formal sets of questions as symptoms became better known over the course of the first year of the pandemic (“I looked at the Public Health website to see what screening questions or symptoms they use” [BC08]). Screening took place in many forms – through signage, in-person questioning and e-mails prior to appointments: “So, like many other clinics, [we were] calling patients – first of all, we have a big list of questions that we asked them” (ON17).

HAND HYGIENE

Although participants made few explicit references to handwashing, many noted the need to restock hand sanitizers (“[W]e ran out of ... hand sanitizer” [BC13]) and to direct staff and patients to sanitize their hands upon entering the office (“We put a table right in front ... with hand sanitizer and little signs on it” [NS15]).

ENVIRONMENT CONTROLS

Participants changed the physical layout of their practices to limit the number of patients in the office at one time by reducing waiting room capacity (“[W]e emptied the waiting room of chairs” [ON13]) and instructing patients to wait in their cars until their appointment (“[P]atients would call from their car when they arrived and they would wait in their car, and they wouldn’t come in until it was time for their appointment” [NS15]). Participants also made changes to the scheduling of appointments to limit the number of patients in the office: “The biggest challenge was navigating who comes in the office and when, how many patients can we book at a time to ensure the waiting room isn’t full of people and we can safely socially distance” (NS22). They also scheduled patients with COVID-19 “as a last patient of the day” (NS12) to minimize the risk that this could present to others.

Participants also instituted more frequent and intensive cleaning protocols: “[W]e now have all kinds of procedures about wiping down rooms and things after we see a patient” (NS02). Participants’ practices also erected protective physical barriers between patients and reception staff to reduce potential contact with patients: “[We had] lots of Plexiglas for the ... receptionist stations” (ON17).

Participants designated areas of their clinics for specific purposes: “[C]ertain rooms are phone rooms and certain rooms are patient rooms. And so that allows us to make sure that certain rooms are kept clean or we know where the patients are going” (NS05). Patients who presented with influenza-like illnesses were seen in separate areas of the clinic in order to reduce the risk to others: “[We] segregated part of our clinic so that there [were] a couple [of] rooms in the back of the clinic that were designated just for people with respiratory symptoms, and we had special cleaning protocols in place for those rooms in particular” (ON02). In some cases, these patients were seen outdoors: “[I]f people had symptoms, ... we were examining them outside if possible” (ON08).

ADMINISTRATIVE CONTROLS

As described above, FPs developed an understanding of IPAC from journal and media articles, social media and official guidance from public health or regional authorities. Participants noted that much of the responsibility for screening patients was taken on by administrative and nursing staff and that screening guidelines changed frequently. Participants described the challenges in educating staff to ensure that they were following up-to-date protocols: “So every time the government came out with another screening

questionnaire, we would update our staff” (ON13). They also followed healthy workplace policies such as encouraging staff to be vaccinated: “[M]ost of us are vaccinated fully” (NS16). Technological supports, such as remotely accessed electronic medical records (EMRs), facilitated working remotely: “[W]e had a skeleton staff in the clinic, but with the EMR we were able to have all of our staff either working remotely or in the clinic” (BC07).

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Even within the same region, access to PPE was an issue for some practices (“[W]e needed PPE” [NS10]) but not for others (“[W]e had PPE from the hospital right away” [NS05]). PPE needs changed over the course of the pandemic as more information about the transmission of the virus was known:

At the beginning, we wore gowns into every patient appointment. ... [O]nce we found out that the virus itself doesn't really last that long on surface objects, I think things really relaxed by June [2020]. ... [I]t was very unclear as to what is the right PPE in a primary care setting. (ON09)

The availability of appropriate PPE determined which patients were seen and which services FPs provided in person: “If your patient is screening positive, which many of ours did, and we didn't have PPE, ... we have no option but to send them to [the emergency department (ED)] because ... we can't go out to see these patients if we're putting ourselves at risk” (NS10).

Diverting Potentially Infectious Patients Away from Family Practices

Although the implementation of practice-based IPAC procedures was similar across the case study sites, the provinces represented by the case study sites used different system-based interventions to divert symptomatic individuals away from community-based family practices (Table 3). Centralized assessment centres, telephone advice lines and virtual fee codes were in place for extended periods, whereas influenza-like illness clinics were available for limited periods.

ASSESSMENT CENTRES

All provinces had centralized COVID-19 assessment and testing centres, so FPs were not required to test patients in their practices. Over the course of the pandemic, BC and ON implemented online symptom screening tools that determined whether a patient was eligible for COVID-19 testing; in NL (and for a limited period in NS), patients had to be referred for testing by the 811 HealthLine. Generally, assessment and testing centres were positively viewed by FPs because they allowed practices to conserve PPE and reduce the risk of transmission (“[W]e would have had to use the additional PPE for [screening and testing patients], and if you had symptomatic people coming in to your office, then it would have put other

TABLE 3. System-based approaches to minimize contact with symptomatic individuals in primary care settings

	Vancouver Coastal Health, BC	Ontario Health West region, ON	Province of NS	Eastern Health region, NL
Assessment and testing centres ^a	x	x	x	x
Telephone advice lines ^b	x		x	x
Telephone assessment lines ^c			x ^d	x
Influenza-like illness clinics ^e			x	x
Virtual care fee codes ^f	x	x	x	x

- a Bengston (2020); Eastern Health (2021); Government of Ontario (2022); Nova Scotia Health Authority (2020).
 - b Government of British Columbia (2022); Government of Newfoundland and Labrador (2022); Province of Nova Scotia (2022).
 - c Government of Newfoundland and Labrador (2022); Province of Nova Scotia (2020).
 - d For a limited period of time, early in the pandemic.
 - e Eastern Health (2021); Nova Scotia Health Authority (2020).
 - f BC Family Doctors (2020); Claims Services Branch, Ontario Health Insurance Plan Division (2020); Government of Newfoundland and Labrador (2020); Nova Scotia Medical Services Insurance (2020).
- BC = British Columbia; NL = Newfoundland and Labrador; NS = Nova Scotia; ON = Ontario.

asymptomatic people at risk” [ON10]) and because they allowed family practices to operate with minimal disruptions (“[I]t was very helpful to be able to send [patients] to a testing centre. It helped us to maintain flow and access to us for all the rest of our patients” [BC01]). Moreover, in most (but not all) cases, FPs were notified if their patients tested positive (“[I]f a patient gets tested, their results will go back to their primary care physician” [NL01]), allowing FPs to follow up on patients.

The criticism of centralized testing was related to patients receiving conflicting advice from their physician: “[T]he criticism of directing patients to assessment centres – the rules [around when to send them to be assessed] were vague and they changed, ... which made it hard for us to figure out how to properly advocate for our patients” (ON15). Participants who worked with populations that struggle with navigating the health system believed that centralized testing centres posed additional barriers for their patients. For example, an FP who worked at an addiction clinic suggested:

I felt that we should offer testing, at the addiction clinic in particular, because a lot of the patients there ... often don’t follow through. It’s very difficult to get them to follow through for bloodwork or other kinds of tests. ... Most of the people there ... would probably have difficulty navigating the system to get tested. (BC05)

Similarly, another FP noted that the presence of police at some of these centres (in the initial months of the pandemic in 2020) may have discouraged undocumented migrants from getting tested: “[T]he assessment centres were difficult to access initially, [and] the police would be triaging people And so, for obvious reasons, many people, ... especially in the precarious migrant community, were definitely not going to go there” (BC15).

TELEPHONE ADVICE AND ASSESSMENT LINES

Three provinces (BC, NS and NL) used telephone advice lines (known as 811 lines). In BC and NS, the 811 service provided COVID-19 information and advised patients if their symptoms met the testing criteria but did not arrange appointments for testing (except for an initial limited period in NS). A participant in NS felt that the 811 service alleviated the pressure on their office staff: “The 811 line ... having that for patients with COVID questions, that was a huge support. Because it takes volume off of the front desk staff [The staff] could just say, ... ‘call 811’” (NS21). Participants in BC felt that the telephone service contributed to patients having consistent information: “So, I know [the province] set up a ... 1-800 line or 811 line, and I think that’s good, you know, it gives centralized information” (BC10).

In NL (and for a limited period in 2020 in NS), the telephone intervention further included assessment (i.e., eligible patients could schedule a screening appointment). FPs were instructed to direct patients with COVID-like symptoms to the 811 line to determine whether patients met the criteria for a COVID-19 test. The 811 operators also scheduled appointments for testing: “There was one avenue and only one avenue for patients that were presenting with symptoms and that was to go through ... 811” (NL02). Participants in NL felt that the 811 service created barriers to COVID testing: “[I]t was a real bottleneck in terms of getting through 811” (NL03). Moreover, FPs said that advice received from 811 would sometimes contradict the physician’s advice: “[A] patient would have symptoms and we’d direct them to 811 ... and then they get screened at 811 and 811 wouldn’t test” [NL04]. The mixed messages left both patients and FPs confused:

The major obstacle or dilemma was the mixed messages that patients were getting ... when they were calling 811 [S]ome of them were being told to isolate, some of them were being told to see their family physician, some of them were being told that they needed to be swabbed, some of them were being told that they didn’t need to be swabbed. ... And basically ... there wasn’t a whole lot of difference in the presentation. (NL01)

INFLUENZA-LIKE ILLNESS CLINICS

NS and NL experimented with dedicated clinics for patients with influenza-like illnesses:

We set [clinics] up so that people with flu-like illness ... didn’t necessarily need to go into their family doctor’s office. They could go to this other, stand-alone clinic ... to make sure that the family doctors could continue on with their regular business in their offices without fears of themselves or their patients contracting illness. (NS13)

These clinics had the goals of helping to preserve PPE, reducing exposure at family practices and limiting the use of emergency departments for non-acute patients: “[With regard to]

patients ...[with] cough and the fevers, a lot of the family medicine offices do not open their doors and are not willing to see them and then they end up in [the ED] by default, when they are nowhere near sick enough to be in [the ED]" (NS02). These clinics operated only when there was a high number of cases of influenza-like illness.

VIRTUAL CARE

All regions in our study adopted fee codes to facilitate virtual care visits, which allowed FPs to screen patients for COVID-19 and only see patients in the office if they required care: "[W]e were booking phone call appointments first, virtual visits first. And then if we felt that the patient needed to be seen in office, our nurse would sort of triage the case quickly and then just book them into an in-house appointment almost immediately" (ON07).

Discussion

We described practice- and system-based approaches used in four regions in Canada to mitigate the risk of COVID-19 in primary care settings. Many FPs in Canada and elsewhere felt poorly guided by public health and IPAC guidelines that largely focused on acute care settings (Hoernke et al. 2021; Houghton et al. 2020; Khunti et al. 2020; Mathews et al. 2022, 2023b) and worked to tailor these guidelines to suit primary care settings. FPs who participated in our study demonstrated their ability to enact all five IPAC elements in their practices (see Table 1), despite PPE shortages. FPs used environmental and administrative controls to minimize patient contact by redirecting patient flows, reorganizing workspaces, enhancing cleaning protocols and working remotely (Houghton et al. 2020; Khunti et al. 2020).

The implementation of practice- and system-level interventions to mitigate the risk of exposure to pandemic-causing illnesses in primary care settings requires planning during the interpandemic period and system-wide, coordinated enactment of interconnected exhortation, expenditure and public ownership (Deber 2018) policies by government and professional, public health and healthcare organizations during the early stages of a pandemic. To support practice-based interventions, exhortation policies (e.g., IPAC guidelines tailored to primary care settings) and expenditure policies (e.g., fee codes to support virtual care, PPE subsidies) are needed. System-level interventions require exhortation policies (e.g., information for providers and the public), expenditure policies (e.g., billing codes for work in testing, assessment of influenza-like illness clinics) and public ownership (e.g., centralized PPE distribution warehouses, testing and assessment centres, information and screening telephone lines and influenza-like illness clinics).

Practice-level protocols were buttressed by system-wide interventions that diverted high-risk patients from family practices and enabled primary care providers to deliver care virtually and to work remotely. Together, the multi-layered approach mitigated the risk of COVID-19 exposure while also helping to conserve scarce resources (e.g., PPE, testing kits) (Hoernke et al. 2021; Snowdon and Saunders 2021), preserve ED capacity, support fragile

supply chains (Snowdon and Saunders 2021) and allow FPs to continue delivering routine primary care (Glazier et al. 2021; van der Velden et al. 2021).

Centralized testing centres for the general population were closed after nearly two years of operations in early 2022. In contrast, practice-level approaches (such as screening and masking) have continued throughout the pandemic, even after PPE became more easily available. Changes in the availability of centralized services need to be communicated in advance so that primary care providers can advise patients and make practice-based accommodations (Mathews et al. 2022).

FPs viewed centralized services positively when they facilitated the operation of family practices, enabled them to conserve PPE and promoted continuity of care but were critical of centralized services if they delivered mixed messages or conflicting advice or created barriers to access. These findings suggest the need to balance centralized and tailored approaches to reach populations facing intersecting vulnerabilities (Embrett et al. 2022; Gagnon-Dufresne et al. 2022; Seto et al. 2020; Spencer et al. 2022).

Our study contributes evidence with which to evaluate the pandemic response and improve planning for future pandemics. Future research should evaluate the impact of influenza-like illness clinics and mass assessment and testing centres on the transmission of COVID-19 to FPs and the utilization of EDs by patients with respiratory symptoms. Moreover, the study highlights the need to provide clear guidelines and educate FPs about IPAC tailored to primary care settings (Young et al. 2023), to include primary care providers in the allocation and distribution of PPE (Mathews et al. 2023a) and to develop communication plans to engage and communicate with primary care providers (Mathews et al. 2022; Young et al. 2023) during rapidly evolving health crises.

Limitations

We conducted interviews between October 2020 and June 2021 and examined four regions. The study data may not reflect experiences during later stages of the pandemic or in other regions. Additionally, interview data may be subject to social desirability (Bergen and Labonté 2020) and recall bias (Coughlin 1990).

Conclusion

Practice- and system-based approaches were used in four regions in Canada to mitigate the risk of COVID-19 exposure in primary care settings. Participants believed that the use of centralized assessment centres, telephone advice lines and virtual fee codes, in combination with practice-based IPAC procedures, worked well to divert potentially infectious patients from primary care practices and preserve the ability to deliver care. The use of a multi-pronged, multi-layered approach was believed to reduce the risk of COVID-19 exposure while also conserving resources, preserving health system capacity and supporting stressed supply chains.

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