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RESEARCH ARTICLE

Community pharmacists' expanding roles in supporting patients before and during COVID-19: An exploratory qualitative study

Jennifer E. Isenor[1] · Benoit Cossette[2] · Andrea L. Murphy[3] · Mylaine Breton[2] · Maria Mathews[4] · Lauren R. Moritz[5] · Richard Buote[5] · Lisa McCarthy[6,7] · Lisa Woodill[8] · Bobbi Morrison[9] · Line Guénette[10,11] · Emily Gard Marshall[5]

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Abstract

Background Timely access and attachment to a primary healthcare provider is associated with better population health outcomes. In Canada, community pharmacists are highly accessible and patients struggling to access a family physician or nurse practitioner (i.e., "unattached") may seek care from a community pharmacist. Community pharmacists took on additional roles during the COVID-19 pandemic; however, little is known about how community pharmacists managed the needs of attached and unattached patients before and during the COVID-19 pandemic.
Aim To describe Nova Scotian community pharmacists' roles in caring for unattached patients before and during the COVID-19 pandemic and identifying barriers and facilitators to optimizing patient access.
Method Semi-structured interviews with community pharmacists (n = 11) across the province of Nova Scotia (Canada) were conducted.
Results Five key themes were noted: (1) rising pressure on pharmacists to meet unique health needs of attached and unattached patients; (2) what pharmacists have to offer (e.g., accessibility, trustworthiness); (3) positioning pharmacists in the system (e.g., how pharmacists can address gaps in primary healthcare); (4) pharmacist wellbeing; and, (5) recommendations for practice post-pandemic (e.g., maintain some policy changes made during the COVID-19 pandemic).
Conclusion Before and during the pandemic, community pharmacists played a significant and increasing role providing care to patients, especially unattached patients. With growing numbers of unattached patients, it is vital that community pharmacists are supported to provide services to care for the health needs of patients.

Keywords Canada · Health services accessibility · Pharmacy · Primary health care · Qualitative research

✉ Emily Gard Marshall
Emily.Marshall@Dal.ca

1 College of Pharmacy and Department of Community Health and Epidemiology, Dalhousie University, Halifax, Canada

2 Department of Community Health Sciences, Université de Sherbrooke, Longueuil, Canada

3 College of Pharmacy and Department of Psychiatry, Dalhousie University, Halifax, Canada

4 Department of Family Medicine, Schulich School of Medicine and Dentistry, Western University, London, Canada

5 Primary Care Research Unit, Department of Family Medicine, Dalhousie University, Halifax, Canada

6 Institute for Better Health, Trillium Health Partners, Mississauga, ON, Canada

7 Leslie Dan Faculty of Pharmacy and Temerty Faculty of Medicine, University of Toronto, Toronto, ON, Canada

8 Pharmacy Association of Nova Scotia, Dartmouth, NS, Canada

9 St. Francis Xavier University, Antigonish, NS, Canada

10 Faculty of Pharmacy and CHU de Québec Research Centre, Université Laval, Québec, QC, Canada

11 Faculty of Pharmacy, Université Laval, Québec, QC, Canada

Impact statements

- Community pharmacists play a vital role in providing primary care, frequently providing care for underserved populations.
- Pharmacists play a crucial role in providing care to the growing number of unattached patients in Canada.
- Patients experienced interruptions in care access during the COVID-19 pandemic, which further exacerbated access challenges experienced by unattached patients.
- Both attached and unattached patients relied on pharmacists to fill gaps in their access to primary care, demonstrating the need for pharmacists in managing the repercussions of delayed and suspended healthcare services.
- Pharmacists' ability to support the needs of attached and unattached patients during the COVID-19 pandemic was enabled through expanded authority and funding to provide prescribing assessment services, prescription adaptations, injections, referrals to other providers, and order laboratory tests.

Introduction

Primary healthcare (PHC) is the cornerstone of a robust healthcare system. PHC is essential to meeting the quadruple aim for health services: improved population health, improved patient experiences, healthcare team wellbeing, and cost savings [1]. Patient access to a regular family physician or nurse practitioner is associated with better population health outcomes, lower costs of care, and reduced health disparities across socioeconomic status [2]. In Canada, patients without a regular primary care provider (e.g., family physician or nurse practitioner) are considered ''unattached'' [3]. Attachment may also be known as rostering, affiliation, patient registration, or empanelment, and refers to the established longitudinal agreement of the therapeutic relationship between patient and provider [3, 4]. In 2019, 14.5% of Canadians over 12 years old were unattached [5], higher than other commonwealth countries [6].

On March 11, 2020, the World Health Organization declared a global pandemic from the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and the pandemic was referred to as COVID-19 (i.e., coronavirus disease 2019) [7]. Before the pandemic, the number of people in Nova Scotia (NS) aged 12 years and older who were registered on the provincial centralized waiting list for primary care, identifying themselves as in need of a primary care provider (i.e., unattached), was around 47,056 (5.1% of the provincial population) [8]. The number of people on the waitlist has increased substantially since. As of February 1st, 2022, 8.6% of Nova Scotians (~86,000 people) are registered on the waitlist, suggesting that the number of unattached patients has grown during the pandemic [9]. Rates of unattachment are lowest in urban regions of the province (e.g., 6.1% in Central Zone, which contains the urban provincial capital) and highest in the Western and Northern Zones (14.5 and 14.8%, respectively) [9]. Both zones are entirely rural, where challenges with attachment and access are most pronounced [10, 11].

When the supply of family physician/nurse practitioner-delivered PHC cannot meet patients' needs, other PHC providers, such as community pharmacists, may fill gaps in care and serve as the PHC provider [12–15]. Community pharmacists are highly accessible healthcare professionals [16]. Although patients may become "attached" to a family physician or nurse practitioner, patients can choose to attend any pharmacy. However, many people have an established therapeutic relationship with their pharmacist/pharmacy and this longitudinal relationship may allow pharmacists to provide more personalized care. Additionally, patients can walk into any community pharmacy and receive care, even if it is not their regular pharmacy. Approximately 40% of Nova Scotians reside within walking distance of a community pharmacy and 79% within a 5 km drive [17]. Community pharmacies across Canada often offer walk-in appointments and extended hours of operation [18]. This degree of accessibility [18–20], and the resulting frequency of pharmacy visits (14 times per year on average), provide pharmacists with multiple opportunities to address health issues among their patient population [21]. Most Canadians trust the care they receive from pharmacists and are open to visiting their pharmacist for healthcare services beyond filling a prescription [22].

Evidence supports pharmacists' role in chronic disease management, treatment of self-limiting conditions [23–27], and meeting routine and specialized immunization needs of patients [28, 29]. In addition, in NS, the scope of pharmacist practice expanded further in recent years – community pharmacists can administer drugs by injection; assess and prescribe for minor ailments, contraception, including emergency contraception, uncomplicated urinary tract infections, and medications for smoking cessation; offer prescription adaptations and therapeutic substitutions; order and interpret laboratory tests needed to manage drug therapy (with access through the provincial electronic health record system, SHARE [Secure Health Access Record]) [31, 32]; and prescribe renewals (a pharmacist can prescribe a *renewal* to provide a patient with a longer duration of drug therapy than originally authorized, thus, extending or renewing a patient's existing prescription for a longer period [33, 34]).

The COVID-19 pandemic led to publicly funded pharmacist assessments for renewals becoming available to all Nova Scotians weeks earlier than planned (March 2020 instead of

April 2020). In addition, federal exemptions from specific provisions of the Controlled Drugs and Substances Act and its regulations allowed pharmacists to extend, transfer, and receive verbal orders to extend or refill prescriptions for controlled substances to help address access issues caused by the pandemic [35]. While anecdotal evidence suggests pharmacists are using their scope of practice to assist in managing care for unattached patients and some literature has examined the early stages of COVID-19[32–35], little is known about pharmacists' role in caring for unattached and attached patients before and during the pandemic.

Aim

To describe Nova Scotian community pharmacists' roles in caring for unattached patients before and during the COVID-19 pandemic and identifying barriers and facilitators to optimizing patient access.

Ethics approval

This study was approved by the Nova Scotia Health Research Ethics Board (File #1025905; 06/08/2022).

Method

As part of the **P**roblems coordinating and accessing primary care for attached and **U**nattached **P**atients in a **P**andemic **Y**ear (PUPPY) Study [36], qualitative interviews were conducted to explore the perspectives of community pharmacists' in NS and their experiences providing care to both unattached and attached patients before and during COVID-19. A masters-trained research assistant conducted interviews between 09/2020 and 01/2021, following the initial peak of COVID-19 cases in NS (03/2020–05/2020), initial pandemic-related lockdowns and implementation of public health restrictions, and, notably, before the introduction of COVID-19 vaccines. Participants were recruited via emails and newsletters delivered through the Pharmacy Association of Nova Scotia, the Nova Scotia College of Pharmacists, social media posts, and snowball sampling [37]. Participants completed a brief demographic survey to ensure they met inclusion criteria and participant representation across characteristics (e.g., gender identity, location of practice, and years in practice). All participants who completed the demographic survey subsequently completed an interview. Inclusion criteria included being licensed by the Nova Scotia College of Pharmacists as a ''Direct Patient Care'' pharmacist and practicing in a community-based setting. Data were collected through semi-structured telephone or web-based interviews until saturation was reached (i.e., no new themes were identified from the last interviews). An interview guide (Appendix A) was prepared by a multidisciplinary team, including pharmacists. The semi-structured nature of the interviews allows interviewees to share their own stories and experiences, and the guide included questions and probes on topics such as caring for different patient groups (e.g., attached/unattached, people with chronic conditions), changes to care provision across a COVID timelines (pre-COVID, during COVID), and barriers/facilitators to providing care.

All interviews (~1 h) were audio-recorded, transcribed verbatim, and anonymized. The interviewer recorded their initial reflections following the interview within their field notes. Data were managed using NVivo software [38]. A codebook for the interviews with pharmacists was developed using a previous codebook that had been created to analyze family physician interviews as a part of the PUPPY Study [36]. Codes identified by team members were added inductively. Team members reviewed interview transcript passages and developed both in vivo (from participant voice) and a priori codes (predefined codes based on the literature). Codes were agreed upon through discussion between a master's trained qualitative research analyst and the nominated primary investigator for the study; a Ph.D. trained, experienced qualitative researcher.

Codes were analyzed according to a framework analysis [39]. Framework analysis involves creating a matrix of columns for each case (i.e., participant) and rows of themes, with in-between cells storing quotes and summaries. Disagreements in identified themes were resolved through discussion between the lead author, the qualitative research analyst, and the nominated principal investigator for the study.

Themes were organized according to the participants' location of practice and proximity to the provincial capital, as their location of practice influences the availability of other healthcare services and resources [17, 40, 41]. Participants were categorized as practicing within the provincial capital if they identified themselves as working in an urban region within Central Zone. Conversely, participants were categorized as practicing outside the provincial capital if they identified themselves as working in Western, Eastern, and Northern Zone or a rural region within Central Zone.

Results

Eleven community pharmacists were interviewed (Table 1). Purposeful sampling ensured representation across gender identity, practice setting, proximity to provincial capital, job title, years in current role, and years in practice [42].

Through framework analysis, five key themes were identified in the roles community pharmacists played in providing care to unattached and attached patients before and during COVID-19: (1) rising pressure on community pharmacists to meet unique health needs of attached and unattached patients;

Table 1 Attributes of pharmacist participants

Characteristic	Attribute	Number of participants (n = 11)
Self-identified gender	Man	4
	Woman	7
	Other	0
Primary practice setting	Pharmacy franchise	6
	Grocery/Department store pharmacy	3
	Independently owned	2
Location of practice	Outside provincial capital	7
	Within provincial capital	3
	Both (relief* pharmacist)	1
Job title	Pharmacy owner	3
	Pharmacy manager	3
	Staff pharmacist	3
	Consultant pharmacist	1
	Relief* pharmacist	1
Years in position	0–5	5
	6–10	2
	11–15	3
	16 +	1
Years in practice	0–5	1
	6–10	2
	11–15	1
	16 +	4
	Missing	3

*A relief pharmacist temporarily fills in for a regular community pharmacist

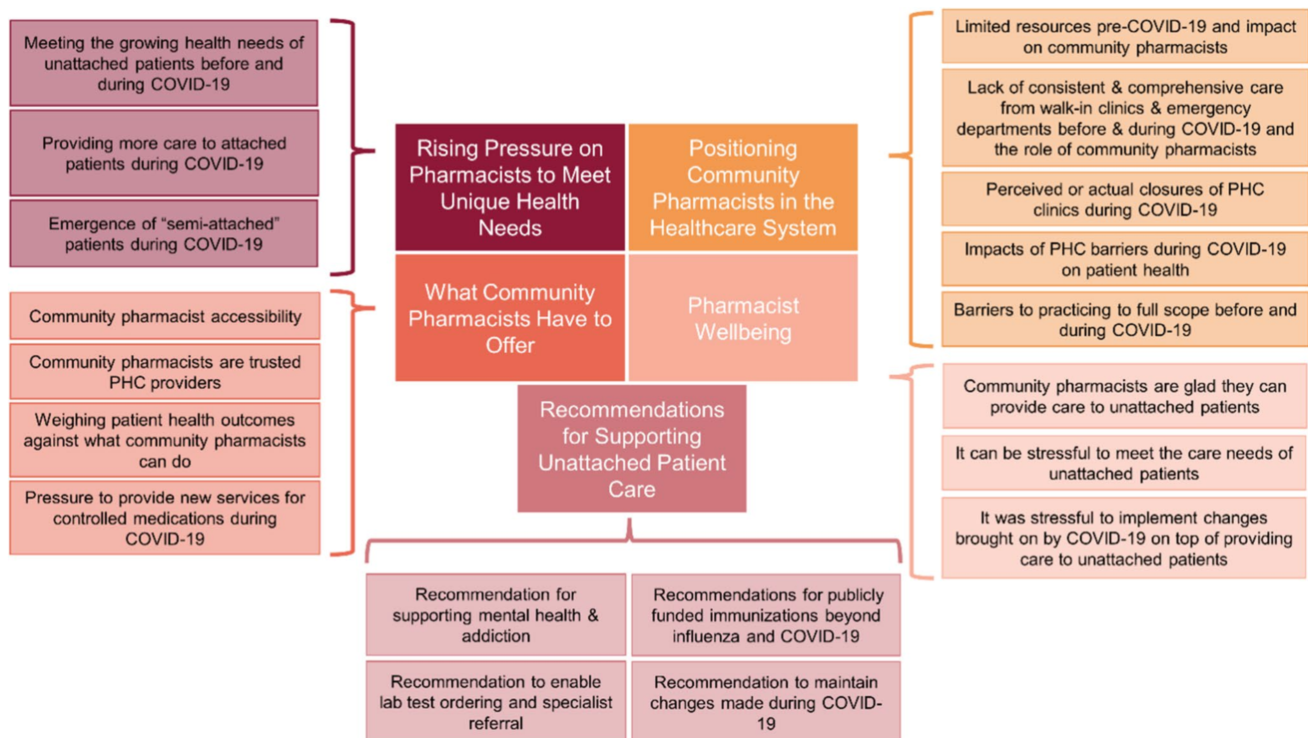

Fig. 1 Five key themes from community pharmacist interviews

(2) expansion of what community pharmacists have to offer; (3) positioning community pharmacists in the system; (4) community pharmacist wellbeing; and (5) recommendations for supporting unattached patient care (Fig. 1).

Rising pressure on community pharmacists to meet unique health needs

Participants perceived pressure to help patients meet their health needs. This pressure was seen to arise from three main areas (Table 2).

Meeting growing health needs of unattached patients before and during COVID-19

Before the pandemic, participants practicing outside of the provincial capital found they worked to full scope more often with unattached patients than attached patients. Unattached patients reportedly requested assessment services, extra services, including advocacy for care, or recently funded services from pharmacists more often than attached patients.

Since the emergence of COVID-19, regardless of where they practiced, participants reported an increase in the number of services provided to unattached patients, impacting the demands on community pharmacists. Several interviewees noted a growing or unchanging number of unattached patients before and during COVID-19 and more care encounters with unattached patients. Participants attributed this to increasing public knowledge about the scope of practice for pharmacists.

Providing more care to attached patients during COVID-19

Before the pandemic, participants practicing outside the provincial capital generally found that attached patients requested fewer services than unattached patients, as attached patients primarily saw their pharmacist for filling prescriptions. However, during the pandemic, more attached patients chose to seek care from pharmacists, possibly out of convenience, which was frustrating for one participant who felt the patients were leaving their regular provider ''out of the loop.''

Emergence of "semi-attached" patients during COVID-19

During the pandemic, interviewees practicing both within and outside the provincial capital had more encounters with ''semi-attached'' patients, that is, patients attached to a PHC provider they could not access. Participants described similarities between ''semi-attached'' and unattached patients, as neither had timely access to a family physician or nurse practitioner during the pandemic. As a result, the workload increased for community pharmacists, who worked to full scope with these ''semi-attached'' patients.

What community pharmacists have to offer

Participants described the value of community pharmacists in four key areas (Table 3).

Community pharmacist accessibility

One participant highlighted the importance of community pharmacists, particularly during the pandemic, as a source of accessible PHC.

Community pharmacists are trusted PHC providers

Participants practicing both within and outside the provincial capital discussed the patient-provider relationship with their unattached patients and highlighted the importance of trust and building a relationship with them. Participants felt they were trusted by unattached patients and tended to get to know their unattached patients better than attached patients because unattached patients do not have other options for accessing PHC. This relationship is important for quality, consistent care. However, another participant described challenges with providing care to unattached patients and highlighted the importance of managing expectations with these patients who rely on pharmacists for their PHC and might expect greater attention.

Weighing patient health outcomes against what community pharmacists can do

Nova Scotian pharmacists are responsible for all aspects of drug therapy management, regardless of the prescriber, including an assessment of the patient's needs and ensuring the appropriateness of the prescribed drug therapy [43]. Participants practicing within and outside the provincial capital shared experiences when they provided care to unattached patients. They had to weigh professional roles that would be consistent with regulations, standards of practice, and the code of ethics and the best interests of the patient. Most often, this was because a patient had not had recent bloodwork, and the pharmacist had to choose to provide medication without updated lab values or refuse and potentially put the patient at greater risk. Participants tended to lean towards providing the medication at the perceived risk of getting their ''fingers slapped'' by the regulatory body. Another scenario raised by one participant was reviewing bloodwork when the participant was not the provider who ordered the bloodwork. In this case, despite having the regulatory authority, the participant

Table 2 Themes and quotes on the rising pressure on community pharmacists to meet unique health needs

Theme	Quotes
Services provided to unattached patients pre-COVID-19	"So pre-COVID, unattached patients will come to us for a lot more I guess diagnostic kind of things… "Could you look at my eye?" …the unattached patient comes in more so looking for advice. They want us to maybe try to diagnose or see if there's any extra services we can provide that will prevent them from having to go to outpatients*…" *Pharmacist 9, outside provincial capital*
	"… the unattached patients… pre-COVID, tended to do more services like renewals specifically for them, and UTIs… minor ailments as well… If they don't have a doctor to get into, we would typically do more services for them. But… even the patients with doctors, you know, it takes a couple of weeks to see them. But definitely… [w]e would do more prescribing services for unattached patients pre-COVID." *Pharmacist 5, outside provincial capital*
	"…in some cases I might be prescribing their medications for a period of time for [unattached patients]. And in that case, trying to make sure that the medication is appropriate for them. And doing the assessment that I can do, oftentimes maybe without bloodwork or without any lab values or anything… but … make sure the medication is appropriate, they're not having any problems with it, that it is working well for them. So that's the main things that I would try to do for them." *Pharmacist 8, outside provincial capital*
	"… we had a new [patient] that moved from [Canadian province]… We're able to help her organize everything and get her a blister**. But we knew that next month she didn't have refills, and we didn't know if she was going to be able to get refills for the next month. So… we would spend time calling around seeing if somebody would be willing to take her… we did end up finding her a nurse practitioner that was willing to take her, you know, in the end. The first few months were ER visits. And unfortunately, you know, we have an [emergency department] that closes a couple of days a week. So that was another roadblock to trying to get this woman care…" *Pharmacist 7, outside provincial capital*
Services provided to unattached patients during COVID-19	"… the services we provide for unattached patients haven't changed, with maybe the exception that there's still a growing number of [unattached patients]. But that doesn't have anything to do with COVID." *Pharmacist 9, outside provincial capital*
	"… the number of unattached patients has remained the same. We certainly haven't had anyone come to the area to take on new patients during COVID. I'd say we were actually seeing them more because the word is getting out about pharmacists being able to provide renewals…So I'd say we're actually seeing more of those unattached patients. More frequently anyway." *Pharmacist 3, outside provincial capital*
	"I would say there have been probably a few more unattached patients since COVID." *Pharmacist 11, within provincial capital*
Providing more care to attached patients during COVID-19 than before COVID-19	"So pre-COVID… people who did have a family doctor would… come to us to fill prescriptions… they've already gone to see their doctor. They already know what's wrong with them. They're just coming to me to fill a prescription or to fill us in on what they discussed with their doctor. And we would fill the prescription, counsel them on the prescription and then they're on their way." *Pharmacist 9, outside provincial capital*
	"I mean once the doctors started kind of working a little bit more, we would see a lot of requests from attached patients to like fax their doctors for renewals versus prescribing, kind of thing, a little bit more. But overall, no, I would say… during COVID, the attached or the unattached patients I found weren't going for bloodwork, weren't getting their labs. So it was kind of they were all in the same crappy boat." *Pharmacist 5, outside provincial capital*
	"… since COVID, we're… seeing an increase in the services that we have to provide for people who do have family doctors. People seem…I don't know if they're scared to leave their house to go to a doctor's appointment or if they're just aware of the services we provide, and they find it more convenient just to speak to us rather than go see their family doctor… They just know that we can do certain things. And it also seems like they don't have the motivation to try to bother to try to make an appointment with their family doctor because they just know that we'll do it for them. Which kind of makes us feel like… yeah, we provide these services, but you really shouldn't be leaving your family doctor out of the loop. You're lucky to have one. You should really be keeping them in the loop." *Pharmacist 9, outside provincial capital*

Table 2 (continued)

Emergence of "semi-attached" patients during COVID-19	"There's lots of unattached patients but now there seem to be like semi-attached patients. So, there's this whole other division of people that have cropped up … since COVID that say, "Well, I have a family doctor but…" "I have a nurse practitioner, but I have not heard from them in six months. And I've left, you know, six phone calls and three messages and I've gone and dropped by the office." So that's new … physicians were difficult to book in. And I mean everybody needed refills. And like that's always happened. But this is a whole other … "My doctor's not seeing anyone. It's only a telephone call." … There's like a limbo layer now." *Pharmacist 2, outside provincial capital*
	"…the people who have family doctors are like, "I called my family doctor. I can't get in for four weeks." And then other people who like don't have family doctors, they're like, "So what do I do? Because I don't have any more refills. I really need this medication." So … they're different but … they're quite similar because both of them aren't able to see a doctor immediately. And most of the time it's for medications or chronic, and it's not necessarily worth an emergency visit at that point." *Pharmacist 10, both (relief pharmacist)*
	"Our attached patients are coming in for everything … "Please check my blood pressure. I haven't had it checked in forever. You know, I'm peeing more. I think my diabetes may be out of control. You know, my psoriasis is acting up, and my dermatologist has cancelled my appointment or delayed." So, with our attached patients that are having the delayed appointment, we're seeing the whole gamut of requests." *Pharmacist 7, outside provincial capital*

*"Outpatients" refers to a service received in a hospital where an overnight stay is not required (e.g., services received within an emergency department).

**A "blister" refers to a blister pack, which is a type of packaging for medication wherein single doses of medication are enclosed in rows of plastic pockets and sealed with a foil covering to protect medication from moisture and damage which can be perforated to remove medication one dose at a time [60]

was concerned that interpreting the values was outside their scope of practice; however, they provided some advice to the patient who was visibly unwell and had no other provider to interpret the values.

Pressure to provide new services for controlled medication during COVID-19

A participant who practiced within the provincial capital discussed how the Federal change of allowing renewals for controlled medications created situations when they felt uncertain about providing this care. Due to this policy change, this participant felt some pressure to provide such care, considering the ethical implications of providing or not providing such services.

Positioning community pharmacists in the healthcare system

Participants often described their role in addressing gaps in PHC. These gaps and related themes are described in the following sections (Table 4).

Limited resources pre-COVID and impact on community pharmacists

Participants practicing outside the provincial capital described challenges referring patients to physicians or nurse practitioners prior to the pandemic and worsening during the pandemic. Participants identified issues such as poor access to emergency departments (EDs) or walk-in clinics in their region prior to COVID-19. Often this was due to provider shortage or turnover, leaving many patients unattached. High numbers of unattached patients coupled with lack of access to other health services impacted the ability of pharmacists to support unattached patient needs.

Lack of consistent and comprehensive care from walk-in clinics and emergency departments before and during COVID-19 and the role of community pharmacists

Participants practicing both within and outside the provincial capital felt referring patients to EDs or walk-in clinics did not support consistent care for patients, particularly because

Table 3 Themes and quotes on what community pharmacists have to offer

Theme	Quote
Pharmacist accessibility during COVID-19	"I would say that we have proven our ability to be a really important part of the healthcare system during COVID, and that hopefully we can maintain that and have funding to maintain that… a lot of patients, and in particular unattached patients, would have been really left without anybody if they didn't have their pharmacist during COVID." *Pharmacist 4, within provincial capital*
Building trust and relationships with patients	"[Unattached patients] ask at the counter because you're accessible and because they know you, and there's some trust there… they would know, say, [Participant Name] as my pharmacist is not going to see me stuck. There's always that kind of mentality. And as long as it's safe, of course, we're not going to see them stuck." *Pharmacist 1, outside provincial capital*
	"I think sometimes because they are relying on us as their primary care provider, they feel like maybe they deserve more attention than somebody else. So, they may just walk in and expect that whatever they need done gets done now. So that's a little bit tricky. But I would say most of our patients, once we explain the process, like you know, to do a renewal, it takes some time, and we can't just stop everything we're doing to do that. And once they know that, they're fine. But I think … they just feel like, "I don't have … a family doctor so I need you. And I need you now," kind of thing." *Pharmacist 4, within provincial capital*
Weighing patient outcomes against what community pharmacists can do	"That's the biggest thing right now – they need to get back in for bloodwork. Because people are just carrying on. And yes, they're less at risk to have their meds. … if we don't give it to them, are they more at risk? Of course, they are. But then at some point you become irresponsible, even if it's a cholesterol pill, to say, okay, we're doing this, we're doing this. The person has put on, you know, 30 pounds during COVID, and we're still just doing the same thing, and you know that their health is not the same. So that to me is the big miss if you bring the COVID scenario. People's health, it visibly deteriorated during COVID." *Pharmacist 1, outside provincial capital*
	"… a lot of the situations where you kind of have to make a decision about, well, what's the worst outcome if I do this and I get my fingers slapped by the College? Or if I don't do it, what happens to the patient? So, I tend to lean towards getting my fingers slapped." *Pharmacist 6, within provincial capital*
	"… I've got one [patient] who comes to mind in particular who came in to me… And I took one look at her and I said… "how are you feeling? You're not feeling well." And she said, "I am not well. Something is wrong. I don't know what it is. I just…" You know, this was a lively, active, very, you know, tough woman… she said, "I had bloodwork done, but no one can read it because I don't have a family doctor." … Because I didn't order the bloodwork, it's technically out of my scope of practice to then go and look at the bloodwork. But I did anyway because what am I going to do? Identified some issues and told her to go back to emergency and just kind of say… that someone needed to take a look at this. Which they did, and now have done follow-up things, and she may have cancer… And it's way out of my scope to be doing things like that. But what do you do when you have someone in front of you looking like that…" *Pharmacist 3, outside provincial capital*
Feeling pressured to provide new services during COVID-19	"…there are certain scenarios where it's really difficult. Like for instance, say a person who was just discharged from jail, and we don't know the patient at all, and they're prescribed something that's a controlled medication like for [attention deficit hyperactivity disorder] or something like that. And it's one of those things where, as a pharmacist, you're kind of on the fence about renewing. I mean we weren't allowed to renew them before the pandemic, but now we are. So now we have this like extra responsibility to provide this care. But we aren't… We don't really know the patient well enough to maybe provide that care." *Pharmacist 4, within provincial capital*

patient care seemed to vary depending on which provider they saw during each visit to these locations, and treatment was not followed-up. One participant was concerned about the lack of monitoring these patients receive. Participants felt that community pharmacists could fill this gap by offering patient monitoring from a community setting.

Perceived or actual closures of PHC clinics during COVID-19

Interviewees practicing both within and outside the provincial capital felt there were more significant barriers to PHC during COVID-19 due to reduced in-person visits and perceived or actual closures of PHC clinics. In cases where patients needed to be seen by a physician, these barriers prevented pharmacists from supporting patient needs.

Table 4 Themes and quotes on positioning community pharmacists in the healthcare system

Limited PHC resources pre-COVID and impact on community pharmacists	"We've had a few physicians leave in the past, you know, three years, four years. We've had some leave and then new ones come, and then the replacements leave. New ones come, those replacements leave. So, we've had… We have quite a few orphan patients from that. And there's been some new doctors come, but … I know they're not taking on the same caseload as previous. So, there's some leftover." *Pharmacist 5, outside provincial capital*
	"The [rural region], like we deal with a large shortage of family physicians … that's always been challenging to try to get people the appropriate amount of care that they need. As pharmacists, we do as much as we can. But obviously there comes a point in time where they need to see a doctor. So… And unfortunately, there's not a lot of walk-in clinics in our area … several of our emergency rooms… have closed or have been opened sporadically over the last year or two. So … we have to send them to the [rural region] hospital emergency room. Which I've been told by both patients and staff that work there is always extremely busy and very long wait times." *Pharmacist 9, outside provincial capital*
	"The closest walk-in clinic to us is in [another community outside the provincial capital], which is about 40 min away. So that was an option. There are a couple of hospitals within the area, all within about a 45 min drive. So, we would send them to those ERs if need be. Occasionally if it was dire, I would call the local nurse practitioner practicing next door and say, okay, I've got an emergency, can you see this person? And she would normally accept after some begging." *Pharmacist 7, outside provincial capital*
Lack of consistent and comprehensive care from walk-in clinics and ED	"…before COVID, like you're basically left with no options to you and this patient. Like I don't have any options for you. I can't… Like I would often send them to the [emergency department] because I think it's the most likely place they might get something. But it depends on who's working, whether or not they would get what they're looking for. And it might be like a seven-day supply or something like that. So it doesn't ultimately help them. So, yeah, I had a few sleepless nights because I'm like there's nothing I can do. I don't know what to do with this person." *Pharmacist 4, within provincial capital*
	"… I think that I'm in a better position to manage a patient suffering from anxiety and depression than the walk-in clinic is… because you don't know who you're going to see … You have to build a relationship with the patient. And if on one night I see Dr. A, and they're terrific, and then I go back and I see Dr. B that says something like, "Well, I don't believe in antidepressant[s]," like… The care's not consistent. At least in the pharmacy, like I know that if you come in on Thursday night, you're going to see me. If you come in on Tuesday night, you're going to see [colleague]. [Colleague] and I talk to each other every day. We've got good patient files… We're very similar in our approach to the work. You talk to either one of us." *Pharmacist 6, within provincial capital*
	"… I've had multiple patients get prescribed [SSRIs] by walk-in clinics. And when I…ask… when are you going to be able to see a doctor again, they're like, "I'm not."… It's really disheartening because no one's really following these patients. And I think they need a little bit more monitoring than the average patient…" *Pharmacist 10, both (relief pharmacist)*
Perceived or actual closures of PHC clinics during COVID	"…one of the longstanding, like 30 year, physicians in the area in the midst of COVID had to move to a different role because they … needed to have a hospitalist … So, he dropped about 1,500 patients right in the midst of COVID … He definitely did his best to look after them but he had to move to a different position." *Pharmacist 3, outside provincial capital*

Table 4 (continued)

Impacts of PHC barriers during COVID-19 on patient care	"…we're seeing people with chronic conditions who haven't seen a physician in months, maybe a year, year and a half. You know, people getting sicker or people who are coming into us are much sicker than they were prior to all of this… We're kind of left with… a small toolbox of things that we can do for them. But people are getting sicker. And I fear things are going undiagnosed. And you can just see it in your patients, that they're failing. So, yeah, there's been a big impact." *Pharmacist 3, outside provincial capital*
Barriers to practicing to full scope before and during COVID-19	"… one of the biggest hurdles is access to lab work…if they're an unattached patient, they don't have regular requests for bloodwork … we have now the legislation that pharmacists can review and order bloodwork, yet we don't have the financial compensation or the ability to actually order it through the lab …" *Pharmacist 7, outside provincial capital*
	"You can't do your own labs … you have to be amalgamated into the system in order to get that. But I think it just doesn't make sense to me that we're literally primary care providers for a small but substantial proportion of the province, and they are at a deficit because we can't monitor them the same way." *Pharmacist 2, outside provincial capital*
	"For people who didn't have a regular doctor, that's the unfortunate thing because we can't order bloodwork. I wish we could for the unattached patient. I would have to tell them like I have no idea what your bloodwork is because maybe you don't have anything on [provincial electronic health system], or maybe you haven't had any for years. I'm going to write you this prescription for three months. I'm going to need you to go to a walk-in clinic or go to outpatients and get a doctor or a nurse practitioner to make sure that you get your routine bloodwork re-done because it's been too long." *Pharmacist 9, outside provincial capital*

Another barrier to accessing PHC during the pandemic was the redeployment of family physicians to contribute to COVID-19-related efforts, which, in at least one case, led to patients having reduced or no access to their physician.

Impacts of PHC barriers during COVID-19 on patient health

In general, participants practicing outside the provincial capital noted that patients' health seemed to decline during the pandemic, suggesting there were aspects of their usual care they were not receiving during the pandemic.

Barriers to practicing to full scope before and during COVID-19

Although it is within the scope of practice for pharmacists in NS to order and review bloodwork to manage drug therapy, participants described barriers to providing such services, including the fact that the ability to order bloodwork has never been enacted, impacting continuity of care, particularly for unattached patients. To contextualize, in Nova Scotia, Canada, legally pharmacists can order and interpret laboratory tests, but this practice remains to be operationalized from a health system perspective [30]. The Pharmacy Act s. 32(2)(b) and the Pharmacist Extended Practice Regulations definitions authorize pharmacists to order, receive, conduct, or interpret tests needed *to properly manage drug therapy*. A position statement from the Nova Scotia College of Pharmacists clarifies the position of the College on what constitutes drug therapy management, and when testing would be consistent with the legislated requirement [30]. During COVID-19, access to lab testing ordered by any provider was reduced, presenting additional challenges. Another issue discussed was the affordability of medication or therapeutic substitutions for unattached patients, whereas Canada does not have a universal, publicly-funded program for providing prescription drugs (i.e., pharmacare).

Pharmacist wellbeing

Several participants who practiced outside the provincial capital shared how providing care to unattached and ''semi-attached'' patients affected their wellbeing. One participant described how providing care to unattached patients made them feel ''so useful and… glad that there are things that I could do rather than to do nothing, legally'' (Pharmacist 2, outside the provincial capital). Although legally pharmacists can provide care to unattached patients, some interviewees had concerns about their expertise to provide certain types of care and potential ethical implications (e.g., beneficence

Table 5 Themes and quotes on recommendations for supporting unattached patient care

Recommendations for supporting mental health & addictions	"…one thing that I would love to talk to somebody higher up is about people not being able to get prescriptions for controlled drugs and narcotics at walk-in clinics and the [emergency department]. Because for unattached patients, that leaves them with no options at all. And you know, like if you're on something for [attention deficit hyperactivity disorder], and that's kept you out of prison, and then all of a sudden you can't get it anywhere, it's just… It's so frustrating to see. And I've seen and heard patients going out on the street trying to find their drugs because they can't get a prescription for it. So, I really think that's something that needs to be fixed." *Pharmacist 4, within provincial capital*
	"Verbal orders for narcotics and [controlled drugs and substances] makes complete sense. That's a federal thing now. Pharmacist being allowed to make changes to [opioid agonist maintenance treatment] treatment totally makes sense. We see the patient every single day. At the beginning anyway. So that's kind of launched us into being a really more important part of the care. So I think that that all should definitely stay."*Pharmacist 3, outside provincial capital*
Recommendations for enabling lab test ordering and specialist referral	"I think pharmacists should be allowed to write for unlimited prescription renewals for the unattached patient, with the caveat that we're allowed to request bloodwork and monitoring and refer to a physician or a specialist." *Pharmacist 9, outside provincial capital*
Recommendations for publicly funded immunizations beyond influenza and COVID-19	"Yeah, getting pharmacists involved in the publicly funded vaccinations, that would be huge as well. I mean in the midst of all of this, when Public Health is at their maximum, a lot of families didn't know where to get their kids' school shots because they didn't have a doctor. And we couldn't provide them because we don't have access to the publicly funded vaccinations other than the flu shot. And those over 65 now looking for pneumonia vaccines who don't have a primary care provider, we can get it but it costs them out of pocket. We can't do it for them for free. We're not involved in the publicly funded pneumonia vaccination program, those types of things. It's things we can do already. We're already vaccinating." *Pharmacist 3, outside provincial capital*
	''I feel like then our vaccination rates would go up. So, like you'd be surprised at how many people have never gotten the [human papillomavirus 9-valent] vaccine, for instance. Or like when's the last time some people have had a pap? Like those are just like usual things that should be part of your health that aren't part of people's health. The same with like the shingles vaccine, that's another one. People who are considering pregnancy, people who are immunocompromised, those are people we should really be keeping a better eye on in terms of their vaccines. I'm pretty sure everybody probably doesn't even know where their vaccine records are. So I think that's… I think it's becoming more important where this new vaccine is coming out that people are going to start thinking about, you know, what vaccines have I gotten, what haven't I gotten, and how do I get them? Because that's a question that's coming up a lot more." *Pharmacist 10, both (relief pharmacist)*
Recommendations to maintain changes made during COVID-19	"… continuing to pay for the renewals, you know, is wise. Right now you're only allowed three in the run of a year … They're only supposed to be good for six months. So that's a bit limiting. But in and of itself, pharmacists doing six months of prescription renewals makes complete sense. Verbal orders for narcotics and [Controlled Drugs and Substances Act] drugs makes complete sense. That's a federal thing now… So, I think that that all should definitely stay.." *Pharmacist 3, outside provincial capital*

and nonmaleficence). As one participant described ''there's definitely an emotional toll to that because we aren't trained for that type of work…'' (Pharmacist 3, outside of provincial capital). A few participants found the rapid changes associated with the pandemic response were stressful, compounding feelings of stress when ''you've exhausted what you can do'' to support unattached or ''semi-attached'' patients.

Recommendations for supporting unattached patient care

Participants made several recommendations for improving PHC access, particularly for unattached patients (Table 5).

Recommendations for supporting mental health and addiction

Participants practicing within and outside the provincial capital discussed the need for better mental healthcare for unattached patients. Interviewees noted the lack of follow-up by walk-in clinic physicians and discussed the implications of being unable to prescribe controlled drugs and narcotics. For context, Federal exemptions from specific provisions of the Controlled Drugs and Substances Act and its regulations allowed pharmacists to extend, transfer, and receive verbal orders to extend or refill prescriptions for controlled substances to help address access issues caused by the pandemic [35], but did not allow pharmacists to prescribe these substances. A few participants discussed the Bloom program [44], a provincial community pharmacist initiative designed to improve mental health and addiction care. One participant suggested providing this service at more pharmacies would be beneficial.

Recommendations to enable lab test ordering and specialist referral

A common concern among participants outside the provincial capital was barriers to ordering lab tests and the corresponding impact on pharmacist's ability to care for patients. Several participants recommended operational changes to enable pharmacists to order lab tests (which they are permitted to do per their Standards of Practice [45]). A few mentioned the need to be able to refer to specialists, particularly for unattached patients who often rely on pharmacists as their PHC provider.

Recommendations for publicly funded immunizations beyond influenza and COVID-19

Participants within and outside the provincial capital discussed the challenges experienced by unattached patients during the pandemic in accessing publicly funded immunizations. Currently, pharmacists can provide two publicly funded immunizations (i.e., seasonal influenza; and COVID-19, which was added after our interviews were completed). The remaining immunizations require fee payment by the patient and may or may not be reimbursed by the patient's private drug plan, if they have one. One participant explained how, when schools closed, unattached children had reduced access to immunizations, especially if families could not afford the fee to receive the immunization from a pharmacist. This participant recommended pharmacists be funded to provide these immunizations at no cost to the patient. Another participant added that providing more immunizations would increase immunization rates for unattached patients.

Lessons learned: recommendations to maintain changes made during COVID-19

A participant practicing outside the provincial capital wished for some COVID-19-related changes to remain post-pandemic, including funding for extended renewals, verbal orders for controlled medications, and making changes to opioid agonist maintenance treatments.

Discussion

Statement of key findings

Community pharmacists played a significant role in providing care for unattached patients before and during the COVID-19 pandemic. Unattached patients have fewer primary care options and pharmacists are one of the most accessible and trusted PHC providers. With the emergence and response to the COVID-19 pandemic, the role of pharmacists changed, and they provided additional necessary care to unattached, ''semi-attached,'' and attached patients who experienced barriers to care. Community pharmacist participants tended to practice to their full scope more often with patients unattached to a PHC provider than attached patients, especially when practicing outside the provincial capital. Community pharmacists play an important role in filling gaps in primary care access and could do even more with additional support.

Participants practicing outside the provincial capital expressed a need to keep recent legislative changes in place, such as the Health Canada (the Canadian Federal agency responsible for health policy across several agencies (e.g., Public Health Agency of Canada; Canadian Food Inspection Agency) and ensuring product safety in Canada, including pharmaceuticals, and maintains the Controlled Drugs and Substances Act [46]) issued exemption for prescribing controlled substances, enabling pharmacists to extend

prescriptions, transfer to other pharmacies, deliver prescriptions to patients' homes, and accept verbal orders for extensions or refills [35]. Participants also suggested expanding funding and infrastructure to enable pharmacists to order lab tests and refer patients to specialists. Allowing pharmacists to refer patients to specialists would expand pharmacists' roles as primary care providers and improve patient access to the healthcare system. Participants practicing both within and outside the provincial capital agreed that offerings for publicly-funded immunizations should be expanded and that mental health and addiction services should be made available province-wide. Maintaining these changes would help remove unnecessary barriers and enable community pharmacists to better support patients, particularly the growing number of unattached patients, and increase access to PHC.

Strengths and weaknesses

We used qualitative interviews with community-based pharmacists purposively sampled to collect a broad array of experiences across the province. Qualitative data provide rich, in-depth explorations of participants' perceptions. Future work will triangulate key findings using quantitative data.

Interpretation

Pharmacists play an important role in PHC and access to care for unattached and attached patients. In NS, unattached patients can go years without having a regular family physician or nurse practitioner, which creates barriers to accessing diagnostic testing and specialist care vital to preventative care and maintenance of existing health conditions [47]. Although pharmacists in NS have the legislated authority to order and interpret diagnostic tests [32], funding and operational barriers (e.g., information technology and infrastructure barriers) prevent them from providing these services, impacting unattached patient care. Nova Scotian pharmacists are also currently unable to participate in the numerous publicly funded immunization programs available to other PHC providers [32, 48].

Enabling pharmacists to provide additional services would improve access for unattached patients, for whom care is often fractured due to receiving care at different locations from different providers they do not have a relationship with and who do not know their medical history [47]. Unattached patients have reported seeking care in walk-in clinics and EDs for referrals and bloodwork, but having referrals not made or lost, resulting in delayed or missed diagnoses [47]. Pharmacists/pharmacies can provide continuity of care, offering a regular, accessible point of access to the health system. In some countries, pharmacists regularly provide care for minor ailments, including the United Kingdom, Australia, and Canada [49, 50] but research on these activities has highlighted the need for formal organization to ensure their standardization and sustainability. With support, pharmacists can address gaps in the healthcare system and lessen the demand for care within overcrowded walk-in clinics and EDs, especially in regions with high care demands, such as rural communities.

Further research

The role of community pharmacists in supporting unattached patients is underrepresented in PHC literature. There is some literature around the role of pharmacists supporting medically underserved patients in the United States, but little is known about Canadian pharmacists in this role [14, 51–56]. Clearly, pharmacists in NS are heavily involved in providing PHC. However, this is a small study of pharmacist experiences and further research is needed to understand the role of pharmacists in managing unattached patients nationally and internationally. Nova Scotian community pharmacists have a relatively broad scope of practice compared to other Canadian provinces and territories [32]. Exploring experiences in jurisdictions with more limited scopes of practice for community pharmacists would provide a more fulsome picture of the role of community pharmacists. There are also jurisdictions with larger proportions of unattached patients than NS [57]. Studying across jurisdictions may be valuable for understanding how community pharmacists could contribute to improving health outcomes for unattached patients internationally.

Findings from our study align with research conducted internationally – during the COVID-19 pandemic, pharmacists were providing additional services (e.g., providing health information, offering home delivery of drugs, virtual prescription consultations), supporting more patients than ever, and finding novel means to provide essential healthcare to patients [58, 59]. Further research should examine the roles of pharmacists during a pandemic and ensure the inclusion of pharmacists in pandemic plans to ensure the maintenance of essential services provided by pharmacists during disease outbreaks.

Conclusion

Community pharmacists play a crucial role in providing primary care to patients, particularly those unattached to another PHC provider. The COVID-19 pandemic has exacerbated gaps in PHC and has revealed a need for pharmacists to have the tools to fill those gaps, particularly outside of major metropolitan regions. Legislative, structural, and funding changes are urgently needed to help pharmacists

further support unattached patients and assist with heightened health needs resulting from interrupted and foregone care. Such changes would address the Quadruple Aim; leveraging and building on the services provided by community pharmacists would contribute to reducing health disparities and increasing access to care at the population level, reducing the amount of work unattached patients take on to navigate the health system, would further pharmacists' ability to care for unattached patients and reduce frustration at functional barriers to providing care, and would reduce costs associated with expensive downstream, reactive care.

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