Experiences of community pharmacists administering COVID-19 vaccinations: A qualitative study

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ABSTRACT

Background: Throughout the COVID-19 pandemic, community pharmacists have played an important role in the provision of patient care, including the delivery of COVID-19 vaccines. The additional workload and related demands arising from these extended services might affect worklife burnout. This qualitative study explored the experiences of Canadian community pharmacists in providing COVID-19 vaccines during the COVID-19 pandemic.

Methods: Eighteen community pharmacists across 10 provinces were asked about vaccination processes and perceptions about their role in separate, virtual semistructured interviews. Interviews were transcribed verbatim and analyzed using a deductive approach using the Areas of Worklife Burnout framework, with pharmacists' self-reported descriptions of their activities summarized using the Association of Faculties of Pharmacy of Canada’s (AFPc) professional competencies framework.

Results: Participants identified aspects of their role that were rewarding and challenging. Some challenges included lack of control, increased workload, inadequate communication, unfair treatment and conflicting values. They described being able to meet challenges and demonstrating resiliency via adaptability, developing communities and valuing their contribution to ending the COVID-19 pandemic. Self-identified AFPc competencies contributing to their ability to manage their worklife included care-provider, professional, leader-manager, collaborator and scholar.

Conclusion: Pharmacists accepted their additional responsibility of managing COVID-19 vaccines during the COVID-19 pandemic. However, they expressed some challenges with this role. To ensure sustainability of these services, prioritizing adequate resources, work processes and efficient communication with all relevant stakeholder groups, including public health, government and corporate leaders, is recommended for the future. Can Pharm J (Ott) 2023;156(Suppl):75-175.
Introduction
The World Health Organization declared COVID-19 as a pandemic on March 11, 2020, with the first confirmed case in Canada reported on January 25, 2020. Canada has reported 3.8 million cases of COVID-19 and more than 41,000 deaths as of early June 2022. Throughout this time, community pharmacists have played an important role in helping to prevent morbidity and mortality of COVID-19 in addition to providing their regular patient care services. Many Canadian jurisdictions expanded prescribing privileges for pharmacists and allowed for point-of-care testing, including for COVID-19 and administering COVID-19 vaccines. To date, it is estimated that Canadian pharmacists have provided more than 17 million doses of COVID-19 vaccine.

While the rationale for integrating community pharmacy practitioners into the delivery of COVID-19 vaccines was to vaccinate as many people as quickly as possible, it is important to examine the personal impact that participation in this effort has had on pharmacists. Although the effect of pandemic-related stressors on the mental well-being and burnout of nurses and physicians is well documented, less is known about pharmacists’ perceptions of their roles during the COVID-19 pandemic and more specifically how vaccinations have contributed to burnout experienced within the profession during the pandemic thus far. The aim of this qualitative study was to explore the perceptions of pharmacists about their vaccinator role during the COVID-19 pandemic. This study is part of a series included in this supplement to the Canadian Pharmacists Journal that together summarize the findings of a program of research funded by the Public Health Agency of Canada, examining community pharmacy vaccination services and integrating a vaccination delivery framework (Comfort Ask Relax Distract; CARD) to improve the experiences of vaccine clients and pharmacy staff.

Methods
This study used a qualitative descriptive design to gain an in-depth understanding of pharmacists’ experiences as COVID-19 vaccinators. Pharmacists practising in community pharmacies from across all 13 Canadian provinces and territories and administering COVID-19 vaccinations were eligible for participation. We used a combination of purposive and snowball sampling, aiming to include respondents from varied geographical locations, population densities, roles and genders.

All interviews were moderated by 1 interviewer and conducted virtually using an online platform (Zoom). A semi-structured interview guide was used, and each interview lasted about an hour. Pharmacists were asked about the circumstances leading to their becoming a COVID-19 vaccinator, how they prepared for this role, what the vaccination processes were in the pharmacy where they worked and their experiences and satisfaction in this role. At the end, they were asked about their perceptions of CARD as a framework for vaccination delivery, The results giving their perceptions of CARD are reported separately in this supplement. The study was approved by the Research Ethics Board of the University of Toronto (40916), and all participants provided informed signed consent.

Sample Size and Analysis
Data saturation was used to guide the required sample size. In prior related work by our group, saturation was achieved with 12 interviews in pharmacist vaccinators. We planned to include up to 30 interviews in the present study to account for variability that may have been present due to a more heterogeneous participant sample.

Interviews were recorded and transcribed verbatim. The qualitative analysis initially followed an inductive approach. Line-by-line coding was performed independently by 4 researchers (S.G., S.B., V.G., A.T.), who then met to discuss their results and identify relationships between codes. After coding the first 2 interviews, the analysis was altered to a deductive approach as emerging themes were determined to be consistent with the preexisting Areas of Worklife Burnout Framework by Leiter and Maslach.

In their comprehensive model of job burnout, Maslach and Leiter describe person-job incongruence within 6 domains of worklife: control, workload, community, fairness, rewards and values. These domains predict the level of experienced burnout (characterized by exhaustion, cynicism and inefficiency), which in turn predicts work outcomes such as job turnover. These 6 domains of job burnout are characterized as complex and interrelated, rather than simple and/or linear. Control is the starting point, as it will influence the extent to which people can attain congruence in workload, reward, fairness and community. Workload is described as directly contributing to exhaustion, whereas community, fairness and reward affect the individual’s values. Values are integral to the model and affect all 3 characteristics of burnout (exhaustion, cynicism and inefficiency), which ultimately lead to negative work outcomes and employee turnover. When values are incongruent with demands/stressors, employees perceive their workplace’s mission to be incompatible with their well-being.

In addition, initial coding discussions revealed that pharmacists’ self-reported activities, in terms of their roles and competencies, aligned with entry-to-practice pharmacy competencies as defined by the 2017 Association of Faculties of Pharmacies of Canada (AFPC). As a result, the AFPC taxonomy was used as the framework to describe how roles influenced the different 6 domains of the burnout. Key roles that were identified included professional, leader-manager, care provider, collaborator and scholar.

One researcher (S.G.) coded all of the transcripts using both frameworks. Regular meetings were held with the other 3 researchers (S.B., V.G., A.T.) to discuss the results until all transcripts were coded. Disagreements were resolved using consensus. Data saturation was determined to be achieved by the lack of substantive new information.
TABLE 1 Characteristics of pharmacist participants (N = 18)

| Characteristic                  | Value          |
|--------------------------------|----------------|
| Gender, No. male (%)           | 13 (72.2)      |
| Ethnicity, No. Caucasian (%)   | 10 (55.5)      |
| Age,* median in years          | 31-40          |
| Pharmacy type, No. independent (%) | 11 (61.1) |
| Role, No. staff pharmacist (%) | 8 (44.4)       |

*Reported age ranges (in years): 21-30, 31-40, 41-50, 51-60; n = 17.

Results

The study was conducted between May 28 and August 16, 2021. Altogether, 18 pharmacists from 10 provinces participated.

Demographic characteristics are shown in Table 1. Pharmacists had experience vaccinating with multiple COVID-19 vaccine brands, including Pfizer-BioNTech Comirnaty, Moderna Spikevax and Astra-Zeneca Vaxzevria.

Drivers of pharmacists’ worklife burnout were identified in all 6 domains of the Worklife Burnout Framework and are described in detail below (with sample quotes in Table 2).

Control

Pharmacists described feeling a lack of control over their work. This included usual activities, such as dispensing medications and patient counselling, and additional COVID-19 related activities, including COVID-19 testing and COVID-19 vaccine administration. They described their work situation as constantly changing. Communications regarding who qualified for COVID-19 vaccine administration were inconsistent and sometimes unpredictable. Pharmacists reported receiving little to no advance notice by health authorities regarding updates to patient vaccine eligibility. Information was often received through the same communication channels that were used to inform the general public (i.e., news reports, government websites). There were limited resources to be able to accommodate the work demands, including staff shortages, inability to hire extra staff due to corporate office refusals and unpredictability of vaccine shipments, which made it challenging for pharmacists to meet public demand.

Despite these challenges, pharmacists successfully leveraged their leader-manager role to adapt to the situation. They prioritized vaccination-related activities over other clinical services such as medication reviews. Some also reported hiring staff and developing and purchasing software to manage the complex vaccination processes.

Workload

Pharmacists described increases in workload during the pandemic. As care-providers, pharmacists filled in gaps in health services resulting from reduced access to other health care providers. Some pharmacists reported being concerned about not being able to address all patient health care needs due to the prioritization of vaccination services. Pharmacists reported an increase in telephone and in-person consultations.

Pharmacists also reported more time preparing, delivering and documenting pandemic-related clinical services, including vaccinations. Their role as professionals led them to accept the added responsibilities involved in the complex processes of vaccine storage, preparation, administration and documentation, which ultimately contributed to their workload.

Pharmacists participated in self-directed learning, including reviewing the primary literature to educate and prepare themselves about vaccination, demonstrating their role as scholars. This was part of their increased workload and was often done during “off” hours.

Pharmacists expressed frustration with inadequate technology support. Processes were reported as inefficient and often increasing rather than reducing workload, due to lack of integration of systems (i.e., vaccine acquisition, appointment booking, vaccine administration, reimbursement). As leader-managers, they altered work processes. Some created and purchased their own booking systems and hired staff to offset the additional work. Many staff pharmacists reported insufficient staffing, and their requests to have additional staff or hours were often denied by head office.

Community

Pharmacists reported that community factors contributed to both support and challenges. As collaborators, pharmacists described their relationships with patients, pharmacy staff and external pharmacies as positive, while those with physicians, public health, government and corporate offices were often strained. Pharmacists stated that patients appreciated this additional service and had increased trust in them. Pharmacy staff worked together more closely, and this strengthened their relationships. Pharmacists interacted with colleagues at other pharmacies more frequently than before, via pharmacy networks, social media and pharmacy associations. Most pharmacists described being disturbed by the unavailability of physicians for their patients, inadequate communication of public health and government with them and their lack of involvement in decision-making related to vaccination processes. They described finding out new information about the vaccines and their role at the same time as the public via mass media. Pharmacists hoped for more support from their corporate head offices than they received.

Fairness

Most pharmacists perceived that the compensation provided to them for their efforts and time was insufficient. Some pharmacists stated that the fee for administering the COVID-19 vaccines did not cover the costs associated with offering vaccination services. Many times, pharmacists were involved with
| Domain (as per Maslach and Leiter\textsuperscript{25}) | AFPC attributes of pharmacists | Example quotes* |
|--------------------------------------------------|-------------------------------|-----------------|
| **Control**<br>Having the opportunity to make choices and decisions, including problem solving and contributing to the responsible actions related to one's work | **Leader-Manager**<br>Engage with others to optimize the safety, effectiveness and efficacy of health care and contribute to a vision of a high-quality health care system | “So, we’re able to more clearly articulate the guidelines and plan ahead of time to make it more of a streamlined process . . . because throughout the whole experience, a lot of times it just felt like certain pieces of news were just dropped on us, and then we had about a night or couple of hours to figure it out and book all the appointments for the next day. So, definitely there could be more communication so we’re a little bit better prepared as well.” P12<sup>25</sup>  
“I would tell a patient at 1 o’clock in the afternoon that ‘Sorry, I can’t book you because you’re not eligible,’ and then at 1:30 the media announcement comes out and now are eligible, which would create just . . . total chaos.” P04<sup>25</sup>  
“Labour has been a big, big challenge, where corporate wants to have minimum labour, if they make $100, they only want to spend $19 on the labour.” P18<sup>25</sup>  
“The flow of our ‘vaccine clinic,’ I call it . . . is worked out primarily by myself and my staff, right? We understood what needed to get done. It’s unique to our environment . . . but I also have 2 other good pharmacist friends and we did a lot more than just creating . . . a vaccine flow within our pharmacy . . . right? And as soon as we knew when we were getting vaccines, we created a template that we could follow and a process that we could follow; almost like a standard operating procedure without writing it down.” P09<sup>25</sup>  
“We have . . . recently hired someone to fill the gaps, and . . . the new graduates too were coming out of school this year ready to go, so that was a big help to have them ready to jump in and help . . .” P17<sup>25</sup>  
“We ended up with waitlists of hundreds of people, and we were making phone calls . . . So very shortly after we started, I subscribed to a platform that would allow . . . much more automation. The platform allowed people to register and then I would offer appointments . . . I would create appointments within the platform, send out automated messages, and people would book their own time.” P05<sup>25</sup> |
| **Workload**<br>The amount of work to complete in a day; the frequency of surprising, unexpected events | **Care-provider**<br>Provide patient-centred pharmacy care by using knowledge, skills and professional judgment to facilitate management of a patient’s medication and overall health needs across the care continuum | “I was a bit hesitant at first, because we had enough on our plates with everything we’ve been doing due to COVID and lack of regular medical care, but it became apparent that we’re a very small community and we need to be front and centre and be able to offer these vaccines to our community. So we quickly got on board.” P07<sup>25</sup>  
“When news breaks out that, you know, AstraZeneca causes blood clots during the pandemic, who are patients going to call first? They’re not calling their family doctor because they’re inaccessible right now, ever since the start of the pandemic. So, pharmacists really did have to take on a larger role for their community. So, the first one they call would be their [laugh] community pharmacist to ask about it. And it’s happened, time and time again, where, you know, the same patients and even new patients keep coming to ask us about these things.” P01<sup>25</sup> |

(continued)
| Domain (as per Maslach and Leiter\textsuperscript{25}) | AFPC attributes of pharmacists | Example quotes* |
|-------------------------------------------------|--------------------------------|----------------|
| **Professional**                                 | Take responsibility and accountability for delivering pharmacy care to patients, communities and society through ethical practice and the high standards of behaviour that are expected of self-regulated professionals | “Pharmacists and pharmacies have the ability, the logistically ability to participate as well as the skill and knowledge. For me, this is something that we can do well. Like we know, we know about vaccines and we know how to administer them and we have the facilities and the logistics to do it fairly quickly. So, for me, it was basically a no-brainer that I would participate in that if given the opportunity. . . . It felt like a way for me to contribute to the beginning of the end of the pandemic.” P05 |
| **Scholar**                                      | Applying medication therapy expertise, learning continuously, creating new knowledge and disseminating knowledge when teaching others | “A lot of reading outside of work, researching, what the vaccine efficacy is, side effects, how to mix the doses, dilute them, anything like that, so it was a lot of extra work outside of my day-to-day job to prepare. A lot of research; a lot of looking up information . . . taking all that information, taking the research that was done and putting it in terms that could help them understand . . . so preparing people that way.” P17 |
| **Leader-Manager**                              | Engage with others to optimize the safety, effectiveness and efficacy of health care and contribute to a vision of a high-quality health care system | “The biggest downfall of this whole vaccination experience has been we’re dealing with 3 different programs. I’m dealing with a scheduling program, I’m dealing with the [province name] program and then I’m dealing with a pharmacist software program to bill. . . . The biggest downfall of this whole rollout was that there wasn’t a way to link everything.” P04 |
|                                                | “We don’t want to have anybody burn out so we just can’t use one person to inoculate everyone and pharmacists are much more valued as knowledge and the registered technicians are much more valued in the technical aspects. So, we’re able to tease that apart, a little further and have each other perform to our excellence in our highest capacity. So, I could be doing a med review over the phone with a patient and documenting all that, while a technician’s giving an injection. So, the technician’s able to do that while I’m able to do the cognitive functions that I’m much better trained for, rather than having to do the injection.” P14 |
|                                                | “I would say in a 3-day period we probably answered . . . 1000 phone calls . . . just from people looking to see where they could get their shots. Nothing else. It got to the point where honestly, we told our staff . . . if the caller ID is not one of our patients, we let it go to voicemail, because the voicemail was set up with the instructions on what to do if you’re looking just for a vaccine. Um, and I mean in my career, I never thought I’d see the day where I would . . . tell somebody on staff don’t answer the phone. But I mean . . . it got to a point where, in order for patients to get through, who really needed medications . . . we had to do that. You had to sort of monitor your phone calls so that . . . you were taking care of the patients who needed . . . refills or needed medications or had a medication question for you and filter out all the vaccine calls.” P04 |
|                                                | “Corporate wouldn’t let me hire somebody. Even though I had 2 qualified PAs [pharmacy assistants] living close by . . . I knew that I was going to lose the assistant that I had, so I had brought them in 2 months earlier before this other assistant went away . . . and corporate didn’t hire them for 6 months, because they felt like there was not really a need right now, even though there was a need.” P18 |

(continued)
| Domain (as per Maslach and Leiter\textsuperscript{25}) | AFPC attributes of pharmacists | Example quotes* |
|--------------------------------------------------|---------------------------------|-----------------|
| Community Community relates to an organization's social environment; includes relationships with different stakeholder groups | Collaborators Work collaboratively with patients and intra- and interprofessional teams to provide safe, effective, efficient health care, thus fulfilling the needs of the community and society at large | “There is a pharmacist Facebook group that started when COVID first started, just to keep everyone up to date on all the changes that were going on. So, a lot of people would post some helpful information there. . . . If there’s a particular resource that someone finds helpful, then they put it in there.” P15 “I think the pharmacy becomes your support system. So, even after shifts on some days, like we just . . . you know, stick around and like just chat with coworkers about things that happened during the day . . . if anyone has like a negative experience, it’s just easier to find someone to confide to who kind of has that similar experience as you because everyone’s going through the same thing. I think it solidified the pharmacy team, because sometimes . . . it just felt like, you know, all hands-on deck.” P12 “We had hundreds of thousands of doses of vaccines sitting in storage in a central facility and yet pharmacies are crying and Public Health is crying for doses up North. We’re not getting anything. It just seems so bizarre and no transparency. I mean, maybe they had a great reason why they were doing this, but they didn’t tell us why, so it’s very frustrating from a provider perspective to know that the, that the vaccines are out there and available, but they are not getting shipped to us, right? So that was the hardest part.” P08 |
| Fairness Individual and collective evaluation by employees about justice and fairness regarding decisions at work | Professional Take responsibility and accountability for delivering pharmacy care to patients, communities and society through ethical practice and the high standards of behaviour that are expected of self-regulated professionals | “You didn’t have time, so we had to do our regular dispensing, consultations, our regular jobs on top of now having to answer all these questions that we don’t get paid to do over the counter—questions, phone calls, we don’t get paid for any of that. . . . At [XX dollars] an injection—to prep all the vaccine ahead of time, prep all the paperwork ahead of time, do the vaccinations, do the watching after and run the clinic as well—for that kind of money. . . . It’s a little bit frustrating how underpaid we are. I mean, that also goes along with flu shots too, that we are underpaid for giving flu shots.” P17 “The other added pressure right now to us is physicians aren’t working. I know patients who haven’t seen their family physician face to face in a year and a half and guess who’s picking up that slack? It’s coming down to us. “ P04 “I don’t know of any other health care practitioner that [reassures patients] on their dime. Right? That’s the point I want to get across really. . . . There’s no other health care practitioner bar none that does all this on their own dime. Right? The doctor will say make an appointment, come and see me and bill the ministry to see you. right? Our own dime and that’s the one thing that people appreciate. . . . so, yeah. We did a lot of reassurance.” P09 |
| Rewards The reward area of work life addresses the extent to which rewards—monetary, social and intrinsic—are consistent with expectations | Care-provider Provide patient-centred pharmacy care by using their knowledge, skills and professional judgment to facilitate management of a patient’s medication and overall health needs across the care continuum | “So, if it’s just immunizing, it’s really satisfying. It’s a very professionally and personally satisfying goal to have right now because, like I mentioned . . . it’s something that people have been looking forward to since day one of the pandemic and oftentimes patients tell you how much this vaccination means to them once you’ve done . . . once you’ve completed the process they might be in tears, they might be overjoyed, they’re taking photos, they’re telling their friends, you know? They’re leaving the pharmacy incredibly happy. So that’s the one positive knowing how much of an impact you’re making right now in contributing to overcoming this pandemic, it’s incredible.” P01 “I’ve really become even more amazed at the influence we do have . . . when I explain this to people and people are saying ‘Yeah, okay, just give me Astra Zeneca. That’s great. I trust you more than I trust the media outlets. I trust you more than these committees.’ And I think that has been rewarding in a way to show that and I think we always knew it was there. It’s just one of those things that it makes you feel a lot better, knowing that, hey patients really do take our word for what’s going on.” P04 |

(continued)
### TABLE 2 (continued)

| Domain (as per Maslach and Leiter) | AFPC attributes of pharmacists | Example quotes* |
|------------------------------------|---------------------------------|-----------------|
| Values                             | Care-provider                   | *There are times we've actually felt that... we've let some things go that normally, we would be taking care of, because we are so focused on getting people vaccinated. And I think... talking to some of my colleagues... The 2 things that really stand out right now... are (1) the same feeling that we're not taking care of our patients how we really want to, and (2) we're just starting to get burnt out. There are just way too many demands.* P04 |
| Values                             | Professional                    | *It has felt meaningful, but there are a lot of times, where it was like very physically demanding, and tiring as well, just because I feel like a lot of responsibilities were put on the pharmacies at once... a lot of times that communication wasn't really great, but the vaccination experience overall... providing the vaccinations, I think that was a positive experience.* P12 |
| Values                             | Professional                    | *I'm not able to keep up because there are added tasks... It was just the unsafe practice that I was getting drawn towards and then I realized it's not something I could do forever. I ended up seeing doctors well before I stopped work in [month], but I started seeing the doctor in [earlier month], my family doctor, and asking for help and I couldn't do it... The last day before I stopped, I ended up just crying at the doctor's office and she's like, 'yeah, it's just unsafe for you to go back. You need to take the time off.' So, she has given me [number] months to start with and then reassess after that.* P18 |

*Participants are denoted by their number (e.g., P01 = participant 1, P02 = participant 2, etc.).

assisting clients in making vaccination appointments, maintaining manual logs of waiting lists and personally contacting them about their appointments. They also reported providing additional services without compensation such as counselling about more ailments, providing advice about COVID-19 vaccinations and answering other COVID-19 pandemic-related queries. Despite this, they persevered, as they believed it was part of their professional role.

**Values**

Ultimately, pharmacists’ overall ability and willingness to persevere with their COVID-19 immunizer role was related to the perceived value they brought to their communities as care-providers. Pharmacists reported wanting to help their community and to help end the COVID-19 pandemic. Pharmacists also reported being concerned about patient safety and ensuring that patients’ health needs were met when there were so many gaps in health services. They worked extra shifts and longer hours; however, they still found themselves having to prioritize vaccinations over other patient health care needs, which increased their stress.

Pharmacists struggled when their own values of patient care and patient safety were not aligned with what they were able to provide for their patients. Despite this, pharmacists felt obligated to continue to work due to their professional role.
Concern about practising in an “unsafe manner” with respect to making errors and causing harm to patients, however, did lead one pharmacist to take a leave of absence from their job.

Discussion

This study examined community pharmacists’ experiences and satisfaction with their role as COVID-19 vaccinators. Pharmacists reported that administering COVID-19 vaccinations was consistent with their professional role. While generally satisfied, they described a busy, chaotic and inefficient working environment with multiple competing demands, inadequate resources and suboptimal communication with key stakeholders (such as government and public health), that together contributed to increased stress. Factors that helped them to deal with their work situation included their ability to adapt to the changing conditions, leveraging supportive communities and valuing their contribution to their patients and to ending the COVID-19 pandemic.

Our findings add to an increasing body of literature examining COVID-19 pandemic-related challenges faced by health care providers. In the first large national survey on this topic, including 768 pharmacists, the INSPIRE study documented added workload due to an increase in number of patients seeking pharmacists’ counselling (vs. other settings), including guidance regarding COVID-19 vaccinations. Other studies with pharmacists have documented that increased workload, lack of control over the work environment, rapidly changing information, staffing shortages and conflicts with the head office or other management structures contributed to negative effects on mental health. Mitigating factors have been reported to include pharmacists’ community connections, positive feedback from patients and the ability to adapt to change.

To date, pharmacies are estimated to have delivered an impressive 21% of all COVID-19 vaccine doses administered to the Canadian public. Based on the prominence of pharmacies in the delivery of COVID-19 vaccines during the pandemic, we believe that community pharmacy-based vaccination services are likely to take on a more central role in Canada in the future. Even prior to the COVID-19 pandemic, community pharmacies were increasingly relied on to deliver vaccinations due to their accessibility and demonstrated efficiency with vaccinating large numbers of individuals. Across the country, vaccination privileges for pharmacists have been continually expanding over time, including the ability to administer more vaccines and to vaccinate younger children. Vaccination administration privileges are also beginning to be extended to pharmacy technicians, in some provinces, as a result of needing to meet the uptake of COVID-19 vaccination.

In April 2022, Nova Scotia pharmacists were given COVID-19 vaccination privileges for children 6 months of age and older, in anticipation of upcoming regulatory approval of COVID-19 vaccines for this population. Other provinces (such, Ontario) have followed suit.

It is important to note that while pharmacists in the present study were generally able to manage the increased work demands and associated stressors that arose from their COVID-19 vaccinator role, the time frame for the study was relatively short compared with the entire duration of the COVID-19 pandemic. While some work-related stressors may have subsided over time for some participants, others may have emerged. The ongoing impact of persistent demands and stressors on worklife burnout cannot be underestimated. For instance, new challenges have included administering vaccines in children aged 5 to 11 years, which takes more time and is more stressful for pharmacists than administering vaccines in adults. Recent expansion in the delivery of COVID-19 vaccines in infants and young children, along with other expanded scope services (e.g., common ambulatory conditions) that are taking place across the country are likely to place additional strains on pharmacists in their worklife in the ensuing months.

To this end, there is in fact emerging evidence that the ongoing COVID-19 pandemic is starting to take a toll on pharmacy professionals that is profoundly negative. In a recent national survey (N = 1399) led by the Canadian Pharmacists Association in January and February of 2022, 92% of pharmacy professionals (pharmacists and pharmacy technicians) were identified to be at risk of burnout. This was assessed using a validated measure—the Oldenburg Burnout Inventory. To support pharmacists to be able to continue to provide vaccination services, we recommend a number of changes, organized into 4 categories: (1) practice, (2) compensation, (3) communication and (4) support and well-being (Table 3). These recommendations are described in further detail below.

First, with respect to practice, we recommend increased staffing to account for increased services and demands as well as using pharmacy technicians to provide pharmacists with more time for clinical services. The integration of evidence-informed resources and tools (e.g., the CARD system) is recommended to assist with establishing efficient vaccination delivery and promoting a healthy pharmacy environment for both pharmacy staff and patients. This may require alterations to work processes, including vaccination setup and flow. Community pharmacists can benefit from scaling up technology in their practice. Software tools like booking systems can help manage workflows by reducing surges in appointments. Health authorities can facilitate development and use of technology that is interoperable with central registries and repositories and provide subsidies for implementation.

Second, the rate of compensation for community pharmacists should be commensurate with vaccination services provided and similar to compensation for other health professionals providing the same services. This includes compensation for vaccine administration and other vaccine-related services (such as providing advice regarding vaccinations) as well as any other cognitive services provided.
| Category                  | Recommended change                                      | Explanation                                                                                                                                 |
|--------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Practice                 | Increase staffing                                       | Increase staffing to account for increased vaccination (and other expanded scope) services, including pharmacists and pharmacy technicians |
|                          | Improve vaccination delivery process                    | Integrate evidence-based vaccination delivery framework to improve efficiency and safety of vaccination delivery (e.g., CARD system)          |
| Efficient technology     |                                                          | Scale up technology; integrate software tools like booking systems to help manage workflows by reducing client surges; health authorities can facilitate use of interoperable systems with central registries and repositories and subsidize adoption |
| Continuing education     |                                                          | Provide continuous professional education and skills training to ensure the latest evidence is incorporated into care delivery to ensure quality care, including pharmacists and pharmacy technicians and resources and tools to support professional learning |
| Compensation             | Increase compensation for vaccine administration, vaccination-related services and non–vaccine-related cognitive services | Provide compensation commensurate for services rendered and aligned with fair market value (for equivalent services by other providers) |
| Communication            | Optimize internal communications                        | Maintain intra-organization communication to support a positive workplace environment. Consider staff/organization needs, including (but not limited to): knowledge dissemination, team building, problem solving and rewards |
|                          | Optimize interpharmacy communications                  | Maintain interpharmacy communications to facilitate knowledge acquisition and social support                                               |
|                          | Optimize external communications with important stakeholder groups | Maintain external communications with public health and governments; include pharmacists in policy making Ensure direct communications from health authorities to pharmacy/pharmacy groups that are timely, consistent and pragmatic |
| Support and well-being   | Taking breaks                                           | Alter current pharmacy work culture, which discourages breaks; pharmacists are currently exempt from having a maximum number of work hours, rest periods and eating periods in labour board policies |
|                          | Administer self-assessment tools to track mental health/burnout | Deploy self-assessment tools to monitor and measure work-related stressors in pharmacy staff (e.g., Maslach Burnout Inventory)             |
|                          | Implement employee assistance programs                  | Create formal employee assistance programs to support pharmacy staff who are experiencing mental health issues (or other health issues) |
Third, enhancements in communication and collaboration are recommended across stakeholder groups, including the inclusion of pharmacists in policy-making decisions. Direct communications from health authorities and government should be timely, consistent and pragmatic.

Finally, we recommend efforts to integrate tools and processes that provide staff support and well-being. There is a need to alter a long-standing pharmacy work culture of "no breaks" that is perpetuated by inadequate labour board policies. Surveys are recommended for staff to monitor work-related stress so that it can be identified and addressed before it becomes harmful and causes individuals to exit the workplace. Formal employee assistance programs are also recommended to address arising mental health issues as well as other health-related concerns.

There are several strengths to this study. The qualitative methods used allowed for an in-depth understanding of pharmacists’ perceptions. Virtual interviews improved the feasibility of participation and allowed for inclusion of pharmacists from across the country with different characteristics, ensuring that a wide range of experiences and perspectives were described. Involvement of multiple coders also increased the credibility of the findings.

This study has several limitations worthy of discussion. While participants from all 10 provinces were included, there was a lack of representation for the 3 territories, and some perspectives may not have been captured. In addition, the perspectives of pharmacists may have changed since participating in the study due to ongoing pandemic-related factors. The continual outbreaks and lockdowns, coupled with COVID-19 testing, administration of booster COVID-19 vaccines and vaccination of children, however, suggests that work-related stressors have been ongoing.

In summary, most community pharmacists demonstrated their ability to adapt to the addition of COVID-19 vaccination services. This added responsibility, however, created a work environment that negatively affected resiliency and threatens the sustainability of broadened community pharmacy-based vaccination services. We recommend examining current approaches to pharmacy service delivery that will allow pharmacists to fully embrace and excel in opportunities to lead vaccination delivery, as well as other emerging services, in order to address the evolving health needs of society, including the potential next pandemic, while also maintaining a healthy workforce.

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