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Pharmacist direct dispensing of mifepristone for medication abortion in Canada: a survey of community pharmacists

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ABSTRACT

Introduction Pharmacists were acknowledged as the most appropriate healthcare professional to dispense mifepristone for medication abortion shortly after the prescription therapy became available in January 2017 in Canada.

Objective We aimed to identify the facilitators and barriers for successful initiation and ongoing dispensing of mifepristone among community pharmacists across Canada.

Study design We surveyed community pharmacists from urban/rural practice settings across Canada by recruiting from January 2017 to January 2019 through pharmacist organisations, professional networks, at mifepristone training courses and at professional conferences. The Diffusion of Innovations theory informed the study design, thematic analysis and interpretation of findings. We summarised categorical data using counts and proportions, χ^2 tests, Wilcoxon rank-sum and proportional odds logistic regression.

Results Of the 433 responses from dispensing community pharmacists across 10/13 Canadian provinces and territories, 93.1% indicated they were willing and ready to dispense mifepristone. Key facilitators were access to a private consultation setting (91.4%), the motivation to increase accessibility for patients (87.5%) and to reduce pressure on the healthcare system (75.3%). The cost of the mifepristone/misoprostol product was an initial barrier, subsequently resolved by universal government subsidy. A few pharmacists mentioned liability, lack of prescribers or inadequate stock as barriers.

Conclusions Pharmacist respondents from across Canada reported being able and willing to dispense mifepristone and rarely mentioned barriers to stocking/dispensing the medication in the community pharmacy setting. The removal of initial regulatory obstacles to directly dispense mifepristone to patients facilitated the provision of medication abortion in the primary care setting.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ Participants from all areas of the country.
⇒ Participants from urban and rural communities.
⇒ Participants from diverse settings.
⇒ Not able to determine response rate as we are unable to determine the number of pharmacists aware of the opportunity to participate in this study.
⇒ Data from 2019 is not reflective of pandemic-associated service changes.

INTRODUCTION

Abortion is a safe and common procedure in Canada, with 83 576 abortions reported in 2019.[1] Mifegymiso (mifepristone 200 mg and misoprostol 800 µcg) became available in Canada in January 2017[2] for medication abortion.[3] With 96% of abortions performed surgically in Canada prior to the introduction of mifepristone,[4] the patients had often been required to travel long distances to access this essential service.[5] The United Nations Human Rights Commissioner's November 2016 Report of the Committee on Elimination of Discrimination Against Women called on Canada to improve access to abortion in all provinces and territories.[6]

Initially the federal drug regulator, Health Canada, specified that prescribing physicians must dispense the medication directly to the patient. This regulatory requirement bypassed professional pharmacy standards that ensure safe dispensing practices and comprehensive pharmacist–patient counselling.[7] Health Canada's removal of regulatory restrictions within the first year enabled ordering and distribution to pharmacies through their usual mechanisms.[3 8] Community pharmacists could then dispense mifepristone directly to patients presenting a prescription, consistent with professional practice for the dispensing of other prescription medications.[3 8]

Pharmacists are drug experts. Pharmacist dispensing of mifepristone has the potential to increase access to early abortion care with no increased risk to patients.[9] We aimed to identify the facilitators and barriers for successful initiation and ongoing

provision of mifepristone among Canadian community pharmacists.

METHODS

This research represents the baseline survey results of a cross-sectional study assessing the perspectives of community pharmacists when initiating mifepristone dispensing in various practice settings during the first 24 months of availability in Canada (January 2017 to January 2019).[10] This research is a component of our larger observational mixed-methods programme of research, the Contraception and Abortion Research Team Mifepristone Implementation Study[10] that also investigated perspectives of physicians and policymakers.[8 11–13]

We conducted a mixed-methods observational design assessing survey results from urban and rural community pharmacists across Canada. Data were stored securely on a REDCap (Research Electronic Data Capture) platform.[14] A prize honorarium was randomly drawn from among those who completed the survey. Participation was voluntary and participants provided informed consent prior to accessing the survey. Participants were able to review and change their answers prior to submitting the survey.

Survey development

Our survey question design combined two theories to explain adoption and diffusion of innovation in service organisations and healthcare: Roger's theory of the Diffusion of Innovation[15] and Godin's framework.[16] We describe the theoretical contribution to the survey development in detail in our protocol paper.[10] Briefly, combining these two models aims to bridge the gap between practice and policy by articulating key components in services implementation, including characteristics of innovation and system readiness, change agents, methods of diffusion and dissemination and outer context.[17] Questions were adapted from field tested questions in our study of pharmacist willingness to implement contraception dispensing innovations.[18 19] We pilot tested the instrument with three pharmacy educators and three experienced community pharmacists practicing in diverse settings. Survey questions assessed the readiness to adopt an innovation, mifepristone dispensing and availability in community pharmacies, as well as pharmacist knowledge, perspectives and experiences with mifepristone use, and the needs of the community served (online supplemental appendix 1).

Patient and public involvement statement

Due to the sensitive topic this project engaged with advocacy organisations and patient representative organisations, but that no patients were directly involved in the project. Further, as this project was a survey among pharmacists, several pharmacists were engaged from the question development through the methodology analysis and interpretation of results.

Recruitment

Canadian pharmacists were invited electronically to participate in our survey beginning in mid-January 2017, following their successful completion of the accredited multidisciplinary Medical Abortion Training Program hosted by the Society of Obstetricians and Gynaecologists of Canada (SOGC), and from May 2017 when this course was no longer required, any interested pharmacists were invited. For the purpose of this study, we included all responding pharmacists who self-identified as working as a dispensing community pharmacist, including pharmacists working in an outpatient hospital pharmacy. Data were collected over 24 months (17 January 2017 to 16 January 2019). We defined urban settings using the definition of Statistics Canada[20] for census metropolitan areas and all other locations as rural. Urban versus rural status was determined using the pharmacy's postal code.

Statistical analysis

As participants provided their email address to be invited for the follow-up survey, duplicate entries were identified and removed. We summarised categorical data using counts and proportions and used χ^2 tests to assess the impact of sex and pharmacy location (urban or rural) on willingness to dispense mifepristone. We used a Wilcoxon rank-sum test to compare demographic parameters between participants who were willing and unwilling to dispense mifepristone. To evaluate the relationship between barriers and facilitators obtained from Likert-test style answers and demographic parameters, we conducted a proportional odds logistic regression. As questions were independent of one another, we included partial responses in our analysis. We performed all data analysis using Stata V.15 (StataCorp, College Station, Texas, USA).

For our single open-ended question, 'Please explain your main motivation to undertake training in the provision of medical abortion', we conducted an inductive thematic analysis informed by a constructivist, reflexive approach.[21 22] We (EZZ and JAS) familiarised ourselves with participants' responses prior to one author (EZZ) copying answers verbatim into NVivo V.12 (QSR International) for analysis. Data interpretation was discussed by all authors and together we refined the themes until we reached consensus. The analysis included: (1) initial open coding, in which we attributed a code to each response that captured its main concept; (2) focused coding, in which codes were shortened and condensed, (3) selective coding, which resulted in a list of themes and categories and (4) identifying patterns across the data set.

RESULTS

Participant characteristics

We received 491 survey responses from Canadian pharmacists, of whom 433 self-identified as a dispensing community pharmacist. Our participation rate (ie, the number of participants who agreed to participate in the

study divided by the number of participants who opened the survey) was 92.0% and our completion rate was 82.0%. Demographic characteristics documented pharmacist representation from 10 among the 13 Canadian provinces and territories; these jurisdictions represent 98.3% of the Canadian population (table 1).[23] Almost half (n=205, 47.3%) of our participants practiced in a rural setting. Demographic characteristics were similar between urban and rural participants (table 2).

Current and future plans for offering clinical services by dispensing community pharmacists

The range of clinical services provided by dispensing community pharmacists are detailed in table 3. Within 12 months, 72.7% of participants selected the response that they were 'planning to offer counselling on mifepristone/misoprostol medical abortion' (table 3) and 85.4% indicated interest in being 'one of the first to implement mifepristone as a new clinical service' in their pharmacy (table 4). Only 1.4% of the pharmacists indicated they were unwilling to change their practice (table 4).

Experience with mifepristone and willingness to dispense

Of our participants, 167 (38.6%) indicated that they knew of other pharmacist(s) in their community who intend to dispense mifepristone and 93 (21.5%) knew of a healthcare provider who was planning to prescribe. Of those aware of mifepristone prescribers in their community, the mean number of prescribers estimated by pharmacists was 4.7 (SD 11.0). Ten participants (2.3%) indicated that, to their knowledge, there were no mifepristone prescribers in their community.

Most respondents (93.4% urban; 95.1% rural) indicated willingness to dispense mifepristone (table 2). For the 19 (4.4%) participants unwilling to dispense mifepristone, the number of years worked as a community pharmacist was a negative indicator ((χ^2, p): 90.3, 0.000). No difference was seen in willingness to dispense mifepristone between pharmacists working in urban versus rural setting ((χ^2, p): 0.352, 0.553). Among pharmacists unwilling to dispense mifepristone, sex, geographical location, pharmacy management or pharmacy ownership were not associated with this decision (data not shown in table).

Facilitators and barriers to the provision of mifepristone

Most participants (n=396, 91.4%), indicated that patient privacy was very important to the provision of mifepristone. Almost 80% of the pharmacists indicated they have a private counselling area in their pharmacy (table 3) and felt comfortable counselling patients in their current pharmacy setting. In addition, 379 pharmacists (87.5%) strongly supported the need for patients to have ready access to medication abortion and indicated that they were motivated to enhance patient access to abortion. Other facilitators included their belief that by dispensing mifepristone,

Table 1 Characteristics of dispensing community pharmacists (N=433)

Characteristic	
Age (mean, SD)	40.9 (11.1)
Years practicing as pharmacist (mean, SD)	14.6 (11.3)
Sex (n, %)	
Female	296 (68.8)
Male	133 (30.9)
Prefer not to say	<6
Province (n, %)	
British Columbia	74 (17.1)
Alberta	48 (11.1)
Saskatchewan	21 (4.8)
Manitoba	9 (2.1)
Ontario	165 (38.1)
Quebec	<6
New Brunswick	22 (5.1)
Nova Scotia	59 (13.6)
Prince Edward Island	<6
Yukon	<6
Not specified	30 (6.9)
Pharmacy setting (n, %)	
Urban	198 (45.7)
Rural	205 (47.3)
Not specified	30 (6.9)
Employment status (n, %)	
Full-time	242 (55.9)
Part-time	66 (15.2)
Floater	26 (6.0)
Resident	<6
Manager	126 (29.1)
Owner	59 (13.6)
Hospital	8 (1.8)
Education (n, %)	
BScPharm	394 (91.0)
E2P PharmD	19 (4.4)
Community residency	<6
Hospital residency	12 (2.8)
Graduate degree	34 (7.8)
Additional certification (n, %)	
Cardiopulmonary resuscitation	229 (52.9)
Certified anti-coagulation provider	8 (1.8)
Certified asthma educator	8 (1.8)
Certified diabetes educator	49 (11.3)
Certified respiratory educator	13 (3.0)
First aid	406 (93.8)
Immunisation	377 (87.1)
None	14 (3.2)

BScPharm, Bachelor of Science in Pharmacy; n, number; E2P Pharm.D, Entry to Practice Doctor of Pharmacy.

Table 2 Participant demographics by community pharmacy setting (N=433)

	Age; mean (SD)	Sex; n (%)	Years as pharmacist mean (SD)	Willing to dispense mifepristone; n (%)	Province (n)								
					BC	AB	SK	MB	ON	QC	NB	NS	PE	Yukon
Urban (n=198)	40.6 (0.8)	Male: 69 (34.8) Female: 127 (64.1) Did not specify: 2 (1.0)	13.9 (0.8)	185 (93.4)	32	22	12	8	96	<6	10	17	0	0
Rural (n=205)	41.1 (0.8)	Male: 60 (29.3) Female: 145 (70.7)	14.9 (0.8)	195 (95.1)	42	26	9	<6	69	0	12	42	<6	<6

AB, Alberta; BC, British Columbia; MB, Manitoba; NB, New Brunswick; NS, Nova Scotia; ON, Ontario; PE, Prince Edward Island; QC, Quebec; SK, Saskatchewan.

pharmacists would assist in reducing pressure on the healthcare system (n=326, 75.3%). Most pharmacists agreed that this new clinical practice had the potential to enhance collaboration between pharmacists and other healthcare team members (n=322, 74.4%) and would increase their job satisfaction (n=256, 59.1%). Pharmacists (n=268, 61.9%) also indicated that mifepristone dispensing can easily fit into their daily dispensing activities.

Responding pharmacists reported some barriers to mifepristone provision. Those considered the most important were cost (n=132, 30.5%, nearly exclusively cited before universal subsidy), liability (n=79, 18.2%), lack of prescriptions (n=72, 16.6%), inadequate stock (n=68, 15.7%) and need for training (n=65, 15.0%). Only 26 (6.0%) participants reported resistance from the public as the most important barrier for dispensing mifepristone and only 24 (5.5%) reported resistance from pharmacy management. Working as a pharmacy owner was significantly associated with stating liability concerns (p=0.016), lack of prescriptions (p=0.003) or the need for additional training (p=0.046) as a barrier, while living in an urban compared with a rural setting was significantly associated with stating that a need for training (p=0.039) was a barrier. Sex of the pharmacist was not associated with any of the barriers (table 5).

Qualitative analysis

Most participants (n=381, 88.0%) responded to the open-ended question on their motivation to provide medication abortion. Our thematic analysis resulted in four themes: supporting the community through abortion access, meeting consumer demand through new business, supporting patients' choices and options and expanding pharmacists' scope of practice (online supplemental appendix 2.

Theme 1: supporting the community through abortion access

Pharmacist reasons to complete training included to enable them to offer the best level of care for their community and for the knowledge provided. Pharmacists discussed the importance of understanding the research literature related to the medications, as well as gaining insight into the effectiveness of the mifepristone/misoprostol protocol and ways to minimise potential adverse reactions. Pharmacists also described using this training to actively support and collaborate with mifepristone prescribers in their community, by being able to answer their questions, dispense the medications with counselling to their patients and lower patient burden at clinics and hospitals.

Theme 2: meeting consumer demand through new business

Pharmacists saw the business opportunity in dispensing mifepristone as one of the motivators for taking this training programme. Pharmacists mentioned healthcare prescribers and patients had asked questions about mifepristone and some had already received prescriptions. Pharmacists in rural areas believed that dispensing mifepristone will become a more common practice and they wished to be trained so

Table 3 Clinical services provided by dispensing community pharmacists (N=433)

Characteristic	n (%)
Full-time pharmacists at the location, mean (SD)	2.4 (2.3)
Community pharmacy setting:	
Banner (eg, I.D.A., Guardian, Pharmasave)	91 (21.0)
Chain (eg, Lawtons, Pharma Plus)	80 (18.5)
Department (eg, mass merchandise Wal-Mart, Safeway)	84 (19.4)
Franchise (eg, Shoppers Drug Mart, Medicine Shoppe)	105 (24.2)
Independent	56 (12.9)
Other	13 (3.0)
Missing	4 (0.9)
Counselling services:	
Private counselling room	343 (79.2)
Separate counselling area at the dispensary	145 (33.5)
Counselling area at prescription drop-off area	100 (23.1)
Counselling area at prescription pick-up area	177 (40.9)
No designated counselling area(s) in the pharmacy	12 (2.8)

	Currently offering	Planning to offer within the next 12 months	Currently not planning to offer	Did not respond
Counselling on emergency contraceptives	416 (96.1%)	<6	7 (1.6%)	<6
Counselling on continuous hormonal contraceptives	413 (95.3%)	<6	<6	9 (2.1%)
Counselling on pregnancy tests	388 (89.6%)	9 (2.1%)	23 (5.3%)	13 (3.0%)
Counselling on options for reproductive health	285 (65.8%)	32 (7.4%)	89 (20.5%)	27 (6.2%)
Counselling on methotrexate/misoprostol medical abortion	91 (21.0%)	164 (37.9%)	149 (34.4%)	29 (6.7%)
Counselling on mifepristone/misoprostol medical abortion	78 (11.1%)	315 (72.7%)	22 (5.1%)	18 (4.1%)
Medication reviews	409 (94.5%)	10 (2.3%)	9 (2.1%)	<6
Adaptations of prescriptions	406 (93.7%)	8 (1.8%)	12 (2.8%)	7 (1.6%)
Adaptations of prescriptions	336 (77.6%)	33 (7.6%)	42 (9.7%)	22 (5.1%)
Observation of administration of drugs (eg, methadone)	288 (66.5%)	16 (3.7%)	117 (27.0%)	12 (2.8%)
Therapeutic drug monitoring	222 (51.3%)	44 (10.2%)	144 (33.2%)	23 (5.3%)

they will be able to competently dispense the medication and support their community clinicians and patients.

Theme 3: supporting patients' choices and options

Pharmacists perceived that providing mifepristone medication abortion services for patients in their community is an important component of reproductive health. Pharmacists mentioned their desire to support and empower patients and enable their right to have options and alternatives to make a positive choice about their reproductive health by enhancing access to mifepristone for patients in their community.

Theme 4: expanding pharmacists' scope of practice

Pharmacists embraced the changing role of the profession and stressed the importance of expanding the pharmacist scope of practice and ensuring that they proactively keep up-to-date with new medications. Pharmacists believe that it is important to embrace a new therapeutic expansion of practice and want to lead by example.

DISCUSSION

Our research found that pharmacists across Canada report active interest in dispensing mifepristone, are ready and trained to dispense mifepristone to their patients and have the infrastructure in place to ensure safe and private access to medication abortion counselling and prescriptions. A key facilitator reported was a pharmacy layout conducive to confidential interactions with patients. We found that most responding pharmacists felt mifepristone

Table 4 Willingness of pharmacists to provide new clinical pharmacy services (N=433)

	Willingness to provide new clinical pharmacy services currently available in your province, n (%)	Willingness to provide mifepristone as a new clinical pharmacy service, n (%)
I am quick to adopt and willing to provide new pharmacy clinical ideas and initiatives and integrate them into my practice	344 (79.4%)	370 (85.4%)
I wait for my peers to try out new clinical services prior to adopting the service myself	61 (14.1%)	38 (8.8%)
I do not provide new clinical services unless it is required (eg, by corporate policies or to perform my job as a pharmacist)	18 (4.1%)	11 (2.5%)
I prefer not to change my practice	<6	6 (1.4%)
Did not respond	8 (1.8%)	8 (1.8%)

prescriptions can be readily incorporated into daily dispensing activities, were interested in promptly initiating mifepristone dispensing for medication abortion and willing to be one of the first to implement the new clinical service in their community. Pharmacists were strongly motivated by the belief that involvement in this new clinical practice has the potential to enhance interprofessional collaboration. While the out-of-pocket cost of the mifepristone/misoprostol product (approximately $C300) was mentioned by our pharmacists as the most substantial barrier for individuals needing to access the medication, this was subsequently resolved with universal government subsidies for all provincial and territorial residents beginning with New Brunswick and Ontario in April 2017, with coverage and documentation in provincial databases gradually implemented by the various jurisdictions across the country by June 2019.[24] Our pharmacist participants also expressed concerns about intermittent stock shortages from the Canadian distributor; this was especially evident during the initial introductory phase between January 2017 and June 2017 when supplies were required to be ordered directly from the drug distributor. Once mifepristone became available through traditional pharmaceutical wholesalers, pharmacists were able to routinely order mifepristone with their other pharmaceutical stock purchases. A minority of pharmacists mentioned other barriers, citing concern about potential community resistance or liability.

A powerful facilitator for the rapid uptake and distribution of mifepristone for medical abortion by pharmacists across Canada was the positive experience beginning in British Columbia in 2000 and then across Canada, of incorporating emergency contraception without a physician's prescription into clinical pharmacy practice.[25–27] Based on this clinical precedent for counselling patients on the potential of emergency contraception to reduce the number of unwanted pregnancies and subsequent abortions, the physical infrastructure was already in place in community pharmacies to ensure safe and private access to medication abortion prescriptions and counselling. This professional experience contributed to pharmacists who were willing to be among the first to implement the new mifepristone clinical service in their community. Pharmacists have professional protocols to manage the timely ordering and stocking of the medication and handling documentation of the subsidised clinical transaction for provincial residents in administrative single-payer health system databases. During continuing education programmes, pharmacists were encouraged to identify physicians and nurse practitioners involved with reproductive healthcare in their community, and mention that their pharmacy would be stocking mifepristone and using the Pharmacist Mifepristone Checklist and Resource Guide.[28] Our experienced community pharmacists were strongly motivated by the belief that involvement in this new clinical practice has the potential to enhance interprofessional collaboration.

Our results are relevant for countries in which medication abortion is currently prescribed and dispensed by physicians, particularly those that may consider transitioning to permit dispensing of mifepristone by community pharmacists. Dispensing mifepristone in community pharmacies enables each patient to take the medication at a convenient time and place. Kaller *et al* aimed to assess the feasibility of pharmacists dispensing mifepristone in the USA and found that when given the opportunity, pharmacists were supportive of dispensing mifepristone, were willing to be trained and reported no dispensing challenges.[29] A recent clinical trial of pharmacist dispensing of mifepristone in California and Washington State has demonstrated high levels of patient satisfaction with their experience receiving mifepristone dispensed by a community pharmacist.[30] In Illinois, primary care providers support potential pharmacist dispensing of mifepristone as this would contribute toward the normalisation of medication abortion.[31] Stone and Rafie note that critics of pharmacist dispensing say that only a handful of pharmacies will take up the option and the impact may be limited.[32] Pharmacy is an ever-evolving field, and with global expansion in pharmacist scope of

Table 5 Associations between participants' characteristics and reported barriers to mifepristone provision (N=433)

Participant characteristics							
Barriers	**Cost**	**Liability**	**Lack of prescriptions**	**Inadequate stock**	**Need for training**	**Lack of payment mechanisms**	**Short expiry date**
Age	–0.005	0.019	–0.0002	0.014	0.013	0.010	0.007
95% CI	–0.021 to 0.011	0.003 to 0.035	–0.017 to 0.016	–0.002 to 0.031	–0.002 to 0.0295	–0.006 to 0.0265	–0.008 to 0.022
P value	0.513	0.018*	0.977	0.079	0.094	0.222	0.391
Sex	0.033	–0.08	–0.353	–0.128	–0.296	–0.325	–0.267
95% CI	–0.344 to 0.411	–0.449 to 0.293	–0.731 to 0.025	–0.508 to 0.252	–0.665 to 0.072	–0.703 to 0.052	–0.650 to 0.114
P value	0.862	0.679	0.067	0.509	0.115	0.092	0.170
Urban vs rural setting	0.278	–0.291	0.260	–0.069	–0.378	–0.352	–0.265
95% CI	–0.643 to 0.086	–0.648 to 0.065	–0.625 to 0.105	–0.431 to 0.292	–0.737 to -0.019	–0.715 to 0.011	–0.624 to 0.093
P value	0.134	0.109	0.163	0.707	0.039*	0.057	0.147
Years practicing as pharmacist	–0.002	0.013	0.006	0.015	0.015	0.015	0.013
95% CI	–0.018 to 0.013	–0.002 to 0.028	–0.010 to 0.021	–0.001 to 0.031	–0.0003 to 0.031	–0.0003 to 0.031	–0.002 to 0.028
P value	0.787	0.08	0.481	0.065	0.056	0.055	0.095
Pharmacy owner	0.358	0.637	–0.817	–0.212	0.525	–0.457	–0.448
95% CI	–0.154 to 0.871	0.120 to 1.154	–1.350 to 0.285	–0.725 to 0.299	0.010 to 1.040	–0.979 to 0.065	–0.950 to 0.054
P value	0.171	0.016*	0.003*	0.416	0.046*	0.086	0.080

*Statistically significant.

practice, pharmacists are quick to adapt to providing new services to meet the growing needs of the community served (eg, point of care testing, smoking cessation services, risk assessments and screening and immunisations are all advanced pharmacy services that go beyond the core medication dispensing service and were introduced to community pharmacy settings worldwide), with challenges addressed by policy change, education and training, professional collaboration and technology.[33–35] Canadian findings suggest that when health policies and regulations are supportive, it is possible to implement mifepristone pharmacist dispensing nationwide. Pharmacists will proactively seek training, the multidisciplinary training programme offered by the SOGC is appropriate for pharmacists, and it could be adapted for other nations. A key finding from our pharmacist survey is the issue of rural representation. Nearly half of the participants were identified as being from a rural community. Our findings suggest a dramatic shift in enhanced access to abortion using mifepristone for rural and remote populations.

Members of our team also conducted a national qualitative study of pharmacists, concurrent with this survey, which provides additional context for the implementation of mifepristone.[13] In that study, involving semi-structured interviews with 24 pharmacists who intended or had begun to dispense mifepristone, experiences in the first year of abortion pill availability (2017–2018) were characterised by the uncertainty of changing restrictive measures and self-organising and adapting to bring mifepristone dispensing in line with usual practice. Local implementation hinged on having a relationship between prescribers and community pharmacists, to ensure that there was a demand for pharmacy mifepristone supplies. Nonetheless, this qualitative investigation echoed the findings that pharmacists were motivated to dispense and encountered very minimal barriers.

Strengths of our study include the participation of pharmacists from across the country, which included participants from both rural and urban regions and diverse practice settings. Limitations to our study include that our data were collected pre-COVID-19 and are not reflective of pandemic-associated changes, although we note that the positive pharmacist uptake and readiness to dispense mifepristone pre-COVID-19 is likely to have been a facilitator for the rapid uptake of virtual medical abortion in Canada noted over the first pandemic year.[36] Further, our sample was not proportionally geographically representative: while we aimed to have pharmacist responses from all 10 provinces and 3 territories, we received less than six responses from the provinces of Newfoundland, Prince Edward Island and Quebec, and the territories of Yukon Territory, Northwest Territories and Nunavut. These provinces and territories represent 24.6% of the Canadian population.[37] We are unable to determine if this is due to limited recruitment among active pharmacists in these jurisdictions, or whether few pharmacists were aware of the opportunity to participate. In addition, we are unable to determine the number of pharmacists aware of the opportunity to participate and thus are unable to determine the response rate or the degree of sampling and non-response bias.

Future studies assessing the long-term impact of mifepristone dispensing on pharmacy practice and pharmacists' experiences with mifepristone dispensing are needed to understand how to support both the dispensing healthcare providers and the patients who receive the medications.

CONCLUSIONS

Pharmacist respondents reported minimal barriers to promptly implementing mifepristone dispensing services in Canada. A small number of pharmacists reported community resistance, suggesting the majority of communities were supportive of having mifepristone available for their residents through pharmacies. Barriers of cost have now been removed as Canadian governments subsidise the medication for provincial residents. Pharmacists in Canada report high acceptance of dispensing mifepristone, as they are highly trained experts accustomed to safely dispensing, counselling and following-up with patients on medication use.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval This study was approved by the University of British Columbia Children's and Women's Hospital Research Ethics Board (H16-01006). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as supplementary information.

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a place of mind
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Welcome to The CART-Mife Study!

Community pharmacists play a major role in the health care team for family planning services. Pharmacists dispense and counsel on all methods of contraception. Mifepristone presents an opportunity to improve women's access to non-surgical abortion, particularly in rural and remote areas of Canada. We invite you to participate in a study to help us improve the health system and services to support your practice by sharing your experience as a potential and/or practicing mifepristone provider in Canada.

The purpose of this study is to identify and address the facilitators and barriers for successful initiation and ongoing provision of mifepristone (i.e. medical abortion) throughout Canada.

We invite you to participate by completing three short online surveys: now, in 6 months and in one year. The survey should take about 10 minutes. Please share your experience and perspective. Your response will assist us to understand what works and doesn't work for you with the provision of mifepristone in your pharmacy. We are offering two chances to win an iPad mini via a draw, one for everyone who completes the baseline survey before Oct 31, 2016, and the other among everyone who completes all three surveys before Oct 31, 2017.

You are not obligated in any way to participate. You are completely free to refuse to participate, to participate but refuse to answer individual questions, or to withdraw from this study at any time without penalty. By completing and submitting the survey, you are providing your consent for the investigators to use the information you submit. The personal information you will provide (such as your name and email address) will be saved in a password protected spreadsheet and will be separated from the survey answers you provide. Only aggregate data will be reported, and the results will be reported in a manner that ensures individual confidentiality.

If you have any questions, or would like further information about this study before or during participation, you can contact Dr. Wendy V. Norman at 1.877.922.7890 or at wendy.norman@ubc.ca. If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the University of British Columbia Office of Research Ethics by e-mail at RSIL@ors.ubc.ca or by phone at 604-822-8598 (Toll Free: 1-877-822-8598).

With many thanks,

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FLIP OVER TO PAGE 2 →

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Part A: Background information

1. Are you currently practicing as a dispensing community pharmacist?

- □ Yes → (proceed to **question 2**)
- □ No → (Thank you for your interest in our survey! At this time, we are looking to explore the views of medication-dispensing community pharmacists. However, we appreciate the work you are doing for our province! It would be helpful for us if you return this questionnaire, although we have no further questions for you.)

2. What is your sex?

- □ Male
- □ Female

3. What is/are your current pharmacy position(s)? **Check all** that apply.

- □ Full-time staff pharmacist
- □ Part-time staff pharmacist
- □ Floater pharmacist
- □ Pharmacy manager
- □ Hospital pharmacist
- □ Other – please specify: _____

4. Do you work in **more than one** community pharmacy?

- □ Yes → (proceed to question **4a**)
- □ No → (proceed to question **5**)

4a. If you work in more than one community pharmacy, please consider the **single** pharmacy in which you spend **most of your time** working as a pharmacist for the remaining questions in this survey. Proceed to question 5.

5. What are the first 3 digits of your pharmacy's postal code?

_____ First 3 digits of postal code (e.g. V4N)

6. Which of the following best describes the type of community pharmacy in which you work? Choose **one** category.

- □ Department-mass merchandise (e.g., Wal-Mart, Safeway)
- □ Chain (e.g., Lawtons, Pharma Plus)
- □ Franchise (e.g., Shoppers Drug Mart, Medicine Shoppe)
- □ Banner (e.g., I.D.A., Guardian, Pharmasave)
- □ Independent
- □ Other – please specify: _____

7. Approximately how many full-time equivalent (FTE) pharmacists work in your store on an average day, **including yourself**?

_____ Number of FTE pharmacists

8. What type of pharmacy training do you have? **Check all** that apply.

- □ Bachelor of Science in Pharmacy
- □ Hospital residency
- □ Community residency
- □ Post-graduate university training (e.g., MSc, MPharm, PhD, PharmD)
- □ Entry-level Doctor of Pharmacy (PharmD)

9. How many years ago did you receive your degree to practice pharmacy?

_____ Number of years

10. How many years have you been practicing as a **COMMUNITY** pharmacist?

_____ Number of years

11. What type of professional pharmacy certification(s) do you currently hold? **Check all** that apply.

- □ First aid
- □ Cardiopulmonary resuscitation
- □ Immunization
- □ Certified diabetes educator
- □ Certified anticoagulation provider
- □ Certified asthma educator
- □ Certified respiratory educator
- □ None of the above
- □ Other – please specify: _____

12. Which of the following statements best describe your pharmacy's structural layout for patient counselling? **Check all** that apply.

- □ Private counselling **room**
- □ Separate counselling **area** at the dispensary
- □ Counselling **area** at prescription drop-off area
- □ Counselling **area** at prescription pick-up area
- □ There are no designated counselling area(s) in the pharmacy
- □ Other – please specify: _____

Part B: Survey questions

Clinical Pharmacy Services

13. Which of the following clinical services do you personally offer in **your pharmacy practice**?

	Currently offering	Planning to offer within the next 12 months	Currently not planning to offer
Counselling on continuous oral contraceptives	□	□	□
Counselling on emergency contraceptives	□	□	□
Counselling on pregnancy tests	□	□	□
Counselling on options for reproductive health	□	□	□
Counselling on methotrexate/misoprostol for medical abortion	□	□	□
Counselling on mifepristone/misoprostol for medical abortion	□	□	□
Observation of administration of drugs (methadone)	□	□	□
Therapeutic drug monitoring	□	□	□
Follow-up calls on new drug therapy	□	□	□
Medication reviews	□	□	□
Adaptations of prescriptions	□	□	□

14. Which of the following statements best describes your willingness to provide new pharmacy clinical services currently available in your province (e.g., immunizations, medication reviews)? Choose **one** statement.

- □ I actively seek out new clinical ideas and initiatives to integrate into my practice
- □ I play an active role in implementing new clinical initiatives and am one of the first among my peers to try these new services
- □ I wait for my peers to try out new clinical services prior to adopting the service myself
- □ I do not provide new clinical services unless it is required (e.g., by corporate policies or to perform my job as a pharmacist)
- □ I prefer not to change my practice

15. Which of the following statements best describes your willingness to provide provision of mifepristone as a new pharmacy clinical services? Choose **one** statement.

- □ I actively seek out new clinical ideas and initiatives to integrate into my practice
- □ I play an active role in implementing new clinical initiatives and am one of the first among my peers to try these new services
- □ I wait for my peers to try out new clinical services prior to adopting the service myself
- □ I do not provide new clinical services unless it is required (e.g., by corporate policies or to perform my job as a pharmacist)
- □ I prefer not to change my practice

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Practice Support

16. Please explain your main motivation to undertake training in the provision of medical abortion [allow the max character limit]: _____

17. The Canadian Abortion Providers Support platform (www.CAPS-CPCA.ubc.ca) provides resources, “Ask an expert” rapid response, and a confidential communication platform for certified mifepristone providers. Do you plan to participate in this forum?

a. Yes
b. No
c. Undecided

Other Certified Providers

18. Is there any pharmacist(s) in your community who has or plans to attain certification to dispense mifepristone? (Yes, No, Don't know)

19. Is there any physician(s) in your community who has or plans to attain certification to provide mifepristone medical abortion? (Yes, No, Don’t know)

20. How many mifepristone medical abortion providers are in your community? Select single best answer

a. None
b. Estimated number _____
c. I do not know but assume fewer than 3
d. I do not know but assume there are 3 or more

21. Are there more mifepristone abortion providers now than there were methotrexate abortion providers in your own community? (Yes/No/Don’t know)

a. Comments: _____

Implementation Barriers, Attitudes and Perceptions

22. Circle the option which best describes your beliefs for the following statements:

	Strongly disagree				Strongly agree
I have at least one patient counselling area in my pharmacy that I think is private enough to talk with patients confidentially	1	2	3	4	5
I am comfortable bringing patients to a private area of the pharmacy to counsel them on their medications and conditions	1	2	3	4	5
I believe patient privacy is important to provide effective pharmaceutical care when counselling	1	2	3	4	5
I believe that patients will feel comfortable being counselled about mifepristone use in a private area within the pharmacy (e.g. inquiry about patient perspective rather than just pharmacist perspective)	1	2	3	4	5

23. Are you willing to dispense mifepristone for medical abortion in your pharmacy?

- □ Yes
- □ No

24. If yes, are you willing to attend a mandatory 3 CEU training to dispense mifepristone?

- □ Yes
- □ No

25 Circle the option which best describes your views for the following statements:

	Strongly disagree				Strongly agree
I have good patient-pharmacist relationships with my patients	1	2	3	4	5
Pharmacists should play an active role in prescribing selected medications, with an established protocol, independent from a physician	1	2	3	4	5
If given the legislative authority today, I would be interested in providing expanded clinical services (e.g., prescribing selected medications, adapting medications over a larger range of medication classes) in my pharmacy practice	1	2	3	4	5
If given the legislative authority today, I would be interested in prescribing hormonal contraceptives in my pharmacy practice	1	2	3	4	5

26. For each of the **potential benefits** below, **circle** the option which best describes your views regarding the **importance** of these benefits with the provision of mifepristone.

	Least important				Most important
Increased accessibility to medical abortion for women and couples	1	2	3	4	5
Increased job satisfaction for pharmacists	1	2	3	4	5
Increased collaboration between pharmacists and other members of the health care team	1	2	3	4	5
Reduced pressure on the health care system (e.g., fewer surgical abortions)	1	2	3	4	5
Increased opportunity for patient to obtain convenient and accessible follow-up monitoring	1	2	3	4	5
Other – please specify: _____					

27. For each of the **potential barriers** below, **circle** the option which best describes your views regarding the **importance** of these barriers with the provision of mifepristone.

	Least important				Most important
Cost considerations (each dose is $300)	1	2	3	4	5
Short expiry (one year)	1	2	3	4	5
Inadequate stock of mifepristone	1	2	3	4	5
Lack of prescriptions for mifepristone	1	2	3	4	5
Lack of extra payment mechanisms if observation of the first dose is required	1	2	3	4	5
Lack of private counselling areas in my pharmacy	1	2	3	4	5
Lack of pharmacy staff	1	2	3	4	5
Liability concerns	1	2	3	4	5
Need for additional pharmacist education/training	1	2	3	4	5
Resistance from management	1	2	3	4	5
Resistance from the general public	1	2	3	4	5
Resistance from the other members of the pharmacy team	1	2	3	4	5
Resistance from the other members of the health care team in the community	1	2	3	4	5
Other – please specify: _____					

28. **Circle** the option which best describes your current views towards mifepristone provision by pharmacists:

	Strongly disagree				Strongly agree
I believe it is an important service to provide mifepristone	1	2	3	4	5
Providing mifepristone directly fits into the daily activities of my pharmacy	1	2	3	4	5
I would prefer to try out providing mifepristone for a short term before integrating into my routine practice	1	2	3	4	5
Providing mifepristone will improve the public image of the pharmacy profession	1	2	3	4	5
Providing mifepristone will only succeed in my pharmacy if the tasks are not too tedious	1	2	3	4	5

29. When new ideas are introduced, pharmacists, like other professionals, may be categorized on a scale of innovativeness, ranging from non-adopter to pioneer. Using the five categories below, select the **single** description which best describes your personality.

□ Laggard □ Late majority □ Early majority □ Early adopter □ Innovator

Part C: Interview

30. Would you be willing to participate in an interview to further expand on your ideas and concerns about provision of mifepristone by pharmacists?

- □ Yes → (proceed to question **31**)
- □ No → (proceed to **end of questionnaire**)

31. If you wish for us to contact you, please enter your **contact information** in the boxes below

Name and Surname	_____
Which is your preferred contact method(s)?	□ Telephone □ Email □ No preference
Telephone number	(_____) _____--_____
E-mail address	_____
Alternate e-mail address	_____

END OF QUESTIONNAIRE

Thank you for taking part in our study!

You may return by this survey:

- By mail to Dr. WV Norman, BC Women's Hospital, E202- 4500 Oak Street, Vancouver BC V6H 3N1;
- By fax to 1.866.656.5544; or
- By email to cart-grac@exchange.ubc.ca .

With many thanks,

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Co-Investigator

Pharmacist Direct Dispensing of Mifepristone for Medication Abortion in Canada: A Survey of Community Pharmacists. Enav Z. Zusman PharmD; Sarah Munro PhD; Wendy V Norman MD, MHSc; Judith A. Soon RPh, PhD. Correspondence: wendy.norman@ubc.ca

Appendix 2: Thematic Presentation of Qualitative Analysis

Theme	Category and Quotes	Sex	Age	Urban/rural	Pharmacy manager:	Years practicing as community pharmacist:	Willing to dispense (%)
Supporting the community through abortion access (n=244)	Gaining Knowledge: *"I feel as if this is going to be something that will come up in my practice, and I would like to be ahead of it. Whether we dispense it or not, I would like to have the knowledge to answer any questions that arise about it. Being a pharmacist, we are often people's first step in obtaining medical care because of our availability and I think medical abortion may even see us be called upon even more as a primary source of info, due to the stigma around abortion and talking about it".* *"Had very little knowledge of he product and protocols for medical abortion, and due to new laws increasing our ability to provide this service wanted to develop a better understanding in this area".* Increasing accessibility and supporting rural residents: *"I believe it is important, especially in small rural community settings, that women have a ready, non-*	Male: 75 (30.9%) Female: 168(69.1%)	40.54 (11.00)	Urban: 116 (47.5%) Rural: 117 (47.9%) Did not specify: 11 (4.5%)	69 (28.3%)	14.2(11.1)	95.9

	judgmental access to medical abortion regimens of their choice. Pharmacists in a community setting can provide support for a patient by providing counselling regarding seeking an abortion; at the time of medical abortion medication dispensing and follow-up post self-administration. Pharmacists are considered to be a knowledgeable and accessible information source for the public in my experience and are often the most readily accessible and/or approachable due to the hours of service of community pharmacies". *"I live and practice in a remote community in Northern Alberta. The next closest city that provides surgical abortion is over 2 hours away and there are few practitioners that offer it there. I want to be able to provide timely access to medical abortions and educate my patients on all of their options. I also educate our local physicians on their options".* Providing Patient Care: *"It is vital that we offer a full service pharmacy where our patients can get all current services. Medical abortion offers a safer alternative to surgical option and the off indication usage of methotrexate and misoprostol. Being informed*						

	and able to dispense this new initiative is important to make it available to my patients". *"I enjoy counselling patients on their medications including medications for MA. I feel that following the company's guidelines we can ask the right questions of the patient, give advice on medications to use for nausea, pain etc, & reinforce with the patients signs/symptoms that they should be concerned with & how to react. I think that we can answer any questions that they may have where they want a second opinion & reinforce the importance of some of the steps that the physician may want use as ultrasound, BHCG, removal of IUD etc".* Supporting Other Healthcare Professionals: *"I want to be able to provide timely access to medical abortions and educate my patients on all of their options. I also educate our local physicians on their options".* *"The community pharmacy in which I practice is located just steps away from our local community health center. One of our local doctors is taking the training to prescribe Mifegymiso and has made arrangements for ultrasounds to be performed at the health*						

	center. Once assessment and ultrasound are complete women will need to be able to readily access their medication. Women's Health issues are important to me and with the health center just a stones throw away from my store, getting certified was essential in ensuring women have access to their prescribed medication".						
Meeting consumer demand through new business (n=93)	Financial Opportunity: *"It is a new line of business and opportunity to help women get the care they require".* *"It is unlikely that other pharmacies in the area would provide that service. It would be unique to our practice".* Increased Demand: *"I have seen in my practice customers seeking help in this matter. I thought of getting training would help me be more beneficial to the community I work for. And as drug is covered in Alberta would help customers to get it".* *"I would like to ensure that I am able to offer all services that are required for my patients. I know that in my area surgical abortion has only recently become available and there is a lot of resistance in the area to abortion, even though there is a demand. I would like to ensure that I can help meet that demand".*	Male: 36 (38.71%) Female: 57 (61.29%)	39.8 (10.5)	Urban: 38 (40.8%) Rural: 52 (55.9%) Did not specify: 3 (3.2%)	32 (34.41%)	13.5 (11.1)	94.6%

Pharmacist Direct Dispensing of Mifepristone for Medication Abortion in Canada: A Survey of Community Pharmacists. Enav Z. Zusman PharmD; Sarah Munro PhD; Wendy V Norman MD, MHSc; Judith A. Soon RPh, PhD. Correspondence: wendy.norman@ubc.ca

Supporting patients' choices and options (n=89)	Providing Patients with Options: *"I support a woman's right to make informed decisions regarding their pregnancy. By offering the mifepristone therapy, I am helping remove barriers to access and stigmas in therapy. It may not be the option all women select but I want it to be available and offered safely for those who would seek this intervention".* *"I strongly believe women need choices and access to care. I have been involved recently in learning about fertility care and was surprised how little i [sic] knew about this very common issue. I would like to offer more care in this area. Medical abortion, being the opposite, felt like the right balance to round off my learning in this area of women's redproduction [sic]. In the past i [sic]have learned about adoption issues and foster care. Again, this combined experience feels like I am looking at an issue from different perspectives. It helps me balance my views and understanding".* Seeing Medical Abortion as a Part of Patient's Reproductive Health: *"I think medical abortion is a necessary part of women's reproductive health. If we are*	Male: 18 (20.2%) Female: 71 (79.8%)	41.2 (10.1)	Urban: 45 (50.6%) Rural: 44 (49.4%)	33 (37.1%)	14.3 (10.2)	100

Pharmacist Direct Dispensing of Mifepristone for Medication Abortion in Canada: A Survey of Community Pharmacists. Enav Z. Zusman PharmD; Sarah Munro PhD; Wendy V Norman MD, MHSc; Judith A. Soon RPh, PhD. Correspondence: wendy.norman@ubc.ca

	able to provide Plan B, we should be able to provide this as well, given that it is more effective than prior existing medical abortion regimens."						
Expanding pharmacists' scope of practice (n=48)	Expanding the pharmacist's role: *I would like to stay current and believe Mifegymiso will become one of the most commonly used medical abortion options in Canada. As the designated manager of my store, I find it important to lead by example and stay up to date on expanded scope of practice and new clinical services in order to lead by example".* *"I feel that it is important that pharmacists embrace new therapeutic challenges and offer medications to the public so that comprehensive public access is maintained".* *"With the expanding roles of Pharmacists to give medical cares [sic] and with the coming of new medications I would like to give this special service to my patients when needed".*	Male: 26 (54.17%) Female: 21 (43.75%) Did not specify: 1 (2.08%)	39.56 (11.87)	Urban: 34 (70.83%) Rural: 12 (25%) Did not specify: 2 (4.16%)	<6	13.15 (10.67)	100