

Ready or not? Pharmacist perceptions of a changing injection scope of practice before it happens

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As the scope of practice for Ontario pharmacists recently expanded to include additional vaccines, we pursued this research to explore perceived advantages and potential barriers to the rollout of these services.

Puisque le champ de pratique des pharmaciens de l'Ontario a récemment été élargi pour inclure des vaccins supplémentaires, nous avons mené cette recherche afin d'explorer les avantages perçus et les obstacles potentiels à la mise en place de ces services.

ABSTRACT



Background: Since 2012, Ontario pharmacists have been authorized to administer the influenza vaccine. In April 2016, the Ontario College of Pharmacists (OCP) proposed to expand the Pharmacy Act to allow pharmacists to vaccinate against 13 additional conditions. The OCP held an online public consultation and invited pharmacists, members of the public and organizations to weigh in on the proposed changes. Our objective was to explore the factors influencing how Ontario pharmacists may adopt or reject an expanding scope of practice, using data from the public consultation.

Methods: We coded the responses to the public consultation in 2 ways: 1) sentiment analysis and 2) an integrative approach to coding using

Rogers's diffusion of innovations theory across 5 domains: relative advantage, compatibility, complexity, trialability and observability.

Results: Responses from pharmacists, the public and organizations were moderately positive on average. Pharmacists most commonly mentioned relative advantages, including benefits for patients, pharmacists, physicians and the health system. Positive responses focused on accessibility for patients, improved vaccine coverage, lower health care spending and freed physician time but cited lack of prescribing privileges as a barrier to the proposed changes. Negative responses focused on increased workload, patient safety concerns and the complexity of travel medicine.

Conclusions: The expanded immunization services are likely to be well received by most pharmacists. Convenience and accessibility for patients were commonly cited benefits, but the changes will be only a slight improvement over the current system unless pharmacists can prescribe these vaccines. Although employers responded positively, the question remains whether they will support pharmacists in a way that aligns with pharmacists' values and expectations. Decision makers must pay close attention to the pharmacy infrastructure and how this will affect uptake of these services. Recognition of this, combined with pharmacists' positive perceptions of the expanded scope, will facilitate smooth integration of this legislation into Ontario pharmacy practice. *Can Pharm J (Ott)* 2017;150:387-396.

Introduction

Control over change would seem to consist in moving not with but ahead of it. Anticipation gives the power to deflect and control force.

—Marshall McLuhan¹

Although vaccines have been celebrated as one of the greatest public health achievements, various factors contribute to suboptimal immunization rates in Canada.^{2,3} These include lack of awareness of the need for adult vaccinations, shortage of primary care providers, lack of time

KNOWLEDGE INTO PRACTICE



- Perceived benefits of pharmacist-administered vaccinations are accessibility for patients, improved vaccine coverage and lower health care spending.
- When expanding pharmacist scope of vaccine services, pharmacists are most concerned about increased workload, patient safety and the complexity of travel medicine.
- The proposed changes will be only a slight improvement over the current system unless pharmacists can prescribe vaccines.
- Decision makers should pay close attention to the pharmacy infrastructure that must be updated or created.

during appointments and vaccine hesitancy.³ As the most accessible health care professionals, pharmacists who vaccinate can increase patient education and vaccine coverage rates and decrease preventable diseases. Research has shown that provinces that use pharmacists as immunizers have higher rates of influenza vaccinations than provinces without such a policy.⁴

While pharmacists in all 50 states in the United States have been administering vaccines since 2009, in Canada, only 9 of 13 provinces and territories allow pharmacists to vaccinate.^{5,6} In 2012, pharmacists' scope of practice in Ontario expanded to include the administration of the influenza vaccine to residents 5 years of age and older as part of the Universal Influenza Immunization Program (UIIP), which is funded by the provincial government.⁷ Of note, pharmacists can both prescribe and administer the influenza vaccine under the UIIP, as it is classified as a Schedule II drug by the National Association of Pharmacy Regulatory Authorities (NAPRA).⁸

In April 2016, the Ontario College of Pharmacists (OCP) proposed an expanded vaccine scope of practice under the provincial Pharmacy Act.⁹ Through their website, the OCP held a public consultation and invited pharmacists, members of the public and organizations to weigh in on the proposed changes. These changes included allowing pharmacists to administer vaccines against 13 additional conditions and allowing students and interns to administer vaccines during their training. Three of the proposed vaccines (meningococcal, pneumococcal and *Haemophilus influenzae* type B) are also Schedule II but are not associated with a public funding program, meaning patients need to pay for the vaccine if it is administered in a pharmacy.⁸

The remaining vaccines are Schedule I and require a prescription from a nurse practitioner or physician (Table 1). The proposed changes to the Pharmacy Act were approved 8 months after the consultation, in December 2016.

Records of the OCP consultation are publicly available and offer a rare opportunity to get ahead of a change in scope to anticipate the roadblocks and friction points. It also allows us to identify opportunities to enhance adoption. Sociologist Everett Rogers developed the diffusion of innovations theory in the 1960s as a way to understand how and why people make a new practice or idea a part of their life—a process called *adoption*.¹⁰ In Rogers's theory, when a new idea or practice emerges, such as the pharmacist as immunizer, the likelihood of adoption depends on 4 main factors: the idea or practice itself, the forms of communication used to spread it, the social system that adopters are in and the amount of time that has passed. For an idea or practice to be adopted, it needs to be better than old ideas or practices and fit with adopters' current ideas and values. It also helps if it is simple, if it can be tried out before committing and if the adopter can see the benefits of adoption. Success hinges on characteristics of the adopters themselves, such as income, education, personality and social connections. Adoption also follows a process. With expanded vaccine scope, for example, Rogers's theory predicts that pharmacists would start by learning about the new scope of practice, decide to apply it to their practice or reject it, implement it at work and then continue to immunize as confirmation of their decision.¹⁰

Our objective was to explore the various factors influencing how Ontario pharmacists may adopt or reject the expanding scope of practice using data from the OCP public consultation.

Methods

We downloaded all responses from the public consultation directly from the OCP website, including responses from pharmacists, pharmacy technicians, applicants to the college, the public and organizations. Four researchers independently coded the stored responses in 2 ways: 1) sentiment analysis and 2) an integrative approach to coding using Roger's diffusion of innovations theory.

Sentiment analysis

Sentiment analysis is a means of classifying if an opinion is positive, negative or neutral. We

TABLE 1 New vaccines that can be administered by pharmacists in Ontario under the expanded scope of practice

Vaccine ⁹	National Association of Pharmacy Regulatory Authorities schedule ⁸
Bacillus Calmette-Guérin	I
<i>Haemophilus influenzae</i> type b (Hib)	II
Meningococcal: monovalent, quadrivalent, multicomponent	II
Pneumococcal disease	II
Typhoid disease	I
Combined typhoid and hepatitis A	I
Hepatitis A	I
Hepatitis B	I
Hepatitis A and B combined	I
Herpes zoster	I
Human papillomavirus	II
Japanese encephalitis	I
Rabies	I
Varicella	I
Yellow fever	I

Schedule I: Available by prescription only. Schedule II: Available from a pharmacist without a prescription.

assigned sentiment codes based on the overall language and tone of each statement. Responses were classified by all 4 researchers using a 5-point Likert scale (1 = very positive, 2 = moderately positive, 3 = neutral, 4 = moderately negative, 5 = very negative). We began by independently coding the sentiment of the first 30 responses, then compared our codes to ensure consistency among researchers. The remaining responses were coded independently. We measured inter-rater agreement using the interclass correlation coefficient (SPSS version 23; SPSS, Inc., an IBM Company, Chicago, IL).

Diffusion of innovations analysis

We developed a preliminary set of conceptual codes using Rogers's diffusion of innovations theory.¹⁰ The codes focused on attributes of the innovation, categories of adopters and the innovation-decision process. We began with a deductive coding approach, where we used a preliminary set of codes on the first 30 responses. We then used an inductive approach where we met to discuss and refine the coding structure and include additional themes that had been

discovered. We coded the remaining responses independently and continued to meet and refine the codes until no new concepts were identified. Inconsistencies were resolved through discussion and clarification of diffusion of innovation terminology. Throughout the process, we actively reflected on our roles as pharmacists and pharmacy educators to acknowledge and identify preconceptions and to understand the influence of our lived experience on the data analysis. These included our support of the expanded scope, our own work as clinicians and our understanding of pharmacist and pharmacy student training.

Results

In total, there were 308 responses, comprising responses from 265 pharmacists, 9 technicians, 6 applicants to the college, 12 members of the public and 16 organizations. (Unless otherwise noted, all responses below are from pharmacists.)

Sentiment analysis

The mean sentiment was 2.00, suggesting that responses were moderately positive on average.

TABLE 2 Percentage of positive respondents and negative respondents who listed supportive or barrier themes*

	Positive respondents, % (n) (n = 236)	Negative respondents, % (n) (n = 56)
Supportive themes		
Benefits to patients	37 (88)	9 (5)
Benefits to pharmacy profession	22 (51)	0 (0)
Benefits to physicians	8 (20)	0 (0)
Benefits to health care system	19 (46)	2 (1)
Barrier themes		
Workload or workflow concerns	12 (29)	68 (38)
Reimbursement concerns	16 (38)	13 (7)
Patient safety	7 (16)	52 (29)
Lack of training or expertise	6 (13)	11 (6)
Not consistent with scope of practice	1 (3)	27 (15)
Lack of prescribing rights	22 (51)	0 (0)

*Positive respondents were those with a sentiment analysis score of 1 or 2 (very positive or moderately positive). Negative respondents were those with a sentiment analysis score of 4 or 5 (moderately negative or very negative). Neutral responses (n = 15) with a score of 3 were excluded.

The mean sentiment for pharmacists alone was 1.96 (moderately positive). While chain pharmacy organizations and drug companies were very positive (sentiment score 1.36), other health professions and public health organizations were moderately positive (sentiment score 1.88), as were responses from the public (sentiment score 2.15). The ratings agreement using interclass correlation coefficient among the 4 coders was 0.980, with a 95% confidence interval of 0.976 to 0.984, suggesting very strong agreement. Table 2 outlines the percentage of positive pharmacist respondents and negative pharmacist respondents who cited supportive or barrier themes. Positive respondents (77% of total) were those with a sentiment analysis score of 1 or 2 (very positive or moderately positive) and negative respondents were those with a sentiment analysis score of 4 or 5 (moderately negative or very negative). Positive responses focused on accessibility for patients, improved vaccine coverage, lower health care spending and freed physician time, while negative responses focused on increased workload, patient safety and the complexity of travel medicine. Notably, positive respondents predicted workload concerns, and more positive respondents than negative respondents were concerned about reimbursement, illustrating that even those in favour of the changes foresee challenges to pharmacy

practice. Furthermore, nearly 1 in 4 positive respondents felt that lack of corresponding prescribing rights was a barrier to greater adoption, while this concern was not mentioned by any of the negative respondents.

Diffusion of innovations analysis

The 5 attributes of innovations that influence the rate of adoption include the following: relative advantage, compatibility, complexity, trialability and observability.¹⁰ We coded our responses according to these 5 domains.

Relative advantage. The most commonly cited attribute was relative advantage, which refers to the ways an innovation is perceived to be better than previous ideas.¹⁰ It is the strongest driver of adoption. Overall, respondents described many advantages for patients, pharmacists, physicians and the health system:

Much more accessible to the public, no appointments, longer hours, close to home, accessible and provided by a trusted professional with whom the patient already has an established relationship.

Respondents also described many relative disadvantages, including concerns about patient safety, workload and access to vaccines:

TABLE 3 Relative advantages and disadvantages of the expanded scope of pharmacist immunizations (with representative quotes)

Representative quotes from pharmacists		
Relative advantage		
Patient	<i>Increased access (time and location)</i>	"It's a win for patients—very convenient, especially when pharmacy retailers invite them to drop by any time, no wait required."
	<i>Higher vaccine coverage rates</i>	"As shown by the widespread success of the influenza program, allowing pharmacists to inject other vaccinations will greatly improve vaccination rates, which have been on the decline recently."
	<i>Better adherence to multivaccination regimens</i>	"In my current practice, I inject via medical directives* and direct orders† both vaccines and medications via injection and the benefits to adherence are definitely enhanced in both cases with my doing so."
Pharmacist	<i>Professional image</i>	"Doing so would increase our value and advocacy to society."
	<i>Strengthening the pharmacist-patient relationship</i>	"Injections at the pharmacy have been widely accepted by patients and the waiting period afterward provides us with an added opportunity to discuss other health matters with patients we many not normally see or who do not qualify for MedsChecks."
Physician	<i>Decreased physician workload</i>	"This will also free up our physicians' time to provide better care."
Health system	<i>Efficiency</i>	"It saves them from having to get the vaccine from us, then make an appointment with the office, then scurry back there to get the shot."
	<i>Decreased health care spending</i>	"If we truly wanted to cut health care costs, then this is an expense we can reduce from the doctors and have the pharmacist administer for a smaller fee."
Relative disadvantage		
Patient safety		"I have been working through flu season year after year without additional tech hours. Added duties and no additional help, a dispensing error is more likely to occur."
Increased workload		"The reality of current community practice cannot be undermined. With labour hours cuts, lack of overlap, lack of breaks (most of my days are 12-hour work days with no structured breaks) and insufficient space to administer these services, it makes it challenging to deliver these services."
Limited access to certain vaccines (e.g., Japanese encephalitis, yellow fever)		"Most pharmacies will likely not even stock [travel vaccines], as they will be used too infrequently to justify the cost of keeping stock on hand."

*A medical directive is a written order that allows a health care professional to delegate a controlled act to a specific person. This person can perform the controlled act on any patient who meets the criteria in the directive.¹¹

†A direct order is a verbal or written order that allows a health care professional to delegate a controlled act to someone. It is a one-time authorization that applies to a specific patient.¹¹

In this deluded system the patients have to make an appointment with the MD, come to the pharmacy to get [a prescription] filled, then take it back to have the injection. [With] all due respect, this does not sound like a very efficient system.

As relative advantage was the largest attribute identified, it is outlined in more detail in Table 3.

Compatibility. An innovation is more likely to be adopted if it is perceived to be compatible or consistent with the existing values, past

experiences and needs of potential adopters.¹⁰ The expanded scope aligned with most pharmacists' desire to increase their role in primary care; they viewed it as a logical use of skills and knowledge that they already have. Many said that immunizing is "a no-brainer," "the logical next step," "a natural progression of our responsibilities" and that it "makes sense."

If I can give influenza vaccines, I am not sure why I currently can only give other vaccinations under a medical directive. It seems silly to dispense things like Twinrix for patients to then take back to the prescriber's office to have administered. It should all take place at the pharmacy.

Many pharmacists also want to be able to administer all subcutaneous and intramuscular injections, including methotrexate, vitamin B₁₂, denosumab, medroxyprogesterone, ceftriaxone, adalimumab and tuberculin skin tests and other vaccines such as tetanus, diphtheria, pertussis, measles, mumps and rubella.

It should also be expanded to include vitamin B₁₂, Prolia and other common injections, as I don't see any difference.

However, some saw vaccinations as time wasted on technical rather than clinical skills and a step away from the pharmacist's role as a medication management expert.

Pharmacists are now stuck jabbing people every fall, instead of managing drug therapy, which is what they should be doing.

Most pharmacists believe that prescribing the proposed vaccines is compatible with their identity. Pharmacists highlighted that it would be most practical to be able to prescribe vaccines.

The ability to have pharmacists prescribe all of the entities would be logical—how exactly would we be alleviating the burden on the health care system if we still need to send the patient to the doctor for [a prescription]?

Some pharmacists disagreed, saying that the scope was not in line with their knowledge and skills.

I don't believe being able to administer additional vaccinations is a good use of our

time, clinical knowledge and expertise. . . . There are many health care professionals who are able to provide vaccinations and I believe allocating these services to pharmacists would be highly demanding and unnecessary.

As with relative advantage, concerns about workload appeared in the theme of compatibility. Respondents foresee quotas for vaccinations that are not compatible with pharmacists' values or experiences.

Pharmacists face real challenges at the workplace with cut hours (both pharmacists and assistants) and corporate head office will pressure pharmacists to offer vaccines as a walk-in, simply adding in the new duty to workflow. This will simply cause pharmacists to be more overloaded than we already are and mistakes happen when we are stretched beyond our limit.

Complexity. An innovation that is easy to understand and use is more likely to be adopted than one that is complex.¹⁰ Seventeen respondents were opposed to the administration of speciality travel vaccines, such as yellow fever, Japanese encephalitis, typhoid and rabies, by pharmacists. They stated that travel medicine is a speciality that requires a detailed assessment of the patient and they recommended mandatory training in travel vaccines.

I would be hesitant on the specialty vaccines such as typhoid, yellow fever or Japanese encephalitis. Travel medicine is a specialty within the medical profession. . . . It is much more detailed than most pharmacists think.

Others did not think it was complex, stating that the technique is the same as for flu shots and is a technical skill, not a clinical skill.

It's not a procedure, or a surgery, it's just a vaccination.

Some pharmacists were concerned about administering vaccines that are not appropriate for a patient since they will not have access to immunization records.

I do not think the health system in Ontario is ready to have pharmacists prescribe the vaccines. We do not have access to a patient's chart and often people do not know if they received a vaccine or not. We require a reliable source of information to review if the patient is a correct candidate for a vaccine.

Other pharmacists countered that a history can be obtained from the patient's primary care provider, complex cases can be referred to a physician and the risks of receiving an extra vaccine are low.

Prescribing decisions by physicians are made without complete charts all the time. . . . We can't ignore patients as sources of their own information and should be able to use our professional judgement to make decisions based on the best available information.

Trialability. Trialability refers to the ability of potential adopters to test an innovation before adoption.¹⁰ An innovation is adopted faster if it can be tried in one's environment. Respondents in favour of the expanded scope cited the successful uptake of the influenza vaccines in pharmacies as a successful trial of a similar service.

This is a total no-brainer. Pharmacists administering flu shots has been an overwhelming success by anyone's standards and has shown the huge potential that expanded scope can realize.

Some respondents gave injections when they practised in other provinces and others currently vaccinate under direct orders or medical directives.

In our practice we are already doing several of these vaccinations under physician medical directives and the service is well received.

Experience with the UIIP shows that pharmacists felt that they did not earn enough money per vaccination.

Unlike flu shots, these vaccines should not be a loss leader. Pharmacists are worth more than that.

Respondents also wanted adequate compensation for increased workload, which would be an incentive to offer expanded services and would

offset the costs associated with more pharmacist overlap and technician hours:

I didn't get the flu vaccine in my pharmacy because . . . it wasn't worth the 7 dollars. Many places I know had to hire an overlapping pharmacist, which again is extra cost, not including fridge costs and increased liability insurance. . . . Pharmacy can't afford to be working for very low wage or offer any more free services.

Observability. An innovation that is observable has an effect that is visible to others.¹⁰ The most commonly cited observable benefits were related to the ongoing flu shot program, which included increased accessibility for patients in time (evenings and weekends) and location (rural areas) and shorter wait times in doctors' offices.

Pharmacists have demonstrated a benefit to the people of Ontario by increasing the number of locations for influenza injection especially to those who lack family physicians and those in underserved areas.

A pharmacist licensed in Ontario and Alberta who works in an Alberta pharmacy with a certified travel pharmacist reported better adherence to multivaccine regimens.

Yes, it takes time but it is of immense value to patients . . . pharmacists do a much better job of following up with callbacks and reminders to ensure patients receive their full injection series in the appropriate timeline, leading to fewer incompletes.

Respondents anticipated that the expanded scope may result in new business models for pharmacists. Others offered improved cold chain management as another benefit, as vaccine stability is preserved by shortening the time between dispensing and administration.

Discussion

Why is the process of getting a vaccination so complicated in the 21st century? — Pharmacist

From a diffusion of innovations perspective, the OCP consultation suggests that most pharmacists are focused on the relative advantages of

MISE EN PRATIQUE DES CONNAISSANCES



- Les avantages perçus des vaccins administrés par les pharmaciens sont l'accessibilité pour les patients, l'amélioration de la couverture des vaccins, et la diminution des frais de soins de santé.
- En élargissant le champ de pratique des pharmaciens relativement aux services de vaccination, ce qui inquiète le plus ces derniers est principalement l'augmentation de leur charge de travail, la sécurité des patients, et la complexité de la médecine des voyages.
- Les changements proposés représenteront seulement une légère amélioration par rapport au système actuel, à moins que les pharmaciens puissent prescrire des vaccins.
- Les décideurs devront porter une attention particulière à l'infrastructure des pharmacies qui doit être modernisée ou créée.

their expanding scope of practice. In the case of new vaccines, the advantages over the status quo include better accessibility for patients, stronger professional image, decreased physician workload and more efficient health care. Yet many pharmacists are concerned about relationships with employers and the effect that a heavier workload will have on patient safety. They also highlight that the advantages offered by the new regulations are incomplete in that they lack prescriptive authority.

Recently, Tsao et al.¹² explored the effects of quotas and inadequate staffing on pharmacists' perceptions of patient care in British Columbia. They noted that pharmacists who had to meet quotas for immunizations, medication reviews or prescription adaptations felt less able to provide safe patient care than pharmacists who did not have to satisfy these targets.¹² In a recent issue of this journal, Rosenthal et al.¹³ discussed how increased work stress can lead to patient safety concerns and can slow the adoption of expanded services. These concerns were clearly present in the public consultation, highlighting that the concerns are significant for Ontario pharmacists as well.

In another Canadian pharmacy practice study that used diffusion of innovations theory, Makowsky et al.¹⁴ examined ambulatory conditions (minor ailments) prescribing in Alberta. Pharmacists in that study also struggled with workload and concerns about increased liability and those factors ultimately slowed the adoption of expanded services. They noted that pharmacists adopted the new scope because it legitimized their preexisting practice, increased their job satisfaction and sense of professionalism, fit with their practice environment and because

there was support from physicians. Similarly, in a study from Australia, Hatting et al.¹⁵ found that convenience and accessibility were the main reasons pharmacists provide a service and that workload and workflow hinder adoption. However, while Makowsky et al.¹⁴ found that Alberta pharmacists felt supported by physicians, Australian pharmacists were concerned about jeopardizing relationships with physicians.¹⁵ Lack of support from physicians was also a barrier to immunization services in a survey by Edwards et al.¹⁶ on Canadian pharmacists' willingness to vaccinate. Similar to our results, other barriers identified by Edwards et al.¹⁶ included availability of support staff, current knowledge and training, reimbursement and liability.

In our research, pharmacists overwhelmingly felt that the expanded scope would benefit physicians by freeing up their time for more complex patients, suggesting that the Ontario experience will align more with the Alberta experience.^{14,15} That said, Ontario's physician organizations provided mixed feedback to the consultation. The Ontario Medical Association stated that the expanded pharmacy scope "is likely to have a positive impact on public health" and that it "supports good patient care." The College of Physicians and Surgeons of Ontario was "generally supportive" but raised a number of concerns about the proposed changes, such as fewer opportunities for health monitoring and health education of younger patients when these patients see a pharmacist rather than their primary care provider for vaccinations.

The OCP consultation also highlighted the potential benefits for underserved populations, such as rural communities and those without a primary care provider. In a study examining ambulatory ailments prescribing in Ontario, Pojskic et al.¹⁷ found that the expanded scope increased access especially for those without a primary care provider, lowered health system spending and strengthened pharmacist competence. Notably, these investigators also found that pharmacists were already managing common ambulatory conditions even though they were not technically allowed to do this, suggesting that it is highly compatible with the profession.¹⁷ Based on the OCP consultation, the same could be said for expanded vaccine scope, since many pharmacist respondents were already providing travel vaccines in other provinces or through medical directives and direct orders.

The consultation clearly demonstrates the growing discord between pharmacists and employers. Although pharmacists expect employers to impose quotas and not support pharmacists, employers reacted positively saying they “fully support” and are “fully aligned” with the expanded scope and that pharmacist-administered flu shots “[have] been a resounding success” and are “extremely popular with patients.” Employer groups recognize benefits such as “better access to timely, quality service that improves the delivery of cost-effective and clinically appropriate health care, thereby providing better health outcomes for all citizens” (according to 1 pharmacy organization). They called for prescribing rights, administration of all vaccines and injectable medications and inclusion of registered pharmacy technicians. It should be noted that these responses were from chain pharmacy head offices, not from pharmacists who are also employers or pharmacy managers. While positive responses suggest that employers will support pharmacists, the question remains whether the services will be supported in a way that aligns with pharmacists’ values and expectations.

From a policy perspective, pharmacist prescribing should be given close consideration. In the OCP consultation, the proposed changes *did not* include the ability to prescribe vaccines—a key issue identified by only a minority of respondents. This issue was subtle but is a major limitation of the proposed change in scope. Patient convenience and reduced physician workload were 2 of the main relative advantages cited during the consultation. Under the new proposal, however, patients will still have to obtain a prescription for 10 of the 13 vaccine-preventable illnesses before the vaccines can be dispensed and administered at the pharmacy. Pharmacists can prescribe, dispense and administer the vaccines against the remaining 3 conditions. In other words, the proposed changes are only slightly more convenient than the current system, as the patient does not have to return to the physician’s office for administration of the vaccine. Overall, the simplest and most convenient option would be to have the patient receive all care at a single location. Within the constraints of the proposed system, the next most convenient option would be for pharmacists to fax the prescriber for a prescription, although prescribers may be reluctant without first assessing the patient. As a result, this option may only fit when the prescriber

has a close working relationship with either the patient or the pharmacist. As outlined by the diffusion of innovation theory,¹⁰ when implementing a new policy such as expanded vaccine scope, decision makers should not underestimate the effects of convenience on uptake.

To improve the rollout of services, decision makers should pay close attention to the pharmacy infrastructure that needs to be updated or expanded. Pharmacists noted the lack of access to patient charts and expressed their desire to have access to an electronic health record. In addition, some pharmacists are calling for legislation from the OCP to regulate minimal staffing requirements, the implementation of quotas and mandatory uninterrupted breaks to protect patients. A program to receive reimbursement from the government for nontravel vaccines (meningococcal, pneumococcal and *Haemophilus influenzae* type B) is also needed, as it remains unclear how publicly funded vaccines will be paid for when delivered in a pharmacy. This research raises other questions, such as whether pharmacists should have the authority to order and interpret lab tests to check serology; whether other routine vaccines such as the tetanus and diphtheria booster, the tuberculin skin test or injectable medications should be included; and whether registered pharmacy technicians should be able to inject.

Limitations

Due to the open consultation format, responses were not structured and they varied in content and focus. Interviews or focus groups would have allowed us to expand upon and clarify responses, such as vague phrases like “enhance the care we provide to the public” (pharmacist) and “reduce the burden on the health system” (pharmacist). The consultation invited a convenience sample, and response bias might exist, as those who felt strongly for or against might have been more likely to respond than those who were indifferent. More responses from other health care professions would help anticipate any resistance to the scope expansion, especially as pharmacists become recognized as key contributors to the interprofessional team. Similarly, more responses from the public would allow us to manage potential barriers, as emphasis is increasingly being placed on patient-centred care and health care accessibility. It makes sense that most responses were from pharmacists, since it directly affects them and since the

consultation was hosted on the OCP website and advertised in electronic pharmacy newsletters.

Conclusion

The expanded immunization services are likely to be well received by most pharmacists in Ontario. Convenience and accessibility for patients were commonly cited benefits, but the changes will be only a slight improvement over the current system unless pharmacists can prescribe these vaccines. Although employers responded positively, the question remains whether they will support

pharmacists in a way that aligns with pharmacists' values and expectations. Decision makers must pay close attention to the pharmacy infrastructure and how this will affect uptake of these services. Recognition of this, combined with pharmacists' positive perceptions of the expanded scope, will facilitate smooth integration of this legislation into Ontario pharmacy practice.

Responses to the OCP consultation can be accessed at www.ocpinfocanada.com/about/consultations/consultation/vaccines-by-pharmacists/feedback/#read. ■

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