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International Series: Integration of community pharmacy in primary health care

Community pharmacists' evolving role in Canadian primary health care: a vision of harmonization in a patchwork system

Taylor RAICHE^{id}, Robert PAMMETT^{id}, Shelita DATTANI^{id}, Lisa DOLOVICH^{id}, Kevin HAMILTON^{id}, Natalie KENNIE-KAULBACH^{id}, Lisa MCCARTHY^{id}, Derek JORGENSON^{id}.

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Abstract

Canada's universal public health care system provides physician, diagnostic, and hospital services at no cost to all Canadians, accounting for approximately 70% of the 264 billion CAD spent in health expenditure yearly. Pharmacy-related services, including prescription drugs, however, are not universally publicly insured. Although this system underpins the Canadian identity, primary health care reform has long been desired by Canadians wanting better access to high quality, effective, patient-centred, and safe primary care services. A nationally coordinated approach to remodel the primary health care system was incited at the turn of the 21st century yet, twenty years later, evidence of widespread meaningful improvement remains underwhelming. As a provincial/territorial responsibility, the organization and provision of primary care remains discordant across the country. Canadian pharmacists are, now more than ever, poised and primed to provide care integrated with the rest of the primary health care system. However, the self-regulation of the profession of pharmacy is also a provincial/territorial mandate, making progress toward integration of pharmacists into the primary care system incongruent across jurisdictions. Among 11,000 pharmacies, Canada's 28,000 community pharmacists possess varying authority to prescribe, administer, and monitor drug therapies as an extension to their traditional dispensing role. Expanded professional services offered at most community pharmacies include medication reviews, minor/common ailment management, pharmacist prescribing for existing prescriptions, smoking cessation counselling, and administration of injectable drugs and vaccinations. Barriers to widely offering these services include uncertainties around remuneration, perceived skepticism from other providers about pharmacists' skills, and slow digital modernization including limited access by pharmacists to patient health records held by other professionals. Each province/territory enables pharmacists to offer these services under specific legislation, practice standards, and remuneration models unique to their jurisdiction. There is also a small, but growing, number of pharmacists across the country working within interdisciplinary primary care teams. To achieve meaningful, consistent, and seamless integration into the interdisciplinary model of Canadian primary health care reform, pharmacy advocacy groups across the country must coordinate and collaborate on a harmonized vision for innovation in primary care integration, and move toward implementing that vision with ongoing collaboration on primary health care initiatives, strategic plans, and policies. Canadians deserve to receive timely, equitable, and safe interdisciplinary care within a coordinated primary health care system, including from their pharmacy team.

Keywords

Pharmacies; Primary Health Care; Delivery of Health Care, Integrated; Ambulatory Care; Community Health Services; Pharmacists; Community Pharmacy Services; Professional Practice; Canada

THE CANADIAN HEALTH CARE SYSTEM

Canada's population of 37.9 million people is divided among its vast geographic landscape of 10 provinces and three territories, with population size, density, resources,

and needs varying widely over its 9.9 million square kilometre landmass.¹ Annually, health expenditure totals 264 billion CAD, representing 11.6% of the nation's gross domestic product (GDP).²

Medicare, the publicly funded universal health system, underpins the Canadian identity with the intent of providing medically necessary health services to all Canadians, regardless of income or location of residence.³ The health services that must be provided under Medicare, at no cost to all Canadians, are broadly defined within the Canada Health Act and primarily include physician, diagnostic, and hospital services.⁴ Services not covered under Medicare include dental and vision care, mental health counselling, physical therapies, prescription drugs, and other pharmacy-related services, except for those receiving inpatient hospital care.^{3,5} Revenue for Medicare is raised through federal, provincial, and territorial taxation, and accounts for approximately 70% of overall health expenditures in Canada.²

Health care delivery is primarily administered by the provincial/territorial governments and, consequently, is structured differently in each jurisdiction. Each

Taylor RAICHE. BSP. Medication Assessment Centre, University of Saskatchewan. Saskatoon, SK (Canada). taylor.raiche@usask.ca
Robert PAMMETT. BSc, BSP, MSc. Northern Health, Prince George, Faculty of Pharmaceutical Sciences, University of British Columbia. Vancouver, BC (Canada). Robert.Pammett@northernhealth.ca
Shelita DATTANI. BScPhm, PharmD. Canadian Pharmacists Association. Ottawa, ON (Canada). SDattani@pharmacists.ca
Lisa DOLOVICH. BScPhm, PharmD, MSc. Leslie Dan Faculty of Pharmacy, University of Toronto. Toronto, ON (Canada). lisa.dolovich@utoronto.ca
Kevin HAMILTON. BSP, MSc. College of Pharmacy, Rady Faculty of Health Sciences, University of Manitoba. Winnipeg, MB (Canada). hamilt23@myumanitoba.ca
Natalie KENNIE-KAULBACH. BSc(Pharm), ACPR, PharmD. College of Pharmacy, Faculty of Health, Dalhousie University. Halifax, NS (Canada). nkennie@dal.ca
Lisa MCCARTHY. BScPhm, PharmD, MSc. Leslie Dan Faculty of Pharmacy, University of Toronto. Toronto, ON (Canada). lisa.mccarthy@utoronto.ca
Derek JORGENSON. BSP, PharmD. Medication Assessment Centre, College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, SK (Canada). derek.jorgenson@usask.ca



province/territory must provide all services described in the Canada Health Act, at no cost to every citizen, however, some offer limited coverage for additional services such as dental and vision care for certain groups (e.g., children, older adults, low income earners). Canada is the only country with a universal national health insurance system that excludes coverage of prescription drugs. Each province/territory has its own publicly funded prescription drug program, which typically only insures populations with difficulty accessing health care (e.g., children, older adults, low income earners, etc.). Some provinces have mandatory or voluntary premiums, while others provide catastrophic drug coverage with deductibles based on annual income.⁶ Copayment or coinsurance is highly variable. Indigenous Peoples in Canada are covered for certain additional health services and prescription medications through federal funding provided by Indigenous Services Canada.⁷

Private insurance and payment directly by patients for services not covered by Medicare, including prescription drugs, account for the remaining 30% of health expenditures in Canada. Approximately 70% of Canadians have private health insurance to supplement the publicly funded Medicare, with 90% of premiums paid through employee/employer relationships.⁸ Most private insurance plans cover at least a portion of prescription medications, often requiring beneficiaries to either meet a deductible or contribute a copayment or coinsurance (e.g., 20%) for eligible prescriptions.

PRIMARY HEALTH CARE IN CANADA

Overview

The Canadian primary health care system was established during the original formation of Medicare through public funding of physician services with a fee-for-service model.⁹ This physician payment model still prevails in most jurisdictions, although various alternative physician remuneration models have been implemented across the nation. The goal to create interdisciplinary family medicine practices and primary care teams has been a common focus of all provinces for several decades.¹⁰ However, implementation of interdisciplinary primary care teams has been sporadic and no standardized model or composition has been established to date.¹¹ Consequently, most primary care providers in Canada (e.g., family physicians, nurses / nurse practitioners, pharmacists, dietitians, social workers, physical therapists, etc.) practice in separate locations or clinics, with separate systems for documentation and limited mechanisms to facilitate information sharing and collaboration.

Historical context

At the turn of the 21st century, health care reform was taking place in Canada as federal, provincial, and territorial governments joined efforts to fund projects that would support evidence-based decision making in health care adaptations. Using a 150 million CAD federal investment in the form of a Health Transition Fund (HTF), 65 primary health care projects across the country were funded between 1997 and 2001, producing new data influencing policy and practice.¹² Particular interest in redesigning

primary health care occurred in the early 2000s as the First Ministers representing these governments established an 800 million CAD Primary Health Care Transition Fund (PHCTF) to accelerate primary health care reform.^{13,14} The subsequent dissemination of the 2003 First Ministers' Accord on Health Care Renewal and the 2004 10-Year Plan to Strengthen Health Care ("the Health Accords") provided consensus on national direction toward primary health care renewal with funding from the PHCTF.¹⁵ The Health Accords were endorsed as a covenant to ensure that all Canadians had timely access to "high quality, effective, patient-centred and safe" primary care services. The principal goals were to ensure that, by the year 2011, at least 50% of Canadians would have access to appropriate primary healthcare providers and that at least 50% of Canadians would routinely receive care from interdisciplinary primary care teams.⁹ The impetus for this reform was to address several primary health care system concerns:

1. Inefficient and incomplete information transfer with moving patients between healthcare providers and institutions.
2. Difficulty integrating interdisciplinary primary care providers, including pharmacists.
3. Existing primary care services were reactive and focused on acute illness, while chronic conditions and preventative health were not receiving the level of proactive care required.
4. Underutilization of interdisciplinary teams.

The Health Council of Canada (HCC), a federally funded agency, was tasked with independently reporting on the progress of commitments made in the Health Accords. To mobilize the Health Accords' vision of primary health care, the HCC recommended that governments accelerate the development of new and innovative delivery models, often taking the form of interdisciplinary family medicine practices. Secondly, they advocated for a clearer delineation of each health professions' contribution to care. To this end, there was a focus on shaping the education and training of health professionals to reflect the vision of interdisciplinary primary care teams. Each jurisdiction was responsible for developing a policy framework to guide reform and was allocated federal funds to support its initiatives.

In 2013, after nearly ten years of reporting, the HCC concluded that "the success of the Health Accords in stimulating primary health system reform was limited" with disparities and inequities continuing to persist across the country.¹⁶ They also raised concern that "the federal government's role in shaping primary health care is far less evident than it was 10 years ago". With results "less than optimal given the significant level of government investment", the HCC disbanded in the following year.¹⁷

Current context

Nearly two decades after the publication of the Health Accords, forward strides have been made in primary health care organization, delivery, and evaluation in many jurisdictions, yet the vision for primary care promulgated in the early 2000s with the Health Accords has yet to be fully

realized. Multiple pan-Canadian organizations focusing on primary health care monitor and report on various aspects of reform from different perspectives, including the Canadian Foundation for Healthcare Improvement (CFHI) and the Canadian Institute for Healthcare Information (CIHI). Unfortunately, several reports show that each province/territory has made limited progress toward the innovations recommended in the Health Accords and none have “implemented all the elements required to achieve the full value of a strong primary health care system”.^{10,11,18,19}

Each province/territory continues to be responsible for its own progress towards primary health system reform. To map out specific measures related to primary health care reform, several jurisdictions have adopted the Institute for Healthcare Improvement's (IHI's) Quadruple Aim Framework; improving the health of populations, enhancing the experience of care for individuals, reducing the per capita cost of health care, and attaining joy in work.^{10,20} Many provinces have also established Quality Councils to measure performance and report to stakeholders. Intergovernmental, non-profit organizations also monitor and report on primary health care system improvements, including the aforementioned CIHI and CFHI.

Future context

Several factors are contributing to increasing health care costs in Canada. Canadians have been living longer over the past decade, with more chronic health conditions, while taking more medications.²¹ The group of Canadians aged 65 and over is growing four times faster than the overall population. Many youth and middle-aged Canadians are physically inactive, possibly contributing to earlier onset of chronic disease. Medications and mental health service expenditures are also increasing as drug costs rise.^{22,23} There continues to be growing political and public concern about access and quality of primary care services in Canada, which will likely influence health system reform in the coming years.¹⁴ Voters continue to rank health care as a top priority during elections, suggesting that this is not an issue that will likely be soon forgotten.²⁴

A 2018 report commissioned by the CFHI identified six criteria on which to measure progress toward future primary health care reform in Canada:¹¹

1. Development of new models of care facilitating access to interdisciplinary teams.
2. Introduction of tight patient rostering to contain costs and improve accountability and continuity of care.
3. Requirement that primary care practices provide patients with a comprehensive range of after-hour (24/7) services.
4. Effective investment in, and use of, information and communication technology, accessible to both patients and providers.
5. Changes in physician remuneration to encourage greater continuity and quality of care.

6. Organizational changes producing health system alignment for greater accountability to patients and health systems.

Physician groups are advocating for the adoption of a revised version of the Patient's Medical Home (PMH) model, as part of their contribution to primary health care system reform.¹⁴ The College of Family Physicians of Canada (CFPC), which is a national advocacy body for family physicians and also the organization that establishes the standard for and accredits postgraduate family medicine training programs, has defined ten “PMH pillars” to measure progress towards successful future primary health care system reform, which overlap with only four of the six aforementioned CFHI criteria.¹⁹ As the national advocacy body for physicians from all specialties, the Canadian Medical Association (CMA) issued an open letter to Canada's premiers in 2019 asking for a 1.2 billion CAD re-investment in primary health care to continue to push reform in each jurisdiction in a more unified way.²⁵ CFPC also recently partnered with the Canadian Pharmacists Association (CPhA) to showcase new and innovative collaborative practice models between physicians and pharmacists.²⁶ CPhA, one of the national advocacy bodies for pharmacists in Canada, works closely with provincial advocacy bodies and other key stakeholders to lead practice advancement to enable pharmacists to utilize the full extent of their knowledge and skills in providing health care by supporting pharmacists in providing medication management, health promotion, and disease prevention services, in collaboration with other health care professionals within the primary health care system.²⁷

COMMUNITY PHARMACY IN CANADA

There are approximately 11,000 community pharmacies in Canada.²⁸ This represents 27.0 pharmacies per 100,000 citizens, compared to 25.9 in Germany, 20.8 in New Zealand, 17.6 in the United Kingdom, 17.2 in the United States, and 11.6 in the Netherlands.¹⁹ Community pharmacies in Canada are businesses that are privately owned, either by individuals or corporations, with diverse business models reflective of jurisdictional regulation, ownership structure, and population/community.²⁹ Sixty-four percent of pharmacies belong to a chain or banner corporation, 21% operate as independents, and 15% are embedded into food and mass merchandisers.³⁰ The market size of community pharmacy in Canada in 2020 is 46.7 billion CAD, with the majority of market share held by four major companies.³¹ Prescription drugs and associated fees related to dispensing are reimbursed on a fee-for-service model, by a combination of publicly funded provincial drug insurance (for low income and high risk populations), private insurance, and patients' out-of-pocket payment. Public funding for pharmacist services beyond dispensing varies widely across jurisdictions.³²

As of January 1, 2020, there were 42,651 licenced pharmacists in Canada, with 66% practicing in community pharmacies.²⁸ Approximately 1,200 new pharmacists graduate from ten post-secondary institutions across the country each year.³³ Available data indicates that approximately one third of all pharmacists in Canada are graduates of international pharmacy training programs.³⁴

Pharmacy technicians are indispensable team members in most Canadian community pharmacies, having adopted many of the technical tasks related to dispensing traditionally performed by pharmacists.³⁵ Pharmacy technicians are not regulated in all jurisdictions, so it is difficult to estimate how many technicians and unregulated pharmacy assistants work in community pharmacies in Canada.

Fifty-five percent of Canadians visit a community pharmacy once weekly and see a community pharmacist up to ten times more frequently than their family physician.^{29,36,37} Pharmacists are consistently ranked as one of the most trusted health professionals in Canada, and over 80% of Canadians agree that allowing pharmacists to do more for patients in the primary health care system will improve health outcomes.³⁶

PRIMARY CARE SERVICES OFFERED BY COMMUNITY PHARMACIES

Historically, community pharmacists in Canada have primarily focused on ensuring safe and convenient access to non-prescription and prescription medications. As part of this vital and long-standing role within the Canadian primary health care system, community pharmacists assess the appropriateness of prescriptions, educate patients about the medications and disease states prior to releasing the prescriptions, monitor the effectiveness and safety of

prescription medications, and encourage patients to engage in self-management with non-pharmacologic strategies. Pharmacists also frequently assess individuals seeking self-care with non-prescription products to make appropriate treatment recommendations and refer patients to other healthcare providers as needed.

The role of community pharmacists has also expanded and evolved in recent years in an attempt to increase access to primary care services for Canadians. This expansion of community pharmacy-based services has been facilitated by a shift in the scope of practice of pharmacists in Canada. Since pharmacists are regulated provincially, scopes have evolved and changed inconsistently across the country, but pharmacists in every province have been granted some degree of greater authority to prescribe, administer, and monitor drug therapies since 2005, when none of the activities shown in Figure 1 were within the pharmacist's scope. With pharmacy technicians providing increased support related to the technical aspects of dispensing, many pharmacists in Canada are now able to provide more clinical services for their patients. Since health services in Canada are administered on a provincial/territorial level, the specific services and the degree to which each are remunerated by public funds also varies considerably across jurisdictions. For example, since 2007, pharmacists in the province of Alberta can apply for additional prescribing authorization (APA) which grants autonomy to independently select, initiate, modify, and monitor

Scope of Practice ¹		Province/Territory												
		BC	AB	SK	MB	ON	QC	NB	NS	PEI	NL	NWT	YT	NU
Prescriptive Authority (Schedule 1 Drugs)¹	Independently, for any Schedule 1 drug	X	✓ ⁵	X	X	X	X	X	X	X	X	X	X	X
	In a collaborative practice setting/agreement	X	✓ ⁵	✓ ⁵	✓ ⁵	X	X	✓	✓	X	X	X	X	X
	Initiate ²													
	For minor ailments/conditions	X	✓	✓	✓ ⁵	P	✓	✓	✓	✓ ⁵	✓	X	X	X
	For smoking/tobacco cessation	X	✓	✓	✓ ⁵	✓	✓	✓	✓	✓ ⁵	✓	X	X	X
Adapt³/Manage	In an emergency	✓ ⁷	✓	✓ ⁷	✓ ⁸	✓	✓	✓	✓	✓	✓ ⁷	X	X	X
	Independently, for any Schedule 1 drug ⁴	X	✓ ⁵	X	X	X	X	X	X	X	X	X	X	X
	Independently, in a collaborative practice ⁴	X	✓ ⁵	✓ ⁵	✓ ⁵	X	X	✓	✓	X	X	X	X	X
	Make therapeutic substitution	✓	✓	✓ ⁹	X	X	✓ ¹⁰	✓	✓	✓	✓	X	✓	X
	Change drug dosage, formulation, regimen, etc.	✓	✓	✓ ⁹	✓	✓	✓	✓	✓	✓	✓	X	✓	X
Injection Authority (SC or IM)^{1,5}	Renew/extend prescription for continuity of care	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
	Any drug or vaccine	P	✓	✓	✓	X ¹¹	✓ ¹²	✓	✓	✓	✓	X	✓	X
	Vaccines ⁶	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	X
Labs	Influenza vaccine	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	X
	Order and interpret lab tests	X	✓	P ¹³	✓ ¹⁴	X	✓	P	P ¹³	✓ ¹⁵	X	X	X	X
Techs	Regulated pharmacy technicians	✓	✓	✓	✓ ¹⁶	✓	X	✓	✓	✓	✓	X	X	X

1. Scope of activities, regulations, training requirements and/or limitations differ between jurisdictions. Please refer to the pharmacy regulatory authorities for details.

2. Initiate new prescription drug therapy, not including drugs covered under the *Controlled Drugs and Substances Act*.

3. Alter another prescriber's original/existing/current prescription for drug therapy.

4. Pharmacists independently manage Schedule 1 drug therapy under their own authority, unrestricted by existing/initial prescription(s), drug type, condition, etc.

5. Applies only to pharmacists with additional training, certification and/or authorisation through their regulatory authority.

6. Authority to inject may not be inclusive of all vaccines in this category. Please refer to the jurisdictional regulations.

7. Applies only to existing prescriptions, i.e., to provide continuity of care.

8. Pursuant to a Ministerial Order during a public health emergency.

9. Applies only to pharmacists working under collaborative practice agreements.

10. Only in the case of a drug shortage.

11. For education/demonstration purposes only.

12. In emergency situations.

13. Pending health system regulations for pharmacist requisitions to labs.

14. Authority is limited to ordering lab tests.

15. Authority limited to ordering blood tests. No authority to interpret tests.

16. Pharmacy technician registration available through the regulatory authority (no official licensing).

✓ Implemented in jurisdiction
P Pending legislation, regulation or policy for implementation
X Not implemented

Figure 1. Scope of Practice (June 2020)
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essentially all prescription drugs, excluding narcotics and controlled substances.³⁸ Nearly half of Alberta pharmacists have APA.³⁹ Pharmacists in other provinces do not yet have the broad prescriptive authority that has been attained in Alberta (Figure 1).

Common expanded clinical services offered in Canadian community pharmacies

New and expanded primary care clinical services provided within community pharmacies varies in each jurisdiction. There are, however, some consistencies across the country. The following section describes some of the expanded clinical services that are offered within many, but not all, community pharmacies in Canada.⁴⁰

Medication reviews

Many Canadian community pharmacists, like pharmacists in other countries, now offer medication reviews as a core primary care service for their patients. Unfortunately, there is inconsistency within Canada, and internationally, regarding what this service typically entails.⁴¹ The goals of medication review programs in some Canadian provinces are to confirm an individual patient's medication list and to help them to better understand their medications. Medication review programs in other provinces go further and require pharmacists to assess the indication, efficacy, safety, and convenience of the patient's medications to identify drug therapy problems and make care plans to optimize health outcomes, in collaboration with the other care providers (e.g., Comprehensive Care Plans in Alberta). Most provinces remunerate community pharmacies for this service, but generally only for select individuals who meet pre-specified eligibility criteria (e.g., over 65 years old and taking more than 5 medications).⁴² The details regarding remuneration, eligibility criteria, and fee structures differ significantly across provinces.³² Remuneration varies between 52.50 and 150 CAD for an initial medication review and 15 to 50 CAD for follow up.^{42,43} A 2016 study found that approximately 24% of eligible older adults received an annual medication review (called a MedsCheck) in Ontario. In Alberta, claims for their Comprehensive Care Plans (CACP) reached 257 500 initial assessments and 1.2 million follow-ups in 2019 (i.e., average of 4.6 follow-ups for each initial CACP), which was significantly higher than in 2018.³⁹ Billing for medication reviews that do not include development of care plans have also been increasing annually in provinces where this service is publicly funded, except in Ontario, where billings for the MedsCheck program dropped from a peak of 779,900 in 2015 to 401,400 in 2019.³⁹ This likely reflects policy changes introduced in 2016 that increased documentation and follow-up requirements when providing a MedCheck service.⁴⁵ Utilization of these services to target those most likely to benefit overall, such as older adults or people taking numerous medications, has been mixed, yet recent Canadian research has demonstrated that medication reviews are associated with a small reduced risk of readmissions to hospital and death.^{44,46,47}

Minor/common ailment management

Many Canadian provinces have expanded pharmacists' scope of practice by authorizing community pharmacists to assess and prescribe for many common medical conditions

such as uncomplicated cystitis and allergic rhinitis, which benefit from treatment with prescription medications not previously within the pharmacist's scope to prescribe. Some provinces delineate specific prescription medications that can be prescribed, and some require pharmacists to prescribe within treatment algorithms. The goal of these programs is to improve access to the primary health care system. The lists of eligible medical conditions/medications and the availability of publicly funded reimbursement for the service varies between provinces (Table 1), with some having no government remuneration for this service and others paying up to 25 CAD for the pharmacists' assessment.⁴⁸ For example, in Saskatchewan, the provincial drug plan will remunerate 18 CAD to the pharmacy when a pharmacist prescribes an NSAID for a musculoskeletal sprain, based on locally developed guidance documents. Recommendation of a non-prescription medication for the same indication is not eligible for remuneration. Approximately 28,000 minor ailment claims were made in Saskatchewan (population 1.17 mil) in 2019, whereas Quebec (population 8.48 mil) had 323,000 claims for similar services, up 30% from 2018.³⁹

Smoking cessation programs

In some provinces, community pharmacists offer smoking cessation coaching and may recommend or prescribe nicotine replacement therapy, varenicline, or bupropion. Only four provinces remunerate pharmacists for this service at present, while pharmacists in other provinces may charge patients directly for the service.⁴⁹ Provision of these services is low.⁵⁰ Efforts are underway to harmonize pharmacists' interventions in tobacco cessation nationwide.⁴⁹

Renewal, extension, and adaptation of existing prescriptions

Pharmacists in all provinces and two of the territories have been granted prescriptive authority to renew or extend existing prescriptions for continuity of care when the patient's primary prescriber is unavailable. This involves pharmacists assessing the prescription's efficacy, safety, and adherence prior to extending the prescription. Each jurisdiction has different regulations concerning the types and quantity of medications permitted, and the frequency with which they can be renewed.^{48,51} Common guidelines may include limiting the prescribed quantity to the amount previously prescribed by the regular prescriber or 100 days, whichever is shorter. Typically, the pharmacist may prescribe only once, and then the patient must see their regular prescriber again to be reassessed for ongoing therapy. Opioids and controlled drugs and substances are not permitted to be prescribed under the pharmacist's scope of practice. However, a federal exemption delivered in response to the coronavirus (COVID-19) pandemic on March 19, 2020 temporarily allowed pharmacists in most provinces to provide these services for medications under these categories, including opioid agonist therapy for opioid use disorder, to ensure continuity of care.^{52,53} Adapting prescriptions by changing the drug dosage or formulation, and making therapeutic substitutions (changing which drug within the family is dispensed within select drug classes; e.g., changing enalapril to ramipril) to best suit a patient's needs and manage distribution

Table 1. List of common ailments eligible for pharmacist prescribing in Canada

- Acne, mild
- Allergic dermatitis
- Allergic rhinitis
- Atopic dermatitis (eczema)
- Bacterial skin infections, including impetigo and folliculitis
- Calluses and corns
- Conjunctivitis
- Contraception, hormonal and emergency contraception
- Cough
- Cystitis, uncomplicated (urinary tract infection)
- Dandruff
- Dysmenorrhea
- Erectile dysfunction
- Fungal skin infections, including tinea cruris (ring worm), tinea pedis (athlete's foot) and diaper dermatitis
- Gastro-esophageal reflux disease (dyspepsia)
- Headache, mild
- Hemorrhoids
- Herpes Simplex Virus (cold sores)
- Herpes Zoster Virus (shingles)
- Impetigo
- Influenza
- Insect bites
- Musculoskeletal pain (sprains and strains)
- Nausea
- Nicotine dependence (tobacco cessation)
- Obesity
- Onychomycosis
- Oral fungal infection (thrush)
- Oral aphthous ulcer (canker sores)
- Sleep problems, mild to moderate
- Threadworms and pinworms
- Vaginal candidiasis (yeast infection)
- Warts (excluding facial and genital)
- Xerophthalmia (dry eyes)

Pharmacist prescribing for common ailments is not offered in all jurisdictions. Regional differences exist.

problems such as drug shortages are also permitted in some provinces. Remuneration for these services is provided by some provincial drug plans. For example, prescribing an interim one-month supply of a chronic medication is remunerated with 6 CAD per prescription in Saskatchewan, 10 CAD in British Columbia, and 20 CAD in Alberta.⁵⁴ In Nova Scotia, remuneration is set at a fee of 12 CAD for three prescriptions or less and 20 CAD for four or more prescriptions, with a maximum of four service fees billed per patient per year.⁵⁵ While authorized under the pharmacist's scope of practice, it is not currently a remunerated service in Manitoba, Ontario, and New Brunswick.⁵⁴

Prescribing and administration of injectable drugs for preventable diseases and immunization

Pharmacists in most jurisdictions can administer a drug or vaccine by injection. Often, additional training and registration of injection authority with the respective licensing body is required. Some provinces limit pharmacists to administering a discrete set of vaccines, while others authorize the injection of all drugs and blood products by pharmacists.⁵⁶ Over 3.2 million flu shots were administered by pharmacists in 2018/2019, representing thirty-five percent of vaccinated adults in Canada.³⁹ In Alberta specifically, there is high turn-out at pharmacies with approximately 60% of flu shots administered by pharmacists. This number has increased annually since the

inception of pharmacist authority to immunize beginning in 2009.^{39,57} Pharmacists as immunizers has increased overall immunization rates, which has the potential to substantially reduce direct health care costs and reduce lost productivity.^{58,59} Some jurisdictions also permit pharmacists to prescribe and administer vaccinations for preventable diseases such as hepatitis A and B, herpes zoster, and human papillomavirus (HPV). Prophylaxis for malaria and other travel-related communicable diseases may be provided as part of comprehensive travel health services provided by specially trained pharmacists possessing a recognized certificate or diploma in Travel Medicine. All provinces publicly remunerate influenza vaccination by a pharmacist. Pharmacist administration of other specific vaccines on provincial publicly funded immunization schedules may also be publicly remunerated in some provinces, but fees associated with administering non-routine vaccines and associated travel health services are generally paid for privately by individuals receiving the service.

Harm reduction services

Community pharmacies in Canada offer an important primary care role by ensuring the provision of medications and supplies for people who use injectable drugs and substances to promote harm reduction for individuals and the community. Between January 2016 and December 2019, 15,393 people in Canada lost their lives due to opioid-related harms.⁶⁰ It has been formally recognized

that Canada is in the midst of an opioid crisis, which continues to escalate in many parts of the country.⁶¹ Prescription and non-prescription use of opioids in Canada remain high, and will likely require multifaceted interventions to ameliorate.^{62,63} Pharmacists provide education to individuals about opioid-related harms, including dispensing naloxone kits for use in opioid overdose, providing guidance on minimizing the risks associated with substance use, and sometimes providing clean ancillary supplies such as needles and sterile water for injection. For example, of British Columbia's 1,368 community pharmacies, 736 participate in the province's free Take Home Naloxone program, representing 42% of the active distribution sites in the province alongside hospitals, corrections facilities, and First Nations sites that distributed some 208,000 kits in total since 2012.⁶⁴ Pharmacists in many communities also provide support and education for individuals receiving opioid agonist therapy for treatment of opioid use disorder. While some of these services are provided under the traditional scope of practice, explicit attention is being brought to the topic as it represents an important public health and primary care role.

TOWARD PRIMARY HEALTH CARE INTEGRATION AND REFORM

The expansion of more accessible, publicly funded primary care services delivered by community pharmacists has started to address some of the CFHI criteria on which to measure progress toward future primary health care reform in Canada. Some community pharmacies provide these new clinical services as part of a formal partnership with local family medicine clinics, where the pharmacist may even provide some of the services co-located within the clinic, which enhances patient access to interdisciplinary teams. Most provide these services to patients independently within a pharmacy, and subsequently may communicate their assessment and plan of care back to the patient's physician or nurse practitioner. However, we are unaware of existing data on this type of collaboration. Many of these type of partnerships are anecdotal and informally shared in pharmacy circles. The extended hours at many pharmacies provide more opportunity for patients to access after-hours care for minor/common ailment management or prescription renewal/extension to minimize the unnecessary use of walk-in clinics or emergency departments. Moreover, providing new and expanded services with evidence for improved patient outcomes and per capita health care costs aligns with the Quadruple Aim framework adopted in many jurisdictions' health care reform policies.¹⁰

Team-based primary care pharmacists

Current and past frameworks for primary health care system reform in Canada, proposed by both provincial and federal government health ministries, have consistently advocated for the creation and expansion of interdisciplinary primary care teams that employ a variety of health professionals co-located within the same clinic, including pharmacists, typically paid a salary by provincial government health authorities. The role of pharmacists within these primary care teams is intended to

complement the role of community pharmacists by offering a variety of non-dispensing, direct patient care services. These primary care team-based pharmacists focus on comprehensive medication management and also provide direct support to the other team members in a variety of areas including serving as a resource for drug information, providing education and suggestions regarding rational use of medicines, and contributing to team rounds or group medical appointments.⁶⁵⁻⁶⁷ Typically these pharmacists do not dispense prescriptions, but they frequently facilitate communication between prescribers and community pharmacies. While examples of this model exist in most provinces, it has not been widely adopted across the country and, consequently, very few pharmacists work as salaried members of team-based primary care clinics in Canada. For example, in Ontario, Canada's most populous province with 13.6 million residents, approximately 200 of the 15,562 pharmacists (1.3%) work as salaried members of team-based primary care clinics in full or part time positions.²⁸ Some other provinces have provided limited funding for primary care teams to hire pharmacists, but none have integrated as many as in Ontario.⁶⁸ It is estimated that approximately 700 pharmacists in Canada currently work in this role. Although there is no benchmark regarding the optimal number of pharmacists that should be working as salaried members of interdisciplinary primary care teams, the National Health Service (NHS) in the United Kingdom has set its recruitment target for this role at one full-time equivalent (FTE) pharmacist per 15,000 citizens.^{69,70} The target is set at 1 to 10,000 in Ontario.⁷¹ Several provinces are currently in the process of building capacity for more pharmacists to work as salaried members of interdisciplinary primary care teams, but as with efforts to expand community pharmacy based primary care services, each province is at a different step in terms of implementation.^{67,72,73}

Recognition of the pharmacist's role in national health care reform

Despite disparities and inconsistencies across provinces/territories in primary care services provided and remunerated at community pharmacies, the value of the expanding role of community pharmacists in the primary health care system has been recognized by major stakeholders. In one of their final publications, the HCC reported on progress toward recommendations made in the Health Accords.⁷⁴ The HCC purported medication reviews, and the initiation, adaptation, and renewal of prescription medications by community pharmacists as access-promoting facilitators to "help increase access to primary health care and encourage team-based care".⁷⁴ The Canadian Institutes for Health Research (CIHR) has propagated the concept of "community-based primary health care", within which pharmacists are seen as integral team members, and also funds research projects aligning with this vision.⁷⁵ As previously mentioned, the College of Family Physicians of Canada (CFPC) supports physician-pharmacist collaboration in team-based primary care within the Patient's Medical Home model, as interdisciplinary collaboration is a central tenet of the vision for primary care practice in Canada.²⁶ Community pharmacists have an important role within the CFPC broader vision for the Patient's Medical Neighbourhood.⁷⁶

Persisting barriers and facilitators of community pharmacist integration

Research has captured Canadian pharmacists' apprehension about their expanding role related to uncertainty around remuneration, perceived physician skepticism about pharmacists' skills, and pharmacists' access to comprehensive patient health records.^{35,77,78} Pharmacists have expressed a need for continuing professional development and education delivered in innovative models that are tailored to the site of practice and learners' unique needs.⁷⁹ Conversely, factors that may make pharmacists feel more comfortable and confident assuming new roles and responsibilities in the primary health care system, consequently facilitating practice change, are summarized by Gregory et al with the "9 Ps of practice change" mnemonic: permission, process pointers, practice/rehearsal, positive reinforcement, personalized attention, peer referencing, physician acceptance, patients' expectations, professional identity, and payment.⁸⁰

This mix of barriers and facilitators to change may explain the uneven implementation of expanded services across different pharmacies and pharmacists with diverse levels of advanced training and certification. Even when pharmacists are trained and authorized to provide new services, pharmacy owners and managers may take different approaches to supporting and offering the services within their pharmacies, depending on the organization's business model.⁸¹

More broadly, there are several system-level factors that pose barriers. Community pharmacy practice is not exempt from the patchwork delivery of primary care across Canada. There is a dire need for improved integration and collaboration between pharmacy professionals and other healthcare providers across the Canadian health care system. Pharmacy advocates are not always included on the macro level of health care policy making, which means that other healthcare professionals, and patients alike, may not fully appreciate where community pharmacy services can optimally fit in the system. For example, health care system policy changes in Ontario have recently reduced the level of medication review service delivery in the province by changing requirements for standardized documentation and follow-up, which has affected the feasibility and sustainability of this service due to increased workload.^{45,82} Lack of digital integration, with uncoordinated health informatics and the dearth of comprehensive, shared electronic medical records in most provinces/territories, often leave pharmacists without adequate information about the patient to provide these services with confidence. Even so, communication of the provision of a pharmacist service to other members of the primary care team is not always routine or comprehensive, although standards of practice for newer services often stipulate this practice.

The future role of community pharmacy in the primary health care system

Patients deserve equitable and consistent access and delivery of high-quality primary care services, including services provided by community pharmacy teams. National, provincial, and territorial pharmacy organizations and other

pharmacy stakeholders in Canada have long advocated for a more formal integration of community pharmacy services into the primary health care system. However, a clear, nationally coordinated approach to do so is still lacking. The variable scopes of practice of pharmacists, and the inconsistent menu of pharmacist services available to patients in community pharmacies across the country, has resulted in a call for harmonization of pharmacists' scopes and standardization of community pharmacy based clinical services. The Canadian Pharmacists Association (CPhA) recognizes these challenges and is working toward a national, forward-thinking strategy.^{27,83,84} In 2017, CPhA renewed efforts toward this vision by launching Canadian Pharmacists Harmonized Scope (CPHS) 2020 with aspirations of defining, describing and developing a harmonized scope of practice across the country, and describing how patients benefit by pharmacists working to full scope. The Canadian Society of Hospital Pharmacists (CSHP), another national pharmacist advocacy organization, has also made the integration of pharmacists into the primary health system a key priority.

Ongoing efforts for primary health care renewal in the pharmacy sector should be directed at providing a consistent offering of evidence-based clinical pharmacist services across Canada, delivered by pharmacists practicing in a variety of settings (i.e., community pharmacies, interprofessional primary care teams) to improve access to services that demonstrate improvement in medication-related outcomes and reduction in medication-related harms. Any future attempts to further expand pharmacist services offered within the primary health care system in Canada should focus on services for which there is strong evidence for improvement in meaningful clinical outcomes when delivered by pharmacists and purported cost-savings for the public and third party payers alike.³² For example, recent studies have found that community pharmacist-led hypertension and dyslipidemia management led to significant improvements in patient outcomes, but neither has been implemented on a widespread basis in Canadian community pharmacies.^{85,86} Similarly, recent evidence continues to demonstrate the impact of the role of pharmacists integrated into primary care teams, yet expansion of these positions remains nearly stagnant.^{68,72} To support continued evolution of clinical services, pharmacy organizations, academics, and researchers will also need to continue to collect and disseminate data associated with new and established initiatives to demonstrate value. Governments and third-party payers expect this information to make evidence-based policies and investments. Pharmacy advocates must continue to work with policy makers to enact systems-level change that augments and optimizes the pharmacist's role in primary health care reform, as Canadians ultimately need and deserve the care that pharmacists can provide.

CONCLUSION

A desire to improve the Canadian primary health care system has persisted for generations. In the absence of a nationally coordinated plan, each province/territory continues to make incremental changes to ensure that all Canadians can receive a standard level of high-quality care

that involves their healthcare providers, including community pharmacists, working together toward a unified goal. The extent to which community pharmacists provide new and expanded primary care services varies significantly across the nation as scope of practice, the regulatory lever that facilitates the expansion of these services, remains discordant between provinces/territories. A desire to harmonize community pharmacists' scope of practice nation-wide, with efforts to optimize and solidify the role within the primary health care system to improve consistency and quality in delivering patient care, pervades. As the Canadian primary health care system continues to remodel slowly, incrementally, and piecemeal, community

pharmacy advocates strive toward ongoing collaboration within the overall strategy of primary health care reform to integrate the pharmacy team's optimal role in improving access and quality of care for all Canadians.

CONFLICT OF INTEREST

None.

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