McMaster University | Health Forum

Context

- In 2023, the province of British Columbia significantly expanded the scope of practice for pharmacists, granting them the authority to prescribe medications for the following 21 minor ailments (as well as contraception):
  - acne (mild)
  - allergies and hay fever
  - canker sores (oral ulcers)
  - cold sores
  - fungal infections
  - headaches
  - heartburn (acid reflux and gastroesophageal reflux disease or GERD)
  - hemorrhoids
  - hives and itching, including from bug bites (urticaria)
  - impetigo
  - menstrual pain
  - nicotine dependence
  - pink eye (conjunctivitis)
  - pinworms or threadworms
  - shingles
  - skin rash (dermatitis)
  - sprains and strains (musculoskeletal pain)
  - thrush (oral fungal infection)
  - upset stomach (indigestion)
  - urinary tract infection (uncomplicated)
  - yeast infection (vaginal candidiasis).
- While a fulsome evaluation is being undertaken to determine whether this change improves access to treatment and quality of care, initial reporting from the first year shows widespread use of these services, including:
  - the filing of 431,100 eligible claims for 312,900 patients
  - participation of 92% of community pharmacies and 77% of active pharmacists.
- Given the significant use of the new service, the Ministry of Health in British Columbia is interested in the effects of further expanding the scope of practice of pharmacists to include prescribing and deprescribing for other minor ailments, chronic conditions (e.g., respiratory, cardiovascular, neurological, mental health, substance use, and musculoskeletal conditions, diabetes, kidney disease), public-health concerns (e.g., COVID-19, influenza, sexually transmitted and blood borne infections or STBBIs, pharyngitis, pneumonia), and opioid agonist treatment (OAT) (e.g., methadone, combined buprenorphine and naloxone, slow-releasing oral morphine, extended-release buprenorphine injection).
- This rapid synthesis assesses the best-available evidence on the impacts of pharmacist prescribing on the equity-centred quadruple-aim outcomes (population health, patient experience, provider experience, cost-effectiveness).

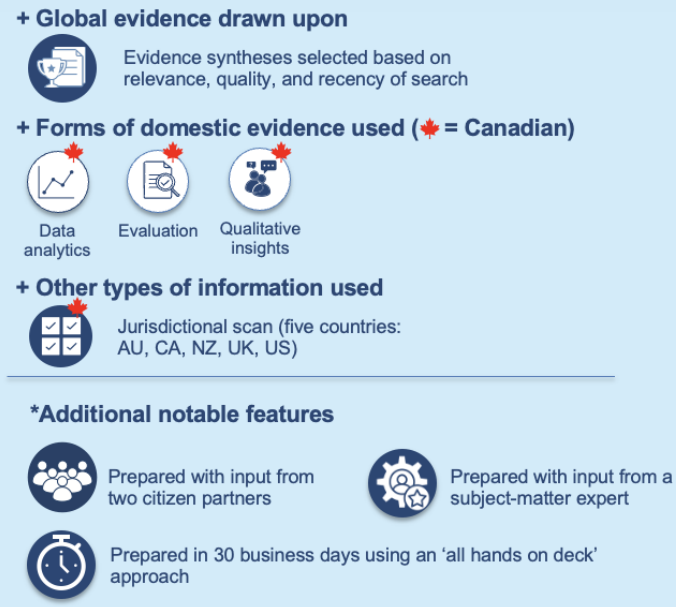
Rapid Evidence Synthesis

Impacts of pharmacist prescribing on the equity-centred quadruple-aim outcomes

24 July 2025

[MHF product code: RES 131]

Box 1: Evidence and other types of information



- Note that only evidence documents reporting pharmacist authority to initiate and/or discontinue prescriptions were considered.
- Moreover, this rapid synthesis is focused on the additional prescribing categories being explored by the Ministry of Health in British Columbia.
- While the findings profiled in this rapid synthesis have been tailored to the context of British Columbia, many other provinces and territories are undertaking similar transformations and may find the findings from the research evidence and jurisdictional scans useful.

Question

- What is the impact of pharmacist prescribing on health-system performance as measured by the equity-centred quadruple-aim outcomes?

High-level summary of key findings

- We identified 54 evidence documents, including 13 evidence syntheses and 41 single studies, which focused largely on pharmacist prescribing for chronic diseases and minor ailments, with fewer focused on pharmacist prescribing for public health–relevant conditions and pharmacist initiation of opioid agonist treatment (OAT).
- Overall, we found that pharmacist prescribing for minor ailments, chronic diseases, public health–relevant conditions, and OAT can support progress toward the equity-centred quadruple-aim outcomes, particularly when it is accompanied by the needed human resources, infrastructure, training, legislation, and interprofessional collaboration. The high-level findings specific to each quadruple-aim outcome can be found below.
- **Population health:** Pharmacist prescribing resulted in fewer prescribing errors, medication adherence, clinical improvements (e.g., reduced levels of LDL cholesterol), fewer adverse effects, referrals to diverse forms of care, and clinical outcomes comparable to those seen with non-pharmacist prescribers, including for patients experiencing homelessness.
- **Patient experience:**
  - Pharmacist prescribing generated high patient trust and satisfaction, improved patient understanding of health, and enhanced the accessibility of care (e.g., given the relatively convenient operating hours and locations of pharmacist prescribing services, alongside the capacity of pharmacists to communicate with clarity and empathy).
  - For equity-deserving groups, notably patients experiencing homelessness, pharmacist prescribing mitigated accessibility barriers such as stigma and confidentiality concerns in traditional prescribing environments; however, an uneven distribution of prescribing services across geographies may reinforce access inequities.
- **Provider experience:** Pharmacists generally viewed prescribing in a positive light, reporting increased confidence and job satisfaction as a result of prescribing, and pharmacist prescribing benefitted other types of healthcare providers (e.g., physicians), such as by reducing their workloads. However, in some cases, uptake of pharmacist prescribing was low (i.e., pharmacists not practicing to the top of their scope) as a result of multilevel barriers (e.g., insufficient resourcing for pharmacists to be able to prescribe, inadequate public knowledge of prescribing services, gaps in pharmacist and pharmacy staff training).
- **Health-system costs:** In mitigating unnecessary physician and emergency department visits, hospital admissions, service duplication, and inappropriate prescribing, pharmacist prescribing was or had the potential to be cost-effective and cost-saving.
- The following resources were commonly reported to facilitate the uptake of pharmacist prescribing: physical and digital infrastructure (e.g., electronic medical record or EMR compatibility) within pharmacy practices, sufficient pharmacy staff, strong collaboration between pharmacists and other types of healthcare providers (e.g., physicians), adequate pharmacist and staff training, supportive legislation (e.g., pharmacist-driven protocols), and patient awareness of prescribing services.
- Notable gaps in the published evidence include research addressing the impacts of pharmacist OAT prescribing on provider experiences and health-system costs alongside the broader impacts of such prescribing on equity in relation

to provider experiences and health-system costs. Some studies also had limited evaluation timeframes, hindering assessment of long-term impacts of pharmacist prescribing.

- A scan of jurisdictional experiences across Canada and four other countries (Australia, New Zealand, the United Kingdom, and the United States) highlighted that pharmacist prescribing for minor ailments is most widespread, while select jurisdictions allow pharmacist prescribing of contraception, chronic disease therapies, public-health prescribing, and OAT.

Framework to organize what we looked for

- Services
  - Prescribing
  - Adapting a prescription
  - Deprescribing
- Service model
  - Independent (e.g., pharmacists have autonomous authority to prescribe within their scope of practice without requiring physician oversight or approval)
  - Supplementary (e.g., pharmacists have a formal partnership with a doctor and can prescribe within the boundaries of a pre-determined clinical management plan)
  - Collaborative (e.g., pharmacists work as part of an interdisciplinary team and can initiate, modify, and monitor prescriptions under collaborative practice, with varying levels of authority)
  - Protocol-driven (e.g., pharmacists may prescribe according to standardized protocols and guidelines that specify conditions, patient criteria and medication choices)
- Conditions
  - Chronic disease prescribing
    - Chronic respiratory diseases (e.g., asthma, chronic obstructive pulmonary disease)
    - Cardiovascular diseases (e.g., acute myocardial infarction, atrial fibrillation, heart failure, ischemic heart disease including cholesterol management, stroke, haemorrhagic stroke, ischemic stroke, transient ischemic attack, anticoagulation management)
    - Neurological disorders (e.g., Alzheimer's and other dementias, epilepsy, multiple sclerosis, Parkinson's disease)
    - Mental and substance use disorders (e.g., depressive disorders, anxiety and mood disorders, schizophrenia and delusional disorders, substance use disorders)
    - Musculoskeletal disorders (e.g., gout, osteoarthritis, osteoporosis, rheumatoid arthritis, juvenile idiopathic arthritis)
    - Diabetes and kidney disease (e.g., type 1 and type 2 diabetes mellitus, chronic kidney disease, hypertensive diseases, high blood pressure or hypertension)
  - Minor ailments (e.g., beyond the 21 for which B.C. pharmacists can currently prescribe)
    - Bacterial skin infections
    - Callouses and corns
    - Dehydration related to diarrhea or vomiting
    - Diarrhea (non-infectious)
    - Earache and ear infections
    - Erectile dysfunction
    - Fever
    - Folliculitis
    - Head lice
    - Motion sickness (travellers)
    - Nausea and vomiting (including preventive medications)
    - Premenstrual syndrome

        - Prenatal vitamins
        - Psoriasis
        - Scabies
        - Sleep disorders (minor)
        - Tick bites (prophylaxis for Lyme disease prevention)
        - Upper respiratory conditions (i.e., cough, cold, sore throat, nasal congestion, sinusitis)
        - Vomiting and nausea in pregnancy
        - Vasomotor rhinitis
        - Warts (excluding facial and genital)
        - Xerophthalmia (dry eyes)
    - Public health
        - COVID-19
        - Influenza
        - Sexually transmitted and blood-borne infections (e.g., chlamydia, gonorrhea, herpes simplex, HIV, Hepatitis B and C), including HIV Pre-exposure Prophylaxis (HIV PrEP)
        - Pharyngitis, including strep throat
        - Pneumonia
    - Opioid agonist treatment
        - Methadone
        - Combined buprenorphine and naloxone (Suboxone)
        - Slow-releasing oral morphine
        - Extended-release buprenorphine injection (Sublocade)
    - Any other conditions not listed above
- Settings
    - Community-based pharmacies
    - Primary care offices and networks
    - Hospitals and specialty care settings
    - Long-term and residential care homes
    - Rural and remote healthcare facilities
- Populations
    - People with co-morbidities
    - People with a history of substance use
    - People living in rural and remote communities
- Equity-centred quadruple-aim outcomes
    - Population health outcomes
    - Patient experience
    - Provider experiences
    - Costs

What we found

Below, we outline in narrative form our key findings related to the research question from the 54 included evidence documents and based on experiences from the jurisdictional scan of five countries and 13 Canadian provinces and territories (see Box 1 for more details).

A summary of the evidence organized by prescribing category (minor ailments, chronic diseases, public health, and OAT) and equity-centred quadruple-aim outcome is provided in Appendix 3, while a summary of the experiences from other countries and from Canadian provinces and territories is provided in Appendix 4. Detailed data extractions from each of the included evidence syntheses are provided in Appendix 5, detailed data extractions from each of the included single studies are provided in Appendix 6, and hyperlinks for documents excluded at the final stage of reviewing are listed in Appendix 7.

Coverage by and gaps in existing evidence syntheses and single studies

Cumulatively, the evidence documents included in this rapid synthesis addressed all of the services, service models, prescribing categories, settings, populations, and outcomes listed in the organizing framework.

Of all the prescribing categories of interest for pharmacists, chronic disease and minor ailments prescribing were best represented among the included evidence documents. In comparison, evidence documents examining the impacts of public health and OAT prescribing by pharmacists were least represented. With respect to the quadruple-aim outcomes, population health, patient experience, and provider experiences were well represented among the included evidence documents. Impacts of pharmacist prescribing on health-system costs were reported infrequently. Equity considerations were reported only in relation to population health and patient experience.

Box 2: Approach and supporting materials

At the beginning of each rapid evidence synthesis and throughout its development, we engage two citizen partners, who help us to scope the question and ensure relevant context is taken into account in the summary of the evidence.

We identified evidence addressing the question by searching Health Systems Evidence, Health Evidence, and PubMed to identify evidence syntheses, protocols for evidence syntheses and single studies. Searches were conducted between 4 to 9 July 2025. The search strategies used are included in Appendix 1. We identified jurisdictional experiences by hand searching government and stakeholder websites for information relevant to the question from all 13 provinces and territories and four countries including Australia, New Zealand, the U.K., and the U.S. In contrast to our rapid evidence profiles, which provide an overview and insights from relevant documents, this rapid evidence synthesis provides an in-depth understanding of the evidence.

We appraised the methodological quality of evidence syntheses that were deemed to be highly relevant using the first version of the AMSTAR tool. AMSTAR rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality, medium-quality evidence syntheses are those with scores between four and seven, and low-quality evidence syntheses are those with scores less than four. The AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to evidence syntheses pertaining to delivery, financial, or governance arrangements within health systems or implementation strategies.

This rapid evidence synthesis was prepared in a 30-business-day timeline.

A separate appendix document includes:

1) methodological details (Appendix 1)
2) a framework to organize what we looked for (Appendix 2)
3) key findings from the included evidence documents (Appendix 3)
4) key findings from highly relevant jurisdictional experiences (Appendix 4)
5) detailed data extractions from the included evidence syntheses (Appendix 5)
6) detailed data extractions from the included single studies (Appendix 6)
7) documents excluded at the final stage of reviewing (Appendix 7).

While evidence documents cumulatively addressed the quadruple-aim impacts of pharmacist prescribing for chronic diseases, minor ailments, and public health, the impacts of OAT prescribing on provider experiences and health-system costs were unreported, indicating a gap in the published evidence base. Furthermore, most of the included single studies (n = 38) were set in Australia, Canada, the United Kingdom, and the United States, with limited representation from Brazil (n = 1) and New Zealand (n = 1), highlighting a gap in published evidence on pharmacist prescribing in low- and middle-income as well as Global South countries.

In summary, there is an apparent need for research addressing: 1) the impacts of pharmacist OAT prescribing on provider experiences and health-system costs; 2) impacts of pharmacist prescribing on equity in relation to provider experiences and health-system costs; and 3) pharmacist prescribing interventions beyond the represented countries.

Key findings from highly relevant evidence sources

General prescribing

We identified 11 medium-quality evidence syntheses and 13 single studies (nine high-relevance, three medium-relevance, one low-relevance) that examined the features and impacts of general pharmacist prescribing. These included independent, supplementary, and collaborative models delivered in community or primary-care settings.(1-23)

Impacts on health outcomes

Impacts on health outcomes were frequently reported. Eight medium-quality syntheses and seven single studies found that general pharmacist prescribing contributed to improved clinical outcomes, including reductions in HbA1c, blood pressure, and LDL cholesterol levels, as well as improved asthma control and medication adherence.(1; 2; 5; 6; 8-11; 14-18; 20; 21) One U.K.-based study highlighted how pharmacist prescribing helped initiate and adjust therapy in patients not meeting treatment goals.(21) These benefits were improved when pharmacists had access to patient records, collaborated with care teams, and provided follow-up.(2; 8; 10; 14; 16; 21)

Impacts on patient experience

Impacts on patient experience were consistently positive. Five medium-quality syntheses and six single studies reported that patients valued the convenience of receiving assessments, prescriptions, and counselling in one setting, and appreciated reduced wait times for care.(3; 5; 9-11; 16; 17; 19; 21; 24) These impacts were particularly noticeable among patients in rural areas or who do not have a regular primary-care provider.(10; 17; 24) Several studies also noted increased patient trust in pharmacists and greater involvement in decision-making.(16; 21; 24)

Impacts on provider experience

Impacts on provider experience were also positive. Six medium-quality syntheses and seven single studies found that pharmacists reported increased confidence, autonomy, and professional satisfaction from their prescribing roles, while physicians reported having reduced workloads as a result of pharmacist prescribing.(2; 4-6; 9; 10; 14; 16; 17; 19; 21; 22; 24) These outcomes were stronger when pharmacists received training and support and were integrated into team-based care.(2; 5; 9; 14; 16; 21) Some studies, however, highlighted challenges such as limited collaboration with physicians and lack of compensation mechanisms.(9; 10; 16; 22; 24)

Impacts on health-system costs

Impacts on health-system costs were less frequently assessed but generally positive. Five medium-quality syntheses and five single studies reported evidence of cost-effectiveness or cost savings, particularly through improved chronic disease management and reduced emergency visits and hospitalizations.(2; 5; 6; 8; 10; 14; 16; 18; 20; 24) Some studies noted short-term increases in costs due to pharmacist time or earlier interventions but suggested these were

offset by longer-term savings.(8; 14; 24) Limitations in these analyses included short follow-up periods and failure to consider system-level or labour impacts.(10; 18; 24)

Assessment and treatment of minor ailments

We identified 10 evidence syntheses (all medium-quality) and 15 single studies (12 high-relevance, three medium-relevance) that examined the features and impacts of pharmacist prescribing for minor ailments. These initiatives typically allowed pharmacists to assess, prescribe, and counsel patients for conditions such as cold sores, allergic rhinitis, conjunctivitis, and uncomplicated urinary tract infections, most often using structured protocols or condition-specific formularies.

Impacts on health outcomes

Impacts on health outcomes were consistently positive. Cumulatively, 10 medium-quality evidence syntheses and eleven single studies found that pharmacist prescribing for minor ailments resulted in safe and clinically appropriate care, with low rates of treatment failure or adverse events and appropriate referrals when needed.(1; 3-9; 11; 13-17; 24-30) For instance, in a systematic review, several studies reported that pharmacist prescribing was highly appropriate, at times more appropriate than physician prescribing for the same minor ailments (e.g., markedly lower antibiotic prescribing rates among patients treated by pharmacists versus physicians for acute pharyngitis, audits confirming the appropriateness of all pharmacist prescriptions for uncomplicated UTI).(9) The use of tools such as Beers Criteria (a guideline that identifies medications that may pose harmful side effects or interactions in older adults) and condition-specific algorithms (standardized protocols for managing specific conditions) supported consistent decision-making and treatment quality.(1; 4; 15; 24; 26)

Condition-specific outcomes were rarely detailed, as most evidence combined results across minor ailment and antimicrobial prescribing programs. One medium-quality synthesis provided more granular data for select conditions. For uncomplicated urinary tract infections, pharmacist prescribing was linked to high clinical cure rates (up to 88.9%), recurrence rate of 5.5%, adverse event rate of 7.2%, and reconsultation rates between 3% and 4%; however, no direct comparators were reported for these outcomes.(9) For acute pharyngitis, pharmacist-led rapid antigen detection testing for Group A streptococcus substantially reduced inappropriate antibiotic use, with overall prescribing rates of 24–26% compared to 62–70% reported in physician-based care within the same jurisdictions.(9) Conditions such as acute otitis media, bacterial sinusitis, chronic sinusitis, and chronic obstructive pulmonary disease (COPD) exacerbations were included in antimicrobial prescribing programs.(9) However, outcomes like cure rates or adverse events were not reported separately, and findings were summarized in aggregate, indicating these services were generally safe and effective.(9) Similarly, another medium-quality synthesis on travel-related and preventive prescribing, including altitude sickness, malaria prophylaxis, and sexually transmitted infection (STI) prevention, reported high patient satisfaction and strong acceptance of pharmacist recommendations, but did not report clinical outcomes for these conditions.(8) No additional condition-specific outcomes were identified in single studies beyond what the syntheses reported.

Impacts on patient experience

Impacts on patient experience were frequently reported. Cumulatively, eight medium-quality syntheses and thirteen single studies found that patients highly valued the convenience, accessibility, and timeliness of pharmacist-managed care for minor ailments.(1; 3-5; 7-9; 11; 13-17; 24; 26; 27; 29-33) Programs offering walk-in or same-day access reduced delays in treatment and lessened reliance on physician appointments, particularly benefiting patients in rural or underserved areas.(4; 9; 11; 17; 24; 33) High patient satisfaction was commonly reported, linked to clear communication, trust in pharmacists' expertise, and reduced travel or wait times.(16; 24; 26; 31; 33)

Impacts on provider experience

Impacts on provider experience were largely positive. Cumulatively, seven medium-quality syntheses and eight single studies showed that pharmacists experienced increased confidence, autonomy, and job satisfaction when prescribing for minor ailments. These benefits were most notable when pharmacists had access to structured training, supportive tools, and collaboration with co-located providers.(5; 6; 14; 16; 24) Pharmacists felt more empowered to practice at their full scope, enhancing their role within interdisciplinary teams; however, they also reported a number of barriers to prescribing, such as the lack of public coverage of pharmacist prescribing, inadequate public knowledge around prescribing services, unwillingness of patients to wait for pharmacists to become available, and pressure from employers to prioritize quantity over quality of prescriptions.(24; 26; 27)

Impacts on health-system costs

Impacts on health-system costs were promising. Cumulatively, six syntheses and 10 single studies indicated that pharmacist-led minor ailments prescribing contributed to system savings by reducing avoidable physician visits and emergency department use.(1; 4-6; 8; 9; 13; 14; 16; 24; 26-30; 32) Cost-effectiveness analyses consistently showed that pharmacist prescribing for minor ailments is cost-saving or cost-effective at the system level, primarily by reducing physician and emergency department visits.(1; 4-6; 8; 9; 13; 14; 16; 24; 26-30; 32) However, most evidence syntheses and single studies did not report dollar-value estimates specific to minor ailment programs.(1; 4-6; 8; 9; 13; 14; 16; 24; 26-30; 32) Several studies noted increased pharmacy costs, which could be offset by appropriate funding models or remuneration strategies.(5; 14; 24; 26)

Chronic disease prescribing

We identified seven medium-quality evidence syntheses and eight single studies (six high relevance, two medium relevance) that examined the impacts of pharmacist prescribing for chronic disease management, particularly for conditions such as diabetes, hypertension, dyslipidemia, and asthma. These studies assessed models implemented in both community and primary-care settings.

Impacts on health outcomes

Impacts on health outcomes were consistently positive. Cumulatively, six medium-quality syntheses and all eight single studies reported improvements in key clinical indicators such as HbA1c, blood pressure, LDL cholesterol, and inhaler technique, alongside significantly lower prescribing error rates among pharmacists than physicians (e.g., in the preoperative context).(1; 2; 5; 6; 8; 10; 14; 16-18; 20; 21; 24; 34) Several studies highlighted greater impacts when pharmacists were integrated into care teams, had access to patients' medical records, and followed structured protocols or guidelines.(2; 5; 8; 14; 16; 21; 24) Evidence from multiple studies suggests that pharmacists helped achieve guideline-directed targets in patients with uncontrolled diabetes and hypertension.(2; 13; 19; 25; 33; 35; 36)

Impacts on patient experience

Impacts on patient experience were reported in two medium-quality syntheses and five single studies. Patients described high satisfaction with pharmacist-led care due to ease of access, medication education, and confidence in the care provided.(5; 10; 16; 21; 24; 30; 34) In some studies, patients emphasized the convenience of receiving prescribing, counselling, and follow-up in one location without needing multiple physician appointments.(16; 21; 24)

Impacts on provider experience

Impacts on provider experience were consistently positive. Overall, four medium-quality evidence syntheses and six single studies found that pharmacists gained confidence and clinical fulfilment from prescribing responsibilities, particularly when supported by training and practice tools.(2; 5; 6; 10; 14; 16; 17; 21; 24; 34) For example, pharmacists

reported feeling more engaged in chronic disease management and able to apply their clinical knowledge more fully.(16; 21)

Impacts on health-system costs

Impacts on health-system costs were examined in five medium-quality syntheses and six single studies. Most sources found pharmacist prescribing to be cost-effective or cost-saving, particularly due to better disease control that reduced emergency visits and hospitalizations.(2; 5; 8-10; 14; 16; 18; 21; 24; 34) However, some studies also noted increased short-term costs (e.g., pharmacist time, more frequent monitoring), suggesting that cost savings may accrue over time.(8; 14; 21) A few sources flagged the need to broaden future economic evaluations to include system-level impacts beyond medication costs.(10; 18)

A medium-quality synthesis and two high-relevance single studies provide evidence that pharmacist prescribing for chronic disease offers potential economic benefits along with clinical value. The synthesis suggested that independent prescribing for cardiovascular disease would lower costs while improving outcomes compared to usual care.(2) It reported an intervention cost of CA$7,145 and projected savings of CA$15,094, which reflects the impact of avoiding cardiovascular events and reducing comorbidity-related costs.(2) One high-relevance study focused on hypertension and found pharmacist-led care to be the most cost-effective approach.(13) Over 30 years, this model saved CA$6,365 per patient and improved both life-years and quality-adjusted life-years.(13) Another high-relevance study examined venous thromboembolism (VTE) prophylaxis in surgical patients.(12) It reported per-patient savings between AU$12 and AU$31, and both scenarios showed a greater than 94% likelihood of being cost-effective using a willingness-to-pay threshold of AU$40,000.(12) The conclusions from these studies emphasize that pharmacist prescribing can support both clinical improvements and financially sound health-systems decision-making.

One medium-relevance single study evaluated a hospital-in-home model that integrated a pharmacist to support high-risk patients with chronic conditions such as heart failure and COPD.(16) The pharmacist's role included medication reconciliation, optimization (including deprescribing), and management of home intravenous therapy.(16) This model reported a total financial impact of US$1.924 million in its first year.(16) The savings included US$1.2 million from reducing inpatient bed days by an average of 2.4 days per patient, US$51,000 from deprescribing 145 inappropriate medications, and US$17,000 from pharmacist-managed IV therapy, along with US$655,567 in incremental revenue from reimbursement programs.(16) The pharmacist also conducted nearly all discharge and post-discharge medication reconciliations and resolved 453 medication discrepancies, 19% of which were high risk, which played a key role in achieving these savings.(16)

Public-health prescribing

Impacts on health outcomes

We identified one evidence synthesis (medium quality) and three single studies (two of high relevance and one of medium relevance) describing the impacts of public-health prescribing on patient health outcomes. Across these studies, pharmacists were authorized to prescribe for the following public-health relevant conditions: acute pharyngitis (sore throat), COVID-19, and STBBIs such as herpes simplex and HIV.(9; 14; 30; 37) Cumulatively, the findings of these studies suggest that pharmacist prescribing strengthens patient adherence to medications, promotes the appropriateness of prescribing, generates clinical improvements and fewer adverse effects, and achieves clinical outcomes comparable to those seen with non-pharmacist prescribers.(9; 14; 30; 37)

The medium-quality evidence synthesis exploring antimicrobial prescribing by community pharmacists, including for acute pharyngitis (sore throat) and cold sores, found that services were associated with clinical improvements and fewer adverse effects among patients.(9) Meanwhile, a high-relevance study found that pharmacist prescribing of nirmatrelvir/ritonavir in a community setting may increase the likelihood that prescriptions align with emergency use

authorization requirements and appropriate dosing, while achieving clinical outcomes comparable to those seen with physician, nurse practitioner, or physician assistant prescriptions, suggesting that pharmacists can safely and effectively prescribe nirmatrelvir/ritonavir for outpatient COVID-19 treatment.(14) The other high-relevance single study found that pharmacist-led deprescribing of antibiotics for discharged patients with negative urine and sexually transmitted infection cultures and no symptoms significantly increased antibiotic-free days, showcasing the effectiveness of pharmacist follow-up in safely discontinuing unnecessary antibiotics after negative urine or STI cultures.(30) Lastly, in the medium-relevance single study regarding an outreach service led by clinical pharmacists to support the well-being of unhoused communities, patients reported improved health stemming from immediate prescriptions and referrals to other care providers; further, stakeholders observed the service to have increased patient adherence to medications.(37)

Impacts on patient experience

We identified five evidence syntheses (all of medium quality) and three single studies (two of high relevance and one of medium relevance) describing the impacts of public-health prescribing on patient experience. Across these studies, pharmacists were authorized to prescribe for the following public health–relevant conditions: pharyngitis (sore throat and strep throat) and STBBIs such as herpes simplex and HIV.(6; 8-11; 30; 37; 38) Cumulatively, the findings of these studies suggest that patients are highly satisfied with pharmacist prescribing, which can improve their health knowledge and enhance the accessibility of medications by mitigating logistical and other barriers, including for people experiencing homelessness.(6; 8-11; 30; 37; 38) However, prescribing pharmacists may be unevenly distributed across communities, potentially reinforcing inequities, and effective pharmacist prescribing requires sufficient resourcing for pharmacist education, staffing, collaboration with physicians, supportive legislation, and patient awareness of services.(6; 8; 11)

For instance, a systematic review assessing the accessibility of pharmacist prescribing services, alongside the direct impacts of these services on access to medicines, concluded that pharmacist prescribing may increase the number of eligible patients receiving medication and the overall number of medicines dispensed, while reducing time to treatment.(6) The studies included in this review examined collaborative prescribing models for the treatment of Group A strep pharyngitis and the administration of HIV PrEP.(6) An additional systematic review describing the types and outcomes of community pharmacist-led travel health services – including pharmacist prescribing for STI prevention – found that patients were highly satisfied with these services, reporting positive patient experience. However, for effective service provision, enablers such as sufficient resourcing for pharmacist education, sufficient staffing, strong collaboration with physicians, and increased patient awareness of services were required.(8) A third evidence synthesis found that pharmacist-led interventions may increase the accessibility of HIV PrEP services if there are sufficient measures to ensure patient privacy and adequate staff training.(11) Relatedly, collaborative agreements with and referrals from primary care providers facilitated pharmacist provision of PrEP services (e.g., by granting them the authority to prescribe PrEP), while a lack of supportive protocols and legislation hindered such provision.(11)

With respect to the highly relevant single studies, an Australia-based study exploring patient attitudes toward pharmacist prescribing of HIV medicines found that all surveyed clinic patients reported satisfaction, which was associated with pharmacists' effective listening and answering of questions, information provision, and checking of patient understanding.(38) The single study of medium relevance explored an outreach service led by clinical pharmacists; unhoused patients reported positive patient experience, including a sense of respect and better health-related understanding and motivation, given the accessible, informal, and flexible nature of the service (e.g., the willingness of pharmacists to discuss non-healthcare issues).(37) Participants with lived experience of homelessness self-reported HIV, amidst other conditions; it was noted that, relative to specialist HIV clinics, the outreach service could better protect the confidentiality of patients with HIV given the diversity of its services.(37)

Impacts on provider experiences

We identified four single studies (three of high relevance and one of low relevance) describing the impacts of public-health prescribing on provider experience. Across these studies, pharmacists were authorized to prescribe for STBBIs such as herpes simplex and HIV.(17; 27; 30; 39) Cumulatively, the findings of these studies suggest that pharmacists view prescribing as part of their roles and perceive it positively.(17; 27; 30; 39) However, multilevel factors hinder the uptake of prescribing practice among pharmacists; identified barriers include inadequate staff, training, physical infrastructure, public knowledge around service availability, and patient unwillingness to wait for pharmacists to become available, alongside high administrative burden, pressure from employers to prioritize quantity over quality, the potential for pharmacist prescribing to harm pharmacist–physician relationships, and having to ask patients to pay for services that are not publicly funded.(17; 27; 39)

A highly relevant single study found that the self-reported prescribing activity of community pharmacists increased during the COVID-19 pandemic, likely due to an increasingly positive perception of prescribing among pharmacists (e.g., given expanded provincial coverage of additional prescribing activities, which facilitates patient impact). However, ongoing barriers to prescribing included pressure from employers to prioritize quantity over quality of prescribing, lack of public knowledge around the availability of services, and unwillingness of patients to wait for pharmacists to become available.(27) Meanwhile, in a Brazilian study, less than 50% of surveyed pharmacists had prescribed medications (including HIV PrEP and post-exposure prophylaxis), despite most surveyed pharmacists viewing prescribing as part of their roles. Reported barriers to prescribing the study included inadequate staff, training, and physical infrastructure, alongside high administrative burden and the potential for pharmacist prescribing to harm pharmacist–physician relationships.(39)

Impacts on health-system costs

We identified one evidence synthesis (of medium quality) describing the impacts of public-health prescribing on health-system costs. The systematic review, exploring antimicrobial prescribing by community pharmacists, including for acute pharyngitis (sore throat) and cold sores, found that services were associated with decreased healthcare utilization.(9) A study included in the systematic review, comparing pharmacist treatment of strep throat with the standard of care, found pharmacist prescribing to be most cost-effective.(9) Although the systematic review reported the dollar amounts saved through select pharmacist prescribing initiatives, the initiatives in question did not include public-health prescribing.(9)

Prescription of opioid agonist treatment

Impacts on health outcomes

We identified one single study (of high relevance) describing the impacts of pharmacist OAT prescribing on patient health outcomes. Based in the U.S., this study found that in the first year of Clinical Pharmacist Practitioners (CPPs) prescribing buprenorphine medication treatment for opioid use disorder (B-MOUD), 86.9% of episodes of care involving a CPP had a 90-day B-MOUD retention.(40) This retention rate was markedly higher than the standard 30–50% previously observed within most care delivery settings, suggesting that CPP prescribing of buprenorphine may come with higher B-MOUD retention rates than most care delivery settings.(40)

Impacts on patient experience

We identified one evidence synthesis (of medium quality) and one single study (of high relevance) describing the impacts of pharmacist OAT prescribing on patient experience. Cumulatively, these studies suggest that pharmacist prescribing may enhance the accessibility of opioid agonist treatment by mitigating logistical barriers (e.g., limited hours of operation, inaccessible locations); however, prescribing pharmacists may be unevenly distributed across communities, potentially reinforcing inequities.(6; 40) The evidence synthesis concluded that pharmacist prescribing may increase the number of eligible patients receiving medication and the overall number of medicines dispensed.(6)

While the locations and operating hours of pharmacist prescribers generally enhanced medicines access, some of the included studies reported relatively low density of pharmacist prescribing services in areas with higher levels of marginalization.(6) The single study, based in the U.S., found that in the first year of CPPs prescribing B-MOUD, 4.8% of Veterans within the Veterans Health Administration had received a B-MOUD prescription from a CPP, suggesting that CPP prescribing of buprenorphine may increase the accessibility of B-MOUD.(40)

Impacts on provider experiences

None of the included evidence documents discussed the impact of pharmacist OAT prescribing on provider experiences.

Impacts on health-system costs

None of the included evidence documents discussed the impact of pharmacist OAT prescribing on health-system costs.

Key findings from jurisdictional scans

A jurisdictional scan comparing the scopes of practice for pharmacist prescribing was conducted across all Canadian provinces and territories, and across four international jurisdictions: Australia (AU), New Zealand (NZ), the United Kingdom (UK), and the United States (US). To accommodate the timeline of the rapid synthesis, the scan of United States experiences relied on sources summarizing information across states rather than state-specific sources. Internationally, some specific models underpin the expansion of pharmacists' scope of practice. For example, in the United States, collaborative practice agreements have been used in many states to create formal relationships between pharmacists and physicians that allow for an expanded scope of practice to prescribe for many minor ailments and other conditions.(41) While collaborative practice agreements are recognized across all 50 states, the specific conditions that they apply to differ between states.(10; 41)

For the assessment and treatment of minor ailments, British Columbia pharmacists' scope of practice exceeded other jurisdictions in the number of minor ailments covered.(42) Other minor ailments that could be prescribed for by pharmacists in other jurisdictions include:

- bacterial skin infections (Canada: SK; international: NZ)
- callouses and corns (Canada: NL)
- cough and cold (and other mild upper respiratory conditions) (Canada: PE, NL; international: US – Oregon, UK)
- diarrhea (non-infectious) (Canada: NS, PE, NL; international NZ)
- dry eyes (Canada: NS, PE, NL)
- ear infections (Canada: SK at designated practicing areas; international: AU, US UK)
- erectile dysfunction (Canada: SK; international: NZ)
- fever (international: NZ)
- folliculitis (Canada: SK)
- nasal congestion (Canada: PE)
- nausea (Canada: ON, QC, NS, PE, NL; international: AU)
- pediculosis (head lice) (Canada: QC; international: NZ, US – Idaho)
- premenstrual syndrome (Canada: AB)
- psoriasis (Canada: AB, MB)
- scabies (international: NZ)
- mild sleep disorders (Canada: NS, PE, NL)
- tick bites (Lyme disease prophylaxis) (Canada: SK, ON, QC, NB, NS; international: US – Idaho)
- vomiting in pregnancy (Canada: MB)
- vasomotor rhinitis (Canada: MB; international: AU)

- warts (excluding facial/genital) (Canada: NS, PE, NL).(43-57)

For contraception, pharmacist prescribing in B.C. and in all other provinces and territories of Canada included emergency contraception, but only B.C. included both hormonal and non-hormonal contraceptive prescription in its scope.(42; 44; 47; 50; 58) In addition, international jurisdictions including Australia and select states within the U.S. (e.g., New Mexico, Oregon) allow prescribing of emergency contraception, while hormonal contraception may be prescribed by pharmacists in New Zealand, the U.K. and the U.S. in the 34 states with collaborative pharmacy practice agreements, standing orders, statewide protocols, or prescriptive authority.(57; 59-61)

No jurisdictions included substantive features about prescribing for chronic conditions. Nova Scotia indicates that prescribing is allowed for some chronic conditions (e.g., heart disease, asthma, COPD, diabetes), which seems to be related to adjusting existing prescriptions or providing emergency prescriptions.(62) Similarly, in Prince Edward Island, limited supplies of drugs can be prescribed for chronic conditions in an emergency until patients are able to see a primary care provider or designated specialist.(50) In the United States, in states with collaborative pharmacy practice agreements (CPPAs), pharmacists can both initiate and discontinue drug therapies for select chronic conditions (e.g., arthritis, asthma, chronic obstructive pulmonary diseases, type 2 diabetes, obesity).(41; 54; 57) Additionally, in Idaho, pharmacists have authority to prescribe medications required to fill gaps within one's care (e.g. statins), and in New Mexico, pharmacists with additional credentials can prescribe for select chronic conditions.(54)

There were no examples of public-health prescribing (e.g., STIs and strep throat, HIV PrEP, COVID-19, hepatitis C), in B.C.'s scope, while Alberta and Quebec displayed the most numerous examples.(42; 43; 47; 63) In Alberta, pharmacists are able to prescribe chlamydia treatment, gonorrhea treatment, herpes simplex treatment, and pre-exposure prophylaxis for HIV.(43; 63) Meanwhile, in Quebec, pharmacists are able to prescribe treatment for COVID-19, traveller's diarrhea, HIV post-exposure prophylaxis, influenza treatment for those at risk, and altitude sickness for travellers.(47)

Pharmacist prescribing of opioid agonist treatment in Canada occurs under federal exemption and provincial frameworks.(64) In New Brunswick, pharmacists are authorized to prescribe, sell, provide, or transfer OAT (including buprenorphine/naloxone, methadone, and sustained-release oral morphine) under the Section 56(1) exemption.(65)

Next steps based on the identified evidence

The evidence base points to several areas that could help strengthen the implementation and impact of pharmacist prescribing, which include:

- clarifying and standardizing prescribing roles by distinguishing prescribing, adapting, and deprescribing within broader pharmacist interventions and improving documentation to strengthen implementation, improve training, and support more effective evaluation
- expanding pharmacist prescribing in areas with limited access to primary care (e.g., rural or remote communities, populations without family physicians) to improve access and equity, with tailored policy and funding strategies helping to scale these models effectively
- integrating pharmacist prescribing into broader chronic disease management strategies alongside efforts to ensure access to clinical information, communication with other providers, and structured follow-up (e.g., shared care protocols, continuity of care, lab access), which have been shown to optimize medication management
- addressing system-level barriers such as lack of payment models, limited access to electronic health records, and uneven collaboration with physicians through clearer regulations, stable funding, and supportive team environments may enable pharmacists to practice to their full scope

- strengthening monitoring of outcomes and costs by expanding data collection and reporting mechanisms, which have been highlighted as helping to assess long-term effects and guide future investment, especially given that many studies noted positive impacts on patient experience and system costs but had limited scope and duration.

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