Options for increasing access to quality community primary care

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Executive Summary

Canada is facing a primary care crisis, with millions of people lacking access to a regular primary care provider. Expanding the scope of practice for non-physician providers has emerged as a promising strategy to address health system gaps by enabling these professionals to safely perform tasks beyond their traditional scope of practice. This briefing report synthesizes the current global evidence on expanded scope of practice across nurse practitioners (NPs), pharmacists, and paramedics practicing in high-income countries.

Emerging insights from Ontario have found that expanding health professionals' scope of practice, allowing NPs to order more diagnostic imaging and pharmacists to administer influenza vaccines, changed care delivery, increased service use in community settings, and reduced avoidable physician visits and hospitalizations. Overall, these reforms improved access to care, particularly in rural and underserved areas, and generated substantial system value, including significant cost savings and a high return on investment.

A review of the global evidence underscores that NPs, pharmacists, and paramedics, can increase access to, and effective delivery of, critical elements of community-based care. The evidence shows consistent improvements in patient experience, including greater satisfaction, access, continuity, trust, and person-centred care, alongside benefits for population health through strengthened primary care, prevention, and early intervention, particularly for rural, underserved, and high-needs populations. Expanded scopes of practice were generally cost-neutral or cost-saving although economic evidence remains limited and mixed.

Together, these findings highlight potential options for increasing access to quality community primary care by leveraging non-physician providers. Importantly, there are ways of deploying these providers that go beyond the current set of policy instruments being used and a rapidly deepening literature on how best to deploy them.

1. **Expanding health professionals' scope of practice holds significant promise** for advancing health system performance, with indications of improved access, patient and provider experience, equity, and system efficiency, while potentially reducing avoidable acute care use and costs.
2. **Clear legislative and regulatory frameworks are essential** to legitimize expanded roles, reduce role ambiguity, and enable health professionals to practise to the full extent of their training and competencies.
3. **Successful and sustainable scope expansion depends on workforce support** including targeted education and training, adequate resourcing, organizational and interprofessional support, and protections that address workload, role clarity, and professional well-being.
4. **Further multidisciplinary research is needed** to better understand long-term patient and system outcomes, economic effects, and differential impacts across settings, particularly to clarify and quantify the emerging benefits of expanded scopes of practice for rural and underserved communities.

Introduction and Background

Canada is facing a significant primary care crisis, with millions of people lacking access and attachment to a regular primary care provider (1), with one in six Canadians without a regular family physician and less than half of Canadians reporting the ability to secure a same-day or next-day appointment with primary care provider when needed (2). These gaps have led to longer wait times, increased reliance on emergency departments for non-urgent care, and poorer management of chronic conditions like diabetes mellitus and hypertension (3). The problem is driven by a combination of interrelated challenges including persistent health workforce constraints, growing administrative demands on providers, as well as population growth and ageing (4). In response, many provinces and territories (PTs) have introduced a range of measures including team-based care, virtual care options, and payment reforms to retain providers (5–7). However, without more comprehensive systemic changes, primary care access will remain a challenge, leaving vulnerable and underserved communities most affected.

Amid Canada's growing primary care access crisis, attention has increasingly turned to optimizing the roles of other health professionals, including nurse practitioners (NPs)[1], pharmacists, and paramedics[2] to help fill critical gaps in primary care delivery. These professionals have substantial clinical expertise and community presence, yet their scopes of practice have historically been limited by regulatory, funding, and organizational barriers. Broadly, expanded scope of practice encompasses a range of scenarios and programs that support practitioners to safely apply skills and protocols for which they were not originally trained (8). Expanding the scope of these professionals to include activities such as prescribing, ordering diagnostic tests, and managing chronic diseases has emerged globally as a promising strategy to improve access, strengthen continuity of care, and bolster primary care workforce sustainability.

Across Canada, several PTs have begun piloting or implementing such models, while jurisdictions globally have longer histories of integrating expanded scope roles into primary care teams. Understanding the evidence on these initiatives, such as their impact on health system performance, is critical for informing policy decisions that could strengthen Canada’s primary care system and better meet patient needs.

[1] In this report, we use the term “Nurse Practitioners (NPs)” as an umbrella label to refer to all types of nurses with advanced training and certification beyond the Registered Nurse (RN) level, including Advanced Practice Nurses (APNs), Advance Nurse Practitioners (ANPs), Clinical Nurse Specialists (CNSs), and other related titles. All these roles are legally regulated and carry distinct clinical responsibilities. There also exists regional variation in these titles and their scope of practice, where NP can signify different competencies and expectations depending on the jurisdiction. For consistency, we use NPs throughout the review to encompass these advanced nursing roles, whilst acknowledging and appreciating the nuanced variation that exists across titles, scopes, and regulatory frameworks within these expanded nursing roles.

[2] In this report, we refer to paramedics as those professionals that work with ambulance services and emergency response services, who have traditionally delivered emergency care.

Emerging Insights from Ontario

Research exploring the effects of extended NP and pharmacist scope of practice changes in Canada have reported promising findings.

A 2023 study examined how changes to the scope of practice for nurse practitioners affected health care services and hospitalizations in Ontario (9). The main focus was a 2018 policy change that removed restrictions on the diagnostic imaging NPs could order. The study also considered earlier expansions to NP scope of practice to assess whether these changes had combined effects over time. Using health care use data for the Ontario population from 2005 to 2019, the study analyzed patterns in diagnostic imaging, prescribing, and hospitalizations. The findings suggest that the 2018 policy change led to an increase in diagnostic imaging ordered by nurse practitioners. The study finds effects on both imaging services that were directly affected by the policy and those that were not, as well as evidence that some care shifted between nurse practitioners and physicians. Changes were also observed in prescribing patterns for both groups, which may reflect differences in the types of patients they treated after the policy change. In addition, the study found a reduction in hospitalizations for conditions that could typically be treated in outpatient settings. Overall, the results suggest that expanding the scope of practice of existing health care providers can change how providers work together and deliver care. These changes may improve access to care and help reduce avoidable hospital use. As a result, scope of practice reforms may be a useful policy option for decision makers facing health workforce shortages and ongoing challenges in access to health care services.

A 2025 cost-benefit analysis explored a 2012 policy change in Ontario that allowed pharmacists to administer influenza vaccinations (10). Using provincial health data from 2010 to 2022, the study analyzed changes in influenza-related outcomes, including the number of people vaccinated, vaccination spending, and visits to physicians and hospitals. The study found a significant increase in influenza vaccinations following the policy change, with larger increases in rural areas. It also found meaningful reductions in physician and hospital visits related to influenza. Overall, the policy produced a return on investment of $31.14, meaning that for every dollar spent by the Ontario Ministry of Health yielded a return of $31.14 in addition to recovering the original cost. This estimate is conservative, as it does not include broader benefits such as improved health outcomes or reduced missed days of work or school. These findings suggest that expanding pharmacists' scope of practice can improve access to health care services while easing pressure on physicians and hospitals. The results also indicate that such policies may be especially effective in rural areas, where access to medical services is often more limited.

Umbrella Review of Global Literature

The following rapid review complements these insights by looking to the wider global evidence. Herein we examine and synthesize the current evidence and impacts of expanded scope of practice for NPs, pharmacists, and paramedics on health system performance.

Methods

We conducted a rapid umbrella review, also known as a review of reviews, to synthesize findings from existing systematic, scoping, and narrative reviews thereby providing a high-level summary of evidence across multiple domains (11–13). Both academic and grey literature sources were included to capture peer-reviewed studies, policy reports, and other relevant reviews of evidence.

To identify and synthesize the evidence, we executed a search strategy across three academic databases (Medline, Embase, CINAHL Plus) and Google (for grey literature). All search results were uploaded into Covidence software to facilitate screening and extraction. Each title and abstract (n = 546) was screened by at least two independent reviewers guided by the predefined inclusion and exclusion criteria. Discrepancies were discussed and resolved by a third reviewer who then confirmed all texts against inclusion and exclusion criteria in the full text review. See **Appendix A** for detailed methodology, including the search strategy, inclusion criteria, and PRISMA diagram.

A standardized and piloted data extraction template (**Appendix B**) was used to ensure consistent capture of scope activities, settings, jurisdictional context, outcomes, and other key features of included reviews. Extracted data were analyzed to identify central themes, variations across professions and jurisdictions, and illustrative case examples that demonstrated diverse models or notable impacts of expanded scope implementation. Findings were then integrated into a consolidated synthesis to highlight the state of the evidence on expanded scope of practice using the Quintuple Aim framework to categorize learnings across professions (14,15). The Quintuple Aim framework offers a conceptual guide for health system quality improvement towards five key aims of improving patient experience and population health, reducing costs and ensuring value, improving health care provider experience and care team well-being, as well as advancing health equity (16,17).

Limitations

This review has some limitations worth noting. First, umbrella reviews are designed to map the breadth of existing evidence, and their strength depends on the availability and quality of existing systematic reviews. As such, the findings offer a reflection of the state of the literature over a given time period. Second, none of the included studies in this review include meta-analyses, limiting our ability to comment on effectiveness and outcomes of expanded scope of practice in absolute quantitative terms. Further research, including meta-analyses and quality appraisals, are needed to generate pooled effect estimates across the professional groups reviewed. Third, the review was limited to English-language sources and high-income countries, which may limit our visibility of some international learnings. Finally, substantial international and intranational variation in the scope of practice, prescriptive authority, regulation, and role recognition, poses

a challenge for comparison and outcome evaluation of expanded scope of practice at scale, resulting in reviews with generally narrative findings.

Analytic Overview

This rapid umbrella review included 44 studies, of which 42 were academic articles and two were grey literature documents. Of these, 17 studies reported on expanded scope of practice for pharmacists, 16 for NPs, eight for paramedics, and three reported on mixed professional categories that included both nurses and pharmacists. The majority of reviews analyzed were scoping (n = 20) and systematic reviews (n = 11), followed by narrative and umbrella reviews (n = 5 for both), with one each rapid review, realist review, and review of qualitative studies. Most reviews included studies from multiple jurisdictions (n = 35), which synthesized evidence from high-income countries including Australia, Canada, Denmark, Finland, France, Ireland, Italy, the Netherlands, New Zealand, Qatar, Saudi Arabia, Spain, Switzerland, the United Kingdom, the United States, the United Arab Emirates, and Poland. Nine reviews were focused on evidence from a single country, with three reviews focused on evidence from Canada, three the United States, two the United Kingdom, and one Australia.

Overview of Expanded Scope of Practice by Professional Group

Expansion of scope of practice can occur in multiple ways, reflecting diverse professional, regulatory, and clinical contexts. Findings from the reviews revealed a breadth of applications of expanded scope of practice across professions. **Table 1** summarizes the main types of expanded practice by professional category. Below we examine these expansions in greater depth, drawing on insights from reviews focused on NPs (n=19, including mixed profession reviews), pharmacists (n=19 including mixed profession reviews), and paramedics (n=8).

Table 1. Examples of expanded scope of practice by professional group

Profession	Specific expansion of scope of practice
NPs	• **Advanced clinical assessment, diagnosis, and decision-making,** including prescribing (18–29) • **Treatment planning, clinical management** (18,22,28)**, and care coordination:** including for chronic diseases (e.g., diabetes, hypertension, other long-term illnesses) (19–21,30), infectious diseases (e.g., HIV/AIDS (19,31)), substance use disorder (24), reproductive and sexual health services (e.g., emergency contraception, abortion care, low-risk pregnancy management) (19,30,32), and transitions of care (e.g., referrals, admissions, discharges) (21,29,33,34) • **Preventive care, health promotion, and health education, including screenings, vaccinations, lifestyle interventions** (18,20,21,28,30)**, and condition-specific support** (**e.g., cardiovascular disease** (18–20,30)**, psychosocial** (18–20,22–25,27–29,31–33,35)) • **Community-based, home-based, and telehealth services** (24,32,36)
Pharmacists	• **Prescribing authority and comprehensive medication management:** adapting prescriptions, independent or collaborative prescribing (19,37–41) • **Clinical management of conditions, including medication administration and optimization** (e.g., for diabetes, hypertension, asthma, mental health and substance use disorder, and reproductive and sexual health services), including optimization of heart failure medications, screening of chronic kidney disease) (37,38,42–50) • **Preventive care, health promotion, and screening, including** point-of-care screening and testing (e.g., ordering and interpreting laboratory tests (38), and identification of diabetes and sexually transmitted diseases (37,43,48,50)
Paramedics	• **Clinical management and collaborative care:** - Chronic disease management and monitoring (51–53). - Integrated primary care delivery (e.g., scheduled visits, patient assessment, medication administration, vaccination) (52–55). - Mental health care in collaboration with psychiatric services (51,52). - Palliative and end of life care in collaboration with hospice care (51,55,56). • **Preventive care, health promotion and education, and social determinants of health assessment and response** (51–53,57)

Nurse practitioners

Across nineteen reviews, NPs were consistently shown to work well beyond traditional nursing roles, assuming advanced and autonomous clinical, preventive, and system-level responsibilities across primary care (19,22,27–29,31,34,36) and diverse mixed care settings, encompassing combinations of secondary and tertiary care, emergency and urgent care, hospital, community, home, long-term and residential care, rural and remote, public health, and academic settings (18,20,21,23–26,30,32,33,35). The most frequently reported expansion involved greater clinical autonomy, including advanced assessment, diagnosis, treatment decision-making, ordering diagnostics, and independent prescribing (19,22–24,26–28,31,33–35). Reviews also highlighted

NPs' involvement in the clinical management of chronic and infectious diseases (e.g., diabetes, hypertension, HIV/AIDS), opioid use disorder (OUD), and sexual health needs) (19,24,30,31,33). Preventative care, health promotion, and population health interventions such as cancer screening, vaccination, cardiovascular risk reduction, and weight management were also commonly reported (28,30,31,33). Two reviews focused specifically on patient-facing service delivery models including face-to-face consultations, home visits, telephone triage, and telehealth (32,36). While four described care coordination, psychosocial support, counselling, patient education, and multidisciplinary collaboration (19,26,33,35). Finally, one review reported on the legislative and policy-driven expansion of scope, particularly during the COVID-19 pandemic, enabling independent practice, telehealth billing, and homecare provision (32).

Pharmacists

Nineteen reviews demonstrated that pharmacists' expanded scope of practice extends well beyond dispensing, encompassing a broad set of clinical and medication-focused services delivered in community pharmacies (37,40,41,43,48,50,58,59), primary care (19,38,42,44,60), and mixed-care environments (30,39,45–47,49). The reviews addressed a wide range of health issues such as chronic diseases (37–39,42,43), mental health and substance use disorder (SUD) (45–47,49), infectious diseases and COVID-19 (41,58), pain management (n=1) (60), and general health issues or multiple issues (19,30,40,44,48,50,59). Within these settings, pharmacists participated in or led activities related to prescribing (40), comprehensive medication management (e.g., adjusting doses) (37), diagnostics (i.e., ordering and interpreting tests (38)), administration of vaccine (50) and long-acting injectable treatment for mental health and SUD (45,46), point-of-care screenings (43,48), and general health issues or multiple issues (19,30,40,44,48,50,59). Within these settings, pharmacists participated in or led activities related to prescribing (40), comprehensive medication management (e.g., adjusting doses) (37), diagnostics (i.e., ordering and interpreting tests) (38), administration of vaccines (50) and long-acting injectable treatment for mental health and SUD (45,46), and point-of-care screenings (43,48).

Paramedics

Eight reviews highlighted that paramedics' expanded scope of practice increasingly positions them as community-based primary care and home-care providers, rather than solely emergency responders (61). Across community, primary care, and mixed pre-hospital settings, all reviews reported on paramedics responding to array of needs, including chronic disease monitoring where paramedics coordinated with primary care for management of diabetes, hypertension and other chronic conditions (51–53); assessment for social determinants of health-related needs (e.g., food or housing insecurity) (55) supporting home-based palliative care including symptom management and crisis care in coordination with hospice services (51,55,56) providing mental health support by collaborating with psychiatric teams to reduce unnecessary hospitalizations (51,52) and providing scheduled primary care visits at home (55). Reviews also reported on their involvement in injury prevention, health promotion and education provided in homes and

communities (51–53,57) and other examples of primary care integration, such as patient assessments, medication administration (52,54), and vaccinations (53) at home. Emerging evidence from the United Kingdom underscored how changing demand on health and social care services, alongside evolving scope of practice supported by legislative changes, has resulted in a more generalist modern paramedic practice, making the profession well-suited to support primary care in communities (61).

Overview of the Evidence on Expanded Scope of Practice

General findings from included reviews underscored the benefits of expanded scope of practice across the Quintuple Aim framework for all reviewed professions. We have also highlighted in boxes selected examples of service delivery where evidence on expanded scope of practice emerged across professional groups. **Table 2** offers a summary of findings related to the Quintuple Aim by profession.

Enhanced patient experience

The aim of enhanced patient experience refers to making care more responsive, respectful, and personalized for patients and families, covering aspects like communication, dignity, and involvement in decisions (62). Across the three professions, expanded scopes of practice were associated with improved patient experience outcomes compared to standard models of care with traditional scopes of practice, reflected by high satisfaction, improved access and continuity of care, enhanced trust and engagement, and more person-centered service delivery. These benefits were most pronounced when professional roles were clearly defined, well integrated, and delivered in community or home-based settings.

For NPs, reviews highlighted positive patient experience outcomes, characterized by high levels of patient and family satisfaction, perceived quality of care, and enhanced engagement in care (26,31–33). Positive patient experience was, attributed to longer consultations, stronger therapeutic relationships, and the provision of holistic, person- and family-centered care, where NPs spend more time on education, counselling, and follow-up than physicians (18,19,35). Patients also reported improved access to care, including shorter wait times, faster medication access, and reduced travel time and costs, particularly in NP-led clinics and telehealth services (23,32,35). Across multiple settings, reviews of care delivered by NPs reported improved self-management, empowerment, confidence, and adherence to treatment, as well as better symptom control and quality of life, and (18,20). Several condition-specific programs led by NPs and delivered locally, such as colorectal cancer screening and medication-assisted treatment for opioid use disorder (see Box 2), were reported to have particularly strong patient satisfaction and reduced stigma (24,30). While findings were largely positive, some reviews identified limitations, including some mixed results in settings where nurses had variable training, patient preference for physicians in certain contexts, role confusion, and care delays related to prescribing or referral

restrictions (29,30). Cultural safety and appropriateness, particularly for Indigenous populations, remain under-studied in the existing literature (18).

Table 2. Summary of the Quintuple Aim showing positive findings (✔), mixed findings (〰) and challenges (✖) by profession.

Quintuple Aim dimension	Nurse practitioners	Pharmacists	Paramedics
Enhanced patient experience	✔ Higher patient and family satisfaction ✔ More holistic and person-centered care ✔ Improved continuity of care	✔ Higher patient satisfaction, trust, and convenience ✔ Improved accessibility, especially in community and private consultation settings ✔ Positive outcomes in specialized areas (e.g., sexual health, chronic disease screening)	✔ Higher patient satisfaction, trust, and engagement, particularly with home-based care, follow up, and community-embedded models ✔ Longer consultations and improved continuity of care ✔ Reduced unnecessary hospital visits and improved timeliness via telemedicine and on-scene care 〰 Occasional role confusion reported by patients when paramedic role is unclear
Improved population health	✔ Improved chronic disease screening and management ✔ Improved preventive care (screening, immunization, lifestyle modification) ✔ Improved mental health and SUD treatment ✓Reduced social stigma	✔ Improved chronic disease management and preventive care ✔ Increased vaccination and early detection rates	✔ Supports chronic disease management, preventive care, and health literacy ✔ Expanded primary care reach for lower-acuity, urgent, and complex cases ✔ Reduced out-of-hospital mortality in rural and underserved populations 〰 Evidence base remains variable
Better value	〰 Mixed evidence on overall health care expenditures ✔ Well-established as cost-effective delivery of medication-assisted treatment for opioid use disorder ✔ Lower visit prices and reduced total and Medicaid spending in retail clinics and primary care settings in FPA states in the US 〰 Robust economic evaluations are limited	✔ Cost effective pharmacist-led interventions, including reduced hospitalizations, improved medication adherence, generic substitution, and optimized medication management 〰 Limited long-term, standardized economic evaluations	✔ Reduced emergency department visits, hospital admissions, and ambulance transports 〰 Cost-effective evidence is limited and inconsistent; inefficiencies may reduce value

Improved health care provider experience and care team well-being	✔ Generally high professional satisfaction ✔ Increased confidence and positive attitudes toward complex care with education, mentoring, and exposure ✘ High workload, role stress, professional isolation, self-doubt, and resistance from colleagues/physicians	✔ Positive job satisfaction and increased professional recognition when integrated into multidisciplinary teams ✘ Increased workload, stress, burnout, and complex reimbursement processes	✔ Increased autonomy, role satisfaction, and skill utilization ✔ Improved work-life balance when roles clearly defined and supported ✘ Burnout, fatigue, compassion fatigue, and stress reported, particularly in rural and high-demand contexts ✘ Reduced satisfaction due to poorly defined roles, supervision gaps and inconsistent program delivery
Advancing health equity	✔ Increase access, continuity, and reach of primary care, particularly for underserved, rural, and high-need populations 〰 Equity dimensions of care can be constrained by uneven legislation, funding, and scope-of-practice regulations 〰 Equity dimensions of care are not consistently measured ✘ Technology-enabled care can carry risks of exclusion	✔ Improved access for underserved, rural, and uninsured populations through community-embedded and accessible services	✔ Improved access for rural, remote, underserved, and vulnerable populations. ✔ Supports culturally and locally responsive care and improves access to palliative care and mental health care in communities ✘ Programs effectiveness may be limited by inconsistent program delivery or poorly defined roles

Pharmacists delivering care under an expanded scope of practice reported similar patient benefits as NPs. Patients consistently reported high satisfaction, citing improved accessibility, convenience, and trust, particularly when services were delivered in community settings, such as community pharmacies, or private consultation spaces (19,40,41,44,48,50,58). For example, a scoping review of community pharmacy services in the United Kingdom and Ireland found evidence that patients trust pharmacists in providing sexual health services, such as chlamydia testing and emergency contraceptive services, where strong patient satisfaction was attributed short waiting times and not needing an appointment, privacy, and the perceived approachability of pharmacists (48).

For paramedics, community and home-based models also reported positive patient experience outcomes, associated with high levels of satisfaction, trust, and perceived quality of care (52–54,57,61). Reviews highlighted improved access to timely care, especially in rural and underserved communities, reduced travel requirements, and decreased reliance on emergency departments for low-acuity needs (53,55,57). Patients engaging with paramedics for care reported longer consultation times, continuity of care, and the development of trust and rapport with paramedics, who were often viewed as advocates helping them navigate health and social services (51,55). For example, a rapid review focusing on paramedicine in Canada reported a 98% patient satisfaction rate within community paramedicine palliative care models, with patients and caregivers valuing the ability to remain at home, experience rapid symptom relief, and maintain dignity, autonomy, and peace of mind while avoiding distressing hospital transfers (56). Similarly, reviews globally and in the United Kingdom found that while some patients initially experienced confusion or frustration when expecting to see a general practitioner, satisfaction increased substantially once the paramedic role was clearly explained by a trusted source, underscoring the importance of role clarity and integration in optimizing patient experience (54,61).

Box 1. Providing substance use care in communities through expanded scope of practice for NPs and pharmacists

Expanded scope of practice for APNs and pharmacists has shown promise in improved access, quality, and continuity of SUD and OUD care. Evidence from international and US-based reviews indicates that NPs with full or expanded prescribing authority are more likely to initiate, prescribe, and sustain medications for OUD, reducing delays in treatment and overdose deaths, and expanding services in primary care, rural, and underserved settings (24,27).

In addition to providing clinical care that resulted in higher patient stability, NPs were pivotal in reducing social stigma with this locally delivered care. Banka-Cullen et al established how medication-assisted OUD treatment within NPs' expanded scope of practice was cost-effective, as it reduced system-level costs from untreated OUD by NPs prescribing and by shifting care from hospital and in-patient to community and primary care (24). Further savings were sourced from reduced overdoses and complications related to opiate use (24).

Additionally, expanded pharmacist roles, particularly within Federally Qualified Health Centers in the US, enhance OUD care through comprehensive medication management, collaborative practice agreements, patient counseling, and monitoring, supporting integrated, team-based models essential for addressing the complexity of SUDs (44).

Improved population health

Improving population health focuses on the health outcomes and well-being of entire communities, often by addressing social determinants of health. Expanded scopes of practice for these professions were found to positively contribute to population health by strengthening chronic disease management, prevention, and early detection, extending the reach of primary care, and improving access and health outcomes for high-needs, rural, remote, and underserved populations.

Reviews of NP-leading prescription models demonstrate meaningful population health benefits through improved prevention, screening, and chronic disease management. Evidence from reviews demonstrates enhanced cancer and cardiovascular risk screening, better control of conditions such as diabetes, asthma, and hypertension, improved functional outcomes in older adults, and reductions in hospitalizations and mortality across multiple care settings (18,26). Reviews found that NPs also contribute to improved outcomes in emergency care, oncology, mental health, and geriatric care, with a strong emphasis on prevention, health promotion, and lifestyle modification, including nurse-led obesity prevention interventions and increased vaccination uptake where NPs or pharmacists have immunization authority (28,30,31). At a population level, NP-led care was reported to improve access to preventive and ongoing services, particularly for individuals without regular general practitioner access, in rural and underserved communities, and in contexts of physician shortages (29,33).

Pharmacists expanded scope was found to positively contribute to population health, particularly in chronic disease prevention and management. Ali et al.'s (2024) scoping review found that pharmacist involvement in medication management and patient monitoring led to clinically meaningful improvements in hemoglobin A1C, blood pressure, and triglycerides in patients with type 2 diabetes, and that pharmacist-delivered point-of-care testing for type 2 diabetes increased rates of diabetes identification and diagnosis (37). Maier et al.'s (2023) overview of reviews found that pharmacists with greater clinical autonomy achieved higher rates of influenza vaccination uptake (see Box 3) and improved smoking abstinence rated through pharmacist-led cessation interventions compared to usual or no care. Finally, Oskroba et al.'s systematic review found that pharmacists involved in chronic kidney disease screening improved rates of early detection

through point-of-care testing, protocol-driven referral to physicians for treatment, and patient awareness and education around prevention (43).

Paramedic roles were reported to similarly contribute to population health by providing proactive chronic disease management, preventive care, and improved access for high-needs and underserved populations (51–54,57,61). These models extend the reach of primary care by enabling safe assessment and management of lower-acuity and complex community cases in the community, reducing pressure on emergency departments, hospitals, and ambulance services while strengthening care coordination and follow-up (54,56,61). Population-level benefits were most evident in rural, remote, and Indigenous communities, where expanded paramedic roles helped address disparities in access and mitigated higher out-of-hospital mortality through timely, community-based interventions (53,57). For example, reviews found that tailored, community-specific preventive initiatives, and public health education, were particularly effective in rural and remote settings, underscoring the adaptability of paramedics as contributors to population health promotion and disease prevention (24,57).

Box 2. Enhancing population health outcomes through immunization and care of vaccine-preventable diseases

The expanded scope of practice for NPs, pharmacists, and paramedics has the potential to enhance vaccination and immunization efforts, particularly in community and underserved settings.

Pharmacists with the authority to administer vaccines have been shown to improve influenza vaccination rates and increase access for low-resource populations, thereby reducing health inequities (30,50). During the COVID-19 pandemic, pharmacists played a critical public health role not only in vaccination delivery but also in maintaining continuity of chronic disease care (41).

NPs routinely prescribe and administer immunizations as part of primary health care, with evidence showing that nurse practitioner-led clinics can achieve vaccination rates above national averages, especially among older adults, while also addressing immunization gaps through targeted communication strategies (28). Paramedics in rural and remote areas have similarly expanded their role beyond emergency care to include vaccination delivery, increasing access in regions with limited health care resources (53).

Collectively, these skill-mix changes enhance preventive care, improve population health outcomes, and address disparities in immunization coverage.

Better value

Providing better value aims to lower health care expenses while maintaining or improving quality, making care more sustainable. Expanded scopes of practice for these professions were generally associated with cost-neutral or cost-saving care through reduced acute care utilization, improved

efficiency, and lower service delivery costs, though the overall economic evidence remains uneven and highlights the need for more robust and standardized cost-effectiveness evaluations.

Cost-effectiveness of nurse–led care was reported in multiple reviews. Horton et al. and Kilpatrick et al. found that NP care was associated with lower emergency department use, fewer hospital readmissions, and reduced inpatient, outpatient, pharmacy, and specialty costs compared to physician care (18,34). Nurse prescribing was reported to improve medication access and efficiency, particularly in settings with physician shortages (23). Some reviews also noted lower consultation costs, shorter waiting times, and reduced chronic disease management costs (21,26). Cost benefits appeared strongest in jurisdictions with full or autonomous scope of practice, where NPs were able to practice to the top of their license (18,21). While several reviews described NP-led care as cost-neutral or cost-saving overall, with improved cost-effectiveness and gains in quality-adjusted life years (QALYs), although findings at the individual study level were mixed and formal economic evaluations remain limited (18,20,31).

Cost effectiveness of pharmacist-led interventions emerged in several of the included reviews. Ali et al.'s (2024) scoping review highlighted a program in Italy where pharmacists delivered a medicine use review intervention for patients with asthma. The program was not only effective in improving adherence to medication but also cost effective, leading Italy to scale and fund the program across the country (37). Other reviews note that pharmacist-led interventions were more cost effective compared to physician-provided services (48), and decreased rates of hospitalization and rehospitalization (19,37), reducing health care utilization and overall costs. Johnson et al.'s (2025) scoping review of pharmacist prescribing in cancer services found that cost savings were also realized through generic substitution of medications. However, several reviews noted that more longer-term and robust findings related to cost effectiveness are missing from the evidence (38,40,41,58–60).

Evidence suggests that community paramedicine and expanded paramedic roles may generate cost savings and improved system value primarily through reduced reliance on acute care services, including fewer emergency department visits, hospital admissions, and readmissions (See Box 4) (51–53,56). These efficiencies are largely driven by non-transport care pathways, proactive follow-up, and the delivery of care in home and community settings, enabling more appropriate use of health care resources and alleviating pressure on overstretched emergency and hospital systems. However, reviews underscore that the economic evidence base remains underdeveloped, with several reviews noting that cost-effectiveness was either not a primary focus or insufficiently quantified despite indications of potential value (54,57,61). For example, a rapid review of Canadian jurisdictions found that home-based community paramedicine in palliative care was substantially less costly than hospital-based care and represented a high value-for-money model when implemented at scale through reduced readmissions and emergency department use (56). While a realist review from the United Kingdom cautioned that inefficient deployment models, including role duplication and supervision-intensive arrangements, may diminish economic benefits despite potential savings from reduced general practitioner workload and improved access (54).

Box 3. Providing mental health care in communities through expanded scope of practice for pharmacists and paramedics

Pharmacists and paramedics are increasingly stepping beyond their traditional roles to provide essential mental health care directly in community settings, helping fill critical gaps in access and reduce unnecessary hospitalizations thereby reducing health system costs. Emerging evidence suggests that the expanded roles of pharmacists and paramedics in mental health care not only improve access and clinical outcomes but also have the potential to enhance cost-effectiveness within health systems.

Pharmacist-led interventions, such as medication reviews, therapy optimization, and patient counseling, can prevent crises, improve adherence, and reduce costly hospitalizations, indicating potential cost savings and value in community mental health care (44,49,60). Similarly, community paramedicine models that integrate paramedics into proactive mental health support and crisis diversion have been associated with reduced emergency department visits and hospital readmissions, outcomes that are likely to translate into system-level efficiencies and reduced health care costs (51,52).

However, more evidence is needed to better understand and quantify the cost-savings of these promising efforts to bolster mental health care in communities.

Improved health care provider experience and care team well-being

The Quintuple Aims underscores that it is essential to support health care providers' work-life balance, prevent burnout, and improve job satisfaction. Across nursing, pharmacy, and paramedicine, expanded scopes of practice are associated with greater professional autonomy, workforce flexibility, and role satisfaction, alongside improved system capacity and care quality, but these benefits are contingent on supportive regulatory environments, clear role definition, adequate training and integration, and attention to workload, burnout, and interprofessional tensions that can undermine provider well-being.

Expanded roles and NP-led models explored in reviews were associated with high professional satisfaction, enhanced autonomy, and leadership opportunities for nurses. Evidence indicates that nurses value nurse-led clinics for the opportunity to develop skills, extend knowledge, and exercise clinical and prescriptive autonomy, particularly where full practice authority exists (21,31,35). Reviews also highlighted how NPs also contribute to education and training of colleagues, act as knowledge brokers, and support interprofessional collaboration, which strengthens care quality and workforce capacity (20,25,32). Role expansion supports task sharing, reduces physician workload, and can improve retention and career progression for nurses (26,33). Despite these benefits, challenges persist, as reviews noted high workload, role stress, professional isolation, and conflict with other health care providers, particularly in restrictive practice environments or rural settings (18,24,29). Confidence and satisfaction were found to improve with experience, mentoring, and supportive training, yet barriers such as resistance from physicians, complex patient populations, and unclear role boundaries continue to limit full realization of nurse autonomy and workforce well-being settings (18,24,29).

The included reviews discussed mixed findings related to provider experience for pharmacists. Johnson et al.'s (2025) scoping review found that pharmacists participating in prescribing in cancer services experienced a positive impact on job satisfaction and felt recognized as vital members of the care team. On the other hand, Sears et al. noted that the rapid expansion of pharmacist roles during the pandemic led to an increase in workload, stress, and burnout (41). Other reviews noted challenges such as complex reimbursement processes and policies which negatively affected provider experience (45,46,48).

Expanded paramedic roles and community paramedicine models in the included reviews were found to increase workforce flexibility, professional autonomy, and role satisfaction, while also contributing to reduced pressure on emergency departments and primary care services (51,54,56,57,61). Reviews found that paramedics frequently reported improved job satisfaction when practicing within clearly defined, autonomous roles supported by appropriate training, supervision, and integration into multidisciplinary teams, allowing for better use of their skill set beyond traditional emergency response (54,56). Positive experiences were also linked to enhanced work–life balance, opportunities for professional development, and stronger community integration, particularly in rural settings where expanded roles made more effective use of paramedic downtime (57). However, challenges related to role clarity, supervision, and workload were consistently identified across reviews. Indeed, Eaton et al. noted that blurred professional boundaries and supervision-heavy or poorly defined roles could lead to dissatisfaction among both paramedics and general practitioners, contributing to professional isolation and, in some cases, a return to traditional emergency medical services roles (54). Moreover, two reviews highlighted evidence of ongoing risks of burnout, fatigue, stress, and compassion fatigue, particularly among rural paramedics, driven by long hours, traumatic exposures, professional isolation, and increasing role complexity (52,53).

Advancing health equity

Health equity is essential to the delivery of high-quality care and entails efforts to eliminate disparities in health care access and outcomes to ensure fair and just treatment for all, especially underserved groups. Across the three professions, expanded scopes of practice were associated with improved health equity by increasing access to care for rural, remote, underserved, and marginalized populations, reducing geographic and structural barriers, and enabling more locally responsive, community-embedded models of care.

Health equity is seen as a central strength of care delivered by NPs with the potential to improve health equity by increasing access, continuity, and reach of primary care, particularly for underserved, rural, and high-need populations (18,27,29). Evidence shows that NPs are more likely than physicians to work in rural areas, serve state-funded or low-income patients, and provide community- or outreach-based care that extends specialist services beyond hospitals, improving access for marginalized and complex patient groups (20,21,24,28). However, equity gains are not consistently measured and are constrained by uneven legislation, funding, and scope-of-practice regulations (18,29). Technology-enabled services using NPs can further support

equity but carry risks of digital exclusion for some groups (18). Overall, care delivered by NPs shows promise to enhance access and reach for hard-to-reach populations, yet systematic evaluation of equity outcomes remains limited (19,20).

For pharmacists, the included reviews discussed health equity in the form of access to health services for various populations. Several reviews discussed how pharmacists are considered to be highly accessible health care providers and how expanded scope of practice can help bring health care services to underserved, rural, and uninsured populations (40,44,49,58).

Reviews of expanded paramedic roles note their contribution to improved health equity by enhancing access to care for rural, remote, and underserved populations and helping to address longstanding geographic and service delivery inequities (51–54,57,61). These models help support access to care by delivering health services directly to patients' homes and communities, reducing barriers related to distance, transportation, and mobility, particularly for older adults and individuals with chronic or complex needs (52,61). Equity benefits were especially evident in reviews of evidence on community-based palliative and home-visiting programs, which improved access to end-of-life care in regions where such services were previously limited or unavailable (56). A review of paramedic involvement in health education in Australia further highlighted the capacity of community paramedicine to support culturally and locally responsive care through tailored service models that reflect community needs, reinforcing trust and engagement in marginalized populations (57).

Considerations for Expanded Scope of Practice

Across professions, reviews emphasize that the benefits and improvements seen with expanded scope of practice are underpinned by regulatory and legislative clarity, adequate investment in education and training, as well as workforce support.

Regulatory and legislative clarity

Regulatory and legislative clarity is a critical consideration when expanding scope of practice for NPs, pharmacists, and paramedics, as unclear or fragmented frameworks undermine legitimacy, confidence, and implementation.

For nurses, legislative and regulatory changes, like full practice authority for diagnosis and treatment in certain jurisdictions, and temporary or permanent reforms during the COVID-19 pandemic, allowed for NPs to have a clearly defined expansion of scope of practice globally, characterized by the assumption of responsibilities traditionally reserved for physicians (21,32). Yet, inconsistent and restrictive regulation, such as variable prescribing, referral, and billing authority, lack of standardized role definitions, and mandated physician oversight, intensifies role ambiguity, fuels interprofessional resistance, and creates legal uncertainty (20,24,32), while supportive legislation that enables full or expanded expanding scope of practice, autonomous

prescribing, title protection, and regulatory recognition legitimizes roles, supports collaboration, and sustains implementation through aligned policy and reimbursement (18,21,24–27,33).

Similarly, for pharmacists, regulatory frameworks can legitimize and standardize expanded scope of practice. However, the same can act as barriers when unclear or inconsistent, with poorly defined reimbursement models constraining uptake and clear remuneration enabling implementation alongside operational constraints such as time, staffing, infrastructure, and resources (19,37,40,41,43–50,59).

For paramedics, wide jurisdictional variation, lack of standardized national and international scope of practice, and regulatory limitations restrict expanded and primary care roles, highlighting the need for policy reform to legitimize preventive and extended practices with clear accountability and professional recognition, supported by integrated care pathways, multidisciplinary governance, stable funding and policy support across settings, and clear articulation of roles and responsibilities (51,52,54,56,57).

Investment in education and training

Education and training are central to the successful implementation of expanded scopes of practice for NPs, pharmacists, and paramedics, as inadequate preparation can limit confidence, competence, and acceptance, while targeted education enables safe and effective role expansion.

For nurses, inconsistent education standards, limited postgraduate pathways, and insufficient continuing professional development contribute to anxiety, resistance, and low confidence (25,29,31,33). On the other hand, harmonized advanced education, recognized credentials, and structured professional development build competence, support workforce mobility, and foster trust among colleagues (25,29,31,33). These gains are reinforced by leadership, infrastructure, clinical supervision, administrative support, interdisciplinary team integration, and peer learning, which reduce hierarchy, clarify responsibilities, and enable fuller utilization of expanded roles (19,24,29,30,32).

For pharmacists, specialized training, ongoing professional development, and access to evidence-based guidelines are essential to ensure competence and confidence in expanded roles, while limited awareness among the public and other health care providers can further hinder implementation, underscoring the need for education beyond the profession itself (19,30,37,38,44,46,47,49,50).

For paramedics, education and training gaps persist due to curricula focused on traditional emergency response, inconsistent and variable advanced training pathways across regions, limited access to continuing professional development, and insufficient formal training, tools, and resources. This highlights the need for standardized undergraduate and postgraduate education in areas such as primary care, chronic disease management, mental health,

telemedicine, palliative care, and expanded clinical skills including pharmacotherapy and diagnostics (19,30,37,38,44,46,47,49,50).

Workforce support

Workforce support is a foundational enabler of effective expanded scopes of practice for nurses, pharmacists, and paramedics, as insufficient support exacerbates strain and limits role sustainability, while robust organizational and interprofessional support enables successful integration into care delivery.

For NPs, high workloads, inadequate compensation, weak incentives, and insufficient infrastructure, including limited physical space, information technology, administrative support, and access to patient records, constrain the effective use of expanded roles and contribute to workforce stress and underutilization (18–20,24,26,29).

For pharmacists, successful role expansion depends heavily on professional and interprofessional support, with evidence highlighting the importance of collaboration within health care teams, collaborative practice agreements, and physician buy-in to legitimize roles, facilitate shared care, and enable service delivery (19,37,39,40,44,46,48–50).

For paramedics, workforce sustainability is challenged by burnout and mental health pressures and limited organizational support, underscoring the need for multidisciplinary team integration, clearer role frameworks from professional bodies, clinical supervision, and structured support for transition into expanded roles alongside integrated care pathways, multidisciplinary governance, and broader stakeholder support to embed paramedics effectively within primary care and other settings (51,53,54,56,61).

Areas for future research

Across NPs, pharmacists, and paramedics, there are consistent gaps in the evidence base that point to priority areas for future research to better inform expanded scopes of practice and better optimize health system benefits of expanded scopes.

Existing studies are limited in their exploration of workforce perspectives across different contexts. While evidence points to important benefits for rural and underserved settings, deeper and more systematic exploration is needed of the ways expanded scope of practice impacts these communities and the unique implementation needs therein (53). There is also a notable lack of longitudinal evidence examining long-term patient outcomes, health system impacts, and sustainability over time (51,52), alongside the need for overall evaluation evidence to guide policy and practice decisions (57).

Robust economic evaluations assessing cost-effectiveness remain scarce (52), as do comparative cross-jurisdictional studies examining how different regulatory models and scopes of practice influence implementation and outcomes (52). Addressing these gaps through well-designed

longitudinal, economic, and comparative studies would strengthen the evidence base and support more informed, equitable, and sustainable scope of practice expansion across health professions.

Considerations for the Canadian Context

In the Canadian context, advancing expanded scopes of practice for NPs, pharmacists, and paramedics will require coordinated federal, provincial, and territorial action to ensure clear and coherent legislative and regulatory frameworks that legitimize expanded roles, reduce role ambiguity, and enable health professionals to practice to the full extent of their education and competencies. Efforts to expand scope should also be accompanied by intentional workforce planning, including increasing the number of health care professionals trained in these disciplines and adapting undergraduate and postgraduate education to prepare learners for expanded responsibilities. Canada can further accelerate progress by prioritizing and scaling innovative initiatives already underway across provinces and territories, building on what is working well rather than creating parallel structures. Finally, as health system transformation advances, clear and proactive communication with the public will be important to ensure Canadians understand what services are available to them and how to access expanded-scope providers as part of their care.

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Appendix A. Umbrella Review: Detailed Methodology

We performed a rapid umbrella review that consisted of a targeted search of academic literature in three databases (OVID Medline, OVID Embase, and EBSCO CINAHL Plus) using a combination of database-specific syntax and key words related to three main concept blocks: population, intervention, and document type (Table A1). These three concepts were combined based on Boolean logic, and the three databases were searched using the following strategy: Population AND Intervention AND Document type. Two additional parameters were added to the searches (limit results to English and limit results to articles published in the last 5 years). The three databases were searched on November 18, 2025.

Table A1. Concept blocks and general search terms

Population (professional groups)	Intervention (expanded scope)	Document type
• (nurse practitioner* OR advanced practice nurs*) • (pharmacist* OR clinical pharmac* OR community pharmac*) • (paramedic* OR community paramedic* OR paramedical personnel OR emergency medical services)	(scope of practice OR expanded scope of practice OR advanced scope of practice OR role expansion OR extended role* OR expanded role* OR advanced practice OR task shift* OR task substitut*)	(systematic review OR meta-analysis OR scoping review OR narrative review OR umbrella review OR review of reviews OR overview of reviews OR rapid review OR evidence synthesis)

A search was also conducted in Google to identify relevant grey literature in two steps. First, the following three set of search terms were used and the first 50 results were screened:

1. "Review of Expanded Scope of Practice for Nurse Practitioners"
2. "Review of Expanded Scope of Practice for Pharmacists"
3. "Review of Expanded Scope of Practice for Paramedics"

Second, the following terms were added to each of previously mentioned search terms and the first 20 results were screened for each search term combination:

1. "…World Health Organization"
2. "…OCED"
3. "…World Bank"

The Google search was conducted on November 20, 2025.

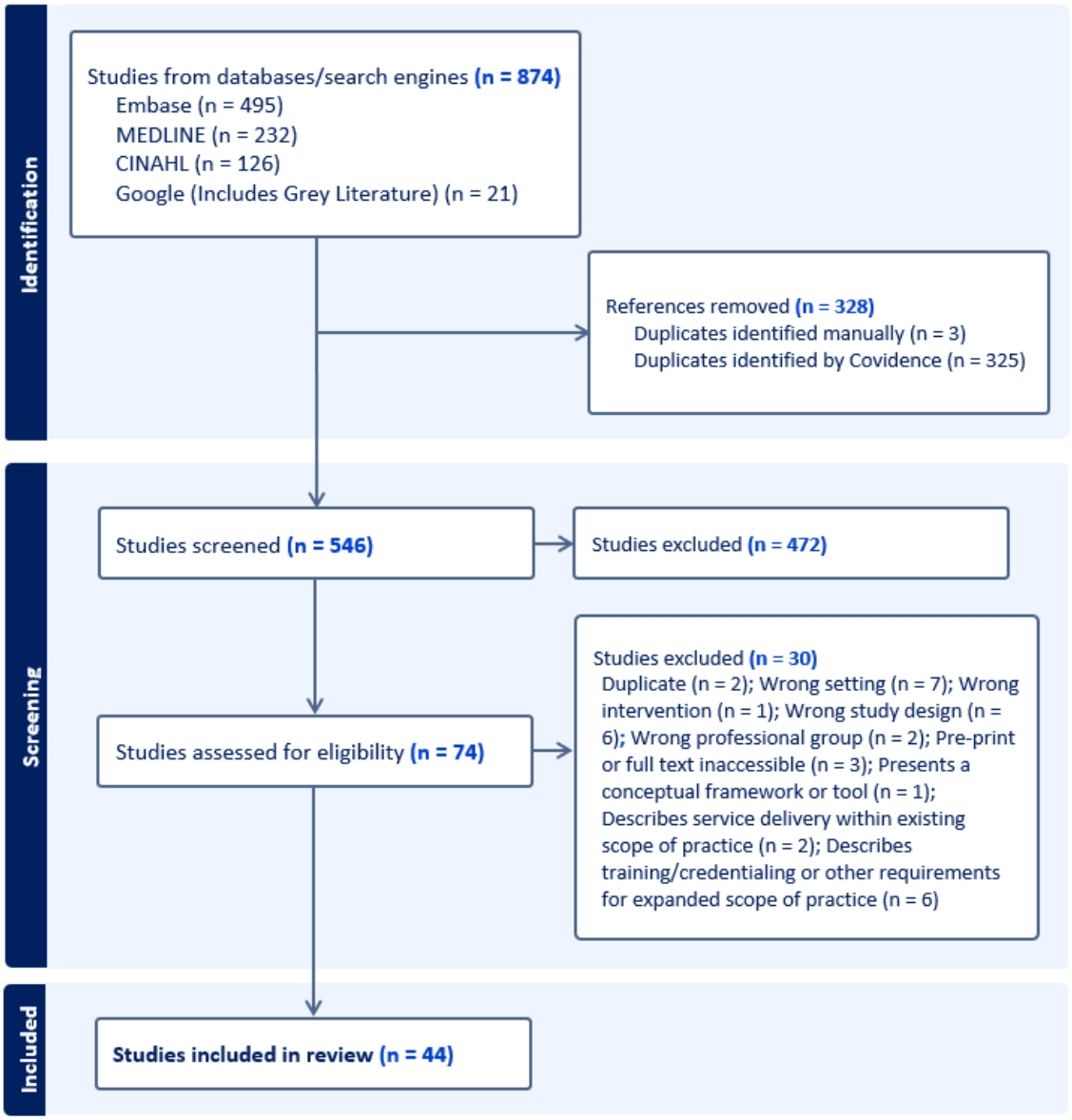
Search results from the academic and grey literature were uploaded to Covidence for relevance review (screening) and data extraction. Screening occurred in two steps: title and abstract, and full-text review, based on inclusion and exclusion criteria outlined in Table A2. In both stages, sources were reviewed by two independent screeners per article (divided among three team

members). Any discrepancies were resolved by a fourth reviewer (VH). See Figure A1 for the PRISMA diagram.

Table A2. Inclusion and exclusion criteria

Inclusion	Exclusion
• Time period: 5 years (2020 to 2025) • Language: English • Jurisdictions: high-income countries • Study types: systematic reviews, meta-analyses, umbrella reviews, scoping reviews, rapid reviews, and narrative reviews that synthesize empirical evidence • Professional focus: nurse practitioners, pharmacists, paramedics • Intervention focus: expanded scope of practice (formally recognized changes) and/or the impacts of expanded scope of practice • Practice settings: primary care, community care • Conceptual focus: Examination of formally expanded roles beyond traditional boundaries, including: prescribing authority, diagnostic testing, disease management, preventive care, and other extended responsibilities; emphasis on practice and delivery of care to patients and populations. • Jurisdictional scope: Includes high-income countries	• Study types: protocols, commentaries, editorials, letters or opinion pieces, or empirical studies that are not a systematic or structured synthesis of evidence. • Focus exclusively on hospital or specialist, or long-term care settings unrelated to primary care or community-based settings. • Examine traditional practice without elements of expanded or extended scope. • Focus solely on trainees, students, or educational interventions rather than clinical practice. • Focus on other healthcare professionals (e.g., physicians, dentists, physiotherapists, dietitians/nutritionists) • Focus solely on team-based care and do not examine the specific expansion of scope of practice for one of the named professions. • Focus on expansion of leadership, administrative, and/or leadership roles • Focus on healthcare practitioners practicing in a new setting or health area, rather than formal expansion of scope of practice. • Focus only on low- and middle-income countries

Figure A1. PRISMA Diagram


Identification
Studies from databases/search engines (n = 874)
Embase (n = 495)
MEDLINE (n = 232)
CINAHL (n = 126)
Google (Includes Grey Literature) (n = 21)
References removed (n = 328)
Duplicates identified manually (n = 3)
Duplicates identified by Covidence (n = 325)
Screening
Studies screened (n = 546)
Studies excluded (n = 472)
Studies assessed for eligibility (n = 74)
Studies excluded (n = 30)
Duplicate (n = 2); Wrong setting (n = 7); Wrong intervention (n = 1); Wrong study design (n = 6); Wrong professional group (n = 2); Pre-print or full text inaccessible (n = 3); Presents a conceptual framework or tool (n = 1); Describes service delivery within existing scope of practice (n = 2); Describes training/credentialing or other requirements for expanded scope of practice (n = 6)
Included
Studies included in review (n = 44)

Appendix B. Data Extraction Template

Part 1: Characteristics of included studies

Last Name of First Author / Organization	Year of Publication	Title	Review Type	Number of Articles Included	Jurisdictions / Countries of Focus	Professional Group Focus	Practice Setting	Health Issue(s)	Specific Expansion of Scope of Practice (SOP)
E.g., World Health Organization	*2022*		*Scoping review*	*27*	*European countries*	*Pharmacists*	*Community pharmacies*	*Vaccination*	*Administration of vaccines*

Part 2: Findings

Overall findings (general and those relevant to Quintuple Aim)	Barriers to expanding SOP	Enablers / facilitators to expanding SOP	Illustrative / Innovative Examples or Case Studies	Other Notes (e.g., gaps in research)
E.g., positive and negative findings	*Regulatory limitations, funding limitations*	*Clear legislative frameworks/roles*		