

Research Report

Toward an Optimal Future: Priorities for Action



2016 PHARMACY THOUGHT LEADERSHIP SUMMIT

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Overview

INTRODUCTION

The pharmacy profession in Canada, and around the world, has undergone many changes, with pharmacists and pharmacy technicians now working in advanced roles that have been found to provide value to other health professionals, patients, and the broader healthcare system.

The pharmacists' role continues to evolve away from a focus on dispensing medications to one emphasizing the provision of patient-centred, outcomes-focused, care. In essence, the emphasis for the pharmacy profession is increasingly on knowledge of the product, direct interaction with the patient and treatment, as opposed to dispensing and the preparation of the product. Backed by legislative and regulatory changes, pharmacists are providing direct care to patients, including chronic disease management and other new services such as immunizations. At the same time, the role of the pharmacy technician is advancing in many ways to support the changing role of the pharmacist.

Despite this progress and the championing of advanced practice in Canada, many pharmacy professionals still lag behind in terms of scope of practice and provision of patient care services. It is clear that unique barriers exist in different settings and that uptake of advanced practice varies greatly between jurisdictions. The pharmacy profession largely remains an untapped resource to help address the healthcare needs of Canadians and the overall health system needs.

PHARMACY THOUGHT LEADERSHIP INITIATIVE

The purpose of this report is to present the results of research sponsored by the Canadian Pharmacists Association (CPhA) and undertaken from April to May 2016. This Report is intended to support CPhA's Pharmacy Thought Leadership Initiative and provide a foundation for idea generation, dialogue and discussion at a Summit on June 23-24, 2016 (in conjunction with the 2016 Canadian Pharmacists Conference). The Summit will seek to identify, agree upon and communicate goals, actions and responsibilities to move the profession forward and enable optimal scopes and practices for the pharmacy profession in Canada.

METHODOLOGY

Definitions:

This research is focused on the pharmacy profession in Canada, which includes both licensed pharmacists and pharmacy technicians. A *licensed pharmacist* is a person who is professionally qualified to prepare, sometimes prescribe, reformulate and dispense medicinal drugs. A *pharmacy technician* is a healthcare provider who can be both licensed and unlicensed, who performs pharmacy-related functions, generally working under the direct supervision of a licensed pharmacist. When the report refers to "*pharmacy professional*", it is in reference to both pharmacists and pharmacy technicians, unless otherwise noted.

Literature Review:

The primary source of research to inform the development of this discussion paper was an extensive literature and document review, including a review of academic/government documents and grey literature. The research also included a review of other jurisdictions to better understand the approach to pharmacy role evolution in other comparable countries. Best and leading practices were examined in the United States, the United Kingdom, New Zealand, France, Portugal, and Australia.

Survey:

The research also included a survey of two groups:

- An expert advisory panel (i.e., the individuals invited and registered to attend the Thought Leadership Summit)
- Representatives from the broader pharmacy community

The survey instrument was the same for both groups.

Descriptive statistics were analyzed for both groups. Findings from the survey include both quantitative and qualitative analysis. Questions using a Likert scale are presented as a percentage and mean. “Do not know” responses were removed when calculating the mean. Chi-square test for independence was conducted to identify significant differences between the responses of the expert advisory panel and representatives from the broader pharmacy community. For this analysis, “strongly agree” and “agree” were recoded to “agree”, “strongly disagree” and “disagree” were recoded to “disagree” and “Do not know” responses were removed.

Respondents’ perceptions of system barriers, educational barriers, workplace barriers, individual barriers and priorities to advance the profession were assessed for their correlation with each other (with each question) using Pearson correlation coefficient. Correlations were identified if $r \geq 0.30$ and considered substantial if $r \geq 0.50$. “Do not know” responses were removed when calculating the correlations. All statistical analyses were computed using SPSS Statistics (version 22, IBM Corp, Armonk, NY) and p-values < 0.05 were considered statistically significant.

Thought Leadership Planning Committee:

The research also included two consultations with a Thought Leadership Planning Committee. These consultations were used to help inform the research framework, the survey instruments and to help finalize the Research Report and Discussion Paper for the Thought Leadership Summit.

Survey Outreach Strategy:

All individuals registered for the Thought Leadership Summit were invited via email to complete the Summit Participant survey. In order to reach a broader representation of the Canadian pharmacists and pharmacy technicians, a number of national associations were also asked to invite a selection of their members to participate in the survey by using the communications and outreach tools that were likely to reach the target audience. Participating organizations included CPhA, the Canadian Society of Hospital Pharmacists; the Canadian Association of Pharmacy Technicians, and a number of national and provincial pharmacy associations.

Structure of the Report

The results of the research are presented in five distinct sections:

Section 1: Canada's Broad Healthcare Needs

Section 2: The Pharmacy Profession — Where Are We Now?

Section 3: The Pharmacy Profession — Where Do We Want to Be?

Section 4: Perspectives from the Pharmacy Profession

Section 5: Harnessing our Future: How Can we Get There

Canada's Broad Healthcare Needs

The potential to expand the scope of practice for other health professions has been suggested as a way to reduce pressure on the system and to provide more opportunities for person-focused care.¹

A HEALTHCARE SYSTEM UNDER PRESSURE

Canadians benefit from a healthcare system that provides access to high quality care and contributes to positive outcomes, and a healthy and productive population. However, there is no single, national health system in Canada. It is a complex, diffuse and decentralized arrangement of actors and services. It is, in fact, a 14 single-payer system (10 provinces, three northern territories and the federal government), which delivers primary and supplementary health services to select populations.

The collection of universal healthcare insurance programs colloquially known as 'Medicare', paid for by governments through Canadian tax contributions, continues to offer essential services to millions of Canadians, and remains the nation's most iconic social program. While Canada's healthcare systems remain a source of national pride and provide important services to millions of Canadians, questions continue regarding the complexity, scope of public coverage, access to care, and overall costs of the provision of health services.

Population health research suggests that stresses on the Canadian healthcare system will continue to grow as the prevalence of chronic illnesses increase, the Canadian population ages, and technological and pharmaceutical innovations drive up costs.

The following provides an overview of Canada's primary healthcare system and healthcare needs deemed to be priority areas to healthcare policy, practice and public dialogue.

The Unsustainability of Canada's Healthcare Spending

Today, Canada's healthcare system is under severe pressure and there are ongoing challenges to its future sustainability. Canada's overall performance is mediocre by international standards. Forecasts from the Canadian Institute for Health Information (CIHI) noted the total health expenditure in Canada to be \$219.1 billion in 2015, a 1.6% increase from 2014. While spending on primary healthcare is high compared to many Organisation for Economic Co-operation and Development (OECD) countries, Canada's relative health outcomes fall short of other countries. Overall, health expenditure is expected to represent 11% of Canada's gross domestic product (GDP) in 2014 — while high, it does represent a decline from an all-time high of 11.6% in 2010. Canada remains among the top quartile of 30 OECD countries on healthcare expenditures.²

Spending on Drugs is a Major Cost Driver

In 1992, total drug spending in Canada was \$8.5-billion, including \$6.1-billion for prescription drugs and \$2.4-billion for non-prescription drugs out of a total of \$70 billion in annual health spending.

At the time, drugs accounted for 12.2% of all health spending, compared with 15.9% of the total \$207 billion annual health spending in 2012. Canada now has the second-highest drug costs in the world, surpassed only by the United States. In the decade from 2000 to 2010, Canada's drug spending grew more than every other developed country except Japan.⁴

Population growth and aging had only modest effects on drug spending from 1975-2014, each accounting for average annual growth of 1.0%.⁵ While there have been recent slowdowns in the cost of health spending on prescription drugs, these declines are predicted to be short reprieves from overall spending on prescription drugs in Canada.⁶

Many attribute these high costs to the fact that prescription drugs (outside of inpatient settings) are not listed under the Canada Health Act as one of the services/products that must be insured in Canada. Consequently, there are multiple payers involved in the financing of prescribed drugs, including public drug programs, private insurers and households.^{7,8} As a result, prescription drug coverage, and consequently pharmacists' clinical services, is insured in a patchwork manner across Canada.

Lengthy Wait Times and Access to Care

Providing patients with timely access to healthcare remains a pan-Canadian challenge.⁹ The Wait Time Alliance has found serious health consequences to long waits, such as increased mental anguish, physical pain, greater deterioration in patients' health, longer recovery time following treatment, and poorer outcomes. Findings from the *Health Care in Canada Survey* by the Canadian Foundation for Healthcare Improvement, indicate that many Canadians perceive lengthy wait times as a major drawback to Canada's healthcare system. Canadians have to wait longer to see their physician than patients from nine other countries (including the US), leaving Canada's wait time performance sub-par in comparison.¹⁰

In terms of access, while Canada has made improvements in some areas (e.g., reduced waits for cataract and hip replacement surgery) progress in other areas is lagging (e.g., knee replacement surgery, timely discharge from acute care to home care/residential care, primary care referral to specialist care, etc.).

Patient Safety

In today's healthcare system, delivery processes involve numerous interfaces and patient handoffs among multiple healthcare practitioners with varying levels of educational and

Recent Statistics on Canada's Healthcare Outcomes

- 53% of Canadians waited two or more days to see a physician or nurse the last time they needed medical attention. This compares to 43% in the US; 36% in the UK and 18% France.
- Nearly 33% waited 6 or more days.
- All 10 provinces have significantly higher wait times than the international average.
- 2010 comparison of 11 countries ranked Canada the lowest for wait times to see a physician or nurse when sick.
- Canadians also reported the longest waits for a specialist appointment, with 41% reporting waits of two or more months.
- More than 33% of older Canadians visited an emergency room department for a medical event that could have been treated by a physician if one were available.

Source: The Commonwealth Fund 2014 International Health Policy Survey of Older Adults and CIHI, *Healthcare in Canada, 2012: A Focus on Wait Times*

occupational training. To increase patient safety requires that all professions work together in an environment of respect and understanding of roles and scopes of practices.¹¹

Patients today often have multiple medical problems that are often treated with a variety of medications, which can result in complex drug interactions, adverse reactions, problems of nonadherence and therapeutic failure. Errors can occur at any step in the prescribing process — this includes prescription errors and prescribing faults due to erroneous medical decisions.¹² Pharmacists working in advanced practice can play a key role together with other healthcare providers to ensure appropriate medication treatment and the monitoring of adverse effects.

Public Health: Pandemic Preparedness

Since SARS, Canada has worked to augment efforts to more quickly detect and protect Canadians from the public health impact of infectious disease outbreaks. This is an ongoing challenge. According to the World Health Organization (WHO), infectious diseases are emerging more quickly than ever and emergency preparedness is becoming a priority. Pharmacists have an important role to play in planning communications to the public in the event of a pandemic. They also have a role to play through immunizations, triage and referrals, supply chain management (dealing with shortages), surveillance, alerting and working with other healthcare professionals to develop appropriate responses.¹³

Patient Engagement

Patient engagement in their own care is critical to improving the quality of care provided by the healthcare system,¹⁴ and recent research suggests that it has become a cornerstone for healthcare improvement.¹⁵ The University of Montreal (UM) is recognized as a pioneer in 'patient engagement'; considering patients as full members and partners in the healthcare team, including within health services, training of medical students and in research.¹⁶

Better access to personal health data also encourages patients and caregivers to become partners with their healthcare providers. With the recent surge of smart phone applications and wearable technologies in healthcare, patients and caregivers are more empowered. From the patient perspective, there is growing demand toward greater access to and portability of their health information.

Trend toward Homecare

The rising costs of healthcare delivery and infectious disease acquired through stays in health institutions, as well as a more participatory and aging society are contributing to the increasing trend toward homecare as opposed to institutionalized care.¹⁷ This trend requires new forms of transitional care as patients move through the medical system.

HEALTHCARE NEEDS OF CANADIANS

Chronic Disease Management and Prevention

Chronic diseases, such as diabetes, cardiovascular disease, chronic obstructive pulmonary disease and cancer represent an ever-growing concern worldwide. According to a survey of Canadians by the Canadian Foundation for Healthcare Improvement, in 2011, over half the population (58%) had one or more chronic disease.

Since the prevalence of multiple chronic diseases increases with age, effectively managing patients with multiple chronic diseases in primary care is critical.¹⁸ Adults with multiple chronic diseases tend to be high users of healthcare services and account for more than two-thirds of healthcare spending.¹⁸

Conversely, chronic disease rates are increasing faster for Canadians aged 35-64 years than Canadians aged 65 years of age and over. Aboriginal peoples are also at a higher risk for chronic diseases such as heart disease, diabetes, cancer and asthma.¹⁹

Most countries will not be able to address chronic disease challenge within the traditional healthcare care system.²⁰ Implementing effective solutions to address the increasing cost burdens of managing and preventing chronic disease is a critical challenge facing many health professions, administrators and policy-makers.

Aboriginal Health

In recent decades, there has been considerable improvement in the health status of Aboriginal people in Canada. Nevertheless, while Canadians, on average, enjoy some of the world's best healthcare and quality of life, Aboriginal peoples generally have poorer health and are affected by major health problems at rates much higher than non-Aboriginal populations.²¹ Canada's Aboriginal population is growing faster than the general population, increasing by 20.1% between 2006 to 2011.²² A new approach is required to meet the needs of the Aboriginal population — particularly in northern and remote locations.²³

Aging Society — the Cost of Aging

As one would expect, seniors (aged 65 years and over) use more healthcare services than younger Canadians. They are also more likely to have chronic conditions (and more of them).²⁴ Having multiple chronic conditions may also involve the use of many different drugs to treat each condition separately. These complex treatment regimens are often not well managed, leading to adverse drug events and further hospitalizations.²⁵

CANADIANS WITH ONE OR MORE CHRONIC DISEASES, 2007 AND 2013



TYPES OF CHRONIC DISEASES REPORTED

Arthritis	22%
Heart disease, stroke or high blood pressure	22%
A mental health condition	16%
Asthma, bronchitis or emphysema	14%
Diabetes	11%
Cancer	7%
Osteoporosis	5%
Any other chronic health condition	19%

Source: Canadian Foundation for Healthcare Improvement, The Health Care in Canada Survey, n = 1000; conducted by POLLARA, December 2013-January 2014

Research has shown that population aging, to date, is only a modest healthcare cost driver, estimated at 0.9% per year. The numbers show that the share of public-sector health dollars spent on Canadian seniors has not changed significantly over the past decade — from 44.6% in 2002 to 45.2% in 2012.²⁶ This may change with seniors representing Canada's fastest growing age group — a trend expected to continue for decades,²⁷ with this cohort projected to rise to 9.8 million by 2036.²⁸ This increase is expected to significantly affect the Canadian workforce and increase the demand for healthcare services.

IMPLICATIONS FOR CANADA'S HEALTHCARE SYSTEM

It is widely recognized that pouring more money into the healthcare system will not lead to improvements in access to healthcare, overall health outcomes or sustainable efficiencies. Many see the need for fundamental changes in how healthcare is organized, financed, and delivered.²⁹

Over the last 30 years, every healthcare profession has examined ways their profession can evolve and change how they work with other healthcare providers in order to focus on the patient, provide greater efficiencies in the delivery of services and support better health outcomes for Canadians. The need for information sharing, patient engagement and interprofessional collaboration has never been greater.

The Pharmacy Profession — Where Are We Now?

THE PHARMACY PROFESSION IN CANADA — A SNAPSHOT

There are approximately 40,704 licensed pharmacists in Canada: 25,200 practicing in community pharmacy, 5,947 practicing in hospital settings and a further 4,626 practicing in other settings.³⁰ In addition to this, there were 6,601 licensed pharmacy technicians in Canada. Note: This figure is inclusive of licensed pharmacy technicians from only nine (9) provinces, where pharmacy technician was considered a regulated profession as of January 1, 2016.³¹

The pharmacy profession has experienced extensive changes in recent years, but more needs to be done to support pharmacy professionals in embracing their full scopes of practice in order to respond to health system needs in Canada. Pharmacists have a unique body of knowledge and represent the most accessible healthcare provider available to Canadians. As such, pharmacists and pharmacy technicians are extremely well-positioned to provide solutions to many of Canada's healthcare and system challenges.³²

THE CURRENT ROLE OF PHARMACY PROFESSIONALS

Internationally, the role of pharmacists is continuing to evolve away from dispensing to the provision of direct patient care.³³ The International Pharmaceutical Federation's (FIP) research has found that the global trend for pharmacy is toward a more clinical, patient-focused profession, with enhanced responsibilities and accountabilities for patient-centred care in clinical environments.³⁴ Increasingly pharmacists are in direct contact with patients and are providing more patient counseling. These changes are being driven by patient demand as well as advances in pharmaceuticals, which have required that pharmacists become more involved in new ways.³⁵ Pharmacists now frequently modify or write prescriptions, manage complex medication regimens and educate the public on drug interactions, side effects and new medications. Advances in technology and regulatory changes have allowed pharmacists to order laboratory tests, such as hemoglobin levels, and lipid profiles, so they can adjust and monitor drug therapy.³⁶

The demand for pharmacists expanded role and services has contributed to the introduction of regulated and licensed pharmacy technicians in several jurisdictions in Canada. Consequently, as the pharmacists' role evolves, so too does the role of pharmacy technicians.^{37,38} Below is a table outlining pharmacists' expanded scope of practice across Canada.

Pharmacists' Scope of Practice in Canada

Scope of Practice ¹		Province/Territory													
		BC	AB	SK	MB	ON	QC	NB	NS	PEI	NL	NWT	YT	NU	
Prescriptive Authority (Schedule 1 Drugs) ¹	Independently, for any Schedule 1 drug	X	✓ ⁵	X	X	X	X	X	X	X	X	X	X	X	
	In a collaborative practice setting/agreement	X	✓ ⁵	✓ ⁵	✓ ⁵	X	X	✓	✓	X	X	X	X	X	
	Initiate ²	For minor ailments/conditions	X	✓	✓	✓ ⁵	X	✓	✓	✓	✓ ⁵	✓	X	X	X
		For smoking/tobacco cessation	X	✓	P	✓ ⁵	✓	✓	✓	✓	✓ ⁵	✓	X	X	X
		In an emergency	X	✓	✓	✓	X	X	✓	✓	✓	X	X	X	X
Adapt ^{3/} Manage	Independently, for any Schedule 1 drug ⁴	X	✓ ⁵	X	X	X	X	X	X	X	X	X	X	X	
	Independently, in a collaborative practice ⁴	X	✓ ⁵	✓ ⁵	✓ ⁵	X	X	✓	✓	X	X	X	X	X	
	Make therapeutic substitution	✓	✓	✓	X	X	X	✓	✓	✓	✓	X	X	X	
	Change drug dosage, formulation, regimen, etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	
	Renew/extend prescription for continuity of care	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X	
Injection Authority (SC or IM) ^{1,5}	Any drug or vaccine	X	✓	✓	✓	X ⁷	X ⁷	✓	X	✓	✓	X	X	X	
	Vaccines ⁶	✓	✓	✓	✓	X	X	✓	✓	✓	✓	X	X	X	
	Travel vaccines ⁶	✓	✓	✓	✓	P	X	✓	✓	✓	✓	X	X	X	
	Influenza vaccine	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	X	X	X	
Labs	Order and interpret lab tests	X	✓	P ⁸	✓ ⁹	X	✓	P	✓	P	X	X	X	X	
Techs	Regulated pharmacy technicians	✓	✓	✓	✓ ¹⁰	✓	X	✓	✓	✓	✓	X	X	X	

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

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

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

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

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

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

7. For education/demonstration purposes only.

8. Ordering by community pharmacists pending health system regulations for pharmacist requisitions to labs.

9. Authority is limited to ordering lab tests.

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

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

ADVANCED PRACTICE AND SPECIALIZATION

The road to pharmacists practicing at full scope of practice and the movement to advanced practice roles and specialization has been long both in Canada and internationally.

Advanced practice for pharmacists has been defined as “*a practice that is so significantly different from that achieved at initial licensure that it warrants recognition by professional peers and the public of the expertise of the practitioner and the education, training and experience from which that capability was derived*”. [Advanced Pharmacy Practice Framework Steering Committee, 2012]. FIP has indicated that the knowledge and skills that pharmacists acquire through foundational practice provide the platform for advancing practice.

The definition of pharmacy specialization is far more complex. FIP has tried to simplify the definition as meaning “*advanced practice within a narrow scope; while advanced practice was taken to mean overt advanced (beyond foundation) with broad scope of practice*”.³⁹ In countries such as Australia and Canada, “specialist” is protected under law and can only be used by designated healthcare practitioners. In Canada, pharmacy specialization is not recognized by any jurisdiction.

The ability of an advanced practice pharmacist to make clinical decisions and deliver patient care is at a significantly higher level than that of a typical pharmacist.⁴⁰ This observation supports

the need for recognition of advanced practice pharmacists. In some countries, such as Australia, advanced pharmacy practice is recognized through the formal credentialing of advanced practice pharmacists.⁴¹

The need for a system to recognize specialty pharmacy practice in Canada began in the mid-1980s with limited progress. In 2010, the CPD/CE Policy Summit: *Advancing Innovation and Excellence in Pharmacy Practice* called for the establishment of a single national credentialing organization for pharmacy specialization that would establish the criteria for specialization in pharmacy and manage a specialty certification system that was recognized in all jurisdictions in Canada.⁴² In 2015, the Blueprint for Pharmacy Initiative (the Blueprint)* commissioned a needs assessment for a formal certification and recognition process for pharmacy specialization. This study confirmed the need for the recognition of pharmacy specialties in Canada; however, it did not fully endorse a made-in-Canada solution for a certifying body.⁴³

Unlike other health professions with standardized processes for specialty certification and recertification, there is no easy way to provide assurances that pharmacists who provide specialty services in Canada meet the required level of knowledge, skills and experience. This is an ongoing risk to the integrity of the profession. It is incumbent on the pharmacist profession to ensure that those who offer specialized pharmacist services meet the standards required by the profession and by the healthcare system. This is important for all stakeholders including the public, government, regulators, private payers, other health professionals and pharmacists.⁴⁴

* The Canadian Pharmacists Association (CPhA) initiated the Blueprint for Pharmacy in 2005 as a strategy to manage and accelerate change within the profession. Its aim was to unite the pharmacy sector, define a vision and clear plan of action for the future of pharmacy, and help pharmacists and pharmacy technicians meet expanded scope opportunities with the right knowledge, skills, confidence and support.

The Pharmacy Profession — Where Do We Want to Be?

THE VISION FOR PHARMACY IN CANADA

The global trend for pharmacy continues toward a more clinical, patient-focused profession, with enhanced responsibilities and accountabilities for pharmaceutical care in clinical environments. In Canada, the Blueprint for Pharmacy identified the following Vision for the profession in 2008:

Optimizing drug therapy outcomes for Canadians through patient-centred care

To achieve this vision the following changes are envisioned for pharmacists and pharmacy technicians:

- practice to the full extent of their knowledge and skills, and are integral to emerging healthcare models.
- protect the safety, security and integrity of the drug distribution system through the enhanced role of regulated pharmacy technicians and greater automation of dispensing.
- lead the development of and participate in medication safety and quality improvement initiatives.

The following changes are envisioned for pharmacists specifically:

- manage drug therapy in collaboration with patients, caregivers and other healthcare providers.
- identify medication use issues, take responsibility for drug therapy decisions and monitor outcomes.
- initiate, modify and continue drug therapy (e.g., through collaborative agreements, delegated or prescriptive authority), and order tests.
- access and document relevant patient care information in health records, including test results and treatment indications (e.g., in electronic health records).
- empower patients in decision-making about their health, and play a prominent role in health promotion, disease prevention and chronic disease management.
- conduct practice research and contribute to evidence-based healthcare policy and best practices in patient care.

Full or Optimal Scopes of Practice for Pharmacy?

The evolution of the pharmacy profession brings with it the question of whether the system should be pushing toward *full* scope or *optimal* scope of practice among pharmacy professionals. The Canadian Academy of Health Sciences appointed an Expert Advisory Panel to report on the evidence around the scopes of practice that could support innovative models of healthcare. The panel's report, *Optimizing Scopes of Practice, New Models of Care for a New Healthcare System*⁴⁵, made the distinction between **full** and **optimal** scopes of practice. It noted that the most efficient, cost-effective system is not necessarily predicated on all professionals working to full scope in all contexts. Instead, working to 'optimal scope' means achieving the most effective configuration of professional roles, determined by other healthcare professionals' relative competencies."

HARNESSING STRENGTHS AND OPPORTUNITIES

Responding to Pressures on the Healthcare System

The relative increases in fees and payments for physician services will be an important issue for health system decision-makers to monitor in the future, as will changes in the scopes of practice of non-physician health professionals. There is increasing interest in exploring whether certain health professionals, such as nurse practitioners and pharmacists, can substitute or complement services currently provided by physicians.⁴⁶

Wait Times and Access

The World Health Organization (WHO) estimates that the current shortage of health workers is in excess of 7.2 million worldwide and that by 2035, the shortage will reach 12.9 million. In Canada, this includes a shortage of physicians — with approximately 5 million Canadians not having access to family physicians. Patients in rural areas are disproportionately affected by limited access to physicians and preventive services. The WHO further noted that pharmacists, in particular, are underrepresented and it recommended a global vision for pharmacy.

Expanding pharmacists' scope of practice and services is part of a solution to the lack of access to family physicians, access to timely treatments and overall wait times. According to a recent report from the Health and Welfare Commissioner, over 60% of hospital emergency room visits are for minor health conditions that could be better treated elsewhere. It is widely recognized that these visits monopolize substantial amounts of medical resources and could be better served by pharmacists, who, given their longer hours and location the community, are ideally positioned to take care of patients grappling with minor ailments.⁴⁷

Barriers to Pharmacy Role Expansion

- Lack of reimbursement models.
- Lack of understanding and support among other healthcare professionals for pharmacy role expansion.
- Protectionism from other mid-level healthcare providers (e.g., nurse practitioners, physician assistants) whose scopes may overlap (e.g., prescribing, immunization).
- Lack of employer support and workplace supports to allow new services to be offered.

TRENDS: England

In England, pharmacists have had greater authority to offer pharmaceutical services since 2005, including that of prescribing drugs in certain circumstances. In recent years, many pharmacies have implemented a variety of programs to take charge of minor ailments. According to a recent evaluation, these new services offered by pharmacists have freed up working hours for many general practitioners and generated savings of around 23 million Canadian dollars per year for the country as a whole. The majority of patients (58%) would have consulted their family physician if the service had not been offered by pharmacists, which would, in all likelihood, have resulted in extra costs for the healthcare system. In addition to these savings, the researchers concluded that patients themselves, who have faster access to the care they need, reap the most important benefits.

Expanded Clinical Services — Improving Patient Access and Safety

Pharmacists are uniquely positioned to bridge the gap between demand for basic primary medical care and access to a competent medical professional.⁴⁸ There is a growing trend of pharmacists delivering expanded patient care services, as well as advanced and specialized services in support of healthcare reforms. Many of these fall into the following areas:

Pharmaceutical Care

Increased numbers of drug therapies, an aging society with more complex care needs, coupled with more knowledgeable and demanding populations, and deficiencies in other areas of the healthcare system are all driving the increased demand for the clinical skills of the pharmacist.⁴⁹ One of the most important roles that pharmacists are currently taking on is one of pharmaceutical care. Pharmaceutical care involves taking direct responsibility for patients and their disease states, medications, and management of each to improve overall patient outcomes. The benefits of pharmaceutical care may include but are not limited to decreased medication errors, increased patient compliance in medication regimen and better chronic disease management.

Minor Ailment Management

Pharmacists have a role to play in helping patients manage minor ailments. In their day-to-day practice, community pharmacists can initiate dialogue with patients, assess their needs and help them manage conditions that can be treated without a prescription. The Ontario Pharmacists' Association estimates that the implementation of a pharmacist minor ailment program would result in an increased capacity of 570 full-time general practitioners (GPs) and an economic savings of \$4.7 million to \$14 million per year.⁵⁰ A proposal by the British Columbia Pharmacy Association states that \$95 million is spent yearly on the treatment of minor ailments by physicians, and transferring those services to a pharmacist would yield savings of \$32 million annually.^{51, 52}

Immunizations

Pharmacists can and do play a critical role in immunization, particularly during influenza season. Across different provinces and different scopes of practice, the shared goal of pharmacists as primary care providers is to facilitate patient access to care. Immunization services, such as for influenza, measles-mumps-rubella vaccine, hepatitis A vaccine, diphtheria and tetanus, human papillomavirus vaccine, can be provided through appointment-based immunization clinics, drop-in clinics and referrals to immunization resources. Trained pharmacists in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador are able to administer vaccinations. Given their community presence,

Barriers to Expanded Pharmacist Services

Public Understanding and Demand

- Pharmacists are consistently ranked among the most trusted healthcare professionals, and research shows high levels of satisfaction with pharmacist services. Studies have also shown that the public is generally unaware of the full range of roles, responsibilities and services of a pharmacist.
- Without this knowledge, patients are not likely to ask for these services. Without such demands, employers in community settings will be less likely to offer these services.
- Interprovincial differences are also observed for the recognition and payment for pharmacy services.
- Many community pharmacy practices are not structured to support the effective integration of these services into their daily routine.

pharmacists can also serve as a platform for public health initiatives and in responding to pandemics and epidemics.

Comprehensive Medication Reviews

During a comprehensive medication review, pharmacists perform a medication assessment, which includes prescription, non-prescription drugs, over the counter and natural health products, to verify which medications a patient is taking, how they are taking them and possible interactions and side effects. It is also an opportunity to reassess the appropriateness of the product (valid indication, appropriate dosing) and screen for potential problems the medication may present to the patient.

Barriers to Role Evolution

Pharmacists' lack of confidence and ownership of clinical decisions maybe a barrier to role evolution. Research shows that many people attracted to the pharmacy profession are assimilators that prefer analytical work, information gathering, and a focus on ideas, concepts, and logical arguments, on which they can take time to form decisions. The movement to advanced clinical services will drive the need for new skill and disposition requirements for pharmacists.

Source: Rosenthal, M., Austin, A. and Tsuyuki, R., *Are Pharmacists the Ultimate Barrier to Pharmacy Practice Change?* in CPJ. Jan/Feb. 2010 (Vol. 143: No. 1)

TRENDS: New Zealand — Cognitive Services

New Zealand's 2012 Community Pharmacy Services Agreement introduced a number of initiatives for pharmacists to better manage complex patients. After two years of negotiations, the agreement aimed to use pharmacist expertise to deliver cognitive services to patients. The objectives of the various elements of the Agreement are to facilitate integration of primary care services and focus pharmacist services on patients with long-term conditions. These services capitalize on the growing evidence that medication adherence has the dual benefit of improving patient outcomes and providing cost savings for the healthcare system.

Ontario

In a study released in January 2014, Green Shield and the Ontario Pharmacy Association reported the results of a randomized, clinical trial testing the effectiveness of pharmacists' hypertension management services. Specifically, the study examined three cognitive pharmaceutical services interventions:

- 1) medication review and drug therapy optimization, where the pharmacist would review potential interactions, suboptimal dosages, adherence issues, or unnecessary medications, and then develop a pharmaceutical plan for patients;
- 2) patient education, which included education and counseling on lifestyle changes; and
- 3) evidence-based strategies to improve patient adherence to medication therapy. Patients in the control group received standard care pharmacy services, which focused largely on medication dispensing.

Outcomes measured included improvements to patients' blood pressure, adherence to therapy, smoking status and frequency, physical exercise frequency, body mass index, drug costs, and intervention costs.

Education, Behavioural Counseling and Preventative Care Services

A primary role for pharmacists is to educate patients when dispensing prescription and non-prescription drugs, when counseling on discharge medications or when providing recommendations about the use and management of specific drug-related problems. Increasingly, pharmacists provide counseling to patients regarding drug interactions.

Pharmacists, in most jurisdictions, provide screening, educational and behavioral counseling, including:

- Screening programs: E.g., for diabetes, including the CANRISK program and the Community Pharmacy Outreach Program.
- Education: Pharmacist-provided education and behavioral counseling improves medication adherence and therapeutic outcomes in patients with chronic conditions. It also improves understanding around the importance of preventive care services.
- Monitoring: As one of the most easily accessible healthcare professionals, pharmacists have the necessary tools and knowledge to implement timely screening and effective prevention initiatives. Pharmacists can play a significant role in monitoring blood pressure and managing medications for patients with hypertension.
- General health promotion: In areas such as tobacco cessation and weight management.⁵³

These services have been found to contribute to better outcomes in chronically ill patients, and can support broader health and wellness in the population.

TRENDS: Education and Counseling

Netherlands

In the Netherlands, pharmacies are relatively large and 95% of patients always visit the same pharmacy. Pharmaceutical care standards were first established in 1996, and the scientific institute of the professional pharmacist organization (WINAP) chose pharmaceutical care as its focus for further professional development around 1997. In general, the comprehensive pharmaceutical care model is followed, although a number of disease-oriented projects addressing asthma and diabetes have also been implemented.

Finland

Finland had 799 community pharmacies as of 2005. Medication counseling has been mandated by law since 1983 and only pharmacists are permitted to provide therapeutic advice in pharmacies. Since the late 1990s, Finish pharmacies have actively participated in national public health programs, initially in the areas of asthma and diabetes, and more recently in the treatment and prevention of heart disease.⁵⁵

Portugal

In Portugal, there are 2,549 pharmacies, a coverage ratio of 4,692 inhabitants per pharmacy. The community pharmacist in Portugal makes an active contribution to the adoption of healthy habits and the prevention of illness. The pharmacist plays a prominent role in promoting the rational use of medicines, pharmaco-surveillance, health education, detecting certain disease, AIDS awareness, and providing information both to physicians and to patients. Given the degree of confidence and credibility that pharmacists inspire among the population, and the ease of dialogue between pharmacist and patient, several pharmacist-led education campaigns

have been successfully promoted, aimed at healthcare and at the prevention and detection of disease.⁵⁶

United States

In 1996, the Asheville Project was implemented in North Carolina. The City of Asheville, a self-insured employer in North Carolina, was to provide pharmaceutical care for its employees with chronic health problems, such as diabetes and asthma. Patients who volunteered to be part of the program received intensive education before being teamed with community pharmacists, who assisted the patients in using their medications correctly. The results of the project were rigorously studied and showed improvements in health outcomes and lower costs of care. For patients with diabetes, for example, researchers found improvements in patients' blood sugar, LDL, and HDL levels.⁵⁷ Medical costs for these patients decreased by 22% over a five-year period following the intervention despite these patients having higher prescription costs than before participating in the project.⁵⁸ Similarly, patients with asthma who were matched with a pharmacy coach reported a decreased number of emergency department visits, hospital days, and missed workdays than before the project.⁵⁹

Transitions in Care — Responding to an Aging Society and the Trend toward Home Care

With increasingly engaged patients, lack of space in health institutions and the trend toward home care, there is an increasing need to support patients as they transition through their healthcare continuum. Transitions to and from any care setting can be overwhelming for a patient and these transitions have been identified as a major risk factor of medication errors and adverse events. In fact, 60% of all medication errors occur during times of care transition and 72% of post-discharge adverse events are medication-related.⁶⁰ Comprehensive transitions of care programs that utilize pharmacist-provided medication reconciliation have been found to be especially important in the post-hospital discharge setting for patients evaluated as being at risk of rehospitalization. This requires contacting the family physician and/or specialist as well as other pharmacists if a patient uses several pharmacies. These actions place the community pharmacist at the center of ensuring the appropriate use of a patient's medications and compiling an accurate and complete list of a patient's medications. These consultations and care plans may include an assessment, medication reconciliation, resolution of drug-related problems, and a follow-up and monitoring plan.⁶¹

TRENDS: Australia — A Home Medicines Review (HMR)⁶²

HMR involves the patient, their general practitioner (GP), an accredited pharmacist and regular community pharmacy. In some cases other relevant members of the healthcare team, such as nurses in community practice, are included. The pharmacist visits the patient at their home, reviews their medicine routine and provides their GP with a report. The GP and patient then agree on a medicine management plan. The objectives of an HMR are to:

- achieve safe, effective and appropriate use of medicines by detecting and addressing medicine-related problems that interfere with the patient's desired outcomes.
- improve the patient's quality of life and health by using a best practice approach, that involves cooperation between the GP, pharmacist, other relevant health professionals and the patient.
- improve the patient and health professional's knowledge and understanding about the patient's medicines build cooperative working relationships between members of the healthcare team in the interests of patient health and wellbeing.

KEY ENABLERS TO IMPLEMENT EXPANDED SCOPE OF PRACTICE AND ADVANCED SERVICES

As identified above, there are a number of opportunities to expand and integrate into practice advanced scope and services offered by pharmacists in Canada. The ability to harness these opportunities is facilitated by key enablers, recognizing there are also a number of barriers that will restrict implementation. The key enablers are outlined below.

Collaborative Care Models

According to the Canadian Academy of Health Sciences 2014 report on *Optimizing Scopes of Practice*,⁶³ improving the healthcare system will require collaborative care models, where the right professional provides the highest quality of care; in the right setting and at the right time based upon the needs of the individual patient.

To provide effective, patient-centered care, it is recommended that family physicians and specialists collaborate with other health and social care providers.⁶⁴ Interprofessional collaboration (IPC) has been advocated by the World Health Organisation in influential policy papers, such as the Alma-Ata declaration, and by several professional bodies, including FIP and the World Medical Association (WMA).⁶⁵ The United Kingdom, New Zealand, Canada and the United States have all moved toward various forms of independent or collaborative prescribing.⁶⁶

The Role of Pharmacists in Interprofessional Care

By its very nature, the practice of pharmacy—whether based in hospital/institutional or community settings—requires working with other health professionals. The need for information sharing, patient participation and IPC has never been greater.

Incorporating pharmacists into the primary care setting is an important way to help ensure that patients have access to the important guidance and expertise that pharmacists can offer. Studies have shown that pharmacist-provided medication reconciliation can help reduce medication discrepancies and may be an important component of improving transitions of care moving forward.⁶⁷ In Ontario, the introduction of family health teams (FHT) is an approach to primary healthcare that brings together different healthcare providers to co-ordinate the highest possible quality of care for the patient. Large numbers of these FHT have funding to hire pharmacists as a co-located members of the team, and a similar model is used by Alberta's Primary Care Networks and Saskatchewan's Primary Healthcare Teams.

Barriers to Interprofessional Collaboration

- Unclear role identification and expectations
- Reimbursement structures/mechanisms
- Regulatory constraints
- Lack of interprofessional training, possibly due to protectionism among faculties, power differentials, different approaches to patient care
- Lack of communication, trust and respect, and shared goals among health professionals
- Lack of supportive clinical and administrative systems.

Source: Bélanger E, Rodríguez C. More than the sum of its parts? A qualitative research synthesis on multi-disciplinary primary care teams. *J Interprof Care*. 2008;22 (6):587-97.

Research findings indicate that health providers involved in IPC have reported beneficial changes in attitudes and knowledge from working with other professionals, positive outcomes for student training, and improvements in the quality of care provided.⁶⁸

Many feel that fully harnessing the unique knowledge of pharmacists and promoting closer collaboration of pharmacists with other healthcare providers will help contribute to better health system and healthcare outcomes of Canadians.

TRENDS: Switzerland

The Swiss experience with pharmacist-physician quality circles (PPQC) highlights the potential for collaboration between pharmacists engaged in cognitive pharmaceutical services and their general practitioner (GP) colleagues. A PPQC is a group of GPs working with a pharmacist who volunteers as a moderator for the group. Pharmacists are accredited to organize a PPQC once they have completed a 52-hour course that includes basic knowledge on the effectiveness, safety, and efficiency of frequently prescribed drugs, as well as an annual 16-hour continuing training course on clinical and pharmacotherapeutic updates. Together, the pharmacists and GPs engage in a structured, continuous, quality improvement and education process to improve outcomes and reduce costs.

TRENDS: UK

A recent UK study on the collaborative relationship between community pharmacy and general medicine highlighted the dynamic nature of the relationship and the key components of collaboration. The study highlighted the importance of trust, communication, professional respect, and “knowing each other” when referring to roles, abilities and responsibilities. Just as the medical profession has its own set of defined competencies, so does pharmacy.⁶⁹ **Note:** In Canada, the National Association of Pharmacy Regulatory Association includes professional collaboration and teamwork in its professional competencies for Canadian pharmacists.

Greater Patient Engagement

Patients are demanding more participation in their own care and engagement with the design of healthcare programs.⁷⁰ Healthcare organizations in Canada are just starting to focus on the important role that patients and their families play in guiding health quality improvement and the delivery of relevant and higher quality healthcare. This shift to incorporating the patient experience into their health and the care they receive are an essential part of improvement efforts.

The role of pharmacists is crucial in the area of patient engagement since the profession is in contact with patients with different needs on a daily basis, who quite often require more qualitative healthcare services and treatment.⁷¹

Leveraging Health Informatics and Technology

The movement toward interprofessional care propels the need for increased information sharing across providers.⁷² The healthcare system is in the midst of a data-driven revolution. The use of information technology (IT) in healthcare is widely regarded as the next frontier in efficiency and quality improvement. In response to consumer demands, a multitude of health and wellness products are being developed, such as smart phone applications and at-home genetic testing, to help individuals understand, track and monitor their health.

At the same time, health systems are challenged to keep pace with demand for new health technologies. At a population level, electronic health records (EHR) have been the centerpiece of most health systems' IT strategies; but the reality is that EHR development has been occurring at a suboptimal pace. Some provinces/territories and organizations are farther along in these areas than others. In addition, pharmacists do not always have access to the complete EHR or the EHR does not include key components of the patient's healthcare record or experience.

Many technologies have become standard practice for many pharmacy professionals (e.g., clinical decision support, electronic prescriptions, bar code systems, dispensing cabinets, medication incident and adverse event reporting systems, and refill reminder systems).⁷³ Pharmacists are often involved in these processes to mine, aggregate, analyze and interpret data from these clinical information systems to improve patient outcomes.

Developing the Knowledge, Skills and Attitudes of a Modern Pharmacist and Pharmacy Technician

Complete Transition to Entry to Practice Doctor of Pharmacy Programs

As pharmacists' responsibilities and skills have expanded over the years, so too have their educational and training needs. In light of this, the Association of Faculties of Pharmacy of Canada has recommended that all pharmacy schools offer an entry-to-practice doctor of pharmacy (PharmD) program by 2020.⁷⁴ PharmD programs will ensure students have increased baseline knowledge of the management of a broader scope of disease states, more training in management and communication skills, more clinical practice experiences, and development of cooperative abilities to work on interprofessional teams.² In addition to these changes to the pharmacy curriculum, the literature also highlights areas that need to be addressed to improve the education and training of pharmacy students and pharmacists. Consideration should be given to the creation of bridging programs for those pharmacists with a Bachelor's degree who wish to obtain a PharmD degree.

Barriers to Leveraging Health Informatics and Technology

Compliance restrictions regarding data security and privacy, and limited interoperability standards have limited the fluidity needed for information sharing.

Although pharmacy informatics is not currently listed in the Canadian Council for Accreditation of Pharmacy Programs, it has been part of the US Accreditation Council for Pharmacy Education (ACPE) for nearly 10 years.

However, pharmacy educators have often stated that they do not have the expertise to teach pharmacy informatics.

Sources: Plaza CM, Draugalis JR. Implications of advanced pharmacy practice experience placements: A 5-year update. *Am J Pharm Educ.* 2005;69(1-5):296.; Hall K, Wilgosh C. Hospital Pharmacy in Canada 2013/2014 Report. Toronto: Eli Lilly Canada; 2015.

Admissions Process for Pharmacy Students

Although pharmacy students are being equipped with additional knowledge through their PharmD degree, change within the pharmacy practice landscape has been slow. As such, it has been proposed that adjusting the pharmacy admissions criteria to those that possess innate leadership and decision-making skills (e.g., *converger*-dominant personalities) would strengthen the pharmacy profession.⁷⁵ More specifically, adopting a holistic admissions review process that incorporates non-academic traits such as communication skills should be considered.

Expanded Interprofessional Education (IPE)

The delivery of responsive, effective, and high-quality patient care is indeed a complex activity. It demands healthcare professionals collaborate in an effective manner. Both WHO and the FIP have agreed that IPE is critical to achieve a collaborative, practice-ready workforce.⁷⁶

IPE offers a possible way to improve interprofessional care and patient care and now forms an essential part of medical school curricula in many countries including Canada, USA, UK, and Australia.⁷⁷ Ideally, IPE should begin early in the education of pharmacy students, include meaningful interprofessional experiences and be as part of ongoing career professional development (CPD).

Developing Clinical Skills

Pharmacy students require practical clinical experience to learn the critical-thinking and reasoning skills required for the modern pharmacist.⁷⁸

Several strategies have been employed in an attempt to provide students with educational and applicable rotation experiences:

- Early exposure to patient care settings starting in first or second year pharmacy school.⁷⁹
- Structuring the experience similar to the medical model, e.g., senior pharmacy students or residents are responsible for teaching and mentoring junior students, and an attending pharmacist oversees the process.⁸⁰
- Developing a framework of expected patient care activities that should be introduced to students at different stages of their training.⁸¹ This would facilitate a sense of “graduated responsibility,” which is evident in the medical model and would provide patient-care experiences appropriate to the level of the students’ abilities.⁸²
- Providing support systems for pharmacist preceptors.

Barriers of IPE

- Resistance from administration, faculty members, and students.
- A study of Canadian schools identified that the main barriers of IPE were scheduling, rigid curriculum, “turf battles,” and lack of perceived value to IPE.

Source: Reeves S, Perrier L, Goldman J et al. Interprofessional education: Effects on professional practice and healthcare outcomes (update). *Cochrane Database Syst Rev.* 2013;3(3).

- Attitudinal differences in health professionals, faculty members, and students also influence implementation of IPE. A lack of resources and commitment can also negatively affect the implementation of IPE.

Source: Curran VR, Deacon DR, Fleet L. Academic administrators’ attitudes towards interprofessional education in Canadian schools of health professional education. *Journal of Interprofessional Care.* 2005; 19(sup1):76-86.

Barriers to Skills Development

Type of Learning: Pharmacy students report that they often observe the pharmacist's role without actively participating themselves (lack of experiential learning).

Source: Hall K, Musing E, Miller DA et al. Experiential training for pharmacy students: Time for a new approach. *Can J Hosp Pharm.* 2012; 65(4).

Duration: The majority of existing practical experiential programs across Canada are short in duration, expose students to the clinical role late in the program, and do not allow enough time to transfer knowledge into advanced practitioner skills. This is expected to change with the transition to entry to practice PharmD.

Sources: Van Gog T, Ericsson KA, Rikers RM et al. Instructional design for advanced learners: Establishing connections between the theoretical frameworks of cognitive load and deliberate practice. *Educational Technology Research and Development.* 2005;53 (3):73-81. ; Rathbun RC, Hester EK, Arnold LM et al. Importance of direct patient care in advanced pharmacy practice experiences. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy.* 2012; 32(4):e88-97.

Type of Skills Developed: Other studies have found that pharmacy school graduates have a tremendous array of clinical skills. However, they do not necessarily have the business and personality skills to monetize their clinical skills creatively.

Host sites: Finding sufficient preceptors for pharmacy students has also become increasingly difficult in recent years. Increased numbers of preceptors are already required to accommodate for increased enrollment rates and movement to the entry-level PharmD programs. Faculties are reporting difficulties placing students for clinical rotations because of limited participation of employers. This unwillingness stems from the fact that pharmacist preceptors are concerned with providing a quality experience.

A second, but related, issue is finding practice sites where pharmacists are practicing at an advanced level.

Source: Accreditation council for pharmacy education. *Guidance for the Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree. Standards 2016.* Chicago, Illinois: Accreditation Council for Pharmacy Education; 2015.

Continuing Education (CE)/Continuing Professional Development (CPD)

CE and CPE, particularly in the areas of clinical skills and counseling, are important to pharmacists who are currently working; many were not trained to provide advanced clinical services during their pharmacist training. All Canadian provinces and territories require pharmacists to engage in ongoing learning to maintain their competence. Pharmacists have traditionally maintained their competence through CE, which is defined as a structured educational activity designed to support and maintain competence.⁸³ However, a focus on CPD has become increasingly popular as it utilizes a cycle that encompasses reflection, planning, acting (learning), evaluating, and recording as the key

Barriers to CPD

Although CPD offers unique advantages compared to CE, additional resources are required to establish a CPD program and audit its compliance/ provide feedback. Furthermore, some pharmacists continue to have a difficult time understanding the value of the CPD system. This includes those that are not in direct patient care, those resistant to change and those who believe the CE system is more effective.

Source: Stead WW, Searle JR, Fessler HE et al. Biomedical informatics: Changing what physicians need to know and how they learn. *Acad Med.* 2011;86(4):429-34.

elements of the learning process.⁸¹ CPD is considered a self-directed, outcomes-focused approach to lifelong learning. Jurisdictions that support a CPD-type system include Ontario and Quebec. Alberta and British Columbia use a hybrid system of both CE and CPD. Given that many Canadian provinces and territories have enacted legislation enabling an expanded scope of practice for pharmacists, the need for ongoing CPD is heightened.

Some Canadian jurisdictions have a CE-type system, requiring attainment of a certain number of CE hours or units per year. In addition, a certain proportion of the hours or units must be derived from accredited CE. Jurisdictions that support a CE-type system include Saskatchewan, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador.⁸¹

Residency Programs

Many hospitals in Canada offer the 1-year post-baccalaureate pharmacy residency program to provide pharmacy graduates with additional clinical experience and the opportunity to undertake independent research in preparation for more responsible positions. Residency programs in Canada are accredited by the Canadian Pharmacy Residency Board.⁸⁵ Currently, there are over 40 accredited general hospital pharmacy residency programs representing more than 90 graduates per year. Several specialty residency programs are also offered or under development.⁸⁵

Barriers to Residency Programs

Pharmacist residencies are primarily limited to hospital settings in Canada. There are a lack of residencies in community settings.

Residencies are considered important for preparing pharmacists to work at an advanced level. This has been reflected in the CSHP 2015 vision's objective to have *"100% of new pharmacists entering hospital and related healthcare setting practice will have completed a Canadian Hospital Pharmacy Residency Board-accredited residency."* With the move to entry level PharmD, it is expected that the demand for residency programs in all practice settings will dramatically increase.

TRENDS: Bringing Residency Programs to Community Settings

In 1999, ASHP and APhA jointly developed standards and learning objectives for the accreditation of community pharmacy residency training. This enabled accreditation of such programs through the ASHP Commission on Credentialing. In 2006, BPS promulgated a vision for a new specialty certification in ambulatory care pharmacy practice and commissioned a practice analysis to determine applicable domains, tasks, and knowledge that characterize the ambulatory care pharmacy specialist. Two years later, this petition was approved by BPS, with the inaugural ambulatory care certification examination debuting in 2011.⁸⁷ Community pharmacy residency programs have become increasingly common in the US, with programs being offered by major chains such as Kroger Pharmacy, Safeway Pharmacy, and Walgreens Pharmacy.

Perspectives from the Profession

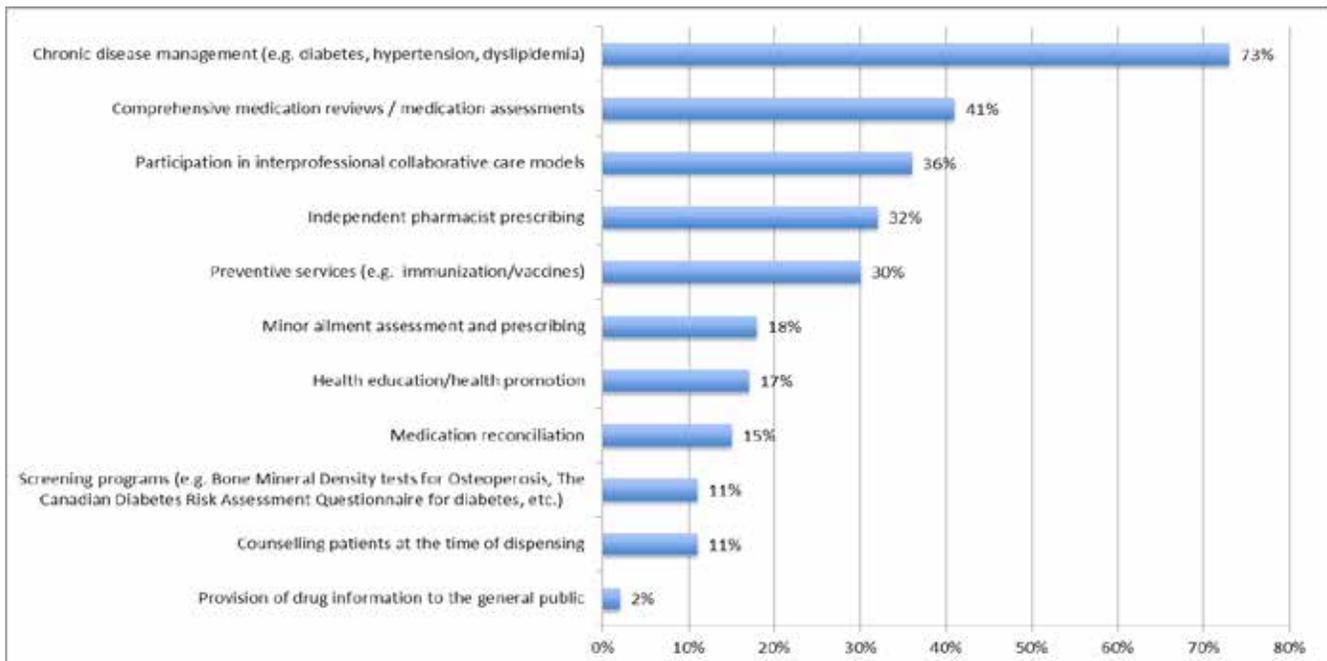
This study included a survey designed to solicit feedback from the profession on the barriers to role evolution, impact of changes on the profession and priorities for action. There were two target populations for the survey:

Expert Advisory Panel: all registered Summit participants were invited to complete the survey. The majority of respondents were pharmacists (49%), academics (18%), and pharmacy managers, supervisors or directors (16%). The overall response rate was 66%.

Broader Pharmacy Professionals: the majority of respondents were pharmacy technicians (50%), pharmacists (33%) and pharmacy managers, supervisors or directors (16%). The response rate could not be calculated due to the survey distribution methods.

ABILITY TO LEVERAGE EXPERTISE TO OPTIMALLY IMPROVE PATIENT CARE

Figure 1: Practice Activities that have the Largest Potential to Impact Patient Health Outcomes in Canada (strongly agree/agree responses combined)



n=66

Note: Combined percentage is greater than 100% as respondents could choose 3 options.

In order to examine pharmacy role evolution further, the Expert Advisory Panel was asked which pharmacy activities they agreed would have the greatest impact on patient health outcomes. The following are the top three responses:

- Chronic disease management (e.g., diabetes, hypertension, dyslipidemia) (73%)
- Comprehensive medication review/medication assessment (41%)
- Preventive services (e.g., immunization/vaccines) (36%)

Broader Pharmacy Community Survey Findings (n=629)

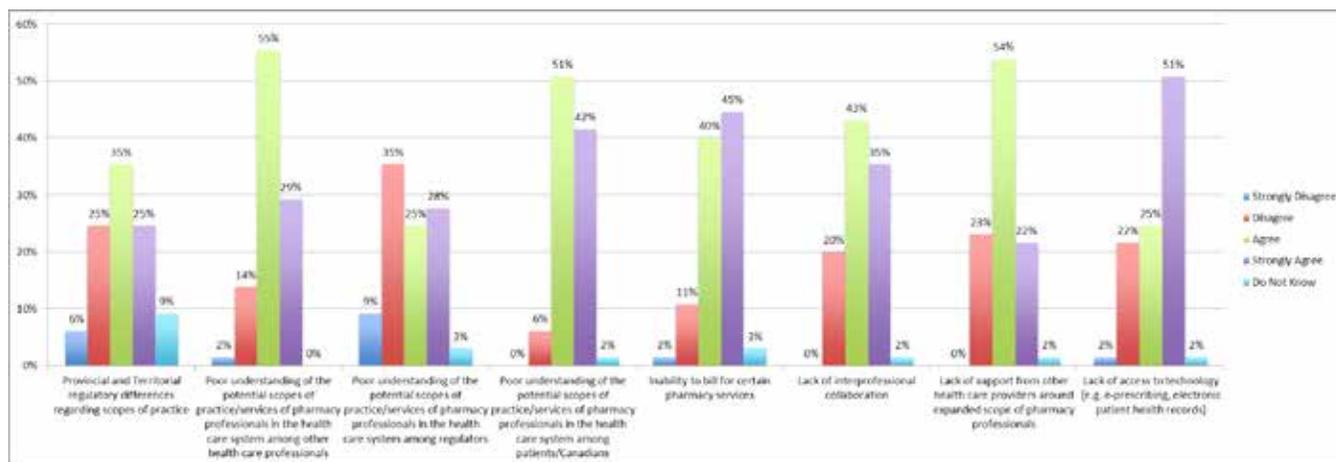
- Chronic disease management (e.g., diabetes, hypertension, dyslipidemia) (54%)
- Comprehensive medication reviews / medication assessments (43%)
- Medication reconciliation (29%)

Implications

These survey findings support the earlier research findings regarding the need to support pharmacists in offering an expanded array of services including those related to chronic disease management and comprehensive medication review. Chronic disease management was the overwhelming selection by the Expert Advisory Panelists as the top pharmacy activity that would have the greatest impact on patient health outcomes.

System-Level Barriers

Figure 2 – Expert Advisory Panel Perceptions of System-Level Barriers



n=65

The Expert Advisory Panel was asked what they thought were the most significant system-level barriers to pharmacy professionals using their expertise to optimally improve patient care. The following barriers were ranked as the top four (strongly agree/agree):

- Poor understanding of the expertise and services among patients/Canadians (92%)
- Inability to bill for certain pharmacy services (85%)
- Poor understanding of the potential scopes/services of pharmacy professionals among other healthcare professionals (85%)

Broader Pharmacy Community Survey Findings (n=629)

- Poor understanding of the expertise and services among patients/Canadians (84%)
- Poor understanding of the potential scopes/services of pharmacy professionals among other healthcare professionals (84%)
- Lack of interprofessional collaboration (79%)
- Inability to bill for certain pharmacy services (74%)

- Lack of interprofessional collaboration (78%)

When the findings are examined based on mean scores, lack of access to technology is ranked much higher primarily because over 50% strongly agreed that the lack of access to technology was a barrier.

System-Level Barriers	Mean	Std Dev
Poor understanding of the potential scopes of practice/ services of pharmacy professionals in the healthcare system among patients/Canadians (N=64)	3.4	0.6
Inability to bill for certain pharmacy services (N=63)	3.3	0.7
Lack of access to technology (e.g., e-prescribing, electronic patient health records) (N=64)	3.3	0.9
Lack of interprofessional collaboration (N=64)	3.2	0.7
Poor understanding of the potential scopes of practice/ services of pharmacy professionals in the healthcare system among other healthcare professionals (N=65)	3.1	0.7

Scale: Strongly agree (4); agree (3); disagree (2); strongly disagree (1)

“Inability to bill for professional services is by far the biggest barrier. There is just no incentive at all for retail pharmacies to hire more staff to provide more comprehensive services”
(Pharmacist)

“The traditional model of funding pharmacist services still relies on the provision of products. This rewards dispensing above all other activities. [We] need to create another model outside the traditional practice setting to allow for innovative practice to be funded and flourish”
(Pharmacist)

“[We need] access to a [patients’] EHR, including clinical findings and labs. It is very difficult to manage patients appropriately when care is divided between hospital and community”
(Pharmacist)

Correlations

A correlation is a statistical measure that indicates the extent to which two or more variables fluctuate together. For this study, an assessment of correlations was used to identify potential causes and solutions to these system barriers. Not surprisingly, a poor understanding of the potential scopes of practice/services of pharmacy professionals in the healthcare system among patients/Canadians was highly correlated with a similar lack of understanding among healthcare professionals. It is also highly correlated with the need for increased support among other healthcare providers and patients/general public.

The inability to bill for certain pharmacy services is highly correlated with the need for a reimbursement framework; the increased need for payer support for the role evolution of pharmacy

professionals; and the poor understanding of the potential scopes of practice/services of pharmacy professionals in the healthcare system among regulators.

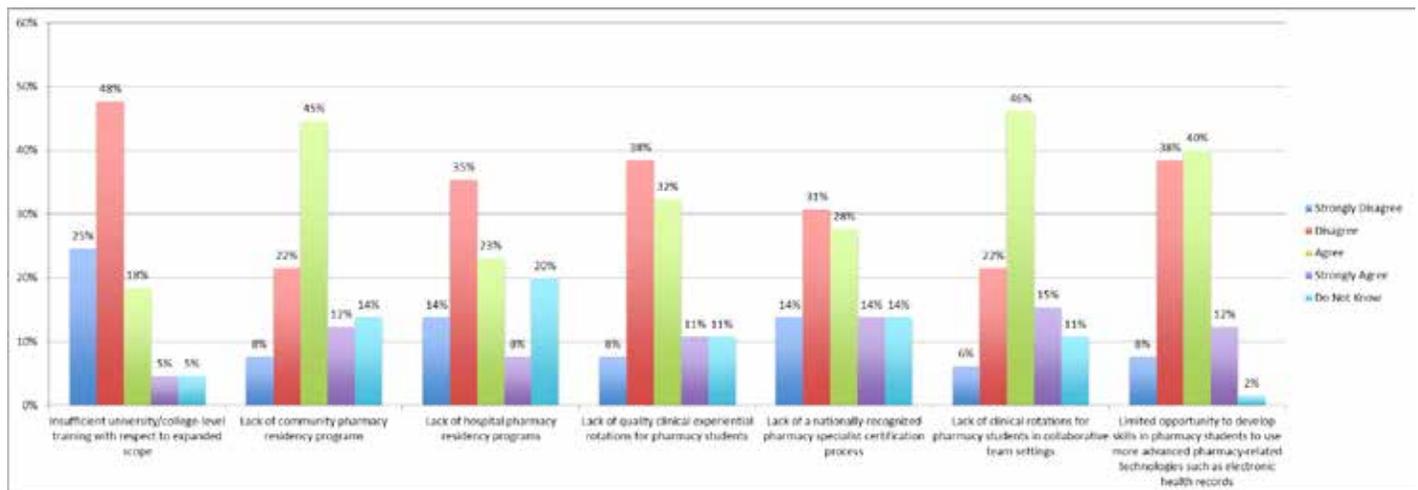
The lack of access to technology (e.g., e-prescribing, electronic patient health records) was highly correlated with provincial and territorial regulatory differences regarding scopes of practice; the lack of support from other healthcare providers around expanded scope of pharmacy professionals; and the lack of business models to implement advanced pharmacy services in the community.

Implications

The perspectives of the survey respondents support the findings of the literature review particularly in relation to lack of understanding among patients/Canadians and other healthcare professionals of the potential scopes of practice/services and the inability to bill for these services. The lack of access to technology emerged most prominently in the survey findings.

Educational-Level Barriers

Figure 3: Expert Advisory Panel Perceptions of Education-Level Barriers



n=65

The Expert Advisory Panel was asked what they thought were the most significant educational-level barriers to pharmacy professionals using their expertise to optimally improve patient care. The following were ranked as the top three barriers (strongly agree/agree responses):

- Lack of clinical rotations for pharmacy students in collaborative team settings (62%)
- Lack of community pharmacy residency programs (57%)
- Limited opportunity to develop skills in pharmacy students to use more advanced pharmacy-related technologies (52%)

The broader pharmacy community survey respondents identified a nationally recognized pharmacy specialist certification process as a greater barrier than limited

Broader Pharmacy Community Survey Findings

- Lack of a nationally recognized pharmacy specialist certification process (54%)
- Limited opportunity to develop skills in pharmacy students to use more advanced pharmacy-related technologies (52%)
- Lack of clinical rotations for pharmacy students in collaborative team settings (50%)

opportunity to develop skills in pharmacy students to use more advanced pharmacy-related technologies.

“There needs to be more interprofessional education, so doctors understand what community pharmacies need and can offer” (Pharmacy Technician)

“[We need to] educate each healthcare professional about the scope of all healthcare professionals relevant to their practice so that there is no doubt, hesitation, or resentment amongst them.” (Pharmacy Technician)

Correlations

Once again, correlations for the top three educational barriers were examined. The lack of clinical rotations for pharmacy students in collaborative team settings was highly correlated with the need for professional credentialing of specialization; as well as the limited opportunity to develop skills in pharmacy students to use more advanced pharmacy-related technologies such as electronic health records; and the lack of opportunity for interprofessional collaboration.

The lack of community pharmacy residency programs was found to be highly correlated with limited opportunity to develop skills in pharmacy students to use more advanced pharmacy-related technologies such as electronic health records (Strong correlation, $r=0.5$). This latter variable was also found to be highly correlated with the priority of professional credentialing of specialization and lack of community pharmacy residency programs (both with strong correlations, $r=0.5$)

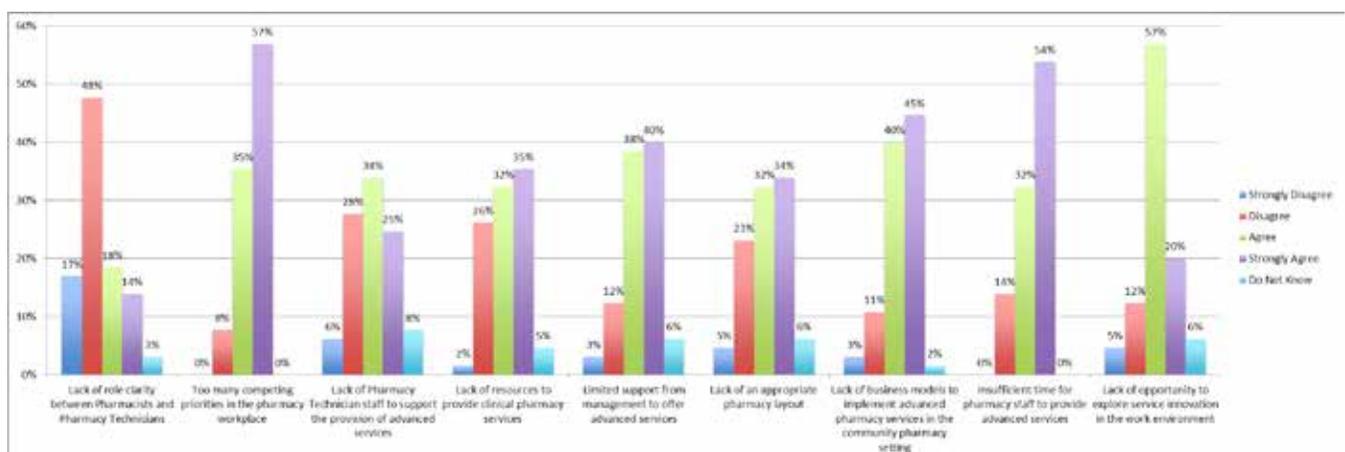
Implications

The perspectives of the survey respondents support the findings of the literature review particularly in relation to the lack of opportunity to develop advanced skills to use technology and offer a wider array of skills as well as the lack of clinical rotations in collaborative team settings and residency programs.

Professional credentialing of specialization was highly correlated with the top three educational barriers as ranked by the Expert Advisory Panel

Workplace-Level Barriers

Figure 4: Expert Advisory Panel Perceptions of Workplace-Level barriers



n=65

The Expert Advisory Panel was asked what they thought were the most significant workplace-level barriers to pharmacy professionals using their expertise to optimally improve patient care. The following were ranked as the top three (strongly agree/agree responses):

- Too many competing priorities in the pharmacy workplace (92%)
- Insufficient time for pharmacy staff to provide advanced services (86%)
- Lack of business models to implement advanced pharmacy services in the community pharmacy setting (85% with 45% strongly agreeing)

Broader Pharmacy Community Survey Findings

- Too many competing priorities in the pharmacy workplace (89% with 50% strongly agreeing)
- Insufficient time for pharmacy staff to provide advanced services (89% with 57% strongly agreeing)
- Lack of business models to implement advanced pharmacy services in the community pharmacy setting (69%)
- Lack of pharmacy technicians to support the provision of pharmacy of advanced services' (69%)

***“More and more we are expected to perform extra tasks with no extra time or remuneration”
(Pharmacy Manager)***

“Pressure for quotas to be met by pharmacies and their owners poses a risk to our reputation ... Pharmacists have some of the worst working conditions seen in Canada as a profession, which puts both them and their patients’ health at risk” (Pharmacist)

“The community pharmacy model that allows non-clinicians to govern how the practice of pharmacy is performed transforms the practice from a clinical to a business model. This impacts the time, availability, and the setting in which pharmacists can do their job - their real job - which is patient care.” (Pharmacist)

Correlations

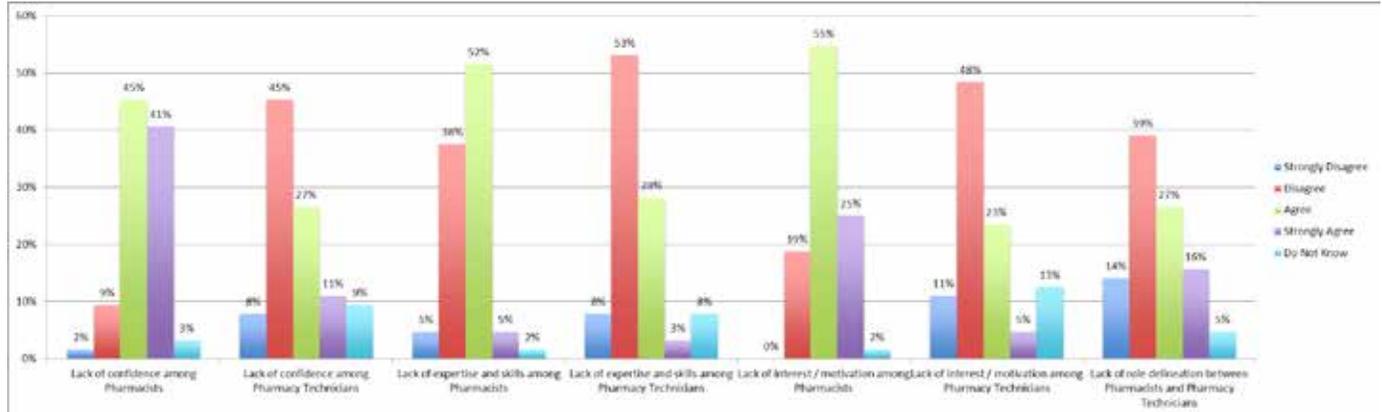
Once again, correlations for the top three workplace barriers were examined. Too many competing priorities in the pharmacy workplace was found to be strongly correlated ($r = 0.5$) with insufficient time for pharmacy staff to provide advanced services and limited support from management to offer advanced services. The lack of business models to implement advanced pharmacy services in the community was found to be highly correlated with a number of variables including the lack of a nationally-recognized pharmacy specialist certification process; and those variables that were work-related such as management support, workplace layout and priorities.

Implications

The perspectives of the survey respondents support the findings of the literature review particularly in relation to the complexity of the pharmacy workplace and limited time pharmacists have to offer more advanced services. It is clear that as pharmacists take on expanded roles, they continue to be challenged to carry out their traditional roles while also advancing new services. The utilization of pharmacy technicians appears to be particularly important for developing business models to implement advanced pharmacy services.

Individual-Level Barriers

Figure 5: Expert Advisory Panel Perceptions of Individual-Level Barriers



n=64

The Expert Advisory Panel was asked what they thought were the most significant individual-level barriers to pharmacy professionals using their expertise to optimally improve patient care. The following were ranked as the top three (strongly agree and agree responses):

- Lack of confidence among pharmacists (86%)
- Lack of interest/motivation among pharmacists (80%)
- Lack of role delineation between pharmacists and pharmacy technicians (42%)

The level of disagreement of individual barriers was high between summit participants and the broader respondents. Among Summit participants, those who strongly disagreed/agreed ranged from a low of 11% to a high of 61%. Overall, the broader survey respondents were even more likely to disagree to these questions – ranging from a low of 34% to a high of 55%).

Broader Pharmacy Community Survey Findings

- Lack of confidence among pharmacists (59%)
- Lack of interest/motivation among pharmacists (58%)
- Lack of role delineation between pharmacists and pharmacy technicians (44%)

Individual Barriers	Mean	Std Dev
Lack of confidence among Pharmacists (N=62)	3.3	0.7
Lack of interest / motivation among Pharmacists (N=63)	3.1	0.7
Lack of expertise and skills among Pharmacists (N=63)	2.6	0.7
Lack of role delineation between Pharmacists and Pharmacy Technicians (N=61)	2.5	0.9

Scale: Strongly agree (4); agree (3); disagree (2); strongly disagree (1)

When mean score are examined we see that the confidence and interest/motivation among pharmacists is viewed as the highest barriers at an individual level.

“Many Pharmacists lack the courage, and in some cases the ability, to make the necessary changes in their practice to embrace and utilized the systems currently in place. It may be the fear of doing something wrong, or the lack of confidence.” (Pharmacist)

“I feel most pharmacists are content in what they are doing, and don’t have motivation to change.” (Pharmacist)

“Rewards for innovation are not clear or consistent. If a pharmacist is still paid the same for the traditional work of product dispensing as for harder, more complicated innovative practice, it is less likely that many pharmacists will pursue the innovative model.” (Pharmacist)

Correlations

Once again, correlations for the top three individual barriers were examined. The lack of confidence among pharmacists was found to be correlated with lack of expertise and skills among pharmacists and the lack of interest / motivation among pharmacists. The lack of interest / motivation among pharmacists was further found to be correlated with provincial and territorial regulatory differences regarding scopes of practice. Finally, lack of expertise and skills among pharmacists was found to be highly correlated with the lack of a nationally-recognized pharmacy specialist certification process ($r=0.5$) and correlated with the insufficient university/college-level training with respect to expanded scope; and the lack of quality clinical experiential rotations for pharmacy students.

Implications

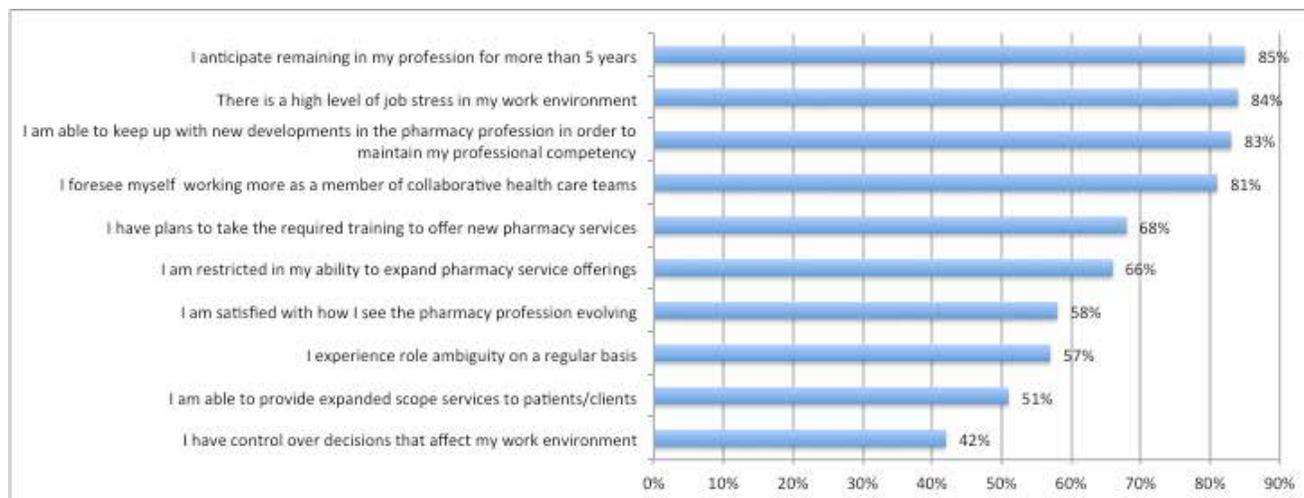
The perspectives of the survey respondents support the findings of the literature review particularly in relation to the lack of confidence among pharmacists to role evolution. It also supports the findings that the individuals who are becoming pharmacists may not have the skills, ability and personality to feel secure and confident in interacting with patients differently and in offering more advanced services. The divergence between the Expert Advisory Panel’s views with those of the broader pharmacy community may be explained by the fact that the broader community respondents were composed largely of practicing pharmacy technicians and pharmacists, who may not be aware of their own lack of confidence and motivation.

VIEWS OF PHARMACY TECHNICIANS

In total, 178 pharmacy technicians also responded to the broader survey, representing 28% of all respondents. Due to this large response from pharmacy technicians, and the fact that the literature is scarce with studies that have assessed pharmacy technicians, the researchers for this study decided to include a section in this report that focuses solely on the responses received by pharmacy technicians.

Pharmacy technicians appear to be satisfied with their work with many most of them anticipating remaining in the profession for more than 5 years (85% compared to 78% of pharmacist from the broader survey and 92% of Summit respondents). However, there is concern that there is a high level of job stress in their work environment.

Figure 6: Pharmacy Technician Perceptions of Professional Satisfaction



n=174

Scale: Very important (4); Important (3); Unimportant (2); Very unimportant (1)

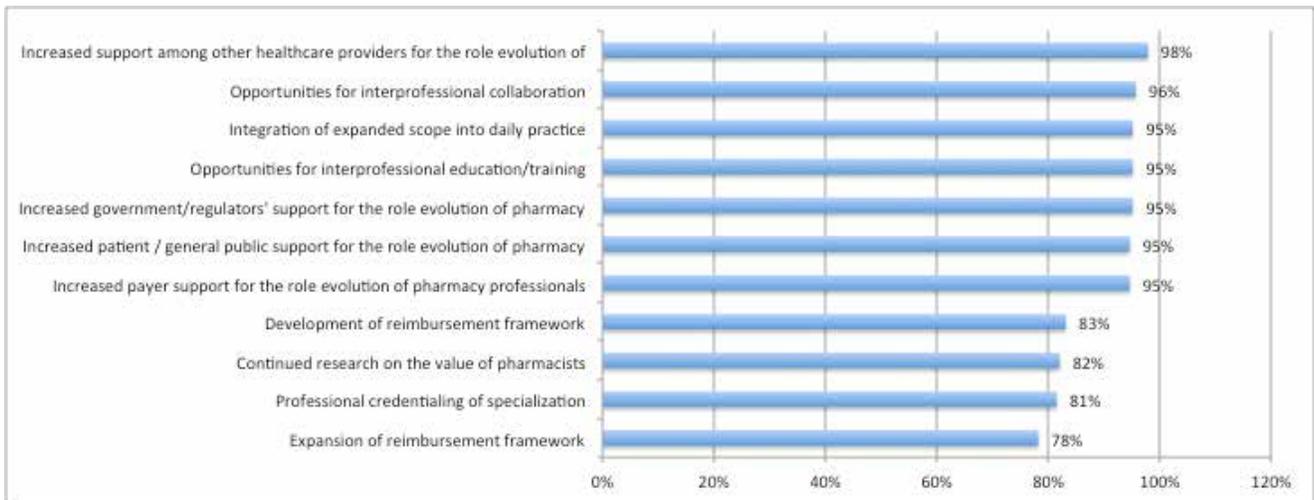
Pharmacy technicians also felt the top indicators for professional satisfaction included adequate staffing in the workplace, continuing education opportunities and opportunities for advancement.

Indicator for Professional Satisfaction	Mean	Std Dev
Adequate staffing in the workplace (N= 177)	3.6	0.7
Continuing education opportunities (N= 167)	3.6	0.7
Opportunities for advancement (N= 157)	3.6	0.7
Innovation in the workplace (N= 171)	3.5	0.7
Support to offer advanced services (N= 175)	3.5	0.7
New technology in the workplace (N= 175)	3.4	0.8
Role delineation in the workplace (N= 174)	3.4	0.7
Professional autonomy (e.g., employer/payer influence on service provision) (N= 175)	3.3	0.7

*1=Very unimportant, 2=Unimportant, 3=Important, 4=Very Important

Pharmacy technicians indicated similar priorities as pharmacists to advance the profession, but also placed additional emphasis on opportunities for interprofessional collaboration and interprofessional education/training.

Figure 7: Pharmacy Technician Perceptions of Priorities to Advance the Profession over the Next 10 Years



n=183

“Community pharmacists are scared of having Technicians take over dispensing. Tech Checks techs have occurred in hospitals for ages now.” (Pharmacist)

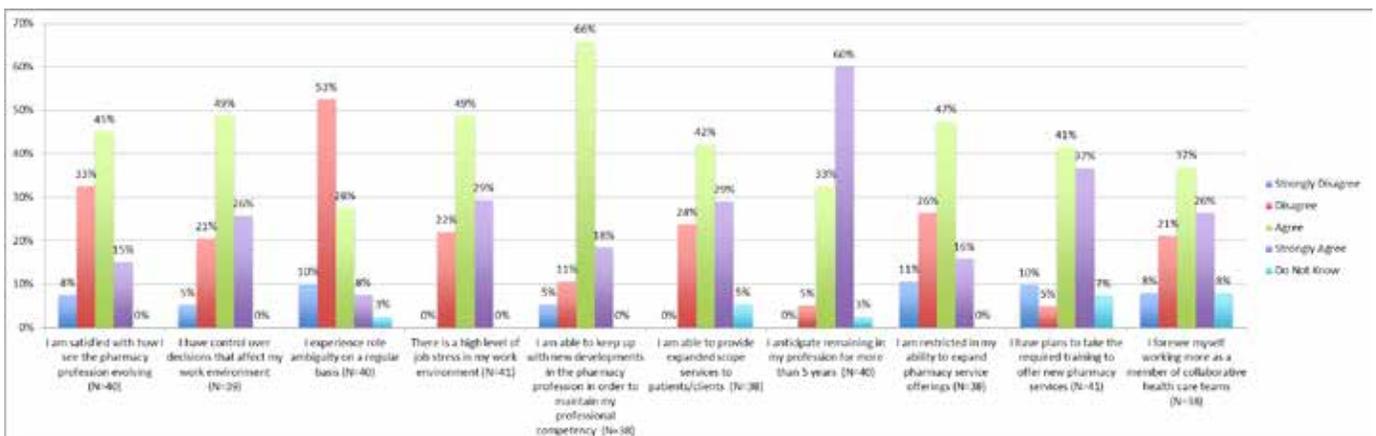
“[Pharmacy Technicians] are considered a wishy-washy nice to have quasi-professional. Technicians have no “power”, they are paid poorly and continue to cow-tow to mediocre pharmacists.” (Pharmacy Technician)

“I personally don’t understand or see the need for pharmacy technicians when they are basically doing the same job as a pharmacy assistant” (Pharmacy Assistant)

REFLECTIONS ON THE PHARMACY PROFESSION

Are Pharmacists Ready for Role Evolution?

Figure 8: Expert Advisory Panel Perceptions of the Pharmacy Profession



Satisfaction with the Direction of the Profession

The majority of Expert Advisory Panel respondents (93%) who are currently working in the pharmacy profession strongly agree/agree they anticipate they will remain in the profession for more than 5 years; compared to 82% of the broader survey respondents. Approximately, two-thirds of the Expert Advisory Panel respondents strongly agree/agree they are satisfied with how the pharmacy profession is evolving (60%; however, only 15% strongly agreeing with this statement). From both a personal and professional perspective, this is not a high level of satisfaction. This may be attributed to the high degree of change that has been experienced within the pharmacy profession over recent years. Across the two surveys, both groups had approximately 80% of respondents indicate they experience a high level of job stress in their work environment.

Control in the Workplace

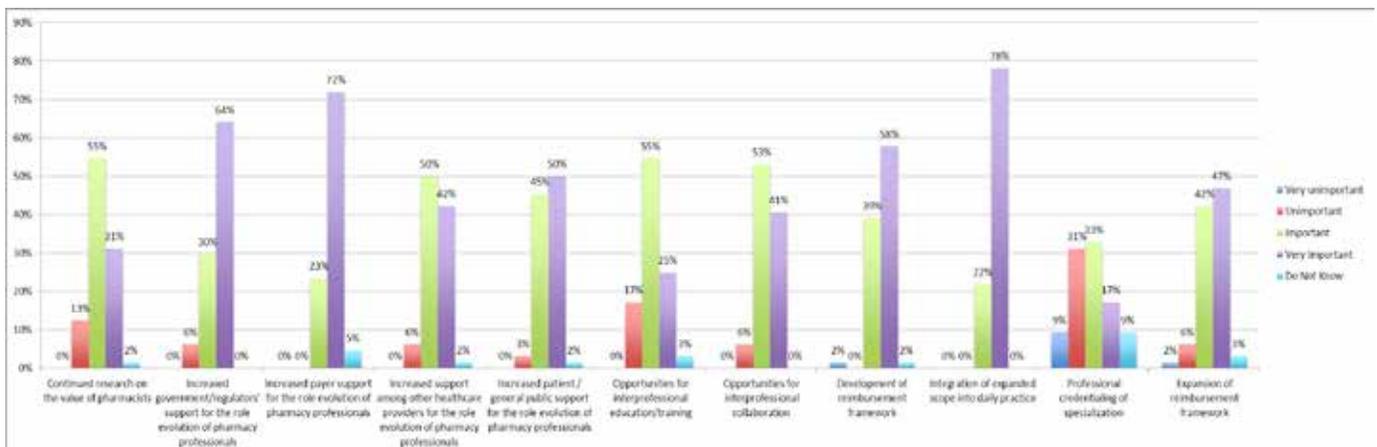
Interestingly, 74% of Expert Advisory Panel respondents and 46% of the broader survey respondents strongly agree/agree that they have control over decisions that affect their work environment. This difference was statistically significant ($p < 0.05$). Expert Advisory Panel respondents were also more likely to strongly disagree/disagree that they experience role ambiguity on a regular basis (63% compared to 44% of the broader survey respondents). However, this difference was not statistically significant ($p = 0.08$).

Providing Expanded Services

Expert Advisory Panel respondents provided interesting insight into their ability to provide expanded pharmacy services. Approximately 71% strongly agree/agree they are able to provide expanded services to increased patients/clients. Approximately 78% of Expert Advisory Panel respondents strongly agree/agree that they plan to take the required training to offer new pharmacy services and 84% strongly agree/agree they are able to keep up with new developments in the pharmacy profession in order to maintain professional competency. Even in light of these positive directions, 63% of Expert Advisory Panel respondents strongly agree/agree they are restricted in their ability to expand pharmacy service offerings.

PRIORITIES

Figure 9: Expert Advisory Panel Perceptions of Priorities to Advance the Profession of Pharmacy over the next 10 years



n=64

Priorities to advance the profession of pharmacy over the next 10 years?

- 100% Integration of expanded scope into daily practice (78% strongly agree);
- 97% Development of reimbursement framework (58% strongly agree; however no one disagreed);
- 95% Increased payer support for the role evolution of pharmacy professionals (72% strongly agree);
- 95% Increased patient / general public support for the role evolution of pharmacy professionals

Not surprisingly, the priorities assessed were all ranked highly; with a similar finding between the Expert Advisory Panel and the broader survey respondents. Clearly, there is a desire among the survey respondents to fully realize the expanded scope of practice and service offerings of pharmacists and pharmacy technicians. Government appears to be a critical enabler of expanded scope both from a regulatory and payer perspective, according to the survey respondents.

Correlations

Once again, correlations were examined for the top three priorities identified to advance the profession of pharmacy over the next 10 years. Increased government/regulators' support for the role evolution of the pharmacy professionals was found to be correlated with regulatory differences among provincial and territorial regulators; as well as poor understanding among regulators of the potential scopes of practice/services of pharmacy professionals.

The need for increased payer support for role evolution within the pharmacy professions was found to be correlated with the lack of support from other healthcare providers for expanded scope of pharmacy professionals and the need to expand reimbursement frameworks.

How Can We Get There?

PRIORITIES TO OPTIMIZE PHARMACY PRACTICE IN CANADA

Draft Priorities for Action

What follows is a list of draft priorities that have emerged from this research, including the results from the Expert Advisory Panel survey (i.e., registered Summit participants) and of the broader pharmacy profession. The drafting of these priorities is intended to inform the discussion at the upcoming Pharmacy Thought Leadership Summit. **Note to the Reader:** these draft priorities are not presented in any order of priority. They can be developed concurrently and may be mutually dependent in order to fully achieve expected results.

1. Education

Support the evolution of the education system and continuing professional development programs for pharmacists and pharmacy technicians to improve the development of the required skills, knowledge and attitudes to support professional role evolution.

Possible Solutions:

- Influence pharmacy faculties to expand entrance requirements and enhance curricular content related to the skills, knowledge and attitudes (confidence) necessary to support new clinical services, business skills, collaborative and patient-centered care, counseling, and emerging IT systems and programs.
- Influence technical training programs to expand the skills, knowledge and attitudes of pharmacy technicians to better position them to take an expanded role in all pharmacy settings.
- Expand experiential clinical opportunities for pharmacy students (beginning in year 1) similar to the medical model, which could facilitate graduated responsibility and would provide patient-care experiences appropriate to the level of the students' abilities.
- Expand pharmacy residency programs, particularly in community settings.
- Increase openness and supports for interprofessional education, including more clinical rotations for pharmacy students in collaborative team settings.
- Create bridging programs for those pharmacists with a Bachelor's degree who wish to obtain a PharmD degree.

2. Regulatory

Remove regulatory barriers to pharmacy role evolution.

Possible Solutions:

- Create a pan-Canadian partnership between provincial regulators and Ministries of Health to develop a common plan to support pharmacy role evolution.
- Develop a common/harmonized national pharmacist scope of practice.

- Agree on definitions for advanced practice and specialization.
- Develop a national certification process and formal recognition of specialty and advanced practice.

3. Payer/Policy Makers

Payers and policymakers should explore ways to leverage pharmacists' accessibility in the community to provide health and preventive care services, especially within alternative payment and delivery models.

Possible Solutions:

- Implement appropriate reimbursement and payment mechanism models to support role and service evolution.
- Provide continuity across both public and private payers for reimbursement of pharmacist cognitive services, including a standardized documentation platform.
- Harmonize the types of services that are remunerated across Canada, to reduce patient confusion regarding the role of pharmacy professionals.

4. Awareness among Key Stakeholders (excluding the public)

Increase key stakeholders' awareness of their role in supporting pharmacy role evolution.

Possible Solutions:

- Government: promote inter-governmental collaboration; support and promote IPC; demonstrate system and public health benefits of pharmacy professionals' working at full/optimal scopes of practice.
- Other healthcare professionals: promote support for interprofessional education and collaboration.
- Employers: encourage the establishment of required business models, new models of practice including interprofessional collaboration, infrastructure, and cultural and workplace supports for the integration of expanded scope into daily practice.
- Pharmacists: encourage the profession to embrace their expanded roles and drive innovation in order to improve health outcomes for Canadians.

5. Public Awareness and Education

Increase public awareness of pharmacy services. Increase understanding in order to increase demand.

Possible Solutions:

- Implement a public awareness campaign around pharmacists' education and variety of service offerings.
- Educate the public on the value of patient-centred care and how the provision of services offered by pharmacists can help reduce overall healthcare costs, improve access to care and improve quality of care.

6. Workplace Environment

Assess the impact role evolution is having on pharmacists and pharmacy technicians. As shifts in pharmacy professional roles occur, capacity, deployment of resources and workplace settings must meet the requirements of changing business and service models.

Possible Solutions:

- Develop an inventory of workplace requirements (adequate staffing, resources, infrastructure, dispensary design, space, etc.) required to support advanced pharmacy service offering.
- Work with employers to remove barriers to integrating expanded scope into daily practice and delivering advanced pharmacy services.
- Identify models to balance community pharmacy's need for financial sustainability and security with the desire to provide patient-centred care and advanced pharmacy practice.

7. Technology

Ensure that all available technology and health informatics solutions are used to support role evolution.

Possible Solutions:

- Assess how advances in information technology that supports health information exchange may facilitate patient care for pharmacy professionals.
- Adopt electronic health records in all pharmacy settings and allow pharmacists to complete electronic health records.

8. Collaborative Care

Expand opportunities for pharmacy professionals to work as members of interprofessional teams.

Possible Solutions:

- Develop and adopt business and funding models that allow existing interprofessional teams to directly involve pharmacists in collaborative care activities (e.g., models could include transitions in care, Primary Care Networks such as those found in Alberta, etc.).
- Utilize technology to support virtual interprofessional healthcare teams.

9. Support Evidence-Based Research

Utilize evidence-based research to understand the return on investment for professional pharmacy services. Ensure that remunerated pharmacy services are supported by evidence demonstrating positive health, societal and economic outcomes. Evaluation plans should be in place to measure outcomes following service design and implementation.

Possible Solutions:

- Conduct economic modeling, including calculation of the return on investment for all pharmacy services from both a public and private payer perspective.
- Obtain seed funding for innovative pharmacy service pilot projects and study the clinical, economic and societal outcomes of these services.
- Provide funding for research that evaluates key barriers to implementation of advanced pharmacy practice, including the integration of expanded scope into daily practice.
- Support knowledge translation for widespread dissemination of pharmacy practice research and results.

Figure 10: Pharmacy Role Evolution Framework Document



Legend: CE = Continuing Education, IPE = Interprofessional Education, IPC = Interprofessional Collaboration

Appendix A: Pharmacy Service Delivery Models

PHARMACY DISTRIBUTION AND DELIVERY MODELS

Numerous drug distribution models in pharmacy have developed to accommodate pharmacists' expanded services. The most notable changes have occurred in the hospital pharmacy setting where clinical pharmacy services are considered standard practice.⁸⁸ However, numerous models are also being developed in the community pharmacy setting to make them a patient-centered destination. Below are some of the models being implemented and explored in Canada.

Hospital pharmacy

In the Hospital Pharmacy in Canada 2013/2014 report, the Editorial Board developed descriptions of four practice models based on definitions from the American Society of Health-System Pharmacists (ASHP) and the American College of Clinical Pharmacy (ACCP).⁸⁶ The practice model definitions are:

- ***Drug distribution-centred model***

Pharmacists largely function in a drug distribution role, with limited clinical services being provided. Clinical activities are largely limited to pharmacy interventions that occur as a result of drug order review in the central pharmacy.

- ***Separate clinical and distributive practice model***

Pharmacists are divided into two groups. One group largely provides distributive services, while the second group largely functions in clinical roles. Those pharmacists who largely function in clinical roles have few or no distributive responsibilities, either in the central pharmacy or in satellite pharmacies.

- ***Clinical practice-centred model***

Nearly all pharmacists function largely in clinical roles, with less than 20% of their time spent in a distributive role. Pharmacy technicians and/or automation are largely responsible for distributive activities.

- ***Integrated drug distribution/clinical practice model***

Nearly all pharmacists have a balance of distributive and clinical responsibilities. The model may include a balanced mix of both.

Community Pharmacy

The landscape of community pharmacy is changing rapidly across Canada. Healthcare providers are increasingly moving toward the adoption of patient-centred care models, which require shared decision-making between healthcare providers and patients. Concurrently, new pharmacy services are being implemented across the country, giving community pharmacists the ability to prescribe, inject medications and provide routine medication reviews. In many jurisdictions, reimbursement frameworks compensate pharmacists for performing these new roles. With these new responsibilities expected of pharmacists, new models for community pharmacy practice are required to integrate these services effectively into their daily routine. Although no consensus exists on the optimal way to implement these new services, below are a few examples presented in the literature.

- ***Drug distribution-centred model***

These pharmacies are heavily reliant on revenue generated from prescriptions and front-end sales. As such, pharmacists largely function in a drug distribution role, with limited clinical services being provided. Clinical activities are largely limited to pharmacy interventions that occur as a result of prescription review. This may also include mail order and internet pharmacies.

- ***Separate clinical and distributive practice model***

These pharmacies maintain their reliance on revenue generated from prescription and front-end sales and have expanded to also offer new clinical services as an additional service. In this model, pharmacists are divided into two groups. One group largely provides dispensing services, while the second group largely functions to provide new clinical services such as immunizations, medication reviews, or smoking cessation counseling. Those pharmacists who largely function in providing new clinical services generally only focus on 1-2 new services and may rotate to various stores to provide the service.

- ***Integrated drug distribution/clinical practice model***

These pharmacies aim to integrate new clinical services into the dispensing process. In this model, nearly all pharmacists have a balance of dispensing and offering new clinical services.

- ***Clinical practice-centred model***

These pharmacies aim to utilize all their pharmacists for clinical service roles, with less than 20% of their time spent in a distributive role. Pharmacy technicians and/or automation are largely responsible for drug distributive activities.

- ***Family practice-centered model***

Pharmacists are utilized completely for their clinical services and expertise in family practices. These pharmacists are not responsible for any distributive role and are not based at a pharmacy. Instead, pharmacists are able to proactively influence prescribing behavior at the patients' family practice and provide patient education at the point of prescribing.

- ***Specialist practice-centered model***

These pharmacies focus on highly specialized services such as compounding and home healthcare to generate revenue.

It has also been argued that there are only two models of practice: reactive and proactive. The definitions of these models are:⁸⁹

Reactive model

The pharmacist primarily reacts to an established medication order or decision (also known as “unit-based model”).

Proactive model

The pharmacist functions as a member of the inter-professional team, proactively contributing to the decision-making process and the development of patient-centred care plans (also known as the “service-based model”). Inherent to this model is the assumption that the pharmacist is routinely present at the point where drug therapy decisions are being made (e.g., routine participation in inter-disciplinary rounds and the provision of input into most medication therapy decisions that are made).

From the Hospital Pharmacy in Canada 2013/2014 report, a mean of 62% ± 31% of inpatient beds were serviced by a reactive model. In addition, 32% (51/161) of hospital pharmacy directors indicated that in the past 12 months they had reviewed their clinical practice model from the perspective of a reactive vs. proactive practice model. Of these, 73% (37/51) indicated that they had plans to change their pharmacy practice model toward a more proactive model.⁸⁷

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