



College of Pharmacists
of British Columbia

A faint background illustration of a pharmacist in a white coat with an "Rx" symbol on the pocket, and a prescription slip with a red signature and a yellow pencil. The slip has "Rx" at the top and wavy lines below. The main title is overlaid on this illustration.

CERTIFIED PHARMACIST PRESCRIBER

**FRAMEWORK FOR PHARMACIST PRESCRIBING
IN BRITISH COLUMBIA**

February 2018

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1. EXECUTIVE SUMMARY

This Certified Pharmacist Prescriber initiative is focused on preventing patient harm by reducing preventable drug-related problems and providing safer transitions in care through increased involvement of pharmacists, as medication experts in the delivery of patient-centred collaborative care. Improving medication management and reducing preventable drug-related hospitalizations protects public safety and will improve patient outcomes.

This initiative will require amendments to the Pharmacists Regulation under the *Health Professions Act*. Amendments to College bylaws will also be needed.

Risks to patient safety as a result of drug-related problems or poor patient outcomes are a growing concern. An aging population, multi-medication use, transfers in care, chronic disease management, and increasing complexity in patient care all increase the risk of drug related problems and put patient safety at risk. These factors together with the challenges in providing timely access to care, affect patient health outcomes.

As a result, medication experts play an important role in navigating the increasing complex care involved in providing patients with the care they need. Pharmacist-led drug therapy management improves clinical outcomes for patients, contributes to health care cost savings, and receives high satisfaction ratings from patients.

However, there are gaps in a pharmacist's authority to use their medication expertise to prevent drug-related problems and help improve patient health outcomes. Currently, pharmacists in BC do not have the level of involvement in prescribing decisions or the ability to initiate, monitor and adjust a patient's drug-therapy in a timely way that is needed to help manage these risks and better care for patients. What results without the authority to prescribe is often a redundant and time-consuming process, where pharmacists make recommendations to other health care professionals who are asked to approve them.

Reduced risk factors for chronic disease, improved blood glucose, improved blood pressure, improved lipid levels, and reduced risk for major cardiovascular events are all examples of pharmacist prescribing in collaborative relationships preventing harm and improving patient outcomes in recent studies. These opportunities to improve patient outcomes and prevent patient harm through pharmacist prescribing cannot be ignored when considering patient safety.

While the College does not advocate for changes to scope of practice for the advancement of the pharmacy profession, it does consider changes to pharmacy practice that are in the best interests of patients by increasing public safety and improving patient outcomes. Like the expansion of the pharmacists' role in drug administration, the College is proposing regulation of Certified Pharmacist Prescribers to help pharmacists better care for their patients and protect them from preventable drug related problems.

Pharmacist prescribing is needed in British Columbia to:

- improve patient outcomes,
- prevent drug-related problems,
- reduce unnecessary emergency room visits and hospitalizations,
- improve timely access to drug therapy, and
- improve continuity of care.

Framework for Pharmacist Prescribing in British Columbia

The Framework for Pharmacist Prescribing in British Columbia has been developed to establish regulation for Certified Pharmacists Prescribers across the Province. It includes requirements for collaboration with other health professionals, an education, training and evidence based qualification process, information access requirements and protection from conflict of interest among other standards, limits and conditions designed to protect patient safety.

Collaboration

For the purpose of the framework, the College is requiring collaborative practice relationships.

Collaborative practice relationships involve developing a relationship with a regulated health professional who has the authority to prescribe to:

- facilitate communication
- determine mutual goals of therapy that are acceptable to the patient
- share relevant health information
- establish the expectations of each regulated health professional when working with a mutual patient

Collaborative practice relationships are not tied to a specific environment or practice setting, but set requirements for what must be established to prescribe through working with others on a patient's care team. In collaborative practice relationships, the diagnosis is still provided by physicians and nurse practitioners (or other regulated health professionals with prescribing authority). Some environments may more easily be able support the requirements for

collaborative relationships, such as hospitals or urgent care centers. However, collaborative relationships can still take place in other environments where pharmacists are able to effectively communicate and securely share relevant health information with other health professionals on a patient's care team.

Separating Prescribing from Dispensing

Pharmacist prescribing would be separated from dispensing. Certified Pharmacist Prescribers would be restricted from dispensing medications they prescribed for a patient. This prevents the potential business conflict of interest – a frequent point of concern for respondents.

Eligibility

The application process to become a Certified Pharmacist Prescriber will involve both an evidence based competency evaluation and completion of an educational program.

The College will use an evidence based competency evaluation to assess the competency of applicants to prescribe in collaborative practice. Applicants will need to submit information on their clinical background as well as patient care cases documenting the pharmacist's clinical involvement to demonstrate knowledge, skills and abilities under each one of the competency indicators.

The education program for Certified Pharmacist Prescribers will include a course

series on the responsibilities of pharmacist prescribing. The series will focus on fundamental knowledge all Certified Pharmacist Prescribers require to effectively and safely prescribe in collaborative practice relationships. The College will also recommend (but not require) a series of preparatory courses based on topics that support pharmacist prescribing in collaborative relationships.

Renewal requirements for a Certified Pharmacist Prescriber includes proof of an additional 15 units of continuing education and an annual self-declaration.

Access to Relevant Health Information

Pharmacists must be able to effectively share and review relevant health information in order to be able to prescribe and effectively manage drug therapy. This ranges from access to patient medical records (electronic or offline), PharmaNet, and laboratory test results, to specific input from the patient and others on the health care team, especially the most responsible practitioner. Access to health information from the patient, PharmaNet, patient medical records, and information from others on the patient care team are required for pharmacist prescribing.

Patient Education

The College will develop a patient education plan and a communications strategy to build awareness and understanding of pharmacist prescribing in BC.

2. PURPOSE OF THIS FRAMEWORK

The College's mandate is to serve and protect the public with a vision to provide better health through excellence in pharmacy. This framework proposes the path forward to protecting patient safety through the regulation of Certified Pharmacist Prescribers in collaborative practice relationships.

This Certified Pharmacist Prescriber initiative is focused on preventing patient harm by reducing preventable drug-related problems and providing safer transitions in care through increased involvement of pharmacists, as medication experts in the delivery of patient-centred collaborative care. Improving medication management and reducing preventable drug-related hospitalizations protects public safety and will improve patient outcomes.

Pharmacists are medication management experts and can identify, resolve and prevent drug therapy problems. They take complete and accurate medication histories and monitor drug therapy to prevent patient harm from drug-related problems. They make recommendations to the patient's family physician and others involved in the patient's care when changes to drug therapy are required to prevent drug-related problems, including initiation of a new drug, discontinuation of a drug and a change in drug therapy. More closely involving pharmacists in a patient's care team and prescribing decisions allows pharmacists to contribute their medication expertise more effectively and better protect patients from the risks involved in drug therapy.

Collaborative practice relationships involve a Certified Pharmacist Prescriber and a regulated health professional who has the authority to prescribe, developing a relationship and working together to establish expectations for caring for a mutual patient, facilitate communication, share relevant health information, and determine mutual goals of therapy with the patient.

Certified Pharmacist Prescribers would work in collaboration with the patient and other members of the patient's care team on drug therapy plans, and would be authorized to prescribe drug therapy, including initiating, discontinuing and or changing drug therapy to improve outcomes and prevent drug-related problems.

Certified Pharmacist Prescribers would be regulated by the College through specific standards, limits and conditions in addition to the College's *Code of Ethics* and existing bylaws and professional practice policies. An education program and evidence based cases would also be part of the certification process.

This initiative will require amendments to the Pharmacists Regulation under the *Health Professions Act*. Amendments to College bylaws will also be needed.

3. BACKGROUND

The development of a framework for pharmacist prescribing stretches back to 2010 when the College of Pharmacists of British Columbia Board first decided to move forward with a feasibility study to assess how pharmacist prescribing could help better prevent patient harm and improve patient outcomes. It was later included as an initiative in the College's 2014/15 – 2016/17 Strategic Plan and continues to be part of the College's Strategic Plan for 2017/18 – 2019/20.

In May 2015, the College developed "Establishing Advanced Practice Pharmacists in British Columbia" which proposed moving forward with obtaining pharmacist prescribing authority, in response to the Ministry of Health's call for feedback on several cross-sector policy discussion papers. In response to the College's submission, the Ministry of Health requested additional information on societal need, eligibility criteria, and managing perverse incentives to prescribe in addition to further stakeholder engagement.

As a result, the College developed an initial Certified Pharmacist Prescriber Draft Framework which included information on societal need, proposed eligibility criteria and standards, limits and conditions, as well as practical use cases. The framework was based on full independent prescribing, similar to the pharmacist prescribing authority that exists in the Province of Alberta, where pharmacist prescribers initiate and manage drug therapy for patients when they have the knowledge, skills and abilities to safely prescribe.

The initial Draft Framework was used to facilitate stakeholder engagement on pharmacist prescribing in BC. Stakeholder engagement was conducted through a series of consultations in Spring/Summer 2016.

The level of participation during the Certified Pharmacist Prescriber Engagement was one of the largest the College has ever experienced. The College held over 15 different workshops, discussions and meetings and heard from over 25 different stakeholder groups. The College also received over 11,400 comments through its online survey. The detailed report on the results of the engagement was published on the College's website after being reviewed by the College Board in November 2016.

After reviewing the results of the engagement, the College Board made the decision to amend the Certified Pharmacist Prescriber Draft Framework by narrowing the scope of pharmacist prescribing to within collaborative practice.

Stakeholder Feedback

The College used feedback from patients, pharmacists and other prescribers to revise and build on the framework for pharmacist prescribing in BC.

Overall, stakeholder groups were quite divided in their level of confidence in pharmacists' independently prescribing. Feedback indicated overwhelming support from pharmacists and pharmacy technicians, but strong resistance from other prescribers, while the public was divided with both support and concern.

The greatest convergence across stakeholder groups surrounded the opportunity pharmacist prescribing could have in providing greater access to care, especially for minor ailments, emergency situations, continuity of care and for patients without a primary care provider. Feedback from pharmacists and other prescribers also highlighted that pharmacist prescribing might work best in interdisciplinary team-based settings where access to more patient information and laboratory test results, and having a physician or nurse practitioner available to provide a diagnosis, provided respondents with greater confidence in pharmacist prescribing. The Engagement Report with stakeholder feedback on the initial framework for independent prescribing can be found at bcpharmacists.org/prescribing.

Pharmacist Prescribing within Collaborative Practice Relationships

Pharmacist prescribing within collaborative practice would take place through interdisciplinary team-based care where physicians and nurse practitioners would continue to be responsible for the diagnosis, and access to health records and diagnostics, including laboratory test results, would be facilitated. Certified Pharmacist Prescribers would also be restricted from dispensing medications they prescribed for a patient.

Reasons for restricting pharmacist prescribing to collaborative practice

- **Interdisciplinary team-based settings**
Collaborative practice involves working closely in an interdisciplinary team to care for patients. In these teams, physicians or nurse practitioners provide the diagnosis – an area many other prescribers felt pharmacist prescribers would not have the expertise to do.
- **Access to patient health information and laboratory tests**
Pharmacists working in collaborative practice already have access to patient health information and laboratory tests. Lack of access to patient information, and diagnostic tests (including laboratory test results) outside of interdisciplinary settings was a key point of concern identified by many pharmacists and other prescribers.
- **Conflict of Interest**
Separating pharmacist prescribing from dispensing and business interests removes the concern for a potential business conflict of interest – a frequent point of concern for respondents.

Developing a Framework for Pharmacist Prescribing in Collaborative Practice Relationships

Based on the College Board's direction, the College has developed a framework for pharmacist prescribing within collaborative practice. Pharmacist prescribing is proposed to take place through interdisciplinary team-based care where physicians and nurse practitioners would continue to be responsible for the diagnosis, and access to health records and diagnostics, including laboratory test results, would be facilitated. Certified Pharmacist Prescribers would also be restricted from dispensing medications they prescribed for a patient.

In developing a new Draft Framework for Pharmacist Prescribing in Collaborative Practice Relationships, the elements in the initial Draft Framework were adjusted to reflect the revised scope and collaborative requirements. Feedback on other areas, such as eligibility requirements and patient education, were also used to inform this framework.

The new Draft Framework for Pharmacist Prescribing in Collaborative Practice Relationships also focuses more closely on the benefit to patient care by identifying specific opportunities to prevent patient harm and improve patient outcomes. More recent evidence and case studies demonstrating the benefits of pharmacist prescribing in patient care have also been released and were important to include.

While many of the standards, limits and conditions remain the same, some changes were needed to narrow the scope of the framework to pharmacist prescribing in collaborative relationships. This included outlining how pharmacist prescribing would operate within a collaborative approach and defining what would be required as part of a collaborative practice relationship.

4. EXISTING PATIENT SAFETY RISKS

Risks to patient safety as a result of drug-related problems or poor patient outcomes are growing. There are many risks inherently involved in providing drug-therapy as part of patient care and medication experts play an important role in navigating the increasing complex care involved in providing patients with the care they need. An aging population, multi-medication use, transfers in care, chronic disease management, and increasing complexity in patient care all increase the risk of drug related problems and put patient safety at risk. These factors together with the challenges in providing timely access to care, also affect patient health outcomes.

While the risks can be managed through the involvement of medication experts in a patient's care team, there are still gaps in a pharmacist's ability to reduce these risks and contribute to improving patient health outcomes. Currently, pharmacists in BC do not have the level of involvement in prescribing decisions or the ability to initiate, monitor and adjust a patient's drug-therapy in a timely way that is needed to help manage these risks and better care for patients.

4.1 DRUG RELATED PROBLEMS ARE A GROWING CONCERN

Drug related problems are a growing concern and pose a serious risk to patients that can result in poor patient outcomes, hospitalizations or even death. Incidents occur both within hospital and residential care settings as well as within the community. However, many can be prevented when medication experts are involved in the prescribing process and can intervene to address drug-related problems.

Drug-related problems

A drug-related problem is defined as an event or circumstance that involves a patient's drug treatment that actually, or potentially, interferes with the achievement of an optimal outcome.

- Need for additional drug therapy (i.e. untreated indications)
- Unnecessary drug therapy (i.e. drug use without indication)
- Wrong drug (i.e. improper drug selection)
- Dosage is too low
- Dosage is too high
- Adverse drug reaction (actual and potential)
- Drug interactions
- Compliance problem
- Failure to receive drugs (i.e. dose omissions and delay in treatment)¹

While many of the factors that increase the risk for drug-related problems are inherent in the health care system and cannot be avoided, in many cases, drug-related problems are still preventable. This makes it important to recognize the ongoing risks and involve medication experts in helping to mitigate the risk for patients.

Drug-related problems have a significant impact on morbidity and mortality and they will continue to increase as BC's population ages and more people use prescription medications, over the counter medications and natural supplements to treat their conditions.

¹ Adusumilli, P.K., Adepu, R. (2014). Drug Related Problems: An Over View of Various Classification Systems. *Asian J Pharm Clin Res*, Vol 7, Issue 4

Elements of patient care that contribute to drug-related problems

- Increased use of medications
- Multiple chronic diseases or conditions (comorbidities)
- Polypharmacy (where patients are on five or more medications)
- Transitions in care (such as discharge from hospital back into the community)

Approximately 5-10% of hospital admissions are due to drug-related problems, of which 50% were preventable.² The Canadian Adverse Events Study³ reported drug and fluid-related events were the second most common type of adverse events in Canadian hospitals, and accounted for 23.6% of the adverse events. In a BC study, more than 1 in 9 emergency department visits at Vancouver General Hospital were due to drug-related adverse events, and 68% of them were preventable.⁴ In addition, 20% of patients discharged experienced some sort of adverse problem and of those, 66% are drug related.⁵

Increases to preventable drug-related problems leads to more hospital admissions and readmissions. As a result, in addition to the patient harm drug-related problems cause, they also add a burden on the health system which unnecessarily takes resources away from patient care.

The total cost of preventable drug-related hospitalizations in Canada is estimated at \$2.6 billion per year⁶. Inappropriate prescriptions for seniors aged 65 and older is also estimated at \$400 million annually to the Canadian healthcare costs and reaches \$1.4 billion when the impact of drug-induced falls, fractures and hospitalizations are included.⁷

² Nelson, K.M., Talbert, R.M. Drug-related hospital admissions. *Pharmacotherapy*, 16 (1996), pp. 701-707

³ Baker, G. R., P. G. Norton, V. Flintoft, R. Blais, A. Brown, J. Cox, E. Etchells, et al. 2004. The Canadian Adverse Events Study: The incidence of adverse events among hospital patients in Canada. *CMAJ* 170 (11): 1678-86.

⁴ Zed, P et al incidence, severity and preventability of medication-related visits to the emergency department: a prospective study, *CMAJ* 2008 June 3:178(12) 1563-9

⁵ Forster, A.J., Murff, H.J., Peterson, J.F., Gandhi, T.K., Bates, D.W. (2003). The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med*, 4,138(3), 161-7

⁶ Hohl, C.M., Nosyk, B., Kuramoto, L., Zed, P.J., Burbacher, J.R., Abu-Laban, R.B., et al. (2011). Outcomes of emergency department patients presenting with adverse drug events. *Ann Emerg Med*, 58(3), 270-279.

⁷ S.G. Morgan, J. Hunt, J. Rioux, J. Proulx, D. Weymann, & C Tannenbaum. (2016). Frequency and cost of potentially inappropriate prescribing for older adults: A cross-sectional study. *CMAJ Open*, 4(2). doi: 10.9778/cmajo.20150131

4.2 TRANSITIONS IN CARE INVOLVE RISKS FOR PATIENTS

Transitions in care are a normal and necessary occurrence in the health system as patients move between different locations and partners in their care team. However, they present an increased risk for patients, primarily from preventable drug-related problems.

Patients are particularly vulnerable during transitions, a time when they are most likely to experience drug-related problems. Transitions in care involve patients moving between different health care locations, health care professionals, or different levels of care within the same location as their conditions or care needs change.

Factors that contribute to delay or omission of medications during transitions of care

- Intention to prescribe but not prescribe a new or routine drug therapy
- Inadequate follow-up of problematic orders
- Incomplete handoffs between health professionals
- Gaps in high quality medication reconciliation^{8 9}

Approximately 40% of medications used upon admission are not continued at hospital discharge which has the potential to cause patient harm.¹⁰ In addition, the first doses of medications to be administered can be delayed when patients are transferred between acute care and primary care or residential care. The timely administration of certain medications is crucial to prevent patient harm and death (e.g. antibiotics, antifungals, anticoagulants, insulin and Parkinson's drug therapy¹¹).

⁸ National Patient Safety Agency. Rapid Response Report NPSA/2010/RRRO09: Reducing harm from omitted and delayed medicines in hospital. NPSA 2010 <http://www.nrls.npsa.nhs.uk/alerts/?entryid45=66720>

⁹ ISMP Canada Safety Bulletin, Delayed Treatment after Transitions in Care: A Multi-Incident Analysis, October 2016

¹⁰ Nickerson, A, MacKinnon, NJ, Robers, N, Saulnier, L. Drug-therapy problems, inconsistencies and omissions identified during a medication reconciliation and seamless care service. *Healthcare Quarterly*. 2005;8:65-72

¹¹ Parkinson's patients may lose their ability to walk without their medication in the hospital

Taking a complete and accurate medication history is an important step involved in transfers of care and occur in both hospital and community practice settings. When incomplete or inaccurate medication history is taken, it increases the risk of drug related problems and puts the patient's safety at risk. Pharmacists have the medication expertise to conduct thorough medication histories. However, they do not have the authority to initiate or adjust drug-therapy which can result in delays in discharge, or not enough involvement in the prescribing decisions and insufficient drug-therapy adjustments.

Incomplete or inaccurate medication histories frequently occur during hospital admissions or discharge. This can lead to unwanted duplication of drugs, drug interactions, discontinuation of long-term medications and failure to detect drug-related problems¹² – all of which put patient safety at risk and negatively affect health outcomes.

Incomplete or inaccurate medication histories also occur outside of hospitals in primary care. This can lead to continuing drugs that are not needed or no longer needed, not using drugs that are needed to prevent adverse drug reactions, using drugs or drug doses that interact with existing medical conditions, using drugs or drug doses that interact with existing drug therapy and inconsistent monitoring.¹³

¹² Medication errors: the importance of an accurate drug history. 2009

¹³ High-risk prescribing and monitoring in primary care: how common is it, and how can it be improved? 2012

4.3 TIMELY ACCESS TO CARE CAN'T KEEP UP WITH PATIENT DEMAND

Challenges with timely access to care increase the risks for drug-related problems for patients in BC. Lack of access to timely care also negatively impacts patient outcomes.

Canadians report longer wait times for physicians and emergency department visits than adults in comparable countries. Only 43% were able to get a same or next day appointment at their regular place of care.¹⁴ Canadians also visit emergency departments more often than people in other countries, and have longer waits. More than 40% of Canadians said that the last time they visited an emergency department, it was for a condition that could have been treated by their regular providers if they had been available.¹⁵

In BC, many large emergency departments are congested and emergency visits continue to increase each year. Seniors, and patients who have chronic conditions or severe mental illness and/or substance use are most affected by access to care and wait times.¹⁶ People living in rural and remote areas in BC also face additional challenges as they tend to have poorer health status and limited access to health care services.¹⁷

Many Canadians do not have access to a regular medical doctor which presents challenges for patients to receive timely access to care and presents risks to patient health. Over 4.5 million Canadians are without a regular medical doctor.¹⁸

Being without a regular medical doctor is associated with fewer visits to general practitioners or specialists, who can play a role in the early screening and treatment of medical conditions.

Patients without a regular medical doctor receive services through a walk-in clinic or ER and may not be well connected to the additional primary care services that would improve their health status.¹⁹

As a result, physicians are seeking support from pharmacists and other healthcare providers to help manage the workload of more and more complex patients.²⁰

¹⁴ Canadian Institute for Health Information. How Canada Compares: Results From the Commonwealth Fund's 2016 International Health Policy Survey of Adults in 11 Countries – Accessible Report. Ottawa, ON: CIHI; 2017

¹⁵ Canadian Institute for Health Information. Commonwealth Fund Survey 2016. <https://www.cihi.ca/en/commonwealth-fund-survey-2016>

¹⁶ Ministry of Health, British Columbia. Setting Priorities for B.C. Health. <http://www2.gov.bc.ca/gov/content/health/about-bc-s-health-care-system/health-priorities/setting-priorities-for-bc-health>

¹⁷ Ministry of Health of British Columbia. 2015. Rural Health Services in BC: A Policy Framework to Provide a System.

¹⁸ Statistics Canada. Access to a regular medical doctor, 2014. <http://www.statcan.gc.ca/pub/82-625-x/2015001/article/14177-eng.htm>

¹⁹ Ministry of Health of British Columbia. Primary and Community Care in BC: A Strategic Policy Framework. <http://www.health.gov.bc.ca/library/publications/year/2015/primary-and-community-care-policy-paper.pdf>

²⁰ Society of General Practitioners of BC 2007. Submission to the BC Ministry of Health "Conversation on Health"

4.4

AN AGING POPULATION, POLYPHARMACY AND INCREASED COMPLEXITY IN PATIENT CARE

An aging population increases the complexity in providing care for patients. With many seniors managing multiple chronic diseases and conditions and needing multiple medications, the risks for drug-related problems and poor patient outcomes are increased.

Across Canada, patient demographics have changed, resulting in a greater number of seniors needing care. There are now more seniors than children in Canada according to the 2016 Stats Canada Census.²¹

This is especially relevant in BC. According to the Ministry of Health, BC has the fastest growing population of seniors in Canada with almost 17% being age 65 or older and this is expected to double in the next 25 years.²²

As people get older, they need more health care, more medications, their care becomes increasingly complex and they are at a higher risk for drug-related problems. Nearly two-thirds of seniors over 65 years use 5 or more drugs and more than one-quarter use 10 or more drugs. Medication use can lead to serious patient harm, especially in older adults with multiple chronic diseases or conditions (comorbidities) and on multiple medications. More than one-third of seniors are also using inappropriate medications²³. As a result, seniors are at a greater risk for adverse drug reactions and are five times more likely to be hospitalized as a result.²⁴

One-half of British Columbians are taking one or more prescription medications and medication use is higher in individuals with chronic conditions of medium or high complexity.^{25 26} Multiple medication use can lead to polypharmacy, the use of inappropriate medications or more medications than clinically indicated.

Polypharmacy is associated with adverse drug-related events, nonadherence, increased risk of cognitive impairment, impaired balance and falls, increased risk of morbidity, hospitalization, and death.²⁷

²¹ Statistics Canada. An aging population. <http://www.statcan.gc.ca/pub/11-402-x/2010000/chap/pop/pop02-eng.htm>

²² Ministry of Health of British Columbia. 2014. 2014/15 - 2016/7 Service Plan.

²³ CIHI 2014 Drug Use Among Seniors on Public Drug Programs in Canada

²⁴ Canadian Institute for Health Information. 2014. Adverse drug reaction- related hospitalizations among seniors 2006 to 2011.

²⁵ Health Council of Canada. 2014. Where You Live Matters: Canadian Views on Health Care Quality.

²⁶ Ministry of Health of British Columbia. 2015. Primary and Community Care in BC: A Strategic Policy Framework.

²⁷ Kwan D, Farrell B. Polypharmacy: Optimizing medication use in elderly patients. *Can Geriatr J.* 2014;4(1):21–7.

There is an also increasing complexity involved in the skills and knowledge required to provide comprehensive care to an aging demographic. This makes it more difficult for any single health professional to be able to meet all the complex needs of patients. Team work, where health professionals work collaboratively to deliver care and draw on the expertise of each health professional in the team, is being emphasized as a strategy by the Province of BC and others for addressing the increasing complexity.^{28, 29}

²⁸ Ministry of Health, British Columbia. Setting Priorities for B.C. Health.

<http://www2.gov.bc.ca/gov/content/health/about-bc-s-health-care-system/health-priorities/setting-priorities-for-bc-health>

²⁹ Team work is used interchangeably with interdisciplinary, interprofessional, multiprofessional, and multidisciplinary throughout Setting Priorities for B.C. Health policy papers.

5. PHARMACIST'S EVOLVING ROLE IN THE PATIENT'S CARE TEAM

At one time, prescribing was limited largely to physicians. However, an increasing focus on an interprofessional collaborative approach in the delivery of healthcare services, especially with chronic diseases, have led to expansion of prescribing rights for other healthcare professionals including pharmacists.

Greater recognition of pharmacists' ability to prevent drug-related problems and improve drug therapy outcomes through their medication expertise has also led to greater involvement in prescribing decisions across Canada and internationally. Growing pressure on the health care system from an increasing senior population, complexities in patient care, and limited access to primary care services have also been factors in expanding pharmacists' scope of practice to provide better care for patients.

5.1 PHARMACISTS OPTIMIZE DRUG THERAPY AS MEDICATION EXPERTS

Medication management involves patient-centred care to optimize safe, effective and appropriate drug therapy. Care is provided through collaboration with patients and their health care teams.³⁰

Pharmacists' Role in Medication Management

- Assess patients and their medication-related needs and identify actual or potential drug therapy problems
- Formulate and implement care plans to prevent and/or resolve drug therapy problems
- Recommend, adapt or initiate drug therapy where appropriate
- Monitor, evaluate and document patients' response to therapy
- Collaborate and communicate with other health care providers, in partnership with patients

With greater involvement in prescribing drug therapy, pharmacist prescribers working in collaborative practice relationships will be able to use their medication expertise to more effectively manage drug therapy, prevent drug-related problems and improve patient outcomes.

Pharmacist-led drug therapy management improves clinical outcomes for patients, contributes to health care cost savings, and receives high satisfaction ratings from patients.³¹ For example, preventable adverse drug events were reduced by two-thirds and 99% of the pharmacist recommendations were accepted by physicians during rounds with a pharmacist in ICU³².

³⁰ This definition was collaboratively defined by the Canadian Pharmacists Association, Canadian Society of Hospital Pharmacists, Association of Faculties of Pharmacy of Canada and Institute for Safe Medication Practices Canada. <https://www.pharmacists.ca/education-practice-resources/professional-development/medication-management/>

³¹ Ramalho de Oliveira D, Brummel AR, Miller DB. Medication therapy management: 10 years of experience in a large integrated health care system. *J Manag Care Pharm.* 2010;16(3):185-95.

³² Leape LL, Cullen DJ, Clapp MD, et al. Pharmacist participation on physician rounds and adverse drug events in the intensive care unit. *JAMA.* 1999;282:267-270

Pharmacist prescribing optimizes the pharmacist's role in medication management and has the potential to improve continuity of care by decreasing the number of steps a patient must take to obtain the optimal medication regimen for their condition.³³

Pharmacists with varying levels of undergraduate, postgraduate and specific on-the-job training related to the disease or condition achieved comparable health outcomes to physicians when the pharmacists prescribed medications to manage a range of conditions³⁴.

What results without the authority to prescribe is often a redundant and time-consuming process, where pharmacists make recommendations to other health care professionals who are asked to approve them. This causes delays and inefficiencies that are not in the interest of patient care or safety, especially in cases of adverse effects or lack of therapeutic response, and does not improve the overall quality of therapeutic decision-making. Further, it requires patients to visit multiple healthcare practitioners and constrains the time that prescribers (e.g., physicians and nurse practitioners, etc.) have to provide other care within their scopes of practice. Prescribing authority provides pharmacists with an important tool to contribute to the optimization of medication use and improve patient health outcomes.

Lack of continuity and prescribing errors at transitions of care from community to hospital and hospital to community are major causes of morbidity, readmission, inefficiency, and patient dissatisfaction with care.^{35 36 37 38} This has become a major priority of health authorities and is a focus of accreditation standards for hospitals.³⁹ Pharmacists in the hospital and the community have a critical role in reconciling and optimizing drug therapy through these transitions. Prescribing is a key to doing this effectively and pharmacist prescribing would contribute greatly to achieving the goal of seamless care delivery.

³³ Pearson, Glen et al. An Information Paper on Pharmacist Prescribing Within a Facility. *The Canadian Journal of Hospital Pharmacy*, [S.l.], v. 55, n. 1, May 2009.

³⁴ Cochrane Review 2016 Weeks G, George J, Maclure K, Stewart D. Non-medical prescribing versus medical prescribing for acute and chronic disease management in primary and secondary care. *Cochrane Database of Systematic Reviews* 2016, Issue 11. Art. No.: CD011227. DOI: 10.1002/14651858.CD011227.pub2 http://www.cochrane.org/CD011227/EPOC_prescribing-roles-health-professionals-other-doctors

³⁵ Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med* 2003;138:161–7

³⁶ Kwan JL, Kwan JL, Lo L, Lo L, Sampson M, Sampson M, et al. Medication Reconciliation During Transitions of Care as a Patient Safety Strategy. *Ann Intern Med* 2013;158:397–403

³⁷ Renke S, Nguyen OK, Shoeb MH, Magan Y, Wachter RM, Ranji SR. Hospital-initiated transitional care interventions as a patient safety strategy: a systematic review. *Ann Intern Med* 2013;158:433–40

³⁸ Hesselink G, Schoonhoven L, Barach P, Spijker A, Gademan P, Kalkman C, et al. Improving patient handovers from hospital to primary care: a systematic review. *Ann Intern Med* 2013;158:417–28

³⁹ American College of Clinical Pharmacy, Hume AL, Kirwin J, Bieber HL, Couchenour RL, Hall DL, et al. Improving care transitions: current practice and future opportunities for pharmacists. *Pharmacotherapy* 2012;32:e326–37 <https://accreditation.ca/medication-management-standards>

5.2 EXPANDING ROLE OF PHARMACISTS IN THE PATIENT CARE TEAM

Pharmacists' scope of practice has evolved in BC to better meet the needs of patients. Risks to patient care and opportunities to improve outcomes are key drivers in expanding pharmacists' scope of practice.

In 2009, pharmacists were given the authority to continue and adapt prescriptions written by authorized prescribers, as well as administer injections.⁴⁰ This was an important step, and expansion of the pharmacist's scope of practice, to help protect patients in BC from the H1N1 influenza. Pharmacists now play an important role in delivering influenza vaccinations every flu season and are better prepared to protect patients from future influenza pandemics.^{41 42}

Pharmacists were also previously granted the authority to prescribe an emergency supply of prescription medications. In addition, pharmacists may prescribe Schedule IV drugs⁴³ for emergency contraception (norgestrol). Pharmacists have also been assessing patients and prescribing Schedule II and III drugs⁴⁴ for years.

These changes helped address risks to patients that could result in drug-related problems or poor patient outcomes, such as timely access to care. However, initiating Schedule I drugs in collaboration with the patients' care team is not within a pharmacist's scope of practice, unlike many other provinces in Canada.

Patient safety was protected by the College of Pharmacists of BC as pharmacist's scope of practice expanded. Methods of regulation related to the new area of practice ranged from specific training, certification programs, to new requirements in College bylaws and policies (see Appendix 6).

⁴⁰ College of Pharmacists of BC. Pharmacists Preparing to Provide Immunizations. Vol 34 no 4, Jul-Aug-Sep 09. http://library.bcparmacists.org/6_Resources/6-7_ReadLinks/ReadLinks-JulAugSep2009.pdf

⁴¹ BC Centre for Disease Control. Communicable Disease Control Immunization Program. <http://www.bccdc.ca/health-professionals/clinical-resources/communicable-disease-control-manual/immunization>

⁴² The role of pharmacists in the delivery of influenza vaccinations. <https://www.ncbi.nlm.nih.gov/pubmed/15161077/>

⁴³ Schedule IV drugs are those prescribed by a pharmacist and include "drugs which may be prescribed by a pharmacist in accordance with guidelines approved by the Board". Drug Schedules Regulation http://www.bclaws.ca/civix/document/id/complete/statreg/9_98#Schedules

⁴⁴ Schedule II drugs may be sold by a pharmacist on a nonprescription basis and which must be retained within the Professional Service Area of the pharmacy where there is no public access and no opportunity for patient self-selection. Schedule III drugs may be sold by a pharmacist to any person from the self-selection Professional Products Area of a licensed pharmacy. Drug Schedules Regulation. http://www.bclaws.ca/civix/document/id/complete/statreg/9_98#Schedules

5.3 OTHER JURISDICTIONS IMPROVING PATIENT CARE THROUGH PHARMACIST PRESCRIBING

Pharmacists have become more involved in protecting patient safety and improving outcomes through different models of collaborative prescribing across Canada and other international jurisdictions.

A recent review of pharmacists' scope of practice across Canada shows that initiating prescriptions is possible in all Canadian provinces except BC.⁴⁵ Other international jurisdictions including the UK, parts of the USA, and New Zealand have also implemented pharmacist prescribing (see Appendix 4).

These jurisdictions established pharmacist prescribing with goals focused on protecting patient safety and improving patient outcomes.

Goals of Implementing Pharmacist Prescribing^{46 47}

- Improve access to primary care
- Improve timely access to medications
- Make better use of pharmacists knowledge and skills
- Increase drug-therapy monitoring
- Reduce ER visits and hospitalizations
- Improve continuity of care
- Improve patient outcomes

⁴⁵ Pharmacists' Expanded Scope of Practice. December 2016. <http://www.pharmacists.ca/pharmacy-in-canada/scope-of-practice-canada/>

⁴⁶ Department of Health. Improving Patients' Access to Medicines: A Guide to Implementing Nurse and Pharmacist Independent Prescribing within the NHS in England. London: Department of Health; 2006.

⁴⁷ MacLeod-Glover, N. (2011), An explanatory policy analysis of legislative change permitting pharmacists in Alberta, Canada, to prescribe. *International Journal of Pharmacy Practice*, 19: 70–78. doi: 10.1111/j.2042-7174.2010.00074.x

5.4

PRESCRIBING DECISIONS IN PHARMACY PROGRAMS

Pharmacists are already being trained to make prescribing decisions. Pharmacy education programs are training pharmacists to be medication therapy experts who will have the knowledge, skills and abilities to initiate and manage drug therapy and effectively collaborate with other health professionals to deliver patient-centred team-based care.

Canadian universities, including the Faculty of Pharmaceutical Sciences at UBC, are transitioning the professional pharmacy degree program from a Bachelor of Science to a Doctor of Pharmacy Degree program with an added focus on prescribing and monitoring of drug therapy, and interprofessional team-based primary care. The curriculum also includes almost twice the amount of experiential learning – caring for patients under the supervision of practicing professionals – than the previous BSc Program.

Universities have also begun to offer opportunities where students across health faculties train together to develop collaborative relationships that prepare them for collaborative practice.

The Pharmacy Examining Board of Canada which assesses the qualifications and competence of candidates for licensing of pharmacists across Canada already includes requirements that support pharmacist prescribing in collaborative practice relationships. “Patient Care” has the highest overall weighting, including for the Objective Structured Clinical Examination.

“Communication and Education”, and “Intra- and Inter-Professional Collaboration” are more highly weighted as part of the clinical examination.⁴⁸

Pharmacy residencies⁴⁹ and other PharmD programs such as the UBC Graduate PharmD degree⁵⁰ and Flex PharmD degree⁵¹ also provide already practicing pharmacists with the knowledge, skills and abilities to prescribe.

⁴⁸ Pharmacy Examining Board of Canada. http://www.pebc.ca/index.php/ci_id/3139/la_id/1.htm

⁴⁹ Pharmacy Practice Residency, Faculty of Pharmaceutical Sciences, University of British Columbia. <https://pharmsci.ubc.ca/programs/pharmacy-practice-residency>

⁵⁰ Graduate PharmD degree, Faculty of Pharmaceutical Sciences, University of British Columbia. <https://pharmsci.ubc.ca/programs/graduate-pharmd-degree>

⁵¹ Flex PharmD degree, Faculty of Pharmaceutical Sciences, University of British Columbia. <https://pharmsci.ubc.ca/programs/flex-pharmd-degree>

5.5 INCREASED COLLABORATION BETWEEN HEALTH PROFESSIONALS

Collaboration and team-based care is growing between health professionals both nationally and internationally.^{52 53} Research showing that a team-based approach can improve efficiency and effectiveness is a key driver in expanding collaborative practice.⁵⁴ Jurisdictions, including BC, have taken measures to support and increase interprofessional collaboration.⁵⁵

Principles of interprofessional collaboration

- Work together with patients in response to their needs
- Collaborate with other providers
- Understand the roles of other providers
- Develop trust and respect for others
- Value the input of other providers
- Communicate effectively
- Seek direction and guidance from other providers when aspects of care are beyond their individual competence, scope of practice and scope of employment

Currently, pharmacists in BC participate in interprofessional collaboration through working on care teams and recommending drug therapy plans to other prescribers involved in the patient's care.

⁵² Steglitz J, Buscemi J, Spring B. Developing a patient-centered medical home: Synopsis and comment on "Patient preferences for shared decisions: a systematic review." *Transl Behav Med* 2012;2:260-261.

⁵³ Canadian Health Services Research Foundation, *Teamwork in Healthcare: Promoting Effective Teamwork in Healthcare in Canada – Policy Synthesis and Recommendations*. June, 2006.

⁵⁴ Health Canada. Health care system. Accessed 2 March 2015. www.hc-sc.gc.ca/hcs-sss/prim/about-apropros-eng.php

⁵⁵ Health Professions Regulatory Advisory Council. Interprofessional Collaboration. <http://www.hprac.org/en/projects/resources/hprac-collaboration.JurisdictionReviewENFINAL.feb1208.pdf>

6. PREVENTING PATIENT HARM AND IMPROVING HEALTH OUTCOMES

Pharmacist prescribing has an important opportunity to prevent harm and improve outcomes for patients across BC.

Patient needs are growing with the rising number of patients with chronic diseases and multiple conditions in addition to a growing senior population. To meet these needs, pharmacists need to be able to contribute more as part of the patient care team.

Pharmacist prescribing is needed to:

- improve patient outcomes,
- prevent drug-related problems,
- reduce unnecessary emergency room visits and hospitalizations,
- improve timely access to drug therapy, and
- improve continuity of care.

Many patients recognize the value pharmacists provide in providing timely access to care and would like to see more health services provided by pharmacists. More than 4 in 5 Canadians (82%) say allowing pharmacists to do more for patients will both improve health outcomes and reduce health care costs.⁵⁶

Studies show that pharmacist prescribing benefits patients by preventing drug-related problems and unnecessary hospitalizations and deaths, improving outcomes for patients with chronic diseases and complex conditions, providing safer transfers in care and providing more timely access to care. Reduced risk factors for chronic disease, improved blood glucose, improved blood

⁵⁶ Abucus Data. 2017. Pharmacists in Canada – A national survey of Canadians on their perceptions and attitudes towards pharmacists.

pressure, improved lipid levels, and reduced risk for major cardiovascular events are all examples of pharmacist prescribing in collaborative relationships preventing harm and improving patient outcomes in recent studies.^{57 58 59 60 61 62 63 64}

It has also been shown that pharmacists achieve comparable health outcomes to physicians when they managed a range of conditions with the authority to prescribe.⁶⁵

⁵⁷ Al Hamarneh YN, Charrois T, Lewanczuk R, et al. Pharmacist intervention for glycaemic control in the community (the RxING study). *BMJ Open* 2013;3:e003154.

⁵⁸ McAlister FA, Majumdar SR, Padwal RS, et al. Case management for blood pressure and lipid level control after minor stroke: PREVENTION randomized controlled trial. *CMAJ* 2014;186:577-84

⁵⁹ Cochrane for Clinicians (2013). Appropriate use of polypharmacy for older patients. *Am Fam Physician*. 2013Apr1;87(7):483-484.

⁶⁰ Tsuyuki R, Houle S, Charrois T, et al. A randomized trial of the effect of pharmacist prescribing on improving blood pressure in the community: the Alberta clinical trial in optimizing hypertension (RxACTION). *Can Pharm J (Ott)* 2014;147:S18.

⁶¹ Rosenthal M, Tsuyuki R. A community-based approach to dyslipidemia management: pharmacist prescribing to achieve cholesterol targets (RxACT Study). *Can Pharm J (Ott)* 2014;147(4):S20

⁶² Al Hamarneh Y, Sauriol L, Tsuyuki R. Economic analysis of the RxING study. *Can Pharm J (Ott)* 2014;147:S47

⁶³ Dole EJ, Murawski MM, Adolphe AB, et al. Provision of Pain Management by a Pharmacist with Prescribing Authority. *AM J Health- Syst Pharm*. 2007; 64: 85- 89.

⁶⁴ Finley PR, Rens HR, Pont JT, et al. Impact of a Collaborative Pharmacy Practice Model on the Treatment of Depression in Primary Care. *Am J Health- Syst Pharm*. 2002; 59(16): 1518- 1526.

⁶⁵ Cochrane Review 2016 Weeks G, George J, Maclure K, Stewart D. Non-medical prescribing versus medical prescribing for acute and chronic disease management in primary and secondary care. *Cochrane Database of Systematic Reviews* 2016, Issue 11. Art. No.: CD011227. DOI: 10.1002/14651858.CD011227.pub2
http://www.cochrane.org/CD011227/EPOC_prescribing-roles-health-professionals-other-doctors

6.1 PHARMACISTS PREVENT DRUG-RELATED PROBLEMS

Pharmacists have unique drug therapy focused knowledge and skills, making them medication experts. This makes them the most effective member of a health care team in identification, prevention and resolution of drug-related problems. Through collaborating with other health professionals and the patient, pharmacists have a great opportunity to help protect patient safety and improve patient outcomes through a more active role in initiating and managing drug therapy.

Currently, pharmacists in BC can recommend drug therapy plans to a physician or other prescriber on the patient's care team. This collaboration already plays an important role in preventing drug-related problems. However, without the ability to make prescribing decisions, pharmacists cannot always intervene to prevent drug-related problems.

A pharmacist prescriber has the ability to effectively manage a patient's drug therapy through initiating, monitoring and adjusting medications. With their medication expertise and accessibility to patients, they can play an important role on the patient's care team in managing drug therapy and providing more opportunities for improved drug therapy monitoring, patient follow up, and adjustments as needed.

They are also more easily able to quickly intervene to address or prevent adverse effects from drug-related problems. Time delays for patients when a prescriber, such as a physician or a nurse practitioner is not readily accessible, can result in delayed interventions and delayed access to treatment which puts patient safety at risk and contributes to poor health outcomes. In addition, the pharmacist may not have ongoing overall involvement in the patient's drug therapy plan to monitor, adjust and follow up with patients and members of the care team.

Studies have also shown that pharmacists on hospital rounds identify, resolve, and prevent drug therapy problems through their management and initiation of drug therapy.

6.2 PHARMACIST PRESCRIBERS IMPROVE TIMELY ACCESS TO PATIENT CARE

For many patients, the first point of contact with the health system is through the most accessible health professional, the pharmacist – this is particularly relevant when other health professionals are unavailable or are unable to see patients in a timely manner. As a valuable member of the patients’ care team, pharmacists can work with patients on achieving the best drug therapy outcomes, avoiding drug-related problems, and providing accessible and timely care.

Patients in BC want better, faster access to health care and have specifically identified pharmacists and nurses as key professionals best qualified to assist in alleviating physicians’ workload.⁶⁶ Patients also believe an expanded scope of practice will allow health professionals to provide a level of care more reflective of their qualifications, while increasing the efficiency and accessibility of BC’s health care system.⁶⁷

Pharmacists frequently see patients with poorly controlled high blood pressure (about 30-90% uncontrolled in the community). They also frequently see patients with abnormal amounts of lipids in their blood (about 50% in the community). These cases, among many, present opportunities for pharmacists to work closely with their patients, and others on the patient care team to help improve health outcomes. The pharmacists’ accessibility to the patient and their ability to assess, monitor and prescribe and adjust drug therapy allows for timely care to be provided. This can be especially beneficial for many chronic diseases and complex conditions where ongoing monitoring and frequent follow-ups and drug therapy adjustments may be needed.

⁶⁶ Geoffrey Appleton, MB. The consensus? There is no consensus. BCMJ, Vol. 50, No. 1, January, February, 2008, page(s) 10 — President's Comment.

⁶⁷ Ministry of Health of British Columbia. 2007. Input on the Conversation on Health.

Improved blood pressure^{68 69} (RxACTION Study)

Pharmacist assessment of blood pressure, cardiovascular risk, patient education, prescribing of antihypertensive medications, laboratory monitoring, monthly follow-up based on the Canadian hypertension guidelines improves blood pressure in poorly controlled patients.

- The pharmacist prescriber established a collaborative relationship with the patient's family physician, established drug therapy goals together with the patient and physician to improve the patient's blood pressure, and ensured information and updates could be effectively shared between the physician and the pharmacist prescriber.
- The pharmacist prescribing decisions included: initiation of new antihypertensive drugs, dose changes, deprescribing of antihypertensive drugs, addition of low-dose acetylsalicylic acid and initiation of a statin.
- This resulted in improved blood pressure in poorly controlled patients.
- Pharmacist prescribers communicated all the assessment results and drug therapy changes in the patient's medication management with the patient's family physician in person or by fax.

⁶⁸ Tsuyuki R, Houle S, Charrois T, et al. A randomized trial of the effect of pharmacist prescribing on improving blood pressure in the community: the Alberta clinical trial in optimizing hypertension (RxACTION). *Can Pharm J (Ott)* 2014;147:S18.

⁶⁹ McAlister FA, Majumdar SR, Padwal RS, et al. Case management for blood pressure and lipid level control after minor stroke: PREVENTION randomized controlled trial. *CMAJ* 2014;186:577-84

Improved lipid levels^{70 71} (RxACT Study)

Pharmacist prescribing helps patients improve lipid levels and achieve cholesterol targets to reduce cardiovascular risk.

- The pharmacist prescriber established a collaborative relationship with the patient's family physician, established drug therapy goals together with the patient and physician to improve the patient's lipid levels, and ensured information and updates could be effectively shared between the physician and the pharmacist prescriber.
- The pharmacist prescriber's medication management and prescribing decisions included: completing assessment of cardiovascular risk, reviewing lipid levels, developing a care plan, providing education/counseling to the patient, prescribing/titrating lipid-lower medications, ordering lab tests to monitor efficacy and safety, assessing drug tolerability (i.e. myalgia), and following-up based on the Canadian dyslipidemia guidelines.
- This resulted in improved lipid levels in poorly controlled patients.
- Pharmacist prescribers communicated all the assessment results and drug therapy changes in the patient's medication management with the patient's family physician.

⁷⁰ Rosenthal M, Tsuyuki R. A community-based approach to dyslipidemia management: pharmacist prescribing to achieve cholesterol targets (RxACT Study). *Can Pharm J (Ott)* 2014;147(4):S20

⁷¹ Cochrane for Clinicians (2013). Appropriate use of polypharmacy for older patients. *Am Fam Physician*. 2013 Apr1;87(7):483-484.

Involving pharmacists more closely in prescribing drug therapy within a collaborative practice relationship can ease some of the pressure on access to primary care for patients in BC. Pharmacists would also be able to collaborate more efficiently with other health providers in hospital settings, for example in providing more timely access to the health professional and medication expertise needed to provide safe transitions in care.

Pharmacist prescribing will allow pharmacists to take on a larger role in medication management, initiating, adapting and monitoring a patients' drug therapy while collaborating with others on the patient's care team to ensure the best possible health outcomes. This additional prescriber on a patients' care team has the potential to both provide more-timely access to drug therapy and improve medication management to reduce risks and improve outcome for patients.

6.3 PHARMACIST PRESCRIBERS HELP PREVENT PATIENT HARM DURING TRANSITIONS IN CARE

Patients are at an increased risk for drug-related problems during transitions in care. However, these risks can be reduced with increased involvement of pharmacists in initiating, managing and deprescribing drug therapy during transitions in care.

Medication reconciliation, an important step in transitions in care, is proven to be especially effective in preventing patient harm and improving patient outcomes.⁷²

Canadian Medication Reconciliation Outcomes

- Using a nurse-pharmacist led process, medication reconciliation was able to potentially avert 81 adverse drug events for every 290 patients.
- Over a six month period, implementation of a formal medication reconciliation process upon transfer out of the Intensive Care Unit (ICU) decreased the number of sampled patients found to have a medication error from 94% to nearly 0%.
- Long-term care (LTC) residents, who had medication reconciliation completed upon return to LTC from acute care, were less likely to have a discrepancy-related adverse event as compared to residents who did not have medication reconciliation completed.

Gaps in high quality medication reconciliation^{73 74} during admission and discharge from hospital can be addressed by pharmacist prescribers with collaborative relationships that involve others on the patient's care team both in the hospital and in primary care.

⁷² Medication Reconciliation in Canada: Raising the Bar Progress to date and the course ahead. <https://accreditation.ca/sites/default/files/med-rec-en.pdf>

⁷³ National Patient Safety Agency. Rapid Response Report NPSA/2010/RRRO09: Reducing harm from omitted and delayed medicines in hospital. NPSA 2010 <http://www.nrls.npsa.nhs.uk/alerts/?entryid45=66720>

⁷⁴ ISMP Canada Safety Bulletin, Delayed Treatment after Transitions in Care: A Multi-Incident Analysis, October 2016

For example, pharmacist-led medication reconciliation⁷⁵ during a hospital discharge can help ease the transition of care back into the community. The pharmacist prescriber would complete a best possible medication history⁷⁶ as part of the medication reconciliation, and facilitate a safe handoff of the medication changes, including initiation, adaptation or deprescribing of drug therapy through working with the patient's family physician and community pharmacy together with the patient and others involved in the patient's care team.

As a result, pharmacist prescribers have a valuable opportunity to improve the timeliness of transfers of care through quality medication reconciliations and initiation of drug therapy during hospital discharge. This is also an opportunity to improve patient outcomes and prevent drug-related problems by ensuring the appropriate drug-therapy is prescribed at discharge and patients are not delayed in starting their therapy. Effective communication between pharmacist prescribers in hospital or urgent care centers and pharmacists in the community also supports effective continuity of care during a transfer. The College of Physicians and Surgeons of BC also specifically identified the opportunity for pharmacists to make appropriate prescribing decisions during hospital discharges.⁷⁷

“It seems entirely appropriate for hospital pharmacists to provide prescriptions at time of discharge, having been engaged in the medication optimization and management during the patient's stay.” – Letter from the College of Physicians and Surgeons of British Columbia

Medication reconciliation by pharmacist prescribers during admissions and emergency room visits – including initiating and adjusting drug therapy – has also demonstrated positive results for patient outcomes.

⁷⁵ Lo L, Kwan J, Fernandes OA, et al. Medication Reconciliation Supported by Clinical Pharmacists (NEW) In: Making Health Care Safer II: An Updated Critical Analysis of the Evidence for Patient Safety Practices. Rockville (MD): Agency for Healthcare Research and Quality (US); 2013 Mar. (Evidence Reports/Technology Assessments, No. 211.) Chapter 25. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK133408/>

⁷⁶ The 'Best Possible Medication History' (BPMH) constitutes the cornerstone for medication reconciliation. The BPMH is more comprehensive than a routine primary medication history, as it involves “(1) a systematic process for interviewing the patient/family; and (2) a review of at least one other reliable source of information (e.g., review of a central medication database, inspection of medication vials, or contact with the community pharmacy) to obtain and verify patient medications (prescribed and non-prescribed).” (Institute for Safe Medication Practices Canada. Medication Reconciliation).

⁷⁷ College of Pharmacists of BC. Certified Pharmacist Prescriber Engagement Report. November 2016. Page 23. http://library.bcparmacists.org/5_Programs/5-5_CPP/1046-Certified_Pharmacist_Prescriber_Engagement_Report.pdf

In the UK, a pharmacist prescriber completed systematic medicine reconciliation in the Accident and Emergency Department and initiated an inpatient prescription chart. In these cases, medicine reconciliation completed within 24 hours of admission increased from 50% to 100% and prescription chart initiation in the Accident and Emergency Department increased from 6% to 80%. The prescribing error rate was reduced from 3.3 errors to 0.04 errors per patient.⁷⁸

⁷⁸ Mills PR, McGuffie AC. Formal medicine reconciliation within the emergency department reduces the medication error rates for emergency admissions. *Emerg Med J* 2010;27(12):911-915. Featured in The Health Foundation, Evidence Scan: Reducing prescribing errors. April 2012.
<http://www.health.org.uk/sites/health/files/ReducingPrescribingErrors.pdf>

6.4 PHARMACIST PRESCRIBERS IMPROVE OUTCOMES FOR PATIENTS WITH CHRONIC DISEASES AND COMPLEX CARE NEEDS

As patients' needs become more complex with multiple conditions and complex drug therapy plans, collaborative relationships become increasingly important. Patients with multiple chronic diseases or conditions are especially vulnerable to drug-related problems. They are also among the patients most affected by access to care and wait times.⁷⁹

Increasing specialization within health professions and a fragmentation in specialist expertise results in no one healthcare professional being able to meet all the complex needs of their patients. As a result, patients with chronic diseases and multiple conditions or other complex issues require a team approach where pharmacists can use their medication expertise to initiate and manage the patient's complex drug therapy while consulting with others on the patient's care team.

While in this more involved prescribing role, pharmacist prescribers also better prevent drug-related problems and unnecessary hospitalizations or deaths.^{80 81} Greater access to a health professional that can initiate, monitor and adjust drug therapy while consulting with and informing other members of the patient's care team can also benefit patients and help address challenges with timely access to care.

In particular, a recent study showed the benefit of using pharmacist prescribing to help improve the health outcomes of patients with Type 2 diabetes. Pharmacists frequently see patients with Type 2 diabetes that have poorly controlled blood glucose (about 50% uncontrolled in the community).

⁷⁹ Ministry of Health, British Columbia. Setting Priorities for B.C. Health.

<http://www2.gov.bc.ca/gov/content/health/about-bc-s-health-care-system/health-priorities/setting-priorities-for-bc-health>

⁸⁰ Kwan D, Farrell B. Polypharmacy: Optimizing medication use in elderly patients. *Can Geriatr J.* 2014;4(1):21–7.

⁸¹ Hughes CM, Lapane KL. Pharmacy interventions on prescribing in nursing homes: from evidence to practice. *Therapeutic Advances in Drug Safety.* 2011;2(3):103-112.

Improved blood glucose⁸² (RxING Study)

Prescribing by pharmacists of oral medications and insulin for patients with poorly controlled Type 2 diabetes that included titration and patient follow-ups that was based on the Canadian Diabetes Guidelines showed improved glycemic control. This also revealed that the pharmacist prescribers achieved similar improvements in controlling blood glucose as previous physician-led studies.

- The pharmacist prescriber established a collaborative relationship with the patient's family physician, established drug therapy goals together with the patient and physician to improve the patient's glycemic control, and ensured information and updates could be effectively shared between the physician and the pharmacist prescriber.
- The pharmacist prescribing decisions included: a switch to another oral diabetes medication, the deprescribing of an oral diabetes medication, the initiation of an oral diabetes medication and the initiation of insulin. The pharmacist provided ongoing care and checked: adherence to the medication, blood glucose, HbA1c, insulin dose and titration, and adverse events.
- The patient's family physician was well informed of the pharmacist prescribing decisions and patient's progress with the medications prescribed.

Pharmacists also frequently see patients with high risk for major cardiovascular events. In particular, patients with chronic diseases are at high risk for cardiovascular events – this includes patients with diabetes, chronic kidney disease, established atherosclerotic vascular disease as well as those with multiple risk factors (such as poorly controlled blood glucose/blood pressure/lipids and current smokers).

Patient care through pharmacist prescribing has been shown to reduce the risk for future cardiovascular events, as well as improve blood pressure, lipids, blood glucose and help patients quit smoking. Pharmacist prescribers are also able to help patients undergo cardiovascular risk assessments. Many patients report not having undergone an assessment despite the guideline recommendation to use this assessment to guide prevention and management. Pharmacists' medication expertise together with their accessibility to the patient are key to improving patient outcomes through this kind of care.

⁸² Al Hamarneh YN, Charrois T, Lewanczuk R, et al. Pharmacist intervention for glycaemic control in the community (the RxING study). *BMJ Open* 2013;3:e003154.

Reduced risk for major cardiovascular events⁸³ (Rx EACH Study)

Pharmacist prescribing and care reduced the risk for future cardiovascular events, as well as improved blood pressure, lipids, blood glucose and smoking cessation. The reductions in cardiovascular risk were achieved on top of (not instead of) usual physician care.

- The pharmacist prescriber completed a training program based on current Canadian guidelines and included modules on case findings (identifying at risk patients), cardiovascular risk calculation, and patient communication of cardiovascular risk, chronic kidney disease, hypertension, dyslipidemia, diabetes, smoking cessation, diet and lifestyle management, and documentation of care plans.
- The pharmacist prescriber established a collaborative relationship with the patient's family physician, established drug therapy goals together with the patient and physician to reduce the patient's risk for major cardiovascular events, and ensured information and updates could be effectively shared between the physician and the pharmacist prescriber.
- The pharmacist prescriber conducted patient assessment including blood pressure measurement, waist circumference, weight and height measurements. They also completed laboratory assessment (HbA1c, fasting cholesterol profile, estimated glomerular filtration rate, albumin-to-creatinine ratio).
- The pharmacist prescriber developed an individualized assessment of cardiovascular risk and provided the patient with education about the risk, prescribed drug therapy to meet lipid, blood pressure and blood glucose targets, and started the patient on smoking cessation.
- The pharmacist prescriber also established regular follow-ups with the patient to monitor effectiveness of therapy.

The pharmacist prescriber communicated regularly with the patient's family physician after each contact with the patient, sharing prescribing decisions and results from patient follow-ups and drug-therapy monitoring.

To meet the needs of the rising number of patients with chronic diseases and multiple conditions, especially in senior populations, many health strategies include new models of care that emphasize interprofessional collaborative practice aiming to maximize the expertise and scope of practice of all qualified healthcare professionals.⁸⁴ Pharmacist prescribing in collaborative relationships supports the team-based approach needed in the health care system to care for the growing number of patients with multiple chronic diseases.

⁸³ Tsuyuki RT, Al Hamarneh YN, Jones CA, Hemmelgarn BR. The effectiveness of pharmacist interventions on cardiovascular risk: the multicenter randomized controlled Rx EACH trial. *J Am Coll Cardiol* 2016;67(24):2846-54.

⁸⁴ Healthcare Priorities in Canada: A Backgrounder 2014 Canadian Foundation for Healthcare Improvement www.cfhi-fcass.ca

6.5 PHARMACIST PRESCRIBERS IN COLLABORATIVE PRACTICE CAN PREVENT PATIENT HARM AND IMPROVE OUTCOMES

Collaborative relationships between health professionals on a patient's care team is a well-established practice for improving patient outcomes and providing more timely access to health services.

It's clear that the factors that increase the risks for drug-related problems will continue to exist and increase with an aging population and increasing complexity of patient care. Greater involvement of medication experts in prescribing drug therapy and medication management as part of a team based approach are needed to reduce preventable drug-related hospitalizations and deaths in addition to the unnecessary burden on the health system.

As we prepare to care for more and more patients while improving patient outcomes and reducing preventable drug-related problems, it will be important for BC to build capacity for patient-centred collaborative care in the health system. Pharmacist prescribing supports greater collaboration between health professionals, allowing pharmacists to play a bigger role on the patient's care team.

Drawing on each health professionals' expertise provides better patient-centred care

Pharmacists and physicians recognize that shared care should be patient-centred and delivered through collaboration.⁸⁵ The importance of trust and mutual recognition of each other's expertise optimizes the application of each health professional's specific training and knowledge in the provision of patient care.

Improvements to patient safety and health outcomes can be found when pharmacists and physicians work together to help patients meet their care goals. For example, a physician makes a diagnosis and decides together with the patient whether or not treatment is appropriate. The pharmacist prescriber initiates and manages drug therapy which includes monitoring, modification, and discontinuation as needed of appropriate medications. Monitoring and follow up with the patient together with ongoing updates and discussions with the physician helps with ongoing medication management, prevent drug-related problems and helps the patient meet their drug therapy goals.

With many opportunities for collaboration to improve patient outcomes, the Ministry of Health is seeking strategies for pharmacists to work together with physicians and other healthcare providers to improve the optimal use of drug therapy⁸⁶. Enabling pharmacists to prescribe in

⁸⁵ Donald, M., King-Shier, K., Tsuyuki, R. T., Al Hamarneh, Y. N., Jones, C. A., Manns, B., ... Hemmelgarn, B. R. (2017). Patient, family physician and community pharmacist perspectives on expanded pharmacy scope of practice: a qualitative study. *CMAJ Open*, 5(1), E205–E212. <http://doi.org/10.9778/cmajo.20160135>

⁸⁶ Ministry of Health BC. 2017. 2017/18 – 2019/20 Service Plan

collaborative relationships will be an important step in maximizing the clinical effectiveness of medications, and efficiencies pharmacists offer as medication experts that can provide timely and easily accessible patient-centred collaborative care.

Collaborative relationships help provide access to shared information

Better communication through electronic health records is needed to facilitate real-time and reciprocal relay of information about the provision of care by pharmacist prescribers and physicians, especially between family physician practices and community pharmacies. It is much more difficult for pharmacists working in community pharmacies and family physician offices to relay timely information to each other about the provision of patient care. The communication is mainly through fax and telephone.

However, those working in collaborative relationships will have developed a plan to facilitate communication and share relevant health information.

The transfer of information (verbal, written and electronic) already readily takes place between pharmacists and physicians working at the same practice site including hospital, team-based primary care clinics and co-located pharmacists at family physician offices. Communication tools that support collaboration are expected to increase as more physicians begin to use PharmaNet and other secure information sharing platforms.

Effective and shared communication between pharmacist prescribers and physicians enables physicians to be notified about modification or initiation of drug therapy, and similarly for pharmacists to be aware of changes to the patient's health status and drug therapy as provided by the physician. Other members of a patient care team, such as nurse practitioners and specialists, would also be involved in collaboration and communication as needed. For example, a specialist's ability to review and discuss the results of the increased drug-therapy monitoring managed by the pharmacist.

6.6 PHARMACIST PRESCRIBING SUPPORTS THE HEALTH SYSTEM IN CARING FOR PATIENTS

Pharmacist prescribing in collaborative relationships supports the health care system in providing better care for patients. There is tremendous opportunity to improve patient care, in addition to improving the overall health of populations and reduce cost through pharmacist prescribing in collaborative relationships. Pharmacist prescribers are able to intervene to prevent drug-related problems, address poor health outcomes, inappropriate medication use, and polypharmacy in high-risk populations and poor transitions in care.

These opportunities for improvements to patient care, in addition to reducing cost through reducing preventable drug-related problems and unnecessary hospitalizations, support the Triple Aim approach to improving BC's health care system

The Ministry of Health's Triple Aim is:

- Improving the patient experience of care (including quality and satisfaction)
- Improving the health of populations
- Reducing the per capita cost of healthcare

This is not attainable without interprofessional collaboration⁸⁷ and using a pharmacist's medication expertise to reduce preventable drug-related problems that put patient safety at risk and add an unnecessary burden to the health care system.

Table 1 outlines key ways pharmacist interventions through pharmacist prescribing in collaborative relationships are improving patient care. Improving overall health of populations and reducing costs are also identified benefits. However, these benefits are secondary to (and largely a result of) the opportunity to prevent patient harm and improve patient outcomes.

⁸⁷ World Health Organization. Framework for action on interprofessional education & collaborative practice. Geneva: World Health Organization. http://apps.who.int/iris/bitstream/10665/70185/1/WHO_HRH_HPN_10.3_eng.pdf. Published 2010

Table 1: Pharmacist interventions improve care, improve health and reduce cost

Issue	Pharmacist Intervention	Improve Care	Improve Health	Reduce Cost
Poor patient outcomes	Pharmacist prescribers manage and initiate drug therapy to improve patient outcomes (e.g. improve blood glucose, blood pressure, lipids and reduce future risk of CVD events). Error! Bookmark not defined. Error! Bookmark not defined. Error! Bookmark not defined.	✓	✓	✓
Poor handoffs during transitions in care	Pharmacist-led medication reconciliation ⁸⁸ at hospital discharge that includes a best possible medication history ⁸⁹ , and a safe handoff of the medication changes (includes initiation of drug therapy) to the patient's family physician and community pharmacy.	✓	✓	✓
Preventable adverse drug events that cause patient harm in acute care	Pharmacists on hospital rounds identify, resolve, and prevent drug therapy problems through the management and initiation of drug therapy. Error! Bookmark not defined..	✓	✓	✓
Preventable adverse drug events that cause patient harm in residential care	Pharmacist-led medication reviews identify, resolve and prevent drug therapy problems through the management and initiation of drug therapy.	✓	✓	✓
Preventable adverse drug events that cause patient harm in the frail elderly	Pharmacist-led medication reviews for the elderly ⁹⁰ identify, resolve and prevent drug therapy problems through the management and initiation of drug therapy. Pharmacists are involved in multi-disciplinary home monitoring programs for high-risk patients discharged from hospital.	✓	✓	✓
Preventable adverse drug events that cause patient harm in primary care patients with chronic diseases	Pharmacist-led medication reviews Error! Bookmark not defined. in team-based primary care practice identify, resolve and prevent drug therapy problems through the management and initiation of drug therapy.	✓	✓	✓
Polypharmacy and inappropriate medication use	Pharmacist-led deprescribing – pharmacists provide evidence-based approaches to reducing potentially harmful medication burdens. ⁹¹	✓	✓	✓

⁸⁸ Lo L, Kwan J, Fernandes OA, et al. Medication Reconciliation Supported by Clinical Pharmacists (NEW) In: Making Health Care Safer II: An Updated Critical Analysis of the Evidence for Patient Safety Practices. Rockville (MD): Agency for Healthcare Research and Quality (US); 2013 Mar. (Evidence Reports/Technology Assessments, No. 211.) Chapter 25. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK133408/>

⁸⁹ The 'Best Possible Medication History' (BPMH) constitutes the cornerstone for medication reconciliation. The BPMH is more comprehensive than a routine primary medication history, as it involves "(1) a systematic process for interviewing the patient/family; and (2) a review of at least one other reliable source of information (e.g., review of a central medication database, inspection of medication vials, or contact with the community pharmacy) to obtain and verify patient medications (prescribed and non-prescribed)." (Institute for Safe Medication Practices Canada. Medication Reconciliation).

⁹⁰ Hughes CM, Lapane KL. Pharmacy interventions on prescribing in nursing homes: from evidence to practice. *Therapeutic Advances in Drug Safety*. 2011;2(3):103-112.

⁹¹ Farrell B, Shamji S, Monahan A, et al. Clinical vignettes to help you deprescribe medications in elderly patients: Introduction to the polypharmacy case series. *Can Fam Physician* 2013;59:1257-1258.

7. REGULATION OF CERTIFIED PHARMACIST PRESCRIBERS

The College of Pharmacists of BC has identified that pharmacist prescribing in collaborative relationships can help prevent patient harm and better protect patient safety. Pharmacist prescribing also has the opportunity to improve outcomes for patients in BC, an important element in the College’s vision to provide better health through excellence in pharmacy.

As described in this framework, pharmacist prescribers in collaborative relationships have the important opportunity to prevent patient harm by reducing preventable drug-related problems, providing safer transitions in care, improving medication management, and providing more timely access to drug therapy. The opportunity to reduce preventable drug-related adverse events, hospitalizations and deaths while improving patient outcomes cannot be overlooked.

While the College does not advocate for changes to scope for the advancement of the pharmacy profession – a role belonging to pharmacy associations – it does consider changes to pharmacy practice that are in the patients best interest by increasing public safety and improving patient outcomes. Like the expansion of pharmacists’ role in drug administration, the College is proposing regulation of Certified Pharmacist Prescribers to help pharmacists’ better care for their patients and protect them from preventable drug related problems.

The framework has been developed to establish regulation for Certified Pharmacist Prescribers. It includes requirements for collaboration with other health professionals, an education, training and evidence based qualification process, information access requirements and protection from conflict of interest among other standards, limits and conditions designed to protect patient safety.

7.1 COLLABORATIVE PRACTICE RELATIONSHIPS

Collaboration is an essential component of the framework for pharmacist prescribing in BC. There are many different types of collaboration described within different health strategies and policies, research studies, educational programs and regulatory frameworks ranging from collaborative practice environments to intra- and inter-professional collaboration.

For the purpose of the framework for Certified Pharmacist Prescribers, the College is requiring collaborative practice relationships.⁹²

A collaborative relationship involves developing a relationship with a regulated health professional who has the authority to prescribe to:

- Facilitate communication
- Determine mutual goals of therapy that are acceptable to the patient
- Share relevant health information
- Establish the expectations of each regulated health professional when working with a mutual patient

Collaborative practice relationships are not tied to a specific environment or practice setting, but set requirements for what must be established to prescribe through working with others on a patient's care team. In collaborative practice relationships, the diagnosis is still provided by physicians and nurse practitioners (or other regulated health professionals with prescribing authority).

Some environments may be able support the requirements for collaborative relationships more easily, such as hospitals or urgent care centers. However, collaborative relationships can still take place in other environments where pharmacists are able to effectively communicate and securely share relevant health information with other health professionals on a patient's care team.

⁹² Collaborative relationships were defined by the Alberta College of Pharmacists in their Standards of Practice for Pharmacists and Pharmacy Technicians to set clear requirements for collaboration in pharmacy practice. <https://pharmacists.ab.ca/sites/default/files/StandardsOfPractice.pdf>

7.2 SHARING RELEVANT HEALTH INFORMATION

Pharmacists must be able to effectively share and review relevant health information in order to be able to prescribe and effectively manage drug therapy. This ranges from access to patient medical records (electronic or offline), PharmaNet, and laboratory test results, to specific input from the patient and others on the health care team, especially the most responsible practitioner.

This information is required to take a complete and accurate medication history, an essential step as part of the prescribing process. Access to this information is necessary for a pharmacist prescriber to effectively initiate and manage a patient's drug therapy in collaboration with other health professionals. Communication will also play an important role in ensuring an accurate and complete medication history is available. For example, a pharmacist prescriber may need to review the number of doses taken by a patient with a patient's primary health care practitioner, and others involved in their care to confirm the accuracy of patient's medication history, or discuss the patient's drug therapy goals and history of effectiveness in meeting those goals.

Establishing how to communicate and share relevant health information as part of the collaborative practice relationship will be an important step in pharmacist prescribing.

Access to Relevant Health Information

Information from the patient

- Current medication list including over-the-counter medications and natural remedies (herbal and vitamins)
- Medications taken recently with long half-lives (amiodarone)
- Previous reactions to medications including hypersensitivity reactions (anaphylaxis) and adverse drug reactions (such as nausea)
- Medication adherence

Information from PharmaNet

- Up-to-date list and date of filled medications
- Previous adverse drug reactions when recorded

Information from the Patient Medical Records

- Diagnoses and past medical history
- List of medications prescribed for the patient (not necessarily filled)
- Trials of previous therapies
- Previous adverse drug reactions
- Diagnostics including laboratory tests

Information from others involved in the patient's care

- Case notes not otherwise included in the medical record
- Goals of drug therapy and history of effectiveness in meeting patient's goals
- Any other relevant insights into a patient's ongoing care and condition(s)

7.3 PATIENT EDUCATION

It's important for patients to understand and know what to expect from collaborative pharmacist prescribing. During the 2016 Pharmacist Prescribing Engagement, patients indicated it would be important for patients to have a clear understanding of how prescribing would work for patients. Education will play an important role in establishing the role Certified Pharmacist Prescribers can play on a patient's care team, and the important role collaboration plays in pharmacist prescribing.

The College will develop a patient education plan and a communications strategy to build awareness and understanding of pharmacist prescribing in BC.

The patient education plan will focus on topics such as:

- How a pharmacist prescriber can help provide care
- How to identify a Certified Pharmacist Prescriber
- Patient informed consent
- Collaborative practice
- Sharing health information
- Medication history and patient assessment
- Ongoing medication management
- Documentation and communication
- Patient follow-up and progress reporting

7.4 INFORMED CONSENT

Pharmacists must have the patient or patient's representative informed consent before undertaking prescribing.

This involves ensuring they are provided with sufficient information about the proposed course of treatment, including any known serious or common side effects or adverse reactions, and voluntarily provided their informed consent.

The process for informed consent may vary depending on where the prescribing takes place. For example, informed consent may be part of the admissions process in hospital or residential care, while a Certified Pharmacist Prescriber may directly receive informed consent within a community pharmacy.

7.5 **PRESCRIBING AND DISPENSING**

Separating pharmacist prescribing from dispensing and business interests removes the concern for a potential business conflict of interest. This was a frequent point of concern brought up in the initial stakeholder consultation conducted by the College.

Within this framework, a Certified Pharmacist Prescriber that prescribes a medication for a patient must not dispense that medication.

Requiring a different pharmacist to dispense the medication also ensures that a separate pharmacist reviews the patient's profile and completes a clinical assessment of the prescription. This clinical assessment by a pharmacist is a part of the College's requirements for dispensing drugs.⁹³

⁹³ *Health Professions Act*, Bylaws, Schedule F, Part 1, Part 2, and Part 3.

7.6 PROPOSED ELIGIBILITY REQUIREMENTS

The College's regulation of Certified Pharmacist Prescribers is designed to ensure pharmacist prescribers must demonstrate they are competent and qualified to prescribe in collaborative relationships. Only pharmacists who successfully complete the application process and are approved by the College will be granted prescribing authority.

The College's eligibility requirements are based on feedback received from pharmacists, other prescribers and patients in BC in addition to a review of the pharmacist prescribing requirements in other jurisdictions.⁹⁴

The College heard through the 2016 Pharmacist Prescribing Engagement that applicants should be able to demonstrate they have the practical knowledge, clinical training and experience needed to be able to prescribe. While courses were suggested as an effective way to build on knowledge and skills, stakeholders also indicated that limiting training to an exam or test was insufficient to become a Certified Pharmacist Prescriber.⁹⁵

Stakeholders also indicated that pharmacist prescribers should have established knowledge, skills and abilities in diagnostics (and differential diagnosis), prescribing responsibilities, physical assessment, and therapeutics.

Pharmacists interested in applying to become a Certified Pharmacist Prescriber will need to go through an education, training and evidence based qualification process. They will also need to demonstrate that they understand the responsibilities of prescribing. Pharmacists will also need to know how to minimize potential conflicts of interest associated with prescribing and dispensing by the same pharmacist.

Pharmacist Educational Background

Pharmacists must have completed an undergraduate degree in pharmacy, and successfully completed the Jurisprudence Examination and Pharmacy Examining Board of Canada Exams. Pharmacist degrees are typically Bachelor of Science in Pharmacy degrees BSc (Pharm) or a Doctor of Pharmacy Degree (PharmD).

Entry-to-practice-PharmD degree programs are now beginning to be offered at many Canadian Universities including through the Faculty of Pharmaceutical Sciences at the University of British Columbia. Doctor of Pharmacy Degree programs include an additional focus on prescribing and monitoring of drug therapy, and interprofessional team-based primary care. They also require almost twice the amount of experiential learning – caring for patients under the supervision of practicing professionals – than previous BSc Programs. Universities have also begun to offer

⁹⁴ In particular, the College reviewed the Alberta College of Pharmacists Additional Prescribing Authorization eligibility requirements (<https://pharmacists.ab.ca/additional-prescribing-authorization>).

⁹⁵ College of Pharmacists of BC. Certified Pharmacist Prescriber Engagement Report. November 2016. http://library.bcparmacists.org/5_Programs/5-5_CPP/1046-Certified_Pharmacist_Prescriber_Engagement_Report.pdf

opportunities where students across health faculties train together to develop collaborative relationships that prepare them for collaborative practice.

This means that moving forward, pharmacists will be graduating with additional education and training in prescribing and collaboration, making them even better prepared for pharmacist prescribing in collaborative relationships.

Pharmacy residencies⁹⁶ and other PharmD programs such as the UBC Graduate PharmD degree⁹⁷ and Flex PharmD degree⁹⁸ also provide currently practicing pharmacists with the knowledge skills and abilities to prescribe.

Pharmacists must also pass a national knowledge-based and Objective Structured Clinical Examination (OSCE) through the Pharmacy Examining Board of Canada to be able to receive a pharmacy licence. The OSCE evaluates the candidate's ability to interact with and assess patients and their drug therapy needs, and to apply their knowledge to ensure appropriate drug therapy is prescribed and monitored. As part of this exam, pharmacists also have to demonstrate they can assess patients through observation, consultation, and analysis of information including laboratory values, medical history and medication history.

Experience

Pharmacists must have a minimum of 1 year in practice experience to apply to be a pharmacist prescriber with the College. They will also need to have had enough practice experience to provide examples of patient cases that demonstrate their competency to prescribe in collaborative relationships.

Good Standing

Only pharmacists in good standing may apply for the Certified Pharmacist Prescriber designation.

⁹⁶ Pharmacy Practice Residency, Faculty of Pharmaceutical Sciences, University of British Columbia.
<https://pharmsci.ubc.ca/programs/pharmacy-practice-residency>

⁹⁷ Graduate PharmD degree, Faculty of Pharmaceutical Sciences, University of British Columbia.
<https://pharmsci.ubc.ca/programs/graduate-pharmd-degree>

⁹⁸ Flex PharmD degree, Faculty of Pharmaceutical Sciences, University of British Columbia.
<https://pharmsci.ubc.ca/programs/flex-pharmd-degree>

Eligibility Criteria

Pharmacists must meet the following criteria to be eligible to become a Certified Pharmacist Prescriber:

- 1) Have at least one year of full-time experience in direct patient care.
- 2) Have collaborative relationships with other regulated health professionals.
- 3) Have and maintain the necessary knowledge, skills, abilities and clinical judgment to enhance patient care.
- 4) Have the required supports in the practice environment to enable safe and effective management of drug therapy.

Self-Assessment

Pharmacists will need to complete a self-assessment to assess their own knowledge, skills and abilities and their readiness to prescribe in a collaborative environment.

Both the Alberta College of Pharmacists and the Pharmacy Examining Board of Canada use self-assessments to help applicants determine if they have the knowledge, skills, and abilities to practice.^{99 100}

Evidence Based Competency Evaluation

The College will use an objective criterion-referenced assessment to evaluate the competency of applicants to prescribe in collaborative practice. Objective criterion-referenced assessments are conducted through the evaluation of evidence based on a set of established criteria to equally assess all applications.¹⁰¹ Measuring all applications against the same set of criteria deters subjective interpretation, holds all applicants to the same standard, and helps ensure public safety.

The College will evaluate whether a pharmacist demonstrates competency to prescribe using six competency indicators.

⁹⁹ Alberta College of Pharmacists. Additional Prescribing Authorization Self Assessment Form.
<https://pharmacists.ab.ca/sites/default/files/APASelfAssessmentForm.pdf>

¹⁰⁰ Pharmacy Examining Board of Canada. Document Evaluation.
http://www.pebc.ca/index.php/ci_id/3116/la_id/1.htm

¹⁰¹ Alberta College of Pharmacists. Additional Prescribing Authorization. Key Activities and Indicators.
<https://pharmacists.ab.ca/sites/default/files/APAKeyActivities.pdf>

Competency Indicators for Pharmacist Prescribing in Collaborative Relationships

1. Form and maintain a professional relationship with a patient
2. Patient assessment
3. Develop care plan and follow-up
4. Collaboration
5. Documentation
6. Judgment

The evaluation is completed through the submission of competency information and patient care cases documenting the pharmacist's clinical involvement to demonstrate knowledge, skills and abilities under each one of the competency indicators.

Applicants will need to provide information about their experience, education, and training. This will also be an opportunity for pharmacists to highlight relevant practice experience, residencies or mentorships they have been involved in that contribute to their preparation for the designation of the Certified Pharmacist Prescriber. Pharmacists should also show how their pharmacy practice supports collaborative practice, or how they will be contributing to their practice environment into one that supports collaborative relationships.

Patient Cases

Applicants will need to demonstrate they clearly understand how to provide patient care through pharmacist prescribing in collaborative relationships. They will need to describe the full patient care process together with supporting examples for each step.

Records of care provide the strongest evidence of the preparedness of an applicant to become a Certified Pharmacist Prescriber.

Applicants will need to submit three real patient cases (i.e. records of care). These cases must be within the last 2 years leading up to an application. The cases must show:

- Collaboration (including the elements required in a collaborative relationship)
- Assessment and synthesis
- Drug therapy care plan development and implementation
- Monitoring and follow-up
- Documentation and communication

As part of patient case submission, applicants would need to describe the patient care process for each case.

Patient Care Process

- Describe the collaborative relationship with other regulated health professionals on the patient's care team with supporting examples.
- Describe how patient information is gathered with supporting examples. This should also include how patient information that is not readily available in a pharmacy is accessed, and how diagnostics would be acquired and ordered as needed.
- Describe the process of patient assessment, synthesis, development of care plans and prescribing decisions with supporting examples. This should also include how to determine whether to prescribe for the patient, or refer them back to another health professional on their care team.
- Describe monitoring and follow-up to ensure continuity of care with supporting examples.
- Describe the documentation of care provided with supporting examples.

Educational Program

Every pharmacist has knowledge, skills and abilities tailored to meet the needs of their practice. However, some key topics are of specific relevance to pharmacist prescribing.

The College will be looking for evidence of continuous learning that supports the applicant's evolving practice, benefits patients, and expands their knowledge, skills and abilities in ways that support pharmacist prescribing in collaborative relationships.

As part of the education program for Certified Pharmacist Prescribers, the College will recommend (but not require) a series of preparatory courses based on topics that support pharmacist prescribing in collaborative relationships. While some pharmacists will have education, training and experience in these areas, the preparatory course topics can assist other pharmacists to enhance their knowledge and training needed to apply to become a Certified Pharmacist Prescriber.

Preparatory Courses for Certified Pharmacist Prescribers

- Collaboration (including inter/intra professional collaboration, and collaborative practice)
- Patient interviewing and assessment (including physical assessment)
- Diagnostic interpretations (including laboratory test results)
- Evidence-based clinical decision making
- Documentation
- Patient care skills

Required Courses

The College will also develop and require a course program series on the responsibilities of pharmacist prescribing. The course program will focus on fundamental knowledge all Certified Pharmacist Prescribers require to effectively and safely prescribe in collaborative practice.

Responsibilities of Pharmacist Prescribing Course Program

- Prescribing responsibilities (including standards, limits and conditions)
- Patient informed consent
- Collaborative practice relationships
- Sharing and accessing relevant health information
- Medication history and patient assessment
- Medication management role in pharmacists prescribing
- Documentation and communication
- Patient follow-up and progress reporting

7.7

PROPOSED RENEWAL REQUIREMENTS

Renewal requirements for a Certified Pharmacist Prescriber includes proof of an additional 15 units of continuing education and an annual self-declaration.

Certified Pharmacist Prescribers may want to consider courses identified in the educational program as having the greatest relevance to pharmacist prescribers as part of their ongoing professional development. However, prescribers may also want to focus on areas of expertise most relevant to their practice.

Each year, Certified Pharmacist Prescribers would declare they understand the responsibilities of pharmacist prescribing in BC and have the knowledge, skills, abilities and collaborative relationships to prescribe.

Renewal as a Certified Pharmacist Prescriber will be incorporated into the existing annual process for pharmacy professional registration renewals.

7.8 PROPOSED STANDARDS, LIMITS, AND CONDITIONS

The Certified Pharmacist Prescriber is legally responsible for the outcomes of their prescribing decisions and legally required to inform the patient's primary care provider of their actions to ensure continuity of care.

Standards

1. Pharmacists prescribe Schedule I drugs, vaccines, parenteral nutrition and blood products only within the scope of their education, training and competence
2. Pharmacists must have the patient's or patient representative's informed consent before undertaking prescribing.
3. Pharmacists must review the patient's record¹⁰² (medical and medication)
4. Pharmacists must work collaboratively with the patient's primary healthcare provider.
5. Pharmacists must review the pharmacy patient's record¹⁰³ prior to prescribing.
6. Pharmacists must review the PharmaNet patient medication record when available prior to prescribing.
7. Pharmacists must conduct a medication history that includes:
 - developing and/or updating a best possible medication history¹⁰⁴
 - using reliable sources of information to obtain and verify the patient's medication use (prescribed and non-prescribed)
8. Pharmacists must review or conduct a patient assessment that may include:
 - physical assessment
 - mental health assessment
 - laboratory values
 - diagnostic information
9. Pharmacists must complete prescriptions accurately and completely, that includes all information required for a prescription.¹⁰⁵
10. Pharmacists are solely accountable for their prescribing decisions.

¹⁰² In accordance with the College of Physicians and Surgeons of British Columbia's Professional Standards and Guidelines for Medical Records <https://www.cpsbc.ca/files/pdf/PSG-Medical-Records.pdf>

¹⁰³ Patient record (11) *Health Professions Act*, Bylaws Community; Patient record (12) *Health Professions Act* Bylaws Hospital; and Resident Record (13) HPA Bylaws Residential Care.

¹⁰⁴ Best possible medication history is a snapshot of the patient's actual medication use, which may be different from what is contained in the patient's records.

¹⁰⁵ *Health Professions Act*, Bylaws, Schedule F, Part 1, Part 2, and Part 3.

11. Pharmacists must notify and provide relevant information to the patient's primary care provider and other health professionals, as appropriate.
12. Pharmacists must have a monitoring and follow-up plan in place to monitor the outcomes of the drug therapy.
13. Pharmacists must document in the patient's record:
 - informed consent
 - patient assessment
 - prescribing decision and the rationale
 - patient understood the instructions provided
 - monitoring and follow-up plan
 - patient's primary health care provider and other relevant health professionals, as appropriate were notified and provided with relevant information
14. Pharmacists must refer the patient to another prescriber as appropriate.
15. Pharmacists must only prescribe where there is a genuine clinical need for treatment, and should only prescribe medication to meet identified needs of patients and never for convenience, or because patients demand the medication.
16. Pharmacists engages in evidence-informed prescribing and considers best practice guidelines and other relevant guidelines and resources when prescribing for patients, including when recommending complementary or alternative health therapies. If an adverse drug reaction as defined by Health Canada is identified the pharmacist must notify the patient's practitioner, make an appropriate entry on the PharmaNet record, and report the reaction to the Canada Vigilance Program regional office.
17. After prescribing, pharmacists must:
 - inform patients of the need for follow-up care to monitor whether any changes to the prescription are required
 - monitor patients for any adverse events, emerging risks, or complications
 - stop drug therapy, following appropriate protocol, if it is not effective, or the risks outweigh the benefits
18. Pharmacists need to collaborate by communicating respectfully, effectively and in a timely way about a patient with the patient's primary care provider, and other health care providers as appropriate.
19. Pharmacists need to engage a patient's most responsible practitioner in discussions aimed at determining mutual goals of therapy for a patient and mutual sharing of relevant patient information.
20. A pharmacist who transfers care to another pharmacist or other health professional within the same or different pharmacy, hospital, or other healthcare facility must ensure the accepting health care provider has the necessary information to assume care.

Limits

1. A Certified Pharmacist Prescriber is not authorized to prescribe controlled drug substances which are regulated federally by the *Controlled Drugs and Substances Act* and its regulations.
2. A Certified Pharmacist Prescriber must not prescribe a drug unless the intended use is:
 - an indication covered by Health Canada,
 - considered a best practice or accepted clinical practice in peer-reviewed clinical literature, or
 - part of an approved research protocol.
3. A Certified Pharmacist Prescriber that prescribes a medication for a patient must not dispense that medication.
4. A Certified Pharmacist Prescriber must not self-prescribe or prescribe for a family member or friend, unless there is an emergency and no other prescriber is available.

Conditions

1. A full pharmacist must apply to the College of Pharmacists of British Columbia to be a Certified Pharmacist Prescriber to prescribe Schedule I drugs.
2. A full pharmacist must not prescribe Schedule I drugs prior to receiving confirmation from the College of Pharmacists of BC of their authority as a Certified Pharmacist Prescriber to prescribe Schedule I drugs.
3. Certified Pharmacist Prescribers must prescribe within a collaborative practice relationship.

A collaborative relationship involves developing a relationship with a regulated health professional who has the authority to prescribe to:

- Facilitate communication
- Determine mutual goals of therapy that are acceptable to the patient
- Share relevant health information
- Establish the expectations of each regulated health professional when working with a mutual patient

8. APPENDICES

- 1 Pharmacist Prescribing Case Illustrations
- 2 Pharmacists' Patient Care Process
- 3 Other Prescribers in BC – Prescribing Parameters
- 4 Pharmacists' Prescribing Authority - Nationally and Internationally
- 5 Pharmacists' Expanded Scope of Practice in Canada, December 2016
- 6 Training Requirements for the Current Scope of Pharmacist Practice
- 7 Models of Collaborative Pharmacist Prescribing
- 8 Legislation and Regulation of Interprofessional Collaboration

APPENDIX 1: PHARMACIST PRESCRIBING CASE ILLUSTRATIONS

These cases are based on actual patients encountered in practice and illustrate patient-centred actions taken by pharmacists in collaboration with the patient and their healthcare team to optimize patient health and medication outcomes.

They are written in the standard form of health professionals communicating and collaborating with each other to ensure continuity of care.

Like all health professionals, pharmacists must collect and assess information about their patients' condition and/or concerns, synthesize this information to draw conclusions about the potential etiologies of problems, develop a care plan and perform interventions to resolve the problems and thereby improve their patients' health. The pharmacist communicates, collaborates and documents in the provision of patient-centred care. Many terms are used for these fundamental components of health care provision. In the cases below, the following are the terms used and their definitions:

“Collect patient information” – subjective and objective information about the patient is collected by the pharmacist to understand the relevant medical and medication history, and the clinical status of the patient. This information includes patient assessments performed by the pharmacist, including those based on interview, drug therapy assessment, physical assessment, and laboratory test interpretation.

“Assessment by pharmacists” – the information is assessed by the pharmacist to analyze the clinical effects of the drug therapy. Such assessments take many forms and are influenced and guided by the patient's presentation and the information available and the clinical acumen and professional judgment of the pharmacist.

“Synthesis” – a description of the conclusions reached by the pharmacist based on the assessments performed. These conclusions may prompt actions in order to address and resolve the patient's issue(s).

“Care Plan” – an individualized patient-centred care plan is developed by the pharmacist in collaboration with the patient and their healthcare team.

“Actions” - distinct from the “Assessments” (which are also types of actions), these are the interventions the pharmacist performs in order to address the patients' problems and improve their health. Modifications to the care plan are made by the pharmacist in collaboration with the patient and their healthcare team.

“Patient Chart” – documentation by the pharmacist is made in the patient record (medical and medication).

Cases

Cases 1-7 are prescribing pharmacists' approach to assessment of drug therapy working in collaboration with the patient and their healthcare team.

Selected Medical Abbreviations used in the Cases

A+O: alert and oriented	Hx: history
A1C: hemoglobin A1C	JVP: jugular venous pressure
ACR: albumin to creatinine ratio	LAA: left atrial appendage
AECOPD: acute exacerbation of COPD	LVEF / EF: left ventricular ejection fraction / ejection fraction
AF: atrial fibrillation	MedicationHx: medication history
ASCVD: atherosclerotic cardiovascular disease	MMSE: mini mental status exam
BP: blood pressure	MPL: medical problem list
CAD: coronary artery disease	NFA: no fixed address
CC: chief complaint	NKA: no known allergies
CBC: complete blood count	NOAC/DOAC: new oral anticoagulant / direct oral anticoagulant
CHADS2/ CHA2DS2-VASc: the two dominant atrial fibrillation stroke risk estimation clinical prediction rules	NRT: nicotine replacement therapy
CKD: chronic kidney disease	O/E: on examination
COPD: chronic obstructive pulmonary disease	OAC: oral anticoagulant
CVD: cardiovascular disease	PFT: pulmonary function test (spirometry)
eGFR: estimated glomerular filtration rate	POC: point-of-care
EMR: electronic medical record	PMH: past medical history
FBG: fasting blood glucose	PVD: peripheral vascular disease
FRS: Framingham risk score	QOL: quality of life
GERD: gastroesophageal reflux disease	SOBOE: shortness of breath on exertion
HCTZ: hydrochlorothiazide	SocialHx: social history
HF: heart failure	S&Sx: signs and symptoms
HPI: history of present illness	STEMI: ST-elevation myocardial infarction
HTN: hypertension	T2DM: type 2 diabetes mellitus
	Td booster: tetanus diphtheria booster
	UBT: urea breath test

CASE 1: Diabetes and Cardiovascular Disease

A Certified Pharmacist Prescriber with a collaborative practice relationship in a team-based primary care clinic helps manage a patient's drug therapy for diabetes and cardiovascular disease.

COLLECT PATIENT INFORMATION

ID	65-year-old male presents to the primary care clinic today for their intake consultation with pharmacist (initial patient assessment prior to seeing physician). He has a meet-and-greet appointment scheduled with his new GP scheduled for 2 months from now.	SOCIALHx	<ul style="list-style-type: none"> • Lives alone • Retired • Occasional EtOH • Non-adherent to diabetic diet • No regular exercise
CC	None	MEDICATIONHx / ALLERGIES / IMMUNIZATIONS	<ul style="list-style-type: none"> • metformin 1000 mg PO bid x 15 yr • glyburide 10 mg po bid x 10 yr • ramipril 2.5 mg po daily x 1 month • acetaminophen 500-1000 mg po daily PRN • sitagliptin 100 mg po daily x 1 month (stopped himself 3 months ago due to high cost and no self-observed improvement to fasting glucose levels)

HPI	N/A	O/E	<ul style="list-style-type: none"> • Appears well, A+O
PMH	<ul style="list-style-type: none"> • T2DM (diagnosed 15 yr ago) • HTN (diagnosed 15 yr ago) • Ex-smoker (quit 15 yr ago) CKD (diagnosed 3 yr ago)	MPL	<ul style="list-style-type: none"> • T2DM with inadequate glycemic control • HTN • High CV risk (primary prevention) • Diabetic nephropathy

ASSESSMENTS BY PHARMACIST

- Perform best-possible medication history (BPMH) including PharmaNet
- Laboratory values accessed via my e-health
- Glycemic control assessment
 - Asymptomatic
- A1c 9.6% (1 month ago), FBG (ac breakfast) 10-16 mmol/LCV risk assessment
 - Lipids: TC 5.5 mmol/L, HDL-C 1.0 mmol/L, LDL-C 3.8 mmol/L
 - BP 169/92 mmHg, HR 66 bpm and regular
 - Asymptomatic
 - No family Hx of premature CVD
 - Framingham Risk Score >20%
- CKD assessment
 - Asymptomatic
 - SCr 185 µmol/L, CrCl 50 mL/min, ACR 3 mg/mmol
- Ask patient re: most recent eye exam
- Perform diabetic foot exam
- Assess vaccination Hx (influenza, pneumococcal)
- Height 170 cm, weight 100 kg, BMI 34.6 kg/m²
 - Assess based on patient interview willingness to take medication, potential for adherence, affordability of medication

SYNTHESIS

- Pre-contemplative re: lifestyle changes
- Glycemic control not at target
- BP not at target
- Inadequate CV risk reduction therapy

COLLABORATIVE CARE PLAN

- Develop a care plan that is evidence-based and cost-effective in collaboration with the patient
- Consult with the prescriber on duty
 - Inform prescriber about the upcoming meet-and-greet appointment scheduled with his new GP scheduled for 2 months from now
 - Recommend initiating changes today
 - Reassure prescriber about the follow-up telephone call in 2-4 weeks with the patient
 - Inform the prescriber that an update on the patient's progress will be provided until the new GP is involved with providing patient care
 - Address prescriber concerns if needed

ACTION

- | | |
|---|--|
| <ul style="list-style-type: none">• Prescribe atorvastatin 10 mg po daily and educate (rationale, administration/titration, goals of therapy, common adverse effects & their management, cost)• Increase ramipril to 5 mg po daily and educate | <ul style="list-style-type: none">• Secure special authority for linagliptin 5mg PO daily (covered by PharmaCare) and educate• Prescribe 1 additional serving of fruit/vegetable per day and educate• Document all above patient assessments, actions, rationale, monitoring plan in EMR |
|---|--|

MONITORING PLAN

- Follow-up via phone in 2-4 weeks
- A1C, SCr and ACR in 2 months

BENEFITS OF PATIENT SEEING CERTIFIED PHARMACIST PRESCRIBER

- Timely initiation of therapy
- Increased efficiency (time, cost) of care by pharmacist performing initial consultation, which streamlines eventual physician assessment
- Pharmacist is working with other members of the patient's team

CASE 2: Optimizing Blood Pressure

A Certified Pharmacist Prescriber in a community pharmacy establishes a collaborative practice relationship with a patient's GP. The care plan developed allows the Certified Pharmacist Prescriber to help optimize the patient's blood pressure between visits to his GP every few months.

COLLECT PATIENT INFORMATION

ID	40-year-old male presents at the pharmacy at 8pm on a Friday to pick up his refills for anti-hypertensives. Reports concern that home BP reading have been gradually increasing and wondering if current meds are working.	SOCIALHx	<ul style="list-style-type: none"> • Lives with his wife. Desk job with more work stress recently. • Occasional alcohol. • No regular exercise. Eats out 5-6 times a week. Admits that he has been gaining weight – up 10 lbs in the last 6 months.
CC	Home BP readings consistently > 140/90 recently	MEDICATIONHx / ALLERGIES / IMMUNIZATIONS	<ul style="list-style-type: none"> • NKA • Vaccinations: influenza, Td booster up to date • Medication: <ul style="list-style-type: none"> ○ HCTZ 12.5mg po daily (on for the last 5 years) ○ ramipril 5mg po daily (on for the last 4 year) ○ acetaminophen 500mg 2 po prn (takes for occasional headaches – max 2 doses/day)
HPI	Gradually increasing numbers over the last 6	O/E	<ul style="list-style-type: none"> • Appears well. Here with home BP readings diary

	<p>months. Sees GP annually for BP review/refills. BPs at the time of last GP visit 6 months ago were consistently < 140/90. Unable to see GP in the next couple of months. Not willing to go to walk in clinic or ED.</p>		<p>from the last 4 weeks: 140-155/88-95</p>
PMH	<ul style="list-style-type: none"> • Ex-smoker: Quit ~5 years ago • HTN diagnosed 5 years ago 	MPL	<ul style="list-style-type: none"> • Uncontrolled HTN

ASSESSMENTS BY PHARMACIST

- | | |
|--|--|
| <ul style="list-style-type: none"> • Perform best-possible medication history (incl. PharmaNet) (BPMH) <ul style="list-style-type: none"> ○ No medication adherence concerns or barriers ○ No OTC NSAID use • Home BP monitoring routine is twice weekly • Consider secondary causes of HTN <ul style="list-style-type: none"> ○ Sleep apnea ruled out by patient interview ○ Hyperaldosteronism unlikely based on serum K ○ Hyper/hypothyroidism improbable in 40 year old male, no S&Sx based on interview, and much more probable explanation for worsening BP control (inactivity, weight gain, stress, inattentive diet)" ○ HPI does not indicate secondary causes as likely, and alternative hypothesis for | <ul style="list-style-type: none"> • CKD assessment: <ul style="list-style-type: none"> ○ No concerns noted with last screening • Lifestyle Management for HTN: <ul style="list-style-type: none"> ○ Diet: Eating red meat 3-4 times/week and struggles to eat fruits and veggies consistently. Some juice or pop 3-4 days/week as well. Salt: adding "a bit" and restaurant food is high ○ Exercise: "none" except for an occasional 20-30 minute walk on weekends ○ Stress management: No tools for managing this • O/E: Labs provided per eHealth profile 6 months ago: <ul style="list-style-type: none"> ○ FBG: 5.8 ○ LDL: 3.2 T Chol 5.0 HDL 1.2 |
|--|--|

worsening BP control is available

- Glycemic Control (via myhealthBC and patient interview)
 - Last FBG outside normal range
 - Family Hx of diabetes: mother and older brother
 - Recent increasing stress and weight increases risk for insulin resistance
 - No symptoms of hyperglycemia but reports more carb craving
- CV risk assessment:
 - No symptoms of concern

- Lytes normal (notably, Na/K)
- SCr 85

- BMI: 28
- FRS < 10%
- BP: 150/90 P 70

COLLABORATIVE CARE PLAN

- Develop a care plan that is evidence-based and cost-effective in collaboration with the patient
 - Initiate lifestyle changes immediately with the patient
- Determine collaborative relationship with patient's GP
 - Identify patient's GP
 - Confirm collaborative relationship with the GP
- Consult GP on Monday
- Inform GP about patient unable to see GP in the next couple of months. Not willing to go to walk in clinic or ED
- Recommend initiating additional drug therapy, amlodipine
- Provide evidence of adding additional BP therapies is superior to maximizing doses of existing BP drugs
- Reassure GP about the follow-up in 2 weeks with the patient
- Inform the GP that an update on the patient's progress will be provided (i.e. no change or describe change)
- Address GP concerns if needed

SYNTHESIS

- BP not at target
- Increasing risk for prediabetes and uncontrolled HTN in view of increasing weight
- Struggling with lifestyle management of HTN
- Primary prevention for CV disease and current risk remains low

ACTION

- Prescribe amlodipine 2.5mg po daily and educate patient re: goals of therapy, potential adverse effects (adding additional BP therapies is superior to maximizing doses of existing BP drugs)
- Daily BP monitoring at variable times of the day, keep BP diary
- Confirm Lifestyle Action Plan, including:
 - 1) 1 additional fruit/vegetable serving/day
 - 2) no added salt
 - 3) week day walking: park 5 blocks away from work and walk.
- Generate documentation and convey to primary care provider
- Include information about the patient's inability to see primary care provider in the next couple of months

MONITORING PLAN

- Reassess patient in 2 weeks via phone or in person
- Update primary care provider with patient assessment (no change or describe change)

BENEFITS OF PATIENT SEEING CERTIFIED PHARMACIST PRESCRIBER

- ED/Urgent care/walk-in clinic visit averted
- Timely initiation of therapy
- Patient received care immediately, no referrals, no waiting
- Primary care provider is informed about the patient's progress
- Pharmacist is working with other members of the patient's team

CASE 3: Polypharmacy

A Certified Pharmacist Prescriber with a collaborative practice relationship in a team-based residential care facility establishes a collaborative practice relationship with a patient’s primary care provider. Certified Pharmacist Prescriber helps optimize and address unnecessary drug therapy to reduce the risks associated with polypharmacy.

COLLECT PATIENT INFORMATION

ID	92-year-old female is being assessed in a residential care facility for regularly-scheduled 6-month medication review	SOCIALHx	<ul style="list-style-type: none"> • Widow • Lives in residential care facility • Retired • 2 children and 4 grandchildren—all live nearby • No EtOH
CC	None	MEDICATIONHx / ALLERGIES / IMMUNIZATIONS	<ul style="list-style-type: none"> • alendronate 70 mg po q week on Sundays x 2 yr • furosemide 40 mg po daily x 3 months • KCl 8 mEq po bid x 3 months • warfarin 5 mg po daily • rabeprazole 20 mg po daily x 3 months • metoprolol 25 mg po bid • citalopram 20 mg po daily • brinzolamide/timolol eye drops 1 drop ou daily • acetaminophen ER 650-1300 mg po up to tid PRN pain
HPI	N/A	O/E	<ul style="list-style-type: none"> • Appears well, A+O

PMH

- Atrial Fibrillation (CHADS2 = 2)
- Osteoarthritis (knee, hip)
- Hypertension
- Osteoporosis (diagnosed 2 yr ago)
- Depression/anxiety
- CKD
- Glaucoma
- Community acquired pneumonia requiring hospitalization (3 months ago)

MPL

(polypharmacy)

ASSESSMENTS BY PHARMACIST

- Perform best-possible medication history (BPMH) including PharmaNet
 - Furosemide and KCl were prescribed on discharge from hospital 3 months ago (admitting diagnosis: community-acquired pneumonia). Had never taken either medication in the past
 - Does not know why she takes rabeprazole. No Hx of peptic ulcer disease, GERD or GI bleeding
 - Has never taken calcium or vitamin D
- Emergency Department assessment and discharge summary reviewed from 3 months prior
 - Furosemide and KCl prescribed on admission for possible heart failure
- Functional assessment:
 - Ambulates with walker
- Heart failure assessment:
 - Denies SOBOE or at rest, orthopnea or PND
 - Able to ambulate around home normally
 - Denies peripheral edema
 - Recent echocardiogram: normal LV size and function, LVEF 55%, normal valves
 - Assess vaccination Hx (influenza, pneumococcal)
 - Height 158 cm, weight 54 kg, BMI 21.6 kg/m²
 - O/E: BP 135/80 mmHg, HR 50 bpm and irregularly irregular, no postural change in BP or HR, JVP <2 cm ASA, normal

- Rabeprazole was prescribed for stress ulcer prophylaxis while in hospital
- Laboratory values from last week accessed from facility chart
 - SCr 55 µmol/L, CrCl 49 mL/min, Na 138 mmol/L, K 4.0 mmol/L, INR 2.3

breath sounds bilaterally, no peripheral edema

- Denies palpitations, occasional presyncope

COLLABORATIVE CARE PLAN

- Develop a care plan that is evidence-based and cost-effective in collaboration with the patient, caregiver and/or family
- Consult with the physician at the residential care facility
 - Inform physician about the cause of the unnecessary medications
 - Recommend initiating changes today
 - Reassure physician about the follow-up in 1 week with the patient and the healthcare team at the facility
 - Inform the physician that an update on the patient's progress will be provided
 - Address physician concerns if needed

SYNTHESIS

- Questionable indication for furosemide and KCl, initiated during ED visit, sx later attributed to CAP, not heart failure. No diagnosis of HF made despite echo.
- No identifiable valid indication for rabeprazole
- Resting bradycardia—may not require current dose of beta-blocker
- No calcium and vitamin D for osteoporosis

ACTION

- | | |
|---|---|
| <ul style="list-style-type: none"> ● Decrease furosemide to 20 mg po daily ● Decrease KCl to 8 mEq po daily ● Decrease metoprolol to 12.5 mg po bid ● Discontinue rabeprazole | <ul style="list-style-type: none"> ● Educate for each of the above (rationale, administration/titration, goals of therapy, common adverse effects & their management, cost) ● Document in facility patient record and convey to primary care provider |
|---|---|

- Prescribe calcium 500 mg po elemental PO bid and vitamin D 1000 units po daily

MONITORING PLAN

- Follow-up in 1 week with the patient and healthcare team in the facility
- Monitor for worsening signs or symptoms of heart failure
- Monitor for palpitations/assess resting HR, BP
- Monitor for any symptoms of GERD

BENEFITS OF PATIENT SEEING CERTIFIED PHARMACIST PRESCRIBER

- Reduce polypharmacy
- Potentially avoid adverse effects associated with unnecessary therapy (e.g., hypovolemia leading to fall, C. difficile infection secondary to chronic PPI)
- Optimize osteoporosis therapy to prevent vertebral/non-vertebral fracture and associated hospitalization +/- mortality

CASE 4: Medication Reconciliation on Admission

A Certified Pharmacist Prescriber with a collaborative practice relationship in a team-based community hospital practice helps prevent the interruption of essential chronic drugs during a hospital stay.

COLLECT PATIENT INFORMATION

ID	35-year-old female admitted overnight to general surgery unit at a community hospital for cholecystectomy for recurrent cholecystitis. She is assessed by the pharmacist in the morning.	SOCIALHx	<ul style="list-style-type: none"> • Single • Lives alone • Unemployed • No children or family support • Denies EtOH or illicit drugs • Smoker 1 ppd x 22 yr
CC	Right upper quadrant abdominal pain, nausea, abdominal tenderness	MEDICATIONHx / ALLERGIES / IMMUNIZATIONS	<ul style="list-style-type: none"> • aripiprazole 15 mg po daily in AM • divalproex 500 mg po bid • sertraline 100 mg po daily at HS
HPI	Patient was admitted for cholecystitis 6 months ago. She received supportive care and was discharged home. She did not have any recurrent symptoms until last night, and promptly presented to the Emergency Department. General surgery was consulted and laparoscopic cholecystectomy is planned for later today. The general surgery resident	O/E	<ul style="list-style-type: none"> • Appears in distress with abdominal pain and nausea • A+O x 3, able to converse appropriately

	completed the admission orders, but did not perform any medication reconciliation, no orders currently written re: prior-to-admission medications.		
PMH	<ul style="list-style-type: none"> • Schizophrenia (x 8 yr) • Depression/anxiety • Obesity 	MPL	<ul style="list-style-type: none"> • Cholecystitis • Schizophrenia • Depression/anxiety • Nicotine dependence

ASSESSMENTS BY PHARMACIST

- | | |
|---|---|
| <ul style="list-style-type: none"> • Perform best-possible medication history (BPMH) including PharmaNet <ul style="list-style-type: none"> ○ Patient receives q1 weekly blister packs ○ Contact community pharmacy to review medication administration times <ul style="list-style-type: none"> ▪ Knowledgeable about her medications—she is very concerned about worsening symptoms if she does not receive her medications ○ Carries accurate home medication list ○ Reports very good adherence (only 1 missed dose in past 3 months) ○ All medications deemed to be appropriate to continue while in hospital and not contraindicated by surgery. | <ul style="list-style-type: none"> • Perform assessment of nicotine dependence <ul style="list-style-type: none"> ○ 22-pack yr Hx ○ Never tried to quit in the past ○ No interest in quitting long-term, but willing to accept nicotine replacement therapy (NRT) while in hospital ○ Has never used NRT or pharmacotherapy ○ Starting to experience symptoms of withdrawal (restlessness, agitation, tachycardia) |
|---|---|

COLLABORATIVE CARE PLAN

- Develop a care plan that is evidence-based and cost-effective in collaboration with the patient
- Consult with the general surgery resident
 - Inform general surgery resident about:
 - the continuation of essential chronic medications during the patient’s hospital stay to prevent adverse events
 - addition of nicotine replacement therapy to prevent nicotine withdrawal symptoms
 - Recommend initiating changes immediately
 - Reassure the general surgery resident about the daily follow-up with the patient
 - Inform the general surgery resident that an update on the patient’s progress will be provided
 - Address the general surgery resident concerns if needed

SYNTHESIS

- High-risk for exacerbation of psychiatric medications due to lack of medication reconciliation—all members of the general surgery team are currently in the operating room (and unavailable)
- Indication for NRT to prevent/treat withdrawal symptoms

ACTION

- | | |
|---|--|
| <ul style="list-style-type: none">• Prescribe medications as per home regimen including aripiprazole, divalproex and sertraline | <ul style="list-style-type: none">• Order nicotine patch 21 mg applied daily• Explain actions to patient• Document in patient record |
|---|--|

MONITORING PLAN

- Pharmacist to follow-up daily while in hospital
- Assess for psychiatric symptoms
- Assess for nicotine withdrawal symptoms

BENEFITS OF PATIENT SEEING CERTIFIED PHARMACIST PRESCRIBER

- Prevents adverse event due to lack of indicated psychiatric medications
- Prevent medication withdrawal symptoms (e.g., SSRI)
- Positive patient experience due to lack of interruption of chronic therapy, and minimization of discomfort from mandatory temporary smoking interruption
- Surgical team not interrupted

CASE 5: Medication Reconciliation

A Certified Pharmacist Prescriber with a collaborative practice relationship in a team-based primary care clinic helps provide appropriate drug therapy is initiated to ensure a safe and effective transition in care during discharge from hospital.

COLLECT PATIENT INFORMATION

ID	72-year-old male recently discharged to a shelter as he had no-fixed-address prior. Admitted 3 weeks ago due ischemic right arm and bilateral leg ischemia. Identified by primary care clinic pharmacist for med review due to discharge 3 days go from hospital. Patient not previously known to the clinic.	SOCIALHx	<ul style="list-style-type: none">• EtOH abuse• Smoker 1ppd• Was NFA now living in shelter• Receives pension
CC	He is out of meds, lost discharge prescription	MEDICATIONHx / ALLERGIES / IMMUNIZATIONS	<ul style="list-style-type: none">• NKA• Patient did not have any meds with him• Med list per discharge summary:<ul style="list-style-type: none">○ warfarin 7mg po OD○ bisoprolol 5mg po OD○ ASA 81mg po OD○ furosemide 40mg po OD

			<ul style="list-style-type: none"> ○ ramipril 2.5mg po OD ○ spironolactone 12.5mg po OD
HPI	None	O/E	<ul style="list-style-type: none"> ● Reviewed labs from chart prior to discharge ● WBC 6.9, Hgb 123, Hct 0.38, HCV 110, Plts 460, INR 2.2, Na 136, K 4.5, SrCr 104, eGFR 61 ● Vague historian unable to describe what happened in hospital or where his discharge prescription went
PMH (from hospital d/c summary and CareConnect)	<ul style="list-style-type: none"> ● CAD with STEMI in 2011 and bare metal stent x 1 ● CHF with EF 27% ● PVD ● Left atrial appendage and left ventricular apex thrombus found while hospitalized 	MPL	<ul style="list-style-type: none"> ● CHF with reduced EF – not on treatment ● Identified thrombus – not on anticoagulation ● CAD – not on appropriate secondary prevention

ASSESSMENTS BY PHARMACIST

- BPMH based on discharge note, PharmaNet and client. Nothing on PharmaNet
- Assess vitals: BP 130/70, HR 66, weight 63.5kg

- LV/LAA thrombus
- Denies numbness or unusual weakness to arms/legs, visual changes, difficulty speaking or vertigo

- Patient currently not on any medications or OTCs
- Lab values from CareConnect
- Normal liver function test
- CHF assessment/CAD/Secondary prevention
- Denies orthopnea, SOBOE, sleeps with 2 pillows, can walk 2 blocks until leg pain makes him stop
- Denies pre/syncope
- Denies angina

- Ascertain pts PharmaCare coverage status (Plan I, able/willing to pay deductible)
- Ascertained that his shelter provides Medication Management and Outreach workers to help him store and administer his medications. Outreach workers can walk with him to the lab for INR and other labwork

COLLABORATIVE CARE PLAN

- Develop a care plan that is evidence-based and cost-effective in collaboration with the patient
- Consult with the prescriber on duty
 - Recommend restarting/initiating drug therapy today
 - Inform prescriber about the coordination of care between the primary care clinic and shelter
 - Reassure prescriber about the follow-up in 2 weeks with the patient at the shelter
 - Inform the prescriber that an update on the patient's progress will be provided
 - Address prescriber concerns if needed

SYNTHESIS

- CHF assessment: Bblocker, ACEi, diuretics should be restarted
- CAD/secondary prevention: ACEi, ASA should be restarted; Statin should be initiated
- LV/LAA thrombus risk of sequelae (embolic stroke, peripheral embolism) as not anticoagulated
- With the supports provided by his shelter, it may be feasible to prescribe these indicated therapies

ACTION

- Restart/initiate medications from hospital discharge Rx
 - ramipril 2.5mg po OD
 - furosemide 40mg po OD
 - spironolactone 12.5mg po OD
 - bisoprolol 5mg po OD
 - ASA 81mg po OD
 - warfarin 7mg po daily.
 - Prescribe atorvastatin 10 mg po once daily.
 - Plan to titrate ACEi, B-blocker to target doses (10mg, 10mg, respectively).
 - Adjust furosemide to symptoms.
 - Educate for all of the above re: rationale, administration/titration, goals of therapy, common adverse effects & their management, cost
- Additional education
 - Anticoagulation: importance of compliance, and risks of bleed and embolic risks
 - CHF: fluid management, salt restrictions
 - Medication education regarding each med and monitoring parameters.
 - Liaise with shelter to communicate therapeutic plan, schedule follow-up, coordinate outreach and medication management services.
 - Document all above patient assessments, actions, rationale, monitoring plan in EMR

MONITORING PLAN

- Reassess patient in 2 weeks in person at shelter
- Bloodwork: SrCr/eGFR, lytes, INR at 7 days.
- Need to be re referred at 3 mos for possible echocardiogram to determine duration of warfarin

BENEFITS OF PATIENT SEEING CERTIFIED PHARMACIST PRESCRIBER

- Prevention of serious adverse effects /hospitalization from any of his conditions. He could have deteriorated quickly (CHF/fluids, embolic event, etc.)
- Timely access to care especially for marginalized patients
- Was able to work with his social supports to coordinate supportive services

CASE 6: Chronic Obstructive Pulmonary Disease (COPD)

A Certified Pharmacist Prescriber with a collaborative practice relationship in a team-based primary care clinic helps review and adjust drug therapy for the patient's COPD.

COLLECT PATIENT INFORMATION

ID	60-year-old male coming to see primary care clinic pharmacist for general medication review.	SOCIALHx	<ul style="list-style-type: none"> Smoking – decreased to 13 cigs/day Family Hx – father – emphysema, mother smokes, sister recently dx with non hodgkins lymphoma
CC	None	MEDICATIONHx / ALLERGIES / IMMUNIZATIONS	<ul style="list-style-type: none"> NKA Warfarin titrated to INR 2-3 OTCs including senna, CaCarbonate Never had flu/pneumo vaccine
HPI	N/A	O/E	<ul style="list-style-type: none"> No visible distress, well groomed, good eye contact Height 178, weight 90.2kg, RR 16, oximetry resting SpO2 95%, HR 78 Cough, productive of grey sputum

PMH

- Hx of recurrent unprovoked PEs/DVTs, prothrombin gene mutation– indefinite anticoagulation
- COPD diagnosed 6 months ago via spirometry. No AECOPD since diagnosis.
- GI – polypectomy
- Remote history of suicidal ideation in the 80s

MPL

- History of COPD - untreated

ASSESSMENTS BY PHARMACIST

- Perform best-possible medication history (incl. PharmaNet) (BPMH)
- Review Spirometry results (patient has spirometry report): FEV1/FVC ratio 0.55.
- History of symptoms: SOBOE, mild cough, worse at night, moderate grey sputum to clear during the night and AM
- Infrequent colds
- INR therapeutic – continue same dose
- Assess based on patient interview willingness to take medication, potential for adherence, affordability of medication

COLLABORATIVE CARE PLAN

- Develop a care plan that is evidence-based and cost-effective in collaboration with the patient
- Consult with the prescriber on duty
 - Recommend initiating changes today
 - Reassure prescriber about the follow-up in 1 month with the patient
 - Inform the prescriber that an update on the patient's progress will be provided
 - Address prescriber concerns if needed

SYNTHESIS

- Patient would benefit from initiation of chronic COPD therapy
- Guideline-recommended therapy for his level of severity is LABA+ICS
- Willingness / ability to use MDIs, cost, coverage status make starting with ICS, LABA, or both debatable
- Smoking cessation is an important priority

ACTION

- | | |
|---|--|
| <ul style="list-style-type: none">• Initiate salbutamol 2 puffs QID PRN and ipratropium 2 puffs QID• Education about<ul style="list-style-type: none">○ rationale, goals of therapy○ optimal MDI use○ monitoring (may need LABA and/or ICS if regular bronchodilator use)○ smoking cessation○ vaccines | <ul style="list-style-type: none">• Initiate patient self-management through COPD Action Plan• Reassess smoking cessation plan• Generate documentation and convey to primary care provider |
|---|--|

MONITORING PLAN

- Reassess patient in 1 month via phone or in person
- Reinforce COPD education and warning signs on each visit
- Reassess smoking cessation plan on each visit
- Update primary care provider on patient progress

BENEFITS OF PATIENT SEEING CERTIFIED PHARMACIST PRESCRIBER

- Timely initiation of treatment
 - Reduce risk of AECOPD
 - Improved quality of life
- Pharmacist is working with other members of the patient's team

CASE 7: AF Stroke Prevention

A Certified Pharmacist Prescriber with a collaborative practice relationship in a team-based primary care clinic helps reduce stroke risk for a patient by starting anticoagulation drug therapy.

COLLECT PATIENT INFORMATION

ID	66-year-old female presents to your primary care clinic today, prompted by a cardiologist who recently diagnosed her with recent-onset atrial fibrillation. The cardiologist told her to talk to her primary care provider about starting anticoagulation.	SOCIALHx	Unremarkable
CC	Asymptomatic, no specific complaints. She presents the report from the cardiologist which documents atrial fibrillation and advises her primary care provider to “start anticoagulation”.	MEDICATIONHx/ ALLERGIES / IMMUNIZATIONS	<ul style="list-style-type: none"> • amlodipine 10 mg po daily x 3 years for HTN • bisoprolol 10mg po daily x 2 weeks for rate control since ED visit. • NKA • Immunization status unknown
HPI	Last seen in your clinic 6 months ago for routine check-up. Developed palpitations and dizziness 1 week ago and went to ED. Assessed there by a cardiologist who prompted today’s visit.	O/E	<ul style="list-style-type: none"> • HR 70, irregularly irregular • Otherwise unremarkable

PMH

- HTN x 3 years.
- Hysterectomy 10 years ago for uterine fibroids

MPL

- Plan to initiate AF stroke prevention therapy

ASSESSMENTS BY PHARMACIST

- Perform best-possible medication history (incl. PharmaNet) (BPMH)
- CHADS2/ CHA2DS2-VASc re: AF stroke risk. CHADS2=1 (3.6% annual stroke risk); CHA2DS2-VASc=3 (4.3% annual stroke risk). Candidate for OAC therapy.
- HAS-BLED score re: OAC major bleeding risk. Score ~0 (HTN, but controlled) (2-3% annual risk of major bleeding on any OAC).
- Assess based on patient interview willingness to take, potential for adherence, affordability

SYNTHESIS

- Patient remains in AF. Ventricular rate is controlled.
- Patient is willing to take SPAF therapy. Prefers OAC to aspirin. Wants to take a NOAC/DOAC, but is concerned about the cost, has no private coverage, understands PharmaCare won't cover unless warfarin unsuccessful.

COLLABORATIVE CARE PLAN

- Develop a care plan that is evidence-based and cost-effective in collaboration with the patient
- Consult with the prescriber on duty
 - Inform prescriber about the individualized care plan based on the clinic protocol for anticoagulation starts
 - Recommend initiating warfarin 10mg po daily and titrate to INR 2-3
 - Reassure prescriber about the follow-up calls with the patient to adjust warfarin doses and the involvement of the patient's community pharmacist
 - Inform the prescriber that an update on the patient's progress will be provided
 - Address prescriber concerns if needed

ACTION

- Educate patient re: AF, stroke risk, therapeutic options, implications of OAC therapy vs. aspirin vs. no therapy. Bleeding risks, INR testing, cost, diet/EtOH, drug interactions, # of daily doses.
- Guide patient through choice of therapy based on preferences using a decision aid (e.g., sparctool.com, afib.ca)
- Based on this, prescribe warfarin 10mg po daily. Use dosing nomogram, schedule INR testing, follow-up phone calls to titrate to INR 2-3.
- Do warfarin teaching and provide written and online counselling resources
- Discuss self-monitoring and self-adjusting via POC testing at a pharmacy or at home, and advise that we can assess this once stabilized on warfarin
- Generate documentation and convey to community pharmacist and cardiologist

MONITORING PLAN

- Reassess patient every 2-4 days initially until the INR is at target
- Reassess patient weekly once INR at target
 - Gradually increase up to every 4 weeks if the INR remains stable and within the therapeutic range
- Support patient with dose adjustments
- Reinforce AF and warfarin education
- Update primary care provider on patient progress

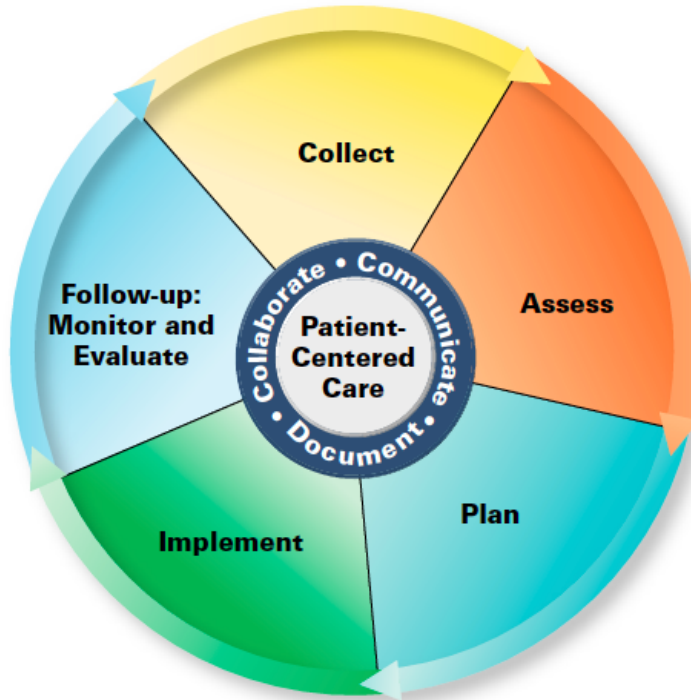
BENEFITS OF PATIENT SEEING CERTIFIED PHARMACIST PRESCRIBER

- More efficient management of drug therapy than by GP
- Pharmacist in clinic more accessible than physician
- Pharmacist is working with other members of the patient's team

APPENDIX 2: PHARMACISTS' PATIENT CARE PROCESS

Pharmacists' Patient Care Process

The Joint Commission of Pharmacy Practitioners, a coalition of national pharmacy associations that includes APhA, recently adopted the Pharmacists' Patient Care Process to promote consistency in patient care delivery within the profession.



Source: http://www.pharmacist.com/sites/default/files/JCPP_Pharmacists_Patient_Care_Process.pdf

Pharmacists' Patient Care Process

Pharmacists use a patient-centered approach in collaboration with other providers on the health care team to optimize patient health and medication outcomes.

Using principles of evidence-based practice, pharmacists:

Collect

The pharmacist assures the collection of the necessary subjective and objective information about the patient in order to understand the relevant medical/ medication history and clinical status of the patient.

Assess

The pharmacist assesses the information collected and analyzes the clinical effects of the patient's therapy in the context of the patient's overall health goals in order to identify and prioritize problems and achieve optimal care.

Plan

The pharmacist develops an individualized patient-centered care plan, in collaboration with other health care professionals and the patient or caregiver that is evidence-based and cost-effective.

Implement

The pharmacist implements the care plan in collaboration with other health care professionals and the patient or caregiver.

Follow-up: Monitor and Evaluate

The pharmacist monitors and evaluates the effectiveness of the care plan and modifies the plan in collaboration with other health care professionals and the patient or caregiver as needed.

Pharmacists Working in Collaboration with Physicians and Other Health Care Professionals, Pharmacy Health Information Technology Collaborative: <http://www.pharmacyhit.org/pdfs/workshop-documents/WG1-Post-2015-01.pdf>

APPENDIX 3: OTHER PRESCRIBERS IN BC – PRESCRIBING PARAMETERS

	Naturopaths	Midwives	Nurse Practitioners	Optometrists
Training	Prescribing Certification requirements: Registrants must successfully complete the Prescribing Upgrade Course offered by the Boucher Institute of Naturopathic Medicine (BINM) including an online course and oral exam.	4-year undergraduate degree. Clinical experience requires 40 births attended as a primary midwife.	Master’s degree program. No additional training; however, created new competencies and updated OSCE’s. Three streams of practice are used to register NPs: family, adult and pediatric	No training requirements if they graduated after 2000. <i>Optometrists certified in Ocular Therapeutics to treat and manage ocular disease as per Bylaws Schedule: Successfully completed a 20-hour therapeutic pharmaceutical agent updating course given at any time after January 1, 2004 and has also successfully completed one of the following: (a) a 100-hour course in ocular therapeutics; (b) the Treatment and Management of Ocular Disease section of the National Board of Examiners in Optometry; or (c) the ocular therapeutics section of the national qualifying examination.</i>
Schedule of Drugs	Schedule I, II and III.	Schedule I, IA, II and III.	Schedule I, IA (controlled prescriptions), II.	Schedule I, II and III.
List of Drugs	List of excluded drugs (e.g., antibiotics with narrow therapeutic index and antipsychotics.	Inclusive list of drugs.	List of drugs: Schedule I, IA, II. NP prescribes in area registered to practice (family, adult, pediatric)	Limited list of drugs: Glaucoma agents, topical treatment of eye disease.
Standards	Usual and customary standards for prescribing	Standards provide indications, routes of administration and upper dosage limits where appropriate.	Usual and customary standards for prescribing.	Standards for the treatment of eye disease Standards for anti-glaucoma medication prescribing Co-manage with ophthalmologist for glaucoma. Inform patients they have a choice to be managed by an optometrist or ophthalmologist for glaucoma. Must refer to an ophthalmologist if condition does not improve or worsens.

Appendix 3: Other prescribers in BC (continued)

	Naturopaths	Midwives	Nurse Practitioners	Optometrists
Limits	Cannot prescribe drugs for a number of categories.	Limited to pregnancy, lactation and labour.	Limits and conditions by drug category. A drug category with the notation “No Exceptions” means that NPs may prescribe all drugs in that category. A drug category with the letters C (continuation prescribing only) and/or O (cannot prescribe) mean there are restrictions on NP prescribing.	No glaucoma drugs for patients age < 30.
Conditions	Can request special authority medications	Conditions around prescribing some drugs in collaboration with a medical practitioner, e.g., controlled drugs for labour.	Restrictions on prescribing – see above.	Cannot prescribe if glaucoma is advanced.
Narcotics	Under the federal <i>Controlled Drug Substances Act and Regulations</i> , no authority to prescribe narcotics and controlled drugs, including benzodiazepines.	Yes	Yes	No

APPENDIX 4: PHARMACISTS' PRESCRIBING AUTHORITY - NATIONALLY AND INTERNATIONALLY

Pharmacists Initiating Prescriptions in Canadian Provinces

Province	Can Initiate Prescription Drug Therapy	Can Order and Interpret Laboratory Tests
BC	x	X
AB	✓	✓
SK	✓	Pending legislation, regulation, or policy for implementation
MB	✓	✓ (authority limited to ordering lab tests)
ON	For smoking/tobacco cessation	x
QC	For smoking/tobacco cessation For minor ailments	✓
NB	✓	Pending legislation, regulation, or policy for implementation
PEI	For smoking/tobacco cessation For minor ailments	Pending legislation, regulation, or policy for implementation
NS	✓	✓
NL	For smoking/tobacco cessation For minor ailments	X

Pharmacists' Scope of Practice in Canada, Canadian Pharmacists Association, December 2016.

https://www.pharmacists.ca/cpha-ca/assets/File/cpha-on-the-issues/ScopeofPracticeinCanada_DEC2016.pdf

Pharmacists Initiating Prescriptions Internationally

Country	Can Initiate Prescription Drug Therapy	Can Order and Interpret Laboratory Tests
NZ	✓	✓
UK	✓	✓
USA	✓	✓ >75% of the States and federal government (armed forces and Veterans Affairs)

APPENDIX 5: PHARMACISTS' EXPANDED SCOPE OF PRACTICE IN CANADA, DECEMBER 2016

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	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	
	Travel vaccines ⁶	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	X	X	X	
	Influenza vaccine	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	X	X	X	
Labs	Order and interpret lab tests	X	✓	P ⁸	✓ ⁹	X	✓	P	P ⁸	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

Pharmacists' Scope of Practice in Canada, Canadian Pharmacists Association, December 2016.

https://www.pharmacists.ca/cpha-ca/assets/File/cpha-on-the-issues/ScopeofPracticeinCanada_DEC2016.pdf

APPENDIX 6: TRAINING REQUIREMENTS FOR THE CURRENT SCOPE OF PHARMACIST PRACTICE

Scope of Pharmacist Practice	Training Requirements
Adaptations of Prescriptions	<p>Read and understand the Orientation Guide and Amendment to the Orientation Guide</p> <p>Must adhere to the 7 fundamentals for adapting a prescription as outlined in Professional Practice Policy-58: Medication Management (Adapting a Prescription) including notification of other health professionals</p>
Administration of Injections	<p>Successfully complete a CCCEP-accredited drug administration training program approved by the College of Pharmacists of BC as listed in Schedule C of the Health Professions Act Bylaws</p> <p>Possess valid certification in first aid and CPR from a recognized provider</p>
Independently prescribe Schedule IV drugs for emergency contraception (norgestrol)	No additional training required
Independently prescribe emergency refills	<p>No additional training (see Professional Practice Policy-31: Emergency Prescription Refills)</p> <p>Apply the fundamentals of:</p> <ul style="list-style-type: none"> • individual competence • appropriate patient information • appropriateness of providing an emergency refill • informed patient consent • document rationale and follow-up plan in PharmaNet and patient pharmacy record
Prescribe Schedule II and III drugs	No additional training

APPENDIX 7: MODELS OF COLLABORATIVE PHARMACIST PRESCRIBING

Collaborative Model	Description	Training Requirements	Prescribing Standards of Practice
Collaborative team-based care for in-patients Hospital-based care	Pharmacist prescribing is a natural extension of the role of the hospital pharmacist Canadian hospital pharmacist prescribing increased from 46% in 2005/06 to 61% in 2007/08, mainly through protocols	No additional training required	No
Collaborative team-based care for out-patients Ambulatory clinics	Pharmacist prescribing is a natural extension of the role of the ambulatory clinic pharmacist	No additional training required	No
Primary care team-based clinics	Pharmacist prescribing is a natural extension of the role of the primary care clinic pharmacist	No additional training required	No
Saskatchewan Collaborative Practice Agreement	Saskatchewan pharmacist prescribing through collaborative practice agreements	No additional training required	No
UK Dependent Prescribing	Supplementary prescribing through protocols and formularies	Additional training required	No (Prescribing Guidelines only)
USA Collaborative Drug Therapy Management Agreements	Dependent prescribing through agreements	Specific training requirements per agreement	No
New Zealand Post Graduate Pharmacist Prescribers	Dependent prescribing arrangements with authorized prescribers through standing orders or protocols	Additional training required	Yes

APPENDIX 8: LEGISLATION AND REGULATION OF INTERPROFESSIONAL COLLABORATION

Jurisdiction	Legislative and Regulatory Framework	Government Policy Supporting IPC	Key Legislative and Regulatory Mechanisms Supporting Enhanced IPC
BC	<ul style="list-style-type: none"> <i>Health Professions Act</i> between 2001-2011 (both common acts and restrictions) 	<ul style="list-style-type: none"> Health Professions Council 2001 Primary Health Care Charter 2007 Divisions of Family Practice 	<ul style="list-style-type: none"> Scope of Practice Statements Reserved Actions
Ontario	<ul style="list-style-type: none"> <i>Health Professions Act</i> 1991 (both common acts and restrictions) 	<ul style="list-style-type: none"> Family Health Teams Community Health Centres Health Force Ontario (develop new provider roles) Blueprint for Advancing IPC (team-based approach) Ministerial Referral to the Health Professions Regulatory Advisory Council (make recommendations for shared controlled acts) 	<ul style="list-style-type: none"> Health System Improvement Act 2007 (Colleges promote IPC, and develop standards/programs to support IPC)
Alberta	<ul style="list-style-type: none"> <i>Health Professions Act</i> 1999 (only common acts) Government Organization Act 2000 (lists restricted activities) 	<ul style="list-style-type: none"> Health Policy Framework 2006 (team based care; new compensation models) Health Workforce Action Plan 2007-16 (new and expanded provider roles to increase patient access to needed health services) Primary Care Networks 	<ul style="list-style-type: none"> Non-restrictive Scopes of Practice Restricted Activities Delegation Common complaints and Discipline Provincial Ombudsman

Adapted from <http://www.hprac.org/en/projects/resources/hprac-collaboration.JurisdictionReviewENFINAL.feb1208.pdf>