

Facing the Future Together



A Policy Paper of the British Columbia Pharmacy Association

March 2014



British Columbia
Pharmacy Association
A voice for community pharmacy

Table of Contents

Table of Exhibits	ii
Executive Summary.....	iii
Introduction.....	1
Part I: Trends in Drug Expenditures.....	2
Part II: Cognitive Pharmaceutical Services: Lessons from Abroad	9
Part III: Creating a Sustainable Provincial Drug Policy	14
Conclusion	23
References.....	24

Table of Exhibits

Exhibit 1: Total Drug Expenditure, British Columbia, 1985-2006.....	3
Exhibit 2: Total Drug Expenditure as a Percentage of Total Health Care Expenditure, British Columbia, 1985-2006.....	4
Exhibit 3: Per Capita Drug Expenditures, British Columbia and Canada, 1985-2006.....	4
Exhibit 4: Annual Percent Change in Drug Expenditure, British Columbia, 1986-2006.....	5
Exhibit 5: Total Drug Expenditure and Average Annual Percent Increase, British Columbia, 1985-2013.....	6
Exhibit 6: Public, Private, and Provincial Spending As a Percentage of Spending, All Drugs and Prescribed Drugs, British Columbia, 1985-2013.....	7
Exhibit 7: Total Expenditure and Market Share, Selected Prescription Drug Categories, Canada, 2009 and 2012.....	7
Exhibit 8: Dosage and Cost, Selected Biologic Medicines, 2013.....	8
Exhibit 9: PHARMAC Policy Tools.....	10
Exhibit 10: Cognitive Pharmaceutical Services Fees under New Zealand’s Community Pharmacy Services Agreement.....	11
Exhibit 11: Overview of the Recommendations.....	15
Exhibit 12: Summary of Pharmacists’ Expanded Scope of Practice Activities Across Canada.....	16
Exhibit 13: Public Payers of Drugs in British Columbia.....	17
Exhibit 14: Summary of the BC Pharmacy Association Clinical Service Plans.....	18
Exhibit 15: Summary of BC Pharmacy Association Commitments.....	20

Executive Summary

For years, policy-makers in British Columbia have faced the daunting challenge of how to best control drug expenditures. In the two decades from 1985 to 2006, total drug spending in British Columbia grew from \$417 million to almost \$2.7 billion—a more than six-fold increase that outpaced inflation and growth in other areas of health care. By 2010, British Columbia was spending almost as much on drugs as it was on physician services.

A drop in prices from the so-called “patent cliff”—a recent wave of patent expirations for brand-name cholesterol-lowering, antihypertensive, and acid-reducing drugs—has provided some temporary relief. But with the ongoing shift from institutional to community-based care, and the growing use of newer and more expensive biologic medicines, the drug cost challenge will continue.

To keep spending levels within budget, while ensuring access to necessary medicines, policy-makers will have to tackle the drivers of drug spending. Researchers have found that up to 80% of spending growth comes not from increased drug prices, but rather from changes in the volumes and types of drugs consumed. Controlling spending, therefore, means doing more than just addressing the economic side of drugs, but also carefully managing the clinical aspects of pharmaceutical care—things like ensuring medication adherence, offering chronic disease management solutions, and providing preventive care.

Pharmacists call this kind of clinical management “cognitive pharmaceutical services.” Evidence from the peer-reviewed literature highlights a trend across developed countries towards the greater use of pharmacists offering cognitive pharmaceutical services. Examples include: New Zealand’s investment in pharmacists to manage patients with high medicine management needs; Switzerland’s introduction of physician-pharmacist quality circles; the United States’ experience with North Carolina’s Asheville Project, which linked chronic disease patients to pharmacists for education and disease management interventions; and Ontario’s own successful, community pharmacist interventions in hypertension management.

These examples, that demonstrate the application of cognitive pharmaceutical services and the resulting improvements in quality and cost control, offer a vision of what is possible in British Columbia. To realize this vision, the pharmacists of British Columbia propose the following six recommendations:

Recommendation 1: That the Government of British Columbia continue to support the expansion of pharmacists’ scope of practice to realize the full benefit of pharmacists’ education and training.

Recommendation 2: That the Ministry of Health, in partnership with the BC Pharmacy Association, create a joint “Pharmacy Services Committee” with representation from both parties, to improve patient care and the professional satisfaction of pharmacists.

Recommendation 3: *That the Ministry of Health, in collaboration with other public payers, prepare and publicly release an annual, consolidated pharmacy expenditures and trends report.*

Recommendation 4: *That the Ministry of Health support the implementation of the clinical services proposals presented to government by the BC Pharmacy Association in March 2013.*

Recommendation 5: *That the Ministry of Health, in collaboration with the BC Pharmacy Association and the Doctors of BC (BC Medical Association), establish physician-pharmacist quality circles.*

Recommendation 6: *That the Government of British Columbia, in collaboration with the BC Pharmacy Association and other relevant stakeholders, update provincial legislation to reflect developments in e-health.*

The British Columbia Pharmacy Association (BC Pharmacy Association) intends to work collaboratively with stakeholders to ensure the implementation of these recommendations. To that end, our Association commits to the following:

Commitment 1: *We will maintain a collaborative approach in our efforts to develop policy in these areas.*

Commitment 2: *We will support sustainable solutions that use public resources wisely, to the benefit of the entire health care system and British Columbians.*

Commitment 3: *We will seek evidence-informed answers and insist on the use of the best available information in the development of policy solutions.*

Commitment 4: *We will work with patients as partners, engaging them meaningfully in our efforts to implement our policy recommendations.*

Commitment 5: *We will hold ourselves accountable for the delivery of high quality pharmacy practice, in accordance with our professional mandate.*

Commitment 6: *We will work with our clinical colleagues to support the development, dissemination, and use of recognized guidelines and protocols that represent best practice in health care.*

Controlling provincial drug spending is possible, and it does not have to come at the price of reduced quality or limited access to health services. British Columbia's pharmacists are committed to working collaboratively with physicians, the Ministry of Health, and other stakeholders to find evidence-based solutions. Join us, and let us face the future together.

The British Columbia Pharmacy Association would like to acknowledge Agnew & Associates Consulting, Ltd., for its contribution in the development of this policy paper.

Introduction

For decades, policy-makers have struggled with how best to balance growing health care expenditures with the demand for greater access and deliverance of improved quality. Within health care, there is perhaps no area that more accurately portrays this dilemma than pharmaceutical services. It goes without saying that pharmaceuticals are the treatment modality of choice in our health care system, and indeed, growing drug budgets confirm it. In the two decades from 1985 to 2006, growth in drug spending outpaced inflation and other areas of health care; and while it slowed substantially over the last five years—largely due to a wave of patent expirations and associated cost reductions—analysts warn us to expect equally as great, or greater, increases in the future. For policy-makers, the question remains how to get the best value for the resources available.

In this paper, the pharmacists of British Columbia offer a framework for achieving that goal. The research on drug expenditure growth clearly states—if counterintuitively—that the drivers of growth have not been the prices of the drugs themselves, but rather the volumes and types of drugs consumed. Controlling spending, therefore, means doing more than addressing just the economic side of drugs. It also means tackling the clinical aspects of pharmaceutical care—for example, medication adherence, chronic disease management and preventive care.

Declaring our intention to control costs while improving quality is not stating a paradox, nor is it a practical impossibility. In fact, both the academic literature and the real world experience in countries around the world—like New Zealand, Switzerland, and the United States—tell us that the opposite is true. Our belief in the win-win of reduced costs and improved quality is as evidence-based as it gets.

To achieve this, public policies are needed that allow pharmacists to work to the fullest extent of their education and training, and in close collaboration with stakeholders across the health care system. We develop our Facing the Future Together strategy in three parts. Part I examines the remarkable and nuanced story of drug expenditures. This is followed in Part II with a review of other jurisdictions' successes using pharmacists to deliver services beyond traditional dispensing. Finally, we present six recommendations, alongside our own commitments, to make these changes a reality.

Part I: Trends in Drug Expenditures

- In the two decades from 1985 to 2006, growth in drug spending outpaced both inflation and other areas of health care. The main drivers behind this growth were not increasing prices of medicines, but rather the numbers and types of drugs being consumed.
- 2007 marked a major shift in this trend as the rate of growth slowed to less than half of the historical average. This was due largely to the move of widely-used prescription medicines off-patent (the so-called “patent cliff”).
- The future will likely see spending growth resume as one-time savings end and prescribing shifts towards less prevalent, but more expensive, biologic medicines. For public payers, ensuring value will require a more sophisticated and nuanced response than in previous years.

For decades now, policy-makers have struggled with the question of how to best control the growth in prescription drug expenditures. In 1993, Anderson and colleagues noted with concern that prescription drug expenditures for the elderly in British Columbia had increased by 317% in less than a decade (Anderson, Kerluke et al. 1993). A dozen years later, researchers again sounded the alarm, finding that prescription drug spending in Canada had doubled (Morgan, Bassett et al. 2005). In the five years from 2003 to 2007, spending on prescription drugs actually exceeded spending on physicians’ services (Canadian Institute for Health Information 2013), confirming the suspicions of many that the increasing portion of health care dollars spent on drugs could threaten the sustainability of public drug programs (Morgan, Agnew et al. 2004).

However, 2007 marked the beginning of what appeared to be a radical change. Adjusted for inflation, per capita spending on prescription drugs actually fell during the last five years, a phenomenon that researchers note has not been seen since World War II (The Centre for Health Services and Policy Research 2013). And yet, those same researchers note that reasons for the drop—such as the move of many high-cost patented drugs to lower-cost generic status—will not happen again. Indeed, the growing popularity of effective, yet expensive, biologic drugs, foretells a future of dramatic increases.

Decades of phenomenal growth, followed by an unanticipated plateau, to be followed by another dramatic increase perhaps, makes the story of drug spending anything but simple; and yet, understanding it is critical to developing sound public policy that directs our human and financial resources towards sustainable and quality drug prescribing.

This section reviews the drug expenditure question chronologically. First, we examine the two decades of drug expenditure growth from 1985 to 2006, both the nature of the increase and the reasons behind it.

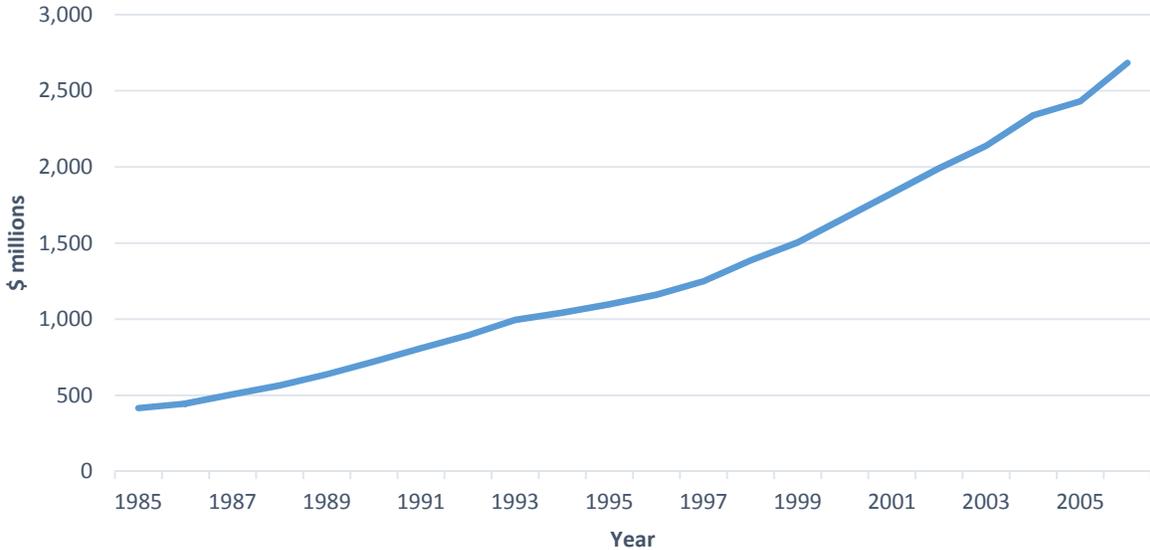
We then move to understand the unprecedented plateau in spending that followed from 2007 to 2013. Finally, we discuss future trends in drug spending and their implications for public policy.

Decades of Growth: Drug Spending from 1985-2006

The drug expenditure story from 1985 to 2006 is one of remarkable growth. In 1985, total spending in British Columbia equalled \$417 million (Exhibit 1). In the years that followed, spending grew at an average of 9% per year; indeed, these annual increases outpaced inflation every year between the years 1985 to 2006 (Exhibit 3). By 2010, drug spending in British Columbia had reached just over \$3.5 billion.

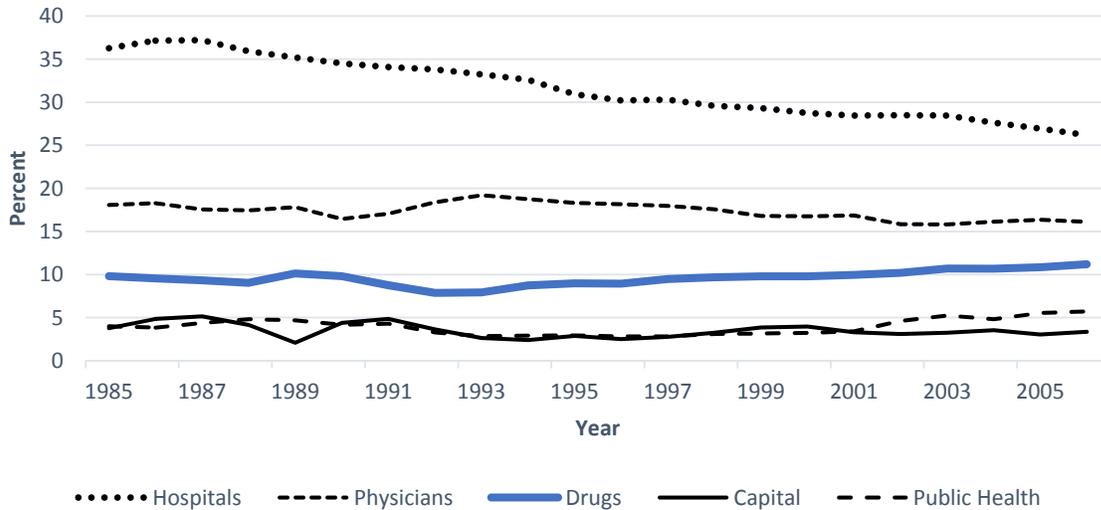
That growth in prescription drug expenditures was accompanied by a remarkable shift in health care expenditures overall. In the 20 years between 1986 and 2006, spending on physicians and hospitals as a portion of total health care spending in British Columbia declined significantly. In the case of physicians, the portion dropped from 18% to 15%; for hospitals, the corresponding figures were 37% to 26% (Exhibit 4). For prescription drugs, however, the portion of total expenditures rose from 9% to 14%. By 2010, in Canada, spending on drugs actually exceeded spending on physicians; and in British Columbia, the difference between these two expenditures was a mere 3% (Canadian Institute for Health Information 2013).

Exhibit 1: Total Drug Expenditure, British Columbia, 1985-2006



Source: (Canadian Institute for Health Information 2013)

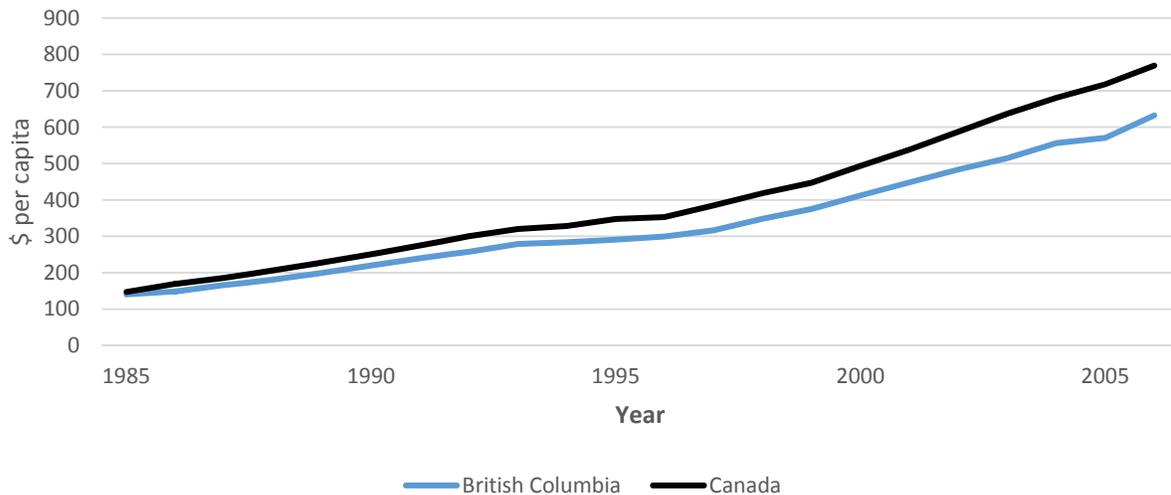
Exhibit 2: Total Drug Expenditure as a Percentage of Total Health Care Expenditure, British Columbia, 1985-2006



Source: (Canadian Institute for Health Information 2013)

Similar patterns were evident in per capita spending on drugs (Exhibit 3). In 1985, drug spending in both British Columbia and Canada averaged \$140 and \$147 per person, respectively. By 2013, the average for Canada is projected to have reached nearly \$977 per person. Interestingly, British Columbia has remained consistently below the national average, with a projected spend of \$761 per person in 2013—fully 22% less than the Canadian figure.

Exhibit 3: Per Capita Drug Expenditures, British Columbia and Canada, 1985-2006

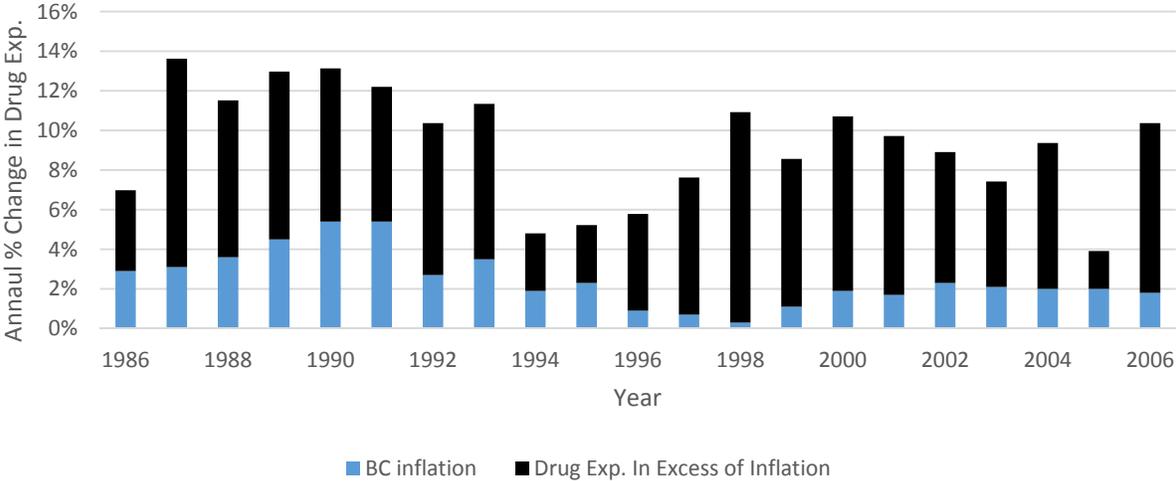


Source: (Canadian Institute for Health Information 2013)

The lower per-capita spending in British Columbia, relative to the rest of Canada, represented a victory of sorts for policy-makers. Programs designed to control spending (e.g., low cost alternative program and reference-based pricing) were having an effect. Nonetheless, the total spending continued to rise faster than inflation (Exhibit 4), at a pace that rivaled spending in other areas of health care.

Some of this was likely an artifact of the data. As health care overall saw a shift from institutional to community-based care (Michael 2008), drug spending that had been captured within institutional budgets was now visible in the budgets of public drug programs. Notwithstanding this phenomenon, an important public policy question emerged about how to understand the factors that were causing the increase, the so-called “drivers” of prescription drug expenditures. Once examined, the results—which had never before been reported quite this way—were contrary to the conventional wisdom that high drug prices were to blame. Using data from British Columbia’s public drug program for seniors, Morgan et al. found that during the period 1985 to 1999, prices accounted for only 22% of the increase (Morgan 2002). The remainder of the growth—nearly 80%—was due to “exposure” and “drug mix,” i.e., the types and amounts of drugs that were prescribed. British Columbia’s public drug program for seniors was spending more each year on prescription medicines, not because manufacturers were raising prices, but because providers were prescribing—and patients were consuming—more medications.

Exhibit 4: Annual Percent Change in Drug Expenditure, British Columbia, 1986-2006



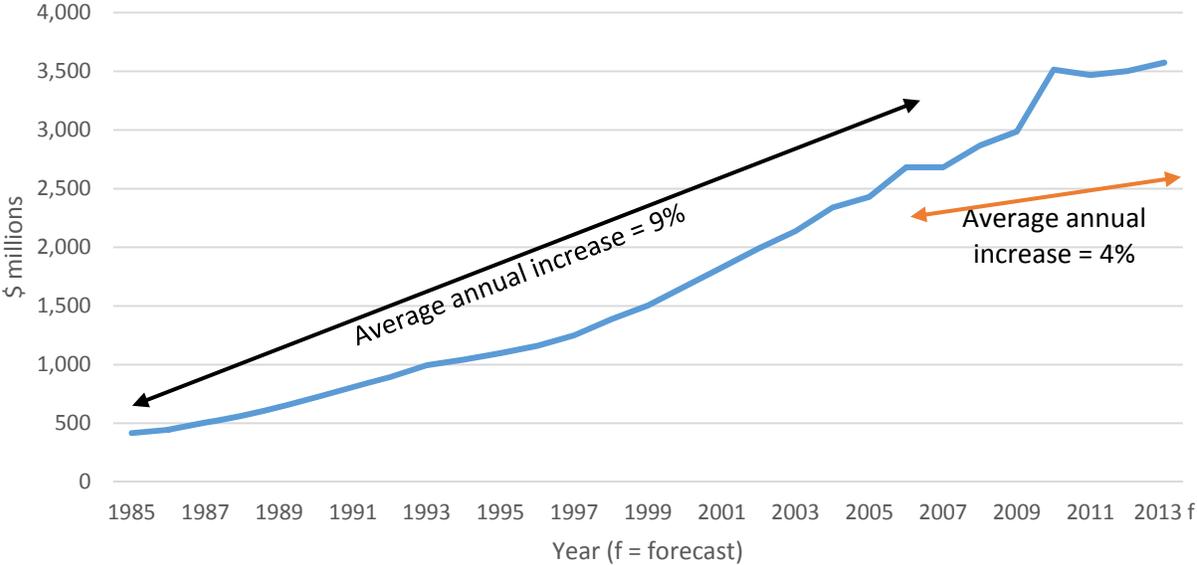
Sources: (BC Stats 2013, Canadian Institute for Health Information 2013)

The Canadian Institute for Health Information (CIHI) applied a similar analysis to all drug spending across Canada. The results confirmed what Morgan found for the narrower analysis of seniors’ drug use in British Columbia, namely that the growth in spending on drugs came from the increased volume of use and changes in the mix of treatments. Indeed, CIHI declared that, “...price changes did not have a significant impact on drug spending, and drug prices actually decreased when adjusted for general inflation” (Canadian Institute for Health Information 2012).

Controlled Growth: Slowing Spending from 2007 to 2012

The year 2007 marked a turning point in provincial drug spending. Compared to 2006, which had grown 10% over the previous year, total spending in 2007 actually decreased to nearly \$2.7 billion. With the exception of 2009 to 2010 (where spending grew by 18%), every year from 2007 to 2013 saw either a modest increase or even a decrease in spending. Considered together, the average annual growth rate in those years was less than half of the rate witnessed in the previous two decades—4% versus 9% (Exhibit 5). Adjusted for inflation and population aging, per capita spending dropped 1.9% per year from 2007 to 2013 (Morgan, Smolina et al. 2013).

Exhibit 5: Total Drug Expenditure and Average Annual Percent Increase, British Columbia, 1985-2013

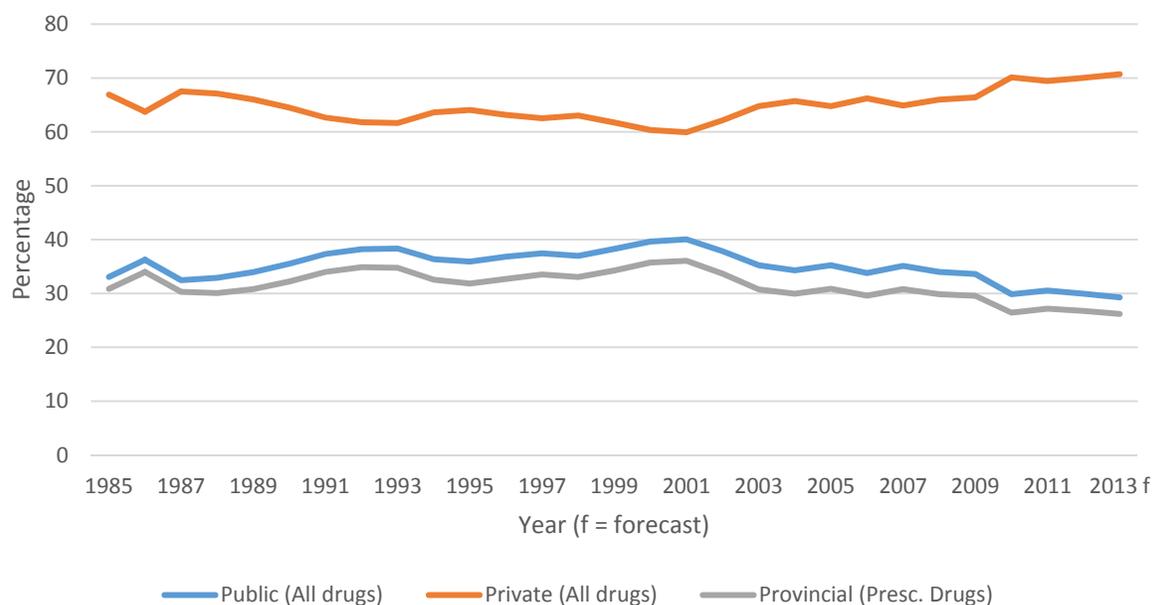


Source: (Canadian Institute for Health Information 2013)

For public payers (i.e., the provincial government, WorkSafeBC, and the federal government), the slower rate of growth was good news. As a share of total spending on drugs, the proportion paid by these public payers from 1985 to 2007 fluctuated between a low of 33% and a high of 40% (Exhibit 6). But by 2013, this figure is forecast to have dropped to 29%. If one looks more narrowly at the provincial government’s contribution to prescribed medicines, there is a similarly dramatic trend. Whereas the provincial government’s contribution to spending on prescribed drugs exceeded 35% in the early 1990s, by 2013 this is forecast to have dropped to 26%.

The reasons for the slowed growth are due, in large part, to the off-patent shift of widely-prescribed brand medicines. For example, cardiovascular drugs, antihyperlipidemic drugs, and acid-reducing drugs have together witnessed dramatic decreases in growth and lowered spending (Exhibit 7).

Exhibit 6: Public, Private, and Provincial Spending As a Percentage of Spending, All Drugs and Prescribed Drugs, British Columbia, 1985-2013



Source: (Canadian Institute for Health Information 2013)

Exhibit 7: Total Expenditure and Market Share, Selected Prescription Drug Categories, Canada, 2009 and 2012

Drug Category	2009 (\$ 000s)	2012 (\$ 000s)	Market Share, 2012	4 year avg. compound growth rate
Cardiovascular	3,273,482	1,806,733	8.2	-8%
Antihyperlipidemic	2,594,714	1,339,697	6.1	-10%
Gastrointestinal / Genitourinary	1,875,357	1,354,552	6.1	-3%

Source: (IMS Brogan 2012)

In a related policy development, several provinces initiated generic drug pricing initiatives to lower drug costs further.

By 2011, five provinces— British Columbia, Nova Scotia, Ontario, Quebec, and Saskatchewan—had introduced reforms that capped generic prices at a percentage of their brand equivalents (Moulton 2011).

After the Patent Cliff: Drug Spending Beyond 2013

Some researchers have suggested that the spending slow-down over the past five years, while welcomed by payers, reflects a one-time savings windfall—not a sustainable strategy for controlling expenditures (Morgan, Smolina et al. 2013); although there may be reason for slightly more optimism. The number of drugs moving off-patent will continue through 2017, allowing payers to benefit from savings (Express Scripts 2012). Nonetheless, those who pay for medicines—including both public and private payers—will still confront the pressures that drove drug spending in previous decades, namely patterns of drug prescribing and consumption, with the potential to push expenditures upwards.

A second challenge for payers will be the growing number and use of biologic medicines. Although reaching much smaller patient populations than blockbuster drugs of the past, “biologics” represent a growing part of the pharmacopeia. In many cases, these drugs are the last or only effective treatment for a chronic condition, and must be taken for years. Moreover, these innovations come at a price. Humira, for example, a treatment for psoriasis, costs over \$20,000 per year of treatment (Exhibit 8).

Exhibit 8: Dosage and Cost, Selected Biologic Medicines, 2011

Name	Dosage Regimen Per Year	Cost Per Year
Humira (adalimumab)	40 mg every 2 weeks, (26 syringes)	\$20,186
Enbrel (etanercept)	25 mg twice weekly, (104 vials)	\$17,160
Remicade (infliximab)	5 mg/kg every 8 weeks, (22.75 vials)	\$21,385
Kineret (anakinra)	100 mg daily, (365 syringes)	\$15,001

Source: (Health Canada 2011)

Policy-makers, therefore, face two important and related questions. First, knowing that the “patent cliff” provided only temporary relief, how should payers tackle the historic drivers of drug expenditures, namely the types and volumes of drugs prescribed? Second, how can they do so in a way that allows them to live within limited public budgets while ensuring the quality of, and access to, necessary medicines—particularly potentially newer and more costly therapies? The following section outlines how several jurisdictions have worked with pharmacists to achieve that goal.

Part II: Cognitive Pharmaceutical Services: Lessons from Abroad

- Controlling drug spending, while improving quality, requires the deliberate application of cognitive pharmaceutical services. This requires using pharmacists to the fullest extent of their training and education.
- Evidence from the peer-reviewed literature highlights a trend across developed countries towards the greater use of pharmacists offering cognitive pharmaceutical services.
- Jurisdictions using pharmacists in this way have observed reduced drug costs, higher quality of care, improved patient satisfaction, and greater inter-professional collaboration. In the same way, the evidence suggests that similar solutions can be implemented successfully in British Columbia.

Analysts' findings—that the source of growth in prescription drug expenditures lay in the volumes and types of drugs prescribed as opposed to the prices charged for them—speak to the need for optimal clinical management of medicines. Without the moderating influence of continued patent expirations and further decreases in generic drug prices, the need for such clinical management becomes even more critical. Indeed, the projected growth in biologic medicines suggests that the demand for clinical management of drugs is set to grow over time.

Cognitive pharmaceutical services is the clinical management of drugs offered by pharmacists working to the fullest extent of their training and education. This section reviews how the application of cognitive pharmaceutical services—across a wide variety of clinical settings, both abroad and in Canada—paints a picture of a profession that can take a leadership role in the health care system to reduce costs, improve quality, and ensure appropriate access to medicines.

New Zealand and PHARMAC

New Zealand is considered by some as a jurisdiction that has successfully controlled drug prices and total expenditures (Morgan, McMahon et al. 2006, Morgan, Hanley et al. 2007) and provides important lessons for British Columbia. New Zealand's experience begins with the Pharmaceutical Management Agency (PHARMAC). Like many other jurisdictions during the 1980s, New Zealand was struggling with rapidly increasing drug expenditures. Between 1977 and 1989, for example, drug expenditures increased by an average annual rate of 16.3% (Braae, McNee et al. 1999). PHARMAC was tasked with implementing supply and demand-side controls (Exhibit 9) to bring drug expenditures in line with available resources.

Exhibit 9: PHARMAC Policy Tools

Policy Tool	Description
Public Formulary	Establishing a defined list of drugs that are subject to government subsidy.
Reference Pricing	Drugs with similar therapeutic effects are grouped into “classes” and PHARMAC would then only reimburse drugs within the category based on the least expensive drug.
Cross-Product Arrangements	Negotiating with pharmaceutical companies to lower the price of one drug by offering to provide a favourable listing for another.
Tenders	Allowing companies to bid on being the sole supplier for the country with their version of a drug.
Price and Volume Contracts	Negotiating with pharmaceutical companies for a “limited” release of a new product. Volume and/or cost overruns result in reimbursement from the pharmaceutical company to the government.
Cost-Utility Assessments	Investigating whether the higher cost of a new drug is justified by improved patient outcomes.
Demand-Side Interventions	Work with patients and prescribers in an attempt to influence their behaviour in critical areas, for example, in prescribing antibiotics.

Source: (Davis 2004)

In the decade following the introduction of PHARMAC, costs increased by approximately 3% per year; and between 1994 and 2008, the corresponding figure was only 2%, despite increasing volumes of prescriptions and the introduction of new medications.

As these figures suggest, few can dispute either New Zealand’s initial success in driving down the price of pharmaceuticals or its more recent success in containing overall drug budget increases. However, in the face of an aging population with chronic and complex diseases that relies heavily on medication therapy, the limits of this “commodity cost containment” strategy have been reached —even when coupled with restrictions on physician prescribing, drug tendering, imposing therapeutic group referenced pricing and imposing stringent special authorization conditions. Moreover, the rules-bound system of price enforcement and restricted access to medications inhibits innovation. The system has resulted in poor integration of pharmacists into the primary health care system.

New Zealand’s government needed to find new solutions to manage its drug costs. Despite a fractured relationship with the country’s pharmacists, PHARMAC moved to negotiate the 2012

Community Pharmacy Services Agreement that introduced a number of initiatives for pharmacists to better manage complex patients (Exhibit 10). After two years of negotiations, the agreement aimed to use pharmacist expertise to deliver cognitive services to patients. The objectives of the various elements of the Agreement are to facilitate integration of primary care services and focus pharmacist services on patients with long-term conditions.

These services capitalize on the growing evidence that medication adherence has the dual benefit of improving patient outcomes and providing cost savings for the health care system.

Exhibit 10: Cognitive Pharmaceutical Services Fees under New Zealand’s Community Pharmacy Services Agreement

Service	Description
Long-Term Conditions Service Fee	Patients with high medicine management needs, multiple co-morbidities, and difficulty managing their medicines are assessed by a pharmacist, who develops a medicines management plan with input from other care providers.
Variable Dispensing Fee	Dispensing fee includes a flat handling fee, plus a variable patient service fee based on the patient service category.
Core Service Fee	Paid every day the patient has a medicine dispensed while the Long-Term Conditions Service Fee is in effect.
Transition Payment	Designed to ensure each pharmacy’s financial stability during the transition period to the Community Pharmacy Services Agreement. Based on the pharmacy’s market share.
Quality Incentive Payment	Equal to 5% of the total Agreement’s funding envelope, intended to serve as an incentive to encourage pharmacists to better use their clinical medicine management expertise.

Source: (Central TAS 2012)

Switzerland and Pharmacist-Physician Quality Circles

The Swiss experience with pharmacist-physician quality circles (PPQC) highlights the potential for collaboration between pharmacists engaged in cognitive pharmaceutical services and their general practitioner (GP) colleagues. A PPQC is a group of GPs working with a pharmacist who volunteers as a moderator for the group. Pharmacists are accredited to organize a PPQC once they have completed a 52-hour course that includes basic knowledge on the effectiveness, safety, and efficiency of frequently

prescribed drugs, as well as an annual 16-hour continuing training course on clinical and pharmacotherapeutic updates. Together, the pharmacists and the GPs engage in a structured, continuous, quality improvement and education process to improve outcomes and reduce costs.

In 1998, the Swiss canton of Fribourg, a region with 250,000 inhabitants, launched six pilot PPQCs with 25 GPs. In a nine-year retrospective analysis of the groups, Niquille et al found a 42% decrease in drug costs in the PPQC group as compared to a control group, representing a \$225,000 (USD) annual savings per GP in 2007. They explain these findings as the result of better compliance with clinical and pharmacovigilance guidelines, greater use of generic drugs, and interdisciplinary continuing education on the rational use of drugs (Niquille, Ruggli et al. 2010). Subsequent research found that the implementation of PPQCs facilitated strong networking between pharmacists and physicians, effective training for pharmacists, and adequate remuneration (Niquille 2010).

The United States: The Asheville Project (North Carolina)

In 1996, the Asheville Project in North Carolina began. The City of Asheville, a self-insured employer in North Carolina, was to provide pharmaceutical care for its employees with chronic health problems, such as diabetes and asthma. Patients who volunteered to be part of the program received intensive education before being teamed with community pharmacists, who assisted the patients in using their medications correctly.

The results of the project were rigorously studied and showed success in improving health outcomes and lowering costs. For patients with diabetes, for example, researchers found improvements in patients' blood sugar, LDL, and HDL levels (Cranor and Christensen 2003). Medical costs for these patients decreased by 22% over a five-year period following the intervention; this was so despite these patients having higher prescription costs than before participating in the project (Bunting and Cranor 2006). Similarly, patients with asthma who were matched with a pharmacy coach reported a decreased number of emergency department visits, hospital days, and missed workdays than before the project. Researchers also found significant direct and indirect cost savings (Bunting and Cranor 2006).

Ontario and Hypertension

In a study released in January 2014, Green Shield and the Ontario Pharmacy Association reported the results of a randomized, clinical trial testing the effectiveness of pharmacists' hypertension management services (Ontario Pharmacists Association and Green Shield Canada 2014). Specifically, the study examined three cognitive pharmaceutical services interventions: 1) medication review and drug therapy optimization, where the pharmacist would review potential interactions, suboptimal dosages, adherence issues, or unnecessary medications, and then develop a pharmaceutical plan for patients; 2) patient education, which included education and counselling on lifestyle changes; and 3) evidence-based strategies to improve patient adherence to medication therapy. Patients in the control group received standard care pharmacy services, which focused largely on medication dispensing.

Outcomes measured included patients' blood pressure, adherence to therapy, smoking status and frequency, physical exercise frequency, body mass index, drug costs, and intervention costs. Patients were followed for six months.

A total of 118 patients participated in the study, from 153 patients originally recruited. Study participants were randomized by pharmacy, with an average of 4.4 patients per pharmacy across a total of 27 pharmacies. Compared to the control group, patients in the intervention group witnessed decreased blood pressure, greater adherence to medication therapy, greater decrease in body mass index, higher frequency of physical exercise, and decreased drug costs. Importantly, these results suggest that the implementation of cognitive pharmaceutical services, in a Canadian context, can lead to improved health and cost outcomes.

These examples demonstrate how pharmacists offering cognitive pharmaceutical services can reduce drug expenditures while significantly improving quality of care. The peer-reviewed literature includes dozens of similar examples in other jurisdictions (e.g., Australia, Germany, and the United Kingdom), where health care systems have shifted resources to providing more cognitive pharmaceutical services to realize savings elsewhere in the system. Many of these developments took place in publicly-funded systems and within clinical contexts similar to British Columbia's. As the following section suggests, finding ways to implement similar strategies here, although requiring a bit of out-of-the-box thinking, poses no fundamentally insurmountable challenges.

Part III: Creating a Sustainable Provincial Drug Policy

- Controlling drug expenditures while ensuring high quality pharmacy practice and access to necessary medicines will require sophisticated approaches that rely on input from health professionals, including pharmacists.
- To help realize this vision, we propose six recommendations for government. These recommendations are based on the best available evidence and build on proven successes in British Columbia and other jurisdictions.
- To support these recommendations, we offer six commitments from the BC Pharmacy Association. These commitments outline our dedication to high quality, sustainable, and collaborative public policy.

For policy-makers and health care providers, controlling prescription drug expenditures in the coming years will be a major challenge. If the issue were one of simply keeping within a budget, reusing old strategies might be sufficient. But the advent of new and effective, as well as expensive, therapies in combination with the growing prevalence of chronic diseases, means that more of the same policies will not suffice. The main drivers of drug expenditures over the past 25 years will continue to have an effect, but this time without the moderating influence of patent expirations that have provided so much budgetary relief. To create a sustainable health care system, policy-makers must not only control costs, but do so while simultaneously ensuring the quality of care provided and continued access to existing and new medicines.

From the perspective of British Columbia's pharmacists, it will be impossible for policy-makers to design and implement policies that achieve these goals without input from clinicians. Pharmacists, as the health care system's medication experts, are well-positioned to tackle the drug spending drivers of volume and drug type, as well as the newer challenges ahead.

To that end, in this section we offer a strategy for achieving that objective. This strategy is articulated in six recommendations for the provincial government (Exhibit 11) and six supporting commitments from British Columbia's pharmacists (Exhibit 15). The recommendations are intended as a mutually reinforcing set of activities. For example, the recommendation to continue the expansion of pharmacists' scope of practice enables the implementation of the remaining clinical service plans, which in turn could be managed by a newly created "Pharmacy Services Committee." Both the recommendations and the commitments are based on academic literature, use British Columbia-specific data, or build on our previous successes of working with the provincial government on programs like medication review and flu vaccinations.

Exhibit 11: Overview of the Recommendations



Recommendation 1: That the Government of British Columbia continue to support the expansion of pharmacists’ scope of practice to realize the full benefit of pharmacists’ education and training.

Pharmacy associations across Canada have been working to ensure that legislation and regulations allow pharmacists in their jurisdictions to practice to the fullest extent of their training and expertise. However, British Columbia’s pharmacists remain behind their counterparts in other provinces (Exhibit 12). By expanding pharmacists’ scope to include the ability to treat minor ailments, initiate prescription drug therapy, and order and interpret lab tests, policy-makers will make possible the launching of programs and initiatives that can ensure appropriate quality prescribing and reduced spending on drugs.

Exhibit 12: Summary of Pharmacists' Expanded Scope of Practice Activities Across Canada

Activity	British Columbia	Jurisdictions Pending	Jurisdictions Implemented
Minor Ailments Prescribing	Not allowed	Quebec New Brunswick	Alberta Saskatchewan Nova Scotia
Initiate Prescription Drug Therapy	Not allowed	Manitoba	Alberta Saskatchewan Ontario Quebec New Brunswick Nova Scotia
Order and Interpret Lab Tests	Not allowed	Manitoba Ontario Nova Scotia	Alberta Quebec New Brunswick

Source: (Canadian Pharmacists Association 2014)

***Recommendation 2:** That the Ministry of Health, in partnership with the BC Pharmacy Association, create a joint “Pharmacy Services Committee” with representation from both parties to improve patient care and the professional satisfaction of pharmacists.*

Controlling drug costs, while improving the quality of prescribing and access to medicines, will require a tight collaboration between the pharmacy profession and the provincial government. Modelled after the successful General Practice Services Committee (GPSC) and building on British Columbia’s Clinical Services Committee, a joint “Pharmacy Services Committee” would bring together pharmacists and ministry representatives in a trusted forum to manage funding for new initiatives, encourage and enhance the fullest possible scope of practice for pharmacists, and allow for the mutual identification of initiatives for quality patient care. The committee could, for example, oversee the implementation and oversight of the clinical services proposals (see recommendation 4), ensuring these programs would be implemented with expert input from pharmacists, evaluated rigorously, and coordinated with existing provincial initiatives.

Recommendation 3: That the Ministry of Health, in collaboration with other public payers, prepare and publicly release an annual, consolidated pharmacy expenditures and trends report.

Health care stakeholders, both within and outside government, rely heavily on the data released by public payers to understand current trends and anticipate future developments. However, because government spending on drugs falls across so many payers, all of whom report spending differently, it makes it exceedingly difficult to appreciate the full extent of drug expenditures (Exhibit 13)—a common result when funding crosses multiple silos. Agencies like CIHI attempt to provide a complete picture, but the data is necessarily limited. For example, drugs paid through health authorities are not identified separately, nor are drugs purchased by residential care facilities for their residents. In addition to providing all stakeholders with a more transparent and detailed understanding of the nature of total public spending on drugs, an annual consolidated pharmacy expenditures and trends report would also allow government to more easily assess the impact of initiatives to reduce expenditures and improve quality.

Exhibit 13: Public Payers of Drugs in British Columbia

Agency or Organization	Programs Funded	Reporting
Pharmaceutical Services Division (Ministry of Health)	PharmaCare	Annual PharmaCare Trends Report
Health Authorities	All in-hospital prescribed medicines	Varies; includes annual reports
Residential Care Facilities	All medicines provided to residents	Varies; includes annual reports

Recommendation 4: That the Ministry of Health support the implementation of the clinical services proposals presented to government by the BC Pharmacy Association in March 2013.

In March 2013, the BC Pharmacy Association released a series of clinical service proposals (CSPs) designed to increase access to primary care and reduce costs to the health care budget (Exhibit 14). The CSPs were modelled after innovative programs that have demonstrated success in other jurisdictions. Taken together, they have the potential to save over \$134 million per year. Furthermore, they build on pharmacists’ training and expertise, allowing them to provide high quality, clinical services, freeing up the time of other clinicians such as physicians who are more expensive and in short supply.

Exhibit 14: Summary of the BC Pharmacy Association Clinical Services Proposals

Clinical Service Plan	Description	Potential Savings
Treating minor ailments	Enabling pharmacists to consult and treat patients with minor ailments to most effectively utilize the skill set of both pharmacists and physicians.	\$32 million per year
Trial prescription program (TPP)	Extending the current TPP to include drugs prescribed for chronic conditions. The diseases would include those designated under the GPSC chronic disease and complex care programs.	\$1 million per year
Medication adherence	Increasing medication adherence among patients with chronic conditions through pharmacist interventions and repeated short-term follow-up when a medication is newly prescribed.	Unknown
Smoking cessation	Developing and implementing a pharmacy-led smoking cessation program to provide British Columbians with the improved access, medication expertise and ongoing counseling needed to successfully quit smoking. The program would be modeled after the Ontario Pharmacy Smoking Cessation Program.	\$52 million per year
Anticoagulation management service	Introducing a pharmacist-led anticoagulation management service, including point-of-care testing, to improve anticoagulation control, reduce the frequency of warfarin-related hospital admission, and lower the frequency of drug interactions.	\$231 million* over five years
Self-monitoring of blood glucose (SMBG) consultations	Implementing SMBG consultation service to reduce the burden of testing on these patients while equipping them with tools to better manage their disease. Pharmacists are ideally positioned to educate patients about “testing with purpose.”	\$9.6 million** over three years
Asthma consultation service	Creating a pharmacist-delivered program that provides education, assessment and management tools to patients, or their caregivers, to help improve control of their asthma. The Asthma Consultation Program would build on the already-implemented Medication Review Services program.	Unknown

* Anticoagulation management service – estimated annual savings of \$46.2 million.

** Self-monitoring of blood glucose (SMBG) consultations – estimated annual savings of \$3.2 million.

Recommendation 5: That the Ministry of Health, in collaboration with the BC Pharmacy Association and the Doctors of BC, establish physician-pharmacist quality circles.

Physicians are the primary prescribers of medicines in British Columbia. Ensuring that trends in the volumes and types of drugs prescribed are consistent with the goals of sustainable drug spending and quality prescribing, close collaboration will be required between physicians and pharmacists. Evidence suggests that the establishment of PPQCs can be highly effective in achieving cost savings and optimizing prescribing practices. Moreover, because PPQCs are based on a similar community-based, continuous quality improvement paradigm supported by the Doctors of BC and the Divisions of Family Practice, these circles could be catalysts for the proposed Clinical Services Proposals (see recommendation 4), easily integrated into British Columbia's primary care system, overseen by a Pharmacy Services Committee (see recommendation 2), and used in collaboration with the GPSC.

Recommendation 6: That the Government of British Columbia, in collaboration with the BC Pharmacy Association and other relevant stakeholders, update provincial legislation to reflect developments in e-health.

British Columbia's current PharmaNet system, the creation of a province-wide e-health strategy, and the implementation and subsequent uptake of electronic medical records via the Physician Information Technology Office have all placed our province in an enviable position. The potential for province-wide electronic prescribing, and the associated benefits, are enormous; however barriers remain to realizing this potential. As noted by the College of Physicians and Surgeons of British Columbia, for example, the electronic transmission of prescriptions through electronic medical records, except by physical fax, is not yet permitted by regulation in this province, per section 27(6) of the Pharmaceutical Services Act (College of Physicians and Surgeons of British Columbia 2014). As technical advances continue, the gaps between existing legislation and clinical practice will continue to grow unless steps are taken not only to ensure that our laws and regulations are current, but that they also remain consistent across professions.

Exhibit 15: Summary of BC Pharmacy Association Commitments



Commitment 1: Maintain a Collaborative Approach

By its very nature, the practice of pharmacy—whether based in an institution like a hospital or in the community—requires working with other health professionals. The research on drug expenditures makes it clear that our province faces a significant challenge in the coming years. One we believe can be successfully handled through close collaboration. This includes formal arrangements, such as those envisioned in our proposed “Pharmacy Services Committee” and Clinical Services Proposals, as well as through informal channels such as daily interactions between individual pharmacists and their clinical colleagues. Whenever possible, the BC Pharmacy Association will commit to maintaining and fostering a collaborative approach in the pursuit of a sustainable drug policy.

Commitment 2: Support Sustainable Solutions

Every health professional association has as one of its aims to support fair economic reward for its members. The pursuit of this objective, however, need not come at the price of a sustainable health care system. Indeed, as we have argued throughout this paper, redeploying resources towards

evidence-based solutions can lead to a win-win situation, whereby providers are compensated for working to the fullest scope of their education and skills, and payers pay for the highest value of clinical services. The BC Pharmacy Association is committed to working with all health care stakeholders to find those win-win, sustainable solutions.

Commitment 3: Seek Evidence-Informed Answers

British Columbia's health care system, and pharmacy in particular, benefits from a wealth of health policy research and data. The existence of PharmaNet provides a source of information that is the envy of many, and its application to the real-world challenges and policies faced by our province enormously increases the potential for quality improvement. The BC Pharmacy Association commits to working with policy-makers and other health care stakeholders so that policy debates are based on the best available evidence and the resulting answers have the highest chance for successful implementation.

Commitment 4: Work with Patients as Partners

The emergence of patients as partners in the care process (Holman and Lorig 2000), while overdue for many, has been a welcome development nonetheless. In the case of clinical pharmacy, it is an absolutely essential one. As one prominent health provider noted, "...drugs don't work well in patients who don't take them." The effective practice of pharmacy is impossible without an effective pharmacist-patient relationship. Indeed, most of the proposals in this paper are impossible without it.

British Columbians benefit from public policy that has fostered the patient as partners model for over a decade, with the values enshrined in the Primary Health Care Charter (Ministry of Health Services, 2007) and the ongoing support of Impact BC, a Ministry of Health-funded organization. By working closely with patients at multiple levels (e.g., through formal committee structures or one-on-one), the BC Pharmacy Association will strive to ensure that the patient perspective is closely integrated in all of its public policy efforts.

Commitment 5: Deliver High Quality Pharmacy Practice

This speaks to the core of our organization and the centre of our professional values. The BC Pharmacy Association's mandate is to support and advance the professional role and economic viability of community pharmacy so that British Columbia's pharmacists may continue to provide enhanced, patient-centred care. This mandate includes advocating for pharmacy's integral role in delivering vital health services to British Columbians. Our commitment to upholding the highest quality of pharmacy practice ensures not only the success of the kinds of proposals outlined in this paper, but also in the well-being of all our patients.

Commitment 6: Support Guidelines and Protocols

The move towards evidence-based health care, which began in earnest in the 1990s, has prompted the widespread development, dissemination and adoption of clinical guidelines (Claridge and Fabian 2005). Within British Columbia, the Ministry of Health and the Doctors of BC have done much to advance these efforts through the creation of the Guidelines and Protocols Advisory Committee. Given the prevalence of chronic diseases, and the fact that so many of them have specific guidelines used by all health care professionals, this approach makes sense. Pharmacists are eager to work with professional colleagues in the health care system to promote the development, dissemination, and use of such guidelines.

Conclusion

In this policy paper, the pharmacists of British Columbia have offered six recommendations to help control prescription drug spending, while improving access and the quality of care that British Columbians receive. These recommendations, as well as the clinical services proposals previously offered by the British Columbia Pharmacy Association, are based on the best available evidence. The successes seen in other jurisdictions have come from the implementation of cognitive pharmaceutical services, and their experiences suggest that similar successes are possible in British Columbia.

Ensuring success will require movement on several fronts. For example, understanding the drivers of drug spending, expanding pharmacists' scope of practice, and updating legislation and regulations to keep pace with developments in e-health are a few of the areas where significant advances are necessary.

However, the road from British Columbia's current situation to the future envisioned here, while clear, is not one that should be travelled alone. Cognitive pharmaceutical services cannot be offered successfully without the support of government and clinical partners. For that reason, the recommendations offered here are accompanied by six commitments from the pharmacy profession. These are more than a goodwill gesture to those with whom we plan to collaborate. Rather, they are a statement of our own values and of our desire to act on what we ourselves have recommended. Facing the future together demands nothing less.

References

- Anderson, G. M., K. J. Kerluke, I. R. Pulcins, C. Hertzman and M. L. Barer (1993). "Trends and determinants of prescription drug expenditures in the elderly: data from the British Columbia Pharmacare Program." *Inquiry* **30**(2): 199-207.
- BC Stats. (2013). "Consumer Price Index." Retrieved December 10, 2013, 2013, from <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Economy/ConsumerPriceIndex.aspx>.
- Braae, M. R., W. McNee and D. Moore (1999). "Managing pharmaceutical expenditure while increasing access." *Pharmacoeconomics* **16**(6): 649-660.
- Bunting, B. A. and C. W. Cranor (2006). "The Asheville Project: long-term clinical, humanistic, and economic outcomes of a community-based medication therapy management program for asthma." *J Am Pharm Assoc* (2003) **46**(2): 133-147.
- Canadian Institute for Health Information (2012). *Drivers of Prescription Drug Spending in Canada. Spending and Health Workforce*. Ottawa, CIHI.
- Canadian Institute for Health Information. (2013). "National Health Expenditure Trends, 1975 to 2013." 17th edition. Retrieved December 10, 2013, from <https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC2400>.
- Canadian Pharmacists Association. (2014). "Summary of Pharmacists' Expanded Scope of Practice Activities Across Canada." Retrieved January 13, 2014, from <http://www.pharmacists.ca/cpha-ca/assets/File/pharmacy-in-canada/ExpandedScopeChart.pdf>.
- Central TAs. (2012). "The Community Pharmacy Services Agreement - 3 Year Transition." Retrieved February 24, 2014, from <http://centraltas.co.nz/CommunityPharmacyProgramme/CPSA2012threeyeartransition/tabid/279/Default.aspx>.
- The Centre for Health Services and Policy Research (2013). *The Canadian Rx Atlas*. Vancouver, The University of British Columbia.
- Claridge, J. A. and T. C. Fabian (2005). "History and development of evidence-based medicine." *World J Surg* **29**(5): 547-553.
- College of Physicians and Surgeons of British Columbia. (2014). "Update from the Prescription Review Program." Retrieved February 16, 2014, from <https://www.cpsbc.ca/for-physicians/college-connector/2014-V02-01/04>
- Cranor, C. W. and D. B. Christensen (2003). "The Asheville Project: short-term outcomes of a community pharmacy diabetes care program." *J Am Pharm Assoc (Wash)* **43**(2): 149-159.
- Davis, P. (2004). " 'Tough but fair?' The active management of the New Zealand drug benefits scheme by an independent Crown agency." *Aust Health Rev* **28**(2): 171-181.
- Express Scripts. (2012). "Estimated Dates of Possible First-time Generics/ Rx-to-OTC Markey Entry." Retrieved January 6, 2014, from <http://www.medco.com/medco/corporate/home.jsp?articleID=CorpAboutGenerics>.
- Holman, H. and K. Lorig (2000). "Patients as partners in managing chronic disease. Partnership is a prerequisite for effective and efficient health care." *BMJ* **320**(7234): 526-527.
- IMS Brogan. (2012). "Canadian Pharmaceutical Industry Review." Retrieved February 22, 2014, from <http://ims.imitated-never-equalled.com/>.
- Michael, B. D. (2008). "Health care Systems and Organizations: Implications for Health Human Resources." *HR Resources Database*.
- Morgan, S., G. Hanley, M. McMahon and M. Barer (2007). "Influencing drug prices through formulary-based policies: lessons from New Zealand." *Health care Policy* **3**(1): 1-20.
- Morgan, S., K. Smolina, D. Mooney, C. Raymond, M. Bowen, C. Gorczynski and K. Rutherford (2013). *The Canadian Rx Atlas*. Vancouver, BC, UBC Centre for Health Services and Policy Research.

Morgan, S. G. (2002). "Quantifying components of drug expenditure inflation: the British Columbia seniors' drug benefit plan." *Health services research* **37**(5): 1243-1266.

Morgan, S. G., J. D. Agnew and M. L. Barer (2004). "Seniors' prescription drug cost inflation and cost containment: evidence from British Columbia." *Health Policy* **68**(3): 299-307.

Morgan, S. G., K. L. Bassett, J. M. Wright, R. G. Evans, M. L. Barer, P. A. Caetano and C. D. Black (2005). "'Breakthrough' drugs and growth in expenditure on prescription drugs in Canada." *BMJ* **331**(7520): 815-816.

Morgan, S. G., M. McMahon, C. Mitton, E. Roughead, R. Kirk, P. Kanavos and D. Menon (2006). "Centralized drug review processes in Australia, Canada, New Zealand, and the United Kingdom." *Health Affairs* **25**(2): 337-347.

Moulton, D. (2011). "Provincial squeeze on generic prices continues." *CMAJ: Canadian Medical Association journal= journal de l'Association medicale canadienne* **183**(14): E1049-1050.

Niquille, A. (2010). "Medication Reviews Led by Community Pharmacists in Switzerland: a Qualitative Survey to Evaluate Barriers and Facilitators." *Pharmacy Practice (Internet)* **8**(1): 35-42.

Niquille, A., M. Ruggli, M. Buchmann, D. Jordan and O. Bugnon (2010). "The nine-year sustained cost-containment impact of Swiss pilot physicians-pharmacists quality circles." *Ann Pharmacother* **44**(4): 650-657.

Ontario Pharmacists Association and Green Sheild Canada (2014). *Impact of Community Pharmacist Interventions in Hypertension Management on Patient Outcomes: A Randomized Controlled Trial*. Toronto, ON: 31.

Patented Medicines Prices Review Board (2011). "Report on New Patented Drugs." Retrieved February 28, 2014, from <http://www.pmprb-cepmb.gc.ca/english/view.asp?x=478>.

