THE IMPLICATIONS OF CATASTROPHIC DRUG COVERAGE UPON HIGH-COST USERS OF PHARMACEUTICALS IN BRITISH COLUMBIA

by

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Abstract

Disparities in drug coverage exist across and within provinces and may worsen as costs increase. Because of their condition, such disparities make chronically ill patients vulnerable to large out-of-pocket costs. This study qualitatively investigates the lifestyle impacts of British Columbia’s Fair PharmaCare program upon persons with diabetes and cardiovascular disease, with household income between $30,000 and $50,000. Focus group discussions, telephone interviews, and participant questionnaires determine how income-based, catastrophic drug coverage serves, or does not serve, chronically ill, middle-earning members of the population. The hypothesis is that Fair PharmaCare creates financial strains that negatively affect the target group’s quality of life. My findings show that Fair PharmaCare creates financial pressures that influenced some participants to cut back on medications, make difficult trade-offs, and experience financial stress. Based upon my findings I recommend that the province improve public pharmaceutical coverage, and work towards integrating outpatient prescription drug benefits under Medicare.

Keywords: Deductible; Fair PharmaCare; Chronic Illness; Cost-Sharing; Catastrophic; Pharmaceutical
Executive Summary

This study examines the financial burden experienced by middle-income chronically ill members of the population. The policy problem under investigation is the possibility that too many chronically ill persons experience undue financial burden because of prescription drug expenditure. In 2003, BC PharmaCare eliminated its seniors program, and reformed the universal plan by distributing benefits according to income based criteria. Households earning greater than $30,000 now cover a deductible equal to three percent of annual household income before receiving public subsidization of drug costs. The outcomes related to this policy change have been quantitatively examined by the Centre for Health Services and Policy Research (CHSPR). This research strives to complement CHSPR work by qualitatively investigating the program’s impact on chronically ill members of the population, using focus group discussions, telephone interviews, and questionnaire data. The key findings of this report are as follows:

- Nine of 21 participants had private insurance coverage. Most privately insured respondents reported that the cost of medications did not restrict their access.

- Many privately insured participants felt fortunate and grateful to be receiving first-dollar benefits for their essential prescription medications.

- A dependence upon employment for first-dollar benefits caused stress for some privately insured beneficiaries. This stress was related to the insecurity of their insurance coverage.

- Fair PharmaCare beneficiaries lacking private insurance were much more likely to experience financial burden related to the cost of medications.
• Paying the Fair PharmaCare deductible created financial strain caused some participants to cut back on medicines, and make trade-offs with other essential medical purchases and household items.

• Many participants were unaware of specific program features, and had a negative viewpoint of the benefits available under Fair PharmaCare.

Based upon my study’s results, interviews, and findings within the literature, I analyze five separate policy alternatives that address this study’s policy problem. These policy alternatives are mutually exclusive; however, the utilization of a communications strategy and the Reference Drug Program are common to all.

I *Status Quo* – This option maintains the status quo policy arrangement that features an income-based deductible structure, with the smallest subsidization for households with income above $30,000.

II *Expanded Upper Income Limit* – The upper income limit of the program is expanded to $50,000; thus, lowering the deductible from three percent to two percent of annual income for all households within this range.

III *Full PharmaCare* – This option removes the income-based structure of Fair PharmaCare and provides complete subsidization of all eligible drug costs.

IV *Public/Private Model* – This option reserves public drug coverage for persons that are unable to access private drug insurance. The deductible is lowered by half for public beneficiaries; while minimum standards of coverage are imposed upon the private sector.

V *Graduated Coinsurance* – This option retains the income-based structure of Fair PharmaCare; however, medications receive subsidization according to the level of necessity.
To evaluate policy alternatives, each are assessed according to the following criteria: effectiveness, cost, equity, administrative ease, and political feasibility. Based upon my analysis I recommend that in the long-term, the PharmaCare program work towards providing complete subsidization of all eligible drug costs. In the short-term, I recommend that British Columbia enhance Fair PharmaCare’s benefit levels by shifting the program’s upper income limit to $50,000.
Dedication

To my family, who supported me every step along this journey
Acknowledgements

I would first like to offer my most sincere thanks to Dr Olena Hankivsky for her support and expertise throughout this entire process. I would also like to thank John Richards for his comments and critiques during my defence, and for his suggested revisions.

Thank you to Dr Steve Morgan for introducing me to this topic, and for his invaluable assistance and thoughtful advice along the way. Additionally, I am grateful towards researchers in the Program in Pharmaceutical Policy at CHSPR for helping me craft focus group questions. My heartfelt thanks also go to study participants who shared their personal stories and experiences for the benefit of my research.

Special thanks to my classmates, who happily put aside their work to help others. In particular, I would like to thank everyone who worked until midnight with me in the computer lab and study room.

Finally, to my family and friends: Thank you for your continual support over the past year.
# Table of Contents

1. **Approval** .................................................................................................................. ii
2. **Abstract** ...................................................................................................................... iii
3. **Executive Summary** ................................................................................................... iv
4. **Dedication** ................................................................................................................... vii
5. **Acknowledgements** ..................................................................................................... viii
6. **Table of Contents** ....................................................................................................... ix
7. **List of Tables** ............................................................................................................... xi
8. **List of Figures** ............................................................................................................ xiii
9. **1: Introduction** ............................................................................................................. 1
   1.1 Policy Problem ............................................................................................................. 3
   1.2 Study Framework ....................................................................................................... 5
10. **2: Background** .......................................................................................................... 6
    2.1 Cardiovascular Disease ............................................................................................. 6
    2.1.1 Cardiovascular Disease ....................................................................................... 6
    2.1.2 Diabetes ............................................................................................................... 8
2.2 Drug Coverage in Canada ............................................................................................. 10
    2.2.1 Historical Context ............................................................................................... 10
    2.2.2 Sources of Financing ......................................................................................... 11
    2.2.3 Cost-Sharing Mechanisms ................................................................................. 12
2.3 Fair PharmaCare ........................................................................................................... 15
2.4 Fair PharmaCare Benefit Levels ................................................................................. 16
2.5 Empirical Research ..................................................................................................... 18
11. **3: Literature Review** .................................................................................................. 24
12. **4: The Current Study** ................................................................................................ 28
    4.1 Research Objectives ................................................................................................. 28
    4.2 Methodology ............................................................................................................ 28
    4.2.1 Sampling Frame .................................................................................................. 29
    4.2.2 Focus Groups ..................................................................................................... 30
    4.2.3 Telephone Interviews ....................................................................................... 31
    4.2.4 Participant Questionnaires ................................................................................. 31
13. **5: Results** ................................................................................................................ 32
    5.1 Participant Questionnaire ....................................................................................... 33
    5.2 Focus Groups/Telephone Interviews .................................................................. 34
    5.2.1 Impact on Privately Insured ............................................................................. 34
    5.2.2 How is Cost an Issue? ....................................................................................... 37
    5.2.3 Does Cost Influence Under-Utilization? .......................................................... 38
List of Tables

Table 1: Top 10 Drugs by PharmaCare Beneficiaries, 2005 ........................................... 7
Table 2: Top 10 Drugs by PharmaCare Expenditure, 2005 ........................................... 8
Table 3: Diabetics Access to Medications and Supplies, January 2008 .......................... 9
Table 4: Cost-Sharing Mechanisms ............................................................................. 14
Table 5: Fair PharmaCare Benefit Levels .................................................................... 17
Table 6: Cost Comparison of Old PharmaCare and Fair PharmaCare for the Non-Senior Population ................................................................. 18
Table 7: Focus Group Participants .............................................................................. 30
Table 8: Questionnaire Results for Focus Group and Phone Interview Participants ............................................................................. 34
Table 9: Cost-Related Impacts on Participants ............................................................ 45
Table 10: Expanded Middle Income Range Benefit Levels ........................................... 50
Table 11: The Quebec Model: Plan for Public Beneficiaries ....................................... 53
Table 12: Graduated Coinsurance Benefit Structure .................................................. 54
Table 13: Criteria and Measures ................................................................................. 60
Table 14: Annual Patient Expenditure under the Status Quo ..................................... 62
Table 15: Cost Comparison - Privately Insured Patient vs. Publicly Insured Patient, Under the Status Quo, Annual Household Income of $50,000 .................................................. 63
Table 16: Annual Patient Expenditure under the Expanded Middle-Income Range Option .................................................................................. 65
Table 17: Comparison of Costs Incurred by a Privately Insured Patient and a Publicly Insured Patient, Annual Household Income, $50,000 .................................................. 67
Table 18: Annual Public Patient Expenditure under the Public/Private Model .................. 70
Table 19: Comparison of Costs Incurred by a Privately Insured Patient and a Publicly Insured Patient, Annual Household Income, $50,000 .................................................. 71
Table 20: Annual Patient Expenditure under the Status Quo ..................................... 73
Table 21: Comparison of Costs Incurred by a Privately Insured Patient and a Publicly Insured Patient, Annual Household Income, $50,000

Table 22: Analysis of Policy Options

Table 23: Effectiveness Scoring (A)

Table 24: Effectiveness Scoring (B)

Table 25: Effectiveness Scoring (C)
List of Figures

Figure 1: Total and Public Drug Expenditure in British Columbia as a Share of Total Health Care Expenditure (%) .......................................................... 19

Figure 2: Prescription Drug Expenditure (Thousands of dollars) in British Columbia, by Province, and Private Sources, 1990 – 2006 ...................... 20

Figure 3: Provincial Government Expenditure on Prescription Drugs as a Percentage of Total Prescription Drug Expenditure in British Columbia, 1985-2006 ................................................................. 21

Figure 4: Cost Comparison of Alternatives, Millions of Dollars, 2005 .............. 78
1: Introduction

By relieving pain, preventing illness, curing disease, and managing chronic conditions, pharmaceuticals are as medically necessary as hospital and physician services (Canada, 2002a). The Canadian Medicare system provides universal coverage for prescription drugs prescribed within hospital. However, outpatient drug coverage is excluded from Medicare’s governing framework and the Canada Health Act (1984). Provincial plans vary in benefit determination and terms of eligibility (Grootendorst, 2002), with most offering comprehensive coverage for the elderly and financially needy (Morgan et al., 2003). The failure of Canada’s provincial pharmaceutical programs has been the lack of coverage for people falling outside targeted comprehensive plans (Morgan et al., 2003). Because they lack private insurance, these individuals are susceptible to reduced access and negative health consequences (Paris and Docteur, 2006).

British Columbia offers income-based, catastrophic drug insurance to the general population. Such catastrophic drug programs, also known as last-dollar benefit plans, differ significantly from targeted first-dollar public programs. Rather than classifying pharmaceutical need on severity of condition or age, income-based programs classify need according to financial status, and offer a basic level of subsidy to the entire population. These plans are criticized for setting deductible levels so high that most residents never receive reimbursement (Health Canada, 2004). British Columbia’s drug plan, “Fair PharmaCare”, determines a beneficiary’s deductible
level, and catastrophic cap, according to annual household income.\(^1\) While families with annual earnings below $15,000 receive immediate subsidization, families with income greater than $30,000 receive zero public coverage until paying a deductible equal to three percent of household income (Ministry of Health, 2007e). The National Pharmaceutical Strategy proposes this model of pharmaceutical coverage as a potential national standard (Canada, 2006).

My study is a qualitative investigation that aims to discover the impact of British Columbia’s public drug program, Fair PharmaCare, on persons with diabetes and/or, cardiovascular disease, with household income between $30,000 and $50,000.\(^2\) This population is of interest because of the terms of coverage that restrict public subsidy; thereby potentially impose a three percent annual tax upon the chronically ill (Morgan et al., 2006).\(^3\) While cost-sharing mechanisms influence underutilization of essential medications, especially amongst low-income people (Tamblyn et al., 2001), a largely under-investigated area in British Columbia is the impact of “last-dollar” benefits upon chronically ill middle-income earners. The large income-based deductible may impose an unreasonable cost burden on this population because of the long-term nature of chronic disease management. The hypothesis of this study is that, for some persons, Fair PharmaCare creates financial pressures that lead to under-utilization of drugs, and other trade-offs between among essential purchases. Focus group discussions, phone interviews, and participant questionnaires generate original data.

The assumptions that guide this research are as follows:

- Cost-sharing mechanisms discourage the use of essential medications and represent a barrier to access.

---

\(^1\) Fair PharmaCare is one plan among several PharmaCare programs. It is important to note that British Columbia offers comprehensive coverage to persons eligible for financial assistance, permanent residents of long-term care facilities, persons enrolled with the BC Centre for Excellence in HIV/AIDS, individuals enrolled in a mental health service centre demonstrating clinical and financial need, and children in the At Home Program (PharmaCare, 2007).

\(^2\) An upper income limit of $50,000 limits the study to individuals of modest or middle income.

\(^3\) This holds unless a person is born in 1939 or earlier. Although I did not restrict this study to persons born after 1939, I did not anticipate very many responses from members using the Enhanced Assistance plan.
• Cost-sharing mechanisms force trade-offs between essential medications and other essential household items and, thus, produce financial strain that negatively affects quality of life.

• Fair PharmaCare’s income-based design allows some persons to fall through the cracks of the province’s pharmaceutical system.

The results of my study confirm that cost-sharing mechanisms deter use of essential medications and are a barrier to access for some middle-income households that lack private forms of insurance coverage. The large Fair PharmaCare deductible created financial pressure that deterred some patients from adhering to medications. This finding has important significance given the essential nature of prescription drug therapy for the chronically ill population. The possibility is raised that non-adherence to medications, and associated negative health outcomes, create larger downstream costs for the public health care system. This study’s findings also indicate that non-adherence is one patient strategy, among several, to cope with the cost of prescription drugs. Respondents who felt a financial burden from the Fair PharmaCare deductible reported foregoing purchase of both essential and non-essential household items. Such findings necessitate a strategy that shifts the burden of pharmaceutical spending away from private sources (and beneficiary’s pocket books), back towards the public purse.

1.1 Policy Problem

The policy problem under investigation is that too many chronically ill persons experience undue financial burden because of prescription drug expenditure. That some Canadian households spend significantly more on prescription drugs than others is evidenced by Statistics Canada research that shows 72 percent of pharmaceutical expenditures are generated by one-quarter of Canadian households (Luffman, 2005). Much of this cost is produced by the long-term
and expensive nature of drug therapy for the chronically ill. (Mueller et al., 1997; Rokowski et al., 1997). Chronic diseases are long lasting, rarely curable, and degenerative in nature. Treating such conditions consumes a vast majority of the country’s health care resources; in fact, chronic illness consumes 67 percent of direct health care costs in Canada (Public Health Agency of Canada, 2008a). Within British Columbia, Broemeling et al. (2005) found that 36 percent of adult residents, and 68 percent of seniors, reported at least one chronic illness (2005). Moreover, relative to those with acute conditions, chronically ill persons, on average, used four times the inpatient hospital days, made twice the physician visits, and generated 3.7 times the PharmaCare expenses (Broemeling et al. 2005).

The fact that chronically ill patients utilize a vast majority of health care resources makes the challenge of chronic disease management (CDM) an important one. British Columbia’s CDM strategy utilizes resources and personnel across the entire health care spectrum, emphasizing patient independence, patient health, disease prevention, and early detection (Ministry of Health, 2007c). Qualitative research shows that prescription drug regimens are central to all facets of chronic disease management and help facilitate a normalized patient lifestyle (Townsend et al., 2003). However, without adequate insurance coverage, this population is vulnerable to large out-of-pocket expenses, affecting both finances and health. Empirical literature shows that large out-of-pocket costs influence patients to reduce utilization of essential medicines (Tamblyn et al., 2001), and force tradeoffs between drugs and other necessary household purchases (Safran et al, 2005; Heisler et al, 2005). These impacts may create adverse medical events for patients, and encourage greater reliance upon the primary care system (Tamblyn et al, 2001; Soumerai et al. 1994).
1.2 Study Framework

First, the specific challenges brought by diabetes and cardiovascular disease are discussed, as well as the role and importance of prescription drug therapy in treating these conditions. The background section of this study details the role of public and private drug coverage plans in meeting the insurance needs of Canadians. I also discuss the various mechanisms used within coverage plans to influence pharmaceutical demand and consumption. The next section of this study provides a brief literature review that highlights research on the impact of cost, and cost sharing mechanisms on the lives of patients. Section 2.3 of my investigation introduces the Fair PharmaCare program. This section contains a discussion of the historical development and policy objectives that led to the program’s implementation. Next, I examine the program’s benefit structure, and relate it back to my policy problem. The final portion of this section summarizes the quantitative work undertaken by the Centre for Health Sciences and Policy Research, and others. Section 4 introduces the current study, including the research objectives and methodology. The fifth section presents my findings; while the sixth section proposes policy alternatives based upon these findings, the literature, and expert opinion. The next section evaluates these policy options against criteria and measures, and offers a course of action for the province to follow. Concluding remarks are presented in the final section.
2: Background

2.1.1 Cardiovascular Disease

Heart disease and stroke are significant causes of disability, illness and death nationwide (Heart and Stroke Foundation, 2003). The age-standardized mortality rates for circulatory diseases nationally, and in British Columbia, are higher even than cancer (Public Health Agency of Canada, 2008b). As with many chronic conditions, treating heart disease often requires a variety of medications to lower blood pressure, reduce cholesterol, and improve blood flow (Heart and Stroke Foundation, 2008). Prescription drugs are an effective means to treat cardiovascular disease, evidenced by the widespread utilization and the associated costs. In 2006, drug store purchases on cardiovascular drugs in Canada were higher than any other therapeutic class, totalling $2.4 billion (IMS Health Incorporated, 2008). Between 1996 and 2002, in British Columbia, expenditures for cardiovascular drugs were larger than any other category of prescription drugs for men, and were second largest for women (Morgan, 2006). Both Table 1 and Table 2 reveal the extent, and cost, of treating cardiovascular disease in the province. Table 1 shows that, province-wide, each of three separate cardiovascular drugs were used by more than 100,000 people in 2005; while Table 2 shows that in the same year, Atorvastatin, a drug commonly used to treat high cholesterol, generated the largest expenditures for PharmaCare.
### Table 1: Top 10 Drugs by PharmaCare Beneficiaries, 2005

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Commonly Used to Treat</th>
<th>PharmaCare Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen with codeine 30 mg</td>
<td>Pain and Fever</td>
<td>139,000</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>Bacterial Infection</td>
<td>120,000</td>
</tr>
<tr>
<td>Ramipril</td>
<td>High Blood-Pressure</td>
<td>112,000</td>
</tr>
<tr>
<td>Atorvastatin</td>
<td>High Cholesterol</td>
<td>106,000</td>
</tr>
<tr>
<td>Hydrochlorothiazide</td>
<td>High Blood Pressure</td>
<td>103,000</td>
</tr>
<tr>
<td>Levothyroxine</td>
<td>Hypothyroidism</td>
<td>90,000</td>
</tr>
<tr>
<td>Salbutamol</td>
<td>Asthma</td>
<td>79,000</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>Anxiety</td>
<td>77,000</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>Bacterial Infection</td>
<td>71,000</td>
</tr>
<tr>
<td>Metformin</td>
<td>Diabetes</td>
<td>70,000</td>
</tr>
</tbody>
</table>

*Source: Ministry of Health, 2007a.*
Table 2: Top 10 Drugs by PharmaCare Expenditure, 2005

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Commonly Used to Treat</th>
<th>PharmaCare Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atorvastatin</td>
<td>High Cholesterol</td>
<td>$43.3 million</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>Psychosis</td>
<td>$26.5 million</td>
</tr>
<tr>
<td>Ramipril</td>
<td>High Blood-Pressure</td>
<td>$26.1 million</td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>Depression</td>
<td>$17.3 million</td>
</tr>
<tr>
<td>Interferon Beta</td>
<td>Multiple Sclerosis</td>
<td>$16.9 million</td>
</tr>
<tr>
<td>Rabeprazole Sodium</td>
<td>Reflux Disease</td>
<td>$15.0 million</td>
</tr>
<tr>
<td>Quetiapine Fumarate</td>
<td>Psychosis</td>
<td>$13.3 million</td>
</tr>
<tr>
<td>Risperidone</td>
<td>Psychosis</td>
<td>$11.7 million</td>
</tr>
<tr>
<td>Simvastatin</td>
<td>High-cholesterol</td>
<td>$11.0 million</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>Seizure</td>
<td>$10.2 million</td>
</tr>
</tbody>
</table>


2.1.2 Diabetes

Diabetes is a lifelong condition with two main types, each affecting the body differently: Type 1 diabetes prevents the body from producing enough insulin and is managed through injections, inhalation, or continuous infusions of insulin; Type 2 diabetes stops the body from processing insulin and is treated with oral anti-diabetic drugs, and, or, insulin infusions (Public Health Agency of Canada, 2007). The economic burden of treating diabetes is large, and is expected to grow as the population ages. In 2005, close to 2 million Canadians were diabetic, with an estimated annual cost of $9 billion (Health Canada, 2007). Moreover, in 2006, the cost of drug purchases alone, for diabetic therapy, totalled near $567 million (IMS Health Incorporated, 2008). Provincially, in dollar terms, diabetics utilized 2.4 times the health care resources as the average population in 2000/2001 (Broemeling et al. 2005).

There are a range of medical devices and prescription drugs to treat diabetic patients. Table 3 shows that Fair PharmaCare provides access to several, but not all of these items. In BC, Metformin is the most commonly used for this condition, with 70,000 persons prescribed the drug.
in 2005. The fact that diabetes sometimes leads to other serious health complications, such as blindness, heart disease, stroke, nerve damage, erectile dysfunction and reduced blood supply, makes the costs of management much greater (Health Canada, 2006). The Canadian Diabetes Association (CDA) reports that diabetics make up six percent of the population, but comprise 32 percent of heart attacks, 43 percent of heart failures, 30 percent of strokes, 51 percent of new kidney dialysis patients, and 70 percent of amputations (2007). As such, diabetics use several medications to reduce the risk of such complications, including statins to lower cholesterol, and ACE inhibitors to prevent or reduce kidney disease (PHRMA, 2006). The costs of treating this condition are borne by both government, and afflicted individuals. However, the personal cost of treating diabetes varies according to an individual’s health insurance coverage, including private or employer provided benefits. The CDA estimates that without extended health benefits, a diabetic in British Columbia could annually pay up to $5000 out-of-pocket (2007).

Table 3: Diabetics Access to Medications and Supplies, January 2008

<table>
<thead>
<tr>
<th>Prescription Medication</th>
<th>Fair PharmaCare Coverage (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin</td>
<td>Yes</td>
</tr>
<tr>
<td>Oral Agents</td>
<td>Yes</td>
</tr>
<tr>
<td>Testing Supplies</td>
<td></td>
</tr>
<tr>
<td>Lancets</td>
<td>No</td>
</tr>
<tr>
<td>Monitors/Meters</td>
<td>No</td>
</tr>
<tr>
<td>Test Strips (BG)</td>
<td>Yes</td>
</tr>
<tr>
<td>Test Strips (Ketone)</td>
<td>No</td>
</tr>
<tr>
<td>Insulin Delivery</td>
<td></td>
</tr>
<tr>
<td>Pen Needles</td>
<td>Yes</td>
</tr>
<tr>
<td>Pumps</td>
<td>No</td>
</tr>
<tr>
<td>Pump Supplies</td>
<td>Yes</td>
</tr>
<tr>
<td>Syringes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Canadian Diabetes Association, 2008.
2.2 Drug Coverage in Canada

2.2.1 Historical Context

Since 1971, the Canadian Medicare system has provided universal coverage for medically necessary hospital and physician services. However, outpatient prescription drug coverage was not mandated under the Medical Care Act of 1966 and the Canada Health Act of 1984. Unrestrained by national terms and conditions, provinces designed unique drug plans, with different rules of eligibility, and levels of cost sharing (Grootendorst, 2002). Most provincial programs were instituted by the early to mid 1970s with benefits targeted upon the aged and low-income populations (Morgan et al., 2003).

The majority of seniors programs were in place by the mid-1970s, with Quebec, Ontario, British Columbia, Prince Edward Island, and New Brunswick offering 100 percent subsidization of drug costs (Grootendorst, 2002); however, by 1996, in a period of restrained spending and deficit reduction, all provinces had implemented cost sharing through increased premiums or deductibles (Morgan et al. 2003). In addition to fiscal concerns, Morgan et al. cite changing objectives for drug benefit policy in Canada as the main factor driving provincial initiatives to reduce senior’s benefits (2003). Amidst reports showing that 20 percent of the population was uninsured for basic prescription drug services (Applied Management in Association with Fraser Group Tristat Resources. 2000), concerns arose regarding the level of coverage offered to the general population (Morgan et al, 2003, 51).

To address this gap in coverage, the Commission on the Future of Health Care in Canada (Canada, 2002a), and the Kirby Report (Canada, 2002b), recommended that the federal government provide financial assistance for provinces to implement catastrophic drug programs. Such programs, which reimburse drug expenses in excess of an income-based deductible, had long been in place in Western Canada (Grootendorst, 2002, 97). In 2004, during First Minister
meetings, provincial premiers called on the federal government to assume total responsibility for provincial drug plans. Rather than accept this proposal, Prime Minister Martin agreed to the creation of a ministerial task force to oversee implementation of the National Pharmaceutical Strategy (NPS) (Marchildon, 2006). Based upon the recommendations of the aforementioned reports, the NPS established a ministerial task force to “develop, assess, and cost options for catastrophic pharmaceutical coverage” (Canada, 2006). The most recent report from the NPS puts forward two different catastrophic designs for consideration: a variable percentage program with a catastrophic threshold determined by household income; or a fixed percentage program with a catastrophic threshold set at 4.3 percent of annual household income (Canada, 2006).

### 2.2.2 Sources of Financing

Drugs financing comes from a variety of sources, including government programs, employer provided plans, and individually purchased insurance. Private sources funded 54 percent of total prescribed expenditure in 2006 (CIHI, 2007). Between 1985 and 2006, prescribed drug expenditure in Canada grew from $2.556 billion to $21.09 billion; while, as a percentage of total health spending, drug expenditure increased from 9.5 percent to 17 percent (CIHI, 2008).

Private drug plans are an important source of first-dollar coverage for the general population and take the form of employer or union sponsored programs, individually purchased insurance and out-of-pocket payments (Canada, 2002b). In fact, sixty percent of Canadians receive conventional, or low-cost, insurance from a privately insured plan (Kapur and Basu, 2005). Typically, however, individually purchased private plans are not comprehensive (Grootendorst and Veall, 2005). Therefore, the possession of full-time, stable employment plays an important role in determining eligibility for comprehensive benefits (Health Canada, 2004). Nationally, Millar finds that 65 percent of employed workers report drug benefits compared to just 52 percent of non-employed persons (1999). Full time workers also report a higher level of
drug coverage (65 percent) relative to part-time workers (57 percent). Drug insurance also varies according to employment type. Millar finds that employed professionals report the highest rates of drug coverage (78 percent) compared to just 49 percent of self-employed persons (1999). A similar study conducted by Kapur and Basu found that, in relation to wage earners, the self-employed were 22 percent less likely to possess drug benefits (2005).

Private plans are the dominant form of insurance for middle- and upper-income households, represented, mostly, by working age individuals. However, chronically ill persons who lack employer-provided coverage and earn too much to qualify for public coverage are susceptible to extremely high out-of-pocket drug costs. Nationally, roughly 30 percent of households with annual income of $30,000 possess conventional private insurance.4 This number increases steadily to, roughly, 60 percent of households once annual income reaches $50,000 (Kapur and Basu, 2005). These numbers suggest that a significant proportion of the population may be underinsured.

2.2.3 Cost-Sharing Mechanisms

Regardless of the source of coverage, patients often bear at least some of the cost of their prescription drugs. In economic terms, health insurance represents a subsidy for health care utilization and, thus, increases the amount of care demanded (moral hazard). Standard microeconomic theory states that a subsidy encourages individuals to consume an inefficiently large amount of care (Blomqvist and Xu, 2005). If consumers would not have purchased the additional service in the absence of a subsidy, the additional benefit due to the subsidy must fall short of the social cost of producing it. The greater the price elasticity, the larger the welfare cost becomes (Manning and Marquis, 1996). Cost sharing mechanisms respond to moral hazard by affecting prescription drug utilization and related expenditures. They can increase revenues,

4 Kapur and Basur classify conventional insurance as non-catastrophic (i.e., containing relatively low deductibles and co-payments).
discourage inappropriate use, encourage cost-effective use, and make patients more accountable (Sketris et al., 2004). Insurance plans use several different cost sharing tools to counter the moral hazard effect (Table 4), implemented with the following principles in mind:

1) Higher prices move patients further up the demand curve and, thus, reduce consumption closer to the economically optimum amount.

2) Higher costs encourage consumption of cheaper substitutes.

3) Higher costs reduce the potential benefit of low-value drugs and make their purchase uneconomical.

4) Patients are price insensitive towards high-value pharmaceuticals. Therefore, higher costs will not influence a discontinuation of prescriptions (Gibson et al., 2005).

As with most health care services, the demand for pharmaceuticals is price inelastic (Smith and Kirking, 1992; Lexchin and Grootendorst, 2004). Common estimates of price elasticity predict that a 10 percent change in price will decrease use by one to four percent (Gibson et al., 2005). An important consideration for health policy-makers is determining whether patients are making well informed decisions and distinguishing between high- and low-value drugs, or, whether cost-sharing leads towards declines in patient health, and poor medical outcomes (Gibson et al., 2005).
Table 4: Cost-Sharing Mechanisms

<table>
<thead>
<tr>
<th>Cost-Sharing Mechanism</th>
<th>Definition</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Premium</strong></td>
<td>Premiums are applied irrespective of use. They are a payment made to access drug insurance.</td>
<td>Premiums are commonly used to finance private plans.</td>
</tr>
<tr>
<td><strong>Deductibles</strong></td>
<td>Deductibles represent a dollar amount, either fixed, or income-based, that is paid incrementally, before a person is eligible for drug coverage (Canada, 2002b).</td>
<td>Patients pay for medications if they highly value them. Patients who place low value upon drugs will restrict use and avoid payment. Deductibles are criticized for promoting extreme consumption behaviours because they restrict coverage to one part of the year (McMillan and Jankel, 1996).</td>
</tr>
<tr>
<td><strong>Co-payment</strong></td>
<td>Fixed-fee charge per prescription</td>
<td>Co-payments are administratively very simple to implement. They encourage high-utility first purchases relative to a deductible policy (McMillan and Jankel, 1996).</td>
</tr>
<tr>
<td><strong>Coinsurance</strong></td>
<td>Fixed-percentage cost per prescription</td>
<td>Coinsurance also encourages high-utility first purchases. The advantage over co-payments is that patients receive same share of insurance coverage, regardless of the cost of medication (McMillan and Jankel, 1996).</td>
</tr>
</tbody>
</table>

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5 France, Denmark, and Italy, use graduated coinsurance systems based on the therapeutic status of a prescription drug. In France, for example, patients pay 0, 35, or 65 percent of the cost, depending upon a medication’s perceived benefits (Noyce et al. 2000).
2.3 Fair PharmaCare

The modern era of BC PharmaCare began in 1972, when the Department of Health instituted a drug subsidy program for low-income residents. This plan featured a $2.00 co-payment charge with a 50 percent coinsurance rate for the remaining cost. In 1973, the province instituted a drug plan for seniors that covered all eligible drug costs. Building on these initiatives, the PharmaCare program officially began on January 1st, 1974, when both pre-existing plans were combined under the Guaranteed Available Income for Need (GAIN) Act, Regulation 30. This act stipulated that pharmacies receive reimbursement for actual acquisition costs, plus a $2.20 dispensing fee for each prescription. A third plan for income assistance recipients helped form the bedrock of BC PharmaCare (BC PharmaCare, 2003). In 1977, the program expanded to include medical supplies (e.g., needles and syringes for diabetics), as well as a universal drug plan with a deductible level of $125 and 20 percent coinsurance rate (Grootendorst and Racine, 2006).

By 2001, British Columbia utilized a “mixed pharmacare model” with first-dollar coverage for seniors and social-assistance recipients, and fixed deductible, catastrophic coverage for the rest of the population (UBC Centre for Health Services and Policy Research, 2006, 1). However, rapidly growing drug costs, and the increasing share of public health spending going towards pharmaceuticals, convinced policy-makers that PharmaCare needed an overhaul. Specifically, decision-makers feared for the program’s sustainability once the “baby boomer” generation reached 65 years of age (Morgan and Coombes, 2006). Perceptions that age-based entitlements were unfair gave further impetus for reform, as many low-income families were not eligible for comprehensive subsidies, yet higher income seniors were. The bureaucracy and

6 By 1998, the universal plan’s deductible rose to $800 ($600 for low income), with a $2000 catastrophic cap (Grootendorst and Racine, 2006).
government felt that ability to pay, rather than age should determine a beneficiary’s level of benefits. In 2003, PharmaCare acted on these concerns and combined the senior’s plan, and the universal program, to create a new income-based plan called Fair PharmaCare. The result was a more generous program and improved access to medicines for non-senior families with annual household income below $30,000 (Morgan and Coombes, 2006).

2.4 Fair PharmaCare Benefit Levels

The Fair PharmaCare program reformed the distribution of benefits according to income-based criteria, outlined in Table 5. Beneficiaries are stratified according to three different income levels with the rate of public subsidy decreasing as income grows beyond each threshold. All beneficiaries are assigned separate terms of coverage, with varying deductibles\(^7\), coinsurance levels, and catastrophic ceilings (Ministry of Health, 2007e).\(^8\)

Registration proceeds through mail-based correspondence or by telephone interview. There are no fees or premiums associated with enrolment in Fair PharmaCare; however, registration requires at least three months residency, effective medical services plan coverage, and an income tax return filed in the relevant taxation year.\(^9\) A person may register him- or her self, his or her spouse, and any dependent children. When registering family members, Fair PharmaCare requires personal health numbers, birth dates, social insurance numbers, and net income from two years prior (Ministry of Health, 2007e). As of January 1\(^{st}\) 2005, 1.27 million out of 2.27 million families in BC were enrolled in the Fair PharmaCare program, with 637,000 individual British Columbians receiving Fair PharmaCare assistance (Ministry of Health, 2007a).

\(^7\) Concerns regarding seasonal patterns in utilization prompted BC PharmaCare to institute a monthly deductible option in which individuals and families can pay their deductible in monthly instalments and receive immediate assistance (Ministry of Health, 2007d).

\(^8\) Residents not enrolled in the Fair PharmaCare program are assigned a default deductible of $10,000 per family member (Ministry of Health, 2008)

\(^9\) If net family income has dropped 10 percent or more a beneficiary can request that assistance be based on a more recent year. Documents supporting the decrease in income must be provided and application must occur before the end of the calendar year (Ministry of Health, 2008).
Table 5: Fair PharmaCare Benefit Levels

<table>
<thead>
<tr>
<th>Net Annual Family Income</th>
<th>Benefit Plan</th>
<th>Fair PharmaCare Plan</th>
<th>Enhanced Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $15,000</td>
<td>None</td>
<td>70 percent</td>
<td>2 percent of net income</td>
</tr>
<tr>
<td>Between $15,000 and $30,000</td>
<td>2 percent of net income</td>
<td>70 percent</td>
<td>3 percent of net income</td>
</tr>
<tr>
<td>Over $30,000</td>
<td>3 percent of net income</td>
<td>70 percent</td>
<td>4 percent of net income</td>
</tr>
</tbody>
</table>

Source: Ministry of Health, 2007e.

Beneficiaries cover prescription drug expenses until reaching the deductible level, upon which Fair PharmaCare subsidizes eligible drug costs at a rate of 70 percent until the family maximum threshold is reached. In relevance to this study, families with net annual income above $30,000 are uninsured until private expenditures reach 3 percent of household earnings. Fair PharmaCare co-insures 70 percent of prescription drug expenses beyond this threshold until expenditures hit four percent of net household income (the family maximum level). To see how the program operates, consider a person with net annual family income of $40,000: this individual pays all drug costs to a maximum equal to an annual deductible of $1,200 (=3% x $40,000). After reaching the deductible, 70 percent of prescription drug expenses are publicly covered until the overall private contribution reaches $1,600 (= 4% x $40,000). Table 6 shows the deductible level

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10 Fair PharmaCare beneficiaries that are born prior to 1940 receive enhanced assistance, illustrated in Table 3.
and family maximum for various income levels under the new and old systems. As shown by the table, Fair PharmaCare created larger deductibles for individuals and families with household incomes greater than $35,000 (Fuller, 2003).

### Table 6: Cost Comparison of Old PharmaCare and Fair PharmaCare for the Non-Senior Population

<table>
<thead>
<tr>
<th>Family Income</th>
<th>Old Deductible</th>
<th>New Deductible</th>
<th>Difference in Deductible</th>
<th>Old Maximum Family Payment</th>
<th>New Maximum Family Payment</th>
<th>Difference in Maxima</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000</td>
<td>600</td>
<td>0</td>
<td>600</td>
<td>200</td>
<td>200</td>
<td>1800</td>
</tr>
<tr>
<td>15,000</td>
<td>600</td>
<td>0</td>
<td>600</td>
<td>200</td>
<td>300</td>
<td>1700</td>
</tr>
<tr>
<td>20,000</td>
<td>600</td>
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<td>200</td>
<td>200</td>
<td>600</td>
<td>1400</td>
</tr>
<tr>
<td>25,000</td>
<td>800</td>
<td>500</td>
<td>300</td>
<td>200</td>
<td>750</td>
<td>1250</td>
</tr>
<tr>
<td>30,000</td>
<td>800</td>
<td>600</td>
<td>200</td>
<td>200</td>
<td>900</td>
<td>1100</td>
</tr>
<tr>
<td>35,000</td>
<td>800</td>
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<td>-250</td>
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<td>1400</td>
<td>600</td>
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<tr>
<td>40,000</td>
<td>800</td>
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<td>50,000</td>
<td>800</td>
<td>1500</td>
<td>-700</td>
<td>200</td>
<td>2000</td>
<td>0</td>
</tr>
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<td>55,000</td>
<td>800</td>
<td>1650</td>
<td>-850</td>
<td>200</td>
<td>2200</td>
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<td>2100</td>
<td>-1300</td>
<td>200</td>
<td>2800</td>
<td>-800</td>
</tr>
</tbody>
</table>


### 2.5 Empirical Research

Following the introduction of provincial plans in the 1970s, spending on prescription drugs continued to increase, both in terms of aggregate expenditure, and as a share of total health spending. Comparable to national trends, British Columbia’s drug expenditures also increased substantially over the past two decades. Figure 1 shows that the share of total health spending
consumed by drug spending in British Columbia, increased over the last two decades, from nine percent in 1985 to 15.4 percent in 2006 (CIHI, 2008). During this same period, total public drug spending, in current dollars, increased from $137.7 million to $1.02 billion (CIHI, 2008).

Figure 1: Total and Public Drug Expenditure in British Columbia as a Share of Total Health Care Expenditure (%)

Source: (CIHI, 2008)

Figure 2 breaks down total expenditures into private and provincial spending. As shown, public and private spending grew in tandem from 1990 until 2001, with very similar annual increases. Over this period, provincial expenditures increased, on average, by 10.8 percent per year, and private expenditure increased, on average, 10.75 percent, indicating that the burden of increased drug spending was being equally borne (CIHI, 2008). Recently, however, the burden of expenditure has shifted from the public to the private sector. Starting in 2002, Figure 2 shows that private spending began to diverge, and started rapidly accelerating away from public expenditure. Figure 3 paints much the same picture. Notwithstanding the large spike in 1986, the province’s share of overall prescription drug costs decreased marginally between 1985 and 2002, from 49.6
percent to 48 percent (CIHI, 2008). From 2002 to 2006, however, this share dropped 11.7 percentage points to 36.3 percent (CIHI, 2008). The above trends coincided with three very important policy reforms in British Columbia: the introduction of cost sharing on seniors in 2002, Fair PharmaCare’s launch in 2003; and the implementation of the provincial drug formulary in 2003.

Figure 2: Prescription Drug Expenditure (Thousands of dollars) in British Columbia, by Province, and Private Sources, 1990 – 2006

Figure 3: Provincial Government Expenditure on Prescription Drugs as a Percentage of Total Prescription Drug Expenditure in British Columbia, 1985-2006


A guiding policy goal of the Fair PharmaCare program was to encourage more responsible product selection amongst middle and higher earning beneficiaries, thereby reducing total spending growth on prescription drugs (Morgan and Coombes, 2006). While CIHI data shows that post 2002, the average rate of growth in provincial spending decreased from 11.2 percent (1996 and 2001) to 5.1 percent (2002 and 2006), the annual rate of growth for total spending in the province increased, from 10.7 percent (1996-2001), to 12.2 percent (2002-2006) (CIHI, 2008).\(^\text{11}\) In fact, the program’s implementation resulted in a direct transfer of $134 million from public to private sources of spending. This represents a 17 percent decrease in public spending, and an 18 percent increase in private spending, compared to a predicted outcome without a policy change (UBC Centre for Health Services and Policy Research, 2006).

\(^\text{11}\) The CHSPR used their own calculations and found that the growth in total drug spending slowed over this period. They credit this slight decrease in the growth rate of drug spending to reduced utilization, which may indicate that Fair PharmaCare succeeded in its policy objective. However, CHSPR researchers found significantly slower utilization growth rates among all age and income brackets, not just the middle and upper earning members of the population that were impacted by Fair PharmaCare. Second, the implementation of Fair PharmaCare coincided with a slowdown in the growth of international drug prices, and the introduction of the provincial drug formulary in 2003, which gave preferential treatment to low-cost products (UBC Centre for Health Services and Policy Research, 2006).
Overall, the combined impact of Fair PharmaCare with other outside factors, increased senior beneficiaries’ average expenditure by 32 percent, and non-senior beneficiaries’ average expenditure by 37 percent (Hanley et al. 2006). By design, higher-income households made relatively larger private payments and received a smaller share of public subsidy, compared to lower-income households, both before and after the policy change. Therefore, Fair PharmaCare slightly increased the level of public subsidy for low-income, non-senior households. However, as a proportion of household earnings, spending on prescription drugs increased across all age and income levels. As such, public subsidy became smaller but slightly less regressive, and private payments became larger but slightly more progressive (Hanley et al. 2006).

As evidenced later in this paper, rising drug prices have the potential to harm the population’s access to medications. To investigate Fair PharmaCare’s impact upon access, Caetano et al. (2006) investigated changes in access to two widely prescribed medicines, antihyperintensives, and statins, both before and after the policy’s implementation (1997 to 2004). The authors found that levels of utilization and discontinuation were not significantly different from data predictions made pre-policy. In conclusion, the authors found that the 2003 policy change did not significantly impede access, or continuation of prescriptions for these two medications, amongst persons whose benefits declined (Caetano et al., 2006).

On the surface, Fair PharmaCare met many of its policy goals: government-spending growth decreased, access was maintained, and the distribution of public and private expenditures became slightly more progressive. The long-term picture, however, depends upon the impact of government’s reduced role on costs, access, and financial equity (UBC Centre for Health Services and Policy Research, 2006). As per-capita drug costs have increased, reducing public coverage for families with household incomes above $30,000 created proportionately larger household payments on prescription drugs (Hanley, Morgan, and Lixiang, 2006). When considering the long-term implications, the CHSPR warns that financial equity across and within income groups,
may crumble as households earning greater than $30,000 face an implicit three percent tax, paid year after year (UBC Centre for Health Services and Policy Research, 2006).\textsuperscript{12}

\textsuperscript{12} Although not mentioned in the CHSPR study, this implicit tax would actually be 4% if a person’s drug costs were to reach the family maximum.
3: Literature Review

As described above, an expansive range of demand-side options exist for restricting costs and consumption of pharmaceuticals. This section synthesizes the state of knowledge on the effects of increased cost sharing of essential medications on a variety of factors including drug use, health outcomes, and trade-offs. Essential medications are classified as those that improve or maintain health status including maintenance medications taken over a long period such as antihyperintensives, and medications taken on a sporadic basis such as bronchodilators (Gibson et al., 2005). Assuming that informed patients decrease the use of less essential medications and maintain their use of more essential ones, the impact of cost sharing on drug utilization should be smaller for essential medications. Several studies have examined whether this relationship holds true.

A review of the literature confirms that cost sharing is associated with reductions in the use of essential medicines, and discontinuations by chronically ill members of the population. For example, Goldman et al. investigated how patient co-charges affected the use of commonly prescribed drugs. The researchers found reductions in the use of antidepressants (eight percent), hyperintensives (10 percent) and antidiabetic medications (23 percent) (Goldman et al., 2004).

Drug discontinuation is the most extreme patient response to increased prescription drug prices. Ellis et al. found the discontinuation rate for patients paying a co-charge of $20 or greater, was four times higher than among patients paying $10 or less (2007). Likewise, Landsman et al. studied the responsiveness rates of long-term users of medications when

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Discontinuation is defined as an absence of refills within medication classes after factoring in switches to similar medications (Gibson et al., 2005)
encountering higher prices for medicines. The researchers found that, one-fourth of patients discontinued treatment within the first six months following a policy change that increased cost sharing (Landsman et al., 2005).

Underutilization or discontinuation of essential medicines can lead to an increase in the use of high-intensity health services, which creates downstream costs for the health care system. Tamblyn et al. studied the introduction of a 25 percent coinsurance fee, and an annual deductible of $100 on seniors and welfare recipients in Quebec. The researchers found reductions in the use of both essential and non-essential drugs. Non-essential drug utilization decreased 9.12 percent among the elderly, and by 14.42 percent among welfare recipients. Essential drug utilization decreased by 15.14 percent for the elderly, and 22.39 percent for welfare recipients. Moreover, such reductions were associated with a rise in serious adverse events such as first acute hospitalizations, long-term care admissions, and death. Adverse events for seniors increased from 5.8 events for members of the pre-policy control cohort, to 12.6 in the post-policy cohort. Among welfare recipients, adverse events increased from 14.7 in the pre-policy control cohort, to 27.6 in the post-policy cohort (2001).

In addition to quantitative investigations, qualitative research has helped provide a fuller picture of cost sharing’s impact on patients. Schafheutle et al. investigated how prescription charges influenced patient management of acute or chronic conditions. The study looked at patients taking medication for dyspepsia, hay fever, hypertension, or hormone replacement therapy. The authors held six focus groups with thirty-one participants, the majority of whom were subject to prescription charges. The authors found there were many factors that influenced condition management, including cost, disease severity, effectiveness, and necessity of treatment. The cost of drugs influenced patients from less affluent backgrounds the most. Patients utilized

14 Members of the study were required to have 24 months of continuous enrolment in a prescription drug plan.
15 Discontinuation is defined as an absence of refills within medication classes after factoring in switches to similar medications (Gibson, 2005)
various strategies to cope with the cost of medication including foregoing some items, taking smaller doses, and buying cheaper over the counter alternatives (2002).

Using a qualitative method consisting of thirteen 90-minute focus groups with 101 participants aged 60 or higher, Goins et al. examined the barriers faced by rural elders when accessing needed health care. In particular, the researchers were interested in coping strategies, developed in response to the high-cost of prescription medications. The researchers found that patients reduced dosages, did without medications entirely, limited other expenses, relied on family assistance, supplemented with alternative medicines, and shopped around for the cheapest prices. The researchers concluded that older adults without coverage (i.e., the poor, sick, and frail) were the most likely to engage in self-restriction (2005).

A growing amount of research suggests that focusing solely upon under-utilization of medicines risks underestimating the negative impact of out-of-pocket spending. The cost of prescription drugs may also affect patient’s lives in ways aside from non-adherence. Safran et al. for example utilized survey data obtained from non-institutionalized seniors in eight states: four with state-funded pharmacy programs and four without. 10 percent of insured seniors were found to decrease spending on household necessities (2005).

Using a national survey of 4055 chronically ill adults, Heisler et al. examined whether patients reacted to prescription charges by decreasing consumption of medicines and necessities such as food, or heat. The researchers discovered that 18 percent of participants underused prescription medications, 22 percent cut back on necessities, and 16 percent increased their debt burden. Interestingly, just 12 percent of diabetic patients reported cutting back on medication, while 28 percent reported foregoing food, heat, and other essentials, suggesting that diabetic patients are price-insensitive to prescription drugs and, thus, sacrifice other essential items (2005).

Cost sharing mechanisms attempt to curb prescription drug overuse and promote responsible consumer decision-making amongst patients. Research confirms that higher levels of
cost sharing create the desired effect of reducing prescription drug demand, especially for less essential drugs. The immediate effect of prescription drug cost sharing is to transfer a portion of the financial burden upon the patient. The above research shows that doing so leads to disruptions in use for chronically ill patients who depend upon regular utilization of medication. In response, concerns over equity and fairness have arisen in response to rising co-payments. (Gibson, 2005)

To date, most studies have focused upon the effects of prescription drug cost sharing on low-income patients. However, Gibson et al. write that, “A careful analysis of the effects of higher levels of cost sharing on diverse subgroups of individuals is warranted” (Gibson et al., 2005, 739). My study responds to this challenge by investigating the effect of cost sharing upon middle-income beneficiaries. The Fair PharmaCare benefit scheme uses small co-payment levels to maintain access amongst low-income patients, and uses a high deductible to encourage responsible use among middle and high-income populations. The results of my study can help illuminate whether a large deductible influences responsible use of drugs, or creates an excessive financial burden.
4: The Current Study

4.1 Research Objectives

The goal of this research is to discover the impacts of Fair Pharmacare’s catastrophic insurance structure on middle-income chronically ill persons in British Columbia. Focus group interviews form the core of my research and answer the following question: How much burden does Fair PharmaCare’s deductible-based system of drug benefits place upon persons with diabetes, and cardiovascular disease, with household income between $30,000 and $50,000? The overall goal of this study is to discover if alternative means of structuring BC’s PharmaCare benefits would better serve persons within this population. I specifically recruited participants with diabetes and, or cardiovascular disease because of the chronic nature of these conditions, and the common application of prescription drugs in treating them.

4.2 Methodology

When used in health care policy, qualitative research obtains evidence directly from the patient (Schafheutle, 2002). This study’s main source of information comes from focus group discussions and phone interviews, with persons having diabetes, and cardiovascular disease. Focus groups generate data by capitalizing on communication among participants. Group interaction becomes a part of the method as people are encouraged to explore their opinions and experiences (Kitzinger, 1995). Focus group interviews are commonly used within the literature to investigate the impact of cost upon patients (Schafheutle, 2002; Goins et al. 2005), as well as other issues related to chronic disease (Daaleman et al., 2001). The literature also confirms that
telephone interviews are a practical and reliable way of obtaining desired information especially when dealing with participants across a wide geographic area (Carr, 2001).

4.2.1 Sampling Frame

Originally, the criteria for inclusion in the study were as follows: a) being a person with cardiovascular disease and diabetes; b) being a person with household income between $30,000 and $50,000; c) being a person who is using prescription drugs to treat a condition(s). The choice of $30,000 as the minimum household income requirement is based upon the terms of Fair PharmaCare’s coverage set out in Table 5. Because my study investigates the impact of cost on patients, the study is restricted to persons potentially making the largest private payments. An upper income limit restricts the study to persons of “modest” or middle income. Inclusion of participants residing in upper income brackets, who presumably can shoulder large out-of-pocket payments, would threaten the study’s policy relevance. Furthermore, as discussed earlier in this study, empirical research shows that access to drug insurance coverage in Canada is correlated with income. Thus, the higher the upper income range became, the greater the likelihood that participants would be covered under private insurance plans. Finally, $50,000 falls within a middle income range, according to parameters used in Statistics Canada’s Health Reports (Statistics Canada, 2006). Annual household income of $50,000 is also near median household income, and median family income in the province.

Participants were recruited through several means: the placement of study ads in the Georgia Straight and the Vancouver Courier; posting of study ads in public places and private buildings; the posting of volunteer requests on the internet website, Craig’s List; distribution of the study ad to the Canadian Diabetes Association and local community centres and

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16 To see the exact table, please refer to Appendix C
17 The 2001 census found that median household income in British Columbia was $46,802 (BC Stats, 2003); median family income in British Columbia in 2005 was 58,500 (Statistics Canada, 2007).
neighbourhood houses; and finally, a presentation to a diabetic support group. Participants were also offered $25 for their participation, as well as reimbursement for travel and childcare costs. I subsequently modified both the criteria for inclusion, and my intention to rely solely upon focus group discussions for data. Most initial responses came from people possessing just one of the two necessary conditions. This prompted me to alter the first criterion for inclusion, (a), to being a person with diabetes, and/or, cardiovascular disease. While this represented a shift from my original intentions, the chronic nature of each individual condition maintained the integrity of the study, and also allowed for a much larger sample of participants.

4.2.2 Focus Groups

Two Semi-structured focus group interviews were held in Vancouver at Simon Fraser University Harbour Centre. The final focus group was held at Cedar Cottage Neighbourhood House in Vancouver. Table 7 shows the dates and composition of each focus group. Prior to each session, study volunteers completed informed-consent forms and short surveys. As moderator, I sought an informal, non-threatening atmosphere by serving light refreshments and encouraging open-ended introductions.

<table>
<thead>
<tr>
<th>Date</th>
<th>Total Participants</th>
<th>Persons with Diabetes</th>
<th>Persons with Cardiovascular Disease</th>
<th>Persons with Both Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 23, 2008</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>February 15, 2008</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>February 22, 2008</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td>3</td>
</tr>
</tbody>
</table>
In administering the focus groups, I centred participant discussion on the themes of this topic. For a complete list of the questions used, please consult Appendix A. An attempt was made to include responses from every participant on every question; however, some participants were more forthcoming than others were. As moderator, I maintained a neutral position and did not present my own views in order to avoid interviewer bias. Focus groups were recorded and lasted approximately one hour. Focus group discussions were transcribed verbatim on a word processing file, and read several times in order to extract the following main themes: cutting back on medication; cutting back on other medical devices; trade-offs; and other coping strategies.

4.2.3 Telephone Interviews

Five participants were interviewed over the phone. Three had both diabetes and cardiovascular disease, one had diabetes only, and one had cardiovascular disease only. The questions and topics covered in phone interviews were the same as those covered in the focus group discussions. Each interview was recorded and transcribed to retain all of the significant information.

4.2.4 Participant Questionnaires

Each focus group member filled out a small self-administered survey on demographic information, drug costs, insurance coverage, and medication regimens. Telephone participants answered the questionnaire verbally over the phone. To see the exact questionnaire, please consult Appendix B.
5: Results

This study's qualitative research yielded many valuable insights into the lives of chronically ill prescription drug users and the impact of cost upon their utilization of medicines and other lifestyle factors. It also produced surprising insights into the experience of privately insured beneficiaries. The following subsections describe the key findings from the focus group discussions, telephone interviews, and survey data. I organize my findings under several main themes.
5.1 Participant Questionnaire

21 patients took part in this study. Table 8 highlights survey participant’s basic demographic information, as well as their main form of insurance coverage. 16 of 21 participants possessed diabetes; eight of whom were also battling cardiovascular disease. The majority of participants (52.4%) were female, which is roughly consistent with literature showing that chronic illness affects women more than men (Broemeling et al, 2005). Interestingly, male respondents reported relatively higher monthly out-of-pocket payments ($93.8 to $81.78). However, eight of 11 female patients considered cost a problem, compared to just five of 10 male participants. Eight of 21 respondents were above the age of 70 and, thus, enrolled in the Enhanced Assistance plan. Questionnaire data did not reveal significant differences in the burden of cost across age groups. At $86.72, the average monthly expense for participants 70 and older was moderately lower than participants below 70 years of age ($88.3).

Questionnaire results were particularly useful in highlighting the personal expense borne by the chronically ill. On average, patients within this study used 6.4 different prescriptions and spent $87.79 each month on medications. Medications were paid for through a variety of means: 16 participants received Fair PharmaCare insurance; nine possessed a private form of coverage; eight relied solely upon public benefits; two were uninsured; and two were on public disability. Questionnaire results showed that the greatest cost burden fell upon Fair PharmaCare beneficiaries who lacked private insurance. Of eight Fair PharmaCare beneficiaries without private insurance, seven reported that paying for medicines was a problem within the previous

\[18\] In 2000/2001, 39.4 percent of females reported having at least one chronic condition compared to 31.6 percent of males.
year. Furthermore, the average out-of-pocket cost for these participants was $137.61, compared to just $88.05 for the privately insured.

Table 8: Questionnaire Results for Focus Group and Phone Interview Participants

<table>
<thead>
<tr>
<th>Insurance Coverage</th>
<th>Participants</th>
<th>Average out-of-pocket, monthly expense ($)</th>
<th>Participants reporting cost as a problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Sample</td>
<td>21</td>
<td>87.79</td>
<td>13</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 – 69</td>
<td>13</td>
<td>88.3</td>
<td>8</td>
</tr>
<tr>
<td>70 +</td>
<td>8</td>
<td>86.72</td>
<td>5</td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>8</td>
<td>97.5</td>
<td>5</td>
</tr>
<tr>
<td>CD</td>
<td>5</td>
<td>64.5</td>
<td>2</td>
</tr>
<tr>
<td>Both</td>
<td>8</td>
<td>93.3</td>
<td>6</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>93.8</td>
<td>5</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>81.78</td>
<td>8</td>
</tr>
<tr>
<td>Fair PharmaCare</td>
<td>16</td>
<td>84.56</td>
<td>11</td>
</tr>
<tr>
<td>Privately insured</td>
<td>9</td>
<td>88.05</td>
<td>4</td>
</tr>
<tr>
<td>Public beneficiary only</td>
<td>8</td>
<td>137.61</td>
<td>7</td>
</tr>
<tr>
<td>Disability</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Uninsured</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

5.2 Focus Groups/Telephone Interviews

5.2.1 Impact on Privately Insured

I begin my discussion of patient experiences by reporting on persons with employer-provided coverage. Access to prescription drugs for most of these participants was unhindered, regardless of the price of medications. Out of nine participants with private drug insurance coverage, zero reported under-utilizing medications, and only three reported lifestyle impacts.
Most of these participants considered private insurance a blessing. As one respondent stated, "I'm covered by Blue Cross, but a lot of people don't have that privilege of being covered by private companies." Privately insured participants were mindful of the long-term risks of their condition and viewed a lack of comprehensive coverage amongst peers as an inequity requiring redress by public policy makers: "With the system the way it is, it is not fair because, obviously, there are people who aren't able to [pay for their medications] and luckily I'm not one of them." Although several privately covered participants were enrolled in Fair PharmaCare and eligible for catastrophic benefits, most had a negative view of the program. In fact, several complained that Fair PharmaCare gave them "nothing", and two chose not to enrol in the program: "I'm covered under Blue Cross, so I don't bother with that PharmaCare thing."

An interesting dynamic that emerged from discussions with privately insured patients was the role of employment in guaranteeing access to essential medications. As several respondents noted, working a full-time schedule was physically demanding because of their weakened state of health. As one participant related, "Working full-time is detrimental to your health. It could add more stress, and you do get tired. I do get tired. I work full-time...and it's not exactly 10 till 3, so it's a long time." A second respondent was prevented from returning to his full-time position because of the health implications of living with diabetes:

When I was strong, good, and healthy, I was able to work 12 hours a day. But now, with like one hour a day...I start shaking. My sugar drops right away...I like to be working...but...I get worried because I start with something and I get shaky after one hour. I don't know what else I need to do.

These experiences highlight the difficulties and challenges of managing a chronic illness while maintaining full-time employment. Although never explicitly stated, these participant experiences raise the possibility that patient health may be compromised when a full-time work schedule is pitted against responsible condition management. The necessity of full-time employment could impact a variety of labour market decisions such as hours worked, and job selection.
Relying upon employment for first-dollar benefits can also magnify a patient’s emotional stress stemming from labour market volatility. The recently diagnosed diabetic, noted above, spoke about his anxiety regarding an economic downturn within his industry, and his subsequent fear of losing insurance coverage: “I am concerned. I am almost, in a way, panicked about the future. What is going to happen...when my insurance runs out? I work for the movie industry, and the movie industry is very unstable right now.” Additionally, losing private insurance coverage may impose an immediate financial burden that challenges patients to adapt to their new reality. This challenge was illustrated by a participant that was terminated from their position and struggled to successfully manage their disease:

*When I was let go from the company, I had no income. I was actually in shock and I had to scramble... I went from making a lot of money to zero money. That was a culture shock in regards to trying to afford all of the test strips and everything else.*

Privately insured participants also reported stress related to the gradual erosion of their plans. For one respondent, the gradual erosion of her husband’s insurance plan meant that her overall medical expenses would likely reach the plan’s lifetime cap sooner than expected:

*My husband has extended benefits but they are cutting back every year. I’ve been on his plan most of my life and they all have limits. Most of them are $50,000 lifetime limits. I spend about $3000 a year to pay for all of it (diabetes) and every time we get a new prescription, we have to pay for more of it.*

Another participant campaigned on her own behalf in order to secure access to a necessary medical device:

*Pacific blue cross would not allow me to have a continuous blood glucose monitor and my endocrinologist said that I needed it. First, they said, ‘we’re denying it...we need more information’, so my physician wrote a letter to them. It went to the Benefits Review Committee and they said ‘no we’re denying it’, and I’m like, ‘ok what do I do now?’ ‘How can you deny this sort of thing?’ I went on the internet and I got the Executive’s list of all the people at Pacific Blue Cross. I wrote a letter to the President, which more or less says, ‘this is what I need’. Why aren’t you giving it to me?’ I got a letter back last week saying that it had been approved.*
5.2.2 How is Cost an Issue?

For patients without comprehensive private insurance, the financial burden imposed by the cost of medications governed their lifestyle, with several referencing actual impacts upon utilization of medicines. An important finding is that the deductible-based structure of the Fair PharmaCare program created financial strain for participants who lacked alternative forms of insurance coverage. Within this study’s sample, eight participants relied solely upon Fair PharmaCare’s deductible-based catastrophic coverage and, thus, paid the full price of drugs for part of the year. As the following quote exemplifies, patients paying the deductible sometimes encountered prescription bills that were in excess of what they could afford: “And my daughter said to me, ‘no mommy. I think you have to pay… this much money ($475) ’… I don’t know how to pay $475 every month, every 2 months.” One middle-aged male diabetic explained his annual struggle to cover the full cost of drugs and provide for his child:

Right now I’m in a situation where I have to pay my deductible. So, I have to pay 100 percent of the cost. That’s a huge chunk of money for me. I’m a single dad trying to raise an 8 year old, and to have to come up with maybe $100 extra dollars a month, and another 70 for my strips every month, is a problem. It will be great once I reach my deductible but until then...

Three other participants noted that the deductible-based structure created strains related to the time of year:

...It’s the only coverage I’ve got. I’m self employed so I don’t have any extended medical. I’ll be paying the full deductible every year before I can hope to not pay for everything...It means that the first few months of the year are going to be very expensive, which typically comes at a fairly bad time of the year.

...His medication that he was on...was like $300 a month which, when I wasn’t working full time, was really hard. When Fair PharmaCare kicked in that sort of helped, but finding that $300 at the beginning of the year was not easy.

...Especially at the beginning of the year, it’s rather difficult because when you start adding them all together... At the beginning of the year, you have to start all over again. You’ve gotta meet these deductibles. As the year progresses and I get the deductibles out of the way, the financial pinch does ease up.
5.2.3 Does Cost Influence Under-Utilization?

Consequently, a lack of first-dollar coverage often resulted in patient’s health considerations being pitted against financial well-being. Of the 21 participants, four reported that the cost of medications had harmed their access to drugs, or other medical devices, with two patients reporting cutting back on medicines. The following participant stated that, on occasion, he would skip medications prior to reaching the deductible:

There are situations where I’ve run out of pills. I can’t afford them... and I would go without them. Sometimes if I could see they were getting low, I would start to cut back. I can sometimes keep my sugar under control, if I’m very careful about what I eat. So I cut back, which is not a good idea to do, but sometimes, I’ve had no choice.

Two participants reported that they were encouraged to forgo purchases of other necessary medical devices because of the cost of covering the deductible. One participant reported that she stopped testing her blood sugar levels because the money was required for her medicines. “I don’t test. I totally cheap out on test strips because there’s only so many dollars in the budget...I spend money on the medications I need.” A second respondent related a very similar story. For them, the urgency of taking medications took precedence over testing, despite the danger this presented to long-term condition management:

I should be testing but I don’t want to test because I know there just going to come out normal. So do I spend the four dollars to find out my blood sugar is normal, or do I not spend the four dollars and find out my sugars are high? Do I? Or don’t I? I don’t. Which I should be doing now because my blood sugars are high.

A fifth participant, referenced earlier, reported past under-adherence when they lost their job and the associated benefits:

When I lost that income, it shocked me...I’m really paying $400 a month for this? That’s when I went, ‘oh man, I better slow down on this and this’... I paid
the fees that would get me the minimum amount of drugs and pills...to make my existence continue.

The consequences of skipping dosages of essential medications can be particularly severe for chronically ill patients because the impact is often felt within hours or days. Participants reporting non-adherence were aware of the health risk they were taking. For most participants, the risk of cutting back on medications was simply too great. One patient’s strict adherence was a learned response, as a prior decision to save money by cutting back on pills had resulted in an adverse medical event:

*I tried giving up the pills a couple of times and wound up in emergency. So I learned my lesson there...I stopped taking that for four days and ended up driving down Oak street feeling funny...I said, ‘I have to go into the cardiologist’. The cardiologist had me hooked up to electricity right away. That kind of smartened me up...No more experimenting. Just take the pills.*

This is an important finding because it prompts policy-makers to consider the cost of prescription drug programs in terms of the downstream costs derived from preventable acute events. The above participant’s story is relevant because it suggests the possibility that more extensive prescription drug coverage could be associated with greater cost savings. Future research should examine how cost-sharing mechanisms in the BC context impact health outcomes, and costs.

That promotion of appropriate and effective use of pharmaceuticals can lead towards reductions in overall system costs was exemplified by a second respondent, whose health suffered when she was denied a particular brand of insulin:19

*Lantus is expensive. It’s $63 a bottle... It stops your lows at nighttime while you’re sleeping, and if you’re not waking up then you are going into a coma. And that was my problem. My husband was not sleeping either. He was calling the paramedics, saying they have to come and they have to deal with you. Then they have to take you to the hospital. That all costs a thousand dollars roughly at a time and it happened more than once a week.*

19 Lantus has since been approved.
5.2.4 What other Coping Strategies are there?

One of this studies aims was to discover that coping strategies participants employed when facing large prescription drug costs. As noted above, many participants without private insurance reported that they could not always afford their needed medicines. Aside from non-adherence to medications, three participants employed alternative strategies to ease the burden of cost upon their lives. Two participants volunteered for drug studies in order to access necessary medications, free of charge. The following quote comes from a patient who relied upon Fair PharmaCare coverage: "I don’t think there’s anything that makes it easier (The burden of cost). So, that’s why I sign up for these volunteer things. This participant was quick to note, however, the hassles associated with volunteering, and the impact upon her sense of well-being:

I wasn’t allowed to participate because they said I was too healthy. I said, ‘I’m too healthy? Oh, okay’. Then, there was another one where I wasn’t allowed to participate because I wasn’t healthy enough. So, I said, ‘okay, I’m in a catch 22 situation...That kind of wears on your self worth a little bit. I think for me that’s been the toughest part’.

A second patient, who was not enrolled within a public or private insurance plan, was asked to participate in a research study by his doctor. This patient was quite grateful for the opportunity because of the financial savings it afforded him. He made it clear that his ongoing participation required that he receive complete subsidization of his drug costs: “So therefore, when I start with their program, I said to them, ‘ok, you better pay for my pills’”. This same patient also reported changing their doctor because of the costly drugs that he was being prescribed: “Another doctor...prescribed me a pill that was very expensive. I think I paid like 63 dollars for about 25 pills. So I said... ‘look I don’t want to see that guy anymore, even if he’s the best in the world’.

A final coping strategy discovered within this study was reported by a retired and divorced cardiovascular patient. The cost of paying for essential medications, along with other
necessary household purchases, forced this patient to pursue new methods of raising revenue to pay for his bills. "When you're looking at laying out a couple hundred bucks for one prescription, and you add them all up...That money's gotta come from somewhere. I've ended up taking in a border this past fall to help me out financially..."

5.2.5 Trade-offs?

Although cost is always a consideration, most participants reported that health considerations took precedence a majority of the time. As one participant succinctly stated, "It's for my health. What can you do?" Another respondent noted, "To pay makes it difficult, but I know the medication I take for my high blood pressure helps me a lot with my heart." A retired diabetic highlighted the difference between paying for medicine, and paying for non-essential consumer goods: "It's not like a car you know. If you don't like the price [of the car], you don't buy." The necessity of paying for essential medications meant that the burden of drug expense often meant sacrificing other purchases. Faced with the consequences of non-adherence, patients were obliged to make the necessary payments; thus giving up more discretionary items in their budget. For some respondents, paying for drugs required giving up purchases of non-essential leisure items:

Well, I find because I'm spending more on medications, I have to spend less on other things that I would normally be spending that money on: trips, going out for dinner and things like that. I don't go out as often. It's an extra expense that I didn't have before.

Foregoing purchases of non-essential goods may not be of great concern to policy-makers; however, patients reporting this behaviour felt that the cost of medicines had an intrusive presence within their life, with very real impacts upon their happiness and well-being. For example, one retired participant was unable to renovate their house, something he looked forward to upon retiring: "When you're basically using all your money in a month just to live, there isn't
much left over to do extra things. I’ve got a lot of renovations I’d like to do to this place. I can’t afford to. Unless I borrow, but if I borrow, I just end up owing more money. The cost of drugs forced other participants to forgo more essential purchases and make painful trade-offs, as indicated by this retired diabetic: “It gets to where you want to buy gas for your car, groceries, or pills... It comes down to groceries, gasoline, or pharmacy. You got your choices because you have to pay rent unless you really feel like roughing it.” This participant went on to describe the long-term impact upon his finances, and his ability to better himself with discretionary purchases.

You want to buy new clothes. Make sure your pharmacist is paid first. You want to go on a holiday? Make sure your pharmacist is paid first.... Year after year, it erodes whatever you did have. Your problem, or your disease, erodes your capability of working, to make any money. So it’s kind of like a downward spiral.

5.2.6 Communication Considerations

A final finding of my study was the apparent lack of communication between PharmaCare and beneficiaries, as well as potential beneficiaries. This affected enrolment in the program, as well as the ability to take advantage of specific program features. Five participants, who in some instances could have benefited from public coverage, were not enrolled in Fair PharmaCare. Focus group discussions and interviews revealed various reasons for non-enrolment, ranging from a lack of knowledge regarding the program, to frustration regarding the enrolment process. One non-enrolled participant with cardiovascular issues was not aware of the program at all, and paid for all of his drugs. 20 The patient cited in section 5.2.3 that lost his job, had low-income and struggled to pay for his medications until the past year. When asked why he was not enrolled in Fair PharmaCare, this participant stated that, “I didn’t know enough about it.” Enrolment in the program may have eased this patient’s struggle to obtain medications: “It’s no longer an issue now, but there was around four years where I went months without testing because I couldn’t afford it. I had to make a choice. Food or a roof... You keep coming last, I

20 This participant did not report any issues related to cost.
hate to admit it”. A lack of knowledge regarding the program was not the only reason that respondents failed to enrol. A different respondent stated that his decision not to enrol was based upon the paperwork involved:

“I tried to approach PharmaCare, and they say I have to give them my income tax from last year. I...have to jump so many hoops... I talk to them...when I am coming out of the hospital...and I have to stop and find all my paperwork from last year and send it to them and be on the phone for hours, so it's like forget about it.”

Finally, as shown in section 5.2.2, the Fair PharmaCare deductible created a financial burden for many participants early in the year. The monthly deductible option allows patients to pay their deductible in monthly instalments; thus receiving immediate public assistance. It is possible that patients within this sample were not generating large enough annual expenditures to take advantage of this specific program feature. It is also possible that patients were simply unaware of the option and were missing out on spreading the cost of their deductible throughout the year.

5.3 Summary of Key Findings

The main finding of this study is that most chronically ill middle income earners were adequately covering their prescription drug costs through public subsidy, private coverage, and out-of-pocket payment. That said, a minority of participants, without private insurance, faced large drug costs on an annual basis and reported a variety of strategies to cope with the cost of medications. For these participants, the large Fair PharmaCare deductible level and the eligibility of drugs within the Reference Drug Program created the greatest financial pressure. To analyze my findings I organized respondent experiences into the following themes: 1) Cutting back on medications; 2) Cutting back on medical devices; 3) Trade-offs with essential/non-essential purchases; 4) Other coping strategies. Seven of 21 participants reported that the cost of medicines
had a direct impact; while four reported that the price of medications influenced them to underutilize drugs or other medical devices.

Of the eight participants relying upon Fair PharmaCare coverage, five reported a lifestyle impact, four of whom reported cutting back on essential medications or medical devices. Other lifestyle impacts included making trade-offs with household items like groceries, food, or gasoline, or foregoing purchase of less essential items like vacations or restaurant dinners. Only two participants relying upon public insurance stated that cost was not a problem for them. Table 9 summarizes the numerous cost-related impacts reported by respondents within this study.
**Table 9: Cost-Related Impacts on Participants**

<table>
<thead>
<tr>
<th>Cost-Related Impact</th>
<th>Number of Participants Reporting this Behaviour</th>
<th>Participant Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting Back on Medications</td>
<td>2</td>
<td>“There are situations where I’ve run out of pills. I can’t afford them... and I would go without them.”&lt;br&gt;“I tried giving up the pills a couple of times and wound up in emergency.”</td>
</tr>
<tr>
<td>Cutting Back on Medical Devices</td>
<td>2</td>
<td>“I should be testing but I don’t want to test because I know there just going to come out normal. So do I spend the four dollars to find out my blood sugar is normal, or do I not spend the four dollars and find out my sugars are high?”&lt;br&gt;“I don’t test. I totally cheap out on test strips because there’s only so many dollars in the budget...I spend money on the medications I need.”</td>
</tr>
<tr>
<td>Trade-offs with essential/non-essential purchases</td>
<td>4</td>
<td>“I have to spend less on other things that I would normally be spending that money on: trips, going out for dinner.”&lt;br&gt;“It gets to where you want to buy gas for your car, groceries, or pills...”&lt;br&gt;“I’ve got a lot of renovations I’d like to do to this place. I can’t afford to.”&lt;br&gt;“I’m outside but I can’t go about because of money.”</td>
</tr>
<tr>
<td>Other Coping Strategies</td>
<td>3&lt;sup&gt;21&lt;/sup&gt;</td>
<td>“I don’t think there’s anything that makes it easier (The burden of cost). So, that’s why I sign up for these volunteer”</td>
</tr>
</tbody>
</table>

<sup>21</sup> The second and third quote belong to the same participant
things.

"Those things they give to me because I'm a volunteer, a long time"

"Another doctor...prescribed me a pill that was very expensive. I think I paid like 63 dollars for about 25 pills. So I said... 'look I don't want to see that guy anymore, even if he's the best in the world."

"I've ended up taking in a border this past fall to help me out financially..."
6: Policy Alternatives

This section presents policy options addressed to BC PharmaCare that were developed through an analysis of the literature, focus groups, and patient interviews. These options respond to my primary research that showed Fair PharmaCare left some members of the population vulnerable to excessively large drug expenses; thus influencing under-utilization of medications and difficult trade-offs. I first present the status quo followed by three alternative means of structuring British Columbia’s system of pharmaceutical benefits. Each alternative is mutually exclusive; therefore, these alternatives provide policy-makers with several fundamentally different tools to improve the quality of prescription drug coverage for the chronically ill. The following policy options are summarized in the next section:

- Status Quo
- Expanding the middle income range of Fair PharmaCare
- A fully subsidized public program
- A public/private partnership model
- A model using graduated coinsurance

In addition to my recommendation that government adopt one of the above options, I propose that two reforms are implemented immediately:

* better communications with Fair PharmCare beneficiaries, as well as non-enrolled individuals who stand to benefit from Fair PharmaCare insurance.

* creation of a public advisory panel in construction of the provincial formulary.
The goal of the communication strategy is to illuminate the options that are available to the chronically ill population; therefore, allowing them to be better served by the province's system of pharmaceutical benefits. PharmaCare currently has an informational website that does an excellent job of promoting the program and answering questions regarding program specifics (Ministry of Health, 2008). However, not all beneficiaries, and potential beneficiaries, have access to the internet. An ongoing television, radio, and newspaper advertisement campaign would better notify the population of the program. A communication strategy is important no matter what option is ultimately chosen. Furthermore, if PharmaCare were to adopt one of the other alternatives, a communication strategy would be necessary to explain the changes in benefit levels to beneficiaries.

The anger, frustration, and outright confusion regarding the eligibility of drugs under the formulary should also be addressed by the successful policy alternative. Drug formularies create savings for drug plans and potentially make room for increased benefits. Morgan et al. estimate that BC's formulary saves PharmaCare $35 million annually (2004). Yet, many of this study's participants found the drug selection process non-transparent, and closed. Rather than improving cost-effectiveness (choosing cheaper drugs with the same benefit), several participants felt the main motivation behind the drug formulary was financial. British Columbia could open this process by following the lead of Ontario, which has proposed The Citizen Council, an advisory panel consisting of citizen representatives and medical doctors to counsel drug formulary decision-makers (Ministry of Health and Long-Term Care, 2007).
6.1 Description of Alternative I – Status Quo

The status quo is the first option considered within this analysis.\textsuperscript{22} The mandate of the PharmaCare program is to provide reasonable access to prescription drug therapy by assisting British Columbians with the cost of drugs (Ministry of Health, 2007f). The current catastrophic insurance structure is deductible based, with benefit levels determined by household income. There are two different benefit structures: one for persons born before 1939, and one for persons born after 1940.

The status quo is a viable option because of two separate findings originating from my research: the first finding is that many participants were satisfied with their private prescription drug plan, and were not hindered by cost. When combined with private insurance plans, the population, arguably, is adequately served by the Fair PharmaCare insurance program. Retaining the status quo enables PharmaCare to keep its income-based structure, ensuring vertical equity within the system; while allowing the freedom to adjust benefit levels and income ranges.

6.2 Description of Alternative II– Expanded Middle Income Range

\textit{When you guys get your medication you have to take that out of your pocket, and that costs a lot of money sometimes... Fair PharmaCare will only kick in at a certain level...for a lot of people they can’t even see that level because they can’t afford to get up there.} (Focus Group Participant, January 23, 2008)

This policy option builds upon the current income-based structure of the status quo. It addresses participant concerns that deductible levels are too high in the Fair PharmaCare program. This option expands the middle income range of the program, by increasing the threshold at which the highest deductible level kicks in, to $50,000. The deductible level for households with annual earnings between $30,001 and $50,000 drops to two percent of net annual income, with the family maximum dropping to three percent of net annual income. The

\textsuperscript{22} For an in-depth description of the program’s design, please consult section 2.21 of this study.
deductible vanishes for seniors born before 1940, who earn $50,000 and below. By decreasing the deductible and family maximum levels, disposable income is increased for families that fall below the median. The deductible for households with annual earnings greater than $50,000 stays the same under the Fair PharmaCare plan and the Enhanced Assistance Plan. The income-based structure of the program is retained; thus satisfying vertical equity concerns.

Table 10: Expanded Middle Income Range Benefit Levels

<table>
<thead>
<tr>
<th>Net Annual Family Income</th>
<th>Family Deductible</th>
<th>Portion PharmaCare pays</th>
<th>Family Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $15,000</td>
<td>None</td>
<td>70 percent</td>
<td>2 percent of net income</td>
</tr>
<tr>
<td>Between $15,000 and $50,000</td>
<td>2 percent of net income</td>
<td>70 percent</td>
<td>3 percent of net income</td>
</tr>
<tr>
<td>Over $50,000</td>
<td>3 percent of net income</td>
<td>70 percent</td>
<td>4 percent of net income</td>
</tr>
</tbody>
</table>

Fair PharmaCare Plan – Enhanced Assistance

<table>
<thead>
<tr>
<th>Net Annual Family Income</th>
<th>Family Deductible</th>
<th>Portion PharmaCare pays</th>
<th>Family Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $50,000</td>
<td>None</td>
<td>75 percent</td>
<td>1.25 percent of net income</td>
</tr>
<tr>
<td>Over $50,000</td>
<td>Equal to 2 percent of net income</td>
<td>75 percent</td>
<td>Equal to 3 percent of net income</td>
</tr>
</tbody>
</table>

6.3 Description of Alternative III – Full PharmaCare

This policy option responds to participant experience, historical data, and arguments found within the literature. For decades, voices have called for a more extensive public provision of prescription drugs in Canada. The 1997 National Forum on Health (NFH) proposed that Medicare integrate prescription drug spending within its governing framework. The NHF argued that complete public financing is the only way to guarantee universality and cost-control (Health Canada, 2004). Furthermore, the inequity of providing total pharmaceutical reimbursement in the hospital, but not outside, creates perverse incentives within the health care system: patients are
encouraged to utilize primary care that is free instead of prescription drug therapy that is not 
(Health Canada, 2004).

This option promotes the provincial equivalent of the NHF proposal by calling for a 
universal, publicly financed plan without deductibles, or co-payments. Specialized plans are 
eliminated, and replaced by one uniform provincial plan subsidizing all eligible prescription drug 
costs. An important caveat to this plan is the maintenance of the provincial drug formulary to 
contain costs and discourage inappropriate prescribing.

Private drug plans would provide coverage for drugs not included under the provincial 
formulary. The benefit of this plan is the incentive it creates for patients to adhere to medication 
regimens. It provides them with extra purchasing power to ease the financial strain associated 
with condition management. Simultaneously, it reduces psychological stress amongst privately 
insured individuals regarding the security of their private benefits.

6.4 Description of Alternative IV – Public/Private Model

This proposed policy option dramatically reforms BC’s Fair PharmaCare program by 
reserving public subsidies for persons without access to private market insurance. This model is 
based on the 1997 reforms to Quebec’s Régie de l’assurance maladie, which made insurance 
mandatory for all Quebecers. Quebec’s reforms restricted individuals with access to private group 
drug insurance from receiving public benefits. Patients remaining in the public plan pay an 
income-based premium, deducted from their annual tax return. Regular verifications in 
collaboration with Revenu Quebec, ensure that beneficiaries enrolled within the public plan are 
indeed eligible, and collecting the proper sum. Patients that are not enrolled in a public or private 
plan are still obliged to pay the public plans premium. An important detail is that all private plans
are required to fulfil certain minimum conditions regarding coverage levels and reimbursement (Gouvernement du Quebec, 2004).

By proposing the Quebec model for British Columbia, this study responds to one of its central findings: individuals without comprehensive private insurance are most likely to report utilization, health, and lifestyle impacts, due to the cost of prescription drugs. The proposed application of this model in British Columbia borrows several features from the Quebec system; however, one important modification distinguishes it. Rather than imposing an annual premium, the proposed BC model retains the current monthly deductible option. This takes advantage of the existing administrative framework within the province. Eliminating coverage for the privately insured allows PharmaCare to increase benefit levels for the population remaining within the publicly subsidized plan, without drastically increasing overall costs. Beneficiaries can decide between the monthly payment option, with its offer of immediate assistance, and paying the deductible in full before receipt of public subsidy. Unlike the current system, however, this option makes enrolment in a public or private plan, mandatory. Individuals who are eligible for public assistance, but do not enrol, pay a monthly premium (equal to the monthly deductible they would pay if enrolled); thus providing incentive to enrol in the public plan.

In response to participant feedback, Alternative IV also reduces the deductible level for Fair PharmaCare beneficiaries by half, a considerable improvement over the existing arrangement. Following payment of the deductible, the same rate of coinsurance applies, until a beneficiary reaches the family maximum level. Lowering the deductible has the added advantage of encouraging more beneficiaries to utilize the Monthly Deductible Option; thus spreading cost of drugs throughout the year and discouraging extreme consumption behaviours.

As in the Quebec model, private insurance plans are obliged to offer a basic level of coverage. This ensures that individuals who are ineligible for public subsidy are not prevented

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23 Beneficiaries utilizing the Monthly Deductible Payment have the amount deducted each month off of their pay cheque. It essentially serves as a monthly premium.
from receiving comparable coverage from the private sector. This alternative imposes the following restrictions on private plans: 1) Catastrophic caps cannot exceed four percent of annual household income; 2) Deductibles cannot exceed 1.5 percent of net household income. Private plans are also obliged, at minimum, to offer the same drugs that are currently covered under the BC formulary.

Table 11 outlines the benefit levels available to public beneficiaries under this proposed scheme. The subsidy structure remains the same for all beneficiaries with family income below $15,000. For families with income between $15,000 and $30,000 the deductible level drops from two percent of net income to one percent of net income. Families with income over $30,000 have their deductible reduced from three percent of net income to 1.5 percent. The only group affected under the Enhanced Assistance plan are seniors with household income between $33,000 and $50,000, whose deductible drops from one percent of annual household income to .5 percent.

**Table 11: The Quebec Model: Plan for Public Beneficiaries**

<table>
<thead>
<tr>
<th>Net Annual Family Income</th>
<th>Family Deductible</th>
<th>Portion PharmaCare Pays</th>
<th>Family Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $15,000</td>
<td>None</td>
<td>70 percent</td>
<td>2 percent of net income</td>
</tr>
<tr>
<td>Between $15,000 and $30,000</td>
<td>1 percent of net income</td>
<td>70 percent</td>
<td>3 percent of net income</td>
</tr>
<tr>
<td>Over $30,000</td>
<td>1.5 percent of net income</td>
<td>70 percent</td>
<td>4 percent of net income</td>
</tr>
<tr>
<td>Fair PharmaCare Plan – Enhanced Assistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $33,000</td>
<td>None</td>
<td>75 percent</td>
<td>1.25 percent of net income</td>
</tr>
<tr>
<td>Between $33,000 and $50,000</td>
<td>.5 percent of net income</td>
<td>75 percent</td>
<td>Equal to 2 percent of net income</td>
</tr>
<tr>
<td>Over $50,000</td>
<td>Equal to 2 percent of net income</td>
<td>75 percent</td>
<td>Equal to 3 percent of net income</td>
</tr>
</tbody>
</table>

53
6.5 Description of Alternative V – Graduated Coinsurance

This policy option restructures benefit levels to reflect health needs, in addition to financial need. A graduated coinsurance plan allows PharmaCare to subsidize certain high-value medications, and charge higher co-pays on less-essential medicines. This plan is based upon France’s system of pharmaceutical reimbursement, which assigns subsidization rates of zero percent, 35 percent, or 65 percent of the cost, based upon the assessed therapeutic value of the medication (Noyce et al. 2000). Like France’s model, this policy option offers beneficiaries three separate reimbursement levels for medicines: Essential; Less-Essential; and Non-Essential. Unlike France, however, these levels are not uniform across income groups. Rather, reimbursement levels, for each class of medication, differ according to a person’s annual household income level. Seniors that receive benefits under the Enhanced Assistance plan are given the choice of staying put, or moving to the Graduated Coinsurance Benefit Plan. Table 12 displays the terms of coverage featured within this policy option:

Table 12: Graduated Coinsurance Benefit Structure

<table>
<thead>
<tr>
<th>Net Annual Family Income</th>
<th>Class of Medication</th>
<th>Portion PharmaCare Pays</th>
<th>Family Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $15,000</td>
<td>Essential</td>
<td>100 percent</td>
<td>2 percent of net income</td>
</tr>
<tr>
<td></td>
<td>Less-Essential</td>
<td>75 percent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Essential</td>
<td>50 percent</td>
<td></td>
</tr>
<tr>
<td>Between $15,000 and $30,000</td>
<td>Essential</td>
<td>75 percent</td>
<td>3 percent of net income</td>
</tr>
<tr>
<td></td>
<td>Less-Essential</td>
<td>50 percent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Essential</td>
<td>25 percent</td>
<td></td>
</tr>
<tr>
<td>Over $30,000</td>
<td>Essential</td>
<td>50 percent</td>
<td>4 percent of net income</td>
</tr>
<tr>
<td></td>
<td>Less-Essential</td>
<td>25 percent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Essential</td>
<td>0 percent</td>
<td></td>
</tr>
</tbody>
</table>

24 France also offers exemptions to 31 disease states. The option of exempting such medications within British Columbia was considered but ultimately rejected in favour of an income-based structure.
Study participants commonly stated that paying the 70 percent coinsurance rate was not a problem for them. However, meeting the annual deductible level, and paying the full cost of drugs up to that point, was a burden. “It will be great once I reach my deductible but until then. It sure would be nice if they could find some way to even that out” (Telephone Interview). In providing first dollar coverage, this alternative provides beneficiaries with immediate subsidization of their drug costs, providing incentive to consume essential medications. Assigning higher rates of coinsurance for more essential medications allows PharmaCare to simultaneously encourage use of vital medicines and encourage responsibility on less-essential purchases. This alternative ensures progressivism by retaining the income-based nature of the Fair PharmaCare program. Members of the $30,001 to $50,000 population receive 50 percent subsidization of essential medications. This better serves participants without private insurance, and offers a generous public alternative to private benefits.
7: Analysis of Policy Alternatives

7.1 Evaluation of Alternatives

Although my study looked at the effect of cost sharing mechanisms on one particular income category, my options are evaluated according to their impact upon the chronically ill population as a whole. This decision was taken for the following reasons: the results confirm that cost-sharing mechanisms create financial pressures upon middle-income patients. However, the finding supplements research that shows financial disincentives are also harmful towards low-income patients. I found it prudent, when developing and evaluating policy options, to be mindful of the impact upon all income groups. The criteria used for assessment are effectiveness, equity, cost, and stakeholder political feasibility. Table 13 displays the criteria and associated measurements used within this policy evaluation. Each alternative is assigned a score of high, medium, or low, based upon its ability to meet each criterion. A score of 15 points is the maximum total a policy option can receive (5 criteria x 3 points each). The final policy recommendations are based upon how each alternative score against the chosen criteria.

7.1.1 Effectiveness

The effectiveness criterion addresses the policy problem that too many chronically ill persons are experiencing excessive financial strain due to the cost of prescription medication. There is abundant evidence, including the results of this study’s primary research, that shows direct financial contributions reduce patient demand for prescription medication. An effective drug-benefit design should not jeopardize patient health by creating large cost-related barriers to
access (Noyce et al., 2000). The measure of effectiveness in this study is the annual cost borne by a patient under each proposed policy option. The smaller the cost borne by the patient, the greater their disposable income becomes; thereby, encouraging greater adherence to medications, reducing trade-offs, and decreasing psychological stress. Because the options often have separate subsidies across income groups, I calculate the annual cost borne by a hypothetical beneficiary according to the following household incomes: $14,999; $30,000; and $50,000. I also estimate patient burden according to two different scenarios: $1500 in annual drug expenditures, and $3000 in annual drug expenditures. A scoring system awards points according to the reduction of costs below the following threshold levels: three percent of annual household income; two percent of annual household income; and one percent of annual household income. For a more thorough explanation of the scoring system used in this analysis, please consult Appendix E.

7.1.2 Cost

The rapid growth of pharmaceutical expenditures over the past 30 years makes cost a top policy concern. This criterion determines an alternative’s impact upon PharmaCare program expenditures. As a public program, PharmaCare has an obligation to maximize spending and manage its budget in a responsible fashion. It is important to note that annual PharmaCare expenditures are determined by numerous factors. To estimate precisely the cost of each alternative requires access to data that is not publicly available. Therefore, this study provides rough forecasts using publicly available data on PharmaCare expenditure, and budgets of comparable programs in other jurisdictions. For ease of comparability, cost estimates are based upon CIHI data for the year 2005.
7.1.3 Equity

Equity is of primary significance given the importance of drug coverage for this population. The equity criterion assesses horizontal equity, which refers to treating equally positioned individuals equally. The spread of financing across several sources, private and public, creates large differences in pharmaceutical coverage within income groups, disease types, and employment types. A successful policy option should ease disparities that exist within disease groups. This analysis awards a score of high, medium, or low to each alternative, determined by the ability to reduce the disparity between a privately insured beneficiary, and a beneficiary receiving public coverage only. Kapur and Basu found that the average private plan had a deductible of up to $100 and an 80 percent coinsurance rate, following payment of the deductible (2005). My study uses this cost-sharing rate as a proxy value to compare public against private benefits.

7.1.4 Administrative Ease

This criterion helps determine the level of administrative burden associated with operating each alternative. Generally, administrative costs increase with the complexity of the cost sharing system, and the amount of information required to determine a beneficiary’s out-of-pocket expense (Office of Technology Assessment: US Congress, 1993). A complex system of pharmaceutical benefits may confuse beneficiaries regarding benefit levels. The results of my study showed that several participants were unsure of the benefit levels under Fair PharmaCare. This criterion therefore rewards a policy option that reduces the administrative complexity of British Columbia’s drug benefit design. Overall, the Status Quo has six different income-based benefit categories for beneficiaries: three categories for beneficiaries born before 1940, and three categories for beneficiaries born after 1940. A policy option that increases the number of benefit categories by a number greater than one receives a low score. An alternative that creates five to
seven different categories receives a medium score. Finally, an alternative that reduces the number of categories by a number greater than one receives a high score.

7.1.5 Political Feasibility

The support of several stakeholders is often necessary for the implementation of any policy alternative. Changes to the design of Fair PharmaCare will likely encounter support or opposition from several different actors in the public arena. Stakeholder political feasibility investigates a proposed policy alternative’s acceptability to a number of key stakeholder groups including patient/advocacy groups, the pharmaceutical industry, business/union interests, and private insurance companies. The support of private insurance companies is determined by a policy alternative’s impact upon the size of insurance claims: fewer patients relying on private coverage means fewer insurance claims and smaller profits for companies. The support of pharmaceutical companies is determined by a policy alternative’s impact upon the distribution of spending between the public and private sector. A policy alternative that shifts spending towards the public sector will not receive support from the pharmaceutical industry. Presumably, this is because the restrictive public formulary will limit spending on new and expensive pharmaceuticals. The support of business and union interests is gauged according to their positions as providers of employee insurance. A policy option that shifts spending towards the public sector will receive support because it lessens financial responsibility for member drug costs. Finally, patient and advocate support is determined by a policy alternative’s ability to decrease patient cost sharing relative to the status quo. For an alternative to receive a high score, it must receive the support of four of the above actors.
Table 13: Criteria and Measures

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Definition</th>
<th>Value</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>How much money will a chronically ill person pay in one year under the alternative?(^{25})</td>
<td>14 to 18</td>
<td>3. High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 to 13</td>
<td>2. Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 6</td>
<td>1. Low</td>
</tr>
<tr>
<td>Cost</td>
<td>Relative to the status quo, by what percentage will annual PharmaCare expenditure increase under this policy alternative?</td>
<td>&gt; 10%</td>
<td>3. High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 to 20%</td>
<td>2. Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt; 20%</td>
<td>1. Low</td>
</tr>
<tr>
<td>Horizontal Equity</td>
<td>Does the policy alternative create equal access to prescription drugs within groups of equals?</td>
<td>Equity is greatly improved. Disparity between publicly insured and privately insured patients ($50,000) is narrowed by more than 50 percent under both scenarios.</td>
<td>3. High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disparity is narrowed by more than 50 percent in one scenario and between 25 and 50 in the other.</td>
<td>2.5 Medium/High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equity is moderately improved. Disparity between publicly insured patients and privately insured patients ($50,000) is narrowed by 25 to 50 percent under both scenarios.</td>
<td>2. Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disparity is narrowed between 25 and 50 percent under one scenario, and less than 25 percent in the other scenario.</td>
<td>1.5. Low/Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equity is not improved. Disparity between public and private beneficiaries is narrowed less than 25 percent</td>
<td>1. Low</td>
</tr>
<tr>
<td>Administrative Ease</td>
<td>Does the policy option increase or decrease the administrative complexity of the program?</td>
<td>The alternative reduces the number of income-based categories by a number greater than one.</td>
<td>3. High</td>
</tr>
</tbody>
</table>

\(^{25}\) For a description of how values were calculated for this criterion please consult Appendix E
The alternative utilizes 5 - 7 income-based categories | 2. Medium
---|---
The alternative adds more than one income-based category | 1. Low

Stakeholder Political Feasibility

How acceptable is the policy alternative to stakeholders?

Support of 3 or more stakeholders | 3. High
Support of 2 – 3 stakeholders | 2. Medium
Support of 0 -1 stakeholders | 1. Low

7.2 Assessment of Policy Alternatives

7.2.1 Consultation with Experts

To assist my evaluation of policy alternatives, I interviewed the following three experts in pharmaceutical policy: 1) Robyn Tamblyn, Professor, Medicine and Department of Epidemiology, Biostatistics, and Occupation Health, McGill Univeristy 2) Dan Rego, President, Drug Coverage, Plasmid BioCommunication Inc. 3) Steve Morgan, Assistant Professor, Department of Health Care and Epidemiology, UBC

7.2.2 Policy Alternative I: Status Quo (10)

*Effectiveness: 1 - Low*

The Status Quo option is ineffective at relieving the financial burden experienced by the two hypothetical patients: one incurring $1500 in annual drug costs, and the other incurring $3000. As table 14 shows, in three out of six scenarios, annual prescription drug expenditures exceed 2.99 percent of net household income. In fact, a hypothetical household earning $50,000 annually, with $3000 in drug expenditure per year, pays almost four percent of net income towards pharmaceuticals.
Table 14: Annual Patient Expenditure under the Status Quo

<table>
<thead>
<tr>
<th>Household Income</th>
<th>Annual Patient Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1500 total drug costs</td>
</tr>
<tr>
<td>$14,999</td>
<td>$300</td>
</tr>
<tr>
<td>$30,000</td>
<td>$870</td>
</tr>
<tr>
<td>$50,000</td>
<td>$1500</td>
</tr>
</tbody>
</table>

Cost: 3 – High (Low-Cost)

The status quo automatically receives a score of three against the cost criterion because it is the baseline upon which other alternatives are assessed. According to CIHI forecasts, provincial prescription drug expenditures in 2005 were $823.8 million (2008). In 2005, the Fair PharmaCare program represented 63.32 percent of overall PharmaCare expenditure (BC PharmaCare, 2007). Therefore, this analysis uses $521.63 million as the expenditure level under the Status Quo option. For a more detailed breakdown of PharmaCare, and Fair PharmaCare expenditures, please consult Appendix D.

Horizontal Equity: 1 - Low

The status quo performs poorly against the horizontal equity criterion because it fosters a mixed system of public and private insurance that is at odds with notions of equity and fairness. The program creates different treatment for patients within disease types. Some diabetic participants in this study had first-dollar employer provided coverage, whereas other diabetic participants relied solely upon Fair PharmaCare coverage. As a result, diabetics without private insurance faced financial strain, with some reporting that they cut back on medications. Finally,
this study found that self-employed participants, and those working for a small business, did not have access to benefit packages with prescription drug insurance. Participants working full time in stable businesses, however, received near or full coverage. As noted by the Commission on the Future of Health Care in Canada, "This situation—many payers, no standard coverage, and high out-of-pocket payments—looks a lot more like the American health care system than Medicare." (2002). Table 15 shows the discrepancies existing between two hypothetical patients, with household income of $50,000, suffering from the same disease: one privately insured; one publicly insured.

<table>
<thead>
<tr>
<th>Table 15: Cost Comparison - Privately Insured Patient vs. Publicly Insured Patient, Under the Status Quo, Annual Household Income of $50,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privately Insured Plan</td>
</tr>
<tr>
<td>Annual Expense: $1500</td>
</tr>
<tr>
<td>Annual Expense: $3000</td>
</tr>
</tbody>
</table>

*Administrative Ease: 2 - Medium*

The Fair PharmaCare program utilizes an income-based structure that requires confirmation of beneficiary's household income with Revenue Canada on a yearly basis. Beneficiaries within each income category are assigned a separate deductible, and family maximum level, that increases progressively with each threshold. In total, the Fair PharmaCare program features six different deductible levels (three in the regular Fair PharmaCare plan; and three in the Enhanced Assistance plan) and six different family maximum levels (three in the Fair PharmaCare plan; and three in the enhanced plan). Compared to a completely subsidized plan, or
a plan that utilizes one co-payment level for all beneficiaries, the Fair PharmaCare system is administratively complex.

*Political Feasibility: 3 - High*

The status quo likely receives the support of several important players in the pharmaceutical policy world. As stated by Dan Rego of Plasmid Biocommunications Inc. private insurance companies adapt to any policy scenario because, by design, their plans are structured to make money (February 27, 2007). That said, limiting pharmaceutical benefits to last dollar coverage provides private sources with a large market. Pharmaceutical companies should prefer any system where they can sell new and expensive products to a large proportion of the population. Private formularies are often not as restrictive as public formularies; therefore, a greater role for the private sector means that pharmaceutical companies may enjoy increased revenues. Business and union interests cover the cost of premiums for employees up to the catastrophic level. Presumably, these interests support a catastrophic system over the alternative of covering ruinous expenses on their own. Patient and advocacy groups are generally supportive of catastrophic drug coverage when the alternative is no coverage at all. The Canadian Diabetes Association, for example, called for a national catastrophic drug plan in which patients spend no more than three percent of their net income on prescription drugs (Canadian Diabetes Association, 2005).

**7.2.3 Policy Alternative II: Expanded Middle Income Range (10)**

*Effectiveness: 1 - Low*

Expanding the middle-income range of the Fair PharmaCare program does not reduce patient costs enough to score higher than the Status Quo option. As table 16 shows, this option succeeds at lowering the annual costs for households falling within the $30,001 to $50,000 income range. A hypothetical patient with household income of $50,000 stands to benefit the
most by spending just 2.3 percent of net household income when incurring $1500 in drug costs, and spending just three percent when incurring $3000 in drug costs. This compares to three percent and 3.9 percent, respectfully, under the status quo. However, under all scenarios, households never spend under two percent of annual earnings on drugs. Thus, Alternative II is more effective than Alternative I, but not sufficiently so, to generate a higher score.

Table 16: Annual Patient Expenditure under the Expanded Middle-Income Range Option

<table>
<thead>
<tr>
<th>Household Income</th>
<th>Annual Patient Expenditure</th>
<th>Total Drug Costs</th>
<th>% of Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>$14,999</td>
<td>$300</td>
<td>$300</td>
<td>2%</td>
</tr>
<tr>
<td>$30,000</td>
<td>$870</td>
<td>$900</td>
<td>3%</td>
</tr>
<tr>
<td>$50,000</td>
<td>$1150</td>
<td>$1500</td>
<td>3%</td>
</tr>
</tbody>
</table>

**Cost: 3 – High (Low Cost)**

To estimate the cost of expanding the middle-income range, this study utilizes Statistics Canada data that shows 19 percent of Canadian families have annual income between $30,000 and $50,000 (Statistics Canada, 2007). Transferring this statistic to British Columbia means that 19 percent of Fair PharmaCare beneficiaries have their deductible reduced from three percent to two percent of net annual household income. Under the Enhanced Plan, 19 percent of seniors born before 1940 have their deductible reduced from two percent of net annual household income to zero. The following calculations estimate this policy option’s maximum expenditure: Of
roughly 395,322 Fair PharmaCare beneficiaries born after 1940, 19 percent, or 75,111, have household income between $30,000 and $50,000. To simplify the calculation, a previous deductible level of $1200 is assigned (the deductible borne by a household earning $40,000 under the Status Quo) and then reduced to $800 (two percent of net income). Each beneficiary therefore saves $400 annually, off his or her deductible, of which 70 percent is cost shared. Based upon PharmaCare data, this increases the annual cost of the Fair PharmaCare program in 2005 by $21,031,130 (75,111 x 400 x 0.7).

The same calculations are used to estimate the new cost of the Enhanced Assistance plan for seniors born before 1940. By expanding the threshold of the lowest income range to $50,000, this policy option increases expenditures by $27,551,292. Adding together the totals from the regular Fair PharmaCare plan and the Enhanced Seniors plan generates an overall spending increase of $48,582,422, or 9.92 percent. After converting this number to CIHI data from 2005, this analysis finds that Alternative II results in an increased cost to PharmaCare of $51.74 million. This total increases overall PharmaCare expenditure by to $875.54 by 6.3 percent.

**Horizontal Equity: 2 - Medium**

Expanding the middle-income range slightly improves the disparities that exist between publicly insured and privately insured patients. Table 17 shows that for a household incurring

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26 This figure is obtained using PharmaCare data that shows 37.94 percent of PharmaCare Beneficiaries are over the age of 70 (BC PharmaCare, 2007). A rough estimate is made that assumes 37.94 percent of the 637,000 Fair PharmaCare beneficiaries (BC PharmaCare 2007) are over the age of 70, leaving 395,322 in the regular Fair PharmaCare plan.

27 This figure is obtained by taking 37.94 percent of Fair PharmaCare beneficiaries in 2005 (241,678), multiplying by .19 (the estimated percentage of families between $30,000 and $50,000), multiplying by $800 (the deductible payment which senior families in this range will no longer pay), and multiplying by .75 (The subsidy applied to the first $800).

28 Converting PharmaCare data to CIHI numbers required the following calculations: PharmaCare data shows that Fair PharmaCare represented 63.32 percent of total PharmaCare costs in 2005 (BC PharmaCare, 2007). Therefore, using the CIHI total of $823.8 million for provincial expenditure in 2005 (CIHI, 2008) and multiplying by .6332 calculates Fair PharmaCare expenditure to be $521.63 million. 9.92 percent of $521.63 million = $51,745,696.
$50,000 in annual prescription drug expenses, the disparity between a public and private beneficiary narrows by 31 percent and 28.7 percent respectfully.

Table 17: Comparison of Costs Incurred by a Privately Insured Patient and a Publicly Insured Patient, Annual Household Income, $50,000

<table>
<thead>
<tr>
<th></th>
<th>Privately Insured Plan</th>
<th>Status Quo Plus</th>
<th>Status Quo</th>
<th>Narrowing of Disparity relative to Status Quo (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Expense: $1500</td>
<td>$380</td>
<td>$1150</td>
<td>$1500</td>
<td>31%</td>
</tr>
<tr>
<td>Annual Expense: $3000</td>
<td>$380</td>
<td>$1500</td>
<td>$1950</td>
<td>28.7%</td>
</tr>
</tbody>
</table>

Administrative Ease: 2 – Med

Expanding the middle income range maintains the basic structure of the Fair PharmaCare plan for beneficiaries born after 1940. Three separate deductible levels and three separate family maximum levels are assigned to persons in receipt of benefits. The complexity of the system reduces for individuals receiving assistance under the Enhanced Assistance plan. There are now only two separate income categories: $50,000 and below; and above $50,000. The complexity of the program is therefore slightly reduced.

Political Feasibility: 2 - Medium

This option increases public benefits for households within the $30,000 to $50,000 income range. This reduces the size of payouts that privately insured beneficiaries within this income range will require from their private insurance plans. Therefore private insurance companies should not view this option favourably. Pharmaceutical companies are also expected to show mild discontent with this option for the same reasons: increased public coverage means a
smaller market for new and expensive drugs left off the public formulary. Patient and advocacy groups should support this option because of the lowered deductible and family maximum. Likewise, business and unions are likely to support this option because the size of premiums should go down.

7.2.4 Policy Alternative III: Full PharmaCare (12)

Effectiveness: 3 - High

This policy option performs best against the effectiveness criteria by eliminating all expenses related to prescription drug spending. Thus, patients receive more incentive to renew prescriptions, and stick to drug regimens. They also receive extra disposable income for other purchases.

Cost: 1 – Low (High Cost)

This analysis shows that the Full PharmaCare option significantly increases public expenditure on prescription drugs. To calculate the annual cost of a fully-subsidized PharmaCare program, CIHI data on prescription spending in the province from 2005, is utilized, which forecasts total prescription drug expenditure in the province to be $2.158 billion (2008). This analysis assumes that a fully subsidized PharmaCare program would generate similar expenditures. Putting aside impacts on utilization, and administration costs, this option creates a 175 percent increase in PharmaCare spending, in comparison to the Status Quo option.

Horizontal Equity: 3 - High

This option performs best against the horizontal equity criterion by eliminating the disparity that exists between privately insured beneficiaries and beneficiaries relying solely upon public coverage. In fact, the private insurance market is eliminated entirely as a source of first dollar coverage. Public insurance is available to all members of the population regardless of income level, and employment type.
Administrative Ease: 3 - High

Setting up a fully subsidized PharmaCare program creates significant structural costs related to the displacement of private insurance (Cost Impact Study of a National PharmaCare Program for Canada). However, once the program is in place, a single-payer system lessens the administrative burden. By completely subsidizing prescription drug costs for all beneficiaries, the Full PharmaCare option drastically simplifies the program’s administrative ease. Instead of featuring three different deductible levels, and three different family maximum levels, the same rate of subsidy (100 percent) is universally offered. This option also does away with the administrative burden of checking beneficiary’s income level with Revenue Canada.

Political Feasibility: 2 - Medium

This option would likely encounter intense political opposition from the private insurance market as well as from pharmaceutical companies. With fewer claimants to insure, the market for private insurance dwindles. Historical evidence supports this notion as private insurance companies opposed the potential implementation of a universal, tax-funded, prescription drug program in Quebec because of a fear of losing clients (Pomey et al, 2007). Pharmaceutical companies are expected to object to this option because the restrictive public formulary would now cover the entire population. This means that cheaper generic drugs, if effective, will receive favourable treatment over newer, more expensive, brand name pharmaceuticals. Business and union interests in the province would likely support this option because the public system would assume responsibility for all their plans’ prescription drug costs. Union support is exemplified by the following statement made by the Canadian Health Coalition, an organization comprised of various union interests: “The goal of a public PharmaCare plan would be to provide essential drugs approved on a national formulary to all Canadians on a first-dollar basis... (2007)”. Patients and advocates would support this option because it completely removes cost as a barrier to access, assuming that the formulary is managed in a manner that is cognizant of patient health.
7.2.5 Policy Alternative IV: Public/Private Model (9)

Effectiveness: 1 - Low

The Public/Private model receives a score of one for effectiveness. As Table 18 displays, a chronically ill person with annual household income of $14,999 spends up to the family maximum level, as they would under the status quo. In three of four possible scenarios, this policy option saves money for beneficiaries with household income of $30,000 and $50,000. The savings are most dramatic for households earning $50,000. Such households now pay $975 and $1425 respectively, compared to $1500 and $1950 under the Status Quo option. However, in four of six scenarios, beneficiaries pay between two and three percent of annual earnings towards drug expenditure, resulting in a score of one.

Table 18: Annual Public Patient Expenditure under the Public/Private Model

<table>
<thead>
<tr>
<th>Annual Income</th>
<th>$1500 Total Drug Costs</th>
<th>% of Income</th>
<th>$3000 Total Drug Costs</th>
<th>% of Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>$14,999</td>
<td>$300</td>
<td>2%</td>
<td>$300</td>
<td>2%</td>
</tr>
<tr>
<td>$30,000</td>
<td>$660</td>
<td>2.2%</td>
<td>$900</td>
<td>3%</td>
</tr>
<tr>
<td>$50,000</td>
<td>$975</td>
<td>1.95%</td>
<td>$1425</td>
<td>2.85%</td>
</tr>
</tbody>
</table>

Cost: 3 – High (Low Cost)

This policy option affects PharmaCare expenditures through two different avenues. First, privately insured beneficiaries, that comprise 55 percent of the population (Kapur and Busu,
2005), become ineligible for Fair PharmaCare benefits. Second, beneficiaries that remain within the public system have their deductibles reduced 50 percent. PharmaCare now covers 70 percent of the range between the old deductible and the new deductible. Using basic calculations, this analysis finds that Fair PharmaCare expenditures are reduced by $119,980,000. This represents a 14.6 percent decrease in overall PharmaCare expenditures.

**Horizontal Equity: 2 – Med**

Horizontal equity improves slightly under this policy. The gap between public coverage and private coverage for a beneficiary with household income of $50,000 is narrowed. However, under this plan, private insurance companies are responsible for providing catastrophic coverage and could raise premiums for business and employer-provided plans. This has the potential to narrow the gap further between publicly and privately insured patients.

<p>| Table 19: Comparison of Costs Incurred by a Privately Insured Patient and a Publicly Insured Patient, Annual Household Income, $50,000 |
|---------------------------------------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>Privately Insured Plan</th>
<th>Public/Private Model (Public Benefits)</th>
<th>Status Quo</th>
<th>Narrowing of Disparity Relative to the Status Quo %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Expense: $4500</td>
<td>$380</td>
<td>$975</td>
<td>$1500</td>
</tr>
<tr>
<td>Annual Expense: $3000</td>
<td>$380</td>
<td>$1425</td>
<td>$1950</td>
</tr>
</tbody>
</table>

**Administrative Ease: 1 - Low**

29 This calculation is made by decreasing Fair PharmaCare’s expenditure by 55 percent and then multiplying this number by two to reflect the lowered deductible, and then multiplying by .70 to represent the portion that PharmaCare will cover. This calculation is not entirely accurate because PharmaCare would cover 75 percent of the difference between the old deductible and new deductible for Enhanced Assistance plan beneficiaries; however, data on how the Program’s costs break down between the two programs are not available.
The public/private partnership model proposed in this analysis significantly increases the PharmaCare program’s administrative burden. Three different deductible levels and three different family maximum levels are retained for beneficiaries born after 1940. Furthermore, this option alters the deductible level for two of the income categories in the regular Fair PharmaCare benefit scheme. In addition to checking beneficiary’s income with Revenue Canada, this policy option introduces the additional administrative complexity of keeping track of whether an individual possesses, or has the option of possessing private insurance. For these reasons, the public/private partnership model receives a low score for administrative burden.

Political Feasibility: 2 - Medium

Private insurance companies are expected to support this policy option because it mandates a private tier of insurance. Private insurance companies were very much in favour of Quebec’s 1997 reforms because they were allowed to retain their share of the market and avoid taking on risky patients (Pomey et al., 2007). Pharmaceutical companies are likely to support this policy option because a greater reliance upon the private sector is achieved. This policy option is expected to be viewed unfavourably by business and unions, because of the associated increase in premium fees for employees. Employer provided plans must cover catastrophic costs; whereas under the current system, Fair PharmaCare handles this responsibility. Furthermore, drug coverage becomes mandatory, so pharmaceutical companies are not in danger of seeing their market shrink (Pomey et al. 2007). Patients and advocates should offer mild support. Deductibles in the public system become half as large; therefore saving chronically ill patients considerable amounts of money. Furthermore, if drug coverage becomes mandatory, the danger of patients falling through the cracks is eliminated.

7.2.6 Policy Alternative V: Graduated Coinsurance (8.5)

Effectiveness: 2 - Medium
This alternative receives a score of two for effectiveness.\textsuperscript{30} As Table 20 indicates, persons with household income below $15,000 do not pay anything for their essential medicines. A chronically ill patient incurring $1500 in annual expenses never pays more than two percent of their net household income. The only scenario in which a beneficiary pays three percent of their net household income on drugs is when annual expenditure equals $3000 for a household with income of $50,000.

\begin{table}[h]
\begin{center}
\begin{tabular}{|c|c|c|c|c|}
\hline
\textbf{Cost: $14999} & \textbf{$0$} & \textbf{0\%} & \textbf{$0$} & \textbf{0\%} \\
\hline
\textbf{$30000$} & \textbf{$375$} & \textbf{1.25\%} & \textbf{$750$} & \textbf{2.5\%} \\
\hline
\textbf{$50000$} & \textbf{$750$} & \textbf{1.5\%} & \textbf{$1500$} & \textbf{3\%} \\
\hline
\end{tabular}
\end{center}
\caption{Annual Patient Expenditure under the Status Quo}
\end{table}

\begin{flushleft}
\textit{Cost: 1 - Low (High Cost)}
\end{flushleft}

This policy alternative is based upon comparable systems being used in France, Denmark and Italy. The cost of this option depends entirely upon which medications PharmaCare considers essential, less essential, and non-essential. This analysis leaves it up to the Ministry to determine how the actual percentages will play out. However, by using France, Denmark, and Italy as rough guides, instituting this policy option is estimated to result in PharmaCare expenses growing considerably. In France, the graduated coinsurance system pays for 70.6 percent of overall prescription costs (CIHI, 2007). The French system also offers prescription charge exemptions for 31 different disease types; thus covering 100 percent of drug costs (Noyce et al., 2000). This

\textsuperscript{30} Because this analysis is studying the impact of cost upon a chronically ill person, it is assumed that 100 percent of drug costs are essential.
alternative does not create any new exemptions in addition to currently existing ones. Therefore, it would not consume a comparable portion of overall prescription costs. Denmark and Italy assume 55.9 percent and 50.5 percent of overall prescription drug costs, respectively (CIHI, 2007). For the sake of this analysis, I have chosen the average between the two (53.2 percent). If British Columbia were to assume 53.2 percent of prescription drug expenses, in 2005, overall PharmaCare expenditures become $1,148,056,000, a 39.4 percent increase over current expenditures ($2.158 billion \times 53.2\%).

*Horizontal Equity: 2.5 – Medium/High*

This option improves horizontal equity by offering first dollar coverage to the entire population. Rather than paying a deductible before cost sharing with PharmaCare, individuals without private insurance receive immediate subsidization of drug costs. Depending upon a beneficiary's income level, however, an individual may not receive comparable coverage with a privately insured counterpart. A beneficiary with household earnings greater than $50,000 receives 50 percent subsidization of essential medications. While a dramatic improvement over the status quo, a privately insured individual receives more favourable coverage. Furthermore, the larger a beneficiaries drug costs become, the wider the gap between private and public coverage grows.
Table 21: Comparison of Costs Incurred by a Privately Insured Patient and a Publicly Insured Patient, Annual Household Income, $50,000

<table>
<thead>
<tr>
<th></th>
<th>Privately Insured Plan</th>
<th>Public Plan</th>
<th>Status Quo</th>
<th>Narrowing of Disparity Relative to Status Quo %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Expense: $1500</td>
<td>$380</td>
<td>$750</td>
<td>$1500</td>
<td>67%</td>
</tr>
<tr>
<td>Annual Expense: $3000</td>
<td>$380</td>
<td>$1500</td>
<td>$1950</td>
<td>28.7%</td>
</tr>
</tbody>
</table>

Administrative Ease: 1 - Low

This policy option drastically increases the administrative complexity of the Fair PharmaCare program. Deductible levels are erased in favour of three different coinsurance rates based upon the therapeutic value of a medication. In total, this option introduces nine different coinsurance rates. The province’s drug formulary should be able to handle the task of assigning therapeutic values to medications; however, this additional task increases responsibilities for drug formulary administrators. Furthermore, PharmaCare administrators must deal with the administrative burden of allowing beneficiaries born before 1940 to choose whether they prefer the current enhanced plan, or the graduated coinsurance plan.

Political Feasibility: 2 – Medium

The graduated Coinsurance alternative receives a medium score because it receives political support from two of four actors. Private insurance interests will likely not support this option because the public system would offer first-dollar coverage for a large proportion of available drugs. Private insurance companies will see their potential profits sink because the public system covers a greater share of overall drug costs. Pharmaceutical companies will also likely oppose this option because public subsidy is linked with the provincial drug formulary, which favours cheaper, generic brand drugs. Business and union interests should support this.
option as premiums go down in response to smaller claims for private insurance coverage.

Patients and advocates will also likely support this option because first-dollar coverage becomes available to all households. However, in regard to households with income below $15,000, there may be concern about the subsidy for less essential drugs dropping from 70 percent under Fair PharmaCare, to 50 percent under this proposed alternative.

7.3 Recommendations and other Considerations

This section presents my recommendations based upon the preceding analysis. Table 22 shows each alternative’s score against the chosen criteria. My analysis shows that the clear winner is the Full PharmaCare option, receiving a score of 12 out of a possible 15 points. It is also the only alternative that scores three points against the effectiveness criteria, and erases all inequities fostered by the current system of public and private pharmaceutical coverage.
Table 22: Analysis of Policy Options

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Effectiveness</th>
<th>Horizontal Equity</th>
<th>Administrative Ease</th>
<th>Cost</th>
<th>Political Feasibility</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Quo</td>
<td>Low (1)</td>
<td>Low (1)</td>
<td>Medium (2)</td>
<td>High (3)</td>
<td>High (3)</td>
<td>10</td>
</tr>
<tr>
<td>Expanded/Middle Income Range</td>
<td>Low (1)</td>
<td>Medium (2)</td>
<td>Medium (2)</td>
<td>High (3)</td>
<td>Medium (2)</td>
<td>10</td>
</tr>
<tr>
<td>Full PharmaCare</td>
<td>High (3)</td>
<td>High (3)</td>
<td>High (3)</td>
<td>Low (1)</td>
<td>Medium (2)</td>
<td>12</td>
</tr>
<tr>
<td>Public/Private</td>
<td>Low (1)</td>
<td>Medium/High (2)</td>
<td>Low (1)</td>
<td>High (3)</td>
<td>Medium (2)</td>
<td>9</td>
</tr>
<tr>
<td>Graduated Coinsurance</td>
<td>Medium (2)</td>
<td>Medium/High (2.5)</td>
<td>Low (1)</td>
<td>Low (1)</td>
<td>Medium (2)</td>
<td>8.5</td>
</tr>
</tbody>
</table>

There are two factors working against immediate implementation of this alternative: one is the extremely large cost associated with its start-up, and annual operation. Figure 4 provides a cost comparison of all five alternatives. The cost of the Fair PharmaCare program towers over the costs of all other options. The $2.158 billion price tag creates a 175 percent increase in costs for the PharmaCare program. Implementing this alternative requires a massive budget increase with the funds presumably arriving through taxation, or through cost shifting.
Nevertheless, a large budgetary increase for the PharmaCare program should not eliminate this option from consideration. Increased public spending on PharmaCare could be a prudent use of funds aimed at achieving long-term savings and health goals. Prescription drug therapy helps manage chronic conditions, reduces morbidity and mortality, and reduces long-term health spending (British Columbia Medical Association, 2007). Over time, the benefits of reduced administration costs, enhanced bargaining power, and improved adherence to medications could create downstream savings and help mitigate the large annual cost.

Fiscal realities suggest that a fully subsidized, first dollar pharmaceutical system is difficult to implement in the short-term. I therefore recommend that BC PharmaCare proceed with a series of short-term (two-year) strategies, and one long-term (10-year) strategy. The goal of the short-term strategy is to lessen the financial burden imposed on patients, relative to the status quo, and improve the program’s image, and enrolment, through a communications strategy. Table 22 shows that the expanded Middle Income Range Option performed second best, along with the status quo, by scoring 10 points out of a possible 15. This option creates modest savings for patients with an estimated increase in annual cost for PharmaCare that is below 10 percent of
its present budget. Administratively, the program continues to be income-based and reduces the complexity of distributing benefits for seniors covered under the enhanced plan. In the short-term, implementing this alternative shifts the burden of pharmaceutical spending back towards public sources of funding and signals a commitment from PharmaCare that providing pharmaceutical benefits is an important goal of the public health care system. Every two years, BC PharmaCare could increase its budget by 10 percent, over and above the rising price of pharmaceuticals.

In the long-term, PharmaCare should proceed towards implementing a pharmaceutical program that delivers universal, and completely subsidized prescription drugs for the entire population. My analysis shows that this decision will increase access, address inequities, and improve cost-control. Decisions of this nature are never made in isolation. Pharmaceutical spending is already consuming a growing proportion of the provincial health budget. The question for the Ministry of Health is whether the large and growing public investment in pharmaceuticals should promote effectiveness, equity, and positive health outcomes, or inequitable distributions of financial burden and less than optimal population health. I therefore recommend that the PharmaCare program work closely with the Ministry of Health to develop a long-term goal of completely subsidizing prescription drugs, and enveloping out-patient prescription drug coverage within the province’s public health care system.
8: Conclusion

Through focus groups, phone interviews, and a literature review, my study proposes policy alternatives for the PharmaCare program that address the needs of chronically ill patients in the province. The growing importance and utilization of outpatient prescription drug therapy should make effective access to medicines a top concern for health care policy-makers. The results of my study show that a large number of chronically ill patients in British Columbia receive first-dollar coverage from private sources; thus, they are not burdened by the cost of medicines. However, my results also show that for patients relying upon Fair PharmaCare coverage are susceptible to reduced access, and non-adherence to medications. The absolute necessity of prescription drug therapy for chronically ill patients makes pharmaceutical coverage every bit as important as total access to hospital and physician services. Yet, the current system fosters an inequitable situation where possession of first dollar pharmaceutical benefits is determined by factors such as income and employment type. By failing to offer universally subsidized first dollar pharmacare, British Columbia, and Canada, are treating outpatient pharmaceutical coverage as the lesser of these forms of medical care.

Income-Based catastrophic drug coverage programs are used by public pharmaceutical plans to limit the financial burden of drug spending upon patients, and improve access to medicines. The income-based structure of such programs creates first-dollar coverage for very low-income households on the presumption that user-fees deter the poor from accessing care. Deductibles are introduced on lower-middle and middle income households on the presumption that adequate resources are available to pay the full-cost of drugs up to the deductible level. My study confirms that the large deductible within British Columbia’s Fair PharmaCare program creates undue financial burden upon members of the middle-class population that lack private
sources of insurance. For such middle-class beneficiaries, the cost of covering the deductible encourages under-utilization of medicines, and difficult trade-offs with other essential purchases. The implications for policy-makers are clear. Limiting public coverage to last-dollar subsidies runs the risk of deterring access to care. Granted, a large proportion of this middle-class population has private insurance coverage. Nevertheless, assuming the results of my study are transferable, 19 percent (four out of 21) of the chronically ill population earning household income between $30,000 and $50,000 are cutting back on essential medicines, and medical devices. The large deductible imposed on this population may lead towards inadequate health outcomes and larger downstream costs for the health care system as a whole.

Based on these findings, I laid out four alternative benefit designs with the potential to serve the chronically ill population in British Columbia. My analysis concludes that larger public subsidies would decrease the financial strain felt by participants and vastly improve the inequities fostered by the current system of pharmaceutical coverage. I conclude that the Fair PharmaCare program requires reform to better serve the vulnerable population that I discovered; however, two major impediments stand in the way of creating a fully subsidized system: the cost of the program; and political opposition. As such, I recommend that the PharmaCare program retain its income-based, deductible structure, and begin shifting the burden of pharmaceutical spending towards public sources of funding, with a long-term goal of providing a fully subsidized system.
Appendix A: Focus Group/Interview Guide

Introduction:
1. Let's start by going around the table and introducing ourselves. I'd like to find out a little bit about each of you. I'd like to know how long you have lived in B.C. and anything else you feel comfortable sharing with the group.
2. How many people have heard about the Fair PharmaCare program?
   • Introductory softball question
   • Should discover which participants are enrolled and which participants are not
   • Should also discover whether the program has a high profile amongst the group
3. Can anyone explain to me how the program works?
   • Designed to get people talking about their feelings regarding the program
   • Discovers whether people understand how the program operates
4. For those that are enrolled. What made you decide to enrol with the program?
   a) How did you find the registration process

Chronic Conditions:
1. Can you describe the experience of living with your condition?
   • Responses may include general experiences, and impact on family/friends/daily activities/employment
2. How important are prescription drugs in the management of your condition?
   • Discovers the importance of access to prescription drugs
   a) How has this changed over the last 10 -15 years?

Access to Medications:
1. What kinds of things help you access your medications?
2. What kinds of things hurt your access to medications?
   • Responses may include cost, severity of illness, possible trade-offs made with other essential household items.
3. What do you think about the Fair PharmaCare insurance plan?
   a. What do you like about it?
   b. What don't you like about it?
   c. How “Fair” do you think the program is?
   d. What changes would you make to the program?
Appendix B: Participant Questionnaire

1. Please identify the condition, or conditions, which you currently have.
   1. Diabetes
   2. Cardiovascular Disease
   3. Both

2. Are you enrolled in the Fair PharmaCare program?
   1. Yes
   2. No

3. Aside from Fair PharmaCare, please indicate the type of drug coverage that you currently have. If you use more than one of these programs, check all that apply.
   1. Employer or Retiree Coverage
   2. No Current Prescription Drug Coverage – purchase out of pocket
   3. Private Insurance plan purchased individually

4. How many prescription drugs do you take in a month? __

5. How many prescriptions are you currently using? __

6. What is your average out-of-pocket cost in a month __

7. If applicable, how much do you currently pay on supplemental insurance premiums each month for prescription drug coverage? $ __

8. In the past 12 months, how would you describe your experience paying for prescription medications?
   1. Major Problem
   2. Minor Problem
   3. Not a Problem

9. Does the Fair PharmaCare plan cover all the medications that you need to take?
   1. Yes
   2. No
   3. Unsure

10. If enrolled in the Fair PharmaCare program, have you reached the annual deductible (3% of household income)
    1. Yes
    2. No

11. If enrolled in the Fair PharmaCare program, have you reached the family maximum (4% of household income)
1. Yes
2. No

13. Are you currently...
1. Employed full time
2. Employed part-time
3. Retired and not working
4. Unemployed and looking for work
5. Something else

14. Please check the box that indicates your age range:

1. 20-29
2. 30-39
3. 40-49
4. 50-59
5. 60-69
6. 70+
Appendix C: Statistics Canada: Household Income

<table>
<thead>
<tr>
<th>Household Income Group</th>
<th>People in Household</th>
<th>Total Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>1 to 4</td>
<td>Less than $10,000</td>
</tr>
<tr>
<td>5 or more</td>
<td></td>
<td>Less than $15,000</td>
</tr>
<tr>
<td>Lower-Middle</td>
<td>1 or 2</td>
<td>$10,000 to $14,999</td>
</tr>
<tr>
<td>3 or 4</td>
<td></td>
<td>$10,000 to $19,999</td>
</tr>
<tr>
<td>5 or more</td>
<td></td>
<td>$15,000 to $29,999</td>
</tr>
<tr>
<td>Middle</td>
<td>1 or 2</td>
<td>$15,000 to $29,999</td>
</tr>
<tr>
<td>3 or 4</td>
<td></td>
<td>$20,000 to $39,999</td>
</tr>
<tr>
<td>5 or more</td>
<td></td>
<td>$30,000 to $59,999</td>
</tr>
<tr>
<td>Upper-Middle</td>
<td>1 or 2</td>
<td>$30,000 to $59,999</td>
</tr>
<tr>
<td>3 or 4</td>
<td></td>
<td>$40,000 to $79,999</td>
</tr>
<tr>
<td>5 or more</td>
<td></td>
<td>$60,000 to $79,999</td>
</tr>
<tr>
<td>Highest</td>
<td>1 or 2</td>
<td>$60,000 or more</td>
</tr>
<tr>
<td>3 or more</td>
<td></td>
<td>$80,000 or more</td>
</tr>
</tbody>
</table>

### Appendix D: PharmaCare Expenditures

#### PharmaCare Expenditures: Total

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Rx (millions)</strong></td>
<td>13.301</td>
<td>14.462</td>
<td>16.158</td>
<td>14.820</td>
<td>15.763</td>
<td>17.915</td>
<td>19.767</td>
</tr>
<tr>
<td><strong>Number of beneficiaries (millions)</strong></td>
<td>.850</td>
<td>.881</td>
<td>.915</td>
<td>.814</td>
<td>.900</td>
<td>.826</td>
<td>.817</td>
</tr>
<tr>
<td><strong>Total amount paid</strong></td>
<td>$490.946</td>
<td>$572.219</td>
<td>$656.728</td>
<td>$658.092</td>
<td>$658.532</td>
<td>$715.177</td>
<td>$773.196</td>
</tr>
<tr>
<td><strong>Avg number of Rx's per beneficiary</strong></td>
<td>15.66</td>
<td>16.42</td>
<td>17.66</td>
<td>18.2</td>
<td>17.52</td>
<td>21.68</td>
<td>24.18</td>
</tr>
<tr>
<td><strong>Avg total amount paid per Rx</strong></td>
<td>$36.91</td>
<td>$39.57</td>
<td>$40.65</td>
<td>$44.41</td>
<td>$41.78</td>
<td>$39.92</td>
<td>$39.12</td>
</tr>
</tbody>
</table>

#### Fair PharmaCare Expenditures: Total

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Rx (Millions)</strong></td>
<td>6.6</td>
<td>10.2</td>
<td>11</td>
</tr>
<tr>
<td><strong>Number of beneficiaries</strong></td>
<td>.613</td>
<td>.643</td>
<td>.637</td>
</tr>
<tr>
<td><strong>Total amount paid (millions)</strong></td>
<td>$305.945</td>
<td>$459.002</td>
<td>$489.579</td>
</tr>
<tr>
<td><strong>Avg number of Rx's per beneficiary</strong></td>
<td>10.79</td>
<td>15.81</td>
<td>17.27</td>
</tr>
<tr>
<td><strong>Avg total paid cost per beneficiary</strong></td>
<td>499.17</td>
<td>714.26</td>
<td>768.75</td>
</tr>
</tbody>
</table>

Source: BC PharmaCare, 2007.
Appendix E: Effectiveness Scoring

Table 23: Effectiveness Scoring (A)

<table>
<thead>
<tr>
<th>Household Income: $15,000</th>
<th>Alternatives</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1500</td>
<td>$300</td>
<td>$300</td>
<td>$0</td>
<td>$300</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>$3000</td>
<td>$300</td>
<td>$300</td>
<td>$0</td>
<td>$300</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>Household Income: $30,000</td>
<td>$1500 $870</td>
<td>$870</td>
<td>$0</td>
<td>$660</td>
<td>$375</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$3000 $900</td>
<td>$900</td>
<td>$0</td>
<td>$900</td>
<td>$750</td>
<td></td>
</tr>
<tr>
<td>Household Income: $50,000</td>
<td>$1500 $1500</td>
<td>$1500</td>
<td>$0</td>
<td>$975</td>
<td>$750</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$3000 $1950</td>
<td>$1500</td>
<td>$0</td>
<td>$1425</td>
<td>$1500</td>
<td></td>
</tr>
</tbody>
</table>

This above table displays the performance of each alternative, for three different household income levels ($15,000, $30,000, and $50,000), according to the cost generated for two hypothetical patients: one incurring $1500 dollars in annual expenditure; and a second incurring $3000 in annual expenditure.

An alternative’s score is determined by the number times a hypothetical patients’ annual expenditure crosses a defined threshold:

3 points for every scenario that generates annual costs below 1 percent of net household income

2 points for every scenario that generates annual costs falling between 1 and 1.99 percent of annual household income.

1 point for every scenario that generates annual costs falling between 2 and 2.99 percent of annual household income

0 points for every scenario that generates annual costs above 2.99 percent of annual household income.

To see how the system works, consider the following example: Patient expenditure under the status quo falls between 2 and 2.99 percent of household income on 3 occasions (3 X 1 = 3). Therefore, the Status Quo receives 3 points. Table 25 shows that scoring 3
points earns the Status Quo a low ranking for effectiveness.

Concurrently, Alternative 4 generates 6 points because costs fall between 1 and 1.99 percent on one occasion (1 X 2 = 2); costs fall between 2 and 2.99 percent 4 times (4 X 1 = 4); costs rise above 2.99 percent on one occasion (1 X 0 = 0)

Table 24: Effectiveness Scoring (B)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Score</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs do not rise above .99 percent of household income</td>
<td>3</td>
<td>6 2</td>
</tr>
<tr>
<td>Costs fall between 1 and 1.99 percent of household income</td>
<td>2</td>
<td>1 2</td>
</tr>
<tr>
<td>Costs fall between 2 and 2.99 percent of household income</td>
<td>1</td>
<td>3 4 4 1</td>
</tr>
<tr>
<td>Costs rise above 2.99 percent of household income</td>
<td>0</td>
<td>3 2 1 1</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>4 18 6 11</td>
</tr>
</tbody>
</table>

The score earned by each alternative is then assigned a value of High, Medium, and Low according to the table below.

Table 25: Effectiveness Scoring (C)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Definition</th>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>How much money will a chronically ill person pay in one year under the alternative?</td>
<td>14 to 18</td>
<td>3. High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 to 13</td>
<td>2. Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 and below</td>
<td>1. Low</td>
</tr>
</tbody>
</table>

89
Bibliography

Works Cited


