



# Who's the Fairest of Them All? Which Provincial Pharmacare Model Would Best Protect Canadians Against Catastrophic Drug Costs?

Megan E. Coombes, Steven G. Morgan, Morris L. Barer and Nino Pagliccia

Correspondence may be addressed to Megan E. Coombes, Centre for Health Services and Policy Research, University of British Columbia, 429 – 2194 Health Sciences Mall, Vancouver, BC V6T 1Z3  
Tel. 604-822-5349; e-mail [mcoombes@interchange.ubc.ca](mailto:mcoombes@interchange.ubc.ca)

## ABSTRACT

**Background:** Public prescription drug plans vary markedly across Canada. To address perceived inequities in coverage across provinces, the February 2003 First Ministers' Accord on Health Care Renewal committed to ensuring that all Canadians have reasonable access to catastrophic drug coverage. A national standard for "reasonable" catastrophic coverage has yet to be formally defined.

**Objective:** To compare the private financial burdens from prescription drugs that Canadian households would face if each of the current provincial pharmacare models were adopted as the national standard.

**Methods:** Through simulation modelling, we computed household private financial burden by applying the cost-sharing rules from provincial drug plans to a nationally representative set of 4,860 household types differing in size, age composition, income and drug expense levels. The proportions of households that would face private out-

of-pocket payments exceeding critical, or catastrophic, percentages of household income were calculated.

**Results:** Private financial burden due to prescription drug costs varies considerably across provincial pharmacare models. Comprehensive, tax-financed pharmacare models that limit out-of-pocket expenditures to a given percentage of income, such as those found in British Columbia, Saskatchewan, Manitoba and Ontario, provide the greatest protection against catastrophic prescription drug costs. There appears, however, to be no "gold standard" for an acceptable financial burden to be borne by patients.

Prescription drugs are playing an increasingly important role in Canadian healthcare. In 2003, Canadians spent \$16 billion on out-of-hospital prescription drugs, making them the second-largest cost component of the healthcare system (Canadian Institute for Health Information 2003). Yet public coverage for outpatient prescrip-

tion drugs is not mandated under the Canada Health Act or any other federal legislation. Provincial governments have independently established outpatient prescription drug subsidy plans, resulting in a "patchwork" system of coverage that varies across and within provinces (Grootendorst 2003; Willison et al. 1998; Anis et al. 2001; Gregoire et al. 2001). To address perceived inequities in outpatient prescription drug coverage, the February 2003 First Ministers' Accord on Health Care Renewal included a commitment to ensure "that Canadians, wherever they live, will have reasonable access to catastrophic drug coverage" (Health Canada 2003). The standard of "reasonable" coverage has yet to be defined.

Previous examinations of the extent to which Canadians would be protected against catastrophic prescription drug costs simulated the degree of protection against hypothetical drug cost levels offered within provinces (Applied Management 2000; Fraser Group Tristat Resources 2002;

Kapur and Basu 2003). Although none of these studies applied empirically determined distributions of drug expense levels, they have been influential in highlighting variations in coverage. The research reported here builds on these previous studies by illustrating the variation in protection against catastrophic drug costs offered by the 10 provincial pharmacare models. Our intention is slightly different from previous studies: we aim to illustrate the degree of protection that would be offered across Canada if different provincial pharmacare models were adopted as the national standard. Our study is unique in that it applies empirically defined distributions of drug expenditures and uses Canadian census data to estimate the proportions of senior and non-senior households affected by different pharmacare policies.

## METHODS

This is a policy simulation study based on the cost-sharing rules from each of the provincial drug plans as of August 1, 2003. Cost-sharing rules (detailed in Appendix A\*) specify the premium, deductible and/or co-payment amounts and whether a maximum out-of-pocket contribution limit applies. Table 1 provides definitions of these terms. "Private financial burden" was the output of primary interest; it comprised any drug costs not covered by a public drug plan, including "out-of-pocket payments" and payments covered by private insurance. Premiums for public drug plans were also included as private costs; though not technically "out-of-pocket" at the point of purchase, premiums affect the affordability of a drug plan, particularly for low-income families. (Appendix B contains the results of sensitivity analyses where premiums

were excluded from the calculation of annual out-of-pocket costs.\*)

Policy simulations were conducted for a nationally representative set of 4,860 household types differing in size, age composition, income and drug expense levels. Households were defined by several characteristics:

- Number of seniors: 0, 1 or 2
- Number of non-senior adults: 0, 1 or 2
- Number of children under 18: 0 or 2
- Annual net taxable household income: \$5,000, \$20,000, \$40,000, \$60,000, \$80,000 or \$100,000
- Annual household prescription drug costs: one of 50 levels from \$0 to \$12,000
- Average prescription cost

The source of each variable is described below.

Each household's private financial burden was expressed as a percentage of its net taxable income. Population coverage under different provincial models was computed as the percentage of households whose private financial burden exceeded different percentages of household income. Simulations were carried out using SAS® Release 8.02 on a Microsoft® Windows 98 platform. Output analyses were completed using Microsoft® Excel 2000.

## Household types

A set of six "typical" private household types were selected for parsimony and based on availability of income distribution data from the 2001 Census (Statistics Canada 2001). The six household types accounted for approximately 87% of all private households in the census: single senior

Table 1. Definitions of terms used in provincial drug plans

Term	Definition
Premium	An amount paid for entitlement to reimbursement of eligible expenses, irrespective of the actual expenses incurred. Payments are made either annually (usually through income taxes), semiannually, quarterly or monthly to the plan provider.
Deductible	The amount of eligible prescription drug expense that must be paid by an individual before the plan provider reimburses any expenses. This may be either a fixed dollar amount or a fixed percentage of family income. The length of time allowed to accumulate the deductible may vary.
Co-payment/ Co-insurance	Once the deductible has been reached, this is the portion of the cost of each prescription that must be paid by the individual thereafter. May be either a flat amount per prescription (co-payment) or a fixed percentage per prescription (co-insurance).
Ingredient Cost	The amount paid for ingredients in the prescription dispensed.
Pharmacist's Professional Fee	The fee charged per prescription by pharmacists for prescriptions dispensed.
Maximum Out-of-Pocket Contribution Limit	The maximum drug expense due to deductibles and co-payments or co-insurance that may be imposed on a beneficiary in a given period (usually a year). May be either a fixed upper limit or a fixed percentage of income. Once this maximum has been met, the plan provider pays 100% of the remaining expenses. The lower this limit, the greater the protection against catastrophic drug expenses.

\* Appendixes can be found at <http://www.longwoods.com/LReview/LR23/LR23Coombes.html>

(9%), single non-senior (17%), senior couple without children (8%), non-senior couple with (26%) and without (18%) children under 18 years of age and non-senior lone-parent households with children under 18 (9%). Couples were defined as married or common-law, opposite- or same-sex. Families with children were assumed to have two. Excluded were primarily multifamily households, senior families with children and non-senior families with children older than 18 years.

### Annual household income

Household income bands used in the 2001 Census were collapsed to six broad bands. The approximate median income within each broad band was used as the representative income for households falling within that income band. These median incomes, which were assumed to be net taxable incomes, were \$5,000, \$20,000, \$40,000, \$60,000, \$80,000 and \$100,000. Households were assumed to qualify for social assistance (non-seniors) or guaranteed income supplements (seniors) based on published cutoffs for income relative to household size (Human Resources Development Canada 2003). Census data provided the numbers of households within each of the six household types with incomes falling in each of the six broad bands. Stratification by income and household type significantly increased the realism of simulation results. For example, Table 1 in Appendix C\*, which summarizes the distribution of income across household types, shows that single seniors are much less likely to have incomes in the highest income bands than single non-seniors.

### Annual prescription drug costs

While average drug cost information is routinely presented in studies, valid information about the distribution of drug costs across individuals is rare owing to scarcity of population-based, patient-specific databases.

Distributions used in our simulation were drawn from the only published data on population-based, patient-specific drug spending: an analysis of Manitobans' total prescription drug costs for fiscal year 2000–01 (Morgan et al. 2003). From the Manitoba data, median drug cost levels of \$0, \$100, \$500, \$1,000 and \$3,000 were selected, representing approximately 35%, 30%, 25%, 5% and 5% of the population, respectively. In other words, 30% of individuals had drug costs between \$52 and \$162, with a median value of approximately \$100, and so on. The drug cost distributions available from Manitoba were not stratified by age; however, studies have shown that prescription drug expenditures increase with age (Mueller et al. 1997; Wallack et al. 2001). In an attempt to make our simulations more realistic, we used the assumptions in Table 2 to estimate the probability that a household had a particular level of annual prescription drug costs. These assumptions were calibrated for consistency with the average senior, non-senior and child drug cost levels to age-specific averages presented elsewhere (Metge et al. 1999).

For single-person households, the distributions of household drug costs were identical to the age-specific individual drug cost distributions. Multiperson household drug costs

Table 2. Distribution assumptions for annual prescription drug cost levels by age

Annual Prescription Drug Cost Level	Senior (65+ yrs)	Adult (18–64 yrs)	Child (<18 yrs)
\$0	10%	35%	55%
\$100	20%	30%	20%
\$500	40%	25%	15%
\$1,000	20%	5%	5%
\$3,000	10%	5%	5%

were computed based on the joint distributions of age-specific individual drug costs for each member. Possible household drug costs fell into 50 different potential levels, ranging from \$0 (if all members of a household had no drug expenses) to \$12,000 (if each member of a four-person family had \$3,000 in drug expenses). Simple Bayesian theory was used to calculate the probability that a given household type had a given level of drug cost. The permutations of household types, incomes, and drug costs resulted in a representative set of 4,860 different households for the simulations. We conducted sensitivity analyses by increasing and decreasing all drug cost levels by 20% (Appendix D\*). The sensitivity analysis revealed little effect of such variation in annual drug costs.

### Cost per prescription

Some provincial plans, such as Newfoundland's seniors' plan, make use of ingredient costs and pharmacists' professional fees to calculate co-payments. Therefore, it was necessary to approximate these amounts separately in determining the total prescription cost.

According to data from IMS Health, the average cost per prescription in 2000, including professional fee, was approximately \$37.80 (IMS Health

\* Appendixes can be found at <http://www.longwoods.com/LReview/LR23/LR23Coombes.html>

Canada 2002). As well, an analysis of prescription costs in Manitoba found that the average ingredient cost per prescription for individuals with drug expenditures greater than \$2,500 per year was nearly double that of the overall Manitoba population (Kozyrskyj et al. 2002). Based on these findings, ingredient costs of \$30 and \$60 each with an assumed professional fee of \$7.80 (i.e., prescription costs of \$37.80 and \$67.80) were used for households with annual prescription drug costs less than or equal to \$2,500 and greater than \$2,500, respectively. The same professional fee (\$7.80) was used for every province unless the cost-sharing rules stipulated a maximum less than \$7.80, in which case the lower of the two was used. For example, under Ontario's plan for "other" seniors, co-payments were calculated at \$6.11 per prescription.

The annual prescription drug cost level was divided by the cost per prescription to arrive at the number of

prescriptions dispensed in one year. This step was necessary to calculate co-payments under some plans. For example, non-seniors receiving social assistance in Alberta pay \$2 for the first three prescriptions each month. We assumed that prescriptions were dispensed evenly throughout the year.

We conducted sensitivity analyses in which we assumed prescription costs of \$37.80 and \$67.80 for all annual drug cost levels (Appendix E\*). Changes to prescription cost caused slight alterations to the proportion of households that would face private financial burdens exceeding critical percentages of household income, but were not large enough to affect the relative standings of the provincial pharmacare models.

## RESULTS

Tables 3 and 4 show the percentages of Canada's senior and non-senior households that would face given levels of private drug costs as a percentage of

household income if each provincial pharmacare model was adopted as the national standard. Comprehensive, tax-financed seniors' drug plans such as the Ontario Drug Benefit plan offer the most protection against modest as well as higher drug costs. According to our simulations, if Canada were to adopt Ontario's pharmacare model as a national standard, most Canadian seniors would bear relatively modest drug costs as a share of household income: no senior household in Canada would pay more than 4% of its annual household income on prescription drug costs. In contrast, premium-based plans such as those in Nova Scotia or Quebec leave a large proportion of the senior population to bear relatively high private costs: this is true despite apparently "generous" deductible and co-payment structures.

Pharmacare models that subsidize only low-income seniors leave many senior households with little or no coverage. Combined with the often

Table 3. Percentage of senior households by out-of-pocket expenditure on prescription drugs as a percentage of annual household income, by province

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	44.1%	65.7%	22.9%	22.9%	81.1%	2.1%	6.5%	12.5%	38.6%	32.5%
1–1.9%	46.6%	18.8%	14.6%	14.6%	18.8%	13.0%	15.9%	23.5%	33.7%	17.6%
2–2.9%	8.8%	6.0%	25.1%	26.0%	0.1%	23.1%	16.5%	15.0%	16.1%	24.7%
3–3.9%	0.4%	1.7%	37.3%	36.5%	0.0%	26.0%	19.1%	7.8%	7.3%	6.0%
4–4.9%	0.0%	5.2%	0.0%	0.0%	0.0%	21.2%	25.9%	12.2%	3.0%	0.4%
5–5.9%	0.0%	2.5%	0.0%	0.0%	0.0%	14.7%	16.1%	28.9%	1.1%	13.7%
10–14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.8%
15–19.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	4.2%
≥20%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4. Percentage of non-senior households by out-of-pocket expenditure on prescription drugs as a percentage of annual household income, by province

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	54.1%	43.3%	54.1%	54.1%	52.4%	17.5%	50.0%	50.0%	57.2%	54.1%
1–1.9%	19.1%	38.7%	17.2%	17.2%	26.1%	36.1%	21.4%	21.4%	20.7%	19.1%
2–2.9%	11.7%	10.6%	7.3%	13.1%	12.5%	24.5%	9.1%	9.1%	8.2%	8.3%
3–3.9%	11.6%	4.3%	21.4%	15.5%	9.1%	11.0%	6.3%	5.8%	4.3%	5.6%
4–4.9%	3.6%	0.9%	0.0%	0.0%	0.0%	6.7%	1.8%	2.1%	1.5%	1.6%
5–5.9%	0.0%	2.1%	0.0%	0.0%	0.0%	4.2%	8.4%	8.6%	6.5%	8.3%
10–14.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%	0.6%	0.7%
15–19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	0.9%	1.9%
≥20%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	0.0%	0.4%

\* Appendixes can be found at <http://www.longwoods.com/LReview/LR23/LR23Coombes.html>

costlier drugs used by seniors, this can result in many households facing high costs as a percentage of income. Newfoundland, for example, provides coverage for seniors only with annual household incomes below a low threshold. If this model were adopted as the national standard, almost one-fifth of all senior households in Canada would pay more than 4% of their net taxable income on prescription drug costs, and just over 4% of senior households would pay 15% or more.

The considerable variation in out-of-pocket prescription drug expenditures borne by non-seniors under the different provincial pharmacare models can be seen in Table 4. Pharmacare programs that limit out-of-pocket expenditures to a given percentage of income protect all households against extraordinarily high financial burdens. Examples of such coverage are increasingly common in Canada. Manitoba, Saskatchewan, British Columbia and Ontario (through the Trillium program) all offer some form of income-based limits on out-of-pocket household drug expenditures. It is noteworthy that Ontario's model appears most generous in this simulation. This finding results from the assumption of 100% participation in the Trillium program by the non-senior Canadian households examined in this study. Since there is an application process associated with the Trillium program, in reality, fewer than 100% of eligible households would likely take advantage of the subsidy offered.

In marked contrast, pharmacare models that provide little or no coverage for non-seniors result in significant proportions of the population bearing private drug costs above 4% of household income. Subsidy programs such as those in the Atlantic provinces illustrate the impact of offering no coverage

for non-seniors above low-income cut-offs. For example, if Nova Scotia's pharmacare model were adopted as the national standard, close to 14% of Canada's non-senior households would pay 4% or more of their annual net taxable household income on prescription drugs. In fact, under three of the four current Atlantic pharmacare models, 3% or more of Canada's non-senior households would pay considerably more out of pocket than under the other provincial pharmacare plans.

Between the extremes lie premium-based programs for non-senior populations. Examples of these are found in Alberta and Quebec. These models offer reasonable coverage for most of the population, but the combined cost of premiums and co-payments can become a significant share of household income. This is particularly true if plans do not employ limits on household contributions, as in Alberta.

## DISCUSSION

While our study focused on single drug cost levels, rather than a realistic distribution of drug costs drawn from empirical research, the results are broadly consistent with those of the earlier work cited above. Simulations consistently reveal that a national catastrophic drug benefit plan modelled after the current plans in the Atlantic provinces would confer the least protection against out-of-pocket catastrophic drug costs for both senior and non-senior households. Perhaps more importantly, simulations also show that the considerable variation in protection conferred by the provincial pharmacare models may be attributed to three influential design components: eligibility rules, premiums and maximum out-of-pocket contribution limits.

First, eligibility rules typically target benefits by age, low-income thresholds

or both. When pharmacare programs are not comprehensive, many senior and non-senior households could be exposed to high drug cost burdens as a percentage of household expenditures.

Second, premiums have a considerable influence on the extent to which provincial pharmacare models provide protection against catastrophic drug costs. Plans that charge seniors premiums, such as those in Quebec, New Brunswick and Nova Scotia, and plans that charge non-seniors premiums, such as those in Quebec and Alberta, appear to provide greater protection against catastrophic drug costs when premiums are not included in calculating out-of-pocket payments. However, as demonstrated in Table 5, plans that charge premiums can substantially reduce their ability to protect against out-of-pocket expenditures exceeding any given threshold.

A third key design feature that strongly influences protection against catastrophic drug costs is whether and at what levels the plan places a limit on a household's total out-of-pocket contribution. Without contribution limits, households can spend significant amounts of income on deductibles and, more importantly, co-payments or co-insurance. A 25% co-payment on a household's drug costs of \$12,000 will be a significant burden to virtually any family. Furthermore, absolute maximum contribution limits, such as those employed in Quebec, New Brunswick and Nova Scotia, are not sensitive to household income and, depending on the limit, may provide at best minimal protection for low-income households. Maximum contribution limits that are a function of income, such as those employed in British Columbia, Saskatchewan and Manitoba, tend to provide better protection against catastrophic payments.



Table 5. Comparison against previously published "catastrophic" thresholds: percentage of senior and non-senior households with out-of-pocket expenditures on prescription drugs as a percentage of annual household income equal to 4.5% or more (including and excluding premiums), by provincial pharmacare model

		BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
% of Senior Households Paying $\geq 4.5\%$	Including Premium	0.0%	7.9%	0.0%	0.0%	0.0%	17.2%	20.1%	41.2%	3.7%	18.8%
	Excluding Premium	0.0%	7.9%	0.0%	0.0%	0.0%	7.0%	0.5%	0.5%	3.7%	18.8%
% of Non-senior Households Paying $\geq 4.5\%$	Including Premium	0.0%	2.5%	0.0%	0.0%	0.0%	4.9%	11.7%	12.1%	8.4%	11.6%
	Excluding Premium	0.0%	2.2%	0.0%	0.0%	0.0%	1.5%	11.7%	12.1%	8.4%	11.6%

*Note:* The "catastrophic" threshold of 4.5% is used solely for comparison to previous research. Further analysis and public input are necessary to determine the legitimate threshold (see Discussion and Conclusion).

## STUDY LIMITATIONS

As this was a simulation analysis of financial burdens, a number of assumptions had to be made, each taken in consideration of the need to balance desired realism, analytic parsimony and data availability.

First, we did not attempt to specify the particular drugs included in the annual prescription drug costs. While differences between provincial formularies have been shown (Anis et al. 2001; Gregoire et al. 2001), incorporating these differences into our simulations was beyond the scope of this study.

Second, while the household data used in this study are more comprehensive than those used in previous work, 13% of private households were excluded from our simulations owing to a lack of detailed income data published from the 2001 Census. Though we believe the included household types are generally representative of the Canadian population, the potential impact of excluding certain household types, such as multi-family households, is unknown.

Third, since our intention was to simulate the impact of adopting any provincial model as a national standard, we assumed that all households would participate in the pharmacare program. This may be unrealistic, particularly for premium-based programs. Unless participation

is compulsory, it is likely that relatively healthy households would opt out of premium-based subsidy programs. Furthermore, relatively poor households may be unable to afford the premiums required by some models of pharmacare.

Finally, because of the paucity of population-based, patient-specific prescription drug cost data, we drew distributions of annual prescription drug costs from the only published study with such information (Morgan et al. 2003). Owing to the limitations of the published data, we made further adjustments for age-specific costs based on our best estimates. While sensitivity analysis showed that changes on the order of 20% do not affect the general findings, future analysis of age-specific cost burdens is warranted.

## CONCLUSION

As policymakers begin to address intra-Canadian inequities in pharmacare coverage, the key issue becomes defining "reasonable" or "fair" drug coverage. As yet, there is no gold standard. Our simulation portrays catastrophic drug expenses in terms of the proportion of income that households must allocate toward their drug costs; it thus reflects favourably on income-based drug plans. Portraying the fairness of drug coverage in terms of income is consistent with economic notions of financial equity in health-

care (Wagstaff and van Doorslaer 2000). It is also consistent with recent provincial trends toward income-based pharmacare and the recommendations of the Standing Senate Committee on Social Affairs, Science and Technology (2002), which suggested that no Canadian should be obliged to pay out-of-pocket prescription drug expenses that exceed 3% of family income. There are, however, important considerations to be taken into account when considering income-based coverage as a standard of pharmacare, two of which are the disincentives for adherence to drug therapy created by deductibles of any kind, and the health-related financial inequities created for patients with persistent chronic disease (Morgan and Willison 2004). Some of these considerations might suggest that 3% of family income is too much for any household – regardless of income – to bear out of pocket for their prescription needs.

Future studies should aim to determine what "reasonable" drug coverage would be. A gold standard might be defined by both Canadian values about healthcare and healthcare financing, and by scientific evidence regarding the impact of user charges – income-based or otherwise – on access to medically necessary prescription drugs. Establishing such a value- and evidence-based standard to be applied

across all provincial pharmacare models would represent a major step forward for Canadian pharmacare policy. Given the considerable variation in provincial pharmacare models that exists today, federal and provincial policy makers should act quickly and cooperatively to ensure that provincial eligibility rules, premiums, deductibles and co-payments do not allow Canadians to fall through the cracks of the pharmacare system while we debate what level of coverage appears reasonable.

## Acknowledgments

Megan E. Coombes is supported by a Western Regional Training Centre studentship funded by the Canadian Health Services Research Foundation (CHSRF), Alberta Heritage Foundation for Medical Research and Canadian Institutes of Health Research (CIHR). Steven G. Morgan is supported through a New Investigator award from CIHR and a Scholar award from the Michael Smith Foundation for Health Research. Nino Pagliccia is supported by a sustaining grant to the UBC Centre for Health Services and Policy Research from the B.C. Ministry of Health Planning.

## About the Authors

**Megan E. Coombes**, BSc, is a graduate student in the Department of Health Care & Epidemiology and Centre for Health Services & Policy Research, University of British Columbia, Vancouver.

**Steven G. Morgan**, PhD, is Assistant Professor, Department of Health Care & Epidemiology and Centre for Health Services & Policy Research, University of British Columbia, Vancouver.

**Morris L. Barer**, MBA, PhD, is Professor, Department of Health Care & Epidemiology and Centre for Health Services & Policy Research, University of British Columbia and Scientific Director, Institute of Health Services & Policy Research, Canadian Institutes of Health Research.

**Nino Pagliccia**, MSc, is Research Analyst, Centre for Health Services & Policy Research, University of British Columbia, Vancouver.

## References

- Anis, A.H., D. Guh and X. Wang. 2001. "A Dog's Breakfast: Prescription Drug Coverage Varies Widely Across Canada." *Medical Care* 39(4): 315–26.
- Applied Management in Association with Fraser Group Tristat Resources. 2000. *Canadians' Access to Insurance for Prescription Medicines. Volume 2. The Un-Insured and Under-Insured*. Ottawa: Author. Retrieved July 15, 2004. <[http://www.appliedmanagement.ca/FYIBenefits/RxAccessRpts/volume\\_2.pdf](http://www.appliedmanagement.ca/FYIBenefits/RxAccessRpts/volume_2.pdf)>
- Canadian Institute for Health Information. 2003. *National Health Expenditure Trends, 1975–2003*. Ottawa: Author.
- Fraser Group Tristat Resources. 2002. *Drug Expense Coverage in the Canadian Population: Protection from Severe Drug Expenses*. Retrieved July 15, 2004. <<http://www.clhia.ca/submissions/2002/fraser.html>>
- Gregoire, J.P., P. MacNeil, K. Skilton, J. Moisan, D. Menon, P. Jacobs, E. McKenzie and B. Ferguson. 2001. "Inter-provincial Variation in Government Drug Formularies." *Canadian Journal of Public Health* 92(4): 307–12.
- Grootendorst, P. 2002. "Beneficiary Cost Sharing Under Canadian Provincial Prescription Drug Benefit Programs: History and Assessment." *Canadian Journal of Clinical Pharmacology* 9(2): 79–99.
- Health Canada. 2003. *First Ministers' Accord on Health Care Renewal*. Retrieved July 15, 2004. <<http://www.hc-sc.gc.ca/english/hca2003/accord.html>>
- Human Resources Development Canada. 2003. *Old Age Security Payment Rates*. Retrieved August 1, 2003. <[http://www.hrdc-drhc.gc.ca/isp/oas/rates1\\_e.shtml](http://www.hrdc-drhc.gc.ca/isp/oas/rates1_e.shtml)>
- IMS Health Canada. 2002. *Average Cost per Prescription Dispensed in Retail Pharmacies, 1998–2002*. Retrieved July 15, 2004. <[http://www.imshealthcanada.com/htmen/3\\_2\\_22.htm](http://www.imshealthcanada.com/htmen/3_2_22.htm)>
- Kapur, V. and K. Basu. 2003. *Drug Coverage in Canada: Who Is at Risk?* Ottawa: Applied Research and Analysis Directorate, Health Canada. Retrieved July 15, 2004. <<http://www.natsem.canberra.edu.au/conference/papers/>>
- Kozyrskyj, A., S.G. Morgan and M. Dahl. 2002. "Prescription Costs for Manitobans. Analysis for the Romanow Commission." Winnipeg: Manitoba Centre for Health Policy. August.
- Metge, C., C. Black, S. Peterson, A. Kozyrskyj, N. Roos and B. Bogdanovik. 1999. *Analysis of Patterns of Pharmaceutical Use in Manitoba. 1996: Key Findings*. A POPULIS Project. Winnipeg: Manitoba Centre for Health Policy and Evaluation. Retrieved July 15, 2004. <[http://www.umanitoba.ca/centres/mchp/reports\\_97-00.htm](http://www.umanitoba.ca/centres/mchp/reports_97-00.htm)>
- Morgan, S.G., A. Kozyrskyj, C. Metge, N. Roos and M. Dahl. 2003. *Pharmaceuticals: Therapeutic Interchange and Pricing Policies*. Winnipeg: Centre for Health Policy and Evaluation. Retrieved July 15, 2004. <<http://www.umanitoba.ca/centres/mchp/reports.htm>>
- Morgan, S.G. and D. Willison. 2004. "Post-Romanow Pharmacare: Last Dollar First ... First Dollar Lost?" *HealthcarePapers* 4(3): 10–20.
- Mueller, C., C. Schur and J. O'Connell. 1997. "Prescription Drug Spending: The Impact of Age and Chronic Disease Status." *American Journal of Public Health* 87(10): 1626–29.
- Statistics Canada. 2001. *Census of Population*. Ottawa: Author. Retrieved July 15, 2004. <<http://www12.statcan.ca/english/census01/release/index.cfm>>
- Standing Senate Committee on Social Affairs, Science and Technology. 2002. *The Health of Canadians: The Federal Role. Volume Six: Recommendations for Reform*. Retrieved July 15, 2004. <<http://www.parl.gc.ca/37/2/parlbus/commbus/senate/com-e/soci-e/rep-e/rep02vol6part3-e.htm#CHAPTER%20SIX>>
- Wagstaff, A. and F. van Doorslaer. 2000. "Equity in Health Care Finance and Delivery." In A.J. Cuyler and J.P. Newhouse, eds., *Handbook of Health Economics*. Volume 1B, 1st ed. (pp.1803–62). Amsterdam: Elsevier Science.
- Wallack, S.S., C.P. Thomas, D. Hodgkin and G. Ritter. 2001. *Recent Trends in Prescription Drug Spending for Insured Individuals Under Age 65 and Over*. Waltham, MA: Schneider Institute for Health Policy, Brandeis University.
- Willison, D., P. Grootendorst and J. Hurley. 1998. *Variation in Pharmacare Coverage Across Canada*. Research Working Paper 9808. Hamilton, ON: Centre for Health Economics and Policy Analysis, McMaster University.

Appendix A: Provincial Prescription Drug Plans as of August 1, 2003

Table 1: British Columbia				
Beneficiary Subgroup	Premium	Deductible (one per family unit)	Co-payments	Max. annual beneficiary contribution
Plan I				
Current seniors <sup>1</sup> with net annual family income <\$33,000	\$0.00	None	25% of total prescription cost <sup>4</sup>	1.25% of net income <sup>3</sup>
Current seniors <sup>1</sup> with net annual family income \$33,000-\$50,000	\$0.00	1% of combined family net income <sup>3</sup>	25% of total prescription cost <sup>4</sup> thereafter	2% of net income <sup>3</sup>
Current seniors <sup>1</sup> with net annual family income >\$50,000	\$0.00	2% of combined family net income <sup>3</sup>	25% of total prescription cost <sup>4</sup> thereafter	3% of net income <sup>3</sup>
Non-seniors <sup>2</sup> with net annual family income <\$15,000	\$0.00	None	30% of total prescription cost <sup>4</sup>	2% of net income <sup>3</sup>
Non-seniors <sup>2</sup> with net annual family income \$15,000-\$30,000	\$0.00	2% of combined family net income <sup>3</sup>	30% of total prescription cost <sup>4</sup> thereafter	3% of net income <sup>3</sup>
Non-seniors <sup>2</sup> with net annual family income >\$30,000	\$0.00	3% of combined family net income <sup>3</sup>	30% of total prescription cost <sup>4</sup> thereafter	4% of net income <sup>3</sup>
Plan C				
Social Assistance recipients	Full coverage			
1 Includes those born in 1939 or earlier 2 Includes those turning 65 after 2005 3 Defined as line 236 from Notice of Assessment or tax form 4 "Total prescription cost" includes both drug ingredient cost and professional fee applied to the prescription of a single medication				

Table 2: Alberta				
Beneficiary Subgroup	Premium	Deductible	Co-payments	Max. annual beneficiary contribution
All senior citizens	\$0.00	\$0.00	30% of total prescription cost up to max of \$25/prescription <sup>1</sup>	None
Single non-seniors	\$61.50/quarter	\$0.00	30% of total prescription cost up to max of \$25/prescription <sup>1</sup>	None
Low income single non-seniors (net income < \$15,970/yr)	\$43.05/quarter	\$0.00	30% of total prescription cost up to max of \$25/prescription <sup>1</sup>	None
Non-senior families	\$123.00/quarter	\$0.00	30% of total prescription cost up to max of \$25/prescription <sup>1</sup>	None
Low income non-senior families (if no children net family income < \$28,240/yr; if one or more children, net family income <\$34,250/yr)	\$86.10/quarter	\$0.00	30% of total prescription cost up to max of \$25/prescription <sup>1</sup>	None
Social Assistance recipients (Alberta Human Resources and Employment programs)	\$0.00	\$0.00	\$2.00/prescription for first three prescriptions each month <sup>2</sup>	\$72.00/yr
<sup>1</sup> The maximum patient co-payment of \$25/prescription does not apply if the patient chooses a brand name formulation of the drug when a generic equivalent exists. <sup>2</sup> Dependents under 18 yrs of age receive full coverage. Note: Total benefit coverage is limited to \$25,000 per subscriber per year.				

Table 3: Saskatchewan				
Beneficiary Subgroup	Premium	Deductible	Co-payments <sup>1</sup>	Max. annual beneficiary contribution
Senior citizens on Saskatchewan Income Plan	\$0.00	\$100/senior/semiannually	35% of all formulary drugs <sup>3</sup> thereafter	3.4% of adjusted household income <sup>2</sup> annually
Senior citizens on GIS in community	\$0.00	\$200/senior/semiannually	35% of all formulary drugs <sup>3</sup> thereafter	3.4% of adjusted household income <sup>2</sup> annually
Senior citizens with no GIS income and Non-Seniors	\$0.00	3.4% of annual adjusted household income	35% of all formulary drugs <sup>3</sup> thereafter	3.4% of adjusted household income <sup>2</sup> annually
Non-seniors on Family Health Benefits	\$0.00	\$100/adult/semiannually <sup>3</sup>	35% of all formulary drugs <sup>3</sup> thereafter	3.4% of adjusted household income <sup>2</sup> annually
Non-seniors on Saskatchewan Assistance Plan (Plan 1 only)	\$0.00	\$0.00	\$2.00/prescription	None
<sup>1</sup> Copayments waived for paraplegic, cystic fibrosis, renal failure, palliative care patients and children under 18 years of families approved for Family Health Benefits as well as for people requiring certain high-cost drugs as in AIDS or transplant therapy. <sup>2</sup> Defined as gross annual household income (line 150 on Notice of Assessment form) less \$3,500 for each dependent under 18 years of age. <sup>3</sup> Total prescription drug cost.				



Table 4: Manitoba				
Beneficiary Subgroup	Premium	Deductible	Co-payments	Max. annual beneficiary contribution
All households with adjusted income \$15,000/yr or less	\$0.00	2.1% of adjusted household income <sup>1</sup> ; minimum of \$100	0%	2.1% of adjusted household income <sup>1</sup>
All households with adjusted income over \$15,000/yr	\$0.00	3.15% of adjusted household income <sup>1</sup> ; minimum of \$100	0%	3.15% of adjusted household income <sup>1</sup>
Social Assistance recipients	\$0.00	Full coverage		
1 Defined as gross income (line 150 on Notice of Assessment form) less \$3,000 for the spouse and each dependent child under 18 years of age.				

Table 5: Ontario				
Ontario Drug Benefit Program				
Beneficiary Subgroup	Premium	Deductible	Co-payments	Max. annual beneficiary contribution
Single seniors with household income < \$16,018/yr and senior couples with household income < \$24,175/yr	\$0.00	\$0.00	\$2.00/prescription (may be waived by pharmacy)	None
Other seniors	\$0.00	\$100/senior/yr	\$6.11 toward professional fee/prescription thereafter <sup>1</sup>	None
Persons who live in long-term care facilities, Homes for Special Care, those receiving professional services under the Home Care Program and Social Assistance recipients (General Welfare or Family Benefits Assistance)	\$0.00	\$0.00	\$2.00/prescription (may be waived by pharmacy)	None
General population See Trillium Drug Program				
1 Seniors in families receiving Trillium Drug Program benefits who have exceeded the yearly deductible pay \$2.00/prescription.				
Ontario Trillium Drug Program: General population with high drug costs in relation to income				
Beneficiary Subgroup	Premium	Deductible <sup>3</sup>	Co-payments	Max. annual beneficiary contribution
Household Annual Net Income <sup>1</sup> ≤ \$100,000	\$0.00	\$150-\$4,089/yr (pd quarterly)	\$2.00/prescription thereafter	None
Household Annual Net Income > \$100,000	\$0.00	See formulae <sup>2</sup>	\$2.00/prescription thereafter	None
1 Defined as line 236 from Notice of Assessment 2 Household Annual Net Income > \$100,000 1-person household: 0.045 x (Net Income-\$20,000) + \$500 2-person household: 0.045 x (Net Income-\$20,000) + \$400 3-person household: 0.045 x (Net Income-\$20,000) + \$350 4-person household or more: 0.045 x (Net Income-\$20,000) + \$300 3 Any unpaid deductible in a quarter is added to the next quarter's deductible				

Table 6: Quebec				
Régime général d'assurance médicaments				
Beneficiary Subgroup	Premium <sup>3</sup>	Deductible <sup>3</sup>	Co-payments <sup>3</sup>	Max. annual beneficiary contribution <sup>5</sup>
Full <sup>1</sup> GIS senior citizens	\$0-\$460/senior/yr <sup>2</sup>	\$8.33/senior/month	25% of total prescription cost thereafter	\$16.66/senior/month
Partial GIS senior citizens	\$0-\$460/senior/yr <sup>2</sup>	\$9.60/senior/month	28% of total prescription cost thereafter	\$46.17/senior/month
Non GIS senior citizens	\$0-\$460/senior/yr <sup>2</sup>	\$9.60/senior/month	28% of total prescription cost thereafter	\$69.92/senior/month
Social Assistance recipients <sup>6</sup>	Full coverage			
General population with no group coverage <sup>4 7 8</sup>	\$0-\$460/adult/yr <sup>2</sup>	\$9.60/adult/month	28% of total prescription cost thereafter	\$69.92/adult/month
1 Those receiving at least 94% of the maximum GIS. 2 Premium is paid through income taxes. Persons whose net income is less than or equal to the following amounts pay no premium: \$11,680: (one adult) \$18,940: (two adults OR one adult and one child) \$21,610: (two adults and one child OR one adult and two or more children) \$24,075: (two adults and two or more children). Those with incomes exceeding the exemption amounts pay 4.77% on the first \$5,000 of income exceeding the exemption amount and 7.17% on the portion of income that exceeds that level. 3 Per adult in family. Not applied to children under 18 years of age, full-time single students under 26 years of age, residents of long-term care facilities and some residents with certain functional deficiencies when they are covered by the provincial drug plan. 4 Those who opt out of the provincial government insurance coverage must enroll in a plan with the following minimum conditions: no more than 25% co-insurance rate on total prescription cost, no more than \$750/year in adult out-of-pocket cost – including drug expenses made on behalf of children under 18 and dependent full-time students under 26 years of age. 5 Refers to total of deductible and co-payment. 6 Recipients with severe functional deficiencies and unable to work due to poor health or those with severe employment constraints (and their spouses) receive full coverage. 7 Persons aged 60-64 years with severe employment constraints who receive a spouse's or a widow's allowance from Old Age Security and hold a carnet de réclamation (claim slip) receive full coverage. 8 Children 0 to 17 years of age and students 18 to 25 years of age who do not have a spouse, who attend an educational institution on a full-time basis and over whom a person would exercise parental authority if they were minors receive full coverage.				

Table 7: New Brunswick				
Beneficiary Subgroup	Premium	Deductible	Co-payments	Max. annual beneficiary contribution
GIS senior citizens (Plan A)	\$0.00	\$0.00	\$9.05/prescription	\$250/person in total co-payment costs annually
Low-income senior citizens <sup>1</sup>	\$0.00	\$0.00	\$15.00/prescription	\$250/person in total co-payment costs annually
Other senior citizens <sup>2</sup>	\$58/senior/month	\$0.00	\$15.00/prescription	None
Social Assistance recipients (Family & Community Social Services FCSS – Plan F)	\$0.00	\$0.00	\$4/prescription <sup>3</sup> for adults >18yrs; \$2/prescription <sup>3</sup> <18 yrs	\$250/family in total co-payment costs annually
General population	No coverage			
1 Defined as those who do not collect any GIS benefits but have adjusted annual household income \$17,198 or less if single or have adjusted household income \$26,955 or less if married to another senior or have adjusted household income of \$32,390 or less if married to a non-senior.				
2 Defined as those who neither receive GIS nor have sufficiently low income. Blue Cross of Atlantic Canada provides drug coverage to these seniors, irrespective of their health status, provided that they apply for coverage within 60 days after their 65th birth date.				
3 Exempted from these fees for oral contraceptives.				

Table 8: Nova Scotia				
Beneficiary Subgroup	Premium	Deductible	Co-payments	Max. annual beneficiary contribution
GIS senior citizens	\$0.00	\$0.00	33%, min of \$3/prescription, max of \$30/prescription	\$350/person in total co-payment costs annually
Non-GIS senior citizens	Income-contingent premium/senior <sup>1</sup>	\$0.00	33%, min of \$3/prescription, max of \$30/prescription	\$350/person in total co-payment costs annually
Employment Support & Income Assistance recipients	\$0.00	\$0.00	\$5/prescription	None
General population	No coverage			
1 For single non-GIS seniors: premium=0 if annual income <\$17,000, premium=4.8%*senior's total annual income in excess of \$17,000 up to \$24,000, premium=\$336 if annual income >\$24,000; For married non-GIS seniors: premium=0 if combined income is <\$20,000, premium=4.2%* total annual combined income in excess of \$20,000 up to \$28,000, premium=\$336 if combined income is >\$28,000.				

Table 9: Prince Edward Island				
Beneficiary Subgroup	Premium	Deductible	Co-payments	Max. annual beneficiary contribution
All senior citizens (Seniors Drug Cost Assistance Plan)	\$0.00	\$0.00	First \$10 of the medication cost <sup>2</sup> plus professional fee <sup>3</sup> /prescription	None
Social Assistance recipients (Financial Assistance Program)	Full coverage if prescription filled at provincial pharmacy			
Low income <sup>1</sup> (Family Health Benefit Program)	\$0.00	\$0.00	Professional fee <sup>3</sup> /prescription	None
General population	No coverage			
1 The Family Health Benefit Program is targeted at families not receiving social assistance benefits with at least one child under 18 years of age and annual net family income of less than \$22,000 plus \$2,000 for each additional child under 18. Household income is defined as line 236 of the Revenue Canada Notice of Assessment form. Families must apply. 2 Medication cost includes ingredient cost and high cost drug markup (7.5% of ingredient cost, for prescriptions with an ingredient Maximum Allowable Cost (MAC) of \$45 or more). 3 Professional fee varies by pharmacy and ranges from \$3.99-\$8.00.				

Table 10: Newfoundland				
Beneficiary Subgroup	Premium	Deductible	Co-payments	Max. annual beneficiary contribution
GIS senior citizens	\$0.00	\$0.00	Professional fee (max. \$6.50/prescription) plus 10% of ingredient cost if ingredient cost is greater than \$30	None
Non-GIS senior citizens	No coverage			
Social Assistance recipients	Full coverage			
General Population	No coverage			

## Appendix B: Sensitivity Analysis Not Including Premiums

### Senior Households

Table 1: Percentage of Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	44.1%	65.7%	22.9%	22.9%	81.1%	31.4%	65.4%	67.8%	38.6%	32.5%
1-1.9%	46.6%	18.8%	14.6%	14.6%	18.8%	39.0%	24.9%	24.8%	33.7%	17.6%
2-2.9%	8.8%	6.0%	25.1%	26.0%	0.1%	9.8%	4.9%	2.7%	16.1%	24.7%
3-3.9%	0.4%	1.7%	37.3%	36.5%	0.0%	5.3%	4.2%	4.2%	7.3%	6.0%
4-4.9%	0.0%	5.2%	0.0%	0.0%	0.0%	7.4%	0.2%	0.0%	3.0%	0.4%
5-9.9%	0.0%	2.5%	0.0%	0.0%	0.0%	7.0%	0.3%	0.4%	1.1%	13.7%
10-14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.8%
15-19.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	4.2%
>=20%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### Non-Senior Households

Table 2: Percentage of Non-Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	54.1%	82.8%	54.1%	54.1%	52.4%	66.0%	50.0%	50.0%	57.2%	54.1%
1-1.9%	19.1%	10.9%	17.2%	17.2%	26.1%	19.7%	21.4%	21.4%	20.7%	19.1%
2-2.9%	11.7%	3.4%	7.3%	13.1%	12.5%	8.3%	9.1%	9.1%	8.2%	8.3%
3-3.9%	11.6%	0.7%	21.4%	15.5%	9.1%	1.3%	6.3%	5.8%	4.3%	5.6%
4-4.9%	3.6%	1.4%	0.0%	0.0%	0.0%	3.2%	1.8%	2.1%	1.5%	1.6%
5-9.9%	0.0%	0.8%	0.0%	0.0%	0.0%	1.5%	8.4%	8.6%	6.5%	8.3%
10-14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%	0.6%	0.7%
15-19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	0.9%	1.9%
>=20%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	0.0%	0.4%

## Appendix C: Census Data

Table 1: 2001 Census of Population Data for Private Household Types Used in Simulations

		Single Senior Household		Senior Couple Family Household Without Children		Single Non-Senior Household		Non-Senior Couple Family Household Without Children	
Income Range	Median Income (approx)	number of private households	% of all private households	number of private households	% of all private households	number of private households	% of all private households	number of private households	% of all private households
Under \$10,000	\$5,000	10,770	0.1%	9,985	0.1%	413,125	3.6%	94,895	0.8%
\$10,000 to \$29,999	\$20,000	810,365	7.0%	335,370	2.9%	625,110	5.4%	306,450	2.7%
\$30,000 to \$49,999	\$40,000	147,110	1.3%	309,955	2.7%	514,220	4.4%	476,270	4.1%
\$50,000 to \$69,999	\$60,000	43,370	0.4%	149,605	1.3%	242,445	2.1%	460,915	4.0%
\$70,000 to \$89,999	\$80,000	14,360	0.1%	67,660	0.6%	78,575	0.7%	332,150	2.9%
Over \$90,000	\$100,000	14,065	0.1%	77,210	0.7%	63,430	0.5%	438,755	3.8%
All Incomes		1,040,040	9.0%	949,785	8.2%	1,936,905	16.8%	2,109,435	18.2%

		Non-Senior Couple Family Household With Children under 18		Non-Senior Lone-parent Family Household With Children under 18		All Households So Classified	
Income Range	Median Income (approx)	number of private households	% of all private households	number of private households	% of all private households	number of private households	% of all private households
Under \$10,000	\$5,000	86,390	0.7%	102,500	0.9%	717,665	6.2%
\$10,000 to \$29,999	\$20,000	275,115	2.4%	375,880	3.3%	2,728,290	23.6%
\$30,000 to \$49,999	\$40,000	612,135	5.3%	285,310	2.5%	2,345,000	20.3%
\$50,000 to \$69,999	\$60,000	693,325	6.0%	153,005	1.3%	1,742,665	15.1%
\$70,000 to \$89,999	\$80,000	546,140	4.7%	66,075	0.6%	1,104,960	9.6%
Over \$90,000	\$100,000	800,645	6.9%	52,425	0.5%	1,446,530	12.5%
All Incomes		3,013,750	26.1%	1,035,195	9.0%	10,085,110	87.2%

## Appendix D: Annual Prescription Drug Cost Sensitivity Analysis

### Senior Households

#### Annual Drug Cost Levels plus 20%

Table 1: Percentage of Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	42.6%	62.7%	21.5%	21.5%	78.6%	2.1%	6.5%	9.8%	36.7%	26.3%
1-1.9%	45.0%	21.1%	13.0%	13.0%	17.0%	12.2%	12.3%	23.6%	31.7%	19.7%
2-2.9%	10.5%	5.3%	3.4%	4.2%	4.4%	21.8%	18.4%	15.1%	17.9%	4.3%
3-3.9%	1.9%	2.9%	62.2%	61.3%	0.0%	27.8%	19.3%	10.2%	2.0%	26.1%
4-4.9%	0.0%	0.1%	0.0%	0.0%	0.0%	17.6%	24.8%	12.3%	7.9%	4.5%
5-9.9%	0.0%	7.5%	0.0%	0.0%	0.0%	18.5%	18.7%	28.8%	3.2%	12.8%
10-14.9%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.2%	2.0%
15-19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	4.3%
>=20%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%

#### Annual Drug Cost Levels less 20%

Table 2: Percentage of Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	46.5%	69.2%	26.1%	26.1%	82.8%	2.9%	9.9%	13.6%	62.1%	35.0%
1-1.9%	45.0%	19.9%	11.8%	11.8%	13.0%	14.8%	15.3%	25.1%	22.5%	15.4%
2-2.9%	8.4%	3.0%	28.4%	29.3%	4.2%	24.4%	14.4%	13.3%	6.4%	27.6%
3-3.9%	0.1%	5.2%	33.7%	32.9%	0.0%	39.3%	20.5%	6.9%	2.4%	3.2%
4-4.9%	0.0%	2.2%	0.0%	0.0%	0.0%	7.2%	24.0%	12.2%	0.8%	10.5%
5-9.9%	0.0%	0.3%	0.0%	0.0%	0.0%	11.4%	16.0%	28.9%	5.5%	4.1%
10-14.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	4.3%
15-19.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
>=20%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%

### Non-Senior Households

#### Annual Drug Cost Levels plus 20%

Table 3: Percentage of Non-Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	51.0%	39.4%	50.6%	49.5%	49.2%	17.4%	46.9%	46.9%	54.1%	51.0%
1-1.9%	18.7%	37.6%	17.1%	17.8%	25.1%	34.7%	21.0%	20.9%	19.7%	18.7%
2-2.9%	9.9%	14.0%	6.4%	12.3%	13.8%	23.8%	5.3%	4.6%	5.7%	4.5%
3-3.9%	15.7%	3.9%	25.9%	20.4%	11.8%	12.5%	10.5%	11.2%	8.5%	10.4%
4-4.9%	4.7%	2.5%	0.0%	0.0%	0.0%	6.7%	4.1%	3.6%	3.1%	3.4%
5-9.9%	0.0%	2.4%	0.0%	0.0%	0.0%	5.0%	8.5%	9.1%	6.5%	8.3%
10-14.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	1.5%	1.5%	1.3%	1.5%
15-19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%	0.8%	1.4%
>=20%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.8%	0.1%	0.8%

#### Annual Drug Cost Levels less 20%

Table 4: Percentage of Non-Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	60.6%	45.4%	59.1%	59.0%	59.6%	19.4%	58.3%	56.6%	64.4%	60.6%
1-1.9%	13.5%	39.3%	15.1%	14.9%	19.6%	37.4%	14.9%	15.8%	14.7%	13.5%
2-2.9%	14.0%	9.1%	8.6%	14.2%	14.0%	22.8%	11.9%	12.5%	10.1%	11.7%
3-3.9%	10.2%	3.9%	17.2%	11.9%	6.8%	12.9%	3.1%	3.0%	2.8%	2.8%
4-4.9%	1.7%	0.7%	0.0%	0.0%	0.0%	4.0%	4.9%	5.1%	3.5%	4.8%
5-9.9%	0.0%	1.7%	0.0%	0.0%	0.0%	3.6%	4.7%	4.7%	3.6%	4.2%
10-14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	0.9%	1.9%
15-19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%	0.3%
>=20%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%

## Appendix E: Prescription Cost Sensitivity Analysis

### Senior Households

All Scripts = \$37.80 for All Annual Drug Cost Levels

Table 1: Percentage of Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	44.1%	65.7%	22.9%	22.9%	78.0%	2.1%	6.5%	12.5%	37.8%	32.5%
1-1.9%	46.6%	18.8%	14.6%	14.6%	17.0%	13.0%	15.8%	23.5%	31.4%	17.6%
2-2.9%	8.8%	6.0%	25.1%	26.0%	4.9%	23.1%	15.7%	15.0%	15.2%	24.7%
3-3.9%	0.4%	1.7%	37.3%	36.5%	0.1%	26.0%	17.8%	7.8%	4.7%	6.0%
4-4.9%	0.0%	5.2%	0.0%	0.0%	0.0%	21.2%	28.0%	12.2%	2.9%	0.4%
5-9.9%	0.0%	2.5%	0.0%	0.0%	0.0%	14.7%	16.1%	28.9%	7.6%	13.7%
10-14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.3%	0.8%
15-19.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%
>=20%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%

All Scripts = \$67.80 for All Annual Drug Cost Levels

Table 2: Percentage of Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	44.1%	65.7%	22.9%	22.9%	92.7%	2.1%	11.3%	12.5%	68.9%	31.2%
1-1.9%	46.6%	18.8%	14.6%	14.6%	7.2%	13.0%	12.7%	23.5%	19.6%	18.9%
2-2.9%	8.8%	6.0%	25.1%	26.0%	0.1%	23.1%	16.9%	15.0%	3.5%	24.7%
3-3.9%	0.4%	1.7%	37.3%	36.5%	0.0%	26.0%	19.8%	7.8%	4.6%	5.9%
4-4.9%	0.0%	5.2%	0.0%	0.0%	0.0%	21.2%	32.1%	12.2%	2.0%	0.5%
5-9.9%	0.0%	2.5%	0.0%	0.0%	0.0%	14.7%	7.2%	28.9%	1.2%	13.7%
10-14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.8%
15-19.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	4.2%
>=20%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

All Scripts = \$67.80 for Annual Drug Cost Levels <=\$2,500

All Scripts = \$37.80 for Annual Drug Cost Levels >\$2,500

Table 3: Percentage of Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	44.1%	65.7%	22.9%	22.9%	89.6%	2.1%	11.3%	12.5%	68.1%	31.2%
1-1.9%	46.6%	18.8%	14.6%	14.6%	5.4%	13.0%	12.7%	23.5%	17.2%	18.9%
2-2.9%	8.8%	6.0%	25.1%	26.0%	4.9%	23.1%	16.1%	15.0%	2.6%	24.7%
3-3.9%	0.4%	1.7%	37.3%	36.5%	0.1%	26.0%	18.5%	7.8%	2.1%	5.9%
4-4.9%	0.0%	5.2%	0.0%	0.0%	0.0%	21.2%	34.1%	12.2%	1.9%	0.5%
5-9.9%	0.0%	2.5%	0.0%	0.0%	0.0%	14.7%	7.2%	28.9%	7.6%	13.7%
10-14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.8%
15-19.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%
>=20%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%

### Non-Senior Households

All Scripts = \$37.80 for All Annual Drug Cost Levels

Table 4: Percentage of Non-Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	54.1%	43.3%	54.1%	54.1%	52.4%	17.5%	50.0%	50.0%	57.2%	54.1%
1-1.9%	19.1%	38.7%	17.2%	17.2%	25.6%	36.1%	21.4%	21.4%	20.1%	19.1%
2-2.9%	11.7%	10.6%	7.3%	13.1%	12.3%	24.5%	9.1%	9.1%	7.6%	8.3%
3-3.9%	11.6%	4.3%	21.4%	15.5%	9.7%	11.0%	5.8%	5.8%	5.3%	5.6%
4-4.9%	3.6%	0.9%	0.0%	0.0%	0.1%	6.7%	1.6%	1.6%	1.8%	1.6%
5-9.9%	0.0%	2.1%	0.0%	0.0%	0.0%	4.2%	9.1%	9.0%	6.6%	8.3%
10-14.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.7%	0.8%	0.6%	0.7%
15-19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	0.9%	1.9%
>=20%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	0.0%	0.4%



**All Scripts = \$67.80 for All Annual Drug Cost Levels**

Table 5: Percentage of Non-Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	54.1%	44.2%	54.1%	54.1%	53.3%	17.5%	52.4%	52.2%	59.0%	54.1%
1-1.9%	19.1%	37.7%	17.2%	17.2%	25.2%	36.1%	20.0%	20.0%	19.0%	19.1%
2-2.9%	11.7%	10.6%	7.3%	13.1%	12.5%	24.5%	8.4%	8.5%	8.0%	8.3%
3-3.9%	11.6%	4.3%	21.4%	15.5%	9.1%	11.0%	6.2%	5.7%	4.3%	5.6%
4-4.9%	3.6%	0.9%	0.0%	0.0%	0.0%	6.7%	1.8%	2.1%	1.5%	1.6%
5-9.9%	0.0%	2.1%	0.0%	0.0%	0.0%	4.2%	8.4%	8.6%	6.5%	8.3%
10-14.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%	0.6%	0.7%
15-19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	0.9%	1.9%
>=20%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	0.0%	0.4%

**All Scripts = \$67.80 for Annual Drug Cost Levels <=\$2,500**

**All Scripts = \$37.80 for Annual Drug Cost Levels >\$2,500**

Table 6: Percentage of Non-Senior Households by Out-of-Pocket Expenditure on Prescription Drugs as a Percentage of Annual Household Income, by Province										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NF
<1%	54.1%	44.2%	54.1%	54.1%	53.3%	17.5%	52.4%	52.2%	59.0%	54.1%
1-1.9%	19.1%	37.7%	17.2%	17.2%	24.7%	36.1%	20.0%	20.0%	18.4%	19.1%
2-2.9%	11.7%	10.6%	7.3%	13.1%	12.2%	24.5%	8.4%	8.5%	7.4%	8.3%
3-3.9%	11.6%	4.3%	21.4%	15.5%	9.7%	11.0%	5.6%	5.7%	5.3%	5.6%
4-4.9%	3.6%	0.9%	0.0%	0.0%	0.1%	6.7%	1.6%	1.6%	1.8%	1.6%
5-9.9%	0.0%	2.1%	0.0%	0.0%	0.0%	4.2%	9.1%	9.0%	6.6%	8.3%
10-14.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.7%	0.8%	0.6%	0.7%
15-19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	0.9%	1.9%
>=20%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	0.0%	0.4%