

Provincial Drug Plans Overview Report

PHARMACEUTICAL TRENDS

1995/96 – 1999/00

**ALBERTA
BRITISH COLUMBIA
MANITOBA
NOVA SCOTIA
ONTARIO
SASKATCHEWAN**

**Prepared by the Patented Medicine Prices Review Board for the
Federal/Provincial/Territorial
Working Group on Drug Prices**

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Executive Summary

- Over the past decade, spending on drugs has grown at twice the rate of spending on health care. Drugs now account for the second largest share of health expenditures, after hospitals, with total spending estimated to have reached \$14.7 billion in 2000.
- Despite significant reform of many of the publicly funded drug plans in recent years, public spending has been increasing by more than 10% per year; in 2000/01, many provincial drug plans experienced increases of 20% or more. The rise in spending on drugs reflects a number of factors, including the growing importance of prescription drugs in treating and preventing illness in Canada and in other countries. Governments can expect to face continuing pressure to ensure that those Canadians who are most in need will be able to maintain affordable access to the best drugs.
- Studies of six participating provincial drug plans (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Nova Scotia), conducted by the PMPRB on behalf of the F/P/T Ministers of Health, demonstrate that increases in drug expenditures in all jurisdictions were largely attributed to increases in the rate of utilization of existing drugs and the impact on total expenditures of decisions to reimburse newer, often higher-cost drugs. More research is required to assess the impact of therapeutic choices on the overall trends in the cost of treating specific conditions.
- The number of persons covered by the six provincial drug plans included in the analysis has been relatively constant. However, the intensity of use (number of prescriptions), the average cost of a prescription and, most importantly, the average annual cost of prescriptions for each person increased substantially. In particular, between 1995/96 and 1999/00, the average annual cost of each person receiving public drug plan benefits increased by approximately 60% in Alberta, Manitoba and Ontario.
- Between 1995/96 and 1999/00, on average, the prices (as measured by a pharmaceutical price index) of drugs covered by the six provincial drug plans ranged from increases of 0.5% to decreases of 11.5%. Therefore, other factors, including changes in utilization of existing drugs and the introduction of newer, more costly drugs, have accounted for most of the spending growth.
- The prices of non-patented drugs continue to be a concern. An international price comparison of top-selling non-patented single source (NPSS) drugs found that in 1998/99, Canadian prices were, on average, 28% above the median of the prices in seven other countries (France, Germany, Italy, Sweden, Switzerland, the United Kingdom and the United States). Had these drugs been priced at the median international levels, spending by the six provincial drug plans (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Nova Scotia) would have been approximately \$60 million, or 20%, less than the \$317.7 million these plans spent on NPSS drugs in 1999/00. An assessment of generic and brand prices of non-patented multiple source drugs revealed an overall increasing trend in the average generic drug prices relative to their brand name equivalents.
- The introduction of new therapies and the rapid rate of market penetration pose significant budgetary pressures for provincial drug plans. For the six jurisdictions included in the analysis, drugs that were introduced into the public plans after 1995/96, defined as “newer drugs,” accounted for over 30% of total expenditures by 1999/00; in Alberta, they accounted for close to 50% of total expenditures.
- In 1999/00, spending on patented drugs represented more than half the total prescription spending in the six provincial drug plans. On average, between 1995/96 and 1999/00, expenditures on patented drugs increased by 111%, growing at an average annual rate of 21%.

- An assessment of five major therapeutic groupings of drugs identified significant differences in the average daily cost among jurisdictions. These interprovincial differences can be a result of differences in provincial drug plans as well as differences the distribution (mix) of therapeutic choices. Whether these differences translate into differences in health outcomes is not clear with the current information. More analysis is required to establish whether drugs are being used in a cost-effective manner and whether differences in the cost of therapy translate into differences in health outcomes of Canadians. In their *Action Plan for Health System Renewal* in September 2000, Canada's First Ministers agreed to begin work to develop strategies for assessing the cost-effectiveness of prescription drugs.

- The Overview Report summarizes the major finding of the F/P/T Working Group on Drug Prices to date (from 1995/96 to 1999/00) and sets the direction for future information needs and priorities. The evolution and continuation of this work can inform activities aimed at improving drug prescribing (best practices) and system efficiency (common drug review). Further analysis aimed at isolating and understanding the impact of therapeutic choices can identify policy impact and intervention priorities.

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Introduction

The role of pharmaceuticals as a component of the health care system is expanding, and federal, provincial and territorial (F/P/T) governments are increasingly facing a number of drug issues, including drug costs, utilization and efficiency of resource allocation. Spending on drugs has grown at twice the rate of spending on health care over the past decade. Drugs now account for the second largest share of health expenditures, after hospitals, with total spending estimated to have reached \$14.7 billion in 2000.¹

The rise in spending on drugs reflects a number of key factors, including the growing importance of prescription drugs in treating and preventing illness in Canada and in other countries. Governments can expect to face continuing pressure to ensure that those Canadians who are most in need will be able to maintain affordable access to the best drugs. Despite significant reform of many publicly funded drug plans in recent years, public spending has been increasing by more than 10% per year. Last year, many provincial drug plans experienced increases of 20% or more.

By working together, F/P/T governments are seeking to ensure that drug prices are fair and reasonable, that drugs are prescribed and used appropriately, and that the system is operating efficiently. In 2000/01, the Pharmaceutical Issues Committee (PIC),² which is responsible for joint F/P/T activities on pharmaceutical issues, identified the following as priorities: increasing the knowledge base on drug prices, cost-drivers and drug utilization in Canada; efficiency and integration of the overall health care policy environment; and improved co-ordination and information sharing across drug programs.

The work of the PIC's Working Group on Drug Prices (WGDP) has focused on providing analysis that supports the overall pharmaceutical management strategies set by First Ministers in their *Action Plan for Health System Renewal* in September 2000. First Ministers agreed that in order to ensure that Canadians continue to have access to new, appropriate and cost-effective drugs, strategies for assessing the cost-effectiveness of prescription drugs must be developed. These strategies would be informed by sharing information on best practices and means of addressing drug-purchasing costs.³

The work of the WGDP provides the necessary foundation and insight to address and better understand pharmaceutical management and utilization issues.

This Overview Report presents a summary of the key findings and observations of the Working Group on Drug Prices for prescription drugs for the six participating provincial drug plans (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Nova Scotia) for the period 1995/96 to 1999/00.⁴ The studies conducted by the PMPRB⁵ on behalf of the F/P/T Ministers of Health demonstrate that the increases in provincial drug plan expenditures can be largely attributed to increases in the rate of utilization of existing drugs and the impact on total expenditures of decisions to reimburse newer and higher cost drugs.

1 Drug Expenditures

In 2000, the total Canadian public and private expenditures on drugs accounted for 15.5% (\$14.7 billion) of total health care expenditures.⁶ Public expenditures accounted for 40% (\$6.1 billion) and provincial drug plans accounted for 28% (\$4.4 billion) of the total drug expenditures. Table 1 provides per capita drug expenditure

information for 1995 and 2000. On average, between 1995 and 2000, Canadian per capita drug expenditures increased by 7%. Over the study period, Alberta and Ontario experienced the highest growth in total (public and private) drug expenditures, while British Columbia and Saskatchewan experienced the highest growth rate in the provincial per capita expenditures, at 11.3% and 10.3%, respectively.

Table 1⁷ Growth Rate, 1995 and 2000

Per Capita Drug Expenditures and Growth Rates, 1995 and 2000* (millions of dollars)										
Jurisdiction	Drug Expenditure per Capita 1995 (\$)	Drug Expenditure per Capita 2000* (\$)	Growth Rate (%)	Provincial Drug Expenditure per Capita 1995 (\$)	Total Provincial Drug Expenditure per Capita 2000* (\$)	Growth Rate (%)	Total Provincial per Capita Drug Expenditure (%)		Drug Expenditure as a Percentage of Total Health Expenditure 1995 (%)	Drug Expenditure as a Percentage of Total Health Expenditure 2000* (%)
							1995	2000		
Canada	340.6	478.3	7.0	N/A	N/A	N/A	N/A	N/A	13.4	15.5
British Columbia	277.5	385.7	6.8	87.0	148.6	11.3	31	39	10.3	12.3
Alberta	282.7	429.6	8.7	75.4	114.0	8.6	27	27	12.4	13.0
Saskatchewan	322.6	420.0	5.4	62.9	102.6	10.3	19	24	13.4	13.6
Manitoba	303.0	417.2	6.6	70.5	111.7	9.6	23	27	11.8	12.2
Ontario	382.1	545.8	7.4	123.9	158.7	5.1	32	29	14.3	17.1
Nova Scotia	355.4	481.3	6.3	90.3	122.8	6.3	25	26	15.5	16.9

* estimated

Similar growth was seen in the provincial drug plans. Annual spending by the six provincial drug plans reached \$2.5 billion in 1999/00 (provincial drug plans were included in the analysis based on data availability). These six provincial drug

plans saw a 51% increase in expenditures between 1995/96 and 1999/00. This represented an increase from \$1.6 billion to \$2.5 billion, or an 11% average annual growth (Figure 1).

Figure 1 Average Annual Expenditure Growth of Provincial Drug Plans, 1995/96 – 1999/00

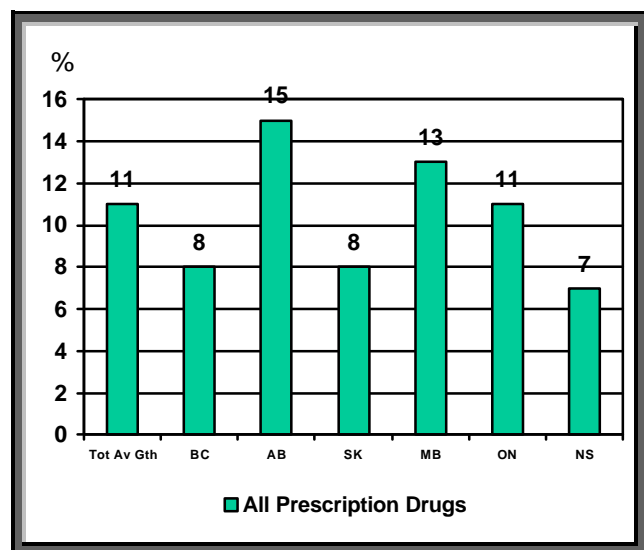


Table 2 breaks down the pattern of provincial drug plan expenditures. It includes information on the total drug costs claimed to each of the six drug plans, as well as a breakdown of expenditures by general drug groupings, patented and non-patented drugs, brand name and generic drugs (based on manufacturer), and multiple and single source non-patented drugs (based on number of manufacturers or producers).⁸ Further analysis based on these general drug market categories is presented throughout the report. Noteworthy are the growth in patented drug expenditures and the increase in the portion of expenditures on patented drugs seen by the provinces in 1999/00.

Table 2 Drug Cost by Drug Market Category in All Six Jurisdictions, 1995/96 – 1999/00

Fiscal Year	All Drugs	Patented Drugs	Non-Patented Drugs	Brand Name Drugs	Generic Drugs	Non-Patented Multiple Source Drugs	Non-Patented Single Source Drugs
1995/96	1,632.5	683.7	948.8	1,088.0	544.6	497.2	451.7
1996/97	1,772.9	848.5	924.5	1,219.0	553.9	550.4	374.1
1997/98	1,970.1	1,071.5	898.8	1,353.1	617.2	586.5	312.5
1998/99	2,196.9	1,251.0	946.1	1,536.2	660.7	638.6	307.5
1999/00	2,457.6	1,444.9	1,012.6	1,654.1	803.3	695.0	317.6

The rate of growth in drug expenditures was more than twice the rate of total health care spending and three times the rate of growth of inflation during the 1995/96 to 1999/00 period. As shown in Figure 1, Alberta had the highest average annual growth rate in drug expenditures among the six jurisdictions, at 15%, while Nova Scotia had the lowest, at 7%.

It is important to keep in mind that the public drug plans are different across Canada. Different beneficiary eligibility criteria exist in each jurisdiction, with varying co-payment and deductible schemes. Broadly speaking, British Columbia, Alberta, Ontario and Nova Scotia

cover largely seniors; Saskatchewan and Manitoba use a means test to determine coverage levels.⁹ New drug listing and formulary decisions¹⁰ also vary significantly among the jurisdictions.¹¹ The differences among drug plans have tremendous potential to inform jurisdictions on the impact of different policy decisions/approaches and provide meaningful benchmarks (see Appendix I for more details on each provincial drug plan included in this report).

2 General Factors Affecting Expenditures

Demographic changes, the cost and available choice of therapy, and the rate and duration with which pharmaceutical interventions are used and reimbursed are all important factors that drive expenditures in public drug plans.

Changes in the number of beneficiaries in the six provinces varied significantly over the 1995/96 to 1999/00 study period (as shown in Figure 2). In British Columbia, the number of total beneficiaries covered by the drug plan increased by 12.4%, the highest increase among the six drug plans. In Ontario, on the other hand, the number of beneficiaries decreased by 7.9%.¹²

Figure 2 Percent Change in Beneficiary, 1995/96 – 1999/00

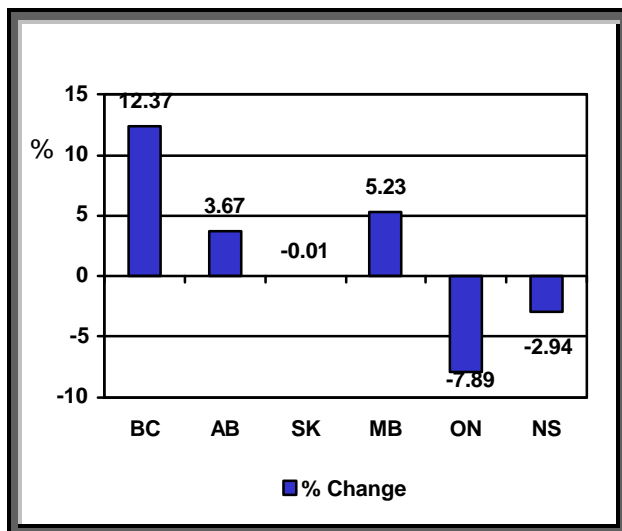
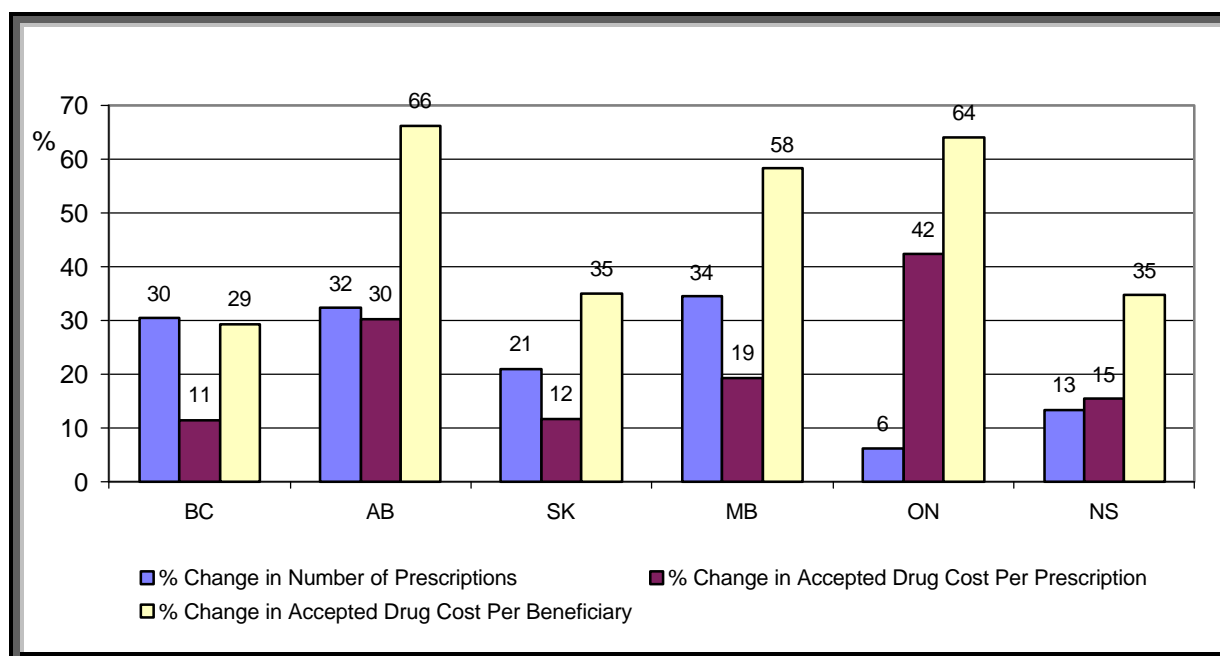


Figure 3 shows that between 1995/96 and 1999/00, the provincial drug plans in Alberta, Ontario and Manitoba had the largest increase in the average accepted drug cost per beneficiary, increasing by 66%, 64% and 58%, respectively.¹³ In 1999/00, the average cost per beneficiary ranged from a low of \$222 in Saskatchewan to a high of \$1,934 in Manitoba. As Table 3 shows, the average number of prescriptions per beneficiary in Manitoba was also significantly higher than in the other jurisdictions. Although in general, the per capita expenditures in Manitoba are in line with other provinces, the design and eligibility criteria of Manitoba's drug plan appear to provide drug coverage to relatively high users of pharmaceutical therapy. Further analysis is required to understand the impact of drug plan coverage criteria on utilization patterns observed by the drug plans. Saskatchewan had the lowest average accepted cost (i.e. the cost recognized by the drug plan) per prescription, at \$21, while British Columbia had the highest, at \$36.¹⁴

Figure 3 Factors Affecting Drug Expenditures, 1995/96 – 1999/00

Table 3 General Drug Plan Statistics, 1999/00

General Drug Plan Statistics, 1999/00					
Province	Average Accepted Drug Cost Per Prescription (\$)	Average Number of Prescriptions Per Beneficiary	Average Accepted Drug Cost Per Beneficiary (\$)	Average Accepted Dispensing Fee Per Prescription (\$)	Average Accepted Distribution and Retail Margin ¹⁵ (%)
British Columbia	36.26	16.16	585.75	5.94	5.26
Alberta	33.99	16.45	559.36	8.48	9.52
Saskatchewan	21.01	10.58	222.28	5.99	17.14 ¹⁶
Manitoba	28.15	68.68	1,933.65	6.43	10.01
Ontario	35.96	19.01	622.35	6.32	13.97
Nova Scotia	29.45	24.20	712.79	8.56	5.69

The average accepted drug cost per prescription presented in Table 3 includes retail and distribution margins but excludes dispensing fees. Average dispensing fees are presented separately in Table 3. Alberta and Nova Scotia have the highest average dispensing fees per prescription. British Columbia has both the lowest average dispensing fee and the lowest average accepted distribution margin. Saskatchewan has the highest distribution margin, which includes both the wholesale and the pharmacy mark-up. Ontario allows a 10% retail mark-up, which is intended to cover any

incurred wholesale margins, although the average margin calculated exceeds the set maximum by 4%.¹⁷

In the last year of analysis, 1999/00, Alberta experienced the highest increase in the total accepted drug cost, 22.5% from 1998/99. Table 4 and Figure 4 identify the relative contribution that three major components had on the overall change in total accepted drug cost experienced by each jurisdiction in 1999/00. In Ontario and Nova Scotia, the number of beneficiaries decreased between 1998/99 and 1999/00,

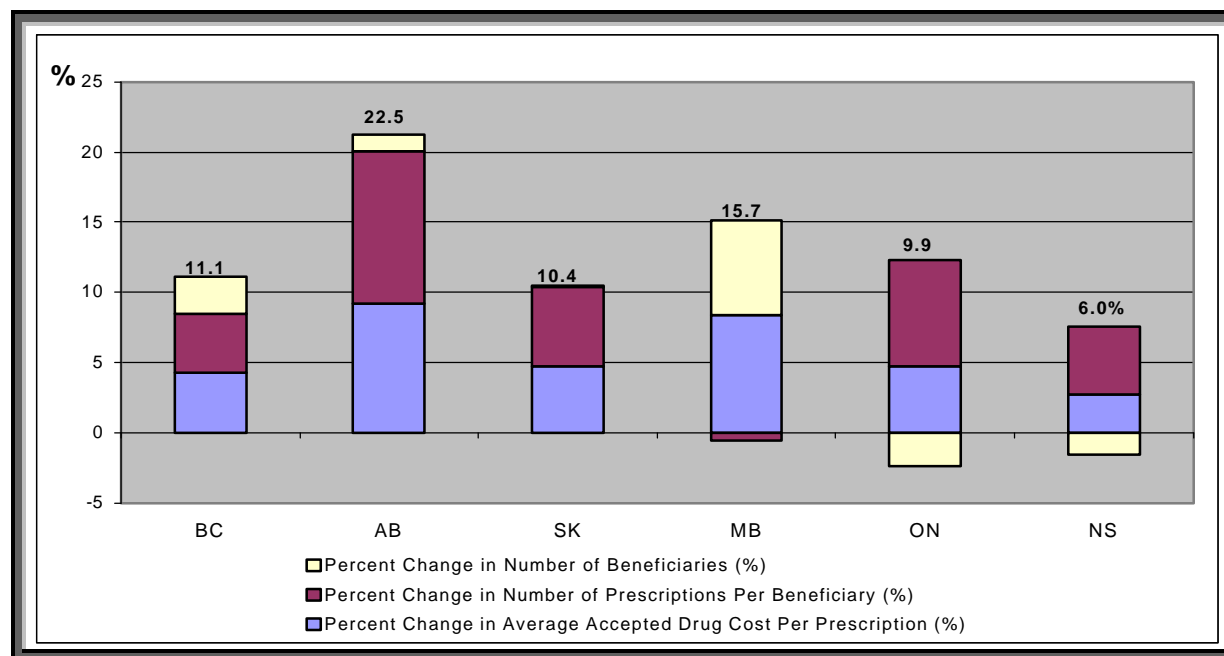
having a negative impact on the overall change in accepted drug cost. Manitoba had the highest increase in the number of beneficiaries, accounting for over 40% of the 15.7% increase in 1999/00. For all jurisdictions except Manitoba,

most of the change in total accepted cost was accounted for by the change in the average cost per prescription and the change in the number of prescriptions per beneficiary (utilization).

Table 4 Cost Components of Pharmaceutical Expenditures, 1998/99 – 1999/00

Cost ¹⁸ Components of Pharmaceutical Expenditures, 1998/99 – 1999/00				
Province	Percent Change in Average Accepted Drug Cost Per Prescription (%) (A)	Percent Change in Number of Prescriptions Per Beneficiary (%) (B)	Percent Change in Number of Beneficiaries (%) (C)	Percent Change in Total Accepted Drug Cost (%) (A+B+C)
British Columbia	4.3	4.2	2.6	11.1
Alberta	9.2	10.9	1.2	22.5
Saskatchewan	4.8	5.6	0.0	10.4
Manitoba	8.3	-0.6	6.8	15.7
Ontario	4.8	7.5	-2.4	9.9
Nova Scotia	2.8	4.8	-1.6	6.0

Figure 4 Components Contributing to Changes in Total Accepted Drug Cost, 1995/96 – 1999/00



3 Price and Utilization Trends

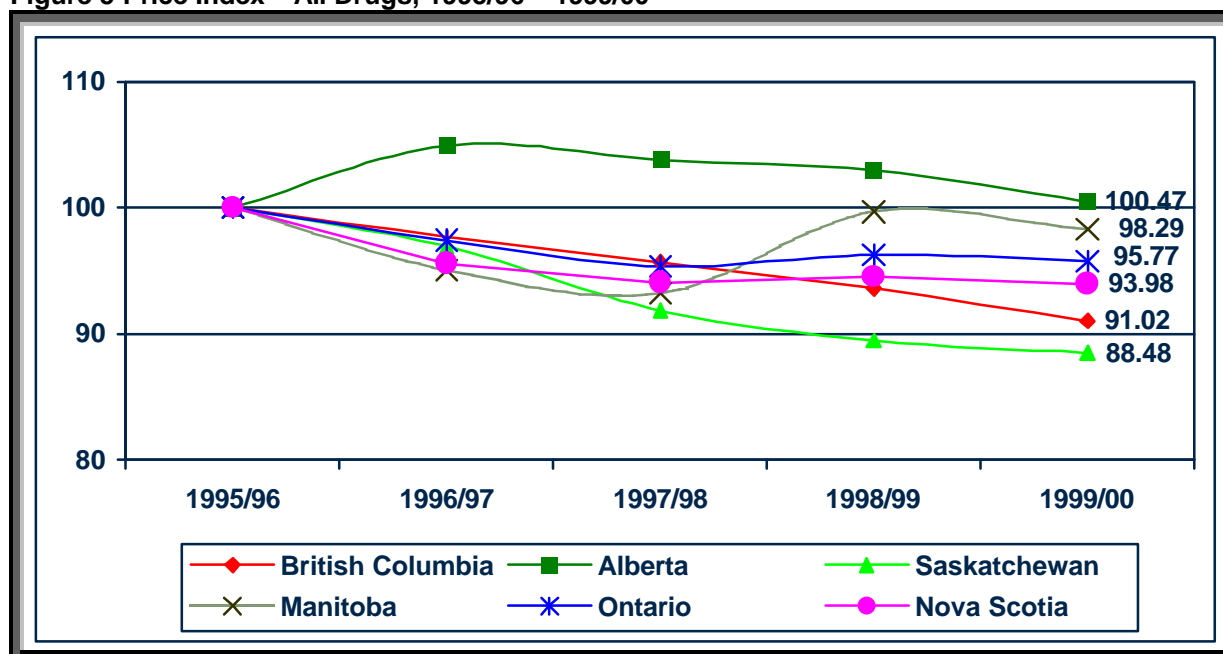
Between 1995/96 and 1999/00, average price changes in the six provincial drug plans ranged from increases of 0.5% to decreases of 11.5% (Table 6). Therefore, other factors, including changes in utilization of existing drugs and the introduction of newer, more costly drugs, have accounted for the majority of the spending growth over this period. Annual price increases

at the drug level are not a major contributor to changes in expenditures. On average, between 1995/96 and 1999/00, approximately 10% of drugs had a price increase that exceeded the Consumer Price Index (CPI) over the same period. The average price index in 1999/00 recorded an overall price reduction of 5% relative to 1995/96. Between 1995/96 and 1999/00 annual price changes had a negative impact on changes in expenditures for all six jurisdictions (see Cost Drivers section of the report, p.19).

Table 5 Annual Price Increases Above the CPI Non-Patented Drug Products (NPDP), 1998/99 – 1999/00

Annual Price Increases Above the CPI Non-Patented Drug Products (NPDP), 1998/99 – 1999/00						
Province	Number of DINs in Total	Number of DINs with Price Increases Above CPI	Percent of NPDP with Price Increases Above CPI (%)	Mean Price Increase of DINs with Price Increases Above CPI (%)	Impact ¹⁹ (Savings if Price Increases Were Limited to CPI) (\$)	Impact to Total Expenditures Ratio (x100)
British Columbia	3,202	424	13.2	25.4	1,202,061	0.7
Alberta	2,925	365	12.5	28.4	501,009	0.6
Saskatchewan	2,504	335	13.4	19.6	151,668	0.3
Manitoba	2,832	472	16.7	25.1	1,475,619	1.9
Ontario	2,463	202	8.2	28.1	5,259,512	1.0
Nova Scotia	2,517	299	11.9	18.5	67,343	0.2

Figure 5 Price Index – All Drugs, 1995/96 – 1999/00



The introduction price of new patented drugs and the rate of price increase for existing patented drugs are regulated by the Patented Medicine Prices Review Board. The Board does not regulate non-patented drugs; price levels and annual price increases for these drugs have been identified as a research priority by the F/P/T Working Group on Drug Prices. Table 5 provides provincial summary information on non-patented drug products (NPDP) price changes that exceeded the CPI for the last period of analysis. In all jurisdictions, less than 20% of NPDP increased by more than the CPI. For those products that did exceed the CPI increase,

however, the average price increase was approximately 20% to 30%. Manitoba had the highest portion of drugs that increased by more than the established threshold (CPI), and the relative value of the impact is close to 2%, which is significantly higher than the value of the impact in other jurisdictions. Impact is measured as the extra cost incurred by the jurisdiction by increases in excess of the CPI. If price increases had been limited to the change in the CPI, Manitoba would have saved \$1.5 million in 1999/00, or approximately 2% of the total expenditures.

Table 6 Price Index Summary, 1999/00

Price Index Summary, 1999/00*					
Province	All Drugs	Patented Drugs	Non-Patented Single Source Drugs	Non-Patented Multiple Source Drugs	Generic Drugs
British Columbia	91.0	98.1	102.1	83.2	95.3
Alberta	100.5	108.0	113.1	89.9	102.0
Saskatchewan	88.5	104.0	100.7	74.7	80.3
Manitoba	98.3	112.1	96.4	85.5	92.1
Ontario	95.8	106.3	100.3	89.1	100.5
Nova Scotia	94.0	97.0	99.6	90.1	100.7

*Base year 1995/96, index in 1995/96=100 for all jurisdictions

A price index,²⁰ measuring the average change in claimed drug prices²¹ for each jurisdiction, is presented in Table 6²² and Figure 5. A price index was calculated for all drugs, patented drugs, non-patented single source drugs, non-patented multiple source drugs (which include brand name drugs) and generic drugs. The price index presented in Table 6 represents an average change in prices in 1999/00, relative to 1995/96; that is, 1995/96 is the base year and is set to 100. The price index tracks price changes of drugs that existed in 1995/96 and adds new drugs to the index as they come on to the provincial formularies. Overall, between 1995/96 and 1999/00, Saskatchewan had the largest price decrease. Each provincial price index reflects the drugs covered by each of the drug plans as well as the rate at which they are

utilized in that province. By 1999/00, prices in Saskatchewan had decreased by 11.5% from 1995/96 levels; the decreases in non-patented multiple source drugs and generic drugs were even larger, at 25.3% and 19.7%, respectively.

A volume index, which is constructed using the same methodology as the price index, measures changes in utilization.²³ It is presented in Table 7 and Figure 6. The trend recorded by the volume index differs substantially from the price index. Between 1995/96 and 1999/00, the volume index measured a significant increase in utilization. Manitoba experienced the highest increase over this period, at 77.1%, while Nova Scotia had the lowest relative growth in volume, at 37.5%.

Figure 6 Volume Index – All Drugs, 1995/96 – 1999/00

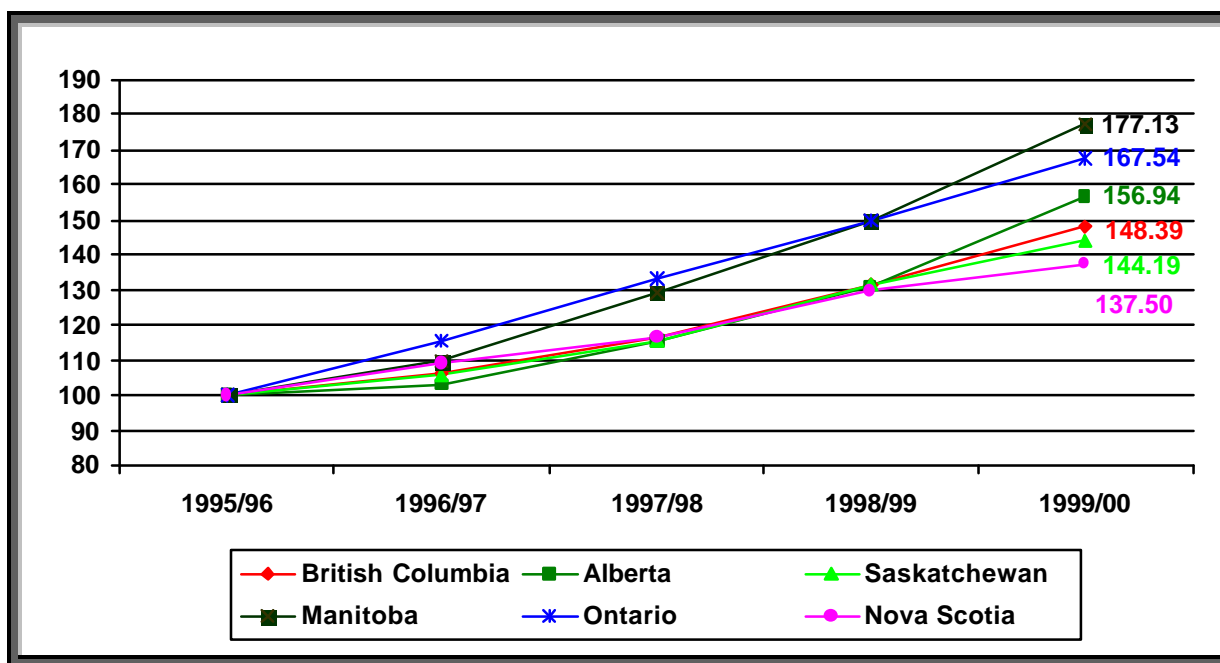


Table 7 Volume Index Summary, 1999/00

Volume Index Summary, 1999/00*					
Province	All Drugs	Patented Drugs	Non-Patented Single Source Drugs	Non-Patented Multiple Source Drugs	Generic Drugs
British Columbia	148.38	171.63	146.25	105.33	145.25
Alberta	156.94	178.49	152.03	101.66	141.13
Saskatchewan	144.19	196.33	144.09	89.63	118.56
Manitoba	177.13	220.45	187.51	109.01	150.91
Ontario	167.54	222.64	144.62	95.49	133.31
Nova Scotia	137.50	173.13	140.46	90.47	131.38

*Base year 1995/96, index in 1995/96 = 100 for all jurisdictions

Between 1995/96 and 1999/00, the growth in utilization of patented drugs was more than 100% in both Manitoba and Ontario. Utilization of non-patented multiple source drugs, on the other hand, decreased in Saskatchewan, Ontario and Nova Scotia.

4 Cost Drivers

Cost driver analyses are conducted in order to give public and private drug plan managers, policy makers and other stakeholders, including consumers, a better understanding of the major components that influence annual increases in pharmaceutical spending.

A cost driver analysis was conducted for the six provincial drug plans to identify and detail cost pressures in the provincial drug benefit plans.

The analysis presented in this section (and shown in Figure 7) breaks down annual changes

in the cost of drugs into the following major components:

- annual volume (utilization) changes of older and newer drugs;
- annual price changes of older and newer drugs²⁴;
- annual influences from the introduction of new drugs (patented and non-patented); and
- annual influences of newer drugs by major therapeutic class or disease groups.

Figure 7 Contribution to Change in Pharmaceutical Expenditure by Major Components, 1995/96 – 1999/00

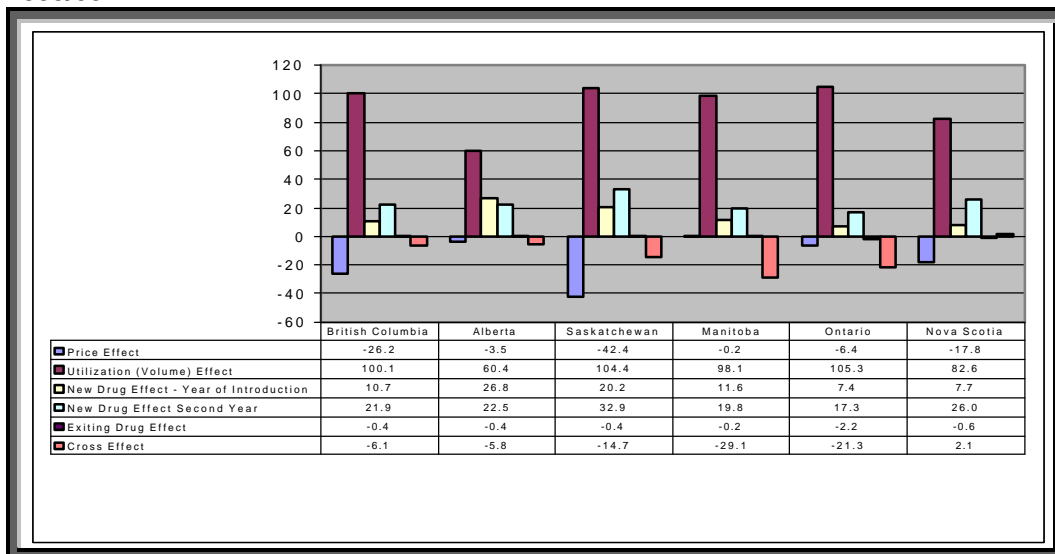


Figure 7 provides a summary of each of these factors and identifies their individual influence, as a relative percentage, on annual drug cost changes. In other words, it evaluates what percentage of the increase in annual cost of drugs is attributed to each of the above components.

Between 1995/96 and 1999/00, spending on pharmaceuticals by the six provincial drug plans increased from \$1.6 billion to \$2.5 billion.

Utilization of both existing drugs as well as the consumption of new generally more expensive drugs are the major cost drivers, accounting for most of the increase in expenditures over this period.

On average, changes in annual prices had a negative effect on changes in expenditures in all six jurisdictions. This result is driven primarily by the introduction and associated savings of generic drugs and is most profound in Saskatchewan.

By 1999/00, “newer” drugs (introduced since 1995/96) accounted for over 30% of drug expenditures in the six provincial drug plans.

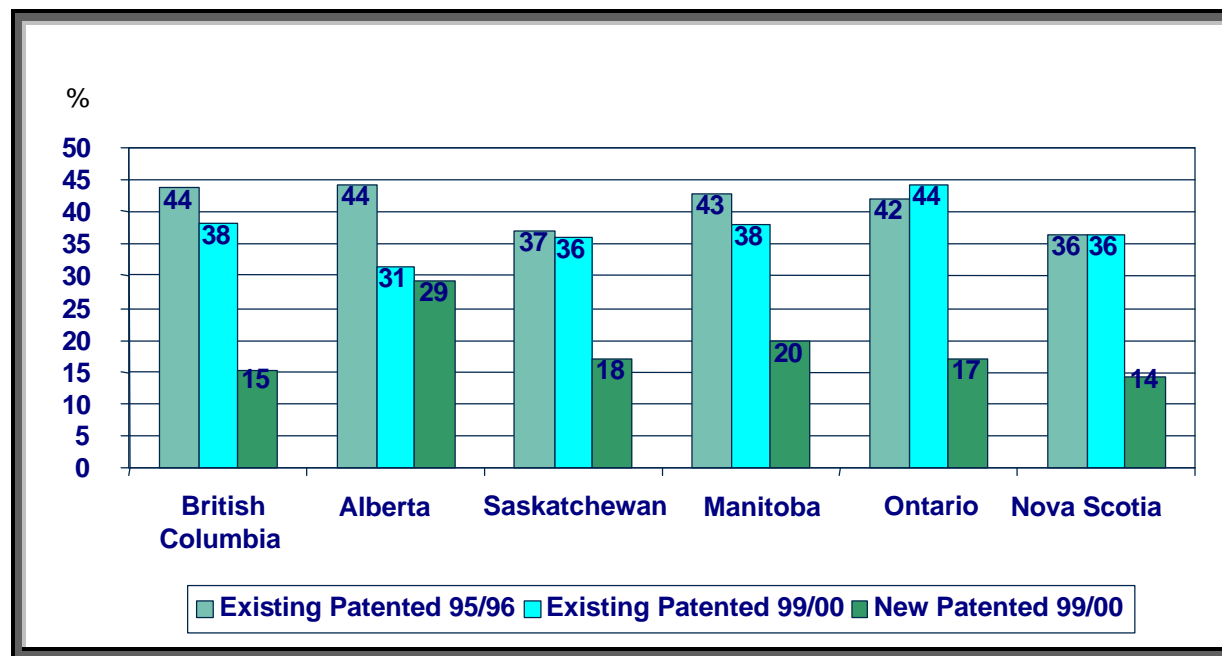
5 Patented Drugs

In 1999/00, spending on patented drugs represented more than half the total prescription spending in the six provincial drug plans. Patented, or brand name, drugs may have 20 years of market exclusivity, and their introductory price level and changes to that level (i.e. price trend) can set the standard for the price of subsequent drugs in the same therapeutic class.

Figures 8 and 9 provide information on the proportion of expenditures on patented drugs for each jurisdiction in 1995/96 and 1999/00. Figure 8 provides information on the distribution of patented drug expenditures. In 1995/96, Saskatchewan and Nova Scotia had the lowest

portion of total expenditures represented by patented drugs, while British Columbia and Alberta had the highest proportion. By 1999/00, patented expenditures in British Columbia, as a portion of total expenditures, were in line with levels seen in Saskatchewan and Nova Scotia. The trends seen in Ontario are also worthy of comment: although expenditures on patented drugs are the highest in Ontario, over 72% of patented expenditures are on drugs that were on the formulary in 1995/96 (i.e. “existing drugs”). In Alberta, on the other hand, almost half of patented expenditures are on “newer” patented drugs (i.e. drugs introduced onto the formulary after 1995/96).

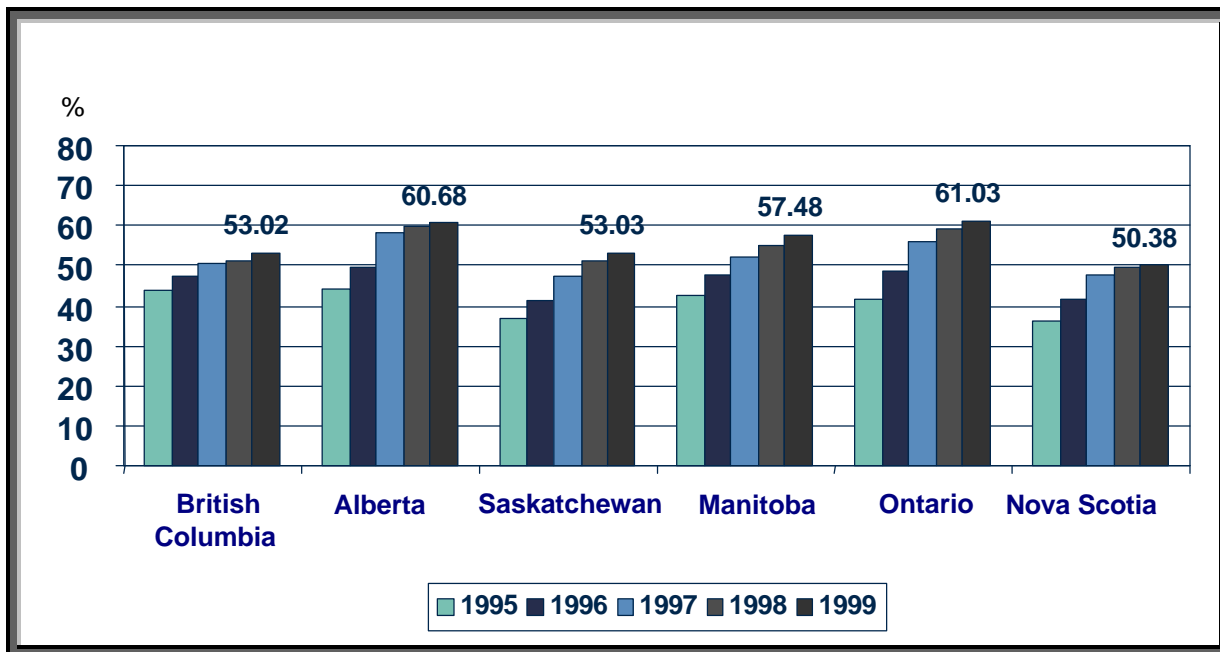
Figure 8 Proportion of Pharmaceutical Expenditures on Patented Drugs



In 1999/00, patented drugs accounted for approximately 60% of total expenditures in Alberta, Manitoba and Ontario. On average,

between 1995/96 and 1999/00, expenditures on patented drugs increased by 111% and grew at an average annual rate of 21%.

Figure 9 Patented Drugs as a Percentage of Total Provincial Drug Plan Expenditures, 1995/96 – 1999/00



New, innovative patented drugs can play an important and essential role in improving the diagnosis of illness, treatment of disease and maintenance of health. However, patented drugs are costly, and cost-effective utilization of new drugs is a challenge.²⁵

Figure 10 illustrates the distribution of patented expenditures between different categories of patented drugs.²⁶ Category 1 drugs are line extensions of an existing drug product, category

2 drugs are those that are a breakthrough or substantial improvement over an existing product, and category 3 drugs offer moderate, little or no improvement over an existing drug product or non-categorized patented drug products.²⁷ In all jurisdictions, category 2 products account for less than 10% of expenditures on patented drugs. Category 3 drugs represent, by far, the largest portion of patented expenditures.

Figure 10 Distribution of Patented Drug Expenditures by Category, 1999/00

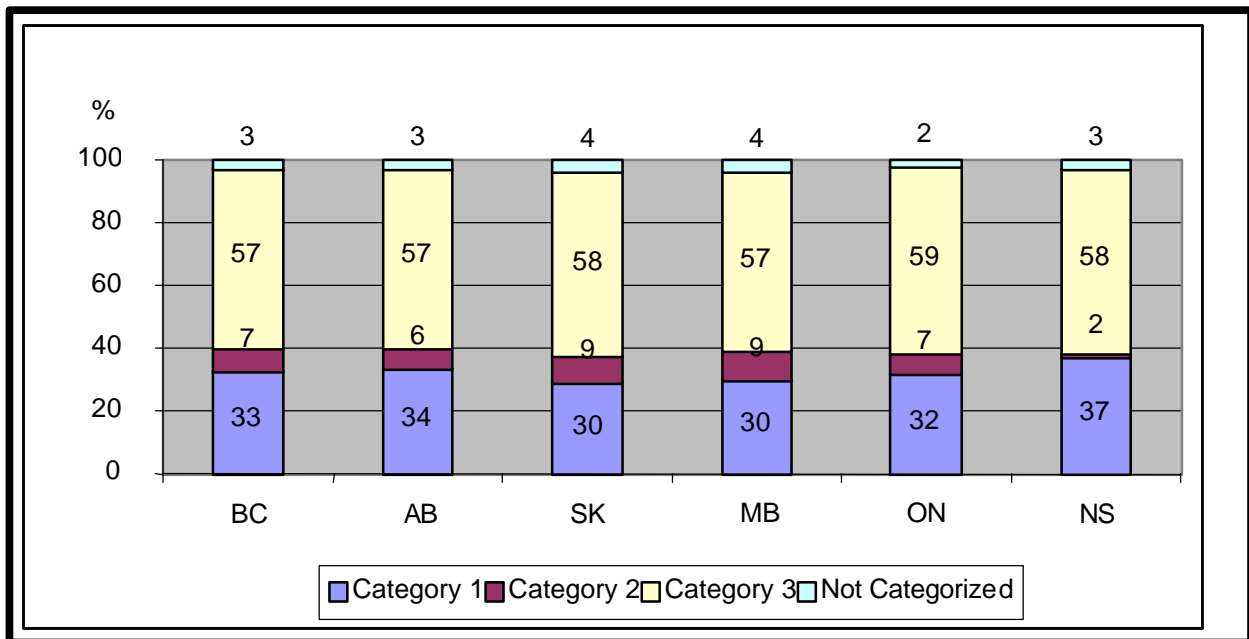
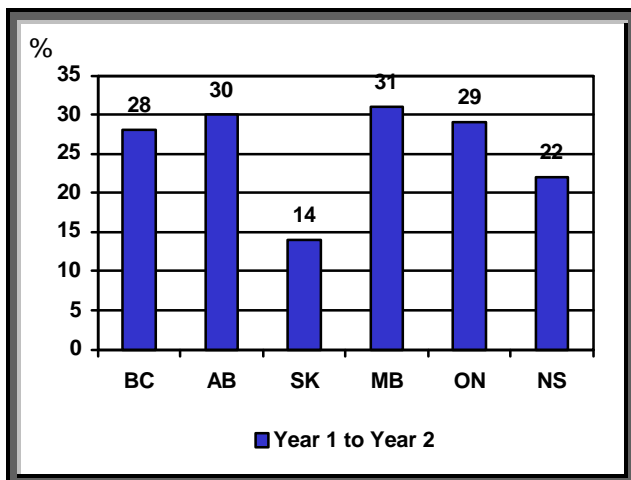


Figure 11 Average Growth Rate of Expenditures on Newer Drugs

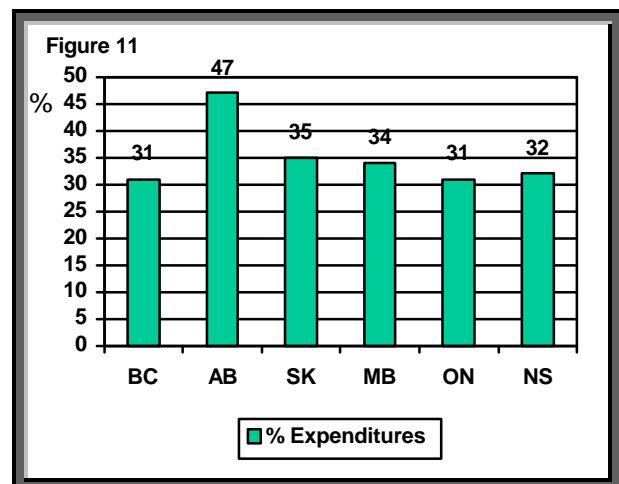


The introduction of new therapies and the rapid rate of market penetration pose significant budgetary pressures for provincial drug plans. Figure 11 demonstrates that between the first and second full year on the provincial drug plan, expenditures on new drugs increased by approximately 30% in British Columbia, Alberta, Manitoba and Ontario. Growth was considerably lower in Saskatchewan and Nova Scotia.

For the six jurisdictions, drugs that were introduced into the formulary after 1995/96 and defined as “newer drugs” accounted for over

30% of total expenditures by 1999/00. As Figure 12 shows, that proportion is closer 50% in Alberta.

Figure 12 Pharmaceutical Expenditures on Newer Drugs, 1999/00



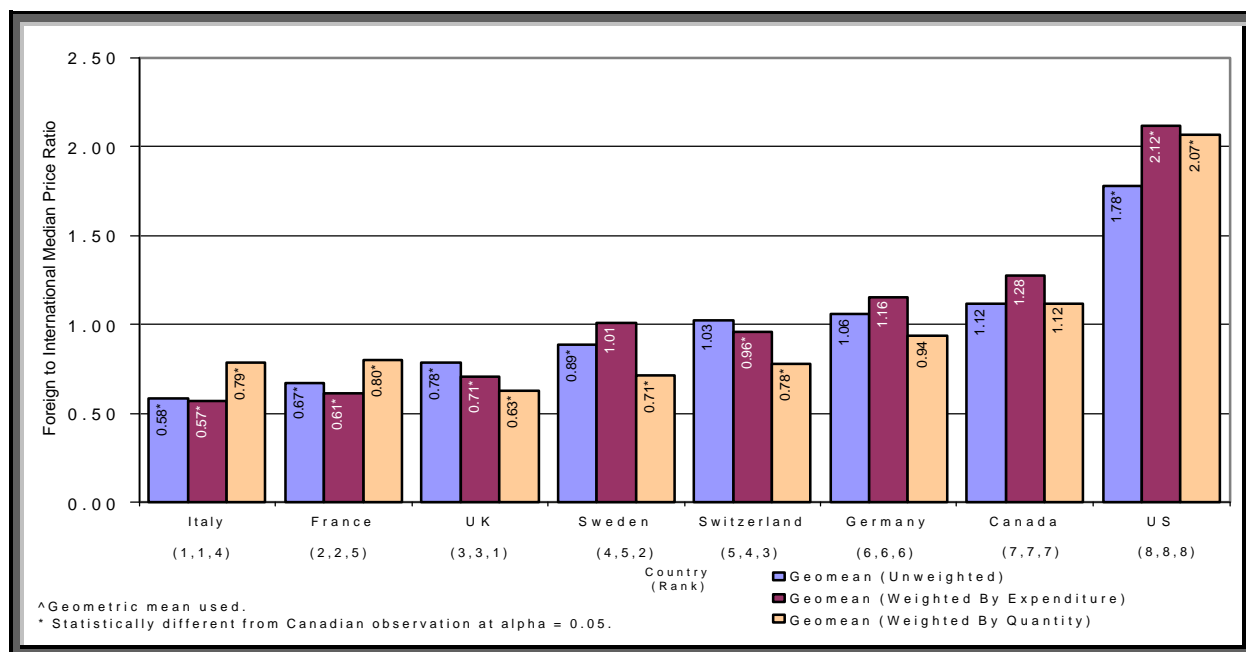
6 Non-Patented Single Source Drugs²⁸

Non-patented single source (NPSS) drugs are products without a patent (either due to patent expiration or dedication, or because a patent does not exist) that are produced by one manufacturer. In 1999, manufacturers' sales of non-patented drugs totalled \$3.6 billion, growing at an annual rate of 6.5% over the decade. In 1999, non-patented drugs represented 39% of all manufacturers' sales in Canada. Based on

provincial drug plan data for the six jurisdictions, NPSS drugs represented, on average, 13% of all prescriptions and 12% of expenditures submitted to the drug plans.

Figure 13 provides an international price analysis of top-selling NPSS drugs in 1998/99. In 1998/99, Canadian prices were found to be, on average, 28%²⁹ higher than median foreign prices in countries used by the PMPRB to review prices of patented drugs. In 2000, by contrast, Canadian prices for patented drugs have fallen to 8% below median foreign prices.

Figure 13 Ratio of Foreign to Median International Prices Top-Selling Non-Patented Single Source Drugs, 1998/99

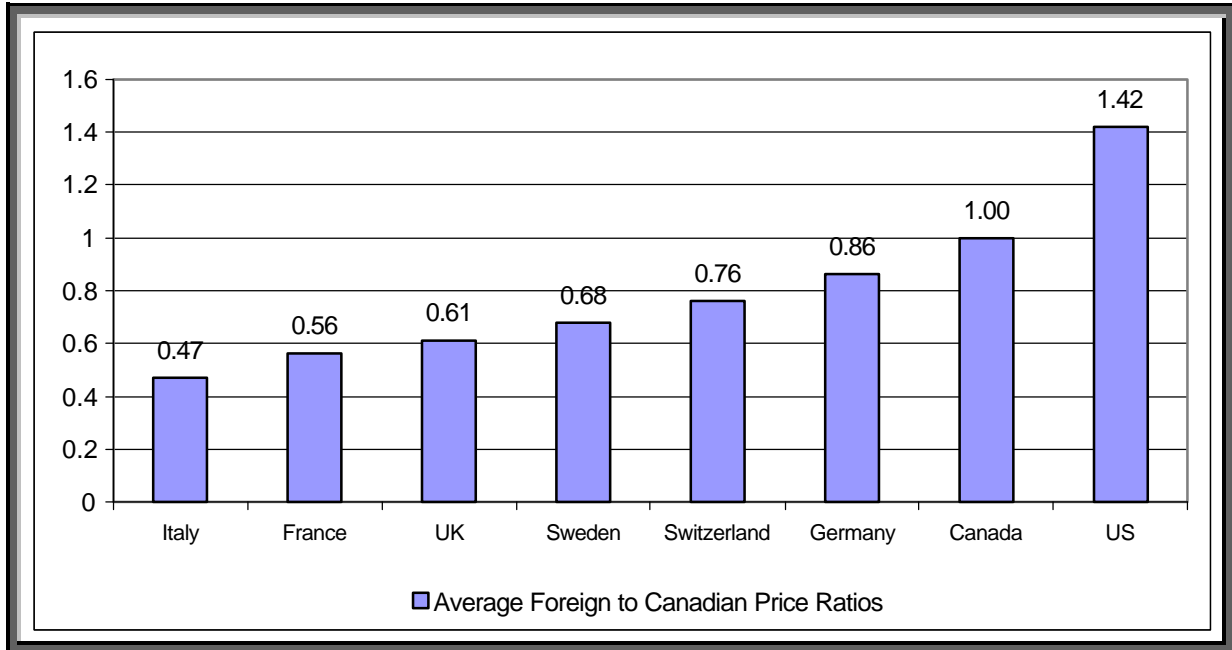


Figures 13 and 14 illustrate that the average prices of NPSS drugs are the highest in Canada, with price levels being second only to the United States. Prices levels in Italy and France, for example, are 53% and 44% lower than in Canada, respectively.

In 1999 and 2000, Canada ranked as the third lowest priced country after Italy and France for patented drugs. Had NPSS drugs been priced at

the median international levels, spending by the six provincial drug plans would have been approximately \$70 million less than the \$317.7 million these plans spent on NPSS drug products in 1999/00. This represents about 2% of the \$2.5 billion spent on drugs by the six provincial drug plans that year.

Figure 14 International Price Analysis Average Foreign to Canadian Price Ratios Non-Patented Single Source Drugs, 1998/99



7 Non-Patented Multiple Source Drugs

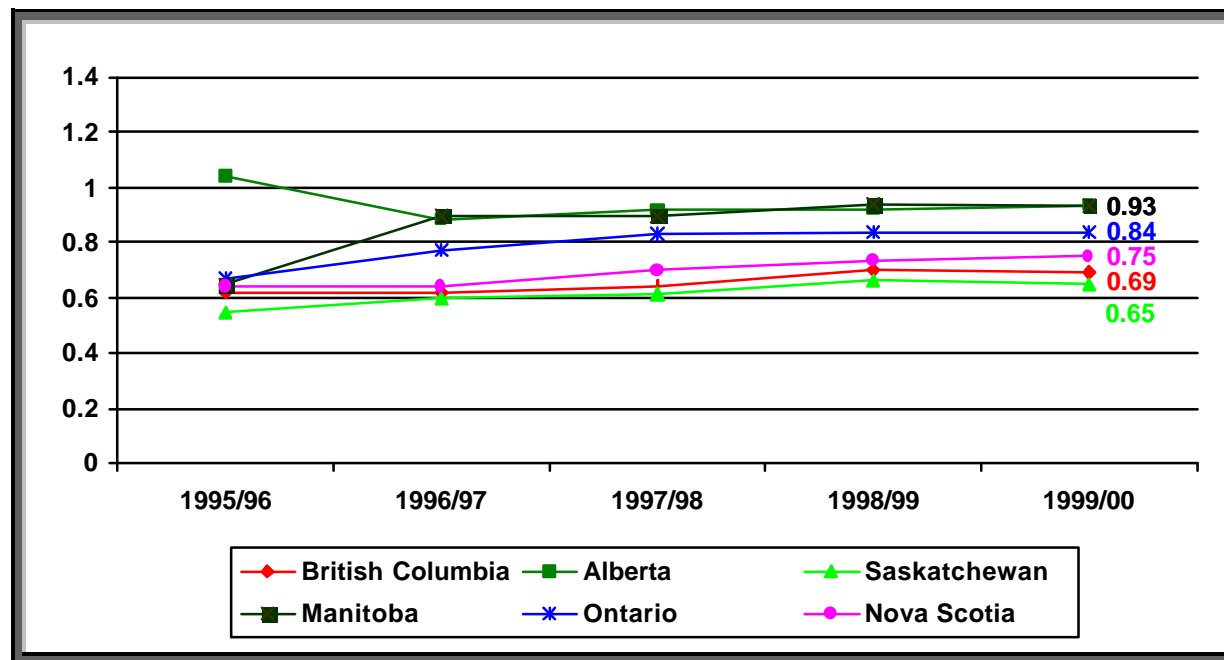
Non-patented multiple source drugs accounted for approximately 28% of spending on prescription drugs in the provincial drug plans in 1999/00.

An assessment of generic and brand prices of these drugs revealed an overall trend towards higher generic drug prices relative to their brand equivalents, while overall prices of brand name multiple source drugs have remained constant or declined. Further analysis is required to answer questions concerning what is an “appropriate” introductory price for first-entrant generic drugs (e.g., 70%, 60%, 55% or some other percent of the brand name price) and to assess the role of competition among multiple source drugs on prices and utilization of these drugs.

An analysis of patented drugs revealed that manufacturers of patented drugs generally treat the Canadian market as one, with little variation in ex-factory gate price from one jurisdiction to another. However, the interprovincial differences in the ratio of generic to brand name prices,

presented in Figure 15, suggest that generic manufacturers do not necessarily follow the same pricing strategy. In Saskatchewan, the generic to brand price ratio is the lowest, with generics being priced, on average, 35% below brand name drugs. In Alberta and Manitoba, the generic discount appears to be only 7%.³⁰ Interjurisdictional price differences appear to be relatively significant for non-patented multiple source drugs. The relative prices levels presented in Figure 15 are based on prices submitted to the drug plans. If pharmacies are submitting lower-cost alternative prices for brand name drugs, the spread between generic and brand price reported to the drug plans would be reduced. Further investigation of this issue is required.

Figure 15 Mean Generic/Brand Price Ratio, 1995/96 – 1999/00

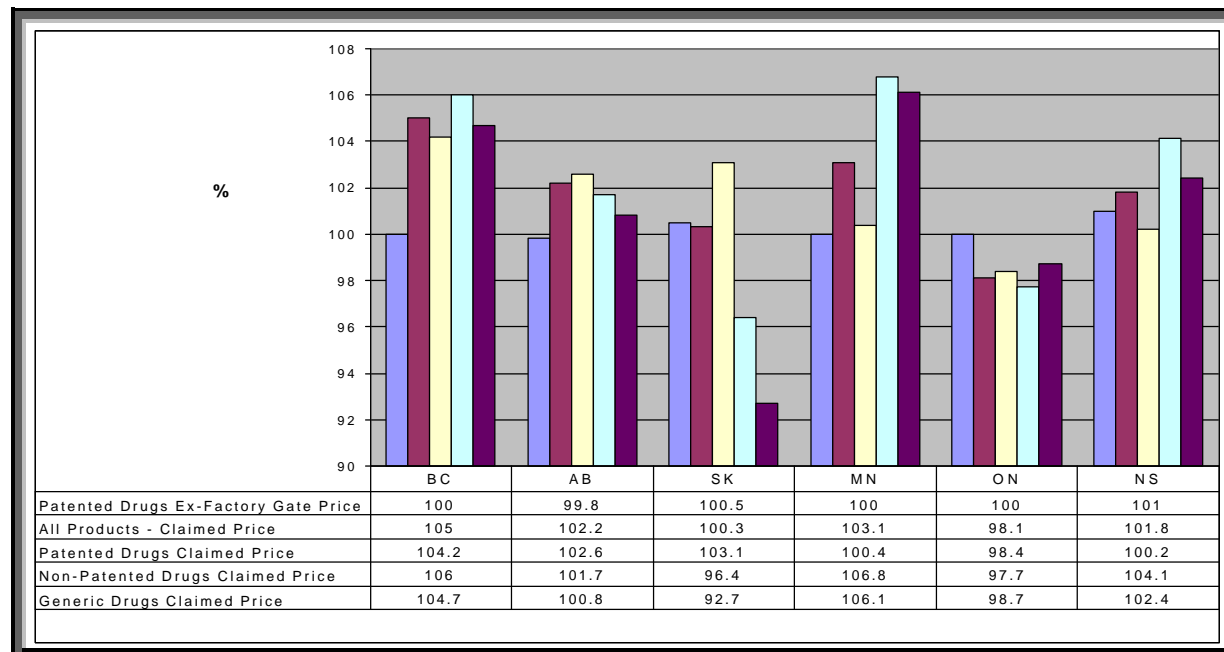


8 Interprovincial Prescription Drug Price Comparisons

Figure 16 provides a summary of interprovincial price comparisons at both the manufacturers' ex-factory gate level and the provincial retail claimed price level for all drugs on the formulary, for patented drugs, non-patented drugs and generic drugs. An index is presented, identifying the relative cost of purchasing an average

Canadian basket³¹ of drugs in each jurisdiction. For example, it costs 0.5% more to buy an average Canadian basket of goods at Saskatchewan ex-factory (manufacturers') prices.

Figure 16 Interprovincial Prescription Drug Price Comparison, 1999/00



Manufacturers' prices of patented drugs were virtually identical in all provincial markets. In 1999/00, the difference between the highest and lowest ex-factory gate price was less than 1.3%. For all provinces, roughly two thirds of provincial prices were within plus-or-minus 2.0% of the corresponding Canada-wide price, with roughly three quarters of all prices within plus-or-minus 5.0%. This is strong direct evidence that manufacturers' prices of patented drugs did not vary much across provinces between 1995 and 1999.

The price variation present at the drug plan level, using provincial drug plan claimed price information (which includes wholesale and retail mark-ups for the six provincial drug plans), is

considerably more substantial both for patented and non-patented drugs. An interprovincial price analysis of generic drugs revealed that prices in Saskatchewan are substantially lower than in the other provinces.

The 1999/00 results for the six provincial drug plans indicate a greater degree of price variation than those obtained with PMPRB data, with a difference between the highest-cost and lowest-cost province of 9.0%. Comparison of the 1999 and 1995 results reveals that the price differences have been narrowing, with a high-low difference of 16.3 percent in 1995.

Conclusion

Drugs will continue to play an increasing role in the health status of Canadians. Despite significant reform of many of the publicly funded drug plans in recent years, public spending has been increasing by more than 10% per year; last year, many provincial drug plans experienced increases of 20% or more.

Studies conducted by the PMPRB on behalf of the F/P/T Ministers of Health demonstrate that these increases were largely attributed to increases in the rate of utilization of existing drugs and the impact on total expenditures of decisions to reimburse newer and higher-cost drugs. Governments can expect to face continuing pressure to ensure that those Canadians who are most in need will be able to maintain affordable access to the best drugs.

The focus of the research, steered by F/P/T Working Group on Drug Prices, was undertaken in part by the information needs of drug plan managers and to support strategies for assessing the cost-effectiveness of prescription drugs. Cost-effective utilization of pharmaceuticals is critical to efficient and effective allocation of public funds.

There is an ongoing need to gather relevant, factual information in order to effectively evaluate current policies and guide the development of future planning in the area of pharmaceutical spending.

Appendix I - Provincial Plans Overview – 1999/00

Government-Sponsored Drug Plans: Type, Beneficiaries and Client Cost Share				
Province	Program	Plan	Beneficiaries	Client Cost Share
British Columbia	Pharmacare	A	Seniors	No deductible; 100% of dispensing fee to a maximum of \$200/person/year
		B	Residents of licensed long-term care facilities	None
		C	Social assistance recipients	
		D	Cystic fibrosis patients	
		F	At Home Programs for severely handicapped children	
		G	Clients of mental health centres	
		E	All residents of BC	Annual deductible of \$800; 30% co-pay to a maximum of \$2,000/year, single or family unit. Recipients of Premium Assistance Program or Temporary Premium Assistance Program through Medical Services Plan pay an annual deductible of \$600
Alberta	Blue Cross Group 66		Seniors and dependants	No premium; no deductible; 30% co-payment to maximum of \$25 pre drug/prescription plus additional cost, if higher-cost product is selected. Annual/lifetime maximum is \$25,000 (which may increase following review).
	Blue Cross Group 66A		Residents 55 to 64 years of age who qualify for Alberta Widow(er)s' Pension, and dependants	

Government-Sponsored Drug Plans: Type, Beneficiaries and Client Cost Share				
Province	Program	Plan	Beneficiaries	Client Cost Share
	Blue Cross Group 1		All other residents who voluntarily enrol with payment of premiums	Premium varies from \$14.35 to \$41 depending on income levels. No deductibles; 30% co-payment to maximum of \$25/drug/prescription plus additional cost if higher-cost product is selected. Annual/lifetime maximum is \$25,000 (which may increase following review).
	Human Resources and Employment		Residents receiving social assistance (Support for Independence); Assured Income for the Severely Handicapped; and Child Welfare	\$2.00 per prescription for first three prescriptions per month.
	Palliative Care Drug Program		People who have been diagnosed as palliative and treated at home	None
	Child Health Benefit Program		Children in low-income families	None
Manitoba	Pharmacare		All provincial residents	Deductible varies with adjusted family income: 2% of <= \$15,000 or 3% of > \$15,000. Adjusted family income is total income less \$3,000 for spouse and each dependent child under 18. Minimum of \$100 deductible
	Social Allowance Health Services (SAHS)		Social services recipients	None
	Personal Care Home Drug Program		Nursing home residents	None

Government-Sponsored Drug Plans: Type, Beneficiaries and Client Cost Share				
Province	Program	Plan	Beneficiaries	Client Cost Share
Ontario	Ontario Drug Benefit (ODB) Program		Seniors; persons receiving benefits under the Ontario Disability Support Program; persons receiving benefits under the Ontario Works Program; residents of Homes for Special Care; residents of long-term care facilities; recipients of professional services under the Home Care Program	Single seniors with annual net income < \$16,018, senior couples with combined annual net income < \$24,175, recipients of general welfare benefits or family benefits, recipients of home care, residents of nursing home, home for aged or Home for Special Care, and beneficiaries of TDP pay up to \$2/prescription. High-income seniors: \$100 deductible/person year then up to \$6.11 toward the dispensing fee.
	Trillium Drug Program (TDP)		All residents with high drug costs in relation to income	Deductibles are income-based: family of four with net annual income < \$6,500 pays \$150, and single person with same income pays \$350. Deductibles are \$4,089 for single person with net annual income < \$100,000 and \$3,889 for family of four with same income; after deductibles are reached they pay \$2/prescription.
	Special Drugs Program		Residents suffering from end stage renal disease, schizophrenia, HIV/AIDS and transplant recipients, who are not eligible for ODB or Trillium	None
Saskatchewan	Prescription Drug Plan	Saskatchewan Assistance Plan	Social Services	Deductibles are waived; \$2/prescription for certain registrants.
		Special Beneficiaries	People under the paraplegic program, cystic fibrosis program, chronic end-stage renal disease program, and users of certain no charge high-cost drugs	None

Government-Sponsored Drug Plans: Type, Beneficiaries and Client Cost Share				
Province	Program	Plan	Beneficiaries	Client Cost Share
		Palliative Care Coverage	Persons in late stages of terminal illness	None
		Emergency Assistance	Persons in need of immediate treatment but unable to cover the costs	Level of assistance determined in accordance with ability to pay.
		Special Support Coverage	Families with annual drug costs that exceed 3.4% of family-adjusted income	Lower deductible and lower co-payment assigned.
		Income Supplement Recipients	Single seniors and senior families receiving the Saskatchewan Income supplement (SIP) or receiving the federal Guaranteed Income Supplement (GIS) and residing in a nursing home	Seniors receiving SIP and seniors receiving GIS and living in nursing homes pay a deductible of \$100 semi-annually. Other seniors receiving GIS and living in the community pay \$200 deductible semi-annually. Other seniors with higher incomes and low drug costs pay an \$850 deductible semi-annually.
		Regular Deductible Program	Families who are not eligible for any other Drug Plan coverage	\$850 semi-annual deductible plus 35% co-payment after reaching deductible.
		Child Benefit Program	Children under 18 years of age of families receiving the Family Income Supplement	None
Nova Scotia	Pharmacare	Seniors' Pharmacare	Seniors > 65 who pay premiums and do not have private drug coverage.	Premium \$215/person/year; 33% co-pay (minimum \$3/prescription) to maximum of \$350/person/year. Low-income seniors may apply for a credit of \$300, which can be used to pay the premium.
		Pharmacare for Income Assistance	People receiving income assistance.	\$3/prescription; no yearly limit.

Government-Sponsored Drug Plans: Type, Beneficiaries and Client Cost Share				
Province	Program	Plan	Beneficiaries	Client Cost Share
		Pharmacare for Family Benefits	People registered with the Family Benefits Program.	No deductibles or premiums; 20% co-payment, minimum \$3/prescription; annual maximum \$150.

Appendix II - Top 25 Selling Drugs by Province

Top 25 Patented and Non-Patented Drugs British Columbia 1998/99 – 1999/00						
DIN	INGREDIENTS	BRAND	ATC	Year of Introduction	1998/99 (\$)	1999/00 (\$)
2190915	OMEPRAZOLE (OMEPRAZOLE MAGNESIUM)	LOSEC 20 MG	A	1995	14,751,090	16,946,897
1940481	PAROXETINE (PAROXETINE HYDROCHLORIDE)	PAXIL TAB 20MG	N	1995	7,229,754	8,770,020
2230711	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 10MG	C	1997	4,149,526	8,102,716
893757	PRAVASTATIN SODIUM	PRAVACHOL TAB 20MG	C	1995	5,773,801	5,757,050
2229285	OLANZAPINE	ZYPREXA - 10MG	N	1997	3,724,447	5,393,151
884340	SIMVASTATIN	ZOCOR TAB 20MG	C	1995	4,588,608	5,261,497
884332	SIMVASTATIN	ZOCOR TAB 10MG	C	1995	4,504,775	4,420,915
878928	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 5MG	C	1995	3,928,583	4,413,320
2230713	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 20MG	C	1997	2,075,559	4,413,131
2220172	LOVASTATIN	APO-LOVASTATIN - TAB 20MG	C	1997	4,803,546	4,277,923
2155907	NIFEDIPINE	ADALAT XL - SRT 30MG	C	1995	4,147,411	3,971,939
894745	CLOZAPINE	CLOZARIL TAB 100MG	N	1995	3,165,731	3,865,198
870935	LEVODOPA	SINEMET CR 200/50	N	1995	2,920,277	3,281,486
1947672	QUINAPRIL (QUINAPRIL HYDROCHLORIDE)	ACCUPRIL TAB 10MG	C	1995	2,575,431	2,957,099
2215055	BECLOMETHASONE DIPROPIONATE	BECLOFORTE INHALER - AEM INH 250MCG/AEM	R	1995	3,968,025	2,938,471
2229453	PANTOPRAZOLE (PANTOPRAZOLE SODIUM SESQUIHYDRATE)	PANTOLOC 40MG	A	1997	1,195,645	2,808,368
2176017	CALCIUM (CALCIUM CARBONATE)	DIDROCAL-400MG(DISOD.ETIDRONATE)TAB AND 1250M	M	1995	1,967,795	2,776,027
2213613	FLUTICASONE PROPIONATE	FLOVENT INHALERS - AEM INH-ORL 250MCG/AEM	R	1996	1,700,577	2,754,219
2229269	OLANZAPINE	ZYPREXA - 5MG	N	1997	2,013,612	2,627,107
2155966	CIPROFLOXACIN (CIPROFLOXACIN HYDROCHLORIDE)	CIPRO 500 - TAB 500MG	J	1995	2,255,929	2,594,713
2221845	RAMIPRIL	ALTACE - CAP 5MG	C	1995	1,725,303	2,560,377
576158	IPRATROPIUM BROMIDE	ATROVENT AEM 28.6MG/100GM	R	1995	2,333,715	2,500,386
2221853	RAMIPRIL	ALTACE - CAP 10MG	C	1995	1,582,052	2,492,050
1962817	SERTRALINE (SERTRALINE HYDROCHLORIDE)	ZOLOFT CAP 50MG	N	1995	3,466,465	2,490,919
1947680	QUINAPRIL (QUINAPRIL HYDROCHLORIDE)	ACCUPRIL TAB 20MG	C	1995	1,870,998	2,425,320

Top 25 Patented and Non-Patented Drugs Alberta 1998/99 – 1999/00						
DIN	Ingredients	Brand	ATC	Year of Introduction	1998/99	1999/00
2190915	OMEPRAZOLE (OMEPRAZOLE MAGNESIUM)	LOSEC 20 MG	A	1996	14,920,640	18,076,515
878928	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 5MG	C	1995	4,911,776	5,984,213
893757	PRAVASTATIN SODIUM	PRAVACHOL TAB 20MG	C	1995	5,475,135	5,923,653
2239942	CELECOXIB	CELEBREX 200MG	M	1999		5,509,238
2230711	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 10MG	C	1997	2,854,999	5,274,602
1940481	PAROXETINE (PAROXETINE HYDROCHLORIDE)	PAXIL TAB 20MG	N	1995	2,809,323	3,543,165
878936	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 10MG	C	1995	2,420,048	3,266,648
2176017	CALCIUM (CALCIUM CARBONATE)	DIDROCAL-400MG(DISOD.ETIDRONATE)TAB AND 1250M	M	1996	2,230,179	3,249,069
2231586	EPOETIN ALFA	EPREX STERILE SOLUTION 4000IU/0.4ML	B	1997	1,644,171	3,247,131
884332	SIMVASTATIN	ZOCOR TAB 10MG	C	1995	2,949,632	3,005,932
884340	SIMVASTATIN	ZOCOR TAB 20MG	C	1995	2,338,967	2,984,184
2182874	LOSARTAN POTASSIUM	COZAAR - TAB 50MG	C	1996	2,466,986	2,798,957
2155907	NIFEDIPINE	ADALAT XL - SRT 30MG	C	1995	2,710,355	2,653,891
2165511	LANSOPRAZOLE	PREVACID - SRC 30MG	A	1996	1,539,390	2,645,496
2230713	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 20MG	C	1997	1,067,273	2,499,166
2239941	CELECOXIB	CELEBREX 100MG	M	1999		2,111,144
2229453	PANTOPRAZOLE (PANTOPRAZOLE SODIUM SESQUIHYDRATE)	PANTOLOC 40MG	A	1997	952,331	2,107,513
2233014	GLATIRAMER ACETATE	COPAXONE	L	1998	109,627	1,904,384
670901	ENALAPRIL MALEATE	VASOTEC TAB 10MG	C	1995	3,630,983	1,700,100
2239500	ENALAPRIL MALEATE	NU-ENALAPRIL TABLETS	C	1999		1,691,023
2220172	LOVASTATIN	APO-LOVASTATIN - TAB 20MG	C	1997	1,776,515	1,687,894
1984853	CLARITHROMYCIN	BIAXIN TAB 250MG	J	1995	1,414,135	1,670,988
708879	ENALAPRIL MALEATE	VASOTEC TAB 5MG	C	1995	3,592,757	1,605,399
1907107	FOSINOPRIL SODIUM	MONOPRIL TAB 10MG	C	1995	1,382,651	1,581,220
1962817	SERTRALINE (SERTRALINE HYDROCHLORIDE)	ZOLOFT CAP 50MG	N	1995	1,625,949	1,576,172

Top 25 Patented and Non-Patented Drugs Saskatchewan 1998/99 and 1999/00						
DIN	Ingredients	Brand	ATC	Year of Introduction	1998/99 (\$)	1999/00 (\$)
2230711	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 10MG	C	1997	1,728,099	2,727,923
2190915	OMEPRAZOLE (OMEPRAZOLE MAGNESIUM)	LOSEC 20 MG	A	1995	2,142,904	2,680,627
1940481	PAROXETINE (PAROXETINE HYDROCHLORIDE)	PAXIL TAB 20MG	N	1995	2,076,219	2,573,704
2169649	SODIUM CHLORIDE	BETASERON	L	1997	2,052,431	2,186,769
865737	RANITIDINE (RANITIDINE HYDROCHLORIDE)	NU-RANIT TAB 150MG	A	1995	2,328,064	2,019,411
878928	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 5MG	C	1995	1,703,466	1,915,589
893757	PRAVASTATIN SODIUM	PRAVACHOL TAB 20MG	C	1995	1,630,900	1,656,907
2213613	FLUTICASON PROPRIONATE	FLOVENT INHALERS - AEM INH-ORL 250MCG/AEM	R	1995	972,521	1,373,189
582352	ISOTRETINOIN	ACCUTANE CAP 40MG	D	1995	1,203,114	1,283,088
2213605	FLUTICASON PROPRIONATE	FLOVENT INHALERS - AEM INH-ORL 125MCG/AEM	R	1995	888,573	1,231,835
2155907	NIFEDIPINE	ADALAT XL - SRT 30MG	C	1995	1,243,081	1,222,690
878936	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 10MG	C	1995	963,401	1,205,749
2230713	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 20MG	C	1997	598,082	1,117,327
2239500	ENALAPRIL MALEATE	NU-ENALAPRIL TABLETS	C	1999		1,116,387
884340	SIMVASTATIN	ZOCOR TAB 20MG	C	1995	901,300	1,112,778
2239499	ENALAPRIL MALEATE	NU-ENALAPRIL TABLETS	C	1999		1,100,772
2233014	GLATIRAMER ACETATE	COPAXONE	L	1997	507,744	1,085,995
836338	CISAPRIDE (CISAPRIDE MONOHYDRATE)	PREPULSID TAB 10MG	A	1995	1,188,291	1,068,553
2182874	LOSARTAN POTASSIUM	COZAAR - TAB 50MG	C	1995	937,701	1,034,349
2176017	CALCIUM (CALCIUM CARBONATE)	DIDROCAL-400MG(DISOD.ETIDRONATE)TAB AND 1250M	M	1996	770,264	1,012,273
2213672	FLUTICASON PROPRIONATE	FLOLEASE - AEM-SUS NAS 50MCG/MD	R	1995	1,125,493	973,776
884332	SIMVASTATIN	ZOCOR TAB 10MG	C	1995	1,014,728	967,643
2237280	VENLAFAXINE (VENLAFAXINE HYDROCHLORIDE)	EFFEXOR XR 75MG EXTENDED-RELEASE CAPSULES	N	1998	306,778	947,147
839396	LISINOPRIL	PRINIVIL TAB 10MG	C	1995	771,520	916,041
2150670	CYCLOSPORINE	NEORAL 100MG	L	1995	864,489	902,840

Top 25 Drugs Patented and Non-Patented Drugs Manitoba 1998/99 and 1999/00						
DIN	Ingredients	Brand	ATC	Year Of Introduction	1998/99 (\$)	1999/00 (\$)
2190915	OMEPRAZOLE (OMEPRAZOLE MAGNESIUM)	LOSEC 20 MG	A	1995	6,418,269	8,525,916
1940481	PAROXETINE (PAROXETINE HYDROCHLORIDE)	PAXIL TAB 20MG	N	1995	2,644,254	3,422,637
2230711	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 10MG	C	1997	1,862,228	3,159,530
893757	PRAVASTATIN SODIUM	PRAVACHOL TAB 20MG	C	1995	2,437,388	2,642,147
884340	SIMVASTATIN	ZOCOR TAB 20MG	C	1995	2,147,263	2,462,958
878928	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 5MG	C	1995	2,086,532	2,423,895
2155907	NIFEDIPINE	ADALAT XL - SRT 30MG	C	1995	2,260,588	2,215,197
2201011	ALENDRONATE (ALENDRONATE SODIUM)	FOSAMAX - TAB 10MG	M	1996	1,328,410	1,887,464
884332	SIMVASTATIN	ZOCOR TAB 10MG	C	1995	1,932,343	1,879,475
2169649	SODIUM CHLORIDE	BETASERON	L	1995	923,526	1,717,554
2220172	LOVASTATIN	APO-LOVASTATIN - TAB 20MG	C	1997	1,906,951	1,695,593
2155990	NIFEDIPINE	ADALAT XL - SRT 60MG	C	1995	1,492,701	1,685,272
2239942	CELECOXIB	CELEBEX 200MG	M	1999		1,639,235
2230713	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 20MG	C	1997	738,754	1,463,309
2213605	FLUTICASONE PROPIONATE	FLOVENT INHALERS - AEM INH-ORL 125MCG/AEM	R	1996	993,815	1,460,613
1962817	SERTRALINE (SERTRALINE HYDROCHLORIDE)	ZOLOFT CAP 50MG	N	1995	1,829,113	1,420,395
1907107	FOSINOPRIL SODIUM	MONOPRIL TAB 10MG	C	1995	1,166,423	1,361,288
2229285	OLANZAPINE	ZYPREXA - 10MG	N	1996	794,436	1,346,932
2229453	PANTOPRAZOLE (PANTOPRAZOLE SODIUM SESQUIHYDRATE)	PANTOLOC 40MG	A	1997	721,004	1,323,897
1968017	FILGRASTIM (R-METHUG-CSF)	NEUPOGEN INJ LIQ 0.3MG/ML	L	1995	855,141	1,284,044
1962779	SERTRALINE (SERTRALINE HYDROCHLORIDE)	ZOLOFT CAP 100MG	N	1995	1,570,180	1,264,258
670901	ENALAPRIL MALEATE	VASOTEC TAB 10MG	C	1995	2,317,416	1,258,156
708879	ENALAPRIL MALEATE	VASOTEC TAB 5MG	C	1995	2,520,119	1,236,800
2213613	FLUTICASONE PROPIONATE	FLOVENT INHALERS - AEM INH-ORL 250MCG/AEM	R	1995	845,724	1,207,766
2182874	LOSARTAN POTASSIUM	COZAAR - TAB 50MG	C	1995	1,195,615	1,197,140

Top 25 Patented and Non-Patented Drugs Ontario 1998/99 and 1999/00						
DIN	Ingredients	Brand	ATC	Year of Introduction	1998/99 (\$)	1999/00 (\$)
2190915	OMEPRAZOLE (OMEPRAZOLE MAGNESIUM)	LOSEC 20 MG	A	1995	70,829,448.89	68,006,946.65
878928	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 5MG	C	1995	31,268,645.66	36,706,564.09
2230711	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 10MG	C	1997	17,143,449.60	29,805,695.69
893757	PRAVASTATIN SODIUM	PRAVACHOL TAB 20MG	C	1995	29,138,909.76	28,857,298.19
884340	SIMVASTATIN	ZOCOR TAB 20MG	C	1995	21,538,324.38	25,286,888.30
1940481	PAROXETINE (PAROXETINE HYDROCHLORIDE)	PAXIL TAB 20MG	N	1995	20,186,609.56	24,148,589.50
708879	ENALAPRIL MALEATE	VASOTEC TAB 5MG	C	1995	24,164,170.90	23,025,995.30
670901	ENALAPRIL MALEATE	VASOTEC TAB 10MG	C	1995	20,986,101.08	21,683,392.22
884332	SIMVASTATIN	ZOCOR TAB 10MG	C	1995	21,870,498.31	21,660,061.41
2230713	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 20MG	C	1997	11,397,263.03	20,988,083.65
733059	RANITIDINE (RANITIDINE HYDROCHLORIDE)	APO-RANITIDINE TAB 150MG	A	1995	16,708,528.23	18,762,872.65
2229285	OLANZAPINE	ZYPREXA - 10MG	N	1996	10,784,070.64	18,143,454.28
878936	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 10MG	C	1995	14,454,971.86	18,118,814.47
2155907	NIFEDIPINE	ADALAT XL - SRT 30MG	C	1995	18,171,434.03	17,293,149.96
2213613	FLUTICASONE PROPIONATE	FLOVENT INHALERS - AEM INH-ORL 250MCG/AEM	R	1995	11,164,592.76	16,581,099.73
2215055	BECLOMETHASONE DIPROPIONATE	BECLOFORTE INHALER - AEM INH 250MCG/AEM	R	1995	20,614,692.61	14,984,651.41
1962817	SERTRALINE (SERTRALINE HYDROCHLORIDE)	ZOLOFT CAP 50MG	N	1995	15,365,833.84	14,648,041.69
2220172	LOVASTATIN	APO-LOVASTATIN - TAB 20MG	C	1997	16,175,738.77	14,131,637.41
1917056	MISOPROSTOL	ARTHROTEC 50 TAB	M	1995	14,002,672.23	14,003,029.03
2225905	GOSERELIN (GOSERELIN ACETATE)	ZOLADEX LA INJ DEPOT 10.8MG	L	1996	10,833,949.35	13,662,512.66
2176017	CALCIUM (CALCIUM CARBONATE)	DIDROCAL- 400MG(DISOD. ETIDRONATE)TAB AND 1250M	M	1996	8,372,285.49	13,227,543.68
2155966	CIPROFLOXACIN (CIPROFLOXACIN HYDROCHLORIDE)	CIPRO 500 - TAB 500MG	J	1995	11,407,055.32	12,294,746.06
2229269	OLANZAPINE	ZYPREXA - 5MG	N	1996	7,168,345.10	11,266,393.90
2182874	LOSARTAN POTASSIUM	COZAAR - TAB 50MG	C	1995	8,463,146.43	10,250,475.20
2146959	FENOFIBRATE	LIPIDIL MICRO - CAP 200MG	C	1995	11,088,026.87	9,972,818.07

Top 25 Patented and Non-Patented Drugs Nova Scotia 1998/99 and 1999/00						
DIN	Ingredients	Brand	ATC	Year of Introduction	1998/99 (\$)	1999/00 (\$)
878928	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 5MG	C	1995	1,673,963	1,811,311
2190915	OMEPRAZOLE (OMEPRAZOLE MAGNESIUM)	LOSEC 20 MG	A	1995	1,472,649	1,732,039
2230711	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 10MG	C	1997	1,008,421	1,478,333
828564	RANITIDINE (RANITIDINE HYDROCHLORIDE)	NOVO-RANIDINE TAB 150MG	A	1995	1,402,412	1,423,696
884340	SIMVASTATIN	ZOCOR TAB 20MG	C	1995	1,054,573	1,346,149
878936	AMLODIPINE (AMLODIPINE BESYLATE)	NORVASC TAB 10MG	C	1995	1,040,312	1,278,346
2155907	NIFEDIPINE	ADALAT XL - SRT 30MG	C	1995	1,261,127	1,193,379
2233005	ENALAPRIL MALEATE	NOVO-ENAPRIL	C	1998	255,411	1,180,614
893757	PRAVASTATIN SODIUM	PRAVACHOL TAB 20MG	C	1995	1,013,442	1,005,505
884332	SIMVASTATIN	ZOCOR TAB 10MG	C	1995	909,862	963,509
2207761	RANITIDINE (RANITIDINE HYDROCHLORIDE)	GEN-RANITIDINE - TAB 150MG	A	1996	748,744	912,759
2233006	ENALAPRIL MALEATE	NOVO-ENAPRIL	C	1998	204,474	909,113
2155990	NIFEDIPINE	ADALAT XL - SRT 60MG	C	1995	828,308	844,948
2220172	LOVASTATIN	APO-LOVASTATIN - TAB 20MG	C	1997	962,359	837,239
2230713	ATORVASTATIN (ATORVASTATIN CALCIUM)	LIPITOR 20MG	C	1997	452,760	806,934
1940481	PAROXETINE (PAROXETINE HYDROCHLORIDE)	PAXIL TAB 20MG	N	1995	706,068	785,884
2054817	CISAPRIDE (CISAPRIDE MONOHYDRATE)	PREPULSID TAB 20MG	A	1995	816,277	757,141
836338	CISAPRIDE (CISAPRIDE MONOHYDRATE)	PREPULSID TAB 10MG	A	1995	828,809	724,932
2225905	GOSERELIN (GOSERELIN ACETATE)	ZOLADEX LA INJ DEPOT 10.8MG	L	1996	659,695	707,001
733059	RANITIDINE (RANITIDINE HYDROCHLORIDE)	APO-RANITIDINE TAB 150MG	A	1995	689,317	688,628
2182874	LOSARTAN POTASSIUM	COZAAR - TAB 50MG	C	1995	648,207	666,163
851752	BUDESONIDE	PULMICORT TURBUHALER 200 MCG/DOSE	R	1995	719,860	656,400
2231493	LATANOPROST	XALATAN	S	1997	380,049	559,118
2146959	FENOFIBRATE	LIPIDIL MICRO - CAP 200MG	C	1995	730,227	518,481
2184478	BICALUTAMIDE	CASODEX TAB 50MG	L	1996	350,868	512,315

Appendix III - Anatomical Therapeutic Chemical (ATC) Classification System

The table below provides a more detailed description of the World Health Organization (WHO) Anatomical Therapeutic Chemical (ATC) classification system.

In the ATC classification system, the drugs are divided into different groups according to the organ or system on which they act and their chemical, pharmacological and therapeutic properties. Drugs are classified in groups at five different levels. The drugs are divided into 14 main groups (1st level), with two therapeutic/pharmacological subgroups (2nd and 3rd levels). The 4th level is a

therapeutic/pharmacological/chemical subgroup, and the 5th level is the chemical substance.

Medicinal products are classified according to the main therapeutic use of the main active ingredient, on the basic principle of only one ATC code for each pharmaceutical formulation (i.e. similar ingredients, strength and pharmaceutical form). A medicinal product can be given more than one ATC code if it is available in two or more strengths or formulations with clearly different therapeutic uses.

This information relates to the analysis presented in the cost driver section of this report.

ATC	Therapeutic Class	Subgroups
A02	Antacids, drugs for treatment of peptic ulcer and flatulence	Antacids; H2-receptor antagonists; Prostaglandins; Proton pump inhibitors; Combinations for eradication of Helicobacter pylori and Others such as sucralfate
C09	Agents acting on the renin-angiotensin system	ACEIs, plain; ACEIs, combinations; Angiotensin II antagonists, plain; Angiotensin II antagonists, combinations and Others
C10	Serum lipid reducing agents	HMG CoA reductase inhibitors; Fibrates; Bile acid sequestrants; Nicotinic acid and derivatives
N05	Psycholeptics	Antipsychotics (phenothiazines; butyrophenone derivatives; indole derivatives; thioxanthene derivatives; diphenylbutylpiperidine derivatives such as pimozide; diazepines, oxazepines and thiazepines such as clozapine, olanzepine and quetiapine; neuroleptics in tardive dyskinesia such as tetrabenazine; benzamides; lithium); Anxiolytics (benzodiazepine derivatives, carbamates, buspirone); Hypnotics and sedatives (barbiturates-plain, barbiturates-combinations, aldehydes and derivatives, benzodiazepine derivatives, piperidinedione derivatives, benzodiazepine related drugs such as zopiclone)
N06	Psychoanaleptics	Antidepressants; Psychostimulants and nootropics (centrally acting sympathomimetics, xanthine derivatives); Psycholeptics and psychoanaleptics in combination (antidepressants in combination with psycholeptics); Anti-dementia drugs

Appendix IV - Therapeutic Cost Driver Analysis

Cost driver analysis, when undertaken by therapeutic category, allows for a detailed assessment of treatment costs in individual therapeutic categories and can be a valuable policy and program management tool. Cost driver analysis by therapeutic category allows drug spending and utilization issues to be further identified and examined. The focus of the analysis is aimed at assessing and providing an interprovincial comparison of the cost of using a major therapeutic class rather than investigating the price of individual drugs. Thus price is defined as the average cost per day of the category of drugs over time for each jurisdiction, and utilization is defined as the number of days of therapy.³²

It is important to keep in mind that numerous factors may account for the differences in the average cost per day presented in the analysis below. Plan design (i.e. eligibility criteria, co-payment and deductible levels) can play an important role in defining plan beneficiaries. Listing decisions and utilization incentives and reimbursement schemes (such as low-cost alternative programs, reference-based pricing and special/pre-authorization processes) also play an important role in influencing the average

cost per day. Finally, prescribing patterns and therapeutic choice influence the average cost of therapy.

Differences between the drug plans can provide insight and establish relevant benchmarks; however, the data should be interpreted with caution (see Appendix I for more detail on each provincial plan). This information is an important first step in examining issues of cost-effectiveness of pharmaceutical therapy.

Drug categories that contributed significantly to changes in expenditures for all six jurisdictions were included in the therapeutic cost driver analysis (see Appendix II for a list of top 25 drugs in each jurisdiction). The therapeutic categories are:

- Serum Lipid Reducing Agents
- Agents Acting on the Renin-Angiotensin System
- Antacids and Drugs Used to Treat Peptic Ulcer and Flatulence
- Psycholeptics
- Psychoanaleptics

As shown in Table 8, these categories of drugs accounted for more than one third of total expenditures for all six jurisdictions in 1999/00.

Table 8 Percent of Total Expenditures for Top 5 Therapeutic Groupings by Jurisdiction, 1999/00

Percent of Total Expenditures for Top 5 Therapeutic Groupings by Jurisdiction, 1999/00						
Drug Group	BC % of Total	AB % of Total	SK % of Total	MB % of Total	ON % of Total	NS % of Total
Serum Lipid Reducing Agents	11.8	11.2	8.2	9.9	13.1	12.2
Agents Acting on the Renin-Angiotensin System	10.1	12.0	11.1	9.7	10.5	11.9
Antacids and Drug Used to Treat Peptic Ulcer and Flatulence	8.1	10.9	5.2	7.8	10.0	9.1
Psycholeptics	8.1	2.7	3.9	5.1	4.5	1.7
Psychoanaleptics	8.8	5.6	8.4	9.5	6.4	4.1
Total	46.8	42.4	36.8	42.0	44.5	39.0

Serum Lipid Reducing Agents (Cholesterol Reducing Drugs)

This group of drugs is generally indicated for the treatment of high cholesterol (see Appendix III for details on which drugs are included in this category). In 1999/00, this group represented approximately 10% of drug plan expenditures. Figure 17 provides information on the average annual growth in both expenditures and utilization between 1995/96 and 1999/00 in each of the drug plans. With the exception of British Columbia, the growth in utilization (or the number of days of therapy) has increased at a faster rate than expenditures.

Figure 18 shows the average cost per day of using Serum Lipid Reducing Agents for each jurisdiction. In 1995/96 the average cost per day ranged from a high of \$2.45 (Ontario) to a low of \$1.11 (British Columbia).³³ By 1999/00, the average cost per day fell to a high of \$1.62 (Ontario) to a low of \$1.12 (Alberta). The spread or difference in the average cost per day among jurisdictions narrowed over the study period from a 121% to 45% difference between the highest cost province and the lowest cost province. Between 1995/96 and 1999/00, Saskatchewan, Manitoba and Ontario experience the largest decrease in the average cost per day, whereas the average cost per day in British Columbia increased by 12%. In 1995/96, British Columbia had the lowest average cost per day among the

six jurisdictions. In 1999/00, the average cost per day was still relatively low, but higher than the average claimed to the drug plan in 1995/96. As such, British Columbia is the only jurisdiction in which the expenditures increased at a higher rate than utilization over the study period.

Figure 19 breaks out changes in expenditures in this group of drugs into three major components: the cost effect, the utilization effect and the cross effect. The expenditure breakdown is a measure of the impact or the relative contribution changes that the average daily cost of therapy and utilization had on changes in expenditures in that therapeutic category.

The cost effect measures the relative impact that changes in the average daily cost of therapy had on budget changes (if utilization was held constant). Similarly, the utilization effect is a measure of the impact of utilization changes (keeping cost constant) on the change in expenditures. The cross effect is a measure of how these two effects interact (i.e. the interaction between changes in drug cost and changes in utilization). For example, a large change in cost accompanied by a large change in utilization will result in a large cross effect.

Figure 17 Serum Lipid Reducing Agents Average Annual Growth in Expenditures and Utilization, 1995/96 – 1999/00

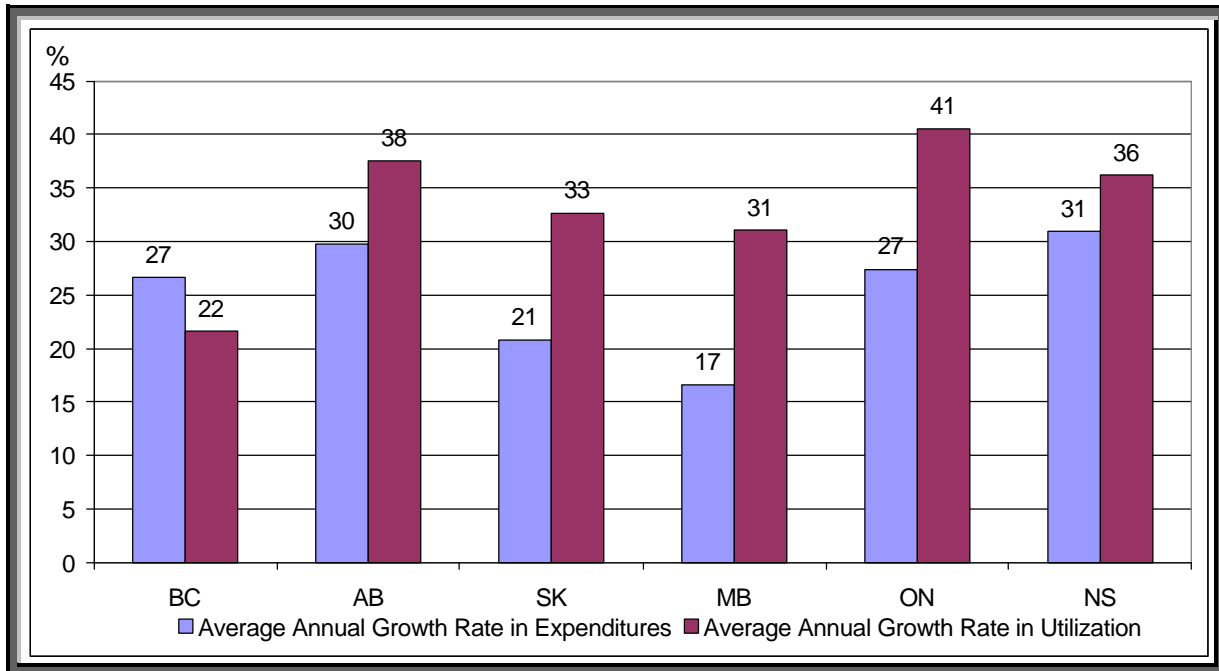
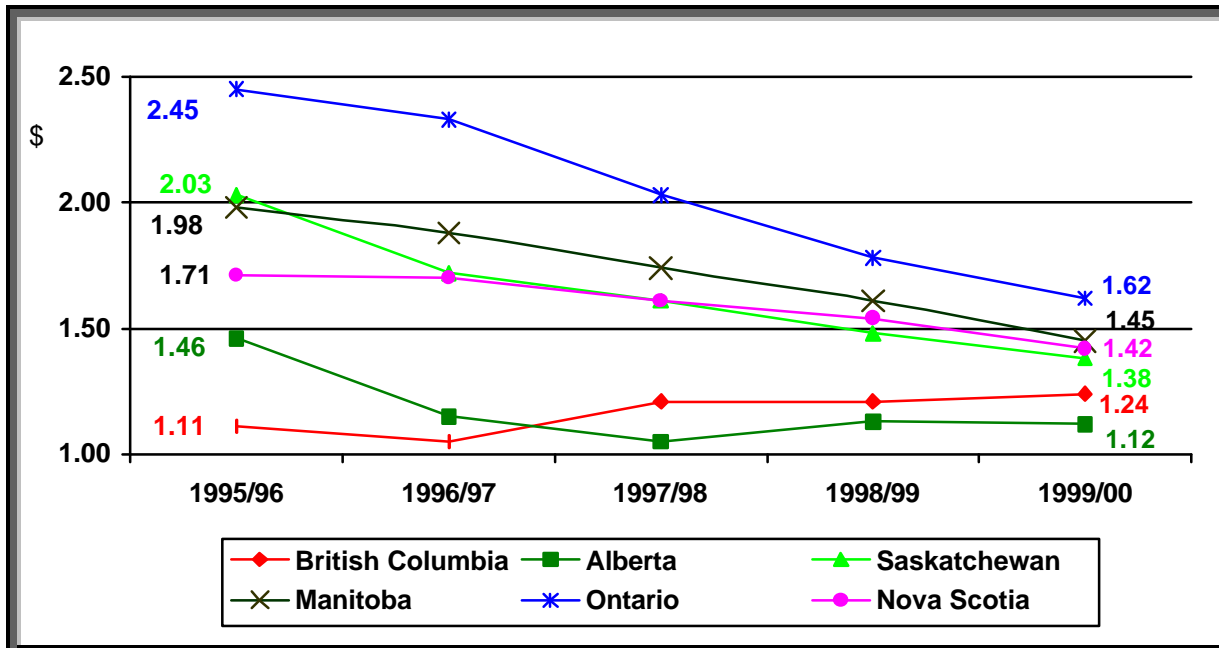


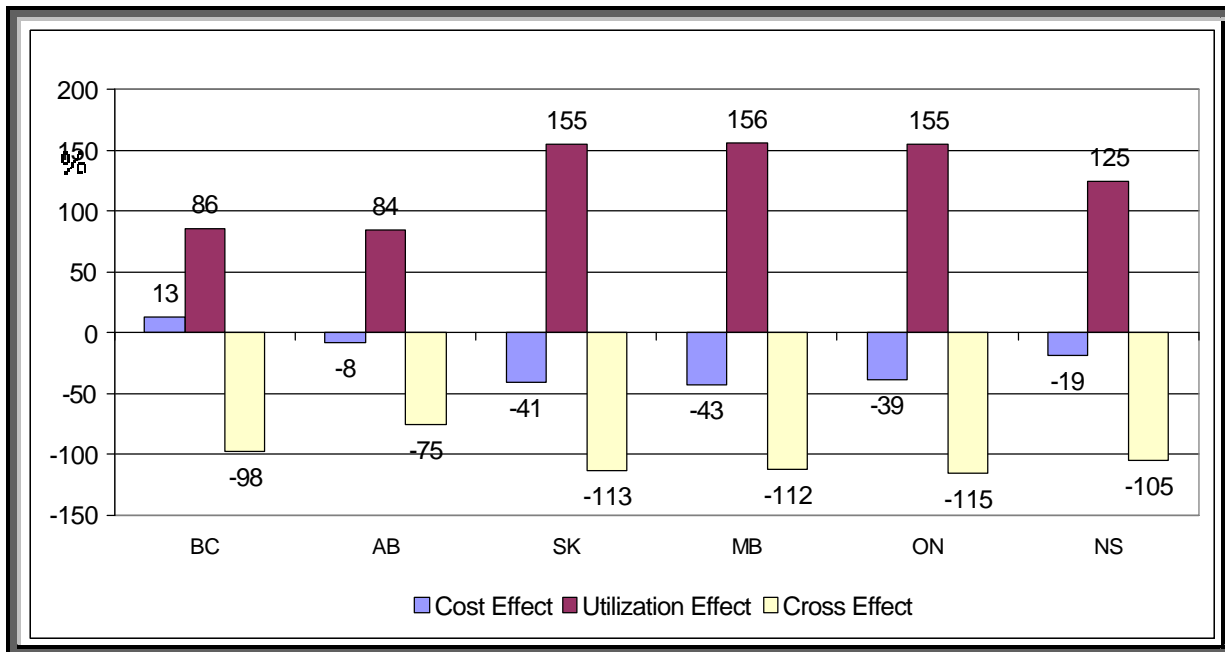
Figure 18 Serum Lipid Reducing Agents Claimed Cost Per Day, 1995/96 – 1999/00



In all six jurisdictions, changes in utilization accounted for most of the increase in expenditures. Had the cost of therapy not decreased (significant negative cost effect in all

jurisdictions other than British Columbia), expenditure increases would have been greater in this therapeutic category.

Figure 19 Serum Lipid Reducing Agents Major Cost Drivers, 1995/96 – 1999/00



Agents Acting on the Renin-Angiotensin System (High Blood Pressure Drugs)

This group of drugs is generally indicated for the treatment of high blood pressure and cardiovascular disease (see Appendix III for details on which drugs are included in this category). In 1999/00, this group represented approximately 10% of drug plan expenditures. Figure 20 provides information on the average annual growth in both expenditures and utilization between 1995/96 and 1999/00 in each of the drug plans. In all jurisdictions, expenditures increased at a rate that exceeded the overall average expenditure growth (Figure 1). Nova Scotia had the lowest average rate of growth in expenditures, at 13%, while Alberta had the highest, at 19%. British Columbia had the highest rate of utilization increases (21% annually on average), and Saskatchewan had the lowest, averaging 13% over this period.

Figure 21 shows the average cost per day of using Agents Acting on the Renin-Angiotensin System for each jurisdiction. In 1995/96, the average cost per day ranged from a high of \$0.91 (British Columbia) to a low of \$0.75 (Alberta). By 1999/00, the average cost per day fell to a high of \$0.87 (Ontario) to a low of \$0.71

(British Columbia). In January 1997, this group of drugs was included in the Reference Drug Program for the treatment of hypertension. Although all jurisdictions experienced some degree of cost decreases from 1995/96 to 1999/00, British Columbia experienced a much more dramatic decline (22%). Alberta was the only jurisdiction in which the average cost per day in 1999/00 exceeded the average cost per day in 1995/96. There were decreases in all other jurisdictions. On average, the difference between the lowest cost and the highest cost of this therapeutic category remained relatively constant at approximately 25%.

Figure 22 breaks out expenditure changes in this group of drugs into the cost effect, the utilization effect and the cross effect. In all the jurisdictions, changes in utilization accounted for all of the increase in expenditures. In all jurisdictions except Alberta, the cost effect had a negative effect on expenditures; that is, the cost of therapy generally decreased over the study period.

Figure 20 Agents Acting on the Renin-Angiotensin System Average Annual Growth in Expenditures and Utilization, 1995/96 – 1999/00

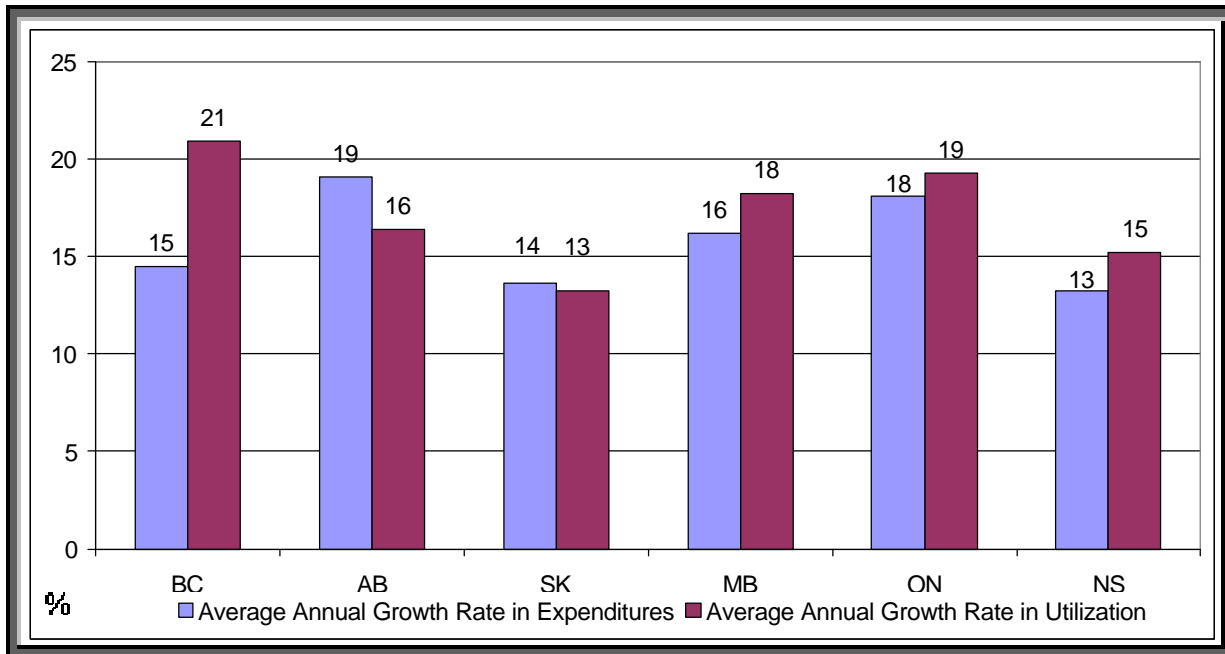


Figure 21 Agents Acting on the Renin-Angiotensin System Claimed Cost Per Day, 1995/96 – 1999/00

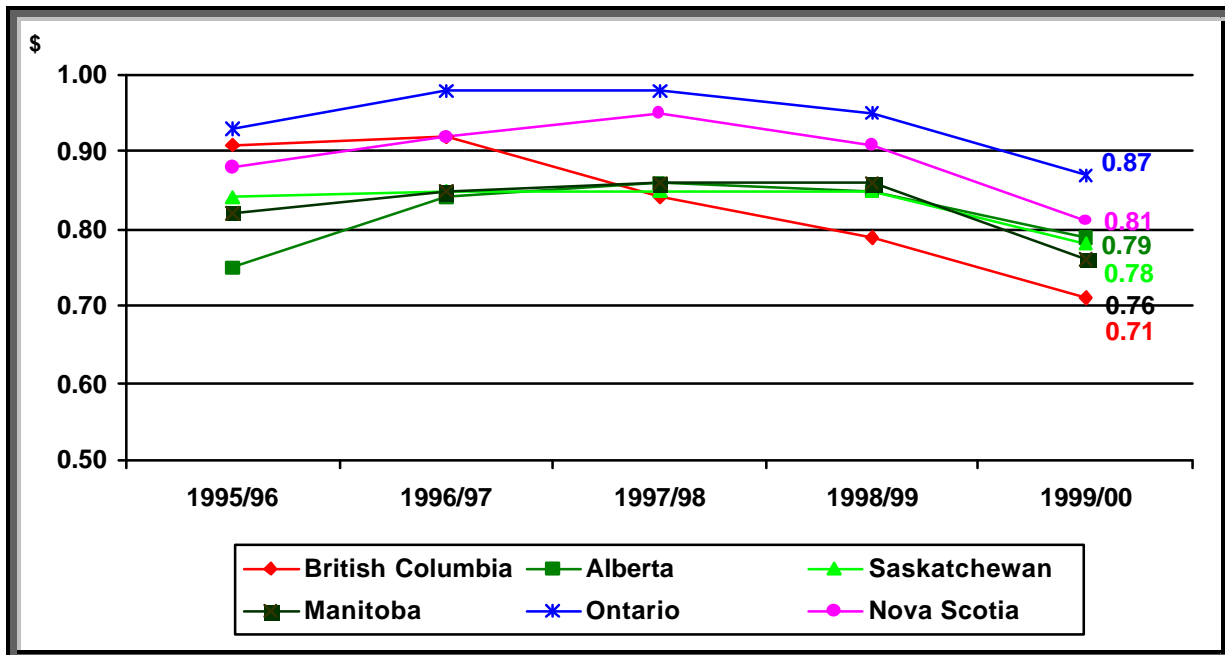
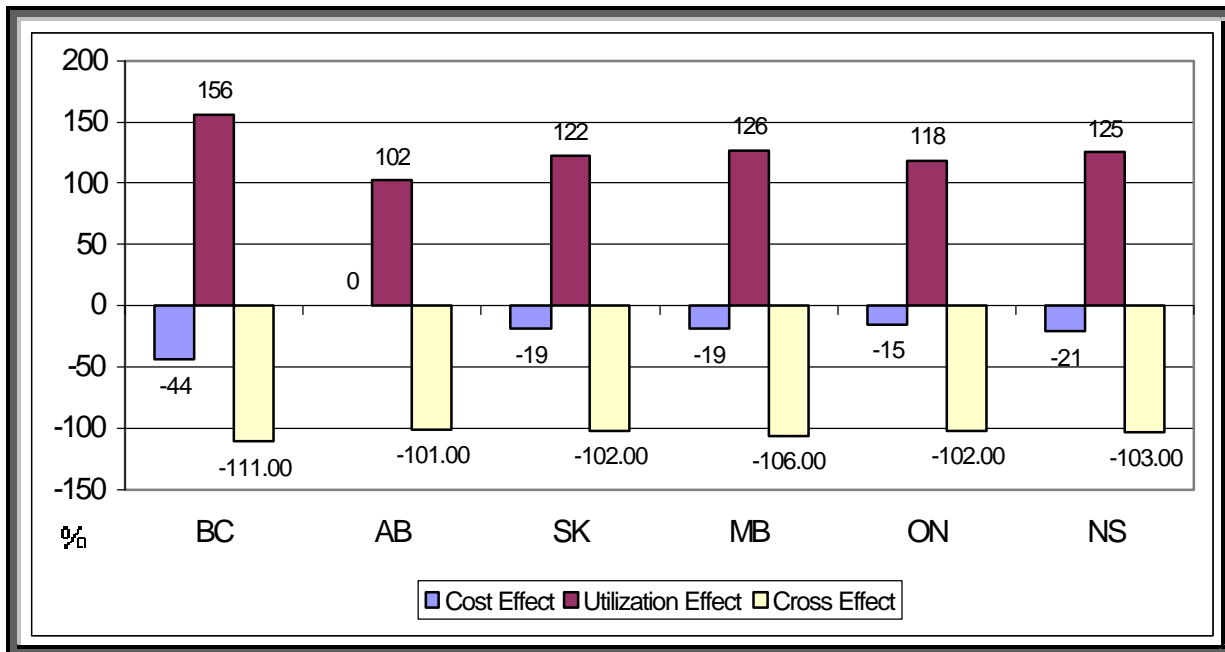


Figure 22 Agents Acting on the Renin-Angiotensin System Major Cost Drivers, 1995/96 – 1999/00



Antacids and Drugs Used to Treat Peptic Ulcer and Flatulence (Stomach Drugs)

This group of drugs is generally used for the treatment of stomach problems such as ulcers and acid discomfort (see Appendix III for details on which drugs are included in this category). In 1999/00, this group represented approximately 5% to 11% of drug plan expenditures. Figure 23 provides information on the average annual growth in both expenditures and utilization between 1995/96 and 1999/00 in each of the drug plans. In Alberta, Manitoba and Nova Scotia, expenditures increased at a rate that exceeded the overall average expenditure growth (Figure 1). Saskatchewan experienced no expenditure growth, whereas Alberta’s expenditures increased by 18% annually on average. Alberta also had the highest rate of utilization increases (9% annually on average), while Saskatchewan had the lowest, averaging 3%. In all jurisdictions except Saskatchewan, the growth in expenditures exceeded growth in utilization rates.

Figure 24 shows the average cost per day of using stomach drugs for each jurisdiction. In 1995/96, the average cost per day ranged from a high of \$1.33 (Ontario) to a low of \$0.91 (Nova Scotia). By 1999/00, the average cost per day increased to a high of \$1.76 (Alberta) to a low of

\$0.84 (Saskatchewan). In 1995/96, British Columbia added H2 Antagonists (a subgroup of stomach drugs) to the Reference Drug Program and removed Proton Pump Inhibitors as a regular Pharmacare benefit, requiring prior approval for reimbursement. The data presented in Figure 24 show some evidence of the impact of this policy; however, by 1997/98 the average cost per day had begun to increase. Saskatchewan was the only jurisdiction in which the average cost per day in 1999/00 was lower than the average cost per day in 1995/96.³⁴ All other jurisdictions had a significant increase in the average overall cost per day of stomach drugs. On average, the difference between the lowest average daily cost and the highest daily cost increased from 45% in 1995/96 to 66% in 1999/00.

It is important to note that the majority of the difference in the average cost of therapy presented in Figure 24 is driven by the rate at which patients are using the drugs included in the therapeutic category. The higher the proportion of patients using higher-cost drugs, the higher the overall average daily cost per therapy. Thus, it is not interprovincial difference in the price of any one drug (refer to section 1.7) that is driving the daily cost differences; it is the utilization mix.³⁵

Figure 25 breaks out expenditure changes for Proton Pump Inhibitors into the cost effect, the utilization effect and the cross effect. When the entire category of drugs is examined (see Pharmaceutical Trends Analysis, 1999/00), the utilization effect accounts for approximately half the increase in expenditures. In the case of

Proton Pump Inhibitors, however, increases in utilization account for all the increase in expenditures (Figure 26). Thus, over time, a greater proportion of patients in all of the drug plans were using Proton Pump Inhibitors.

Figure 23 Stomach Drugs Average Annual Growth in Expenditures and Utilization, 1995/96 – 1999/00

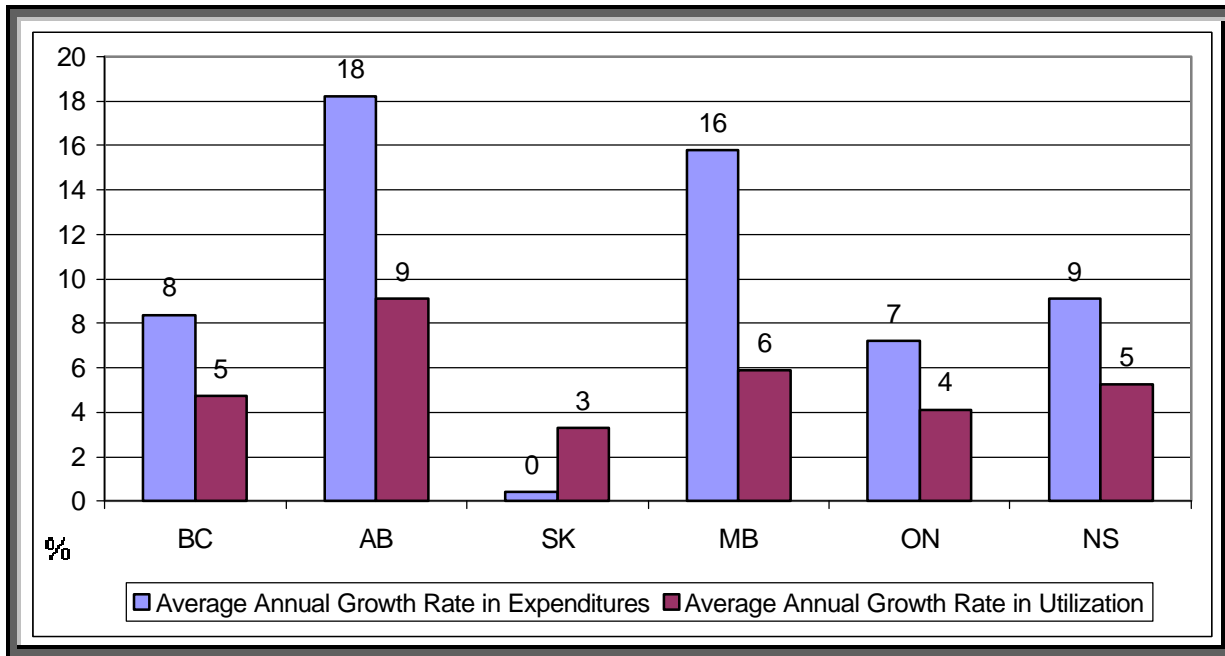


Figure 24 Antacids and Drugs Used to Treat Peptic Ulcer and Flatulence Claimed Cost Per Day, 1995/96 – 1999/00

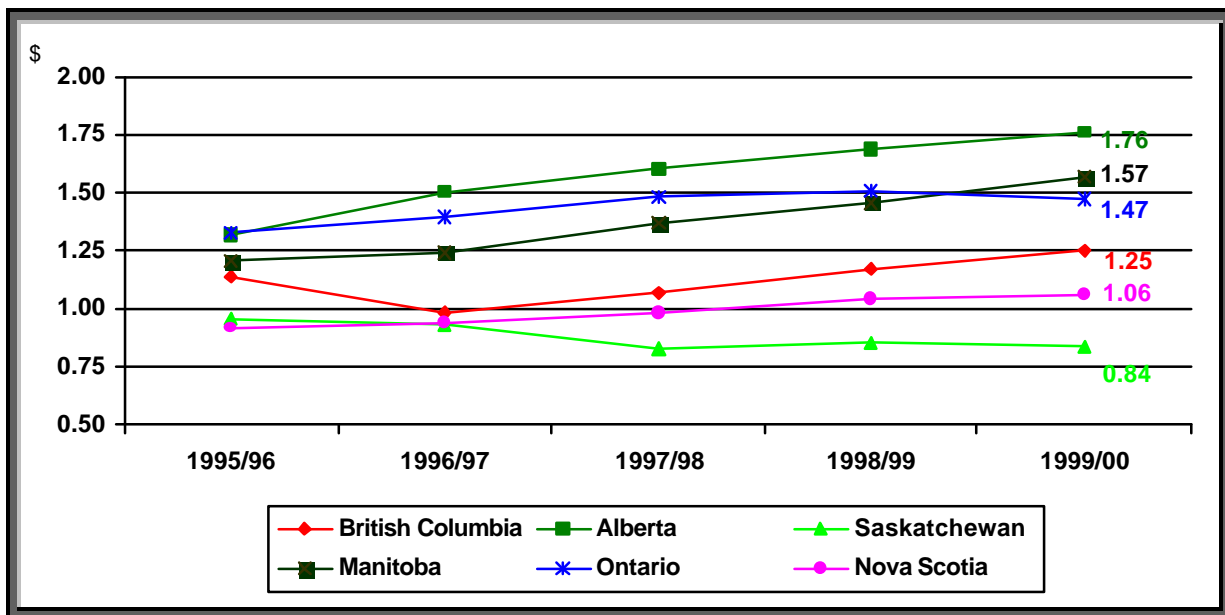
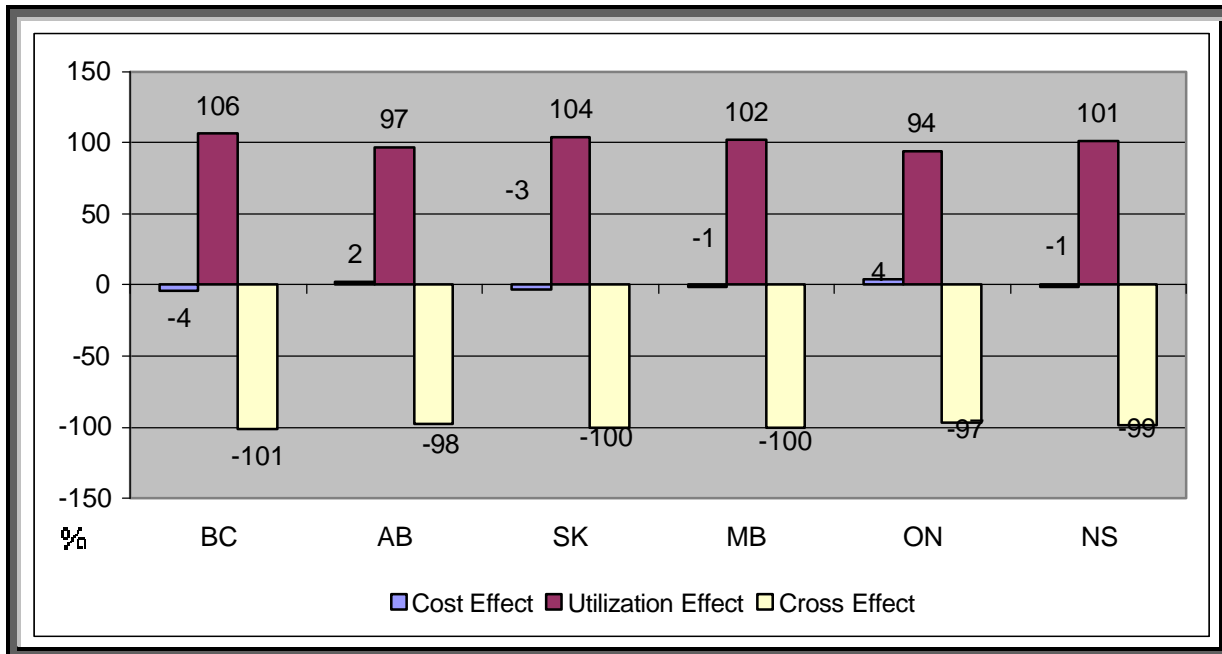


Figure 25 Proton Pump Inhibitors Major Cost Drivers, 1995/96 – 1999/00



Psycholeptics

This group of drugs alter a patient’s state of consciousness and includes drugs known as antipsychotics, anxiolytics, hypnotics and sedatives (see Appendix III for details on which drugs are included in this category). Figure 26 provides information on the average annual growth in both expenditures and utilization between 1995/96 and 1999/00 in each of the drug plans. In all jurisdictions except Nova Scotia, expenditures increased at a rate that exceeded the overall average expenditure growth (Figure 1). In Nova Scotia, both utilization and expenditures decreased over this period. For all other jurisdictions, the growth in expenditures was a result of increases in the cost of daily therapy rather than increases in utilization.

Figure 27 shows the average daily cost of Psycholeptics for each jurisdiction. In 1995/96, the average cost per day ranged from a high of \$0.55 (British Columbia) to a low of \$0.26 (Nova

Scotia). By 1999/00, the average cost per day increased to a high of \$0.92 (British Columbia) to a low of \$0.30 (Nova Scotia). Ontario experienced the highest percentage increase in daily cost among the six jurisdictions; its average daily cost increased by 174% from \$0.27 in 1995/96 to \$0.74 in 1999/00. On average, the difference between the lowest cost and the highest cost of this therapeutic category increased from 112% in 1995/96 to 207% in 1999/00.

Figure 28 breaks out expenditure changes in this group of drugs into the cost effect, the utilization effect and the cross effect. In all the jurisdictions, increases in the cost of therapy accounted for most of the increase in expenditures.

Figure 26 Psycholeptics Average Annual Growth in Expenditures and Utilization, 1995/96 – 1999/00

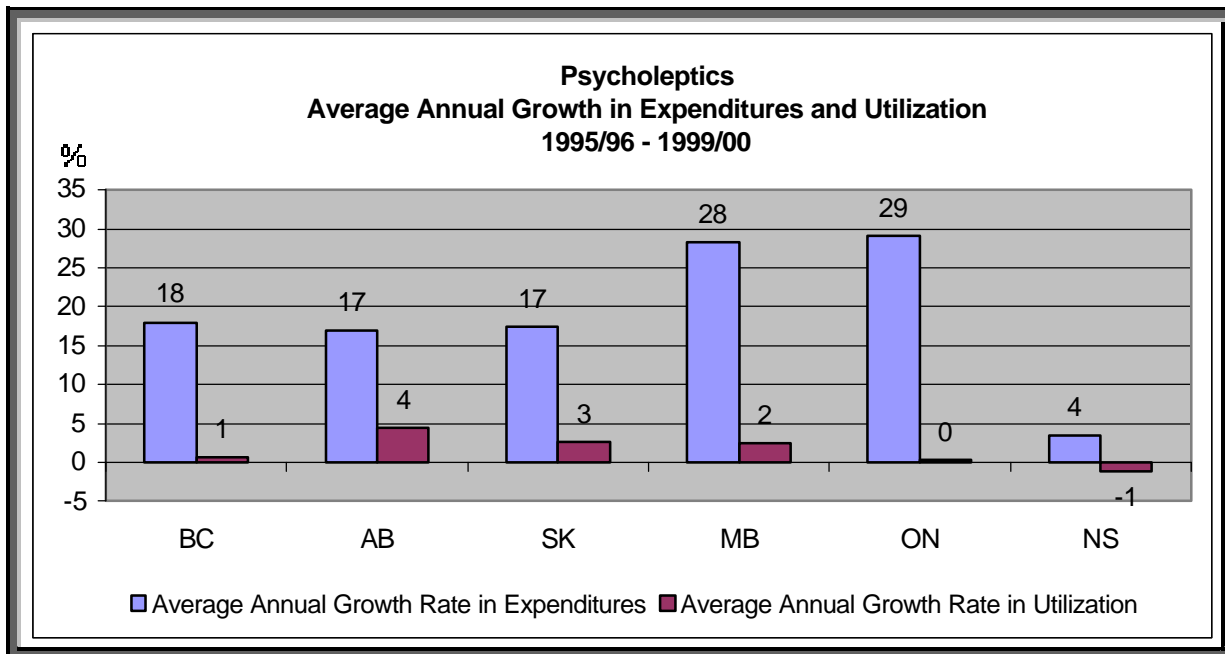


Figure 27 Psycholeptics Claimed Cost Per Day, 1995/96 – 1999/00

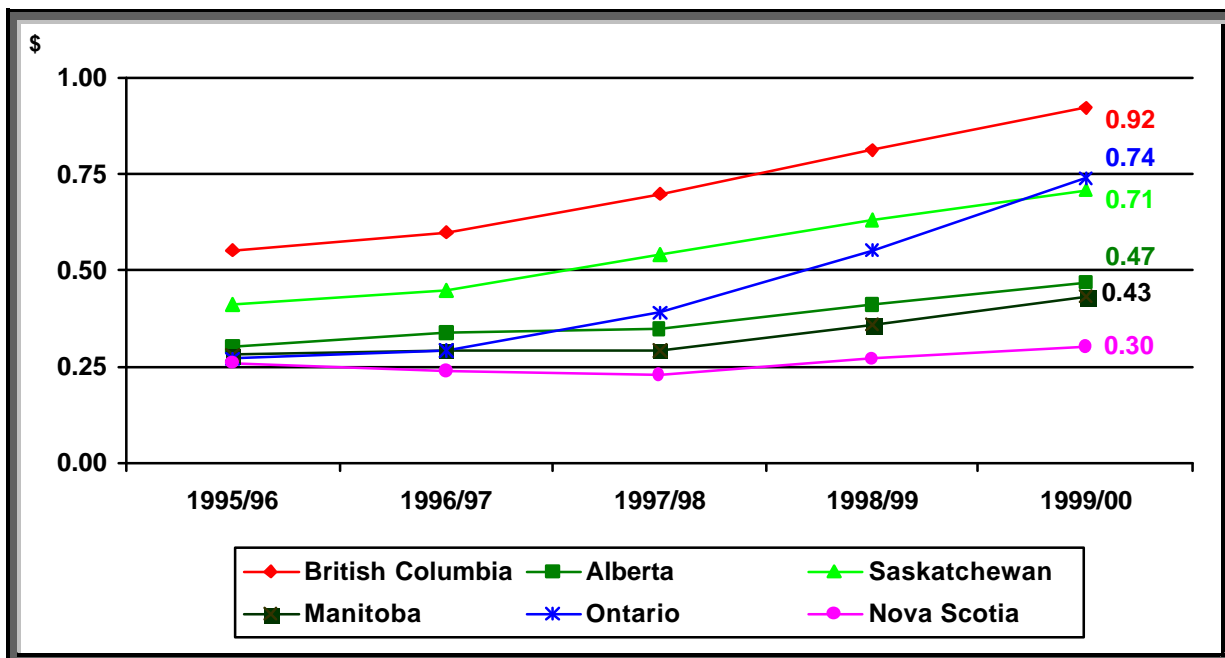
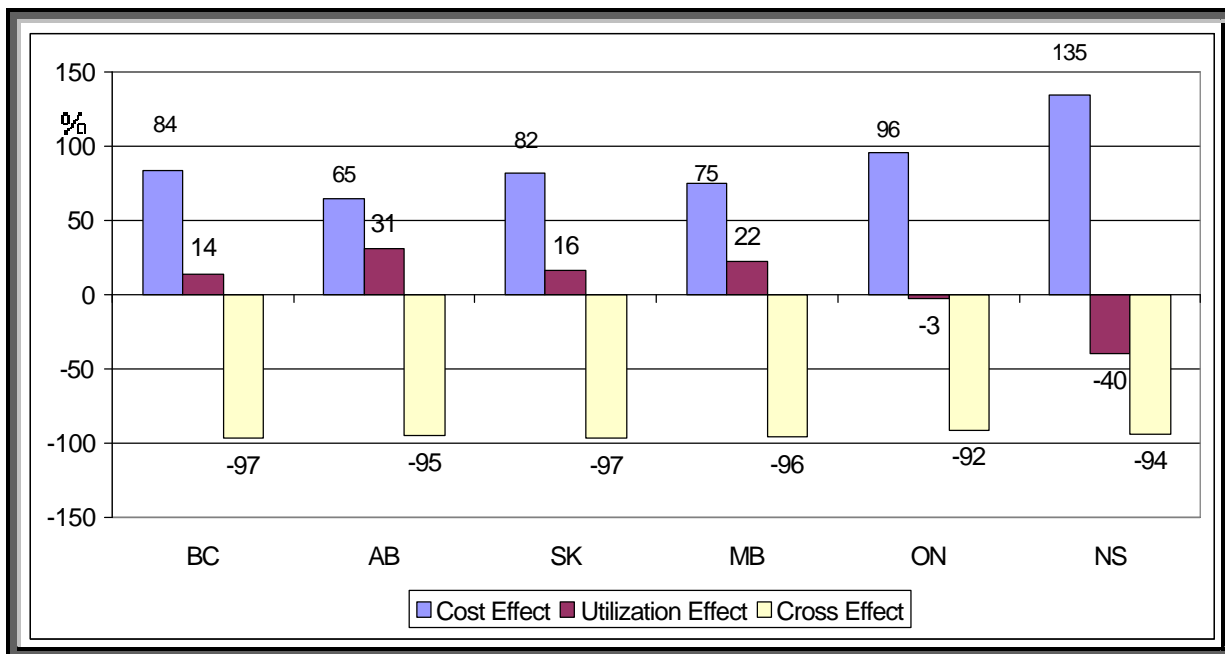


Figure 28 Psycholeptics Major Cost Drivers, 1995/96 – 1999/00



Psychoanalectics

This category of drugs reverses a depressed central nervous system and includes drugs known as antidepressants, psychostimulants and anti-dementia drugs (see Appendix III for details on which drugs are included in this category). Figure 29 provides information on the average annual growth in both expenditures and utilization between 1995/96 and 1999/00 in each of the drug plans. In all jurisdictions, expenditures increased at a rate that exceeded the overall average expenditure growth (Figure 1).

Figure 30 shows the average daily cost of Psychoanalectics for each jurisdiction. In 1995/96, the average cost per day ranged from a high of \$1.21 (British Columbia) to a low of \$0.96

(Nova Scotia). The average daily cost of therapy was relatively static over the study period. In 1999/00, the average cost per day ranged from \$1.23 (Ontario) to \$0.94 (Saskatchewan). Nova Scotia experienced the highest percentage increase in daily cost among the six jurisdictions; its average daily cost increased by 17%, from \$0.96 in 1995/96 to \$1.12 in 1999/00. On average, the difference between the lowest cost and the highest cost of the therapeutic category was fairly constant at 30% over the period of analysis.

Figure 31 breaks out expenditure changes in this group of drugs into the cost effect, the utilization effect and the cross effect. In all the jurisdictions, increases in utilization accounted for most of the increase in expenditures.

Figure 29 Psychoanalectics Average Annual Growth in Expenditures and Utilization, 1995/96 – 1999/00

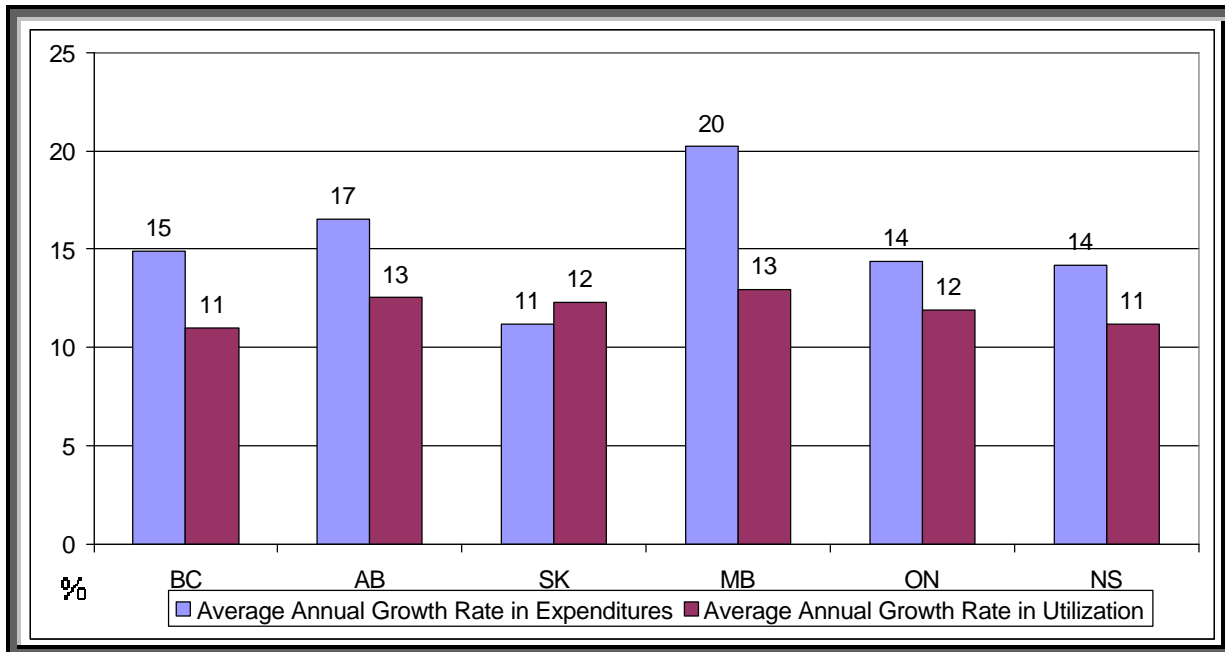


Figure 30 Psychoanalectics Claimed Cost Per Day, 1995/96 – 1999/00

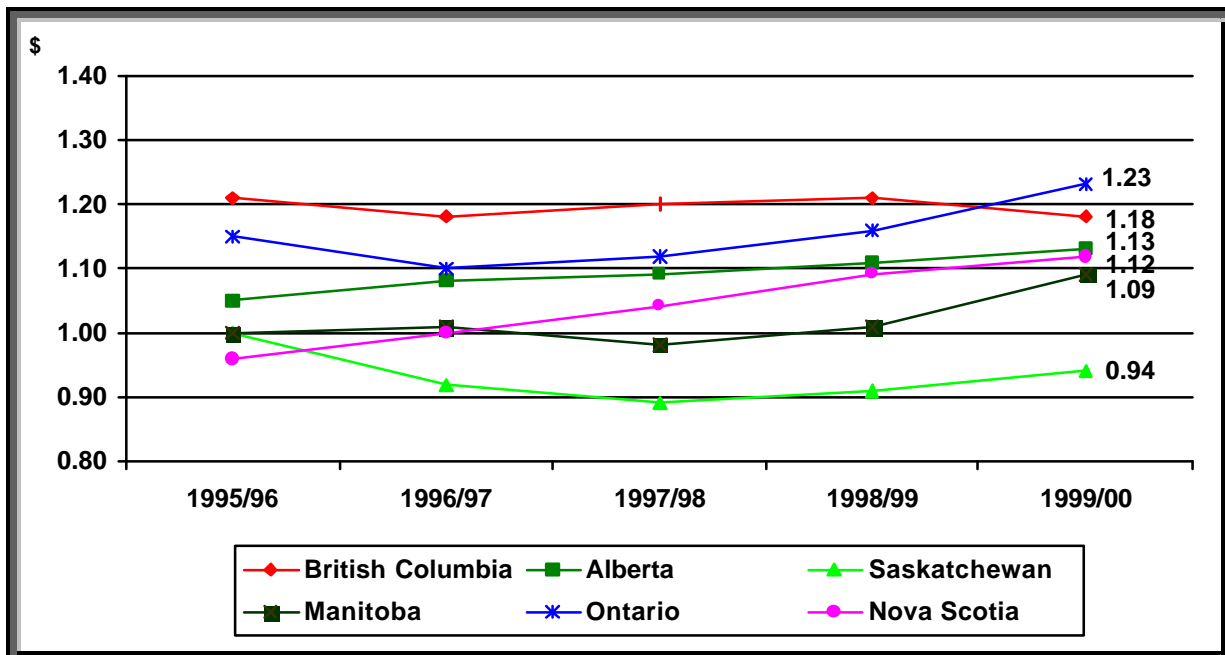
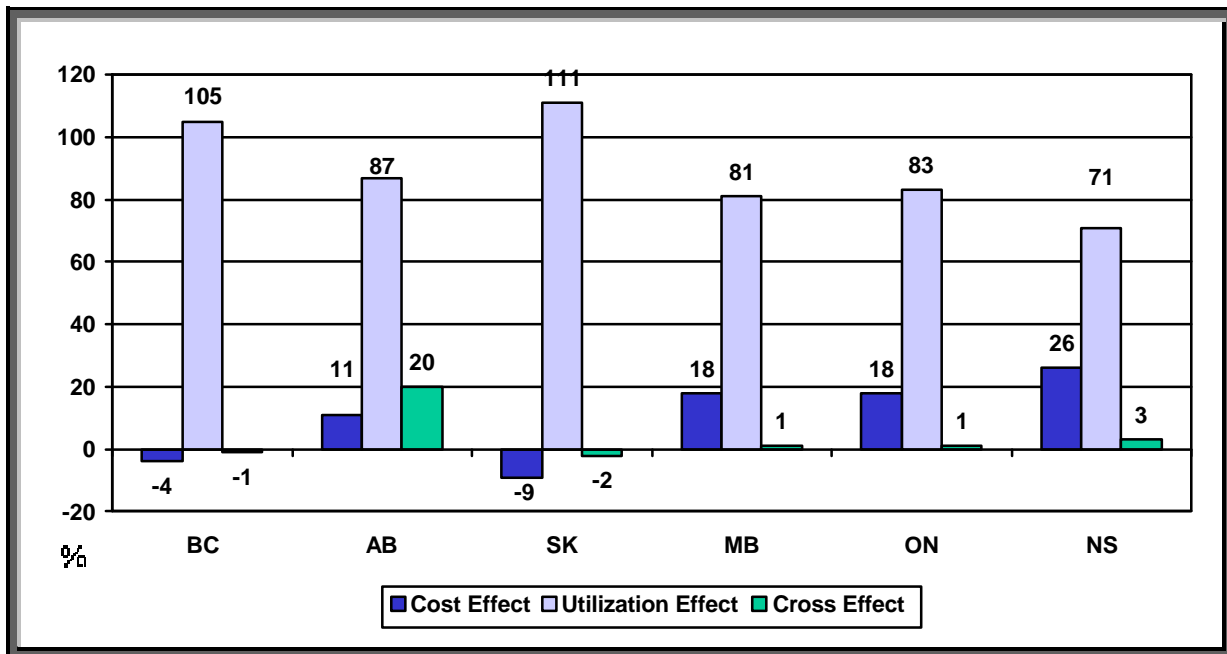


Figure 31 Psychoanalectics Major Cost Drivers, 1995/96 – 1999/00



Differences between therapeutic choice/utilization patterns can result in significant differences in the daily cost of therapy among jurisdictions. An increase in cost of therapy does not necessarily translate into better health outcomes. An examination of these patterns may serve as a useful tool in identifying areas in need of further study and possible policy intervention(s) aimed at improving cost-effective utilization of pharmaceutical therapy.

Endnotes

¹ Canadian Institute for Health Information (CIHI), National Health Expenditures, 2000.

² PIC is made up of government officials from each province and territory as well as representatives from Health Canada and other federal departments and agencies. PIC reports to the Advisory Committee on Health Services, which reports to the Conference of Deputy Ministers.

³ First Ministers' Meeting, Communiqué on Health, September 11, 2000.

⁴ The studies use administrative data provided by the provincial drug benefit plans. The WGDP is aware of the limitations associated with program administration data but believes that the research findings offer valid and convincing insight into the understanding of pharmaceutical trends and cost drivers in these six provincial drug plans. Work is currently under way to include New Brunswick, Prince Edward Island, Yukon and Non-Insured Health Benefits (NIHB).

⁵ At their meeting on June 17 and 18, 1999, Federal/Provincial/Territorial Deputy Ministers of Health approved a recommendation that the federal Minister of Health, in collaboration with his provincial/territorial counterparts, request the PMPRB to undertake the price and cost driver analyses of drug benefit plans. The detailed analysis and reporting of price and expenditure trends, price levels and cost drivers facing drug benefit plans is intended to provide useful decision-making tools and information to assist with the identification, understanding and better management of public spending on drugs. The information is also intended to provide greater transparency to the public on the prices and cost drivers that public drug plans face. The current work plan of the PMPRB and the WGDP includes analyzing prices, expenditure trends and drug plan cost drivers. A *Memorandum of Understanding (MOU)* between Health Canada and the PMPRB outlines the core analyses.

⁶ As estimated by the Canadian Institute for Health Information.

⁷ CIHI

⁸ The PMPRB database was used to identify drugs that are or were under patent protection. Not all patented drugs are single source drugs; as numerous patents can exist for a product, it is feasible for a patented drug to be produced by more than one manufacturer. A drug produced by more than one manufacturer is classified as a multiple source product. British Columbia's data were used to identify brand and generic drugs. Generally speaking, generic drugs were drugs not under patent protection and were bio-equivalent with the branded product(s).

⁹ All jurisdictions provide coverage for individuals receiving social assistance. See Appendix I for details on each drug plan.

¹⁰ Between 1998 and 2000, the average number of days from Notice of Compliance to formulary listing was 328.8 days in Nova Scotia, 323.6 days in Ontario, 250.5 days in Manitoba, 302.4 days Saskatchewan, 297.3 days in Alberta, and 335.3 days in British Columbia. (Scrip 2000; *Market Access Monitor, Brogan and Associates*).

¹¹ The "*Market Penetration Analysis - Case Study*" reviewed five newer drugs and examined the benefit status these drugs received as well as the differences in market share evident among the jurisdictions. Special authorization schemes can be an effective tool in ensuring cost-effective access to more expensive therapy.

¹² Between 1995/96 and 199/00, the growth in British Columbia's general population was only slightly higher than in Ontario; however, Ontario's senior (65 years of age and over) population increased by approximately 2% more than British Columbia's. Statistics Canada Catalogue Number 91-213.

¹³ Accepted drug cost includes the patients' portion of the cost and excludes dispensing fees.

¹⁴ These averages are reflective of prescribing patterns in each of the jurisdictions as well as who is covered, what is covered and maximum day supply policies.

¹⁵ Based on patented drugs only (see *Inter-provincial Price Comparison Analysis* for further details).

¹⁶ The average wholesale up-charge was 7.2% in 1999/00. Saskatchewan operates based on an actual acquisition reimbursement policy and allows a pharmacy mark-up. The number reported represents both the wholesale and retail mark-ups seen by the provincial drug plans.

¹⁷ It is possible that the "cost-to-operator" mechanism established by the Ontario Drug Benefit Program is partly driving this result. As well, a "spread" may exist between the manufacturers' list price and actual acquisition cost. The base price used to estimate the reported margins is based on sales data submitted to the PMPRB by patentees, and the margin over the allowed level may reflect a spread between list prices and actual transaction prices. Further analysis may be required.

¹⁸ See *Provincial Pharmaceutical Trend Reports: 1995/96 – 1999/00* for more details on this analysis.

¹⁹ These impacts do not take into account any price decreases directly related to a price increase. For example, in Ontario, a manufacturer may be requested to ensure that any price increases are "revenue neutral" (i.e. off-set by a price decrease).

²⁰ See the PMPRB's *A description of the Laspeyres methodology used to construct the Patented Medicine Price Index (PMPI)*, March 1997, for an explanation of the index presented in this analysis.

²¹ Claimed prices include the patients' portion of the drug cost, retail and wholesale margins. Claimed prices differ from accepted prices due to reimbursement maximums that may be imposed by a provincial drug plan, like low-cost alternative programs, reference based pricing and distribution maximums.

²² Base year 1995/96, index in 1995/96 = 100 for all jurisdictions.

²³ Utilization is defined as quantity used at a bio-equivalency drug level; that is, the price savings associated with generic drugs are taken into account in this analysis.

²⁴ New drugs are defined at the chemical, dose, form and route levels. Generic bio-equivalent products are not considered as new drugs in the major component decomposition.

²⁵ The PMPRB was established to protect consumer interests and contribute to Canadian health care by ensuring that prices charged by manufacturers of patented drugs are not excessive.

²⁶ The categorization presented is defined by the PMPRB for the purpose of applying price tests as outlined in PMPRB's Excessive Price Guidelines.

²⁷ It should be noted that while the expenditures for category 1, category 2 and category 3 drugs are reported separately, they are often different brands, strengths and dosage forms of a single medicine. Category 1 products are sometimes a line extension of a category 2 or category 3 product. Non-categorized drugs are generally older drugs introduced prior to 1987.

²⁸ See F/P/T studies on Non-Patented Single Source Drugs (2001, 1999).

²⁹ This was the relative level of patented drug prices in 1987.

³⁰ Prices include wholesale and retail mark-ups and are defined as prices claimed to the provincial drug plans.

³¹ An average Canadian basket identifies all common products available in all jurisdictions and sums utilization across all the jurisdictions included in the analysis.

³² Version 5.1 of "Defined daily dose" (DDD) information dated December 2000 was used in this analysis.

³³ The differences identified are not intended as a comment on health outcomes. At this point, data linking drug utilization, cost and health outcomes are not available. As such, no value judgement is presented in this report identifying the "optimal" cost-effective level; rather this information is intended as a first step to start looking at therapeutic choice and providing interjurisdictional comparisons.

³⁴ Saskatchewan's standing order contract bidding process and savings associated with lower generic prices may explain this decline.

³⁵ See F/P/T Working Group on Drug Prices/PMPRB *Market Penetration Analysis-Case Study* for more information on utilization and policy levers applied by provincial drug plans to this group of drugs.