MARKET PENETRATION ANALYSIS
CASE STUDY

1995/96 - 1999/00

BRITISH COLUMBIA
MANITOBA
NOVA SCOTIA
ONTARIO

Prepared by the Patented Medicine Prices Review Board for the

Federal/Provincial/Territorial

Working Group on Drug Prices

Acknowledgement

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The report was produced under the direction of the Working Group on Drug Prices (WGDP), which is a working group of the F/P/T Pharmaceutical Issues Committee (PIC). The contribution of individual member of the WGDP was invaluable.

The following is a list of WGDP (past and present) members and contributors to the production of the report:

Frank DeFelice (Chair)
Drug Programs Branch
Ontario Ministry of Health and
Long Term Care

Scott Doidge (Vice-Chair)
Home Care and Pharmaceuticals Division
Health Canada

Colin Dormuth
Pharmacare
British Columbia Ministry of Health and
Ministry Responsible for Seniors

Marilyn Thornton
Pharmaceutical Policy and Programs Branch
Alberta Health and Wellness

Andrea Laturnas
Pharmaceutical Services
Drug Plan and Benefits Branch
Saskatchewan Health

Olaf Koester
Provincial Drug Programs
Manitoba Health

Emily Somers
Drug Programs
Nova Scotia Department of Health

Ron Corvari
Policy and Economic Analysis Branch
Patented Medicine Prices Review Board

Tanya Potashnik
Policy and Economic Analysis Branch
Patented Medicine Prices Review Board

Orlando Manti
Policy and Economic Analysis Branch
Patented Medicine Prices Review Board

Ivan Ross Vrana
Health Canada

Brent Fraser
Drug Programs Branch
Ontario Ministry of Health and
Long Term Care

John Hoar
Nova Scotia Department of Health

Kevin Wilson
Saskatchewan Health

Sean Burnett
British Columbia Ministry of Health Services

Wendy Eyres
British Columbia Ministry of Health Services

Paul Gudaitis
British Columbia Ministry of Health Services

Kitty Leong
Manitoba Health

Executive Summary

- British Columbia, Manitoba, Ontario and Nova Scotia were the jurisdictions included in this case study. The drugs, which were chosen for review, were identified by the participating jurisdictions.

- The focus of the analysis was to identify how the drug is covered in each jurisdiction, and the market share attained in each jurisdiction based on both volume (as measured by number of prescriptions) and expenditures (as measured by accepted drug cost).

- The drugs included in this case study are Alendronate (Fosamax); Insulin Lispro (Humalog); Losartan (Cozaar); Proton Pump Inhibitors (PPI's); Olanzapine (Zyprexa). Drugs with different benefit status (i.e. regular benefit, restricted/limited benefit, under special authorization) between jurisdictions were of particular interest and provided insight into some of the differences in the rate with which new drugs were able to attain market share.

- With the exception of Losartan and Olanzapine, the market share attained by the other products was the highest in Manitoba based on both volume and drug cost in the last year of analysis, 1999/00. Losartan attained the highest market share in Nova Scotia's Pharmacare Plan and Olanzapine attained the highest market share in Ontario's Drug Benefit Plan.

- Based on special policy interests identified by the F/P/T stakeholders, a more in-depth review of the PPI's was conducted. An analysis of prescribing patterns stratified by age and physician specialty groups highlighted some significant interjurisdictional differences. In particular, the rate of PPI utilization in Nova Scotia's Pharmacare Plan is significantly lower than in the other jurisdictions. Utilization in Manitoba is higher than the other jurisdictions investigated. In 1999/00, the number of beneficiaries with a prescription for a PPI only (i.e. no recorded trial on an H_2-RA in that year) was 9% in Nova Scotia; 20% in Ontario; 24% in British Columbia and 36% in Manitoba. The rate of PPI prescribing by internal medicines physician specialty in British Columbia is significantly higher than any other specialty group within the province as well as compared to other jurisdictions.

- The five case studies examined in this report suggest that market penetration is the most rapid within the first two years of a products' life cycle. The level of adjudication, which is designed to ensure specific criteria are met before a drug is covered, appear to play a significant role in determining the rate of market penetration and net cost to the system provided they actually impose a significant time requirement/commitment.

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1 Introduction

The introduction of new therapies, ones which may offer moderate, limited or no therapeutic advantage over existing therapies, is one of the key cost drivers for provincial drug benefit plans.[1] The utilization patterns of new therapies and the rate with which prescribing patterns change do not necessarily correspond with optimal and/or cost effective options. Generally speaking, drug plan managers have tried to manage access to "me-too" therapies through policy levers which aim at affecting the prescribing decision and attempting to make physicians better informed about cost effective prescribing through specific guidelines and/or criteria. The effort required to obtain coverage and the level of reimbursement, play a significant role in determining the rate with which new drugs gain market share.

1.1 General Approach

Drug therapies chosen for analysis were selected in order to review the effectiveness of different policy levers, identify provincial differences, as well as gain insight into the rate with which drugs enter the market and gain acceptance in the medical community. Although different jurisdictions generally have independent review processes in making coverage decisions, often there are significant similarities between jurisdictions in how any one drug is covered. Drugs, which had different eligibility criteria between jurisdictions, were of particular interest for the purpose of this analysis. British Columbia, Manitoba, Ontario and Nova Scotia were the jurisdictions included in this case study.

Table 1-1 summarizes the drugs that were chosen, the categorization they received at the Patented Medicine Prices Review Board (PMPRB), their first Notice of Compliance (NOC) date as well as their status on the formulary for each of the jurisdictions studied. With the exception of proton pump inhibitors, the drugs chosen for analysis received their NOC from Health Canada prior to September 1995 and are relatively new therapies. It is interesting to note that there are significant differences in the way each jurisdiction implements and administers policies aimed at increasing cost-effective utilization.

Table 1-1

Summary Table of Provincial Drug Coverage

Drug Name	PMPRB Category	First NOC Date	British Columbia Coverage	Manitoba Coverage	Ontario Coverage	Nova Scotia Coverage
Fosamax (Alendronate)	3	Dec, 1995	SA	SA (PART 2)[2]	SA (SECTION 8)[3]	SA
Cozaar (Losartan)	3	Sep, 1995	SA	RB	LIMITED USE	RB
Humalog (Lispro Insulin)	N/C	Oct, 1996	RB[4]	RB[5]	LIMITED USE	SA
Zyprexa (Olanzapine)	3	Oct, 1996	SA	RB	RB[6]	SA[7]
PPI[8]'s (Losec, Pantoloc, Prevacid)	2;3;3	Jun, 1989; Sep,1996; May, 1995	SA	SA (PART2)	LIMITED USE	SA

RB: Regular Benefit;
SA: Special Authority;
NB: Non-benefit

In British Columbia, the special authorization (SA) process is relatively user friendly and requires a limited time commitment by the physician. The form is composed primarily of check boxes with the option of calling in or faxing SA requests. In Manitoba, coverage for drugs is based on a three level approach (Part 1-Part 3). The drugs included in this analysis are either regular benefits (i.e. Part 1) or a set criteria is established as a guide for prescribing,

however physicians are not required to write or fill out any forms to receive coverage (Part 2). The Part 2 scheme in Manitoba is similar, administratively, with Ontario's Limited Use Drugs, where the physician is not required to send in a letter or form; pharmacists, however, are required to enter in a special code identifying the rationale for use. Ontario's SA process (or coverage under section 8) appears to be the most rigorous and effective in curtailing use and market penetration. It is critical not to equate and group these different schemes as many lessons can be learned from administrative approaches, which on the surface appear to be similar. The special authority process in Nova Scotia has elements of both a form process, exemption status coverage and written physician requests, with administrative burden to physicians varying depending on the drug in question.

1.2 Analysis and Discussion of Results

For each of the drugs identified in Table 1-1, other drugs used for the same indication(s) were identified[9] for each jurisdiction in order to estimate the size and value of the entire market and the rate with which new therapies gain market share. Market share attained will be presented based on both volume (number of prescriptions and quantity) and value (allowed/accepted cost).

2 Alendronate (Fosamax)

Table 2-1 and 2-2 summarize the market share attained by alendronate within its therapeutic market (for the drugs included in the market and their respective market shares, refer to Appendix II). Alendronate received its first NOC December 1995. All jurisdictions included in this analysis covered this drug under the special authority process, however, the degree of effort required by physicians to attain coverage from the drug plan seems to play a critical role in determining the rate with which this product is able to attain market share (for more information on the special authority process in each jurisdiction refer to Appendix I).[10] Manitoba and Nova Scotia have similar criteria for coverage and are clearly outlined in their respective formularies.

Table 2-1

Market Share Based On Volume									
FISCAL YEAR	CHEMICAL NAME	BC Rx(%)	MAN Rx(%)	ONT Rx(%)	NS Rx (%)	BC QUANTITY (%)	MAN QUANTITY (%)	ONT QUANTITY (%)	NS QUANTITY (%)
1996	ALENDRONATE	0	4	0	1	0	2	0	1
1997	ALENDRONATE	2	9	0	5	2	5	0	3
1998	ALENDRONATE	4	13	0	11	3	8	0	8
1999	ALENDRONATE	4	16	0	14	4	11	1	11

Table 2-2

Market Share Based On Accepted Ingredient Cost[11]					
FISCAL YEAR	CHEMICAL NAME	BRITISH COLUMBIA (%)	MANITOBA (%)	ONTARIO (%)	NOVA SCOTIA (%)
1996	ALENDRONATE	1	15	0	4
1997	ALENDRONATE	10	32	1	17
1998	ALENDRONATE	14	45	2	33
1999	ALENDRONATE	19	50	2	39

Within the first few years on the market, alendronate is able to attain most of its market share gains. In 1997/98, alendronate had attained 2% of volume[12] market share and 10% of cost market share in British Columbia and respectively 9% and 32% in Manitoba; 0% and 1% in Ontario; and 5% and 17% in Nova Scotia. By 1999/00, significant market share gains had been made in Manitoba and Nova Scotia; moderate gains were made in British Columbia; and marginal gains had been made in Ontario where the Section 8 special authority process requires the physician to write a letter outlining the patient specific conditions in order to receive drug plan coverage.

For British Columbia and Ontario, due to data availability, expenditure growth for alendronate is tracked on a quarterly basis, where Q1=April-June; Q2=July-September; Q3=October-December; Q4=January-March. Expenditure growth is generally calculated after the drug has been reviewed by the Ministry and claims for the drug are seen for at least two quarters, this is done to better capture the true growth rate once the coverage decision is made and communicated to the medical community. Between 1997/98 and 1999/00 the average annual growth in expenditures on alendronate was 46% in British Columbia, 62% in Manitoba, 47% in Ontario and 111% in Nova Scotia. Market penetration for alendronate was

significantly faster between 1997/98 and 1998/99 then between 1998/99 and 1999/00. For example, the average quarterly growth in expenditures in British Columbia was 24% between 1997/98 and 1998/99 and 4% between 1998/99 and 1999/00 (see Table 2-3). It is also interesting to note that although Ontario was able to manage the net expenditures on the product, the growth rate within the covered prescriptions was in line with the general market penetration of a new drug within its expected life cycle.[13] Had alendronate attained the same market share in Ontario as it did in British Columbia (which is moderate relative to Manitoba and Nova Scotia), expenditures would have been approximately $3M higher in 1999/00.[14]

Table 2-3

Alendronate Growth Rate Summary 1997/98 - 1999/00

Average Quarterly Growth	British Columbia (%)	Manitoba (%)	Ontario (%)	Nova Scotia (%)
1997/98-1998/99	24	23	47	46
1998/99-1999/00	4	13	19	13
1997/98-1999/00	12	15	27	24

Figure 2-1 British Columbia – Pharmacare Fosamax Accepted Ingredient Cost – All Plans

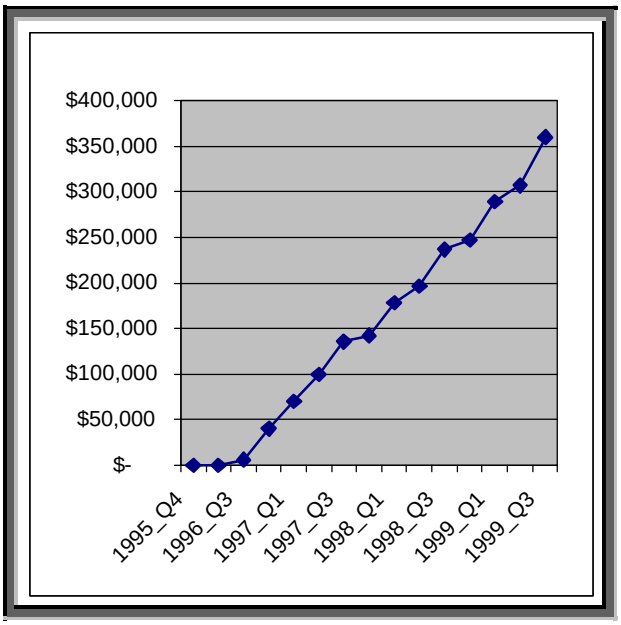


Figure 2-2 Manitoba Drug Plan Fosamax Accepted Ingredient Cost – All Plans

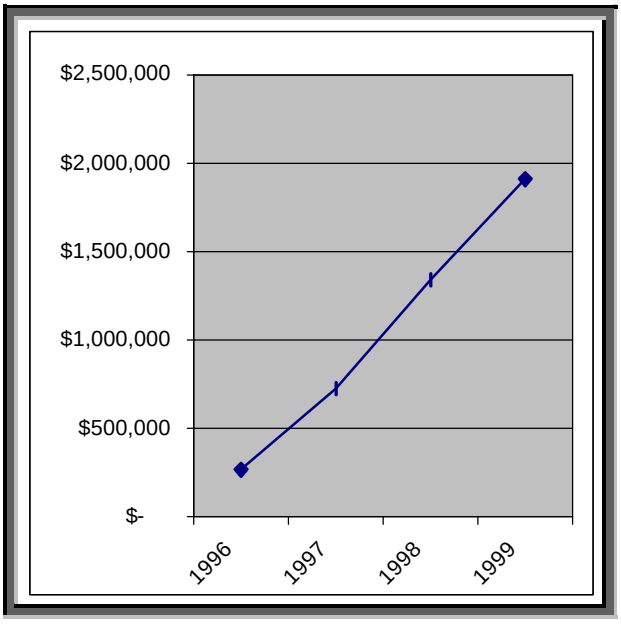


Figure 2-3 Ontario Drug Benefit Program Fosamax Accepted Ingredient Cost – All Plans

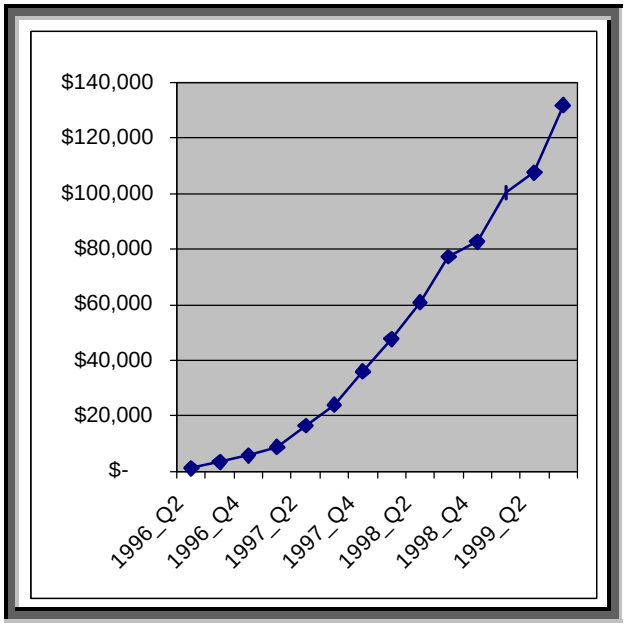
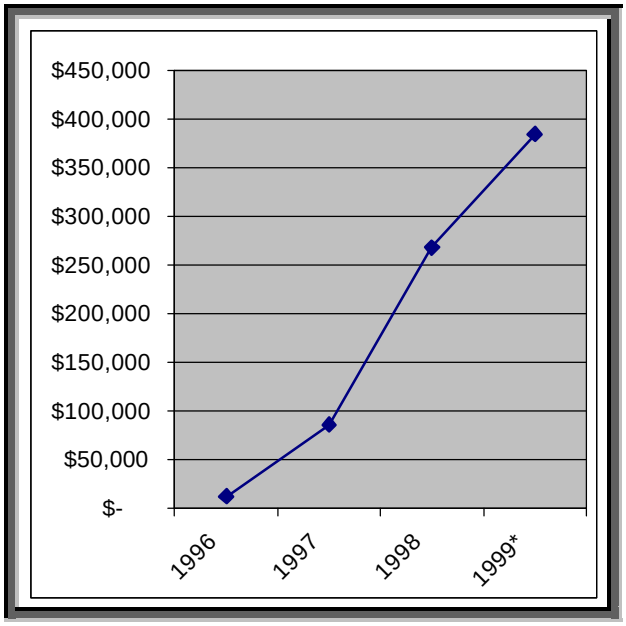


Figure 2-4 Nova Scotia Pharmacare Fosamax Accepted Ingredient Cost – Seniors Plan



The market share attained by alendronate, particularly in Manitoba and Nova Scotia, is substantial; however, it is important to note that the market base over the period of analysis was also growing. Between 1997/98 and 1999/00 the number of prescriptions for the entire

market, excluding alendronate had increased by 29% in British Columbia, 22% in Manitoba, 43% in Ontario and 26% in Nova Scotia.

Figure 2-5 British Columbia's Annual Prescription Growth for Alendronate and the Rest of the Market

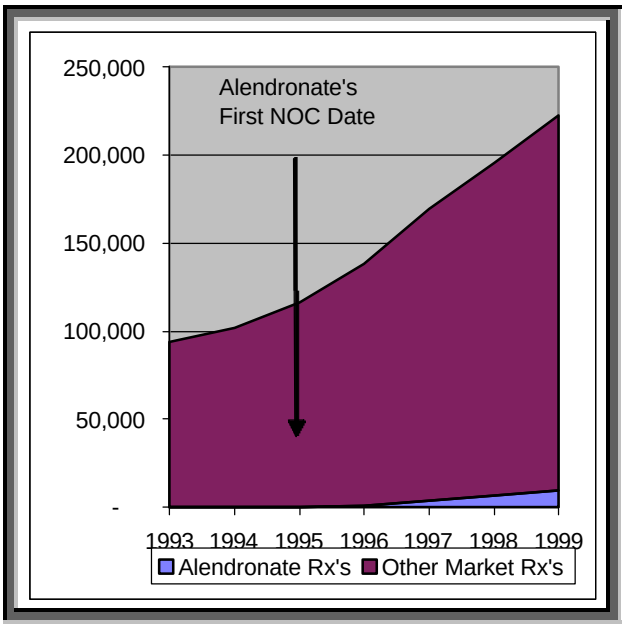


Figure 2-6 Manitoba's Annual Prescription Growth for Alendronate and the Rest of the Marktet

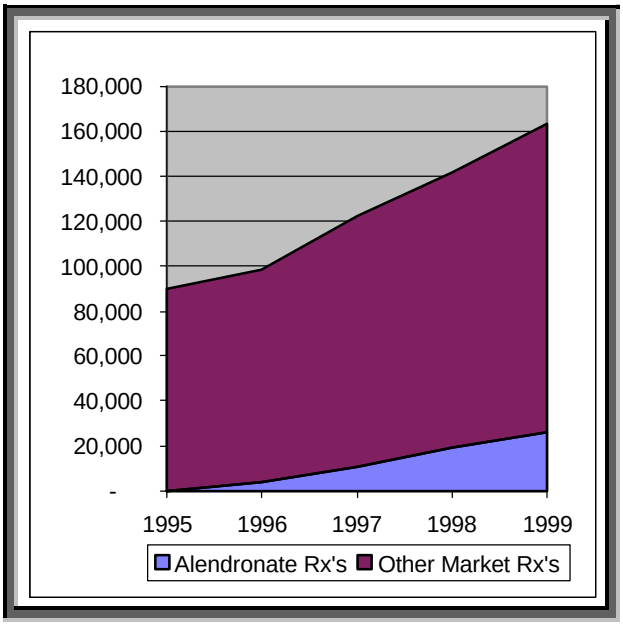


Figure 2-7 Ontario's Annual Prescriptions Growth Alendronate and the Rest of the Market

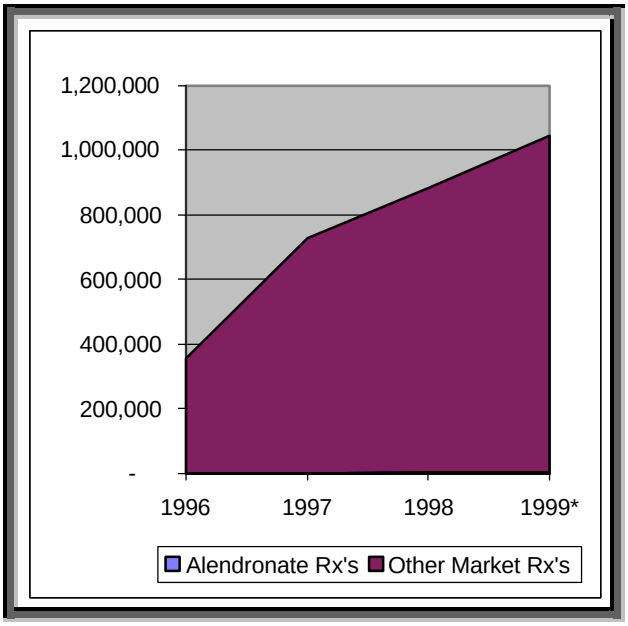
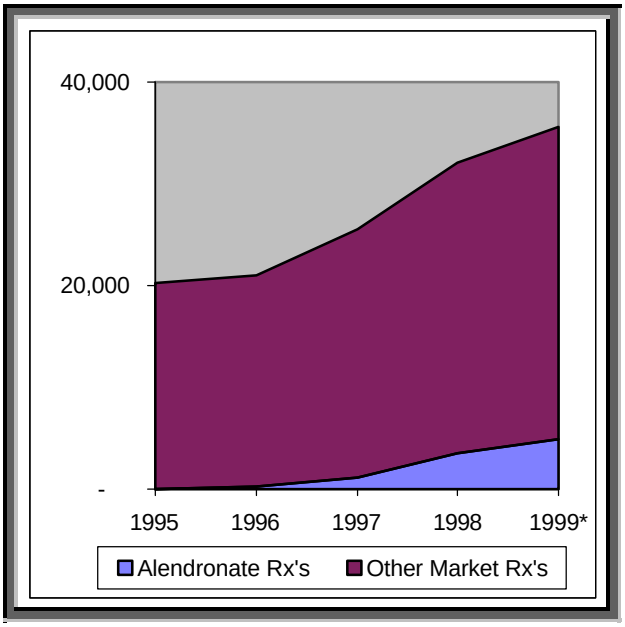


Figure 2-8 Nova Scotia's Annual Prescription Growth Alendronate and the Rest of the Market



In all the jurisdictions under review, the entire alendronate market seems to have increased around the time of alendronate's NOC. Whether this phenomenon is reflective of best practice and improved diagnosis rate and/or a function of detailing and advertising efforts either by the manufacturer of alendronate or its therapeutic competitors requires further research.

3 Insulin Lispro (Humalog)

Table 3-1 and 3-2 summarize the market share attained by insulin lispro within its therapeutic market. Insulin lispro received its first NOC October 1996. British Columbia and Manitoba listed the product as a regular benefit; however, reimbursement in British Columbia was limited up to the cost of human biosynthetic regular insulin. In Ontario insulin lispro received limited use coverage with very detailed criteria for use and in Nova Scotia it was restricted with criteria outlined for coverage.

Table 3-1

Market Share Based On Volume									
FISCAL YEAR	CHEMICAL NAME	BRITISH COLUMBIA Rx (%)	MANITOBA Rx (%)	ONTARIO Rx (%)	NOVA SCOTIA Rx (%)	BRITISH COLUMBIA QUANTITY (%)	MANITOBA QUANTITY (%)	ONTARIO QUANTITY (%)	NOVA SCOTIA QUANTITY (%)
1996	INSULIN LISPRO	0	2	n/a	0	n/a	1	n/a	0
1997	INSULIN LISPRO	0	10	n/a	0	n/a	10	n/a	0
1998	INSULIN LISPRO	2	19	6	1	2	20	11	1
1999	INSULIN LISPRO	9	30	11	2	8	32	19	2

Table 3-2

Market Share Based On Accepted Ingredient Cost					
FISCAL YEAR	CHEMICAL NAME	BRITISH COLUMBIA (%)	MANITOBA (%)	ONTARIO (%)	NOVA SCOTIA (%)
1996	INSULIN LISPRO	0	3	N/A	0
1997	INSULIN LISPRO	0	14	N/A	1
1998	INSULIN LISPRO	2	27	9	2
1999	INSULIN LISPRO	9	42	16	3

Market share attained in Manitoba was the highest followed by Ontario, British Columbia and Nova Scotia. It is of interest that partial reimbursement in British Columbia seems to have had a significant impact on the product's market share.

The average rate of growth for insulin lispro was significant, even in British Columbia and Ontario where the market share based on accepted cost was relatively low. The average quarterly growth in expenditures between 1998/99 and 1999/00 was 24% in British Columbia, 21%[15] in Manitoba, 40% in Ontario, and 25 % in Nova Scotia.

Unlike alendronate, the introduction of insulin lispro onto the formularies did not appear to expand the size of the entire market[16]; most likely substituting insulin lispro for human regular insulin[17].

Figure 3-1 British Columbia – Pharmacare Insulin Lipro Accepted Ingredient Cost – All Plans

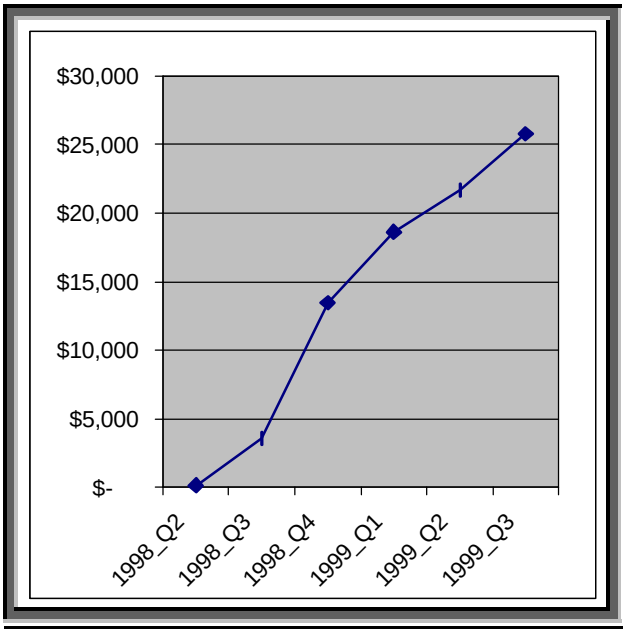


Figure 3-2 Manitoba Drug Plan Insulin Lipro Accepted Ingredient Cost – All Plans

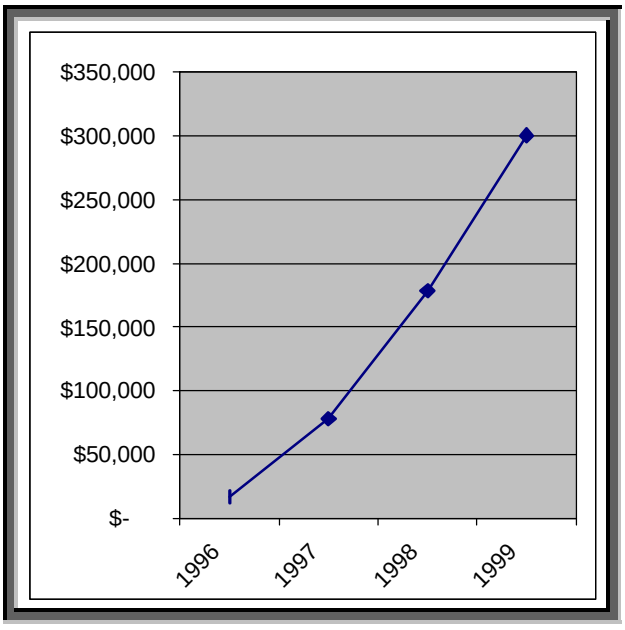


Figure 3-3 Ontario Benefit Program Insulin Lipro Accepted Ingredient Cost – All Plans

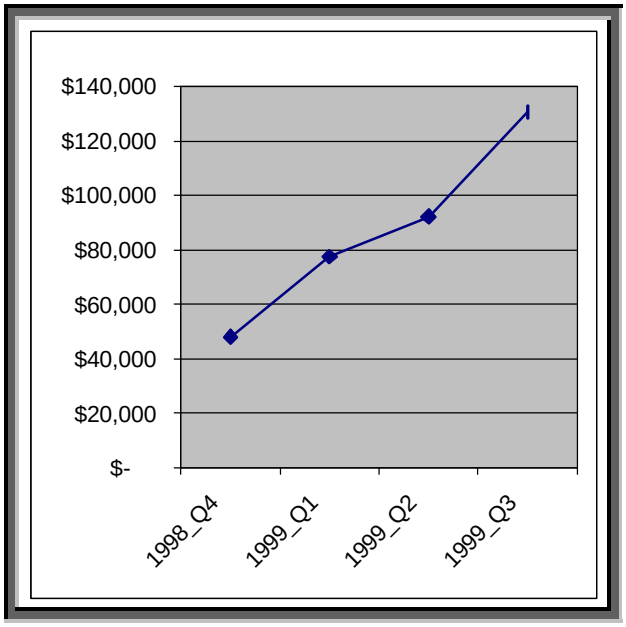
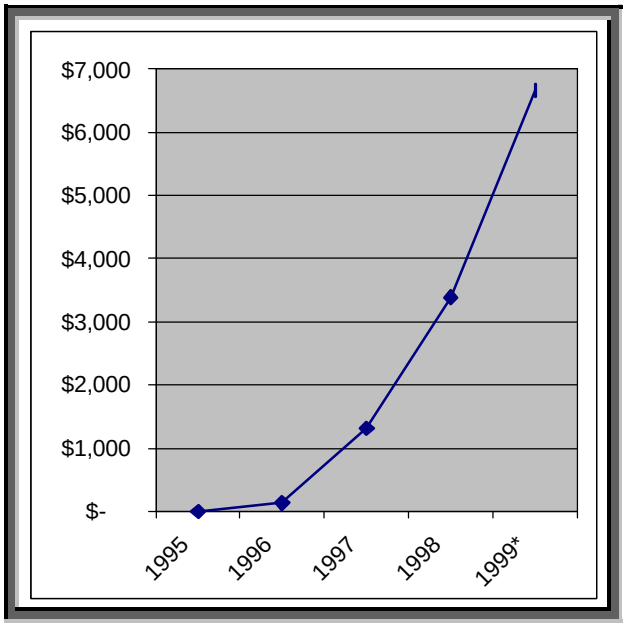


Figure 3-4 Nova Scotia Pharmacare Insulin Lipro Accepted Ingredient Cost – Seniors Plan



4 LOSARTAN (Cozaar)

Table 4-1 and 4-2 summarize the market share attained by losartan within its therapeutic market. Losartan received its first NOC September 1995. The product was listed as a regular benefit in Manitoba and Nova Scotia, it received Limited Use Status in Ontario and physicians in British Columbia have to request a special authorization for patients to receive coverage.

It is interesting that the market share obtained in British Columbia is only marginally smaller than the other jurisdictions by 1998/99, and is actually higher than Ontario for the first three quarters of fiscal year 1999/00, based on volume.

Table 4-1

Market Share Based On Volume									
FISCAL YEAR	CHEMICAL NAME	BRITISH COLUMBIA Rx (%)	MANITOBA Rx (%)	ONTARIO Rx (%)	NOVA SCOTIA Rx (%)	BRITISH COLUMBIA QUANTITY (%)	MANITOBA QUANTITY (%)	ONTARIO QUANTITY (%)	NOVA SCOTIA QUANTITY (%)
1996	LOSARTAN POTASSIUM	1	5	2	4	1	4	1	3
1997	LOSARTAN POTASSIUM	3	7	4	7	3	6	3	5
1998	LOSARTAN POTASSIUM	5	8	7	10	5	7	6	8
1999	LOSARTAN POTASSIUM	7	9	7	12	7	8	6	11

Table 4-2

Market Share Based On Accepted Ingredient Cost					
FISCAL YEAR	CHEMICAL NAME	BRITISH COLUMBIA (%)	MANITOBA (%)	ONTARIO (%)	NOVA SCOTIA (%)
1996	LOSARTAN POTASSIUM	1	6	2	4
1997	LOSARTAN POTASSIUM	4	8	5	7
1998	LOSARTAN POTASSIUM	7	9	8	11
1999	LOSARTAN POTASSIUM	9	10	9	15

In all jurisdictions, losartan attained a significant market share (given that this is a relatively mature market and the product had to create a niche market). The average quarterly growth in expenditures over the first full year of formulary coverage was approximately 27% in British Columbia, 27% in Manitoba, 25% in Ontario and 38% in Nova Scotia. Between 1997/98 and 1999/00, the average growth in expenditures was 20% in British Columbia, 6% in Manitoba, 14% in Ontario and 8% in Nova Scotia every three months. In 1996/97 the market share of losartan in British Columbia was relatively small, however, British Columbia experienced a significantly high growth in losartan expenditures over the entire period of analysis and by 1999/00 losartan represented 9% of the entire value of the market, similar to Ontario and only 1% lower than in Manitoba. It would appear that the special authority process in British Columbia was not a significant barrier to market penetration for this drug. In 1999/00 expenditure growth on losartan was relatively flat in Manitoba and Nova Scotia, where the highest market share was attained.

The average three-month growth in expenditures in 1999/00 was 21% in British

Columbia, 3% in Manitoba, 8% in Ontario and 1% in Nova Scotia. The length of time between NOC date and the formulary listing decision may help explain these discrepancies.

Figure 4-1 British Columbia Pharmacare Losartan Accepted Ingredient Cost – All Plans

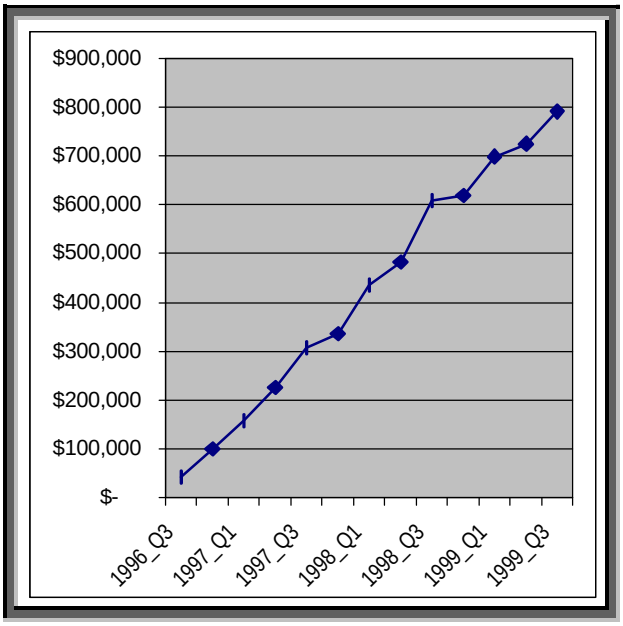


Figure 4-2 Manitoba Drug Plan Losartan Accepted Ingredient Cost – All Plans

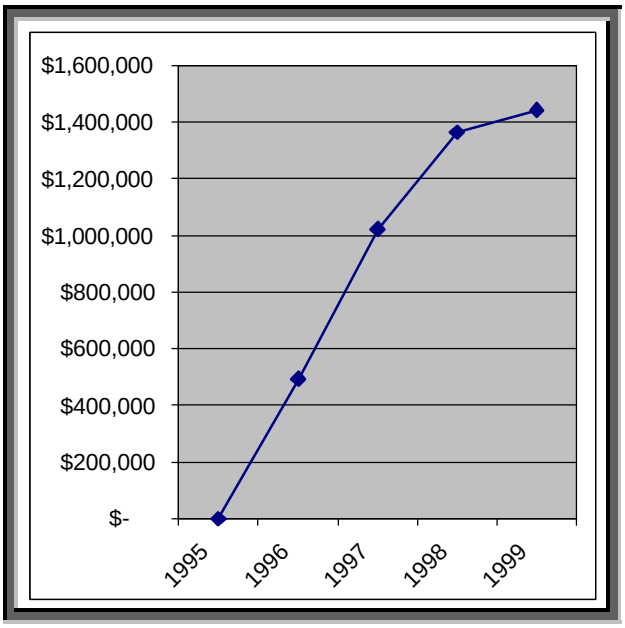


Figure 4-3 Ontario's Drug Benefit Program Losartan Accepted Ingredient Cost – All Plans

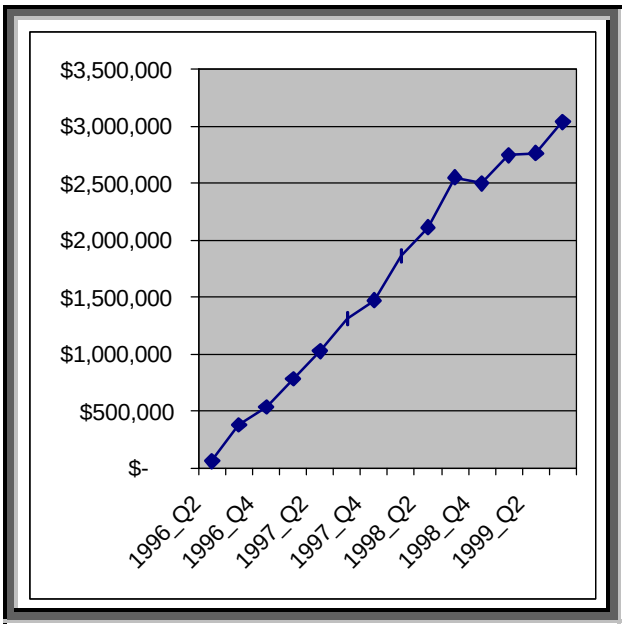


Figure 4-4 Nova Scotia's Pharmacare Losartan Accepted Ingredient Cost – Seniors Plan

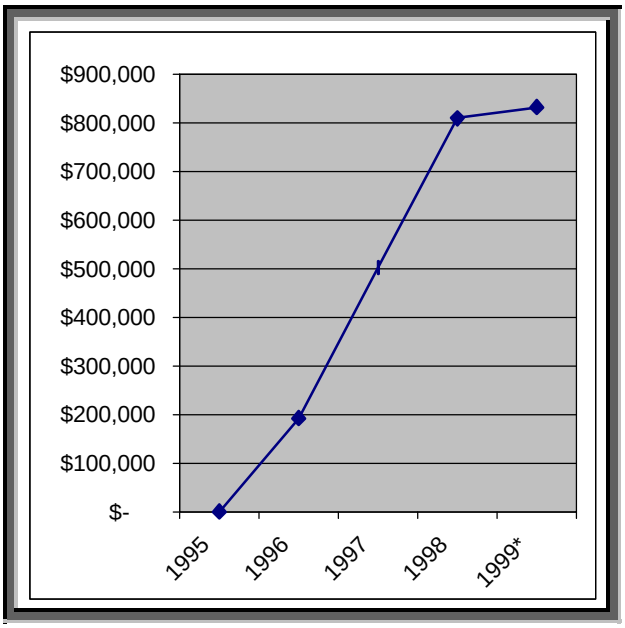


Figure 4-5 British Columbia Annual Prescription Growth Losartan and the Rest of the Market

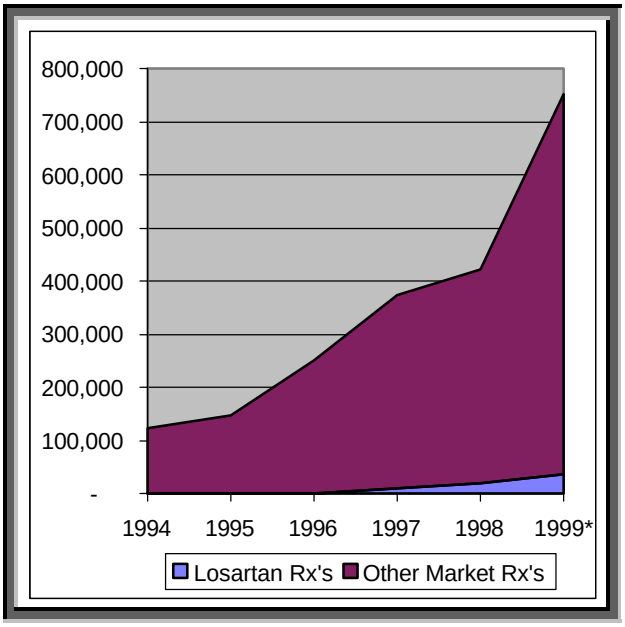


Figure 4-6 Manitoba's Annual Prescription Growth Losartan and the Rest of the Market

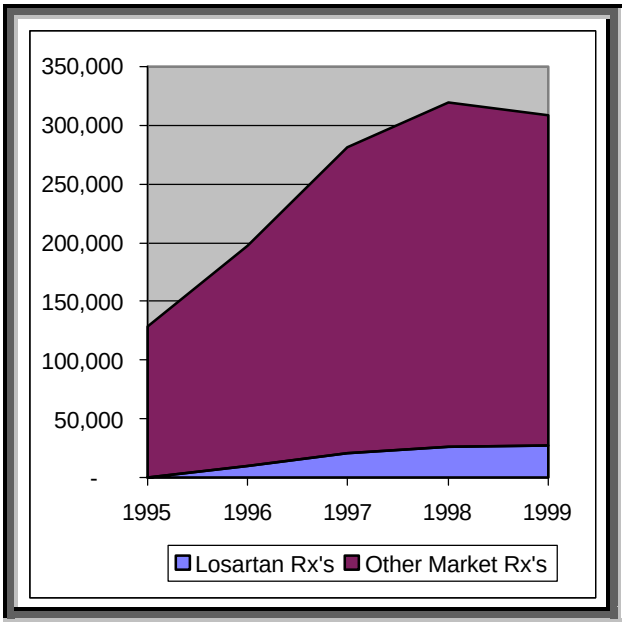


Figure 4-7 Ontario's Annual Prescription Growth Losartan and the Rest of the Market

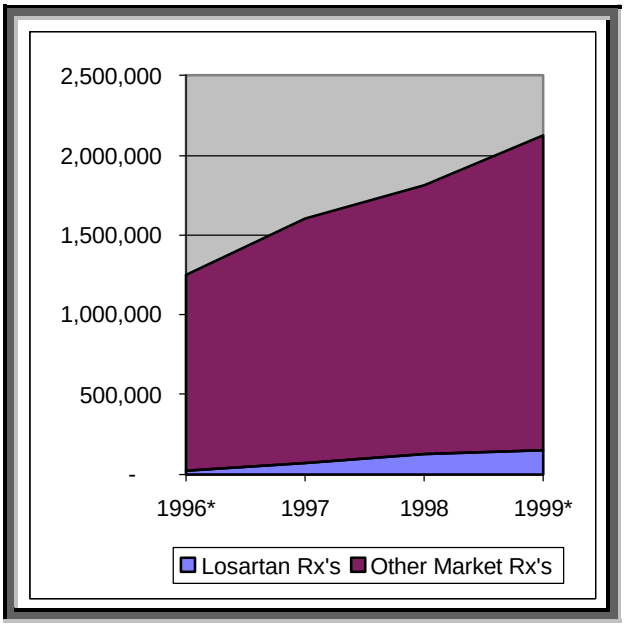
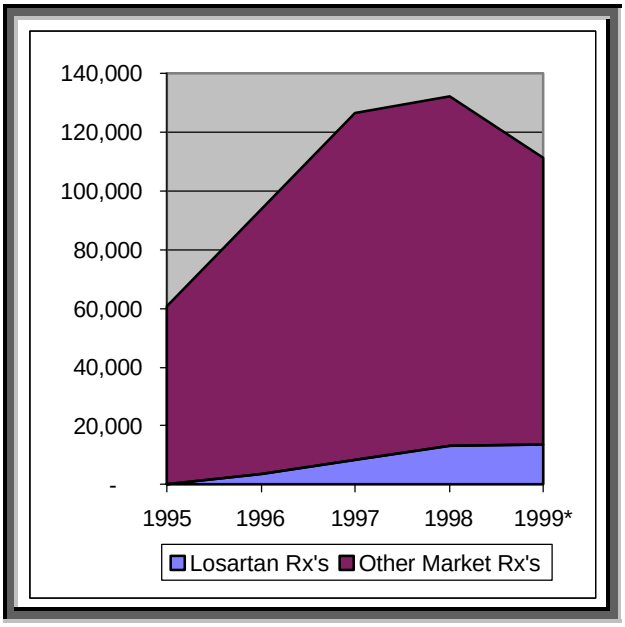


Figure 4-8 Nova Scotia's Annual Prescription Growth Losartan and the Rest of the Market



The above graphs plot the growth in prescriptions for losartan and the entire market. In 1998/99 British Columbia appears to have experienced exceptional growth in this group of drugs. Between 1996/97 and 1999/00 the average annual prescription growth rate was 44%, between 1998/99 and 1999/00 the number

of prescriptions claimed in British Columbia increased by 78%.

In Manitoba, the growth of this market began to diminish by 1997/98; between 1996/97 and 1999/00 the average annual prescription growth rate was 19%, between 1997/98 and 1999/00 the number of prescriptions claimed annually in Manitoba grew by 9%, in 1999/00 the growth was only 4%. Ontario experienced a relatively steady growth rate over the entire period; between 1996/97 and 1999/00 the average annual prescription growth rate was 19%. The growth rate in Nova Scotia between 1996/97 and 1999/00 was 6%, however, between 1995/96 and 1997/98 annual growth rate was 44%; in 1999/00 the annual number of prescriptions for the entire market had decreased by 16%.

5 PROTON PUMP INHIBITORS (PPI's)

(OMEPRAZOLE, LANSOPRAZOLE, PANTOPRAZOLE)

Table 5-1 and 5-2 summarize the market share attained by omeprazole, lansoprazole and pantoprazole within their therapeutic market. Omeprazole (Losec) received its first NOC June 1989, lansoprazole (Prevacid) received its first NOC May 1995 and pantoprazole (Pantoloc) received its first NOC September 1996.

The products are listed as Part 2 benefits in Manitoba have Limited Use Status in Ontario and physicians in British Columbia and Nova Scotia must request a special authorization for patients to receive coverage. Specific eligibility criteria are defined for all jurisdictions, and are very similar, although as stated earlier, administrative process appears to play a significant role in determining the final market share distribution.

Table 5-1

Market Share Based Volume									
FISCAL YEAR	CHEMICAL NAME	BC Rx	MAN Rx	ONT Rx	NOVA SCOTIA Rx	BC QTY	MAN QTY	ONT QTY	NOVA SCOTIA QTY
1994	OMEPRAZOLE	33%	n/a	18%	n/a	19%	n/a	11%	n/a
1995	OMEPRAZOLE	27%	22%	22%	5%	17%	13%	14%	3%
1996	LANSOPRAZOLE	1%	1%	0%	0%	0%	0%	0%	0%
1996	OMEPRAZOLE	22%	25%	25%	6%	15%	15%	16%	3%
1997	LANSOPRAZOLE	2%	2%	2%	1%	1%	1%	1%	0%
1997	OMEPRAZOLE	25%	29%	27%	8%	17%	19%	19%	4%
1997	PANTOPRAZOLE SODIUM	0%	1%	0%	0%	0%	1%	0%	0%
1998	LANSOPRAZOLE	3%	3%	3%	1%	2%	2%	2%	1%
1998	OMEPRAZOLE	27%	32%	27%	11%	19%	21%	20%	6%
1998	PANTOPRAZOLE SODIUM	3%	4%	1%	1%	2%	3%	1%	0%
1999	LANSOPRAZOLE	4%	6%	3%	2%	2%	4%	2%	1%
1999	OMEPRAZOLE	27%	36%	22%	12%	21%	26%	18%	7%
1999	PANTOPRAZOLE SODIUM	6%	7%	2%	2%	4%	5%	2%	1%

Table 5-2

Market Share Based On Accepted Ingredient Cost					
FISCAL YEAR	CHEMICAL NAME	BRITISH COLUMBIA (%)	MANITOBA (%)	ONTARIO (%)	NOVA SCOTIA (%)
1994	OMEPRAZOLE	57%	N/A	38%	N/A
1995	LANSOPRAZOLE	0%	0%	0%	0%
1995	OMEPRAZOLE	62%	41%	45%	13%
1996	LANSOPRAZOLE	2%	1%	1%	1%
1996	OMEPRAZOLE	64%	47%	49%	16%
1997	LANSOPRAZOLE	4%	3%	3%	2%
1997	OMEPRAZOLE	65%	52%	53%	21%
1997	PANTOPRAZOLE SODIUM	1%	1%	0%	0%
1998	LANSOPRAZOLE	6%	5%	5%	3%
1998	OMEPRAZOLE	63%	54%	52%	26%
1998	PANTOPRAZOLE SODIUM	5%	6%	2%	2%
1999	LANSOPRAZOLE	7%	8%	6%	3%
1999	OMEPRAZOLE	61%	56%	48%	28%
1999	PANTOPRAZOLE SODIUM	10%	9%	4%	3%

Prior to December 1995, Omeprazole was a regular benefit in British Columbia and enjoyed a significantly higher share of the market than in the other jurisdictions. The significant market share attained in British Columbia in the early years of the product's life cycle was impacted by the change in benefit status of PPI's from a regularly funded benefit to a restricted benefit (gastroenterologists in the province are exempt from the special authority process for PPI's but not from the H2 Antagonists (H_2-RA) Reference Based Pricing Policy)[18], although the negative pressures from the policy appears to be short lived. By 1999/00 PPI's account for approximately 37% of market share based on prescription (Rx) volume (the second highest) and a staggering 78%[19] of the market share based on accepted cost.[20] In 1999/00, the prescription market share for PPI's is 48% in Manitoba, the highest of all jurisdictions under review. Volume (Rx) market share is 27% in Ontario and 16% in Nova Scotia in 1999/00. Nova Scotia's special authority process appears to have been extremely successful in managing the cost of PPI's. In most jurisdictions, PPI's represent one of the highest single expenditure items.

Between 1994/95 and the third quarter of fiscal year 1999/00 expenditures on PPI's grew on average by 3% every three months in British Columbia and 6.5% in Ontario. Between 1993/94 and the second quarter of 1995 (prior to the change in benefit status for PPI's), the average growth rate in expenditures in British Columbia was 6% every three months (quarterly). Between the third quarter of fiscal year 1995/96 and1999/00 the average growth rate in expenditures was reduced to 4% on average quarterly. As is apparent from the graph below, expenditures on PPI's have been marginally affected by the special authority policy lever, however, market share continued to increase after the initial reduction and expenditure levels once again exceed pre-policy levels. In 1996/97 expenditures on PPI's declined by 10% in British Columbia and between 1996/97 and 1999/00 the annual expenditures growth rate was 26%. Between 1995/96 and 1999/00 the average annual expenditures growth rate was 11% in British Columbia, 34% in Manitoba, 14% in Ontario and 34% in Nova Scotia (by 1999/00 the annual increase in accepted drug cost was down to 12%).

Figure 5-1 British Columbia – Pharmacare Proton Pump Inhibitors Accepted Ingredient Cost – All Plans

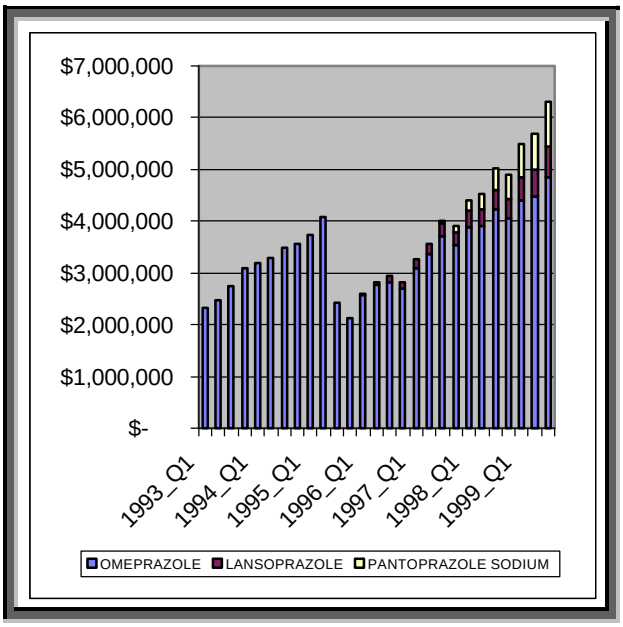


Figure 5-2 Manitoba – Drug Plan Proton Pump Inhibitors Accepted Ingredient Cost – All Plans

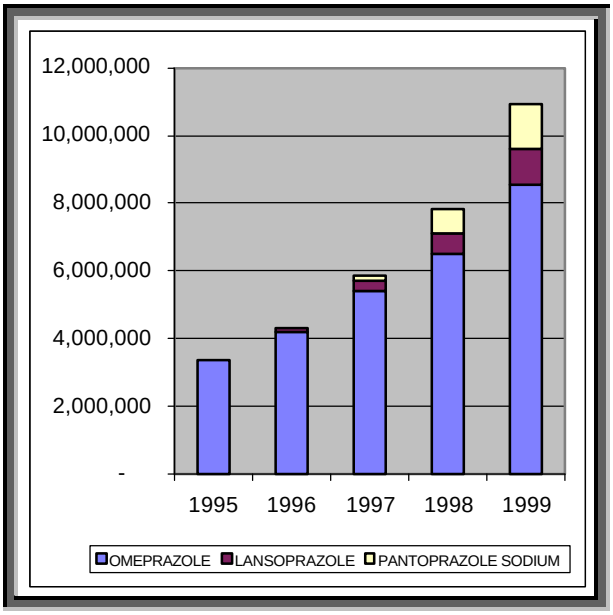


Figure 5-3 Ontario Drug Benefit Program Proton Pump Inhibitors Accepted Ingredient Cost – All Plans

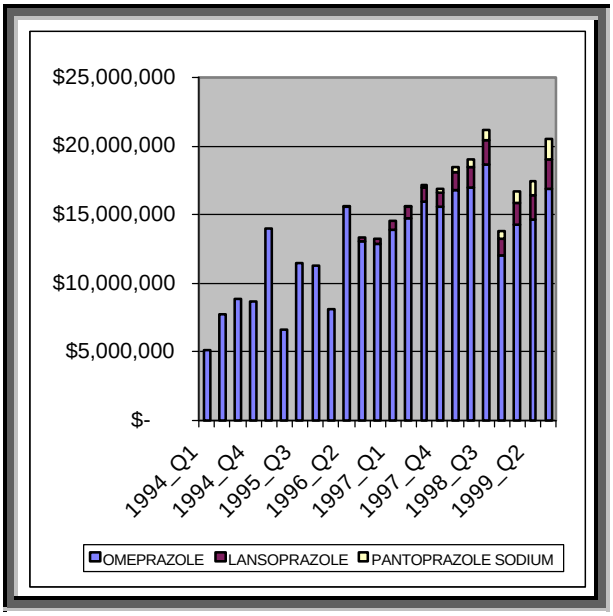
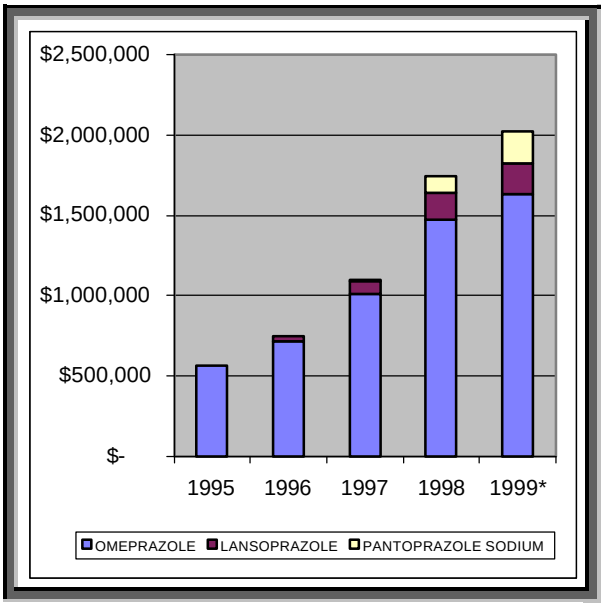


Figure 5-4 Nova Scotia Pharmacare Proton Pump Inhibitors Accepted Ingredient Cost – Seniors Plan



Lansoprazole and pantoprazole have also been able to gain significant market shares upon inception and expenditure growth for these products are in line with other "me-too" drugs. Between 1996/97 and 1999/00 expenditures on lansoprazole grew on average by approximately 20% per quarter in British Columbia, Manitoba

and Ontario and 14% per quarter in Nova Scotia. Expenditures on pantoprazole grew on average by 32% per quarter between the end of 1997/98 and 1999/00 in British Columbia and 23% in Manitoba capturing a higher share of the market than lansoprazole, which was actually introduced earlier. The rate of pantoprazole's growth may be a due to its slight price advantage as well as the availability of the intravenous form which may catch patients discharged from the hospital. In Ontario, expenditures on pantoprazole grew on average by 23% per quarter between the end of 1997/98 and 1999/00 and the growth rate in Nova Scotia was 15% every three months.

PPI Prescribing/Utilization Patterns

PPI's are a relatively new and expensive therapy used in the treatment of peptic ulcer disease and gastroesophageal reflux disease (GERD). In 1999/00, the average annual cost per patient using H2 Antagonists (H_2-RA) was only $63 in British Columbia, $100 in Manitoba, $150 in Ontario and Nova Scotia. In comparison, the average annual cost per patient using PPI's was $620 in British Columbia, $420 in Manitoba, $650 in Ontario and $570 in Nova Scotia.

In December of 1995, British Columbia Pharmacare program had restricted the utilization of PPI's to those patients who had failed on a course of H_2-RA therapy or were under the care of a gastroenterologist. Although gastroenterologists were exempt from the PPI policy (i.e. no special authorization or trial required), they were not exempt from the Reference Drug Program policy. The analysis below reviews the pattern of PPI and H_2-RA prescribing within British Columbia in relation to the other jurisdictions.

Table 5-3

Analysis by Physician Specialty Group - H_2-RA and PPI's (1999/00)

Specialty	% of total volume (BC)	% (ON)	% (NS)	avg cost/id* (BC) $	avg cost/id (ON) $	avg cost/id (NS) $	avg days per id (BC)	avg day per id (ON)	avg day per id (NS)	avg cost per day (BC) $	avg cost per day (ON) $	avg cost per day (NS) $
General Practice	85.91	81.08	92.24	202.03	268.76	196.71	176.26	192.59	181.95	1.15	1.40	1.08
Internal Medicine	6.32	3.58	0.92	289.86	217.54	128.77	139.72	135.64	90.73	2.07	1.60	1.42
Otolaryngology	0.39	0.14	0.30	127.07	119.03	115.34	78.92	86.48	106.22	1.61	1.38	1.09
General Surgery	1.10	1.08	0.99	187.35	192.20	135.48	98.79	122.52	110.85	1.90	1.57	1.22
Gastroenterology	0.05	0.83	0.38	115.56	312.48	281.31	105.56	134.14	118.79	1.09	2.33	2.37
Gastroenterology (Endoscopy)**	3.94	n/a	n/a	186.27	n/a	n/a	154.41	n/a	n/a	1.21	n/a	n/a

**id=patient*

** gastroenterologists performing endoscopies, exempt from PPI policy in British Columbia

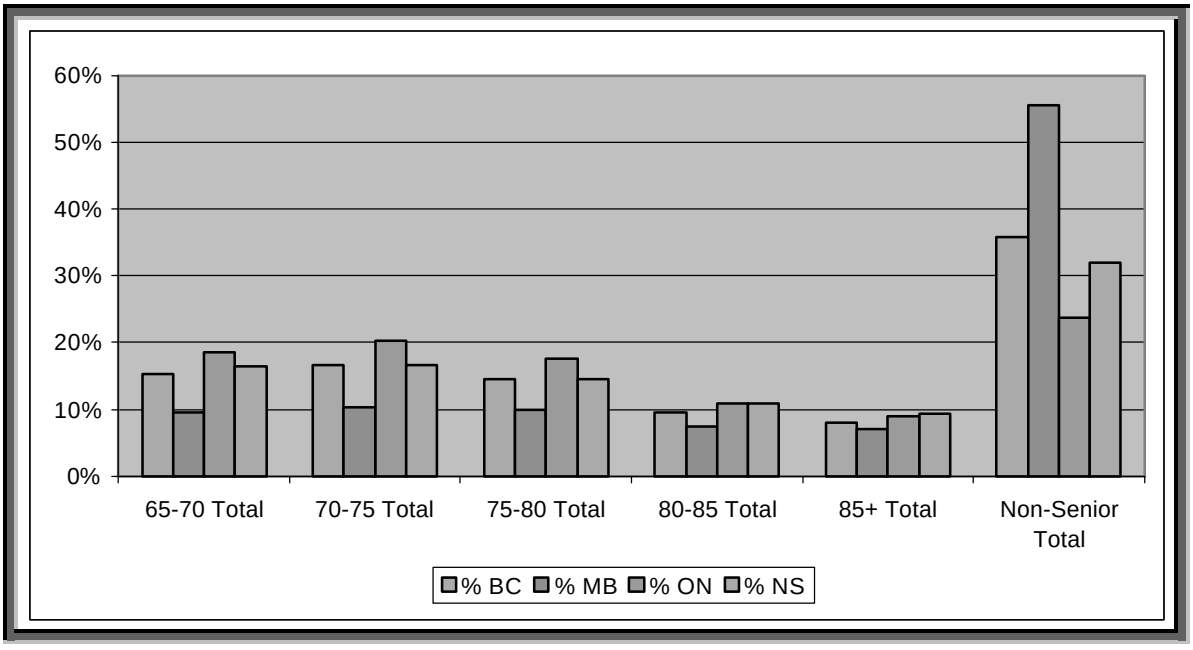
Table 5-3 identifies the percentage of all prescriptions written for H_2-RA's and PPI's by the five specialty groups under consideration[21] and Table 5-4 summarizes the average cost per patient in British Columbia, Ontario and Nova Scotia for two age groups, seniors between 65 and 70 years of age and non-seniors. Nova Scotia had more than 90% of all H_2-RA and PPI prescriptions being written by general practitioners, followed by British Columbia at 86%. The number of prescriptions written by physicians specializing in internal medicine or gastroenterology is significantly higher in British Columbia than in other jurisdictions. Because patients often can receive an original prescription from a specialist which can subsequently be renewed by a general practitioner, the cost per patient and cost per day by specialty is somewhat difficult to interpret, however, the data does not suggest that the PPI policy in BC is resulting in higher cost by the exempted specialists.

Table 5-4

Provincial Average Patient Cost by Physician Specialty Group 1999/00						
Specialty	avg cost per patient (senior: age 65-70) BC	avg cost per patient (non-senior: <65) BC	avg cost per patient (senior: age 65-70) ON	avg cost per patient (non-senior: <65) ON	avg cost per patient (senior: age 65-70) NS	avg cost per patient (non-senior: <65) NS
General Practice	191.23	155.48	239.74	230.97	202.09	134.75
Internal Medicine	275.84	306.50	214.45	198.65	120.39	105.45
Otolaryngology	123.69	142.82	122.40	92.79	118.47	89.91
General Surgery	187.49	189.53	180.61	166.59	138.94	117.22
Gastroenterology	155.31	93.64	284.54	303.25	298.43	239.40
Gastroenterology (Endoscopy)	186.67	139.39	N/A	N/A	N/A	N/A

Table 5-5 identifies the percentage of patients who received a prescription only for an H_2-RA in 1999/00, only for a PPI or for both. As well the average cost per day and the average duration of therapy is presented for all four jurisdictions. Manitoba, has the highest percentage of patients receiving only a PPI in 1999/00 (36%), however, in British Columbia, where an administrative process has been established to encourage cost-effective PPI prescribing, the number of individuals only on a PPI is the second highest (24%). Nova Scotia has the lowest number of individuals using only PPI therapy that year; Nova Scotia also has the most rigorous process requiring the completion of a detailed approval form.

Figure 5-5 Age Distribution of H_2-RA and PPI Beneficiaries by Jurisdiction 1999/00



It is also interesting to note that the number of individuals who have received an H_2-RA trial is relatively low in British Columbia. The average duration of therapy is also telling;[22] British Columbia has the highest PPI therapy duration followed by Ontario, Nova Scotia and Manitoba. In British Columbia, the special authority is granted for a specified period of time, perhaps the incentive to fill prescriptions prior to SA expiration is driving this result[23]. Manitoba has the shortest duration of PPI and H_2-RA therapy, partially due to the percentage of non-senior

beneficiaries who have a relatively shorter average duration of therapy. The average cost per day in British Columbia for patients only on an H_2-RA is significantly lower as a result of the Reference Drug Program and marginally lower for those on PPI only and on PPI's with a trial of H_2-RA.[24]

Table 5-5

Provincial Utilization Distribution, Cost and Average Annual Duration of PPI and H_2-RA Therapy 1999/00

Drug Category	% of Patients BC	% of Patients MB	% of Patients ON	% of Patients NS	Avg Cost Per Day BC ($)	Avg Cost Per Day MB($)	Avg Cost Per Day ON ($)	Avg Cost Per Day NS ($)	Average Duration of Therapy (days) BC	Average Duration of Therapy (days) MB	Average Duration of Therapy (days) ON	Average Duration of Therapy (days) NS
H2RA Only	68	54	69	84	.42	.77	.84	.83	149	133	176	175
PPI's Only	24	36	20	9	2.49	2.53	2.67	2.62	249	165	242	219
PPI with trial of H2A in 1999/00	8	11	11	7	1.53	1.68	1.79	1.60	248	212	273	250

The graphs below provide summary information on the number of prescriptions written for PPI's and the percentage of patients on PPI's only, by specialty group. In British Columbia, the percentage of prescriptions written for PPI's is significantly higher for all specialties, except for gastroenterologists - this result is somewhat surprising given the policy incentives, which exist in British Columbia. The overall average percent of prescriptions for PPI's was 38% in BC, 48% in MB, 29% in Ontario, and 15% in NS.

Figure 5-6 Distribution of PPI Prescription by Physician Specialty BC, ON, NS, 1999/00

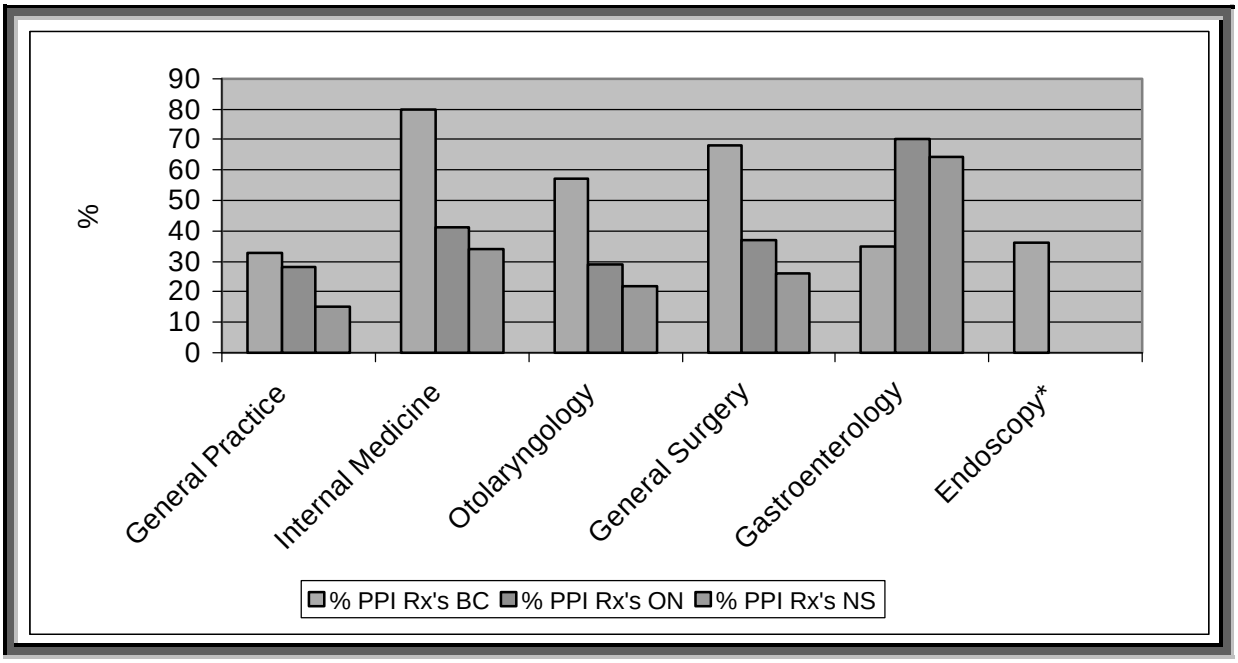


Figure 5-7 Percentage of Patients on PPI ONLY Therapy in 1999/00 by Physician Specialty BC, ON, NS

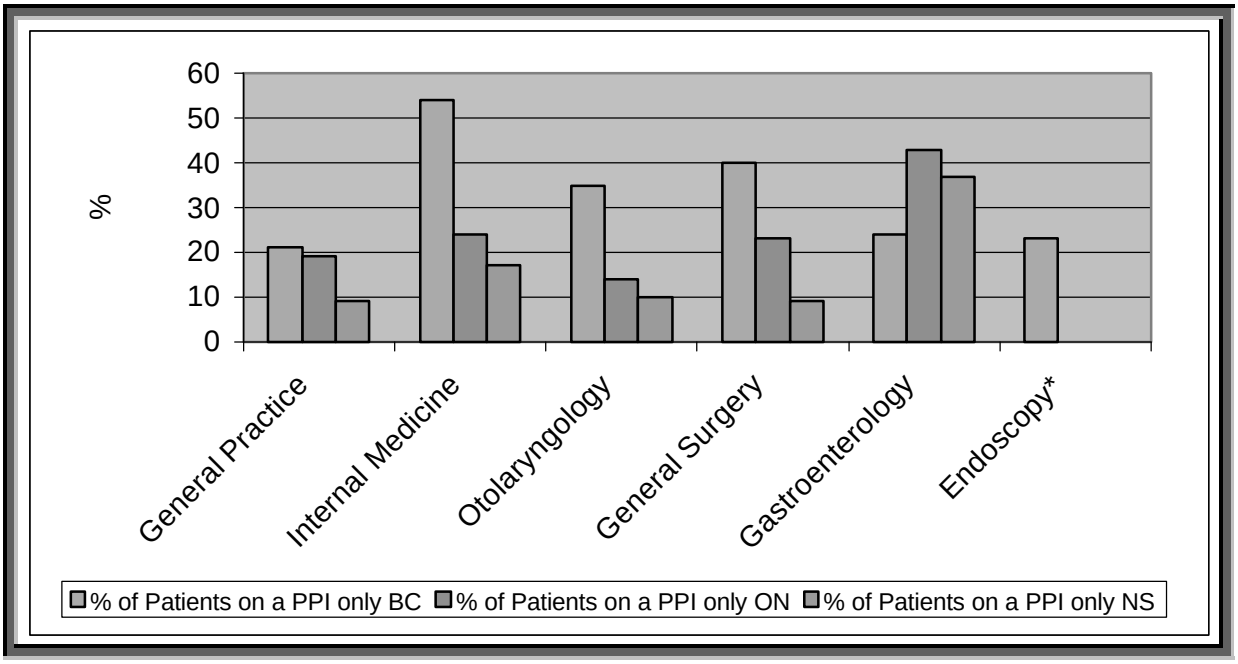


Figure 5-8 Percent Use of PPIs Only by Age and Jurisdiction 1999/00

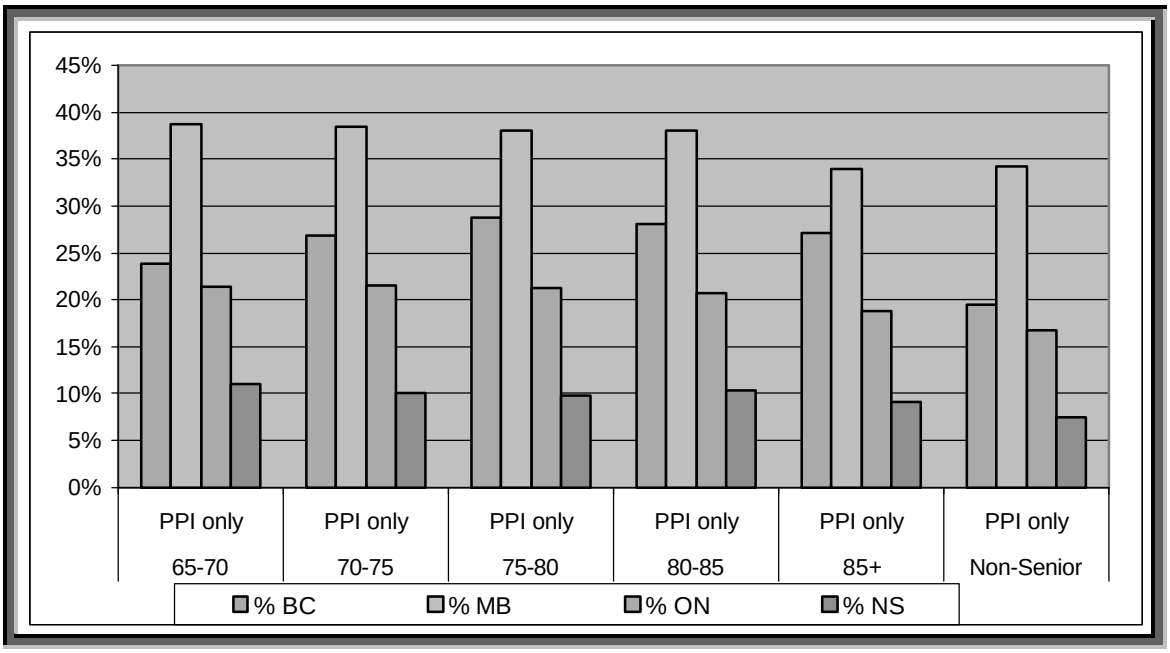
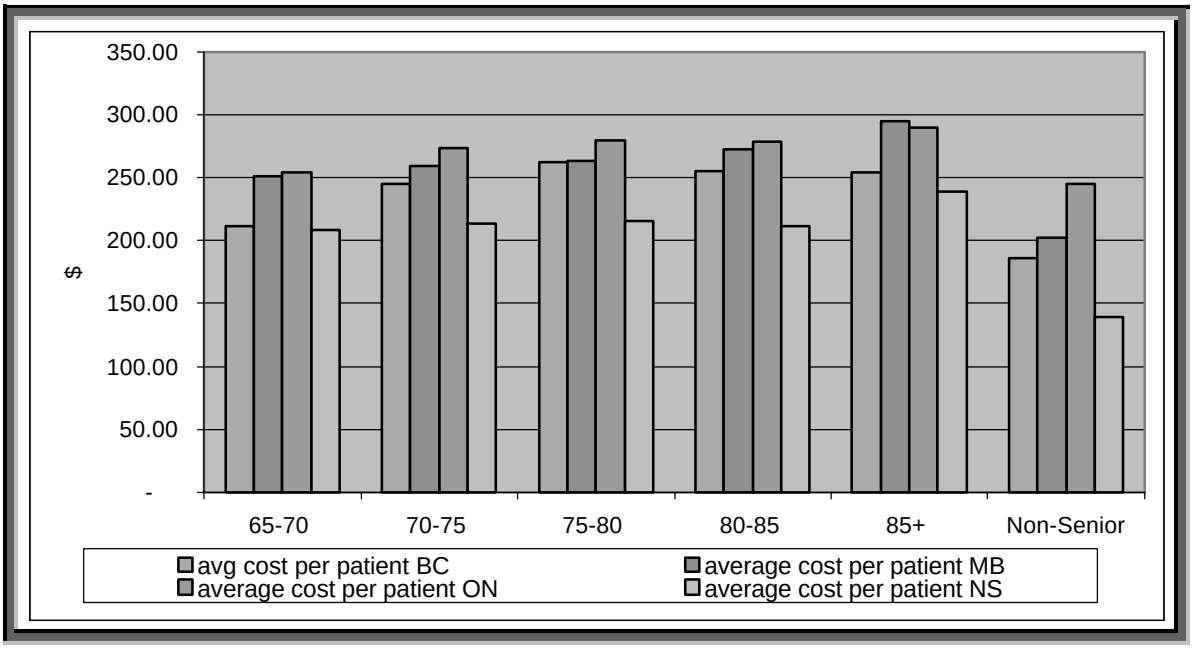


Figure 5-9 Average Annual Cost per Patient Using H_2-RA and PPI Therapy 1999/00



Controlling for age does not change the results significantly. For all age groups, the rate with which beneficiaries are using PPI only therapy is the highest in Manitoba[25] and the second highest in British Columbia. However, the average cost per patient is the highest in Ontario, with the exception of the over 85 seniors where Manitoba's average cost per patient is the highest. Nova Scotia has the lowest average cost per patient for all age groups.

6 OLANZAPINE (ZYPREXA)

Table 6-1 and 6-2 summarize the market share attained by olanzapine within its therapeutic market. Olanzapine received its first NOC October 1996. The product was listed as a regular benefit in Manitoba and Ontario (after 1998) and was subject to special authorization in British Columbia and Nova Scotia.

By 1997/98 the market share obtained in British Columbia under the special authority process was significant and only second to Ontario. Market penetration appears to have been relatively low in Manitoba and is comparable to the rate of gain in Nova Scotia under the special authority process. By 1999/00, olanzapine represents a significant share of the market in every jurisdiction.

Table 6-1

Market Share Based On Volume

FISCAL YEAR	CHEMICAL NAME	BRITISH COLUMBIA Rx(%)	MANITOBA Rx(%)	ONTARIO Rx(%)	NOVA SCOTIA Rx (%)	BRITISH COLUMBIA QUANTITY (%)	MANITOBA QUANTITY (%)	ONTARIO QUANTITY (%)	NOVA SCOTIA QUANTITY (%)
1996	OLANZAPINE	0%	1%	0%	0%	0%	1%	0%	0%
1997	OLANZAPINE	22%	10%	30%	8%	20%	8%	25%	8%
1998	OLANZAPINE	32%	26%	41%	19%	31%	23%	37%	18%
1999	OLANZAPINE	36%	31%	45%	23%	33%	26%	42%	22%

Table 6-2

Market Share Based On Accepted Cost

FISCAL YEAR	CHEMICAL NAME	BRITISH COLUMBIA (%)	MANITOBA (%)	ONTARIO (%)	NOVA SCOTIA (%)
1996	OLANZAPINE	0%	2%	0%	0%
1997	OLANZAPINE	41%	20%	48%	25%
1998	OLANZAPINE	56%	45%	64%	44%
1999	OLANZAPINE	60%	52%	68%	50%

Between 1997/98 and 1999/00 the average growth in expenditures was approximately 20% every three months in British Columbia and Ontario; 40% in Manitoba and Nova Scotia.

Between 1998/99 and 1999/00 growth slowed down to approximately 10% every three months in British Columbia and Ontario and 20% in Manitoba and Nova Scotia.

Figure 6-1 British Columbia – Pharmacare Olanzapine Accepted Ingredient Cost – All Plans

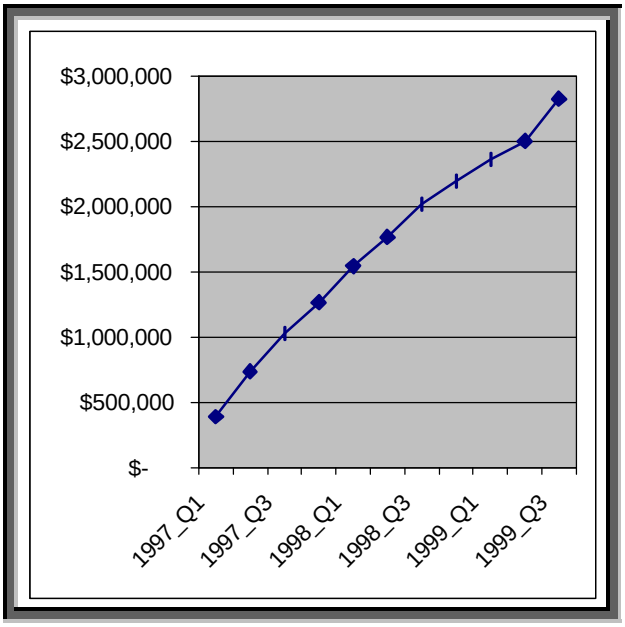


Figure 6-2 Manitoba – Drug Plan Olanzapine Accepted Ingredient Cost – All Plans

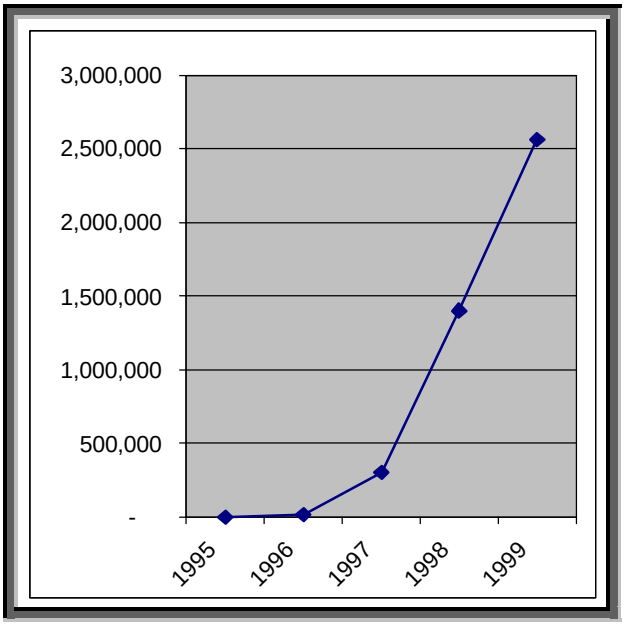


Figure 6-3 Ontario Drug Benefit Program Olanzapine Accepted Ingredient Cost - All Plans

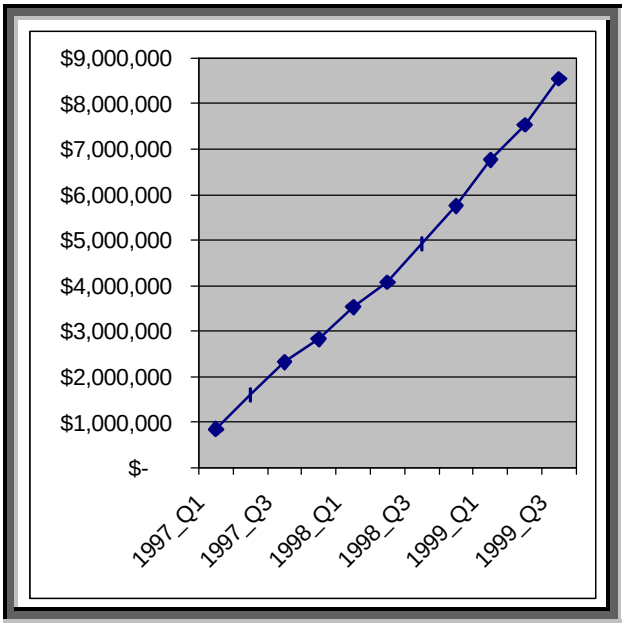
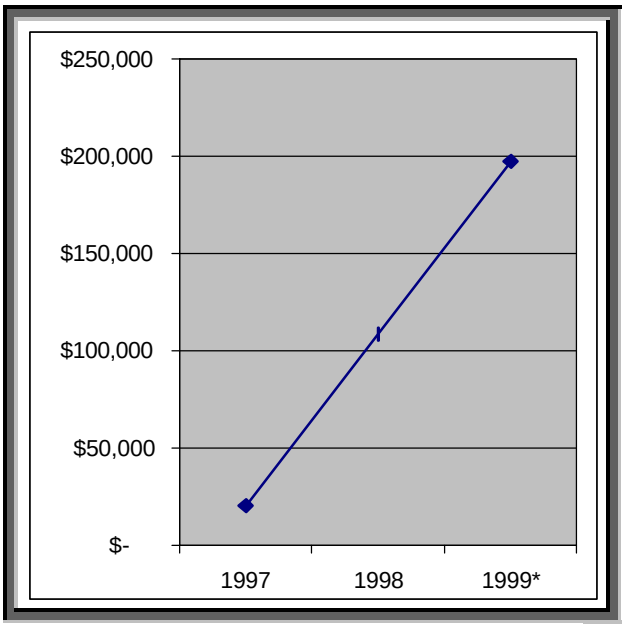


Figure 6-4 Nova Scotia – Pharmacare Olanzapine Accepted Ingredient Cost – Seniors Plan



The growth in the entire market is also striking for this group of drugs. The market base over the period of analysis was also growing.

Between 1997/98 and 1999/00 the number of prescriptions for the entire market, excluding

olanzapine, had increased by 64% in British Columbia, 151% in Manitoba, 141% in Ontario and 250% in Nova Scotia.

Figure 6-5 British Columbia's Annual Prescription Growth Olanzapine and the Rest of the Market 1995/96 – 1999/00

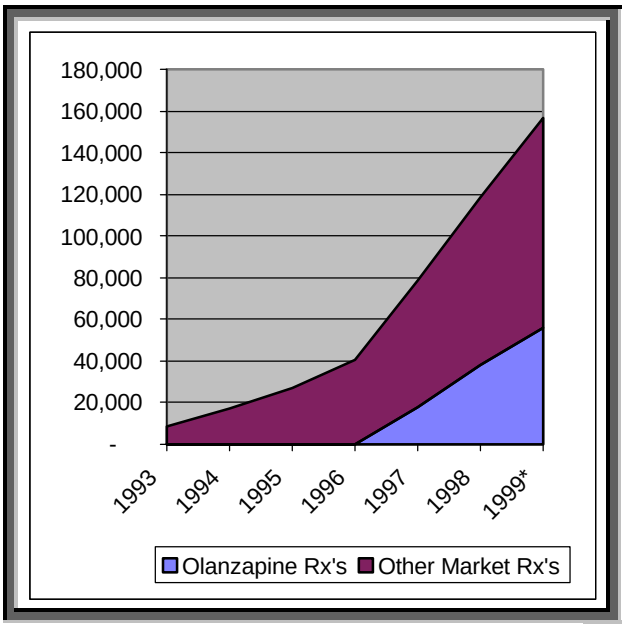


Figure 6-6 Manitoba's Annual Prescription Growth Olanzapine and the Rest of the Market – 1995/96 – 1999/00

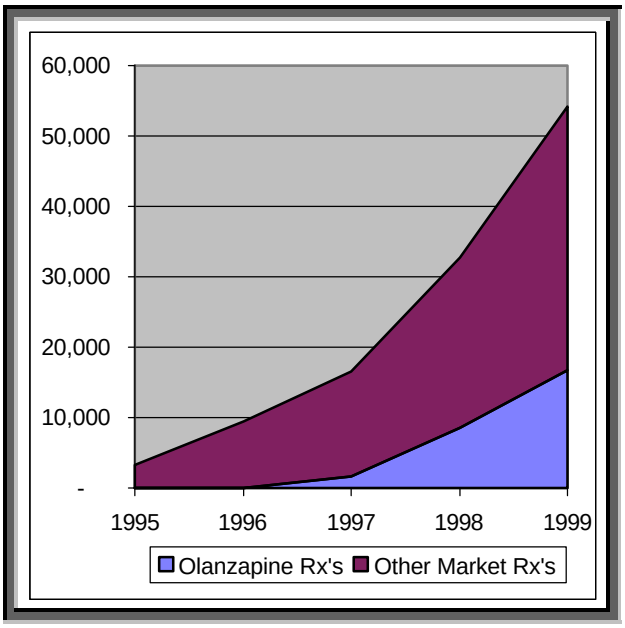


Figure 6-7 Ontario's Annual Prescription Growth Olanzapine and the Rest of the Market – 1995/96 – 1999/00

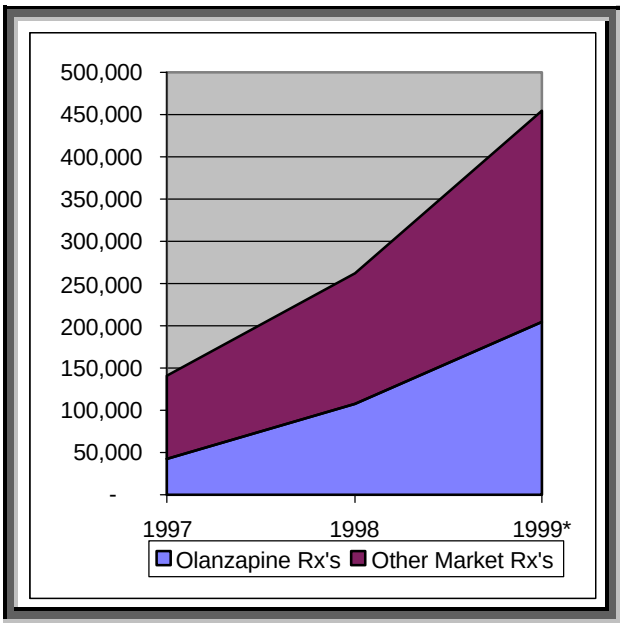
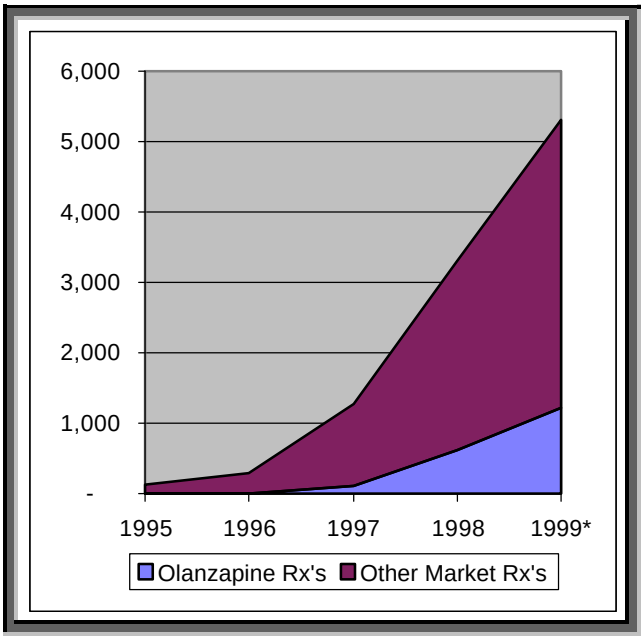


Figure 6-8 Nova Scotia's Annual Prescription Growth Olanzapine and the Rest of the Market – 1995/96 – 1999/00



Conclusion

The five case studies examined in this report suggest that market penetration is the most rapid within the first two years of a products' life cycle. Generally speaking, it appears that average expenditure growth is of 20-30% in magnitude every three months, regardless of the administrative process involved. The level of adjudication which ensure specific criteria are met before a drug is covered appear to play a significant role in determining the rate of market penetration and net cost to the system provided they actually impose a significant time requirement/commitment. The Fosamax example demonstrates that Ontario's Section 8 process is extremely effective in affecting market share and utilization. The special authority process in British Columbia appears to be comparable in outcome to limited use or criteria driven systems. The Humalog example in British Columbia is interesting, as partial coverage appears to be relatively effective in influencing utilization.

This study was designed to provide some background and insight for the direction and focus of future work. Testing whether these finding are generalizable should provide further insight into the nature of competition in the pharmaceutical market, particularly one in which therapeutic comparators are available upon entry.

Appendix I - Special Authority Process

British Columbia

Pharmacare has used the special authority process for a number of years. In June 1998 Pharmacare switched over to a LANFAX system, which uses electronic filing and processing. The current system has increased efficiency and now allows information to be processed, filed and retrieved faster. The one page special authority form has been designed to be as clear and straight forward as possible to help reduce physician paperwork. Toll-free telephone numbers have been established strictly for incoming faxes from physicians. Physicians have the option of requesting special authority by phone (urgent requests), by fax or by mail. Some physician specialties (i.e. gastroenterologists, allergists) have exemption from the process for certain classifications of drugs (i.e. PPIs, salmeterol).

Drugs have been classified into time-frame categories depending on the urgency of the request. Requests are classified into urgent (completed within 24 hours), 48 hours (processed within 2 business days) and 2 weeks (processed within 14-days). Physicians can request urgent special authorities by calling a toll-free number connecting them with a Pharmacare pharmacist or faxing in the special authority request marked "urgent". Urgent special authority faxes are pulled immediately and are processed as quickly as possible. Specific drugs are classified as urgent (i.e. fentanyl, fluconazole, zuclopenthixol) and some 48 hour drugs may be phoned in or faxed as urgent depending on need (i.e. PPIs are urgent for H-pylori, GI Bleed, strictures).

Drug	Status	Adjudication Target
Fosamax	SA	2 weeks
Cozaar	SA	2 weeks
Humalog*	partial	N/A
Zyprexa	SA-urgent	24 hours
PPIs**	SA	48 hours

*humalog is reimbursed up to the regular price of insulin
**PPIs may be classified as urgent for H-pylori,GI Bleed, strictures.

Manitoba

The Pharmacare drug benefits list is divided into three parts. Part I includes drug products that are eligible for Pharmacare benefits under all prescribed circumstances. Part II includes drug products that are eligible for Pharmacare benefit only when prescribed for terms and conditions indicated. When a drug is not listed in Part I or Part II, a request for Exception Drug Status coverage will be considered under Part III for each individual's specific circumstances. Under this program physicians apply to Pharmacare Exception Drug Status Program; approvals are generally given for a one-year period.

Pharmacare Exception Drug Status Program:

1. The specified drug is ordinarily administered only to hospital in-patients and is being administered outside of a hospital because of unusual circumstances.

2. The specified drug is not ordinarily prescribed or administered in Manitoba but is being prescribed because it is

required in the treatment of a patient having an illness, disability or condition rarely found in Manitoba.

3. The specified drug is infrequently used since therapeutic alternatives listed in the Schedule are usually effective but are contraindicated or found to be ineffective because of the clinical condition of the patient.

Part I (Schedule C-specified Drugs) listing-regular benefits, no special criteria e.g. Apo-Amox.

Part II (Schedule C-restricted under specified criteria as listed -Meet Exceptional Status) - physician must indicate Meet Exceptional Status (EDS) on prescription where applicable e.g.. Diflucan 150mg cap -- for single dose treatment of vaginal candidiasis in patients who fail or are intolerant to topical antifungal therapy.

Part III are products that are not a regular benefit, must have an NOC and must have been reviewed by Manitoba Drug Standard Therapeutic Committee (MDSTC). These drugs may be considered for coverage by plan, upon a physician's request on behalf of a patient - requests can be made via (phone call) to EDS office to establish special coverage for the individual.

Ontario

The Ontario Drug Benefit (ODB) Formulary/Comparative Drug Index (formulary) contains two types of listed benefits: general listing and Limited Use (LU). General listed products may be prescribed for any eligible ODB recipient and are reimbursed under the ODB program following standard adjudication rules. LU products are eligible for reimbursement only when prescribed for specific clinical conditions as specified by the LU criteria for the product. The LU criteria are listed in the formulary and a "reason for use" code is specified for each criteria. Prior to receiving coverage for a LU product, the prescriber must complete a LU prescription form, which the patient presents to the pharmacist. By completing the form and specifying the "reason for use" code, the prescriber indicates that the recipient meets the clinical criteria for that product. The pharmacist must ensure that the form is complete prior to processing the ODB claim. When submitting the claim, the pharmacist must specify the "reason for use" code. A LU form is valid for one year after the date on the form and must be retained by the pharmacist for a period of two years for audit purposes. The new prescription form has been streamlined and simplified to make it easier to complete.

For those products not listed in the formulary or if the recipient does not meet the clinical criteria, physicians may write to the ODB program and request coverage under Section 8 of the Ontario Drug Benefit Act (Individual Clinical Review program). Physicians will be notified whether or not coverage will be provided for the patient for the requested product.

Nova Scotia

When drugs are evaluated for use within the Nova Scotia Pharmacare program they can be dealt with in one of four ways:

a. Added as a full benefit (F)- All drugs in this category are fully covered upon receipt of a physicians's prescription. Multi-source products in this category are assigned a maximum allowable cost (MAC), which reflects the cost of the least expensive generic alternative. The patient is responsible for the co-payment (33% up to a max of $350).

b. Added as a benefit with exception status (E)- Drugs in this category are only covered when the physician provides written or verbal information to the Pharmacare Office that demonstrates how the patient meets the criteria for coverage. Preapproval is required. The patient is responsible for the co-payment (33% up to a max of $350). If the patient does not meet the criteria, the drug is not covered.

c. Added as a benefit with a limit on the reimbursed amount (Special MAC) - Drugs in this category are covered under the program but there is a set limit on the reimbursement level. For these drugs, there is an alternative agent on the benefit list available at a lesser cost. The patient is responsible for the additional cost.

d. Rejected as a benefit - Drugs is this category are not routinely covered. However, requests are considered and based on the situation coverage may be provided. Physicians must provide written or verbal documentation to the Pharmacare Office and preapproval is required. If approved, the patient is responsible for the co-payment. (33% up to a max of $350).

In the formulary, the full benefit drugs are listed with a colour code designation and a price symbol to assist physicians in identifying those medications with most evidence of benefit and optimal cost-effectiveness. An appendix also lists the criteria for coverage of exception status drugs. Following this list are exception forms, which may be used to facilitate the approval process; one general form and one form specific to Proton Pump Inhibitors.

As an alternative to sending a written request to the Pharmacare office, certain exception status drugs have added criteria codes. To allow for on-line payment of specific drugs with exception status, the criteria code may be provided by the physician either on the prescription or as a verbal order to the pharmacist. The use of these codes offers the physician and the pharmacist access to immediate coverage for patients who clearly meet the exception status criteria.

Appendix II - Market Definition and Results

ALENDRONATE (FOSAMAX)

Market

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1995	ALENDRONATE	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1996	ALENDRONATE	0%	0%	0%	0%	0%	1%	4%	2%	15%	1%	1%	4%
1997	ALENDRONATE	0%	0%	1%	2%	2%	10%	9%	5%	32%	5%	3%	17%
1998	ALENDRONATE	0%	0%	2%	4%	3%	14%	13%	8%	45%	11%	8%	33%
1999	ALENDRONATE	0%	1%	2%	4%	4%	19%	16%	11%	50%	14%	11%	39%
1993	ALFACALCIDOL	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1994	ALFACALCIDOL	n/a	n/a	n/a	0%	1%	1%	n/a	n/a	n/a	n/a	n/a	n/a
1995	ALFACALCIDOL	n/a	n/a	n/a	1%	1%	1%	0%	0%	0%	1%	1%	2%
1996	ALFACALCIDOL	0%	0%	1%	1%	1%	1%	0%	0%	0%	1%	1%	2%
1997	ALFACALCIDOL	0%	0%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
1998	ALFACALCIDOL	0%	0%	1%	0%	0%	1%	0%	0%	0%	1%	1%	1%
1999	ALFACALCIDOL	0%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
1993	CALCITONIN SALMON	n/a	n/a	n/a	3%	0%	13%	n/a	n/a	n/a	n/a	n/a	n/a
1994	CALCITONIN SALMON	n/a	n/a	n/a	2%	0%	14%	n/a	n/a	n/a	n/a	n/a	n/a
1995	CALCITONIN SALMON	n/a	n/a	n/a	2%	0%	14%	0%	0%	1%	0%	0%	4%
1996	CALCITONIN SALMON	1%	0%	6%	2%	0%	12%	0%	0%	1%	1%	0%	4%
1997	CALCITONIN SALMON	0%	0%	5%	2%	0%	9%	0%	0%	0%	0%	0%	2%
1998	CALCITONIN SALMON	0%	0%	4%	1%	0%	7%	0%	0%	0%	0%	0%	2%
1999	CALCITONIN SALMON	0%	0%	3%	1%	0%	7%	0%	0%	0%	0%	0%	1%
1993	CALCITRIOL	n/a	n/a	n/a	1%	1%	3%	n/a	n/a	n/a	n/a	n/a	n/a
1994	CALCITRIOL	n/a	n/a	n/a	0%	1%	2%	n/a	n/a	n/a	n/a	n/a	n/a
1995	CALCITRIOL	n/a	n/a	n/a	0%	0%	1%	1%	1%	3%	2%	1%	5%
1996	CALCITRIOL	4%	4%	14%	0%	0%	1%	1%	1%	3%	2%	1%	6%
1997	CALCITRIOL	4%	4%	13%	0%	0%	1%	1%	1%	3%	1%	1%	4%
1998	CALCITRIOL	4%	4%	11%	0%	0%	1%	2%	1%	3%	1%	1%	3%
1999	CALCITRIOL	3%	4%	9%	0%	0%	1%	2%	1%	2%	1%	1%	2%
1993	CONJUGATED ESTROGENS	n/a	n/a	n/a	69%	87%	42%	n/a	n/a	n/a	n/a	n/a	n/a
1994	CONJUGATED ESTROGENS	n/a	n/a	n/a	69%	87%	42%	n/a	n/a	n/a	n/a	n/a	n/a
1995	CONJUGATED ESTROGENS	n/a	n/a	n/a	68%	86%	41%	85%	95%	70%	75%	89%	42%

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1996	CONJUGATED ESTROGENS	67%	86%	26%	65%	78%	37%	82%	92%	59%	82%	90%	48%
1997	CONJUGATED ESTROGENS	64%	87%	23%	63%	69%	23%	79%	89%	44%	72%	85%	34%
1998	CONJUGATED ESTROGENS	59%	87%	20%	57%	61%	16%	74%	85%	35%	62%	76%	22%
1999	CONJUGATED ESTROGENS	55%	89%	17%	51%	54%	15%	70%	81%	29%	56%	72%	18%
1996	DIENESTROL	0%	0%	0%	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a
1997	DIENESTROL	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	n/a	n/a	n/a
1998	DIENESTROL	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	DIENESTROL	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%	0%	0%
1993	DIHYDROTACHYSTEROL	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1994	DIHYDROTACHYSTEROL	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1995	DIHYDROTACHYSTEROL	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	n/a	n/a	n/a
1996	DIHYDROTACHYSTEROL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1997	DIHYDROTACHYSTEROL	0%	0%	0%	0%	0%	0%	0%	0%	0%	n/a	n/a	n/a
1998	DIHYDROTACHYSTEROL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	DIHYDROTACHYSTEROL	0%	0%	0%	0%	0%	0%	0%	0%	0%	n/a	n/a	n/a
1993	ERGOCALCIFEROL	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1994	ERGOCALCIFEROL	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1995	ERGOCALCIFEROL	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%	0%	1%
1996	ERGOCALCIFEROL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
1997	ERGOCALCIFEROL	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1998	ERGOCALCIFEROL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	ERGOCALCIFEROL	0%	0%	0%	0%	0%	0%	n/a	n/a	n/a	0%	0%	0%
1994	ESTRADERM 50 & ESTRAGEST	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1995	ESTRADERM 50 & ESTRAGEST	n/a	n/a	n/a	0%	0%	0%	1%	0%	1%	n/a	n/a	n/a
1996	ESTRADERM 50 & ESTRAGEST	0%	0%	1%	0%	0%	0%	2%	0%	3%	0%	0%	0%

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1997	ESTRADERM 50 & ESTRAGEST	0%	0%	1%	0%	0%	0%	1%	0%	2%	0%	0%	0%
1998	ESTRADERM 50 & ESTRAGEST	0%	0%	1%	0%	0%	0%	1%	0%	2%	0%	0%	0%
1999	ESTRADERM 50 & ESTRAGEST	0%	0%	0%	0%	0%	0%	1%	0%	2%	0%	0%	0%
1993	ESTRADIOL 17-B	n/a	n/a	n/a	9%	3%	19%	n/a	n/a	n/a	n/a	n/a	n/a
1994	ESTRADIOL 17-B	n/a	n/a	n/a	8%	3%	18%	n/a	n/a	n/a	n/a	n/a	n/a
1995	ESTRADIOL 17-B	n/a	n/a	n/a	8%	2%	17%	10%	2%	19%	14%	3%	28%
1996	ESTRADIOL 17-B	5%	1%	10%	5%	1%	10%	7%	1%	13%	3%	0%	5%
1997	ESTRADIOL 17-B	4%	1%	9%	1%	0%	2%	6%	1%	10%	2%	1%	4%
1998	ESTRADIOL 17-B	3%	1%	7%	1%	0%	1%	5%	1%	8%	2%	1%	3%
1999	ESTRADIOL 17-B	3%	1%	6%	1%	0%	1%	6%	3%	8%	2%	1%	3%
1993	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 1.25MG)	n/a	n/a	n/a	1%	1%	1%	n/a	n/a	n/a	n/a	n/a	n/a
1994	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 1.25MG)	n/a	n/a	n/a	1%	1%	1%	n/a	n/a	n/a	n/a	n/a	n/a
1995	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 1.25MG)	n/a	n/a	n/a	1%	1%	1%	1%	1%	1%	0%	0%	0%
1996	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 1.25MG)	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1997	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 1.25MG)	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
1998	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 1.25MG)	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
1999	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 1.25MG)	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%
1993	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 2.5MG)	n/a	n/a	n/a	0%	0%	1%	n/a	n/a	n/a	n/a	n/a	n/a
1994	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 2.5MG)	n/a	n/a	n/a	0%	0%	1%	n/a	n/a	n/a	n/a	n/a	n/a
1995	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 2.5MG)	n/a	n/a	n/a	0%	0%	1%	0%	0%	0%	0%	0%	0%
1996	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 2.5MG)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1997	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 2.5MG)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1998	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 2.5MG)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	ESTROPIPATE (CALCULATED AS SODIUM ESTRONE SULFATE 2.5MG)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1993	ETHINYL ESTRADIOL	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1994	ETHINYL ESTRADIOL	n/a	n/a	n/a	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a
1995	ETHINYL ESTRADIOL	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%	0%	0%
1996	ETHINYL ESTRADIOL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1997	ETHINYL ESTRADIOL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1998	ETHINYL ESTRADIOL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	ETHINYL ESTRADIOL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1993	ETIDRONATE DISODIUM	n/a	n/a	n/a	9%	4%	19%	n/a	n/a	n/a	n/a	n/a	n/a
1994	ETIDRONATE DISODIUM	n/a	n/a	n/a	9%	5%	20%	n/a	n/a	n/a	n/a	n/a	n/a
1995	ETIDRONATE DISODIUM	n/a	n/a	n/a	11%	6%	23%	1%	1%	3%	5%	4%	18%
1996	ETIDRONATE DISODIUM	14%	4%	38%	19%	16%	34%	2%	1%	4%	9%	5%	28%
1997	ETIDRONATE DISODIUM	20%	3%	45%	26%	25%	51%	2%	1%	6%	16%	8%	36%
1998	ETIDRONATE DISODIUM	26%	2%	53%	32%	33%	58%	3%	2%	5%	20%	11%	34%
1999	ETIDRONATE DISODIUM	31%	1%	59%	38%	39%	54%	4%	2%	7%	23%	14%	35%
1993	VITAMIN D	n/a	n/a	n/a	8%	3%	2%	n/a	n/a	n/a	n/a	n/a	n/a
1994	VITAMIN D	n/a	n/a	n/a	8%	2%	1%	n/a	n/a	n/a	n/a	n/a	n/a
1995	VITAMIN D	n/a	n/a	n/a	8%	2%	1%	0%	0%	0%	1%	1%	1%
1996	VITAMIN D	7%	2%	1%	6%	2%	1%	0%	0%	0%	1%	1%	1%
1997	VITAMIN D	4%	1%	1%	4%	1%	1%	0%	0%	0%	1%	0%	0%
1998	VITAMIN D	5%	1%	1%	4%	1%	0%	0%	0%	0%	1%	0%	0%
1999	VITAMIN D	4%	1%	1%	3%	1%	0%	0%	0%	0%	1%	0%	0%

LISPRO INSULIN (HUMALOG)

MARKET

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1995	INSULIN (ZINC CRYSTALLINE) HUMAN BIOSYNTHETIC (RDNA ORIGIN)	n/a	n/a	n/a	78%	78%	77%	54%	55%	51%	76%	75%	74%
1996	INSULIN (ZINC CRYSTALLINE) HUMAN BIOSYNTHETIC (RDNA ORIGIN)	n/a	n/a	n/a	77%	76%	74%	57%	57%	53%	77%	76%	75%
1997	INSULIN (ZINC CRYSTALLINE) HUMAN BIOSYNTHETIC (RDNA ORIGIN)	n/a	n/a	n/a	76%	75%	73%	52%	52%	47%	77%	76%	74%
1998	INSULIN (ZINC CRYSTALLINE) HUMAN BIOSYNTHETIC (RDNA ORIGIN)	56%	49%	50%	74%	73%	70%	47%	48%	40%	76%	74%	73%
1999	INSULIN (ZINC CRYSTALLINE) HUMAN BIOSYNTHETIC (RDNA ORIGIN)	52%	42%	44%	68%	67%	64%	40%	40%	32%	75%	74%	72%
1995	INSULIN (ZINC CRYSTALLINE) PORK	n/a	n/a	n/a	1%	1%	2%	0%	0%	1%	0%	0%	0%
1996	INSULIN (ZINC CRYSTALLINE) PORK	n/a	n/a	n/a	1%	1%	1%	0%	0%	0%	n/a	n/a	n/a
1997	INSULIN (ZINC CRYSTALLINE) PORK	n/a	n/a	n/a	1%	1%	1%	0%	0%	0%	n/a	n/a	n/a
1998	INSULIN (ZINC CRYSTALLINE) PORK	0%	0%	0%	1%	1%	1%	0%	0%	0%	n/a	n/a	n/a
1999	INSULIN (ZINC CRYSTALLINE) PORK	0%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%
1995	INSULIN HUMAN BIOSYNTHETIC	n/a	n/a	n/a	20%	20%	22%	45%	44%	48%	24%	25%	25%
1996	INSULIN HUMAN BIOSYNTHETIC	n/a	n/a	n/a	21%	23%	24%	41%	41%	43%	23%	24%	25%
1997	INSULIN HUMAN BIOSYNTHETIC	n/a	n/a	n/a	22%	24%	26%	38%	37%	38%	23%	24%	25%
1998	INSULIN HUMAN BIOSYNTHETIC	38%	40%	41%	23%	24%	26%	34%	32%	32%	23%	25%	26%
1999	INSULIN HUMAN BIOSYNTHETIC	37%	38%	39%	22%	23%	25%	30%	28%	26%	23%	24%	25%
1996	LISPRO INSULIN	n/a	n/a	n/a	n/a	n/a	n/a	2%	1%	3%	0%	0%	0%
1997	LISPRO INSULIN	n/a	n/a	n/a	n/a	n/a	n/a	10%	10%	14%	0%	0%	1%
1998	LISPRO INSULIN	6%	11%	9%	2%	2%	2%	19%	20%	27%	1%	1%	2%
1999	LISPRO INSULIN	11%	19%	16%	9%	8%	9%	30%	32%	42%	2%	2%	3%

LOSARTAN (COZAAR)

MARKET

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1995	BENAZEPRIL	n/a	n/a	n/a	2%	1%	1%	2%	2%	2%	0%	0%	0%
1996	BENAZEPRIL	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
1997	BENAZEPRIL	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
1998	BENAZEPRIL	0%	0%	0%	1%	1%	0%	1%	1%	1%	0%	0%	0%
1999	BENAZEPRIL	0%	0%	0%	1%	1%	0%	1%	1%	1%	0%	0%	0%
1998	CANDESARTAN CILEXETIL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0%	0%	0%
1999	CANDESARTAN CILEXETIL	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%
1995	CAPTOPRIL	n/a	n/a	n/a	23%	37%	22%	19%	32%	19%	21%	33%	20%
1996	CAPTOPRIL	9%	16%	8%	13%	21%	12%	10%	18%	10%	11%	19%	10%
1997	CAPTOPRIL	7%	12%	6%	8%	15%	8%	6%	12%	6%	7%	12%	6%
1998	CAPTOPRIL	5%	9%	5%	7%	12%	6%	5%	9%	5%	6%	10%	5%
1999	CAPTOPRIL	4%	7%	3%	6%	11%	5%	4%	8%	4%	5%	10%	5%
1995	CILAZAPRIL	n/a	n/a	n/a	4%	4%	4%	5%	4%	4%	2%	1%	2%
1996	CILAZAPRIL	2%	2%	2%	3%	3%	3%	5%	4%	4%	3%	2%	2%
1997	CILAZAPRIL	3%	2%	2%	3%	3%	2%	5%	5%	4%	3%	2%	2%
1998	CILAZAPRIL	3%	3%	3%	3%	3%	3%	6%	6%	5%	4%	3%	3%
1999	CILAZAPRIL	3%	3%	3%	4%	4%	3%	7%	7%	6%	5%	5%	4%
1995	ENALAPRIL MALEATE	n/a	n/a	n/a	16%	14%	17%	6%	6%	7%	20%	20%	24%
1996	ENALAPRIL MALEATE	47%	49%	54%	37%	37%	41%	28%	29%	32%	37%	40%	44%
1997	ENALAPRIL MALEATE	43%	45%	49%	35%	34%	36%	36%	39%	41%	46%	50%	53%
1998	ENALAPRIL MALEATE	37%	41%	43%	30%	29%	30%	33%	36%	38%	38%	42%	44%
1999	ENALAPRIL MALEATE	32%	36%	37%	12%	12%	13%	16%	19%	19%	14%	17%	16%
1995	FOSINOPRIL SODIUM	n/a	n/a	n/a	9%	7%	9%	14%	11%	13%	12%	9%	11%
1996	FOSINOPRIL SODIUM	8%	6%	7%	6%	5%	6%	12%	10%	11%	8%	6%	7%
1997	FOSINOPRIL SODIUM	9%	7%	8%	5%	4%	4%	11%	9%	10%	6%	5%	6%
1998	FOSINOPRIL SODIUM	10%	8%	9%	5%	4%	4%	13%	11%	12%	6%	6%	6%
1999	FOSINOPRIL SODIUM	10%	8%	9%	5%	5%	5%	16%	14%	15%	8%	7%	8%
1998	IRBESARTAN	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%
1999	IRBESARTAN	1%	1%	1%	1%	1%	2%	6%	5%	7%	2%	2%	2%
1995	LISINOPRIL	n/a	n/a	n/a	31%	26%	32%	39%	33%	39%	36%	29%	35%
1996	LISINOPRIL	19%	16%	17%	20%	18%	20%	25%	23%	24%	26%	22%	23%
1997	LISINOPRIL	19%	17%	17%	13%	12%	13%	19%	17%	18%	21%	17%	18%

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1998	LISINOPRIL	19%	17%	17%	12%	11%	12%	17%	16%	16%	22%	19%	19%
1999	LISINOPRIL	18%	17%	16%	13%	12%	12%	18%	18%	17%	26%	25%	25%
1995	LISINOPRIL & HYDROCHLOROTHIAZIDE	n/a	n/a	n/a	3%	2%	3%	3%	2%	3%	n/a	n/a	n/a
1996	LISINOPRIL & HYDROCHLOROTHIAZIDE	1%	1%	1%	2%	2%	2%	2%	2%	2%	n/a	n/a	n/a
1997	LISINOPRIL & HYDROCHLOROTHIAZIDE	1%	1%	1%	1%	1%	1%	2%	2%	2%	0%	0%	0%
1998	LISINOPRIL & HYDROCHLOROTHIAZIDE	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
1999	LISINOPRIL & HYDROCHLOROTHIAZIDE	2%	1%	2%	2%	2%	2%	4%	3%	3%	2%	2%	2%
1995	LOSARTAN POTASSIUM	n/a	n/a	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%
1996	LOSARTAN POTASSIUM	2%	1%	2%	1%	1%	1%	5%	4%	6%	4%	3%	4%
1997	LOSARTAN POTASSIUM	4%	3%	5%	3%	3%	4%	7%	6%	8%	7%	5%	7%
1998	LOSARTAN POTASSIUM	7%	6%	8%	5%	5%	7%	8%	7%	9%	10%	8%	11%
1999	LOSARTAN POTASSIUM	7%	6%	9%	7%	7%	9%	9%	8%	10%	12%	11%	15%
1995	PERINDOPRIL ERBUMINE	n/a	n/a	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%
1996	PERINDOPRIL ERBUMINE	2%	1%	1%	0%	0%	0%	0%	0%	0%	1%	1%	1%
1997	PERINDOPRIL ERBUMINE	3%	2%	2%	0%	0%	0%	1%	1%	1%	2%	1%	1%
1998	PERINDOPRIL ERBUMINE	4%	3%	3%	0%	0%	0%	2%	1%	1%	2%	2%	2%
1999	PERINDOPRIL ERBUMINE	4%	4%	3%	0%	0%	0%	2%	2%	2%	4%	3%	3%
1995	QUINAPRIL HCL	n/a	n/a	n/a	5%	4%	6%	8%	6%	8%	5%	4%	5%
1996	QUINAPRIL HCL	5%	4%	5%	9%	7%	8%	6%	5%	6%	5%	4%	5%
1997	QUINAPRIL HCL	6%	5%	5%	17%	16%	18%	6%	5%	6%	4%	3%	4%
1998	QUINAPRIL HCL	6%	6%	6%	19%	18%	19%	6%	5%	6%	4%	4%	4%
1999	QUINAPRIL HCL	6%	6%	6%	23%	22%	23%	7%	6%	6%	6%	5%	6%
1995	RAMIPRIL	n/a	n/a	n/a	6%	5%	5%	6%	4%	5%	4%	3%	4%
1996	RAMIPRIL	4%	3%	3%	8%	6%	7%	4%	4%	4%	4%	3%	3%
1997	RAMIPRIL	6%	4%	4%	14%	12%	14%	4%	4%	3%	4%	3%	3%
1998	RAMIPRIL	7%	6%	6%	18%	16%	16%	4%	4%	4%	5%	4%	4%
1999	RAMIPRIL	11%	9%	9%	25%	22%	23%	7%	6%	6%	11%	9%	9%
1997	VALSARTAN	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1998	VALSARTAN	0%	0%	0%	0%	0%	1%	2%	1%	2%	1%	1%	1%
1999	VALSARTAN	1%	1%	1%	2%	2%	2%	4%	4%	4%	3%	2%	3%

PROTON PUMP INHIBITORS

(OMEPRAZOLE, LANSOPRAZOLE, PANTOPRAZOLE)

MARKET

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1994	CIMETIDINE	7%	9%	2%	10%	13%	2%	n/a	n/a	n/a	n/a	n/a	n/a
1995	CIMETIDINE	7%	8%	2%	33%	36%	8%	15%	21%	5%	9%	11%	3%
1996	CIMETIDINE	6%	7%	1%	50%	52%	14%	12%	17%	3%	8%	9%	3%
1997	CIMETIDINE	4%	6%	1%	45%	49%	11%	9%	13%	2%	6%	8%	2%
1998	CIMETIDINE	3%	4%	1%	39%	44%	9%	6%	10%	1%	5%	6%	2%
1999	CIMETIDINE	3%	4%	1%	34%	41%	7%	5%	8%	1%	4%	6%	1%
1994	FAMOTIDINE	10%	7%	10%	7%	6%	7%	n/a	n/a	n/a	n/a	n/a	n/a
1995	FAMOTIDINE	8%	7%	9%	5%	4%	5%	11%	10%	12%	4%	3%	4%
1996	FAMOTIDINE	8%	6%	8%	2%	2%	3%	9%	10%	9%	4%	3%	4%
1997	FAMOTIDINE	7%	6%	7%	2%	2%	2%	7%	6%	7%	4%	3%	3%
1998	FAMOTIDINE	7%	6%	6%	2%	2%	2%	6%	5%	5%	3%	2%	3%
1999	FAMOTIDINE	7%	6%	7%	2%	2%	2%	5%	4%	4%	3%	2%	2%
1995	LANSOPRAZOLE	0%	0%	0%	0%	0%	0%	n/a	n/a	n/a	0%	0%	0%
1996	LANSOPRAZOLE	0%	0%	1%	1%	0%	2%	1%	0%	1%	0%	0%	1%
1997	LANSOPRAZOLE	2%	1%	3%	2%	1%	4%	2%	1%	3%	1%	0%	2%
1998	LANSOPRAZOLE	3%	2%	5%	3%	2%	6%	3%	2%	5%	1%	1%	3%
1999	LANSOPRAZOLE	3%	2%	6%	4%	2%	7%	6%	4%	8%	2%	1%	3%
1998	LANSOPRAZOLE & CLARITHROMYCIN & AMOXICILLIN	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	LANSOPRAZOLE & CLARITHROMYCIN & AMOXICILLIN	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	1%
1994	NIZATIDINE	4%	4%	6%	2%	2%	3%	n/a	n/a	n/a	n/a	n/a	n/a
1995	NIZATIDINE	5%	4%	6%	2%	2%	2%	4%	3%	4%	2%	2%	2%
1996	NIZATIDINE	5%	5%	6%	1%	1%	1%	3%	3%	4%	2%	2%	2%
1997	NIZATIDINE	6%	6%	6%	1%	1%	1%	3%	3%	4%	2%	2%	2%
1998	NIZATIDINE	6%	6%	7%	1%	1%	1%	3%	3%	3%	2%	1%	1%
1999	NIZATIDINE	7%	6%	5%	1%	1%	1%	2%	2%	1%	1%	1%	1%
1994	OMEPRAZOLE	18%	11%	38%	33%	19%	57%	n/a	n/a	n/a	n/a	n/a	n/a
1995	OMEPRAZOLE	22%	14%	45%	27%	17%	62%	22%	13%	42%	5%	3%	13%
1996	OMEPRAZOLE	25%	16%	49%	22%	15%	64%	25%	15%	47%	6%	3%	16%
1997	OMEPRAZOLE	27%	19%	53%	25%	17%	65%	29%	19%	53%	8%	4%	21%
1998	OMEPRAZOLE	27%	20%	52%	27%	19%	63%	32%	21%	54%	11%	6%	26%

Fiscal Year	Chemical Name	On Rx	On Qty	On Cost	BC Rx	BC Qty	BC Cost	MB Rx	MB Qty	MB Cost	NS Rx	NS Qty	NS Cost
1999	OMEPRAZOLE	22%	18%	48%	27%	21%	61%	36%	26%	56%	12%	7%	28%
1997	PANTOPRAZOLE SODIUM	0%	0%	0%	0%	0%	1%	1%	1%	1%	0%	0%	0%
1998	PANTOPRAZOLE SODIUM	1%	1%	2%	3%	2%	5%	4%	3%	6%	1%	0%	2%
1999	PANTOPRAZOLE SODIUM	2%	2%	4%	6%	4%	10%	7%	5%	9%	2%	1%	3%
1999	RANITIDINE BISMUTH CITRATE	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1994	RANITIDINE HCL	56%	56%	41%	43%	46%	27%	n/a	n/a	n/a	n/a	n/a	n/a
1995	RANITIDINE HCL	55%	55%	37%	30%	31%	20%	47%	48%	36%	75%	67%	71%
1996	RANITIDINE HCL	53%	55%	32%	20%	21%	13%	48%	50%	34%	76%	70%	70%
1997	RANITIDINE HCL	50%	53%	28%	22%	23%	13%	47%	52%	28%	76%	73%	67%
1998	RANITIDINE HCL	50%	54%	27%	23%	25%	12%	44%	51%	25%	75%	74%	61%
1999	RANITIDINE HCL	54%	56%	29%	24%	25%	11%	38%	48%	20%	73%	74%	58%
1994	SUCRALFATE	5%	14%	4%	4%	13%	3%	n/a	n/a	n/a	n/a	n/a	n/a
1995	SUCRALFATE	4%	12%	3%	3%	11%	3%	2%	5%	2%	5%	15%	6%
1996	SUCRALFATE	3%	10%	2%	3%	9%	3%	2%	6%	1%	4%	13%	5%
1997	SUCRALFATE	2%	8%	2%	2%	7%	2%	1%	5%	1%	3%	11%	4%
1998	SUCRALFATE	2%	7%	1%	2%	6%	2%	1%	4%	1%	3%	9%	3%
1999	SUCRALFATE	2%	6%	1%	2%	5%	1%	1%	3%	0%	2%	8%	2%

OLANZAPINE (ZYPREXA)

MARKET

Fiscal Year	Chemical Name	On Rx	On Quantity	On Cost	BC Rx	BC Quantity	BC Cost	MB Rx	MB Quantity	MB Cost	NS Rx	NS Quantity	NS Cost
1996	OLANZAPINE	n/a	n/a	n/a	n/a	n/a	n/a	1%	1%	2%	n/a	n/a	n/a
1997	OLANZAPINE	30%	25%	48%	22%	20%	41%	10%	8%	20%	8%	8%	25%
1998	OLANZAPINE	41%	37%	64%	32%	31%	56%	26%	23%	45%	19%	18%	44%
1999	OLANZAPINE	45%	42%	68%	36%	33%	60%	31%	26%	52%	23%	22%	50%
1997	QUETIAPINE	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1998	QUETIAPINE	1%	2%	1%	0%	0%	0%	1%	2%	1%	1%	2%	1%
1999	QUETIAPINE	4%	6%	3%	2%	3%	2%	7%	13%	5%	5%	8%	3%
1993	RISPERIDONE	n/a	n/a	n/a	100%	100%	100%	n/a	n/a	n/a	n/a	n/a	n/a
1994	RISPERIDONE	n/a	n/a	n/a	100%	100%	100%	n/a	n/a	n/a	n/a	n/a	n/a
1995	RISPERIDONE	n/a	n/a	n/a	100%	100%	100%	100%	100%	100%	100%	100%	100%
1996	RISPERIDONE	n/a	n/a	n/a	100%	100%	100%	99%	99%	98%	100%	100%	100%
1997	RISPERIDONE	70%	75%	52%	78%	80%	59%	90%	92%	80%	92%	92%	75%
1998	RISPERIDONE	58%	61%	35%	68%	69%	44%	73%	75%	54%	80%	80%	55%
1999	RISPERIDONE	51%	52%	29%	62%	64%	39%	62%	61%	43%	72%	70%	47%

Endnotes

[1]For further detail refer to provincial cost driver studies.
[2]Fosamax 5mg is a non-benefit
[3] Fosamax is a listed benefit on the Ontario Drug Benefit Formulary/Comparative Drug Index effective November 30, 2000.
[4]Reimbursed up to the price of human biosynthetic regular insulin
[5]Humalog mix50 is a non-benefit
[6]Change from limited use effective Dec 31, 1998. April 10/97 to Dec 30/98 - limited use.
[7]Risperidone and Quentiapine on SA as well
[8]Proton Pump Inhibitors
[9]The Ontario Drug Benefit Program identified drugs on their formulary that would constitute a market for the drugs under review; these drugs were used across all jurisdictions for the purpose of this analysis.
[10]Fiscal year 1999 is estimated based on the three fiscal quarters in BC and ON and first two in NS due to data availability at the time of analysis
[11]Accepted ingredient cost is the drug cost recognized by the provincial drug plan, wholesale and retail mark-ups (if applicable) are included as well as the patients' portion of the cost (i.e. co-pay or deductible) and exclude dispensing fees.
[12]Based on number of prescriptions
[13]Refer to Working Group on Drug Prices (WGDP) cost driver work for further analysis of new drug growth
[14]The Canadian Consensus Conference on Menopause and Osteoporosis was published in November and December 1998.
[15]The average quarterly growth in expenditures between 1997/98 and 1998/99 was 32% in Manitoba and 37% in Nova Scotia. Both of these jurisdictions had recorded claims for lispro as early as 1996/97.
[16] Since the size of the market was not affected, the analysis does not include data on market prescriptions in the text – this information is available in Appendix II – Market Definition and Results.
[17] In October 1998, clinical practice guidelines for the management of diabetes in Canada were published.
[18]A more detailed look at specialist prescribing patterns will follow.
[19]It is important to keep in mind that the value of the market is lower in BC due to reference based pricing applied to H2 Antagonists.
[20]Effective October 1995, British Columbia Pharmacare introduced the Reference Drug Program and H2 antagonists were included in the program.
[21]Data by specialty group was not available for Manitoba; therefore any analysis looking at prescribing and/or utilization by specialty group is not available for Manitoba. In Manitoba, the overall average annual cost per patient was $241.73, with an average day supply of $152.89 per patient with an average cost per day of $1.58.
[22]Duration of therapy was calculated using accepted day supply. These results were validated using defined daily dose information from WHO.
[23]Initial approval of PPI's is limited to duration of 8 weeks in British Columbia and Nova Scotia, 6 months in Ontario and no time limits exist in Manitoba.
[24]Costs are estimated based on accepted drug cost.
[25]It is important to keep in mind that the senior beneficiaries in Manitoba may be of socio-economically different background than the seniors in other jurisdictions given Manitoba's coverage is income based.