

## **Price Controls, Patents, and Cross-Border Internet Pharmacies**

**Risks to Canada's Drug Supply and  
International Trading Relations**



by Brett J. Skinner

## Critical Issues Bulletins

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Date of Issue: February 2006 (version 1.1)

Printed and bound in Canada

Canadian Publications Mail Sales Product  
Agreement Number 40069269.

Return undeliverable Canadian addresses to  
The Fraser Institute, Fourth Floor, 1770 Burrard Street, Vancouver,  
British Columbia, Canada V6J 3G7.

ISSN 1480-3666

Editing and design: Lindsey Thomas Martin

Image for front cover: © Keith Brofsky; © Getty Images  
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# Price Controls, Patents, and Cross-Border Internet Pharmacies

## Risks to Canada's Drug Supply and International Trading Relations

Brett J. Skinner

### Contents

About the author / 2

Acknowledgements and Disclosure / 3

Executive summary / 4

What this study is about / 7

1 Data and economics of the cross-border Internet drug trade  
between Canada and the United States / 9

2 Background and special interests / 26

Appendix A: Legislative history of cross-border drug trade  
in the United States, 2002 to September 2005 / 29

Appendix B: Efforts by American cities and counties  
to facilitate the cross-border drug trade / 33

References / 35

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- *Generic Drugopoly: Why Non-Patented Prescription Drugs Cost More in Canada than in the United States and Europe* (2004).
- *Paying More, Getting Less: Ontario's Health Premium and Sustainable Health Care* (2004).

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- *Definitely Not the Romanow Report: Achieving Equity, Sustainability, Accountability and Consumer Empowerment in Canadian Health Care* (2002). Halifax: Atlantic Institute for Market Studies (AIMS).
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- *Medicare, the Medical Brain Drain, and Human Resource Shortages in Health Care* (2002). Halifax: AIMS.

# Acknowledgments and Disclosure

## Acknowledgments

The author would like to acknowledge with gratitude the excellent comments and suggestions of those who reviewed this paper including: Nadeem Esmail, Director, Health System Performance Measurement, The Fraser Institute (Calgary); Dr. Aidan Hollis (Ph.D.), Associate Professor of Economics, University of Calgary, Research Fellow of the Institute of Health Economics in Edmonton, Alberta, and 2003/04 TD MacDonald Chair of Industrial Economics at the Competition Bureau, Industry Canada; John R. Graham, Director, Health Care Studies, Pacific Research Institute, San Francisco, California; and the staff at IMS Health Incorporated, Montreal, Quebec.

The author would also like to acknowledge the important contributions to this paper made by Sophia Genyk, B.A., Political Science, University of Waterloo, who worked diligently as an intern at The Fraser Institute to provide research assistance to support the information presented in Section 2 of this paper and wrote parts of the first draft for Section 2.

The Max Bell Foundation, a non-profit charitable foundation supporting research on public policy, is gratefully acknowledged for their generous financial contribution through an unrestricted grant in support of this research without which it would not have been possible to hire an intern to assist with the project.

Sue Cavallucci and Dorothy Rhodes of IMS Health Incorporated were very helpful in facilitating access to the necessary data for this study. Their assistance is greatly appreciated.

The views expressed by the author are not necessarily those of The Fraser Institute, its supporters, nor of those colleagues and reviewers gratefully acknowledged here.

## Disclosure

Because the author's employer receives charitable donations from research based pharmaceutical manufacturers, the author has chosen to disclose financial relationships in accordance with the policies of the International Committee of Medical Journal Editors (Clever et al., 1997; Davidoff et al., 2001). The author acknowledges with gratitude those who financially support The Fraser Institute and this research including research-based pharmaceutical companies (whose contributions make up less than 5% of The Fraser Institute's budget) as well as the other supporters of The Institute. With respect to this manuscript, no drug-maker or other donor had any input into the collection, analysis, or interpretation of the research, nor in the manuscript's writing. Nor did any drug-maker or other donor preview this manuscript before its publication.

## Executive summary

### **Measuring the cross-border Internet drug trade between Canada and the United States**

This study finds that sales of drugs through Canadian-based cross-border Internet pharmacies to American consumers remain significant despite the rising value of the Canadian dollar. According to IMS Health Incorporated data, the moving annual total (MAT) value of sales to the United States through the 278 confirmed or suspected Canadian-based Internet pharmacies identified as of June 2005 was estimated at CDN\$507 million measured at standardized manufacturer-level prices. This is down 18% from estimated total sales of CDN\$618 million over the 12 months ending June 2004. (The value of sales measured at the final retail prices in US dollars charged to American consumers by Canadian Internet pharmacies was unavailable to this study but is certainly much higher than the figures reported above. These figures also do not include “foot traffic” sales to American consumers through regular “brick-and-mortar” border pharmacies in Canada.)

### **Sales of generic products rising while sales of brand-name products falling**

Data from IMS Health Incorporated on annual sales for the 500 top-selling cross-border drug products between July 2003 and June 2005 show that generic products that are less expensive than brand-name products are displacing brand-name products in the volume of drugs being traded over the Internet to Americans, thus largely explaining the drop in the overall value of sales. Of the 500 top-selling cross-border drugs between July 2004 and June 2005, 302 (60%) were brand-name products representing 72% of the total value of Internet sales and 198 (40%) were generic products representing 28% of the total value of Internet sales.

### **Cross-border Internet pharmacies violating US patent (intellectual property) rights**

The large and rising proportion of cross-border drugs accounted for by generic products is very surprising given that previous research has shown that 74% of the 100 most commonly prescribed generic products that were available in both Canada and the United States in 2003 were priced higher in Canada than in the United States with the average price difference for this group of high-priced generics being 116% greater in Canada after adjusting for currency equivalency.

Why would Americans be buying so much of Canada’s generic drug supply if these kinds of drugs are almost always cheaper in the United States? The answer is found in an analysis conducted by IMS Health Incorporated for this study of the patent status in Canada and the United States of drug products sold through cross-border Internet pharmacies. The analysis shows that nearly half (47%) of the value of sales for generic products sold through cross-border Internet pharmacies was accounted for by drugs that were not yet genericized in the United States. In most cases, the lack of a generic equivalent in the United States means that these drugs were still under active patent protection there. The data suggest that Canadian-based Internet pharmacies are engaged in a massive theft of intellectual property by selling drugs to Americans in violation of active US patent rights.

These findings make it highly probable that American patent holders have legal recourse in US courts to stop the cross-border trade. The US government certainly has the legal and moral authority to ban imports of these generic drugs in order to enforce its own property-rights laws. The findings also imply that US politicians who promote the legalization of the cross-border resale drug trade are inadvertently encouraging the massive theft of US intellectual property and therefore might be legally liable for the losses suffered by patent holders.

It is not certain that the Canadian government is legally or morally obligated to impose an export ban on drugs that are genericized in Canada but still under patent protection in the United States because patent laws differ nationally and are not enforced across international borders. This study does not attempt to provide a legal opinion on this matter. However, if such a policy could be enforced without adding a cost to Canadian taxpayers, then the gesture would be consistent with Canada's commitment to protecting intellectual property and, at the least, maintain respect for the patent rights of our trading partners as implied in international trade agreements on intellectual property (e.g., TRIPs & NAFTA). Such a move could bolster Canada's international trading relationship with the United States in the process.

### Threats to Canada's drug supply

Although the total value of drugs being diverted from Canadians to Americans through Internet pharmacies has levelled off, political events south of the border suggest there is a real threat that demand in the United States for cross-border drug sales could soon expand dramatically. The cross-border resale drug trade is currently illegal in the United States. Yet since the trade began in 2002, many federal, state, and local American politicians have been attempting to make it legal for individuals to purchase resale drugs from Canadian Internet pharmacies. The number of attempts to pass legislation at the federal and state level has grown from three per year in 2002 to 84 per year by September 2005. Many of the proposals would allow the bulk buying of drugs from Canadian Internet pharmacies to supply employees for federal, state, and local governments in the United States as well as recipients of US public-health programs like Medicaid and Medicare.

When the potential individual and bulk demand from the United States for cross-border drugs is totalled, the number of American consumers that might compete for access to the Canadian drug supply is conservatively estimated to be almost 119 million, nearly four times the size of Canada's entire population of approximately 32 million.

### Government policies are the problem. What are the solutions?

This study identifies Canadian drug-price regulations and provincial leveraging of the monopsony buying power of public drug programs as the causes of the cross-border

trade. Such policies do not allow normal upward price adjustments in response to increased demand by American consumers for Canadian resale drugs from cross-border sales and the threat that the trade represents for global pharmaceutical price-differentiation strategies. This study argues for the repeal of public policies that distort normal drug pricing and create artificial incentives for cross-border Internet pharmacies to divert Canada's drug supply to a competing American consumer population.

Previous research suggests that, when there is no large-scale cross-border resale drug trade between Canada and the United States, federal price regulations and provincial monopsony buying power are not necessary to keep Canadian prices low relative to those in the United States as lower Canadian incomes would already lead to lower prices. In the presence of the cross-border resale trade, however, government price controls and monopsony buying power cause market distortions by prohibiting drug companies from making temporary price adjustments that would narrow the differences between Canadian and American prices to the point where there are no significant savings to be gained from cross-border drug sales for Americans.

Government prohibitions on flexible pricing cause drug makers to choose the next least costly option, which is to restrict their supply of medicines to Canada, capping shipments at normal Canadian consumption levels. This could seriously threaten access to necessary medicines in Canada as the limited Canadian drug supply is diverted to Americans through Internet pharmacies; a result that would be much worse than a temporary increase in the prices of some drugs.

Therefore, it is recommended that federal price regulations be repealed and provincial monopsony buying power replaced with more efficient cost-control mechanisms like consumer cost sharing and drug programs targeting only catastrophic needs so that normal market pricing can occur in Canada. Previous research has demonstrated that removing price controls and similar misguided public drug policies would correct a host of other market distortions that are harmful to Canadian consumers. Repealing such policies would also eliminate the conditions that drive the cross-border Internet drug trade between Canada and the United States.

The only circumstances under which this study would recommend a general export ban are if governments stubbornly cling to misguided pharmaceutical price controls and insist on leveraging a provincial monopsony buying presence. If this were the case, then in order to

protect the Canadian drug supply, an export ban would be appropriate also for all prescription drugs whose prices are regulated by the federal Patented Medicines Prices Review Board (PMPRB) or affected by provincial monopsony buying power.

### Summary of findings

#### Scale of the cross-border internet drug trade

- ◆ The moving annual total (MAT) value of sales to the United States through Canadian-based Internet pharmacies as of June 2005 was estimated at CDN\$507 million measured at standardized manufacturer-level prices; down 18% from total sales of CDN\$618 million over the 12 months ending June 2004.
- ◆ As of June 2005, there were 278 Internet pharmacies in Canada that were confirmed or suspected of being primarily cross-border retailers serving mainly American consumers. Nearly 70% of the total business generated through these 278 Internet pharmacies was accounted for by cross-border sales.
- ◆ The estimated provincial distribution of the cross-border Internet drug trade as a percentage of the total value of sales can be broken down as follows: Manitoba (39%), British Columbia (20%), Alberta (20%), Ontario (19%), Quebec (3%) and all other provinces (less than 1%).

#### Threat to Canada's trading relationship with the United States: Patent status of the top 500 cross-border drugs

- ◆ Defined by estimated dollar value of sales, the top-selling 500 drug products sold through Internet pharmacies represented CDN\$468 million for the year ending June 2005 and accounted for 92% of all estimated cross-border Internet pharmacy sales.
- ◆ Of the 500 top-selling cross-border drugs between July 2004 and June 2005, 302 (60%) were brand-name products representing 72% of the total value of Internet sales and 198 (40%) were generic products representing 28% of the total value of Internet sales.
- ◆ Generic products have been accounting for a larger share of the top-selling 500 products over time,

displacing brand-name products; this explains the shrinking dollar value of the trade.

- ◆ Nearly half the value of sales (47%) in generic products sold through cross-border Internet pharmacies was accounted for by drugs that were not yet genericized in the United States. Most of these drugs were likely still under active patent protection in the United States.

#### Potential threat to Canada's drug supply

- ◆ Canadian Internet pharmacies are targeting an American consumer segment (seniors and the uninsured) that is nearly twice as large (approx. 59 million) as the entire population of Canada (approx. 32 million).
- ◆ American seniors groups are particularly active in promoting Internet drug sales from Canada and represent a consumer segment that is nine times as large (approx. 36 million) as Canada's own population of seniors (approx. 4 million).
- ◆ Since the beginning of the cross-border trade in 2002, many federal, state, and local American politicians have been attempting to legalize bulk buying of drugs from Canadian Internet pharmacies to supply employees of federal, state, and local governments in the United States, as well as recipients of US public health programs like Medicaid and Medicare. The number of attempts to pass such legislation at the federal and state levels has grown from three per year in 2002 to 84 per year by September 2005.
- ◆ When the estimated potential individual and bulk demand from the United States for cross-border drugs is totalled, the number of American consumers that might compete for access to the Canadian drug supply is nearly four times (approx. 119 million) the size of Canada's entire population.
- ◆ Ten of the largest brand-name drug companies have already begun to restrict the Canadian supply of their drug products to the level of normal domestic consumption in order to avoid facilitating the cross-border drug trade.
- ◆ Pharmacy associations have reported that drug shortages are occurring in Canada, though there is no independent data available to confirm this (Woodend, K., et al., 2004).

### What this study is about

This study measures and analyzes the export trade in prescription drugs between Canadian Internet pharmacies and American consumers. It does not directly measure the additional value of the cross-border drug trade that also occurs between physical “brick-and-mortar” retail pharmacy locations and pedestrian consumers, nor does it consider international flows in the cross-border resale drug trade beyond Canada and the United States.

Using the most recent, detailed, and authoritative data sample yet published on the subject, this study examines the total value of the cross-border Internet drug trade between Canada and the United States over time. The value of the trade is also measured according to the location of the Internet pharmacy by province, the therapeutic classification of the drugs being traded, and the brand name or generic status within Canada of the drug products being traded. The potential for future growth in the cross-border prescription drug trade is examined.

This study also compares the patent status of the top-selling 500 cross-border Internet drugs in both Canada and the United States. The implications and risks to Canada’s international trading relationships arising from findings about the cross-border patent status of the drugs being traded will be discussed.

The public policies that make the trade possible, and the economic incentives that drive it are explained. The business responses available to drug companies are explained and the risks to Canada’s drug supply are assessed.

Finally, this paper documents the historical development of the trade and the special-interest politics that are encouraging its growth.

This paper is divided into two sections. Section 1 describes and explains the empirical findings about the cross-border Internet drug trade between Canada and the U.S. and the economics driving it. Section 2 describes the background to the cross-border Internet drug trade as well as the special interests associated with it.

### Description of data used in this study

The data used for this study was obtained by special request from IMS Health Incorporated using their Territorial Sales Analysis (TSA) database. According to IMS Health Incorporated, “TSA tracks the sales of pharmaceutical products sold directly by manufacturers or sold indirectly through wholesalers and chain warehouses to customers in Canada” (IMS Health Incorporated, 2005). In this case, “customers” includes retail pharmacies.

TSA prices reflect those provided to IMS by each manufacturer for their own products to use as standardized national benchmarks for their own sales rep activity analysis purposes. These are applied to units of both direct sales to pharmacies and indirect sales to wholesalers, which usually have the same benchmarks. Data was not available to estimate the value of sales at either American or Canadian retail prices or the volume of the cross-border Internet drug trade by prescription volume.

The detailed sample obtained for this study included data on the value of sales (CDN\$) over the top 500 drug products sold to retailers that were identified by IMS Health Incorporated as cross-border Internet pharmacies. Detailed data were not available from IMS Health Incorporated that would permit an estimate of the total value of cross-border sales through both Internet and “foot traffic” via regular “brick-and-mortar” retail pharmacy outlets located close to the border. The methodology for identifying cross-border Internet pharmacies is a proprietary secret of IMS Health Incorporated and, as such, details cannot be published in this study. IMS Health Incorporated identified 278 retail outlets as Canadian-based pharmacies confirmed or suspected of being involved in cross-border Internet activities (IMS Health Incorporated, 2005). Defined by the value in Canadian dollars of sales at TSA manufacturer-level prices, the top 500 drug products sold to these 278 cross-border Internet pharmacies accounted for 92.4%

of the total sales to these pharmacies over the period from July 2004 to June 2005 (IMS Health Incorporated, 2005).

The data includes some non-prescription drug products sold to cross-border Internet pharmacies because IMS Health Incorporated's TSA does not sort out prescription from non-prescription drug products. However, non-prescription products end up representing only an insignificant proportion of the overall sample of drug sales. A review of sales by therapeutic category indicates that the categories that could contain non-prescription products end-up ranked last toward the end of the list of 500 by value of sales. It is therefore, very safe to assume that the data sample used for this study reflects almost exclusively sales of prescription drug products.

Relying on external analyses conducted by IMS Health Incorporated on behalf of this study, additional data was provided at an aggregate level and over earlier time periods. These analyses were required because direct access to most of the detailed individual product data through the TSA database was restricted in order to protect the proprietary interests of IMS Health Incorporated and its data suppliers.

On behalf of this study, IMS Health Incorporated also identified the Canadian and US patent status of the drug products being sold to cross-border Internet pharmacies through a proxy analysis conducted in cooperation with IMS Health's US business.

# 1 Data and economics of the cross-border Internet drug trade between Canada and the United States

## Measuring the cross-border Internet drug trade

### National figures

According to data obtained from IMS Health Incorporated for this study, it was estimated that, as of June 2005, there were 278 confirmed or suspected Internet pharmacies operating in Canada whose main business was to resell to American consumers drugs that were originally distributed in Canada. Measured as a moving annual total (MAT) [most recent 12 months] current to June 2005, the total value of sales through these 278 Internet pharmacies was almost \$726 million including both sales to the United States and local Canadian business (unless otherwise stated, all figures are in Canadian dollars at Territorial Sales Analysis [TSA] manufacturer-level prices). The total value of sales to Americans was approximately \$507 million, while sales to Canadians amounted to \$219 million over the same period. Therefore, sales to the United States accounted for about 70% of the total business generated by cross-border Internet pharmacies while local Canadian business represented only about 30% of total business (figure 1).

### Provincial figures

The data available to this study also permitted a breakdown of Internet pharmacy sales to the United States by province (table 1; figure 2). According to this data, five provinces account for the bulk of cross-border Internet pharmacy sales to the United States. Ranked in order from highest to lowest value of sales, the five provinces are Manitoba (\$196 million), British Columbia (\$102 million), Alberta (\$100 million), Ontario (\$94 million) and Quebec (\$13 million). All other provinces combined account for only about \$2 million.

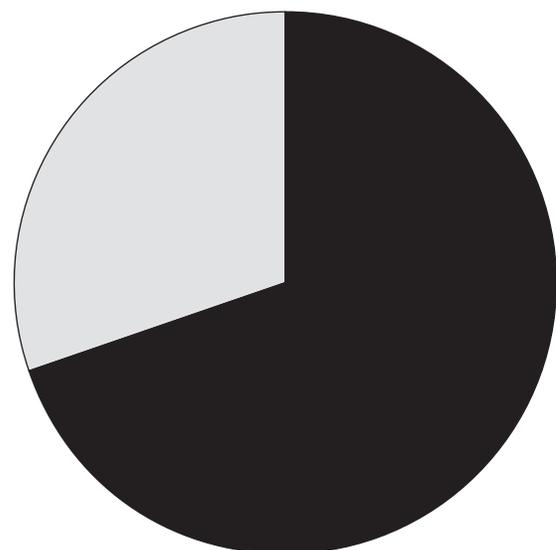
### Cross-border Internet drug sales by therapeutic category

The data available to this study also allowed for a breakdown of cross-border Internet pharmacy sales to the United States by therapeutic category. A therapeutic category

(or class) is a group of drug products that treat similar types of health conditions or that have similar effects. It is common for drugs to be sorted into therapeutic classes according to their Uniform System of Classification (USC) code. USC codes have four levels of specificity. USC<sub>2</sub> is the broadest category, USC<sub>5</sub> the most detailed category (Glass and Rosenthal, 2004). IMS Health Incorporated was able to group the drugs in the sample into 70 separate therapeutic classifications based on a USC<sub>2</sub> level of description. The data show that the top 14 therapeutic drug categories are made up exclusively of prescription medications and account for 90% of the value of all sales to the United States through cross-border Internet pharmacies (table 2).

**Figure 1: Canada-US distribution of total sales for the 278 Canadian-based cross-border Internet pharmacies identified by IMS Health Inc., moving annual total (MAT) to June 2005, CDN\$ at manufacturer-level prices**

local Canadian sales—30.2%



cross-border sales—69.8%

Source: IMS Health Incorporated, 2005.

**Table 1: Provincial distribution of cross-border Internet pharmacy sales between Canada and the United States, as of June 2005**

	Value (moving annual total [MAT] in CND\$ at manufacturer-level prices)
Manitoba	\$196,014,214
British Columbia	\$101,808,933
Alberta	\$99,902,925
Ontario	\$93,882,479
Quebec	\$12,818,801
Other	\$2,215,441
<b>Total</b>	<b>\$506,642,793</b>

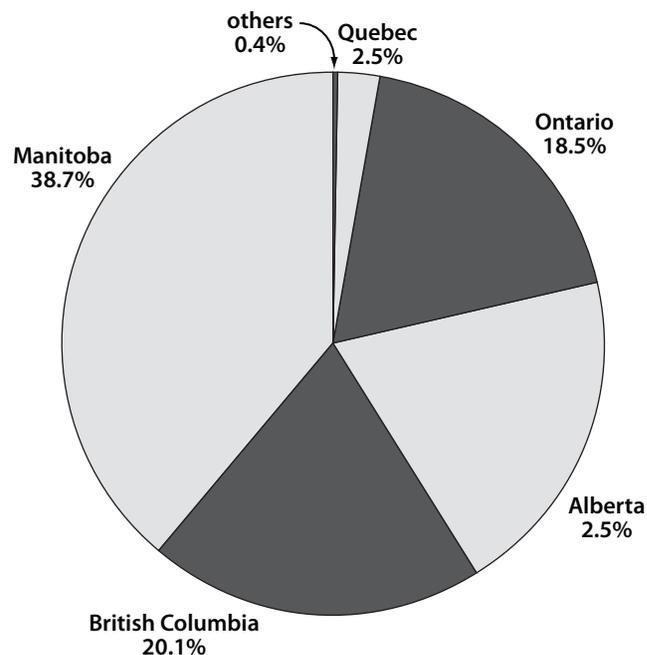
Source: IMS Health Incorporated, 2005.

According to the data used in this study, the top five therapeutic drug categories ranked by value of sales to the United States through Canadian-based Internet pharmacies are cardiovascular drugs; antihyperlipidemic agents; hormones; psychotherapeutics; and antispasmodic/antisecretory medications. These five therapeutic categories account for 57% of the total value of sales to the United States through cross-border Internet pharmacies (table 2).

Drugs in these therapeutic classes are also among the most important to seniors (65 years of age and older) in particular. In fact, the data suggests that the cross-border drug trade might be heavily driven by sales to seniors because the most commonly prescribed therapeutic categories for seniors in the United States closely match the top therapeutic categories of drugs involved in the cross-border Internet pharmacy business (table 3). When ranked by annual personal expenses, the top five therapeutic classes for prescribed drugs purchased by the elderly (age 65 and older) in the United States in 2002 were cardiovascular agents, hormones, antihyperlipidemic agents, central nervous-system agents, and gastrointestinal agents. These five categories of drugs totaled US\$36.5 billion and represented 73.1% of the US\$49.9 billion total drug expenses of the elderly (persons age 65 and older) for prescription drugs in the same year (Stagnitti, 2005).

It should be noted that, without comparing the distribution of cross-border Internet drug sales by therapeutic category in the non-senior population to these findings, it is impossible to know for sure that there is a correlation between sales in particular drug classes and demand from American seniors. Data was not readily available to this study that would allow such an analysis. Nevertheless, the findings are consistent with the fact that the Canadian International Pharmacy Association (CIPA) openly markets to

**Figure 2: Provincial distribution of cross-border Internet pharmacy sales, percentage of the moving annual total (MAT) value of sales across 278 outlets, as of June 2005**



Source: IMS Health Incorporated, 2005.

American seniors as a specific group and that seniors' advocacy groups in the United States are among the most active lobbyists in favour of the cross-border Internet drug trade.

**Changes in the Canada-US cross-border internet drug trade over time**

According to the detailed data sample obtained for this study, the estimated dollar value of cross-border Internet drug sales at TSA manufacturer-level prices has been steadily declining since about April 2004. IMS Health Incorporated's MAT TSA value of sales for the 12 months between July 2004 and June 2005 was nearly \$507 million. This was down 18% from the MAT value of sales of approximately \$618 million for the previous 12 months, between July 2003 and June 2004.

Until April of 2004, the dollar value of cross-border Internet drug sales had been rising. A monthly sales analysis over the longer term conducted by IMS Health for this study indicates that the value of sales to the United States through cross-border Internet pharmacies rose steeply from about \$7.5 million per month in July 2002 to a peak of approximately \$58 million per month in March of 2004. The data available to this study indicate that the dollar value of cross-border drug sales thereafter fell to about \$37 million per month by June 2005, 36% below the level in March 2004 (figure 3).

Table 2. Cross-border Internet pharmacy drug sales by therapeutic category, ranked by MAT value of sales as of June 2005.

Rank	Therapeutic category*	Cross-border sales	Cumulative percent of cross-border sales
1	Cardiovascular	\$80,394,797	16%
2	Antihyperlipidemic agents	\$79,213,386	32%
3	Hormones	\$46,473,012	41%
4	Psychotherapeutics	\$41,068,262	49%
5	Antispasmodic/ antisecretory	\$40,718,169	57%
6	Hemostatic modifiers	\$39,380,368	65%
7	Neurological disorders, misc	\$27,881,028	70%
8	Bronchial therapy	\$19,175,722	74%
9	Antiarthritics	\$16,752,954	77%
10	Cancer/ immunomodulators	\$16,594,143	80%
11	Diabetes therapy	\$16,451,244	84%
12	Anti-infectives	\$15,053,745	87%
13	Ophthalmics	\$8,181,106	88%
14	Anti-virals	\$7,786,118	90%
15	Miscellaneous ethical	\$6,884,423	91%
16	Antihistamines, systemic	\$5,744,446	92%
17	Dermatologicals	\$5,529,766	93%
18	Diagnostic aids	\$4,112,069	94%
19	Cough/cold preps, ethical	\$3,402,651	95%
20	Analgesics	\$2,583,582	95%
21	Thyroid therapy	\$2,280,509	96%
22	Nutrients & supplements	\$1,998,131	96%
23	Muscle relaxants	\$1,620,338	97%
24	Contraceptives	\$1,577,577	97%
25	Diuretics	\$1,420,479	97%
26	Hematinics	\$1,183,521	97%
27	Sexual function disorders	\$1,066,438	98%
28	Antinauseants	\$944,018	98%
29	Analgesics, proprietary	\$923,938	98%
30	Sedatives	\$921,425	98%
31	Smoking deterrent, ethical	\$914,113	98%
32	Anti-obesity ethical	\$886,559	99%
33	Vitamins, ethical	\$869,599	99%
34	Bile therapy	\$784,231	99%
35	Biologicals	\$742,405	99%
36	Cough/ cold preps, pty	\$674,113	99%
37	Laxatives, ethical	\$661,660	99%
38	Enzymes & digestants	\$457,398	99%
39	Antimalarials	\$308,724	99%
40	Infant formulas	\$307,203	99%
41	Parasympathetics	\$277,346	100%
42	Miscellaneous, pty	\$232,702	100%
43	Hemorrhoidal preps	\$222,647	100%
44	Antidiarrheals	\$199,883	100%
45	Dermatologicals, pty	\$196,291	100%

## Price Controls, Patents, and Cross-Border Internet Pharmacies

Rank	Therapeutic category*	Cross-border sales	Cumulative percent of cross-border sales
46	Suncare preps	\$189,279	100%
47	Anesthetics	\$168,973	100%
48	Antiseptics, proprietary	\$143,165	100%
49	Antacids ethical	\$141,539	100%
50	Lip protectors, pty	\$112,085	100%
51	Antacids proprietary	\$103,688	100%
52	Amebicide & trichomonacide	\$102,010	100%
53	Foot preparations, pty	\$99,407	100%
54	Antiseptics	\$85,434	100%
55	Vitamins, proprietary	\$64,829	100%
56	Denture care	\$59,531	100%
57	Laxatives, proprietary	\$49,666	100%
58	Anti-obesity proprietary	\$47,781	100%
59	All others, unidentified	\$45,123	100%
60	Hospital solutions	\$42,543	100%
61	Sedatives, proprietary	\$32,692	100%
62	Baby care preps, pty	\$29,636	100%
63	Otic preparations	\$20,215	100%
64	Fem hygiene preps, pty	\$17,965	100%
65	Anthelmintics	\$16,180	100%
66	Sweetening agents	\$9,966	100%
67	Rubbing alcohol	\$7,691	100%
68	Diuretics, proprietary	\$1,102	100%
69	Asthma remedies	\$47	100%
70	Antiarthritics pty	\$9	100%

Source: IMS Health Incorporated (2005).

Notes: \* USC2 description supplied by IMS Health Incorporated.

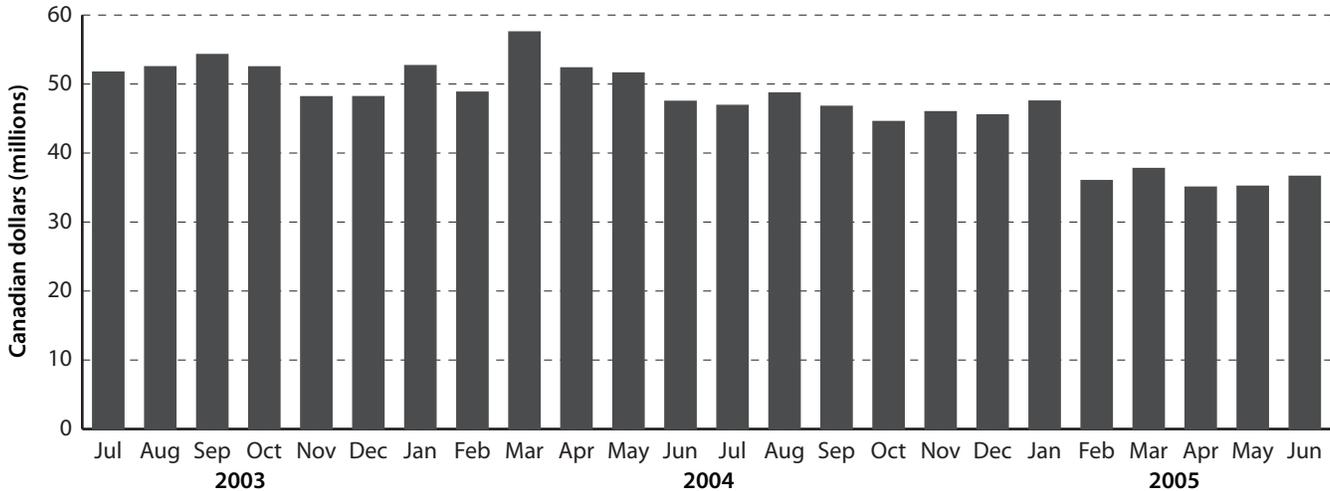
**Table 3. Comparison of top therapeutic drug classes prescribed for American seniors and the top-selling drugs in the Canadian-based cross-border Internet pharmacy business to the United States.**

Rank	Top selling drugs for seniors in the United States in 2002, by therapeutic category*	Top selling cross-border Internet pharmacy drugs, by therapeutic category**
1	Cardiovascular agents	Cardiovascular agents
2	Hormones	Antihyperlipidemic agents
3	Antihyperlipidemic agents	Hormones
4	Central nervous system agents	Psychotherapeutics (sub-category of central nervous system agents)
5	Gastrointestinal agents	Antispasmodic/antisecretory (for gastrointestinal related treatment of stomach cramps)

Source: Stagnitti (2005); IMS Health Incorporated (2005).

Notes: \*Stagnitti's Multum Lexicon description; \*\*IMS Health's USC2 description.

Figure 3: Estimated monthly total cross-border Internet pharmacy sales to the United States, July 2003 to June 2005



Source: IMS Health Incorporated, 2005: special data request.

The data available to this study was not capable of measuring the volume of sales defined by the number of prescriptions dispensed or units sold so it is difficult to know exactly whether the overall volume of trade is declining or whether the individual value of the particular products being sold has changed over time. However, an analysis conducted by IMS Health Incorporated on behalf of this study indicates that the change in the value of the trade is only partially related to declining demand from American consumers.

According to IMS Health Incorporated, the four major explanations for the reduction in the value of cross-border sales since early 2004 include:

- ◆ rising value of the Canadian dollar against American currency
- ◆ increase in the penetration of generics in the 15 months previous to June 2005
- ◆ manufacturer supply management initiatives (i.e., brand-name manufacturers are restricting supply to normal Canadian consumption levels)
- ◆ pharmaceutical products for the United States being sourced from countries other than Canada.

Figure 4 shows daily changes in the value of the Canadian dollar relative to the American dollar between July 1, 2003 and June 30, 2005. The data show that value of the Canadian dollar indeed rose steadily, increasing 9% against the US dollar over the study period.

#### Total sales compared to generic sales

A comparison of the trend in total cross-border drug sales to the United States and the cross-border sales of generic

drugs confirms another conclusion reached by IMS Health Incorporated's analysis: generic products are displacing brand-name products in the mix of drugs that are being sold through Internet pharmacies to Americans. Figure 5 shows how the monthly value of all cross-border Internet drug sales declined 29% between July 2003 and June 2005. At the same time, the monthly value of cross-border sales in generic products has steadily increased over the same time period, rising 70% between July 2003 and June 2005. Therefore, the shrinking value of cross-border sales is not solely reflective of declining unit volumes of the drugs being traded. This data indicates that generic drugs, of lower price relative to brand drugs, are accounting for a greater share of the cross-border product mix since April of 2004, thus largely explaining the drop in the overall dollar value of sales over time.

#### Patent status of cross-border drugs in Canada and the United States and risks to Canada's international trading relationships

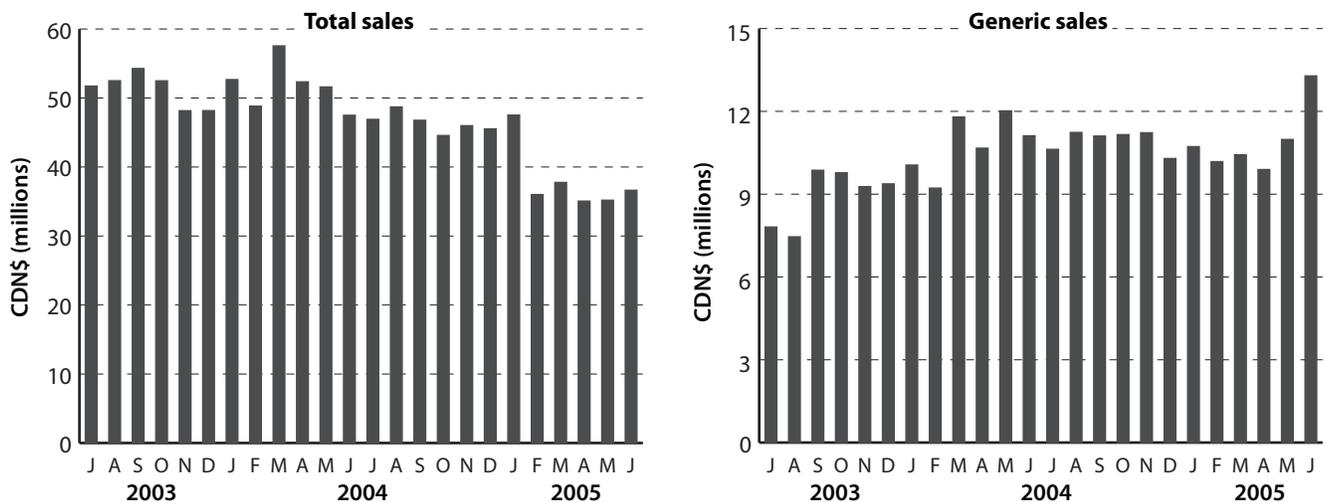
According to the data presented in figure 5, it appears that generic products are displacing brand-name products in the volume of drugs being sold to Americans through the cross-border Internet pharmacy business. The rising proportion of cross-border drugs accounted for by generic products is very surprising given that previous research has shown that 74% of the 100 most commonly prescribed generic products that were available in both Canada and the United States in 2003 were priced higher in Canada than in the United States, with the average price difference for this group of drugs being 116% higher in Canada after

Figure 4: Daily noon exchange rate of CDN\$ against the US\$, July 2003 to June 2005



Source: Bank of Canada, 2005.

Figure 5: Monthly cross-border Internet pharmacy sales to the United States—  
Total sales vs Generic sales, July 2003 to June 2005



Source: IMS Health Incorporated, 2005: special data request.

adjusting for currency equivalency (Skinner, 2005). Why would so many generic products be resold to Americans through the cross-border drug trade when they could be obtained more cheaply in the United States?

As mentioned above, one explanation is that brand-name manufacturers are restricting supply to normal Canadian consumption levels. By default, this reduction in the brand-name drug supply in Canada makes the generic proportion of cross-border drug sales rise as a percentage of the overall trade.

However, there is another explanation for the rise in the proportion of generic cross-border drug sales, an explanation that can be found in a comparison of the Cana-

dian and American patent status of drugs sold in the cross-border trade. An analysis conducted by IMS Health Incorporated for this study indicates that 50 generic products being sold through Canadian-based Internet pharmacies to the United States have no generic equivalent south of the border (table 4). These 50 drug products accounted for \$61.2 million in annual sales (MAT at June 2005) or nearly half (46.7%) the total annual value of generic cross-border drug sales to the United States through Internet pharmacies of \$131.1 million (MAT at June 2005).

Clearly, it is irrelevant to American consumers that Canadian generic prices are much higher on average than American prices for the same drugs if there is

**Table 4: Distribution of drug sales across 278 confirmed or suspected Canadian-based Internet pharmacy outlets by patent status in Canada and the United States, moving annual total (MAT) as of June 2005**

Cross-border drug sample	Cross-border sales	Percent of total business	Canadian sales	Percent of total business	Total business
Top 500	\$468,235,940	71.2%	\$189,306,398	28.8%	\$657,542,337
% total cross-border Internet sales	92.4%		n/a		n/a
198 Canadian generics in top 500	\$131,130,748	80.0%	\$32,797,777	20.0%	\$163,928,525
% sales \$ over top 500	28.0%		17.3%		24.9%
% total cross-border Internet sales	25.9%		n/a		n/a
50 of 198 Canadian generics non-genericized in US	\$61,203,561	87.8%	\$8,487,888	12.2%	\$69,691,448
% sales \$ over 198 Canadian generics	46.7%		25.9%		42.5%
% Sales \$ over top 500	13.1%		4.5%		10.6%
% total cross-border Internet sales	12.1%		n/a		n/a
Total cross-border sales to United States	\$506,642,793	69.8%	\$219,089,387	30.2%	\$725,732,180

Source: IMS Health Incorporated (2005).

no generic version available for the particular drug they need. Even a high-priced generic drug in Canada might be cheaper than the patented brand-name drug in the United States and so American consumers might still face a cost-savings incentive to import Canadian generic versions of drugs that are still under patent protection in the United States.

More importantly, in almost all cases the absence of a generic equivalent in the United States means that the drug in question is still under patent protection in the United States (table 5).<sup>1</sup> Therefore, almost half the annual value of cross-border generic drug sales going through Canadian-based Internet pharmacies are for drugs that are probably still protected by active US patents. If further research confirms this finding, the data suggests that Canadian cross-border Internet pharmacies are engaged in a massive theft of American intellectual property.

The negative implications of this finding for Canada's international trading relationship with the United States cannot be understated because the cross-border resale drug trade may violate the spirit, if not the letter,

of the North American Free Trade Agreement (NAFTA), which specifically calls for member states to respect the intellectual property rights of its trading partners (Ladas and Parry, 1994). These findings could also have an impact upon Canada's global trading relationships. In fact, Canada is a member of the World Trade Organization (WTO) and is a signatory to the WTO's General Agreement on Tariffs and Trade (GATT) as well as the GATT's Trade Related Aspects of Intellectual Property Rights (TRIPS) provisions; all of which acknowledge the responsibility of member states to respect the intellectual property rights (patents) of its trading partners in these global agreements (Ladas and Parry, 1994). Canada's tacit approval of resale export activities that are primarily based on commercial advantages obtained by violating the intellectual property rights of its trading partners have the potential to damage our international trading relationships, and may be open to international legal challenges. This study, however, offers no definitive legal opinion on the matter and leaves this question to further research by experts in international trade and intellectual property-rights law.

1 In the few cases, where there was no comparable US drug product available, it was likely that the Canadian product being sold to Americans was not approved for sale in the United States, making it doubtful that these cross-border sales were even accompanied by a valid prescription issued by an American physician.

Table 5. Drugs that are not genericized in the United States (grouped by therapeutic category and active ingredient) that are being sold in generic versions (across 50 products) from Canadian-based Internet pharmacies to Americans

Therapeutic category*	Generic active ingredient	US patented brand-name version
antiarthritics	leflunomide	Arava
antiarthritics	meloxicam	Mobic
antihistamines, systemic	cetirizine	Zyrtec
antihyperlipidemic agent	fenofibrate micro	(various: Tricor, Triglide, Lofibra, etc.)
antihyperlipidemic agent	simvastatin	Zocor
antihyperlipidemic agent	pravastatin	Pravachol
anti-infectives	levofloxacin	Levaquin
anti-infectives	terbinafine	Lamisil
antispasmodic/antisecretant/antisecretory	domperidone	(no equivalent brand or generic)
bronchial therapy antispasmodic/antisecretory	salvent cfc freedomperidone	(various: similar to Albuterol) (no available product)
bronchial therapy antispasmodic/antisecretory	salbutamol hfa domperidone	(various: similar to Albuterol) (no available product)
cardiovascular bronchial therapy	carvedilol salvent cfc free	Coreg (various: similar to Albuterol)
hormones bronchial therapy	desmopressin salbutamol hfa	(various: Ddavn, Stimat, Minirin, etc.) (various: similar to Albuterol)
hormones cardiovascular	alendronate carvedilol	Fosamax Coreg
neurological disorders,hormones	lamotrigine desmopressin	Lamictal (various: Ddavn, Stimat, Minirin, etc.)
psychotherapeutics hormones	sertraline alendronate	Zoloft Fosamax
neurological disorders,	lamotrigine	Lamictal
psychotherapeutics	sertraline	Zoloft

Source: IMS Health Incorporated (2005) Notes: \*USC2 description.

### Canadian versus American consumer demand in the competition for Canada’s drug supply

Understanding the characteristics and size of the American consumer segment competing for access to Canadian drugs through the cross-border pharmacy industry is important in estimating accurately the potential impact that this additional consumer demand might have on the Canadian drug supply. For the purposes of this study, total American demand is disaggregated and examined according to the following three criteria:

- ◆ consumer group characteristics
- ◆ individual versus bulk demand
- ◆ actual demand versus potential demand.

The distinction between individual and bulk demand is especially important because the Canadian International

Pharmacy Association (CIPA) argues that they are opposed to “bulk” exports and only in favour of sales to individual American consumers (CIPA, 2005). Examining the size of the demand by individual American consumers for Canadian retail drug sales separately from bulk US demand will provide insights into whether it is feasible for Internet pharmacies to resell Canadian drugs to Americans even if they limit themselves to serving individual market demand from the United States alone.

Based on the evidence available to this study, the current cross-border demand in the United States for retail sales of Canadian drugs is largely composed of two groups that represent market demand for drugs that is individually driven:

- ◆ American seniors (65 years of age and older); and
- ◆ Americans without health insurance coverage.

Other consumer groups that have serious potential to enter the competition for access to Canadian drugs and that represent demand that is driven by “bulk” purchases include:

- ◆ federal, state, and local public employees; and
- ◆ recipients of public health insurance programs in the United States.

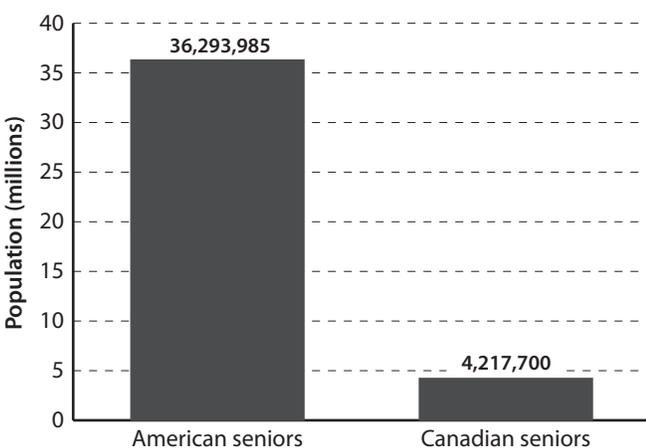
The following sections will quantify the size of these American consumer groups and compare them to the size of the current Canadian population to provide a context for estimating their impact on our drug supply.

**Individual demand: American seniors and Americans without health insurance**

The cross-border Internet pharmacy industry is represented by a number of trade associations, the most prominent of which is the Canadian International Pharmacy Association (CIPA). According to the CIPA, their organization “is a non-profit trade association that represents 35 of Canada’s leading mail-order pharmacies. CIPA’s member pharmacies service about two million US patients, primarily seniors and the uninsured” (CIPA, 2005). Importantly, CIPA officials identify American seniors and Americans without health insurance as the specific target markets for its members. Based on this claim, we can estimate the size of this target market and compare it to Canada’s own population of consumers.

According to the most recent data available to this study (figure 6), American seniors numbered about 36.3 million in 2004 (US Census Bureau, 2005). By comparison, Canada’s current senior population is about 4.2 million (Statistics Canada, 2005). This means that there are approximately 9 times as many American seniors as there are Canadian seniors in the competition for a limited Canadian drug supply.

**Figure 6: Population 65 years of age and older in the United States and in Canada, 2004**



Source: U.S. Census Bureau, 2005; Statistics Canada, 2005.

However, the recent implementation of the US Medicare Modernization Act (MMA), which extended publicly subsidized drug benefits to most American seniors, may reduce the need for many American seniors to shop for drugs in Canada. There are three main publicly funded health-insurance programs that together cover most of the nearly 45% (Bureau of Labor Statistics, 2004) of total annual health-care expenditures accounted for by public funding in the US:

- ◆ Veterans Administration
- ◆ Medicaid
- ◆ Medicare.

Veterans Administration provides medical benefits specifically for American military combat veterans. Medicaid is a program that provides health-care benefits for those with low income, usually welfare recipients. Medicare provides medical benefits specifically for seniors (although there are some eligible non-senior recipients like the disabled).

In 2003, Congress passed the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003 to create new public drug benefits under Medicare that did not previously exist for seniors. The MMA established a basic out-patient drug benefit as Part D of Medicare and made it available on a voluntary basis to all Medicare beneficiaries; making eligibility for the Medicare drug benefits more universal than existing Canadian programs for seniors.

According to the US Congressional Budget Office (CBO), the standard drug benefit specified by the MMA for calendar year 2006 will have a \$250 annual deductible; pay 75% of covered drug costs between \$250 and \$2,250; provide no further coverage until an enrollee has incurred \$3,600 in out-of-pocket drug costs for the year; and pay about 95% of covered drug costs beyond that catastrophic threshold. The catastrophic threshold is defined in terms of the out-of-pocket costs that enrollees actually incur (CBO, 2004: viii).

The US Congressional Budget Office (CBO) estimates that 87% of current Medicare beneficiaries will participate in the drug benefit once it becomes available in 2006. Some of these would receive subsidized drug coverage through a former employer and thus would technically not be enrolled in Part D. This leaves an estimated 29 million seniors as recipients of the new benefit as of 2006 (Mays and Brenner, 2004).

The MMA also established subsidies for enrollees with relatively low income and countable assets. The subsidies will pay all, or a portion of, premiums and substantially reduce cost-sharing liabilities. It has been estimated that about 8.7 million people would be eligible for low-income subsidy benefits under the MMA (Mays and Brenner, 2004).

The MMA therefore introduces drug-benefit coverage to seniors who have until now been the target market for Canadian Internet pharmacies. This could have the effect of reducing demand from American seniors for lower-priced Canadian retail drug purchases. However, the deductible structure of the benefit and the fact that some seniors are not eligible for coverage at all under the MMA mean that seniors as a whole will still face significant out-of-pocket drug costs. This means American seniors may still demand drugs that are sold through Canadian-based Internet pharmacies. Also, as discussed later in this publication, there are accelerating legislative efforts underway in the United States to allow Medicare recipients to obtain retail drugs from Canadian pharmacies.

The other target market for CIPA is Americans without health insurance. According to the US Census Bureau’s Current Population Survey (CPS), 45.8 million Americans lacked health insurance in 2004 (US Census Bureau, 2005). However, estimating the number of people without health insurance in the United States is subject to much debate because of the way that the US Census Bureau collects data on the issue. The problem is that government survey questionnaires overstate the uninsured population, possibly double counting many responses.

Table 6 illustrates the problems with the CPS. It shows the numbers for the estimated US population in each of the survey categories for health-insurance coverage. Note that the total number of people with private health insurance, government health insurance, and no health insurance exceeds the Census Bureau’s estimate for the entire population of the United States, an obvious impossibility. The CPS also does not take into account the particular characteristics of the survey population, including:

- (1) those who are uninsured only for a short period because they are between jobs and have temporarily lost employer-based health insurance, or who are students transitioning between family, school, and work coverage—according to National Survey of America’s Families (NSAF), up to 47% of respondents (Kaiser, 2004);
- (2) those who are eligible for public health insurance programs like Medicaid and SCHIP programs for children who are reluctant to enrol until the moment they require health-care services—approximately 33% of respondents (BCBS, 2005);
- (3) those who have the income to buy health insurance but simply do not prioritize the purchase of health insurance—approximately 20% of respondents had annual incomes above \$50,000; nearly half of this group had household incomes above \$75,000 (BCBS, 2005);
- (4) those who are uninsured for long periods of time because they lack employer-based insurance or the income to buy health insurance themselves—about 50% of respondents (BCBS, 2005).

The total numbers of people who are uninsured at any time for whatever reason, represent a potential market for Canadian-based Internet pharmacies of about 46 million people (US Census Bureau, 2005). However, based on the characteristics of the uninsured survey population, the best estimates of the actual long-term uninsured population in the United States is about 23 million (BCBS, 2005). Nevertheless, even this group by itself equals two thirds of the entire population of Canada of roughly 32 million (Statistics Canada, 2005).

**Table 6: Inaccuracies in the US Current Population Survey (CPS) questionnaire regarding health-insurance coverage among Americans**

Survey Response	Estimated population
Had private health insurance	198,262,000
Had government health insurance	79,086,000
Not covered at any time during the year	45,820,000
Total of Above	323,168,000
Total CPS US Population	291,155,000

Source: US Census Bureau, 2005.  
 Note: the percentages stated above do not total to 100% because some of the surveyed population is in multiple categories.

**Bulk demand—US public employees and recipients of public health-insurance programs**

To date, demand for bulk purchases of drugs supplied by cross-border pharmacies has not materialized due to the US federal ban on the reimportation of drugs sold outside the country. The national reimportation ban is enforced by the Food and Drug Administration (FDA) under the rationale that the safety of cross-border drugs cannot be assured because FDA-mandated standards do not apply beyond the borders of the United States. Despite the fact that the trade is illegal, numerous states have begun to mobilize support for its legalization and to lobby the

US Congress to permit states to make bulk purchases on behalf of public employees and those enrolled in public health insurance programs like Medicaid and Medicare. The size of the consumer populations targeted by the political efforts of American states to legalize the cross-border drug trade is quite substantial relative to the overall size of the Canadian population.

For instance, the US Census Bureau reports that the total number of full-time equivalent, federal, state, and local civilian employees of government is approximately 18.2 million people or approximately 57% of the entire Canadian population (US Census Bureau, 2005). It is also probable that the family members of these employees would be eligible to make cross-border purchases. The 2004 US census reports that the average American family size was 3.18 people (US Census Bureau, 2004). Therefore, the potential consumer segment represented by government employees and their families could be as high as 58 million or nearly twice as large as Canada's entire population. To be conservative, this study only includes the direct employee population of 18.2 million.

Additionally, just the number of people enrolled in state Medicaid programs (37.5 million, mainly recipients of social assistance) is 17% greater than the entire Canadian population and the number of Medicare beneficiaries (39.7 million, mainly seniors and the disabled) is 24% greater (US Census Bureau, 2005).

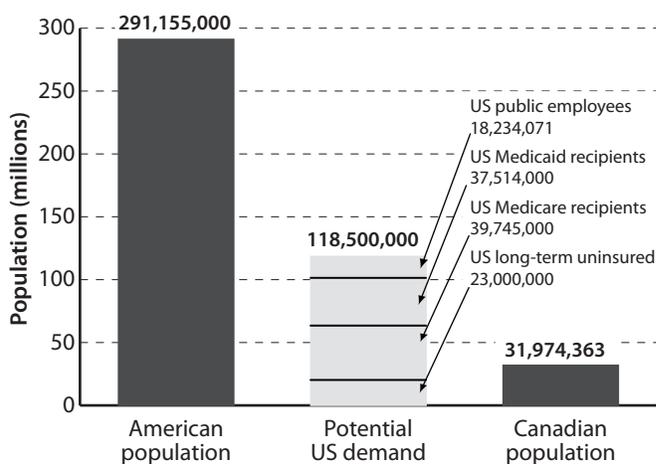
#### Total potential American demand for Canadian cross-border drug sales

If the estimated potential individual and bulk demand for cross-border drugs from the United States is totalled, it becomes apparent that the number of American consumers that might compete for access to the Canadian drug supply is nearly four times the size of Canada's entire population. The enormous size of the potential American consumer demand relative to Canada's population is shown in figure 7 and indicates that it is clearly not feasible for cross-border pharmacies to supply either their target markets (approximately 63 million customers between Medicare (seniors) and the uninsured populations) or potential bulk buyers (approximately 56 million customers between Medicaid and US public employees, excluding family members) (US Census Bureau, 2005).

#### Warning signs of increasing American demand for retail drug sales from Canada

It might be argued that the potential American demand for Canadian cross-border drug sales will not actually materialize. However, there are serious signs that the po-

Figure 7: Estimated size of American consumer groups competing for access to Canada's drug supply



Source: U.S. Census Bureau, 2005; Statistics Canada, 2005.

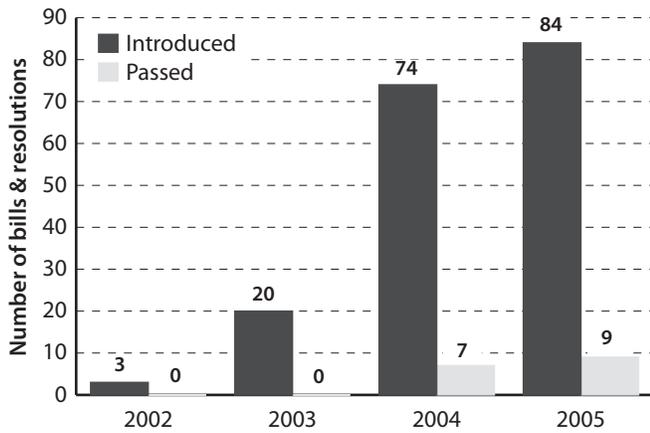
litical momentum on this issue in the United States is accelerating. As mentioned earlier, legislative and political activities at the state level have been increasing dramatically in the last couple of years in an effort to put pressure on Washington to repeal its ban on the cross-border drug trade. These efforts are not limited only to the state level; the US Congress has seen the introduction of numerous bills as well.

One way to measure these trends is to count the number of bills that have been introduced by state and federal legislatures since the beginning of the cross-border drug trade between Canada and the United States. Figure 8 shows the number of state and federal bills introduced since 2002 (roughly the beginning of the Canada-US cross-border drug trade) that favoured the legalization of the cross-border drug trade with Canada or attempted to facilitate it. The number of bills and resolutions introduced annually has risen dramatically from three in 2002 to 84 as of September 2005.

Figure 8 also shows the number of these bills or resolutions that have passed since 2002. The data indicates that there is a build up of political momentum in favour of the cross-border drug trade with nine bills or resolutions passing by September 2005 compared with zero between 2002 and 2003.

The statistics presented here are conservative because they do not even include the growing efforts of American cities and counties to legalize and facilitate the bulk purchase of drugs from Canadian Internet pharmacies for their public employees and the beneficiaries of local social programs.

Figure 8: Number of US state and federal bills and resolutions introduced and passed that favoured legalizing the cross-border drug trade, January 2002 to September 2005



Source: National Conference of State Legislatures, 2005.

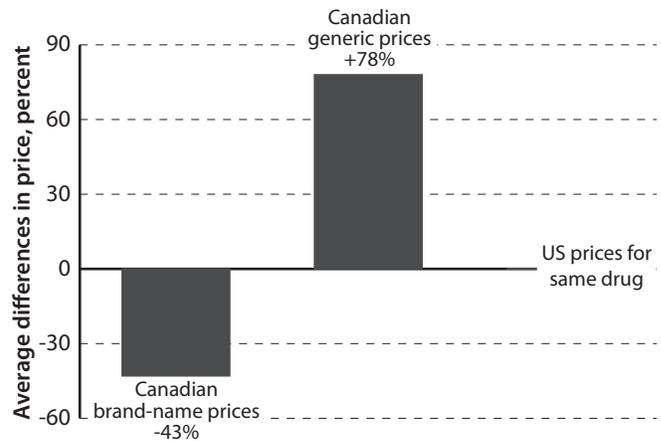
### Economics of the cross-border Internet drug trade

#### Differences in drug prices driving the cross-border resale trade

The difference between Canadian and American prices for brand-name drugs has created an incentive for Canadian Internet pharmacies to resell the Canadian drug supply to American consumers at a premium over the Canadian price. Previous research has shown that, after adjusting for currency equivalency, Canadian prices for the 100 top-selling brand-name drugs are on average 43% below American prices for the same drugs (figure 9). By contrast, the 100 top-selling generic drugs are overall, on average, priced 78% higher in Canada than in the United States (Skinner, 2005).

Not surprisingly, the data obtained for this study show that brand-name products accounted for 74.1% of the value of all cross-border Internet sales to Americans between July 2004 and June 2005, while generic products accounted for only 25.9% (see table 5). This pattern of sales is roughly consistent with the fact that 92% of the 100 top-selling brand-name products in Canada are priced lower in Canada than in the United States, while nearly 75% of the 100 top-selling (defined by the number of prescriptions dispensed) generic products in Canada (2003) are priced higher in Canada than in the United States (Skinner, 2005). As one would expect, lower prices on Canadian brand-name drugs create incentives for these particular products to be resold to Americans at a price that is below the US market

Figure 9: Average differences of Canadian from US prices for the same drugs over the top 100 brand-name and top 100 generic drug products sold in Canada in 2003, PPP adjusted for currency equivalency



Source: Skinner, 2005; based on data from IMS Health Inc., 2004.

price. The higher relative price of three-quarters of Canadian generic drugs explains why a relatively smaller percentage of these kinds of drugs are resold to Americans through Internet pharmacies: they can buy most of these drugs cheaper at home.

But a price incentive only accounts for about half of the sales of generic products through Canadian Internet pharmacies to Americans. Cross-border sales of generic drugs are also being driven as much by the fact that many of the drugs are still under patent in the United States. As mentioned earlier, almost half the annual value of cross-border generic drug sales going through Canadian-based Internet pharmacies is for drugs that are probably still protected by active US patents. The difference in price between an over-priced Canadian generic drug and the regularly priced patented version in the United States might still represent a significant savings to American Internet customers, but such savings are based on the theft of US intellectual property and are therefore not legitimate.

Figure 10 illustrates the components of the pricing economics that drive the cross-border resale trade in drugs. The first bar in the figure shows that the potential savings for consumers created by the difference between the American market price and the lower Canadian price create an incentive for Americans to demand drugs from Canadian retail pharmacies. The second bar in the figure shows how Internet pharmacies take advantage of Canadian government interference in the drug market that creates an artificial price ceiling for brand-name drugs sold in Canada.

Figure 10: Illustration of the pricing economics driving the Canada-US cross-border resale drug trade



Canadian Internet pharmacies buy their product at low Canadian prices, and then sell to Americans at a price that is far above Canadian prices but still much below the American price. The premium price that an Internet pharmacy can get from sales to Americans creates a profit incentive for them to favour American consumers and redirect the Canadian drug supply to them. Meanwhile, drug manufacturers are prohibited by federal price controls and provincial monopsony buying power from defending their global pricing strategies by raising Canadian prices. This fixes the differences between Canadian and American drug prices and allows cross-border Internet pharmacies to exploit the resulting market distortion at the expense of drug makers.

### Explaining the differences between Canadian and American drug prices

There are valid economic reasons why drug companies charge lower prices in Canada than in the United States and also why they cannot afford to allow lower Canadian prices to be “imported” into the American market through the cross-border drug trade. Previous research indicates that across segmented free markets, the prices of drugs

should be positively correlated to the average incomes in each market: that is, drug prices should be higher in wealthier markets and lower in poorer markets—a pricing relationship that is consistent for many non-pharmaceutical products as well (Danzon and Chao, 2000; Graham, 2000; Danzon and Furukawa, 2003).

Differential pricing between markets occurs because sellers find that the profit-maximizing price in a market depends on the level and distribution of income among buyers. A positive relationship between price and average income in a market is usually observed because average income is an important factor in determining consumers’ willingness-to-pay in a market.<sup>2</sup> For the seller, the best price is the one that maximizes profits through an optimal combination of supply and demand for a product within each market (Varian, 1985). Thus, countries with higher incomes will generally pay higher prices for goods and services.

Hollis and Anis (2004) have explained how drug price differentiation between Canada and the United States has benefited Canadian consumers by providing access to drugs at lower prices; and also benefited drug companies

2 However, higher prices may sometimes be observed in poorer markets if a very wide income range characterizes the market. This is because average incomes are affected by the distribution of wealth in the market. For instance, a poor country may have a small minority of its population that is extremely wealthy while the bulk of the population is extremely poor. This will lower the average income (total income divided by population). If the domestic market cannot be segmented among consumer groups based on income or if the incomes of the poor are not high enough to buy at the lowest possible price, then it will only be profitable to sell to the smaller but wealthier population whose average incomes, if considered as a separate consumer group, are much higher. Furthermore, the profit-maximizing price will be set at the equilibrium of the wealthier consumer group. If this small group of consumers has higher average incomes than the average incomes in foreign markets, then its prices will be higher as well (Skinner, 2004).

because it allows them to maximize profits by selling their products at a price is matched to the different supply-and-demand dynamics in the Canadian and American markets. In other words, the interests of Canadian consumers and drug companies converge on the issue of differential pricing strategies. It is important to understand that lower prices on Canadian brand-name drugs are also likely just the normal result of market economics, not Canadian price regulations. There is evidence that even in the absence of price controls, the normal Canadian free-market price for drugs would likely remain much lower than American prices.

This is certainly the case with federal price regulations imposed by Canada's Patented Medicines Price Review Board (PMPRB). According to the PMPRB's 2002 to 2004 annual reports, manufacturers' prices of patented drugs fell by 1.2% in 2002, 1.1% in 2003, and 0.2% in 2004. These results continue the pattern of declines and near negligible increases in the Patented Medicines Price Index (PMPI) that began in 1993 (PMPRB, 2002: 21; 2003: 21; 2004: 22). Except during 1992, pharmaceutical prices have increased less than the general rate of inflation measured by the Consumer Price Index (CPI) in every year since 1988 (PMPRB, 2003). The 2004 PMPRB annual report again confirms that manufacturer's prices for patented (brand-name) drugs have grown slower than inflation every year since 1993 and actually decreased in eight out of the last 11 years (PMPRB, 2004). Notably, the PMPRB's price-control regulations limit price increases for patented drugs to the expected rate of increase in the CPI over a three-year period (PMPRB, 2003). Therefore, if drug prices are rising slower than they are allowed to, this would indicate that factors other than price controls are holding the prices of patented drugs down (Graham, 2000).

Federal price regulations also only apply to brand-name drugs while they are under patent protection in Canada. Once a branded drug's patent expires, PMPRB regulations no longer apply. Therefore, after a branded drug's patent expires, its price is determined by market forces, so that the price could rise if market conditions demanded it. However, research shows that branded drug prices do not rise significantly above the price-control level even after their patents expire and federal price controls no longer apply. For instance, Skinner (2005) examined a small sample of prices for Canadian brand-name drugs with expired patents (i.e., their prices are no longer regulated) and have no competition from generics or other patented or non-patented brand-name drugs in the same therapeutic class (i.e., prescription brand drugs with expired patents that have market exclusivity similar to, or stronger than, patented drugs). The research found that the prices of these drugs were at similar levels to drugs that were un-

der price controls in Canada. This suggests that, if federal price controls on patented drugs were repealed, the price of patented drugs would not likely rise much higher than current levels in Canada. (However, such a result would only occur in the absence of a large and persistent cross-border resale drug trade.)

Hollis and Anis (2004) have also argued that Canadian federal price regulations do not adequately explain lower Canadian drug prices relative to those in the United States and suggest that a more likely answer is that provincial governments use the bulk-purchasing power of their drug programs to drive down drug prices in Canada. They attribute lower Canadian prices both to the price negotiating power of large provincial programs and the effect of lower Canadian incomes.

### **Problems created by federal price regulations and provincial monopsony buying power**

Canadian prices should be lower than those in the United States due to the average income differences between the two countries. This should occur even if governments do not impose price controls. However, drug manufacturers can charge lower prices in Canada than they do in the United States only when the two markets are segmented; that is, when vendors can prevent customers who enjoy lower prices (Canadians) from re-selling their goods to customers who pay higher prices (Americans) (Schweitzer, 1997). If the cross-border drug trade undermines North American market segmentation, Canadian prices would be expected to adjust naturally in response to the increased market demand from the growing wave of American consumers and converge toward higher American prices.

Aside from normal demand-driven price increases, the growth of the cross-border trade should also be expected to create upward pressure on Canadian prices because drug manufacturers want to prevent Canadian prices from being "imported" to the United States, thus undermining global pharmaceutical pricing strategies. Therefore, drug companies would also have an incentive to raise the price in Canada to eliminate any artificial cost savings that are driving cross-border sales.

Existing Canadian pharmaceutical policies prevent such an increase in price. This is because Canadian regulations governing drug prices and provincial reimbursement policies prevent natural price movement above the status quo. For instance, Federal PMPRB regulations prohibit increases in patented drug prices above the annual rate of general inflation in Canada. This creates an effective barrier to normal market-driven pricing—with other negative consequences for consumers (Skinner 2005).

The large scale of provincial drug programs and the influence they have on drug prices in general is also a barrier to price increases above current levels in response to the cross-border drug trade. According to CIHI (2004), public drug programs account for about half the market (47%) for prescription drug sales in Canada. In Canada, the prices for prescription drugs in the rest of the market are similar to those obtained by provincial drug programs. This occurs because provincial reimbursement schemes act to create a single price at the wholesale level: retailers receive a fixed reimbursement from provincial drug programs; wholesalers sell at a single price to retailers; and manufacturers sell at a single price to wholesalers. But, the large market coverage of provincial drug programs coupled with the single price means that provincial programs influence the overall market price and exercise near monopsony buying power—effectively creating a price control for the market and distorting normal market pricing. In a competitive market, normal price negotiation among multiple, competitive, market buyers and sellers is perfectly legitimate. However, the monopsony power leveraged by provincial drug programs makes such negotiations unbalanced, harming the economic interests of sellers (drug makers) and distorting the market.

### Economic choices facing drug companies

As illustrated above, American consumers represent an opportunity to capture a higher price and sell a larger quantity of drugs, thus creating a powerful profit incentive for Internet pharmacies to engage in reselling the Canadian drug supply to Americans. This would not be a problem if there were an unlimited supply of drugs available in Canada. However, the growth in the cross-border drug trade encourages drug makers to restrict their supply of medicines in Canada to normal domestic consumption levels in order to prevent Canadian prices from being “imported” to the United States.

Research-based drug companies cannot afford to have Canadian prices imported to the American market because their global price-differentiation strategies are designed to recover the significant research and development costs associated with bringing new drugs to market. Research indicates that inventing and developing a new drug costs on average between US\$800 and US\$900 million (DiMasi, 2002; Adams and Brantner, 2004). Most of the cost of this R&D is borne by Americans, who pay higher prices that match their higher average incomes.

In this context, drug manufacturers have only a few options to deal with increasing volumes of cross-border

resale drugs.<sup>3</sup> First, in a competitive market, drug makers would simply adjust Canadian prices toward the American price level to eliminate the savings that are driving consumer demand for cross-border drugs. This is the easiest, most effective, and the least costly strategy for dealing with the cross-border resale drug trade. However, federal drug-price regulations and provincial drug procurement policies in Canada prevent this from occurring and so this option is simply not available to drug companies.

The next least expensive option is to minimize cross-border sales of drugs. The least expensive way of doing this is to supply the Canadian market only at levels that are consistent with normal Canadian demand. This would make the cross-border drug trade a zero-sum game: if Internet pharmacies were to redirect substantial portions of the Canadian drug supply to American consumers, it would result in equivalent shortages in supply for Canadian consumers. Such a strategy limits the damage that can be done to international pricing structures in pharmaceutical markets and puts the onus on the Canadian government to act to protect its domestic drug supply. Given that price regulations and provincial monopsony power is the cause of the cross-border drug trade, this assignment of the onus would seem appropriate.

The last option available to drug companies is to monitor their distribution networks and enforce wholesale distribution agreements that prohibit sales to cross-border pharmacies, assuming they can even be properly identified. This option is not realistic: it would be prohibitively expensive to implement, requires the bureaucratic assistance of Canadian law enforcement, and would do nothing to deal with “foot traffic” sales to American consumers originating from regular “brick-and-mortar” border pharmacies because there is no inexpensive way to identify whether sales were directed toward American rather than Canadian consumers among walk-in customers.

In any case, evidence exists to show that drug companies have revealed their preferences for the second option, implying that it is the least costly response. According to data obtained by IMS Health Incorporated for this study, as of June 2005 at least 10 of the largest brand name pharmaceutical companies supplying the Canadian market have implemented policies to restrict sales of drugs in Canada to normal domestic consumption levels. These companies include Abbot Laboratories, AstraZeneca, Boehringer-Ingelheim, GlaxoSmithKline, Lilly, Merck Frosst, Novartis, Pfizer, Sanofi Aventis, and Wyeth (IMS Health Incorporated, 2005).

3 Hollis and Anis (2004) also outline some of these options.

## Conclusions and policy recommendations

In previous research, Graham (2003) studied the cross-border drug trade and concluded that it posed a serious risk that research-based drug makers would stop supplying Canada with their products. Further, he calculated that importing Canadian prices generally into the United States would reduce the profits of research-based drug makers to such a degree that they would reduce annual investment in research and development (R&D) by US\$5 billion to US\$15 billion, the latter estimate being almost half of global pharmaceutical R&D for 2002.

More recently, Hollis and Anis (2004) studied the cross-border drug trade finding that Canada's Internet pharmacies pose a deep threat to our domestic drug supply and lower prices. They argued that the federal government should intervene and shut down the trade. Hollis and Anis acknowledged that since Canadian federal regulations prohibit drug companies from increasing prices at a rate higher than inflation, the manufacturers' only method of protecting their American profits would be to restrict supply to Canada, which could lead to shortages and eventually to higher prices. However, instead of calling for the removal of price regulations, they recommended that Canada take pre-emptive measures to prevent unauthorized exports of drugs whose prices are regulated by the Patented Medicines Prices Review Board (PMPRB).

This publication's findings agree with other research indicating that the potential growth in American demand for Canadian cross-border drug sales will seriously threaten Canadians' access to medicines. It also agrees with previous research in identifying Canadian drug price regulations and the leveraging of provincial monopsony power as the causes of the cross-border trade because such policies interfere in normal adjustments of market prices in response to increased demand by American consumers for Canadian resale drugs and threats to global pharmaceutical pricing strategies.

### Remove public policies that distort the market for pharmaceuticals

The correct response to this situation, however, is the removal of the public policies that interfere in Canada's pharmaceutical market, distort drug pricing, and create artificial incentives for cross-border Internet pharmacies to divert our drug supply to a competing American consumer population.

Previous research has shown that when there is no large-scale cross-border resale drug trade between Canada and the United States, price regulations are not necessary to keep Canadian prices low. This study has shown that

when there is a large-scale cross-border resale drug trade, price regulations can cause market distortions by limiting the responses available to drug companies whose global pricing strategies are threatened by cross-border resale drug trade.

Such obstacles created by public policy force drug makers to choose the next least costly option, which is to restrict their supply of medicines to Canada. Therefore, it is recommended that federal price regulations be repealed and provincial monopsony buying power reduced so that normal market pricing can occur in Canada. Previous research has demonstrated that removing price controls and other misguided public drug policies would result in other significant benefits for Canadian consumers (Skinner 2004, 2005) in addition to eliminating the threat to our drug supply from the cross-border drug trade.

### Patents and trade relations between Canada and the United States

This study also found that a large number of generic products are being sold to Americans through the cross-border Internet pharmacy business in likely violation of active US patents. These findings make it highly probable that American patent holders have legal recourse in American courts to stop the cross-border trade. The US government certainly has the legal and moral authority to ban imports of these generic drugs in order to enforce its own property rights laws. The findings also imply that American politicians who promote the legalization of the cross-border resale drug trade are inadvertently encouraging the massive theft of US intellectual property and, therefore, might be legally liable for the losses suffered by patent holders.

It is unclear whether the Canadian government is legally or morally obligated to impose an export ban on drugs that are genericized in Canada but still under patent protection in the United States because patent laws differ nationally and are not enforced across international borders. This study does not attempt to provide a legal opinion on this matter but offers some discussion points below.

Both Canada and the United States are signatories to the WTO's Trade-Related Aspects of Intellectual Property Rights (TRIPs) agreement that was part of the World Trade Agreement of 1994. The text of Article 51 of the TRIPs agreement requires member countries to suspend the importation into their territories of "counterfeit trademark or pirated copyright goods" and permits similar action against "other infringements of intellectual property rights" (WTO 2005), which presumably would include patent rights. Article 51 thus justifies the United States banning the import of generic products identified as patent violators.

However, the requirements of TRIPs do not explicitly create a Canadian obligation to impose an export ban on generic drugs that infringe on patents in other countries. First, the text of Article 51 states that customs authorities in member countries are allowed to suspend the “release of infringing goods destined for *exportation* from their territories” but the provision does not require such action (WTO, 2005). Second, the text probably refers to goods that infringe on patents in the exporting country even though the patent-violating goods are not intended for sale in that country. But Article 51 does not necessarily refer to goods that infringe on a patent(s) in another country.

While it does not appear that Canada has an obligation under international treaty to ban exports of generic drugs that violate foreign patents, it is clear that the Canadian government could enact such a policy if it chose to do so. If such a policy could be enforced without adding a cost to Canadian taxpayers, then the gesture would be

consistent with Canada’s commitment to protecting intellectual property and, at least, maintain respect for the patent rights of our trading partners as implied in international trade agreements on intellectual property (e.g. TRIPs and NAFTA). Such a move could bolster Canada’s international trading relationship with the United States in the process. This study makes no recommendation either way on this matter.

The only circumstance under which this study would recommend a general export ban on the resale of cross-border drugs is if governments stubbornly cling to misguided pharmaceutical price controls and insist on maintaining a provincial monopsony buying presence. If this were the case, then in order to protect the Canadian drug supply, an export ban would be appropriate for all prescription drugs whose prices are regulated by the Patented Medicines Prices Review Board (PMPRB) or affected by provincial monopsony buying power.

## 2 Background and special interests

### **Beginnings of the cross-border Internet drug trade between Canada and the United States**

#### **Andrew Strempler**

American retail importation of Canadian prescription drugs via “online pharmacies” or “Internet pharmacies” emerged as a significant commercial business beginning in 2000. Andrew Strempler, a graduate of the University of Manitoba’s pharmacy class of 2000, is credited with pioneering the industry. Strempler took advantage of the fact that Nicorette gum (a non-prescription pharmaceutical product that helps people quit smoking cigarettes) was cheaper in Canada than in the United States and began selling it on eBay directly to American online customers. Strempler’s venture began by selling one box a week but increased to 150 sales per day within three months (Parloff, 2005).

#### **Daren Jorgenson**

At the same time, Daren Jorgenson, another graduate of the University of Manitoba’s pharmacy program, began selling glucose-monitoring equipment over the Internet. Jorgenson claims to have asked US Food and Drug Administration (FDA) officials whether selling the equipment via the Internet was legal. In response, he said, an FDA official encouraged him to sell prescription drugs over the Internet due to urgent demand from American consumers and the high price disparity between Canada and the United States on brand-name pharmaceutical products (Parloff, 2005).

Exploiting the opportunity created by government price controls on prescription drugs in Canada, Strempler and Jorgenson set up profitable businesses reselling to Americans prescription drugs that were meant for distribution in the Canadian market, subsequently spawning the cross-border Internet pharmacy industry in Canada. By 2003, Internet pharmacies in Canada had developed into a big business.

### **The politics of the cross-border Internet drug trade between Canada and the United States**

#### **Canadian government**

At the federal level, former Canadian Health Minister Ujjal Dosanjh introduced a bill late in 2005 that would have mandated that a Canadian physician personally examine each cross-border patient before signing a prescription for a medication. This would have erected serious logistical obstacles to conducting the cross-border trade. The bill also had provisions empowering the Minister of Health to monitor drug shortages related to the cross-border drug trade and to ban exports of those drugs on a case-by-case basis to protect the Canadian drug supply. The proposed legislation was not passed, expiring with the dissolution of parliament in November of 2005 and the launch of a general election.

#### **US Government**

At the federal level, officials of the Food and Drug Administration (FDA) oppose the cross-border drug industry, arguing that the practice is both unsafe and illegal. Since 2003, the FDA has taken serious measures to stem the flow of cross-border drugs into the United States (FDA News, 2003). President George W. Bush is also opposed to the cross-border drug trade and supports the FDA’s stance that personal and bulk drug reimportation poses significant health risks for American consumers because of the inability of the FDA to enforce American safety standards on products that are sold through the cross-border trade.

#### **Canadian pharmaceutical industry**

The national trade association representing Canada’s Research-Based Pharmaceutical Companies (Rx&D) is opposed to the cross-border resale drug trade. Their position is that the cross-border drug trade avoids normal medical

and health controls that require patients to be examined by a physician before a prescription is issued. They also argue that the trade could trigger shortages of critically important medicines in Canada (Rx&D, 2003).

The national trade association representing Canada's generic companies, the Canadian Generic Pharmaceutical Association (CGPA) does not post a public statement of their position regarding the cross-border resale drug trade on their website. However, the CGPA does post their position on export restrictions in general, saying the association believes it "deserves the right to export pharmaceutical products to any countries where a product does not have patent protection and that the laws of a country where a product is being used should govern whether or not Canadian companies are allowed to sell it there" (CGPA, 2005).

### **American pharmaceutical industry**

In the United States, the Pharmaceutical Research and Manufacturers of America (PhRMA), representing the leading research-based pharmaceutical and biotechnology companies in the United States opposes the reimportation of drugs from Canada. According to PhRMA, reimportation of pharmaceuticals creates real risks for American patients while providing no guarantee of cheaper pricing. PhRMA's position is that Federal laws banning reimportation reflect documented apprehension about the safety of imported drugs and the probability that many such drugs will be unapproved, adulterated, contaminated, or counterfeit. PhRMA's alternative solution is the expansion of drug insurance coverage for seniors under the new 2006 Medicare prescription drug benefit (PhRMA, 2005).

The US Generic Pharmaceutical Association (GPhA) is also against the reimportation of drugs that have not been under continuous supervision for safety by the FDA (GPhA, 2004).

### **Canadian retail pharmacies**

The Canadian International Pharmacy Association (CIPA), a lobby group for online pharmacies based in Winnipeg, obviously supports the cross-border trade. CIPA's 35 member companies account for 80% of the cross-border Internet drug trade to the United States (Associated Press, 2004). CIPA is opposed to a proposal from former Canadian Health Minister Ujjal Dosanjh to require doctors facilitating the Internet pharmacy business by co-signing American prescriptions without seeing patients to conform to Canadian standards and only sign prescriptions for patients they have personally examined (CIPA, 2005).

The Canadian Pharmacists Association (CPhA), a national organization of mostly brick-and-mortar retail pharmacists, opposes the parallel drug trade due to concerns over the negative impact of this trade on Canadians, including many factors such as access to quality care, access to prescription drugs, and the threat to drug prices in Canada. CPhA also opposes the practice of co-signing prescriptions (CPhA, 2004).

In 2003, community pharmacists in Manitoba established the Coalition for Manitoba Pharmacy. Their main concern is the potential impact of the rapid growth of the parallel drug trade on Manitoba health care and access to medicines in Canada. The group is especially concerned about the prospects of state governments using Canadian pharmacies to source the bulk purchase of drugs (CNW Group, 2005).

### **American retail pharmacies**

The National Association of Chain Drug Stores opposes the cross-border resale drug trade. Position statements of the organization indicate opposition to the cross-border trade both at the bulk and personal importation level (NACDS, 2004).

### **Canadian seniors organizations and other special-interest advocacy groups**

In Canada, there are numerous special-interest groups endorsing the call for a ban on the cross-border drug trade. These include: The Canadian Treatment Action Council, CARP—Canada's Association for the Fifty-Plus, Canadian Pharmacists Association, Best Medicines Coalition, The Arthritis Society, Canadian Breast Cancer Network, Arthritis Consumer Experts, Canadian Hepatitis C Network, HepCURE, Canadian Arthritis Patient Alliance, Consumer Advocare Network, Manitoba Society of Seniors and the Coalition for Manitoba Pharmacy. In a joint statement, these groups asked the federal government to act immediately to end exports of prescription drugs. They also called on provincial regulatory bodies for pharmacists and physicians to monitor and, where necessary, discipline those members who are engaged in the cross-border Internet drug trade (CARP, 2005).

### **American seniors organizations and other special-interest advocacy groups**

The Internet drug trade is largely driven by demand from American seniors as evidenced by the existence of groups like the Minnesota Senior Federation that encourage American seniors to buy drugs in Canada and lobby

American legislators to permit cross-border sales (Graczyk, 2004). Major supporters of the reimportation of prescription drugs to the United States include both the Alliance for Retired Americans (AARA) (Alliance for Retired Americans, 2005) and the American Association of Retired Persons (AARP) (AARP, 2004). These groups take the view that the cross-border trade is a safe and effective method of providing low-cost prescription drugs to American seniors who cannot afford US prices, but consider it a temporary solution.

#### **Canadian health professionals and associations**

Media releases in March and June of 2005, co-sponsored by the Canadian Medical Association, Canadian Medical Protective Association, Canadian Pharmacists Association, The Federation of Medical Regulatory Authorities of Canada, and the National Association of Pharmacy Regulatory Authorities have indicated that these groups are opposed to the cross-border resale drug trade. The main concerns of these groups are protecting Canada's drug supply, ensuring the safety of drug distribution, and ethical and safety-based worries about the practice of co-signing of prescriptions. The Colleges of Physicians and Surgeons in British Columbia, Saskatchewan, Manitoba, and Ontario are also opposed to the Internet pharmacy industry's reliance on prescription co-signing and have censured and fined doctors engaging in the practice.

The National Association of Pharmacy Regulatory Authorities (NAPRA), an umbrella association representing the members of 11 Pharmacy Regulatory Authorities (PRAs), oppose the resale of Canadian pharmaceutical products to Americans. The NAPRA wants to enforce a ban on exporting drugs via Internet sales until governments can implement systems to regulate the trade effectively (Pharmacy Post News, 2004).

#### **American health professionals and associations**

The American Medical Association (AMA), an advocate group for physicians and their patients, firmly believes that online pharmacies create threats to public health. However, the AMA is supporting prescription drug reimportation as a way to help reduce drug prices. According to AMA's policy on the issue, the association will support legalizing the importation of prescription drug products by wholesalers and pharmacies only if all drug products are approved by the Food and Drug Administration (FDA) and meet all other FDA regulatory requirements, pursuant to United States laws and regulations; the drug distribution chain is closed and all drug products are subject to reliable, electronic track and trace technology; and Congress grants

necessary additional authority and resources to the FDA to ensure the authenticity and integrity of prescription drugs that are imported. The AMA is opposed to personal importation of prescription drugs via the Internet until patient safety can be assured (AMA, 2005).

The National Association of Boards of Pharmacy (NABP) supports the resale of pharmaceutical products from Canada to Americans. In response to public concern over the safety and conduct of Internet pharmacies, NABP developed the Verified Internet Pharmacy Practice Sites (VIPPS) program. The VIPPS program is a voluntary certification program available to Internet pharmacies. Through VIPPS, members of the public are provided with a means to assure themselves that the Internet pharmacy they choose is a bona fide, fully licensed, facility exercising competent Internet/interstate pharmacy practices. (NABP, 2005). The Pharmacy Boards of many states, on the other hand, oppose the cross-border trade.

#### **First Nations**

The ability of governments to restrain the cross-border resale drug trade in either Canada or the United States is complicated by the existence of semi-autonomous First Nations' reserves. For instance, Maine and Minnesota are considering the possibility of re-importing drugs from Canada by using the First Nations Sovereign status as a loophole. In Maine, Governor John Baldacci (D) gave the Penobscot Indian Nation \$400,000 to build a warehouse and initiate a distribution program. In 2004, the governor requested a waiver from the US Department of Health and Human Services (HHS) to allow Maine residents to purchase their prescription drugs from Canada through the Penobscot Indian Nation (Gutknecht, 2005). US State governors have also discussed ways to facilitate the cross-border drug trade with provincial officials, reportedly offering to help build a casino and pharmacy on First Nation's territory close to where seniors travel in large numbers to local health facilities. First Nations' media sources have reported that one of the possibilities suggested was to build a pharmacy at the Seven Clans Casino in Thief River Falls to sell lower-priced prescription medications imported from Canada. According to the story, the joint Dakota Ojibwe Tribal Council already operates a pharmacy in Winnipeg licensed by the Manitoba Pharmacy Association (Miron, 2005).

Yellowhead Tribal Council (representing five First Nations groups in Alberta) is part of a broad coalition of special interests including seniors' and patients' groups that are allied in Canada to oppose the cross-border trade (CARP, 2005).

## Appendix A: Legislative history of cross-border drug trade in the United States, 2002 to September 2005

Jurisdiction	Bill	Allows cross-border drug trade?	Status of law	Sponsoring political party
<b>2002</b>				
Illinois	S. 812	✓		Democrat
Arizona	S. 812	✓		Republican
New Jersey	S. 772	✓		—
<b>2003</b>				
New Jersey	A 570			Democrat
New Jersey	S 2598			Democrat
Vermont	HR 847	✓		Independent
USA	HR 780	✓		Democrat
USA	HR 2497	✓		Independent
Maine	SP 380	✓		Republican
Michigan	HB 4289	✓		Democrat
Michigan	BH 4473	✓		Democrat
Michigan	SB 69	✓		Democrat
Vermont	JRS 17	✓		Democrat
USA	HR 2427	✓		Independent
USA	HR 2769	✓		Republican
District of Columbia	B15-569	✓		Republican
New York	A 9298	✓		Democrat
Vermont	S. 276	✓		Republican
Illinois	SB 1769	✓		Republican
Massachusetts	S 494	✓		Democrat
Rhode Island	HB 5478	✓		Democrat
Vermont	H. 56	✓		Democrat
Vermont	S. 103	✓		Democrat
Florida	SB 484	✓		Republican
Pennsylvania	HR 155			—
USA	HR 2629	✓		Democrat
Nevada	SB 337		Passed	Democrat
<b>2004</b>				
New Jersey	A 1645	✓		Republican
USA	S 2137	✓		—
USA	S 2307	✓		Republican
USA	S 2328	✓		Democrat
New Jersey	A 2439			Democrat
New Jersey	A 3289	✓		Democrat
New Jersey	S 1231	✓		Democrat
Massachusetts	S. 2400	✓		—
New Jersey	A 3289	✓		Democrat
Virginia	HJ 199	✓		Democrat

**Price Controls, Patents, and Cross-Border Internet Pharmacies**

Jurisdiction	Bill	Allows cross-border drug trade?	Status of law	Sponsoring political party
Wisconsin	SR 31	✓		Republican
California	SB 1149			Democrat
Louisiana	HB 894			Democrat
Tennessee	SR 158			Republican
Vermont	H. 502			Democrat
California	AJR. 61	✓		Democrat
California	SB 1144	✓		Democrat
California	SB 1333	✓		Democrat
California	SJR 25	✓		Democrat
Connecticut	SB 472	✓		—
Hawaii	HR 47	✓		—
Hawaii	SCR 27	✓		—
Idaho	HJM 16	✓		—
Illinois	HB 6787	✓		Republican
Illinois	HJR 56	✓		Democrat
Illinois	SB 2608	✓		Democrat
Illinois	SB 2609	✓		Democrat
Iowa	HSB 620	✓		—
Kentucky	SS-SB 7	✓		—
Massachusetts	H 4626	✓		—
Michigan	HB 5436	✓		Republican
Minnesota	HF 1998	✓		Democrat
Minnesota	SF 1966	✓		Democrat
Minnesota	HF 2293	✓		Democrat
Minnesota	HF 2697	✓		Republican
Missouri	SCR 28	✓		Democrat
Nebraska	LR 331	✓		Democrat
New Hampshire	SB 434	✓		Republican
Pennsylvania	HR 645	✓		Democrat
Rhode Island	H. 7199	✓		Democrat
Tennessee	HB 2173	✓		Democrat
Tennessee	SB 2545	✓		Democrat
Vermont	H. 728	✓		Democrat
Vermont	S. 288	✓		Democrat
Vermont	JRS 40	✓		Democrat
Virginia	HB 190	✓		Republican
Washington	HB 2469	✓		Democrat
Wisconsin	AB 785	✓		Republican
Wisconsin	AJR 71	✓		Democrat
Arizona	HM 2001	✓		Republican
California	AB 1957	✓		Democrat
Florida	HB 1347	✓		Democrat
Florida	S 3042	✓		Democrat
Hawaii	HB 1921	✓		Democrat
Hawaii	HCR 70	✓		—
Hawaii	HCR 80	✓		—
Hawaii	HCR 192	✓		—
Hawaii	HR 134	✓		—
Hawaii	SCR 125	✓		—
Hawaii	SR 63	✓		—
Hawaii	SB 2684	✓		Democrat
Hawaii	HCR 70	✓		—
Hawaii	SB 3045	✓		Democrat
Maryland	SB 167	✓		Democrat

**Price Controls, Patents, and Cross-Border Internet Pharmacies**

Jurisdiction	Bill	Allows cross-border drug trade?	Status of law	Sponsoring political party
Wisconsin	SJR 46	✓		Democrat
New Jersey	A 2439			Democrat
Michigan	HB 5732	✓		Democrat
Michigan	SB 1095	✓		Democrat
New Jersey	S 1231	✓		Democrat
Florida	HR 3710	✓		Democrat
USA	S 2493	✓		Republican
USA	HR 4790	✓		Democrat
USA	HR 4923	✓		Republican
Connecticut	SB 8	✓	Passed	Democrat
Mississippi	HB 1434	✓	Passed	—
Mississippi	0	✓	Passed	Democrat
Rhode Island	H. 7320	✓	Passed	Democrat
Rhode Island	S. 2160	✓	Passed	Democrat
Vermont	H. 768	✓	Passed	—
West Virginia	HB 4084	✓	Passed	Democrat

**2005**

USA	S 184			Republican
USA	HR 563	✓		Democrat
USA	HR 578	✓		Republican
USA	HR 700	✓		Republican
USA	HR 753			Republican
USA	HR 328	✓		Republican
USA	S 334	✓		Democrat
Tennessee	HB 1870	✓		Democrat
Washington	HB 1194	✓		Democrat
Connecticut	SB 45	✓		Democrat
Connecticut	SB 46	✓		Democrat
Connecticut	SB 126	✓		Democrat
Connecticut	SB 314	✓		Democrat
Connecticut	SB 1236	✓		—
Georgia	HB 887	✓		—
Hawaii	HR 139	✓		Democrat
Hawaii	HCR 187	✓		Democrat
Maryland	HB 65	✓		Democrat
Maryland	HB 231	✓		Democrat
Maryland	SB 742	✓		Democrat
Minnesota	HF 2117	✓		Republican
Minnesota	SF 1892	✓		Republican
Minnesota	SF 22	✓		Democrat
Missouri	HB 59	✓		—
Missouri	HB 859	✓		Republican
Montana	SB 310	✓		Republican
Nevada	AB 195	✓		Democrat
New Mexico	SJM. 8	✓		Democrat
Oklahoma	SB 544	✓		Democrat
Oklahoma	SB 977	✓		Democrat
Tennessee	HB 172	✓		Democrat
Tennessee	SB 841	✓		Democrat
Tennessee	HB 1096	✓		Democrat
Tennessee	SB 1112	✓		Democrat
Tennessee	SB 1989	✓		Democrat
Tennessee	HB 2021	✓		Democrat
Tennessee	SB 2134	✓		Democrat

## Price Controls, Patents, and Cross-Border Internet Pharmacies

Jurisdiction	Bill	Allows cross-border drug trade?	Status of law	Sponsoring political party
Texas	HB 173	✓		Democrat
Texas	SB 518	✓		Democrat
Texas	HB 3427	✓		Democrat
Texas	SB 601	✓		Democrat
Texas	HB 173	✓		Democrat
Texas	SB 518	✓		Democrat
Vermont	H 29	✓		Democrat
Virginia	HB 2005	✓		Democrat
Virginia	HB 2281	✓		Democrat
Virginia	HB 2348	✓		Republican
Virginia	HJR 632	✓		—
Virginia	HJR 718	✓		—
Virginia	SJR 391	✓		—
Virginia	SJR 411	✓		—
Virginia	HJR 683	✓		Republican
Virginia	SB 1246	✓		Democrat
Washington	HB 1316	✓		Democrat
Washington	HB 1884	✓		Democrat
Washington	SB 6020	✓		—
Colorado	HB 05-1152	✓		Democrat
Florida	SB 464	✓		Democrat
Florida	SB 2306	✓		Democrat
Montana	HB 364	✓		Republican
New Mexico	HB 601	✓		Democrat
California	AB 73	✓		Democrat
California	AB 74	✓		Democrat
Massachusetts	H 2748	✓		Democrat
Massachusetts	S 375	✓		Democrat
Massachusetts	S 400	✓		Democrat
Massachusetts	S 427	✓		Democrat
Ohio	SB 14	✓		Democrat
Oregon	SB 192	✓		Democrat
Pennsylvania	HB 613	✓		Republican
Pennsylvania	HB 715	✓		Democrat
Pennsylvania	HR 51	✓		Democrat
Pennsylvania	SR 43	✓		Democrat
Rhode Island	HB 5809	✓		Democrat
Rhode Island	SB 560	✓		Democrat
USA	S 109	✓		Republican
USA	S 16	✓		Democrat
Iowa	HF 610		Passed	—
Maine	HP 369/ LD 494	✓	Passed	Republican
Maine	SP 406/LD 1178 (LR50)	✓	Passed	Democrat
Maine	HP 923 / LD 1324	✓	Passed	Democrat
Nevada	SB 5	✓	Passed	Republican
Texas	SB 410	✓	Passed	—
Vermont	H 67	✓	Passed	—
Vermont	S 49	✓	Passed	—
Washington	HB 1168	✓	Passed	Democrat
Washington	SB 5470	✓	Passed	Democrat

## Appendix B: Efforts by American cities and counties to facilitate the cross-border drug trade

City	Position/Situation
<b>2003</b>	
Montgomery, AL	Allows its 4,100 city employees and retirees to buy drugs from Canada; about 300 to 400 participate. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
New York, NY	Mayor Bloomberg has added his name to the roster of leaders calling on the FDA to permit states and cities to import prescription drugs from Canada. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Pittsburgh, PA	Officials have expressed interest and asked State Rep. Don Walko to assist the city in reviewing its possible participation in program that involves buying drugs in Canada. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Portland, ME	Considering and exploring the importation of drugs from Canada. Health and Human Services Department, Office of Elder Affairs, sponsored a one-day event at City Hall, during which 25 senior citizens were instructed by city staff on how to order prescription drugs from a Canadian-based mail-order company via the internet. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
<b>2004</b>	
Anchorage, AK	Mayor Begich is moving forward with a proposal to import prescription drugs from Canada for city employees. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Buffalo, NY	Resolution to investigate the issue of importing drugs from Canada. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Burlington, VT	Information on city's official website, < <a href="http://www.ci.burlington.vt.us">www.ci.burlington.vt.us</a> >. Prescription drugs from Canada are available for city employees and retirees covered by the City Health Plan, BurlingtonMed program. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Columbia, SC	Mayor has created a personal website to direct local consumers to Canadian pharmacies; city council is considering a link on the city's official site. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Newton, MA	Discussing the possibility of including re-importation of drugs from Canada in City of Newton health plan. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Palm Beach, CA	County Commissioner reported on the elements of importing plans from various government entities. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Revere, MA	About 1,700 employees, retirees, and their dependants who are enrolled in the city self-insurance health plan can begin to participate in a program that will allow them to purchase drugs from Canada; program is called Revere RX Direct; city will waive co-payments for drugs purchased through CanAm Health Source, a Montreal-based company. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >

## Price Controls, Patents, and Cross-Border Internet Pharmacies

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River Fall, MA	Mayor Lambert announced a partnership with CanaRx Services to import prescription drugs to all residents and employees of the town. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Washington, DC	City's official website < <a href="http://www.dc.gov">www.dc.gov</a> > has link to Minnesota RxConnect. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Worcester, MA	Prescription drug purchasing plan for 9,000 people includes a limited option to buy medications from Canada. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >

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### 2005

Cambridge, MA	Exploring options on buying prescription drugs from Canada. < <a href="http://bernie.house.gov/documents/pharmbill/importation_announcement_10_20_03.htm">http://bernie.house.gov/documents/pharmbill/importation_announcement_10_20_03.htm</a> >
Somerville, MA	Exploring options on buying prescription drugs from Canada. < <a href="http://bernie.house.gov/documents/pharmbill/importation_announcement_10_20_03.htm">http://bernie.house.gov/documents/pharmbill/importation_announcement_10_20_03.htm</a> >
Wooster, MA	Exploring options on buying prescription drugs from Canada. < <a href="http://bernie.house.gov/documents/pharmbill/importation_announcement_10_20_03.htm">http://bernie.house.gov/documents/pharmbill/importation_announcement_10_20_03.htm</a> >

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### County

### Position / Situation

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### 2003

Caldwell County, NC	Passed resolution to encourage US government to allow US citizens to buy prescription drugs from Canada. Board of Commissioners asked the Human Resources director to research a Canadian prescription drug program. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Montgomery County, MD	Proposal to buy prescription drugs from Canada for county employees. Resolution No. 15-385 on securing lower-price prescription drugs for current and retired employees of county agencies. The resolution discussed the impact of the soaring price of prescription drugs and the arguments for and against enabling active employees and retirees to obtain these drugs from Canada. County Council voted to approve resolution to allow about 85,000 county employees, retirees, and their dependents to purchase drugs from Canada. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Westchester County, NY	Prescription drug plan includes a Canadian pharmacy option that allows residents to obtain medicines produced in America but sold at a significantly reduced rates in Canada. Program is open to all Westchester residents for an annual fee of \$15 for an individual and \$26 for a family. WestchesterRx is working with an intermediary that has relationships with various Canadian pharmacies. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >

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### 2004

Lake County, IN	Under a proposed drug program, county employees would send their prescriptions by mail to Sav-Rx, which could then fill them with Canadian drugs. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Miami-Dade County, FL	Resolution directing the county manager to conduct a feasibility study regarding the importation of Canadian prescription drugs for county employees and senior citizens. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Monroe County, NY	Under a proposal, county officials would contract with Ontario-based CanaRx Services to conduct an analysis. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Orange County, CA	County Supervisor proposes to buy prescription drugs from Canada. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >
Prince George's County, MD	County Executive Jack Johnson is reviewing the issue of importation. < <a href="http://www.gil.house.gov/issues/pdrugs/cityinfo.htm">http://www.gil.house.gov/issues/pdrugs/cityinfo.htm</a> >

### References

- Adams, Christopher P., and Van V. Brantner (2004). *Estimating the Costs of New Drug Development: Is It Really \$802m?* US Bureau of Economics, Federal Trade Commission.
- American Association of Retired Persons [AARP] (2004). Statement for the Senate Committee on Health, Education, Labor, and Pensions on Prescription Drug Importation Congressional Testimony (May 20, 2004). <<http://www.aarp.org/research/press-center/testimony/a2004-05-20-medicare.html>>.
- Alliance for Retired Americans (2005). *Drug Reimportation Basics*. <<http://www.retiredamericans.org/index.php?tg=articles&idx=More&topics=72&article=245>>.
- American Medical Association [AMA] (2005). *D-100.983 Prescription Drug Importation and Patient Safety*. <[http://www.ama-assn.org/apps/pf\\_new/pf\\_online?f\\_n=browse&doc=policyfiles/DIR/D-100.983.HTM](http://www.ama-assn.org/apps/pf_new/pf_online?f_n=browse&doc=policyfiles/DIR/D-100.983.HTM)>.
- Bank of Canada (2005). *CAN\$/US\$ Exchange Rate Look-up*. <<http://www.bankofcanada.ca/en/rates/exchange-look.html>>.
- BlueCross BlueShield Association [BCBS] (2005). *The Uninsured in America*. BCBS.
- Canadian Association of Retired Persons. [CARP] (2004). *Canada Must Stop Cross-border Exports* (October 18). <<http://www.carp.ca/display.cfm?documentID=1486&CabinetID=308&LibraryID=70&cityID=0>>.
- Canadian Generic Pharmaceutical Association [CGPA] (2005). *Export Restrictions*. <[http://www.cdma-acfpp.org/en/issues/export\\_restrictions.shtml](http://www.cdma-acfpp.org/en/issues/export_restrictions.shtml)>.
- Canadian Institute for Health Information [CIHI] (2004). *Drug Expenditure in Canada: 1985–2003*. CIHI.
- Canadian International Pharmacy Association [CIPA] (2005). *CIPA Discusses Consequences of Changes to Canadian Food and Drug Act*. News release (November 15). CNW Group.
- Clever, Linda Hawes, et al. (1997). “Additional Statements from the International Committee of Medical Journal Editors.” *Canadian Medical Association Journal* 156, 4: 571–74.
- CNW Group (2005). *Canadian Patients, Seniors, Pharmacists Request Meeting with U.S. Governors*. <<http://www.newswire.ca/en/releases/archive/February2005/08/c1696.html>>.
- Canadian Pharmacists Association [CPhA] (2004). *Position Statement on Cross-border Prescription Drug Trade*. <[http://www.pharmacists.ca/content/about\\_cpha/who\\_we\\_are/policy\\_position/policy.cfm?policy\\_id=1](http://www.pharmacists.ca/content/about_cpha/who_we_are/policy_position/policy.cfm?policy_id=1)>.
- Davidoff, Frank, et al. (2001). “Sponsorship, Authorship and Accountability.” *Canadian Medical Association Journal* 165, 6: 786–87.
- DiMasi, J.A., et al. (2002). “The Price of Innovation: New Estimates of Drug Development Costs.” *Journal of Health Economics* 22 (2003): 151–85.
- FDA News (2003). *FDA Takes Action against Companies That Are Importing Unapproved, Potentially Unsafe Drugs*. <<http://www.fda.gov/bbs/topics/NEWS/2003/NEW00939.html>>, as of July 28, 2005.
- Glass, Harold E., and Rosenthal, Bruce (2004). “Demographics, Practices, and Prescribing Characteristics of Physicians Who Are Early Adopters of New Drugs.” *Pharmacy and Therapeutics* 29, 11 (November).
- Generic Pharmaceutical Association [GPhA] (2004). *Importation: Americans Deserve Safety and Savings*. <<http://www.gphaonline.org>>.
- Graczyk, Lee, Legislative Director, Minnesota Senior Federation (2004). “Cost Issues and Supply from Online Pharmacies for Seniors.” Presented at the Conference for Online Pharmacists (March 24–25, 2004), Winnipeg Convention Centre, Winnipeg, Manitoba.
- Graham, John R. (2003). *Prescription Drug Prices in Canada and the United States—Part 4: Canadian Prescriptions for American Patients Are Not the Solution*. Public Policy Source 70. The Fraser Institute.
- Gutknecht, Gil (2005). “Prescription Drug State Information.” *Market Access for Prescription Drugs*. <<http://www.gil.house.gov/issues/pdrugs/stateinfo.htm>>, July 28, 2005.

- Hollis, A., and A. Anis (2004). *Rx for Canada: Close the Internet Pharmacies*. C.D. Howe Institute Commentary 205 (October). C.D. Howe Institute.
- IMS Health Incorporated (2005). Special data request.
- Ladas and Parry, LLP. (1994). *NAFTA and GATT Intellectual Property Issues*. Newsletter (December). <<http://www.ladas.com/BULLETTINS/1994/NAFTAGATT.html>>.
- Mays, J., and Brenner, M. (2004). *Estimates of Medicare Beneficiaries' Out-of-Pocket Drug Spending in 2006*. Actuarial Research Corporation and the Kaiser Family Foundation.
- National Association of Boards of Pharmacy [NABP] (2004). *Verified Internet Pharmacy Practice Sites Program and PayPal® Information*. <<http://www.nabp.net/>>.
- National Association of Chain Drug Stores [NACDS] (2004). *Commercial Importation of Pharmaceuticals*. Issue Brief (November). <[http://www.nacds.org/user-assets/pdfs/gov\\_affairs/issuebriefs/ImportationCommercialNovember2004.pdf](http://www.nacds.org/user-assets/pdfs/gov_affairs/issuebriefs/ImportationCommercialNovember2004.pdf)>.
- National Association of Chain Drug Stores [NACDS] (2004). *Illegal Personal Importation of Pharmaceuticals from Foreign Countries*. Issue Brief (November). <[http://www.nacds.org/user-assets/pdfs/gov\\_affairs/issuebriefs/ImportationPersonalNovember2004.pdf](http://www.nacds.org/user-assets/pdfs/gov_affairs/issuebriefs/ImportationPersonalNovember2004.pdf)>.
- National Conference of State Legislatures (2005). *2005 Prescription Drug State Legislation*. <<http://www.ncsl.org/programs/health/drugdisc05.htm>>.
- Parloff, Roger (2005). "Pharmaceuticals: The New Drugs War". CNNMoney.com—Fortune. <<http://www.fortune.com>>.
- Patented Medicine Prices Review Board [PMPRB] (2002) *Annual Report*. Government of Canada.
- Patented Medicine Prices Review Board [PMPRB] (2003) *Annual Report*. Government of Canada.
- Patented Medicine Prices Review Board [PMPRB] (2004) *Annual Report*. Government of Canada.
- Pharmaceutical Research and Manufacturers of America [PhRMA] (2005). *Reimportation: Overview*. <<http://www.phrma.org/issues/reimportation/>>.
- Raymer, E. (2004). *Forum Tackles International Pharmacy Issues*. Pharmacy Post News (April). <[http://www.napra.org/pdfs/news/pharmacypostnews/2004april/forum\\_tackles\\_international\\_pharmacy\\_issues.pdf](http://www.napra.org/pdfs/news/pharmacypostnews/2004april/forum_tackles_international_pharmacy_issues.pdf)>.
- Miron, Molly (2005). "Red Lake, Canadian First Nations Hold Historic Gathering." *Red Lake Net News*. <<http://www.rlnn.com/ArtFeb05/RLMeetCanadians.html>>, July 28, 2005.
- Rx&D [Canada's Research Based Pharmaceutical Companies] (2003). *Internet Pharmacies—A Risk to Public Health*. <[http://www.canadapharma.org/Industry\\_Publications/Fact\\_Sheets/Internet\\_Pharmacies-Core-English.pdf](http://www.canadapharma.org/Industry_Publications/Fact_Sheets/Internet_Pharmacies-Core-English.pdf)>.
- Skinner, Brett J. (2005). *Canada's Drug Price Paradox: The Unexpected Losses Caused by Government Interference in Pharmaceutical Markets*. Fraser Institute Digital Publication (February). The Fraser Institute.
- Stagnitti, M.N. (2005). *The Top Five Therapeutic Classes of Outpatient Prescription Drugs, by Total Expenses for the Elderly and Near Elderly in the U.S. Civilian Noninstitutionalized Population, 2002*. Statistical Brief 91 (July). Agency for Healthcare Research and Quality. <<http://www.meps.ahrq.gov/papers/st91/stat91.pdf>>.
- Statistics Canada (2005). CANSIM, table (for fee) 051-0001. Last modified: October 27, 2005.
- US Bureau of Labor Statistics (2004). *Data Series ID: WPU0638*. US Department of Labor.
- US Census Bureau (2004). *United States: 2004 American Community Survey*. <[http://factfinder.census.gov/servlet/ACS-SAFFFacts?\\_event=&geo\\_id=01000US&\\_geoContext=01000US&\\_street=&\\_county=&\\_cityTown=&\\_state=&\\_zip=&\\_lang=en&\\_sse=on&ActiveGeoDiv=&\\_useEV=&pctxt=fph&pgsl=010](http://factfinder.census.gov/servlet/ACS-SAFFFacts?_event=&geo_id=01000US&_geoContext=01000US&_street=&_county=&_cityTown=&_state=&_zip=&_lang=en&_sse=on&ActiveGeoDiv=&_useEV=&pctxt=fph&pgsl=010)>.
- U.S. Census Bureau (2005). "Table HI05. Health Insurance Coverage Status and Type of Coverage by State and Age for All People: 2004." *CPS [Current Population Survey] 2005 Annual Social and Economic Supplement*. <<http://pubdb3.census.gov/macro/032005/health/toc.htm>>.
- U.S. Census Bureau, Population Division (2005). "Table 2: Annual Estimates of the Population by Selected Age Groups and Sex for the United States: April 1, 2000 to July 1, 2004" (NC-EST2004-02) (June 9).
- US Congressional Budget Office. (2004) *A Detailed Description of CBO's Cost Estimate for the Medicare Prescription Drug Benefit*. Congress of the United States.
- Woodend, K., et al. (2004). *Administrative Burden on Canadian Pharmacists Due to Drug Shortages*. Canadian Pharmacists' Association (CPA).
- World Trade Organization [WTO] (2005). *World Trade Agreement 1994: Trade-Related Aspects of Intellectual Property Rights*. <[http://www.wto.org/english/res\\_e/booksp\\_e/analytic\\_index\\_e/trips\\_03\\_e.htm#article51A](http://www.wto.org/english/res_e/booksp_e/analytic_index_e/trips_03_e.htm#article51A)>.

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