

# The Drivers of Overspending on Prescription Drugs in Quebec

## Les moteurs du gonflement des dépenses pour les médicaments sur ordonnance au Québec



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### Abstract

According to data from the most recent edition of the *Canadian Rx Atlas*, Quebec was the province with the highest total spending per capita on prescription drugs. The difference between Quebec and the rest of Canada was 35%, which translates into \$1.5 billion dollars of extra spending. This analysis explores the economic cost drivers of the higher level of pharmaceutical spending in Quebec. While much of the additional spending was driven by a higher volume of drugs being prescribed overall, the factors contributing to higher spending differed greatly within particular therapeutic categories. The results and their implications are discussed in the context of pharmaceutical policy environment.

### Résumé

Selon les données présentées dans la dernière édition du *Canadian Rx Atlas*, le Québec est la province où l'on observe le total des dépenses par personne le plus élevé pour les médicaments sur ordonnance. La différence entre le Québec et le reste du Canada est de 35 %, ce qui équivaut à 1,5 milliards de dollars de dépenses supplémentaires. Cette analyse explore les

inducteurs économiques de coût du plus haut niveau de dépense en produits pharmaceutiques au Québec. Alors que la plupart des dépenses supplémentaires sont induites par un plus grand volume de médicaments prescrits, les facteurs qui contribuent au gonflement des dépenses diffèrent grandement selon les catégories pharmaceutiques. Les résultats et leurs répercussions sont discutés dans le contexte propre aux politiques sur les produits pharmaceutiques.

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**T**HE RECENTLY PUBLISHED *CANADIAN Rx ATLAS* DOCUMENTED VAST PROVINCIAL variations in prescription drug spending (Morgan et al. 2013b). Retail spending per capita on prescription drugs was the highest in Quebec, at 35% above the rest of Canada. As prescription drugs make up one of the largest components of healthcare spending, important questions arise as to why so much more is spent on them in Quebec.

Because average levels of prescription drug use and cost increase as people age, provincial differences in population age might explain some of the difference in prescription drug spending. However, Quebec's population is only slightly older than the Canadian average (per cent of individuals 65 years or older is 16.2 in Quebec and 14.4 in the rest of Canada); the difference in population age alone would only translate into a difference in per capita spending of about 5%, leaving 30% still to be explained (Statistics Canada 2012).

To put that 30% difference in perspective, Quebecers spent \$187 per capita more on prescription drugs than other Canadians in 2012/2013. This translates into a price tag of \$1.5 billion dollars of additional money spent than otherwise would be the case if per capita spending in Quebec were equal to that for the rest of Canada. The \$1.5 billion dollar figure is considerable, given that Quebec's total annual prescription drug retail spending was \$6.6 billion.

Another plausible explanation for the higher level of spending might be the health status of the population. Yet Quebec does not stand out either as the sickest or the healthiest population in Canada – generally, their disease rates and health behaviours are comparable to or better than residents of other provinces (INESSS 2013).

If age and health status are unlikely candidates, what drives the extra spending in Quebec? This analysis explores the economic cost drivers of prescription drug spending in the historical context of pharmaceutical policy developments.

## Data and Analysis

The data used for this study are derived from data obtained under license from IMS Brogan (IMS Health Canada Inc.). We obtained retail sales volumes for every province from the IMS CompuScript database. We obtained population estimates from Statistics Canada. Sales information from IMS pertains to total retail sales, including all markups and pharmacists' fees. Our analysis does not include drugs sold over the counter, diagnostic agents (e.g. glucose test strips) and devices.

For analysis of provincial variation, we computed the impact of six age-standardized pharmaceutical cost drivers that fall into three broad categories: volume effects, therapeutic choice effects and price effects.

Volume effects relate to the absolute amount of drug therapy received by a population. They are a function of the prescription volume – per capita volume of prescriptions received – and prescription size, the average amount of drug per prescription.

Therapeutic choice effects relate to the average selection of general and specific types of drug per course of treatment. They include choices from both the broad drug classes and from specific drug types within a particular drug class.

Price effects reflect both the use of generics and price paid. Generic use is the average savings generated from using a generic drug as opposed to the brand name alternative. This is influenced by the availability of generics, the relative price of generics versus brands and the extent to which generics are selected when available. The price paid reflects the average price paid per unit of a given brand or generic drug product.

The impacts of cost drivers were computed as per the methods described in the *Canadian Rx Atlas*, which presented impacts in terms of percentage differences in per capita spending between each province and the rest of Canada. Here, we compute the total value of these differences for Quebec by multiplying differences in per capita spending by Quebec's total population.

## Results

Table 1 breaks down the extra \$1.5 billion dollars spent on prescription drugs in Quebec by cost driver, for all drugs and for select therapeutic categories. Overall, much of the additional spending in Quebec was driven by a higher volume of drugs purchased. Higher per capita volumes of prescription drugs purchased were enough to increase spending in Quebec by \$1.2 billion relative to what it would have been at averages observed in the rest of Canada.

Averaged across all drug classes, the types of drugs chosen for Quebecers were slightly less costly than the choices made for other Canadians. Although this held overall, there were a number of therapeutic categories where Quebecers were prescribed more expensive treatment options. In those cases, they were prescribed a more expensive drug within a particular sub-class as opposed to a drug from a different sub-class. For example, it may not be common knowledge that esomeprazole – a proton pump inhibitor used to treat gastrointestinal disorders – costs three times as much as another proton pump inhibitor, pantoprazole, even though both are similar in terms of their therapeutic efficacy (INESSS 2013).

**TABLE 1.** Drivers of the difference in total spending on prescription drugs between Quebec and the rest of Canada, 2012/2013

Therapeutic category	% difference in spending per capita in QC vs. the rest of Canada*	Total extra spending in QC as a result, \$ millions	Driver contribution to difference in spending, \$ millions (% total)		
			Higher volume prescribed	More expensive drugs chosen	Higher prices paid
All drugs	30	1,508.8	1,200.3 (80)	-79.3 (-5)	387.8 (26)
Top seven categories where QC spends more					
Antihypertensives	34	180.5	19.4 (11)	17.4 (10)	143.7 (80)
Cholesterol-lowering drugs	46	165.0	76.9 (47)	38.6 (23)	49.5 (30)
Acid-reducing drugs	50	134.4	9.0 (7)	90.6 (67)	34.9 (26)
Gabapentin and pregabalin	118	87.0	29.6 (34)	56.1 (64)	1.3 (1)
Antipsychotics	60	83.3	78.1 (94)	1.1 (1)	4.1 (5)
Drugs for ADHD	106	72.1	65.3 (91)	6.8 (9)	0.01 (0)
Drugs for respiratory conditions	22	67.5	48.6 (72)	34.6 (51)	-15.8 (-23)
Categories where QC spends less					
Insulins	-24	(32.9)**	-17.4 (53)	-7.6 (23)	-8.0 (24)
Opioids	-37	(68.8)**	-88.0 (-128)	4.1 (6)	15.1 (22)

\* Age-standardized; \*\* Savings.

ADHD = attention deficit hyperactivity disorder; QC = Quebec.

Source: Morgan et al. 2013b.

Quebecers paid higher average prices than would have been paid in the rest of Canada. While this was partially a result of higher unit prices for specific brand or generic drugs, an important driver of this is the difference in average length of prescriptions in Quebec versus the rest of Canada: across all drug classes, prescriptions in Quebec were for approximately half as many days of therapy as were prescriptions in the rest of Canada (Table 2).

In addition to higher unit costs, higher average prices in Quebec also reflect lower generic substitution rates relative to the rest of Canada. Overall and in most therapeutic categories, the share of total spending that went to generics as opposed to brand name drugs was higher in the rest of Canada. The most extreme example is antiplatelet drugs, with Quebec spending only 32% on generics in this category compared with 65% spending on generics for the rest of Canada.

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**TABLE 2.** Average length of prescriptions across provinces in Canada, all drugs and top three categories where Quebec spends more, 2012/2013

Province	Estimated average days of treatment per prescription (days)			
	All drugs	Antihypertensives	Cholesterol-lowering drugs	Acid-reducing drugs
British Columbia	44	79	63	48
Alberta	46	79	73	53
Saskatchewan	36	46	39	37
Manitoba	39	59	56	41
Ontario	41	65	61	44
<b>Quebec</b>	<b>20</b>	<b>26</b>	<b>29</b>	<b>24</b>
New Brunswick	47	79	75	56
Nova Scotia	51	74	75	60
Prince Edward Island	48	84	58	47
Newfoundland	50	76	70	54

Source: *Canadian Rx Atlas*, 3rd edition

The magnitude of higher spending in Quebec and factors contributing to it were not the same across drug classes. As can be seen in Table 1, Quebecers spent considerably more than the rest of Canada on classes of commonly prescribed drugs. For example, Quebecers spent significantly more on medications for cardiovascular disease, which are the largest therapeutic categories in terms of prescription rates and average spending per capita in Canada. For antihypertensives, Quebecers spent more in large part because they paid higher unit prices and therefore had the highest cost per day of treatment compared to all other provinces. For cholesterol-lowering drugs, higher spending reflected more drugs being prescribed, more expensive drugs being chosen and higher prices being paid.

Differences in average spending per capita on some less commonly prescribed classes of medicines were even greater. For example, for drugs used for attention deficit hyperactivity disorder (ADHD) and neuropathic pain (gabapentin and pregabalin), spending per capita in Quebec was more than double the level in the rest of Canada.

### Discussion

Prescription drugs spending per capita is far higher in Quebec than in the rest of Canada, and this is largely because Quebecers purchase more prescriptions and pay higher prices for the medicines they use. These differences may have as much to do with policy and practice variations than with health needs of the population. For example, the shorter prescription length in Quebec – typically, one month in length as opposed to the customary three months elsewhere

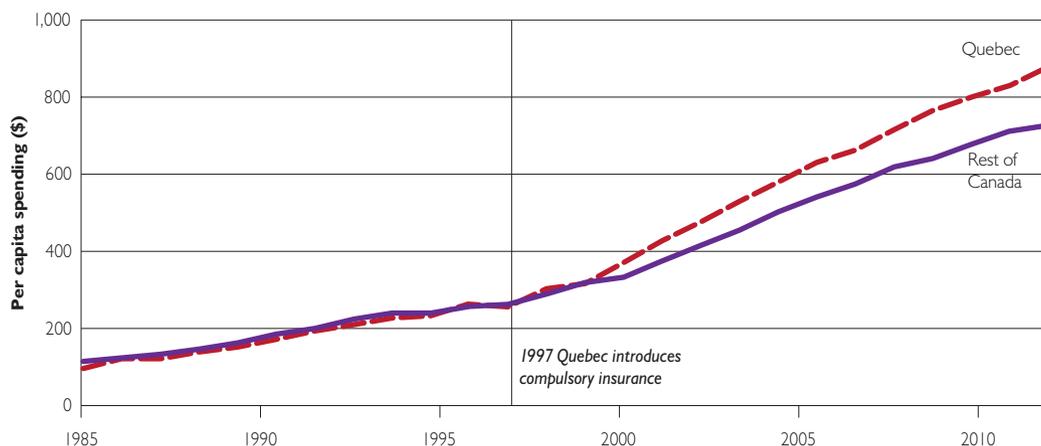
in Canada – adversely affects population spending. As unit prices include pharmacy fees, for a three-month supply of a particular drug, Quebecers pay a pharmacist fee three times, compared to once for other Canadians.

Similarly, the lower use of generics in Quebec can be partly explained by the unique-in-Canada “15-year rule.” To incentivize the pharmaceutical industry to do business in Quebec, this legislation was introduced in 1994 and allows brand name drugs to qualify for reimbursement for 15 years after inclusion on the provincial formulary, even if their patent expires and the generic version becomes available on the market. This in turn provides two to five additional years of patent protection (Gagnon 2011; Paris and Docteur 2006). However, in an attempt to control prescription drug costs, the government recently abolished the 15-year rule as part of the 2013/2014 budget (Marceau 2012).

Finally, the higher overall use of prescription drugs in Quebec versus the rest of Canada may, in part, be explained by the introduction of Quebec’s compulsory drug insurance program in 1997, the first and still the only one of its kind in Canada. It requires all residents of Quebec to have drug insurance coverage, either privately through group insurance or employee benefit plans, or, if they are not eligible for a private plan, through Quebec’s public health insurance agency, RAMQ. As Figure 1 illustrates, the effect of this legislation appears observable in longer-term trends in total prescription spending in Quebec and the rest of Canada (CIHI 2013).

The finding of higher spending on drugs for ADHD is troubling: either Quebec is experiencing a significantly higher incidence of ADHD than the rest of Canada, or ADHD is being overdiagnosed, or it is being overtreated. Any of these scenarios is worrisome and warrants further investigation.

**FIGURE 1.** Total per capita spending on prescription drugs, Quebec and the rest of Canada, 1985–2012



Source: CIHI Drug Expenditure in Canada Report, 1985–2012

We also found that Quebecers are spending less than the rest of Canada on opioids, almost exclusively driven by a lower volume of drugs prescribed. This is significant for two reasons. First, Canada is the country with the second-highest level of opioid use in the world, and opioid-related issues of addiction, overdose and abuse are an important public health concern (Fischer and Argento 2012). Second, the key driver behind the lower spending in Quebec is volume, and particularly, the number of prescriptions given out is significantly lower than the rest of Canada. It is possible that other provinces may learn something from Quebec's clinical practice on prescription opioids.

In summary, there are a number of factors that contribute to Quebec's higher spending on prescription drugs, and the importance of each differs substantially depending on the drug class. However, in one way or another, higher volumes of drugs prescribed, more expensive treatment options chosen by prescribers, higher unit prices and lower use of available generics all contribute to the additional \$1.5 billion annual price tag. It remains to be seen if the elimination of the 15-year rule will have a significant impact on Quebec's prescription drug spending.

In all likelihood, further policy options will be required, with the objectives of lowering unit drug prices and encouraging physicians to prescribe only what is necessary and opt for more cost-effective options. But this will be challenging: with a mixed public/private payer system, the government has a limited arsenal of effective cost-control mechanisms at its disposal (Morgan et al. 2013a; Gagnon 2014). Structural inefficiencies created by the mixed funding model – including a dramatic weakening of purchasing power and negotiating power for product listing agreements – are difficult to overcome in the current environment.

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