

Addressing cost-related barriers to prescription drug use in Canada

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In a recent randomized trial, Choudhry and colleagues¹ showed that patients randomly assigned to receive full insurance coverage of their medications prescribed after myocardial infarction had lower rates of major vascular events and improved adherence compared with patients who had copayments. These findings have heightened the awareness of the potential negative impact of patient-borne expenses for prescription drugs on treatment access and outcomes. This concern was raised at the Canadian Medical Association's 2012 annual general meeting, which addressed the issue of health inequities.² The issue is particularly relevant in Canada, because prescription drugs are not considered "essential" therapy under medicare and therefore are not covered for many patients. In this article, we examine drug expenses as a barrier to outpatient prescription medications and the consequences of this from the patient's perspective. We discuss the multiple players who influence patient-related drug expenses and suggest changes to minimize inequity in drug access.

Drug expenses are a barrier to appropriate therapy

In Canada, drug expenses are borne by patients, publicly funded provincial/territorial or federal drug plans and private insurers. Cost-related non-adherence is an important issue, reported by 9.6% of the respondents to the 2007 Canada Community Health Survey who received a prescription and by 20.4% of respondents from low-income

households.³ In a survey of Canadians who had one or more of hypertension, diabetes or cardiovascular disease, 14% reported having no drug insurance.⁴ Even those with insurance may face difficulty affording medications, because most systems require copayments in part to lower expenses for the insurer. After copayments were introduced in the province of Quebec, the number of prescription drugs used per day decreased by 9% among older people and by 16% among those receiving social assistance; these reductions were associated with an increased rate of emergency department visits by 14.2 and 54.2 events per 10 000 person-months respectively.⁵

Who influences drug prices?

Federal government

The control of prescription drug prices starts with the federal government and the independent body it established in 1987 — the Patented Medicine Prices Review Board of Canada. The board regulates prices of prescription and nonprescription patented drugs to ensure that they are not excessive. It does this by comparing a drug's price with the price at which it is sold in seven selected Organisation of Economic Co-operation and Development (OECD) countries (France, Germany, Italy, Sweden, Switzerland, the United Kingdom and the United States). In addition, a comparison is made with the prices at which other medicines in the same therapeutic class have been sold in the relevant Canadian market.

Although a reasonable first step in attempting to establish uniformity of Canadian patented drug prices and fairness on an international scale, the board's influence has been somewhat limited. First, the seven comparator countries have generally high medication prices, with 4 of them having the highest medication prices worldwide.⁶ Second, the Patented Medicine Prices Review Board does not regulate prices of generic drugs. Among the seven comparator countries, France and Britain's generic drug prices are 71% and 81%, respectively, relative to those in Canada,⁶ and only Switzerland has higher generic prices than Canada.⁷

KEY POINTS

- Patient-borne drug expenses are an important barrier to outpatient prescription medications.
- Drug coverage varies widely across Canadian provinces and territories, which results in inequity in drug access.
- Governments and prescribers can each influence patients' out-of-pocket drug expenses.
- Physicians should have a broad understanding of medication prices so that they can prescribe clinically effective, yet affordable and cost-effective medications.

Provincial/territorial governments

Drug formularies

Provincial and territorial governments in Canada have a direct influence on the provision of prescription drugs by establishing drug formularies, negotiating drug prices and legislating price ceilings for generic drugs. Within provincial/territorial drug plans, they also establish eligibility criteria and copayment levels, all factors that influence patients' out-of-pocket expenses.

Although provinces and territories have generous plans for residents receiving social assistance, where drug coverage is offered with low or no copayments, the "working poor" may not have the same benefits. In an analysis of the extent of drug coverage in Canada, Kapur and Basu found that households with an annual income of \$10 000–\$29 999 were 14%–31% less likely than those with an annual income of \$30 000–\$39 999 to have drug coverage.⁸ Demers and colleagues found wide variations in provincial drug plans across Canada.⁹ A single woman with an annual income of \$14 000 requiring only two prescription drugs, levothyroxine and atorvastatin, would pay anywhere from \$252 annually in British Columbia to more than \$800 in New Brunswick.^{9,10}

Generic and therapeutic substitutions

Most provincial and territorial governments provide incentives to use generic drugs. Benefit plans reimburse only the cost of generic alternatives. If the brand-name drug is desired, then the patient must pay the difference. British Columbia also allows for therapeutic substitutions, under a policy known as reference drug pricing. Within each group of medications deemed therapeutically interchangeable, only the price of the least expensive medication, or the "reference drug," is reimbursed. Despite initial concerns that this policy would result in a switch to less effective medications and increased noncompliance, a 2006 Cochrane review found no increase in adverse events or health care utilization.¹¹ However, the program has not expanded beyond the initial five medication classes owing to lobbying by the pharmaceutical industry, inconsistent evidence of sustainable health care savings and electoral politics.¹² Although policies for generic and therapeutic substitutions were created to decrease health care spending at a population level, they also result in lower out-of-pocket expenses for patients because less expensive drugs are favoured.

Generic-drug pricing

Provinces and territories have been actively trying to reduce generic drug prices. In 2010, Ontario mandated that generic drug prices be set at

no higher than 25% of the brand-name drug price. British Columbia and Alberta soon followed, by changing the maximum generic-drug price to 35% and 45% of the brand-name price, respectively.^{13,14} A promising development is collaboration among provinces and territories to collectively bulk buy generic medications to enhance bargaining power. As of April 2013, this has lowered the price of six generic drugs to 18% of the brand-name price.¹⁵

There have been concerns that excessive price controls may limit entry of new generic drugs to the market, if the retail price is below the cost of production,¹³ or result in drug shortages, as has been recently seen with the cancer drug cytarabine.¹⁶ These potential negative impacts must be weighed against the benefits of lowering provincial/territorial and individual expenses.

Limitations in bargaining power

Although drug purchasing and price negotiations with manufacturers are within the provincial/territorial jurisdiction, bargaining power is limited. Each jurisdiction is a relatively small market, and one jurisdiction's negotiations with drug manufacturers may undermine another's bargaining ability. For example, Quebec has legislated that, for generic drugs, a medication's sale price to its public drug plan must be lower than that paid by other provinces. This has created a price floor, whereby manufacturers are reluctant to offer other provinces lower prices than those in Quebec.⁶

Physicians

Physicians influence drug prices by not prescribing cost-effective medications. Physicians have a responsibility to be aware of the prices of the medications they prescribe. However, in a survey of 134 clinicians in an urban primary care centre, 80% stated they often felt unaware of the actual costs.¹⁷ In addition, a systematic review indicated that physicians consistently overestimated the cost of inexpensive drugs and underestimated the cost of more expensive ones.¹⁸

One example of the importance of knowing medication prices is in the treatment of heart failure. Current treatment guidelines recommend using one of the three β -blockers proven to reduce mortality (bisoprolol, carvedilol or sustained-release metoprolol succinate) in patients with systolic heart failure, without explicit guidance as to which β -blocker to use.¹⁹ Physicians may not recognize that, despite similarities in clinical efficacy, carvedilol (\$1.51 per day for 25 mg twice daily) is more than 3 times the cost of metoprolol (\$0.44 per day for 100 mg twice daily).²⁰

Another barrier is suboptimal physician–patient communication. In surveys of 133 gen-

Table 1: Barriers and proposed solutions to improve patient access to prescription drugs, and their anticipated effect on government expenses

Players	Current barriers to drug access	Currently active and proposed solutions	Anticipated immediate effect on government expenses
Federal government	Patented Medicine Prices Review Board regulates prices of patented drugs in Canada by comparing them with the prices at which they are sold in 7 comparator OECD countries (some of which have the highest drug prices worldwide) and with the prices of other medicines in the same therapeutic class sold in the relevant Canadian market ⁶	Change the comparator countries to include all OECD countries, or select a group of more diverse countries to better reflect true international market drug prices ⁶	Decrease
	No regulation of generic drug prices	Individual provinces and territories have taken on this role ^{13,14} by setting maximum generic prices at a percentage of the brand-name drug price	Decrease
		Alternatively, the mandate of the Patented Medicine Prices Review Board could be expanded to include regulation of generic drugs	Decrease
Provincial/territorial governments	Limited negotiation with pharmaceutical companies to lower prices of generic and brand-name drugs	In 2012, the premiers committed to work together to bulk buy generic drugs to enhance collective bargaining power ¹⁵	Decrease
		Alternatively, a national drug agency, with a single formulary, could negotiate drug prices more effectively	Overall decrease to both levels of government, but costs may shift to the federal level
	Variation in provincial/territorial drug plans and formularies, leading to inequity in drug access ^{9,10}	Create a national drug agency, universal drug plan and single formulary	Increase, especially at federal level
	Variation in drug coverage for the working poor, whose copayment levels are high relative to their income	Implement different copayment systems:	Increase
		<ul style="list-style-type: none"> • People with lower incomes could have lower copayments than those with higher incomes • Copayments for highly beneficial drugs could be waived or lowered to improve access to the most effective drugs^{1,23} 	Increase
Physicians	Lack of knowledge about drug prices ^{18,24}	<p>Improve physician knowledge of drug prices:</p> <ul style="list-style-type: none"> • Provide price information in the form of a manual,²⁵ prescription template²⁶ or electronic prescribing system²⁷ • Provide frequent feedback and reminders to be conscious of drug costs^{25,28} • Encourage “step-up therapy”: if different drugs have comparable clinical effectiveness, start with the least costly one 	Uncertain, although the costs of an effective educational intervention could be offset by cost savings in drug expenses
	No routine physician–patient communication on the financial impact of prescribed medications ²²	<p>Improve communication:</p> <ul style="list-style-type: none"> • Increase awareness that drug expenses are an important barrier to access and that patients want to discuss this issue²² • Provide easily accessible information on drug prices to physicians, as a reminder of the financial impact of patient-borne expenses 	Uncertain, although the costs of an effective intervention to improve communication could be offset by cost savings in drug expenses

Note: OECD = Organisation for Economic Co-operation and Development.

eral internists and 484 of their patients, 85% of the patients said they had never discussed the impact of drug prices with their doctor before receiving medications, despite a majority of patients indicating their wish to have such a conversation.²¹ Barriers included lack of time and physician perception of patient discomfort.²²

What are possible solutions?

Given the complexity of the problem, it is not surprising that improving drug affordability will require addressing several barriers at different levels. Table 1 summarizes the barriers at the federal, provincial/territorial and physician level, some proposed solutions and their likely impact on the government payer.

Change the Patented Medicine Prices Review Board's processes

Because the Patented Medicine Prices Review Board currently regulates prices of patented drugs relative to prices in countries with some of the highest drug prices worldwide, a simple change in the comparator countries used could result in lower prices in Canada.⁶ The role of this agency could also be expanded to regulate prices of generic drugs.

Create a national drug agency and program

The problems with current provincial/territorial drug plans and their inequities have long been recognized. The 1997 National Forum on Health, the 2002 Kirby Report and the 2002 Romanow Report^{29,30} all proposed the creation of a national drug agency to minimize disparity in drug coverage among provinces. Also, given the larger market, a single national drug agency would be more effective than individual provinces and territories in negotiating drug prices with pharmaceutical companies. France, Britain, Australia and New Zealand all have national pharmacare; their average prices of patented drugs range from 76% to 90%, and generic drugs from 23% to 83%, of the prices in Canada.⁶

A national drug agency would be well positioned to implement a universal drug program, where all Canadians would have access to some type of drug coverage. We acknowledge many barriers to a national drug plan. First among these is the upfront cost from increased use of prescription drugs, a volume effect estimated to be 10%.⁶ The government would also then be the single payer, rather than sharing expenditures with the private sector as it currently does at a 70%/30% split.³¹ However, concurrent changes such as elimination of private drug plans and

their generous tax subsidies could result in improved efficiency of health care spending and an estimated net savings of \$2.95 billion.⁶ There would be additional challenges, including the need to redefine federal and provincial/territorial roles in health care. Finally, some provinces and territories may have different views regarding which medications should be covered and to what extent; under a single drug plan, these different views could be accommodated by having a national minimum formulary that could be enhanced at a provincial/territorial level.

Change copayment systems

There are many methods of changing copayment systems to improve drug access. Table 1 highlights possible changes, including differential copayments based either on low income or on the clinical value of a medication. These proposed changes are different from the tiered copayment system commonly seen in the US, where tiers are set based on medication acquisition cost alone rather than on ability to pay or clinical value. The randomized controlled trial by Choudhry and colleagues of the effect of full coverage for preventive medications after myocardial infarction¹ is an example of establishing the level of cost sharing based on a drug's clinical benefit. Given that certain drugs are of high value, the intervention group had copayments waived, which resulted in better medication adherence (4%–6% points higher) than in the group who had copayments. Generalizability of these findings to other conditions requires further evaluation.

Educate physicians about drug-related expenses

To better educate physicians, multiple strategies have been used. Academic detailing,²⁵ provision of easily accessible price information,²⁶ implementation of a computerized prescribing system and integration of price information with evidence-based recommendations²⁷ have all been shown to lower medication expenses. Providing price information decreases patient-borne drug expenses by closing the gap in physician's knowledge of drug prices and by improving physician–patient communication in this area.²² Further information on the cost-effectiveness of these proposed interventions is required to inform policy.

Educating physicians on drug prices may be even more effective if the information were juxtaposed with information on drug efficacy. For example, tricyclic antidepressants and gabapentin are both effective in treating neuropathic pain.^{32,33} Gabapentin has not been shown to be superior, and it is 10 times more costly than tricyclic antidepressants. If physicians were aware

that similarly effective medications had vastly different prices, they may be more likely to start with a less expensive one first.

Conclusion

Patient-borne expenses for prescription drugs are an important issue and can have a negative impact on treatment access and outcomes. Without better drug coverage systems, Canadians do not have universal health coverage. As the 2012 Canadian Medical Association meeting so clearly delineated, physicians have a responsibility in championing equality of access to care.² Individually, physicians may be limited in their ability to create changes at the national and provincial/territorial levels, but they can do their part by gaining familiarity with drug prices to increase their awareness of the financial impact of their prescribing choices on patients.

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