

Self-monitoring of blood glucose: Impact of quantity limits on provincial costs

Background

- Self-monitoring of blood glucose (SMBG) for patients with diabetes on insulin therapy is considered an essential part of management. However, for most patients with type 2 diabetes not using insulin, frequent monitoring with blood glucose test strips (BGTS) is not considered clinically beneficial and may lead to decreased quality of life and well-being.
- In Ontario in 2013, the Ontario Public Drug Programs implemented a policy restricting blood glucose test strips that aligned with guidance from the Canadian Diabetes Association.
- Provincial governments across Canada (with the exception of Nova Scotia) have implemented blood glucose test strip quantity limits to encourage proper testing practices for optimal patient outcomes.
- In this study, the potential impact of BGTS quantity limits on utilization and costs was estimated for nine provinces in Canada and reported with previously published data for Ontario, British Columbia, and Quebec.

Quantity Limit Policy

The annual quantity limits modeled are as follows:

- Maximum of 3,000 strips for patients using insulin
- 400 strips for patients on oral antidiabetic drugs at increased risk for hypoglycemia (i.e., sulfonylureas, rapaglinide)
- 200 strips for all other patients with diabetes

How was this study conducted?

- Using data from 2014, a cross-sectional study among adults residing in six provinces across Canada (Alberta, Saskatchewan, Manitoba, Nova Scotia, Newfoundland and Labrador, Prince Edward Island) who were dispensed at least one prescription for BGTS that was reimbursed through a public drug program.
- Excluded jurisdictions included Quebec, New Brunswick and the Territories as data on BGTS dispensing and reimbursement was not available.

What did we find?

- In the six provinces studied, a total of \$38,051,026 was reimbursed through public drug programs for BGTS in 2014. It is estimated that with the introduction of quantity limits similar to those which were introduced in Ontario in 2013, an overall savings of \$4,631,849 (12.2%), annually, would be realized.
- In provinces where BGTS use is largely restricted to patients using insulin, the potential annual savings were minimal, ranging from 0.4% (Alberta, \$25,112 of \$7,178,925) to 2.3% (PEI, \$21,663 of \$935,278). However, in the other six provinces the potential savings associated with quantity limits ranged from 12.4% (\$863,070 of \$6,988,646 in Nova Scotia) to 19.8% (\$1,295,106 of \$6,540,569 in Newfoundland) in 2014.
- Additional studies have estimated the impact of introducing similar quantity limits in Ontario, British Columbia and Quebec. When considering all of this evidence together, the cost savings associated with the introduction of BGTS quantity limits by provincial drug programs among nine of the ten provinces across Canada (representing 97.6% of the overall Canadian population) is estimated to be \$60.7 million (19.8%), annually.

Key points

- Across nine provinces representing 97.6% of the population, a policy of quantity limits for BGTS that aligns with evidence around efficacy, optimal prescribing and patient safety can lead to considerable savings, with over \$60 million in savings anticipated annually.
- The impact of such a policy would differ among the provinces, depending on their current level of reimbursement for BGTS through their public drug programs.

Blood Glucose Test Strips Spending and Potential Savings by Province in 2014

Province	Actual Spending	Estimated Spending after Quantity Limits	Potential Cost Savings
Alberta	\$7,178,925	\$7,153,813	\$25,112
Manitoba	\$6,986,410	\$5,881,724	\$1,104,686
Newfoundland	\$6,540,569	\$5,245,463	\$1,295,106
Nova Scotia	\$6,988,646	\$6,125,576	\$863,070
Prince Edward Island	\$935,278	\$913,614	\$21,663
Saskatchewan	\$9,421,198	\$8,098,986	\$1,322,212
Québec ¹	\$103,882,787	\$83,937,599	\$19,945,188
Ontario ²	\$140,915,878	\$109,314,723	\$31,601,154
British Columbia ³	\$23,586,698	\$19,048,612	\$4,538,086
OVERALL	\$306,436,389	\$245,720,110	\$60,716,277

1. Data obtained from [INESSS. Avis sur les mesures relatives au remboursement des bandelettes, 2016.](#)
2. Data obtained from [Gomes T et al. Self-Monitoring of Blood Glucose Levels: Evaluating the Impact of a Policy of Quantity Limits on Test-Strip Use and Costs, 2016.](#)
3. Data obtained from [Gomes T et al. The impact of policies to reduce blood glucose test strip utilization and costs in Canada. Canadian Journal of Public Health, 2015.](#)
4. Data for all other provinces obtained from current publication: [Knowles S et al. Self-monitoring of blood glucose: Impact of quantity limits in public drug formularies on provincial costs across Canada. Canadian Journal of Diabetes, 2017.](#)