Reducing Cost Without Causing Patient Harm:

Blood Glucose Test Strip Quantity Limit Policy

ODPRN

Background

- Self-monitoring of blood glucose 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 of blood sugar levels using blood glucose test strips (BGTS) has not been found to be clinically beneficial and may lead to decreased quality of life and well-being.
- In 2012/13, BGTS were the second most expensive product reimbursed through the Ontario Public Drug Program costing the province $139 million that year. Given their high cost, as well as previous evidence suggesting no clinical benefit associated with frequent testing among non-insulin treated patients with type 2 diabetes, the routine use of BGTS among this population has been questioned.
- In 2013, Ontario was one of the first payers to introduce a policy limiting reimbursements for BGTS aligned with recommendations from the Canadian Diabetes Association. Following the implementation of this policy, annual provincial costs fell by more than 20% ($106 M to $86 M).
- Despite considerable cost savings, evidence is needed to understand the impact of this policy on patient outcomes among adults with diabetes in Ontario.

What were we investigating?

The impact of the BGTS quantity limit policy in 2013 on patient outcomes among adults with diabetes in Ontario.

Quantity Limit Policy

This policy includes the following maximum reimbursements:

Patients using insulin	Patients on oral antidiabetic drugs at increased risk for hypoglycemia	All other patients with diabetes
3,000 BGTS/year	400 BGTS/year	200 BGTS/year

How was the study conducted?

- We conducted a population-based, cross-sectional time series analysis of all individuals aged 19 years and older who were eligible for public drug coverage with a diagnosis of diabetes between April 2008 to March 2015 in Ontario, Canada.
- Patients were categorized by age group (<65 vs. ≥65 years) and their diabetes drug therapy: insulin, oral hypoglycemic-inducing agents, oral non-hypoglycemic-inducing agents, and no drug therapy.
- Primary outcomes were emergency department (ED) visits for hypoglycemia or hyperglycemia. A secondary outcome of mean HbA1c was also measured.
- A sensitivity analysis was conducted on a subgroup of high-volume BGTS users most likely to be affected by the quantity limit policy.

What did we find?

- The introduction of BGTS quantity limits led to no immediate significant changes on ED visits for hypoglycemia, hyperglycemia, or mean HbA1c in both age groups over the study period.
- Similarly, these findings were consistent when measured on the subgroup of high-volume BGTS users most likely to be impacted by the quantity limit policy.

Key points

- In 2013, Ontario introduced a policy limiting reimbursements for BGTS. This new policy appeared to have no immediate impact on the risk of hypoglycemia, hyperglycemia or blood sugar control (measured using mean HbA1c) among all patients, including the subgroup of high BGTS users who were more likely to be impacted by the policy.
- These quantity limits on BGTS produce considerable cost savings without jeopardizing patient safety. More research is required to measure the long-term impact of these changes on patient outcomes.

Recommendations

Policymakers and Clinicians

- The introduction of a BGTS quantity limit policy in Ontario has resulted in considerable cost savings without evidence of harm across several important patient outcomes. Other payers with high BGTS use may want to consider implementing similar restrictions.
- Further research is needed to assess the impact of these restrictions on long-term outcomes among this patient population.

Patients

- Talk to your doctor about an individualized plan for testing frequency based on factors such as current diabetes medications used, your level of blood glucose control and history of low blood glucose.
- If you currently use BGTS close to the maximum limits, consider whether testing less often is a manageable option for you.

For more information: www.odprn.ca @ODPRN_Research @ODPRNResearch

Gomes, T et al. The impact of blood glucose test strip quantity limit policy on patient outcomes in Ontario: A population-based study. JAMA Internal Medicine, 2016.