



Canadian Agency for
Drugs and Technologies
in Health

Reducing Blood Glucose Testing for Residents with Type 2 Diabetes in Long-term Care

Why should I consider implementing this quality evidence-informed initiative?

- Evidence-based recommendations help foster best practices in health care
- Results will benefit residents, families, staff, and facilities
- Success will trickle to other long-term care centres and influence change

What is the evidence?

- In 2009, the Canadian Agency for Drugs and Technologies in Health (CADTH) conducted a systematic review of the clinical and economic evidence supporting the optimal use of blood glucose test strips.
- Results of CADTH's clinical analysis:
 - Routine testing using blood glucose using strips in patients with type 2 diabetes who do not take any antidiabetes drugs did not result in clinically or statistically significant differences in glycemic control, as measured by haemoglobin A1C (WMD in A1C [95% CI] = -0.05% [-0.33, 0.23]).
 - Routine testing in patients who use non-insulin antidiabetes drugs (e.g., metformin) resulted in statistically significant, but clinically modest improvements (WMD in A1C [95% CI] = -0.25% [-0.36, -0.15]).
 - There was little or no evidence suggesting that routine testing improves patients' quality-of-life, satisfaction, body weight, long-term complications of diabetes, or mortality.
- Results of CADTH's cost-effectiveness analysis:
 - Routine testing was associated with an additional 0.02385 quality-adjusted life years (QALYs) and increased costs by \$2,711, resulting in an incremental cost-utility ratio (ICUR) of \$113,643 per QALY gained.
 - Routine testing in patients with type 2 diabetes who do not use insulin is not cost-effective.
- CADTH recommends that most adults with type 2 diabetes not using insulin do not require routine SMBG. Periodic testing may be indicated for select patients, such as those with unstable glucose levels, acute illness, changes to drug therapy, pregnancy, or those at high risk of hypoglycemia (e.g., using a sulfonylurea) or those in situations where hypoglycemia poses danger.

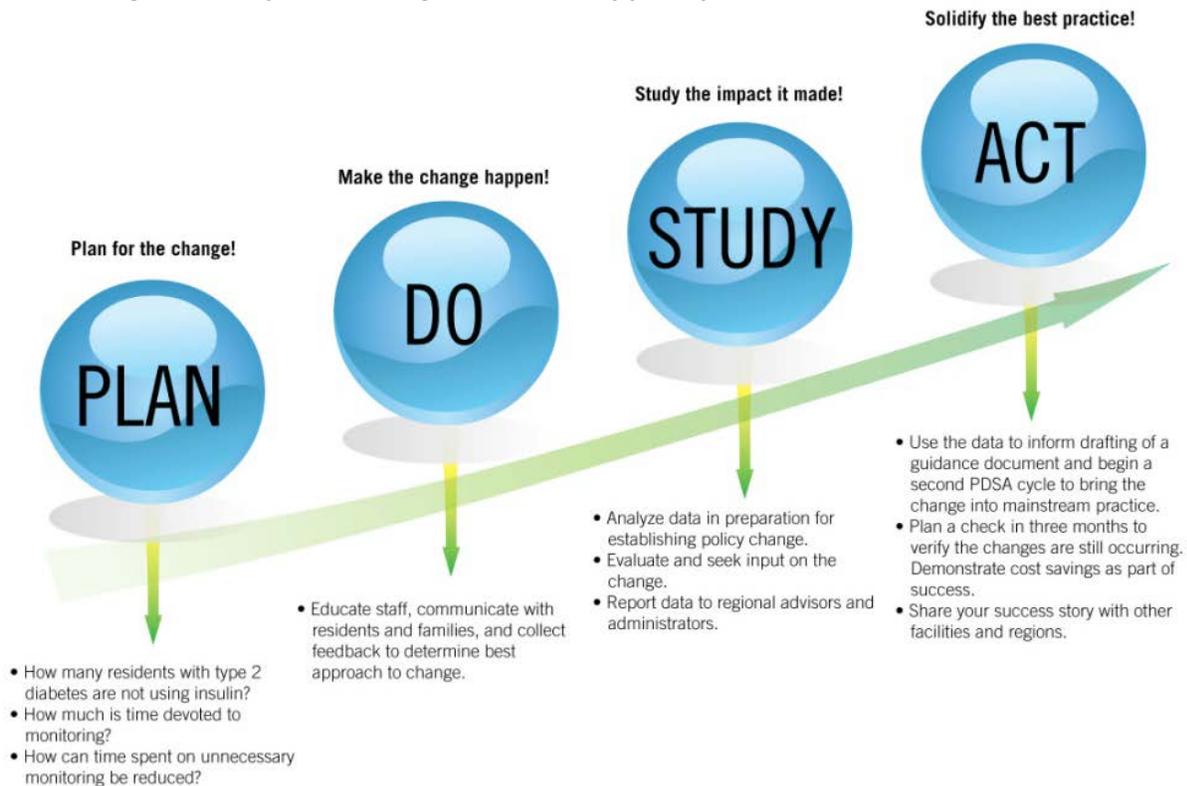


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What is the potential impact on residents, their families, and the health care system?

- If blood glucose testing practice changes to reflect the evidence, health care dollars will be saved, and patients and care givers will be able to focus on other, more effective diabetes self-management actions.
 - *Resident Benefits:* reduced out-of-pocket expenses, reduced pain, reduced inconvenience, reduced stress, reduced risk of infection, focus shifted to other activities
 - *Family Benefits:* reduced costs, knowledge that family member is being well taken care of without unnecessary blood glucose testing being imposed on him or her.
 - *System Benefits:* reduced strain on limited health care budget, saved time and resources that can be used to support more effective diabetes interventions.

How can I get started for this change to occur in my facility (s)?





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What are additional references, supporting information, or reading?

CADTH Reports

- [Summary](#) (nine-page synopsis of clinical reports)
- [Project in Brief](#) (one-page synopsis of clinical reports)

- [Gap Analysis and Key Messages](#)
- [Recommendations Report](#)
- [Current Practice Report](#)
- [Current Utilization Report](#)
- [Economic Report](#)
- [Clinical Report](#)
- [Project Protocol](#)

Tools for Health Care Professionals

- [Optimal Therapy Newsletter](#) — summary of key clinical messages on the prescribing and use of blood glucose test strips for self-monitoring of blood glucose, designed to support decision making by health care professionals
- Quick Reference Prescribing Aid — contains key messages and cost information about self-monitoring of blood glucose
 - [National](#)
 - [Alberta](#)
 - [British Columbia](#)
 - [Manitoba](#)
 - [Newfoundland and Labrador](#)
- [Clinical Flow Sheet](#) — a tool maintained in a patient's chart that is designed to help clinicians collect and organize individual patient data at each appointment, and detect trends in these data over time
- [Café Casebook](#) — the methodology and impact of a series of Café Scientifique events across Canada to exchange the knowledge generated by CADTH's study into self-monitoring of blood glucose (SMBG) by people with type 2 diabetes not using insulin
- [Using Evidence in the Real World](#) — a didactic presentation that provides a basic overview of evidence-based decision making, using CADTH's work on self-monitoring of blood glucose and insulin analogues as examples
- [Guide to Starting and Adjusting Insulin for Type 2 Diabetes](#) — a fold out information card providing health care professionals with guidance on how and when to start insulin
- [Interventions for Optimizing Therapy in Patients with Diabetes Mellitus: A Literature Review](#)



Tools for Patients

- [Residential Care Pamphlet on Self-Monitoring of Blood Glucose](#)
A readable, educational tool outlining key messages from CADTH's work on SMBG and tailored to the needs of family members and caregivers of those living in residential care.
- [Guide for Type 2 Diabetes and Monitoring Your Blood Sugar](#) — an easy-to-read pamphlet for people with type 2 diabetes who are not using insulin
- [Alternate Prescription Pad](#) — provides recommendations for patients with type 2 diabetes not using insulin, guidance on self-testing, and lifestyle tips for managing diabetes
- [Self-Management Action Plan](#) — a tool that supports diabetes self-management education, which a clinician and patient can use to identify, achieve, and maintain self-management goals

Published Articles

- [Self-Monitoring of Blood Glucose in Type 2 Diabetes](#) (*Therapeutics Letter Issue 81*, April-June 2011)
- [Self-Monitoring of Blood Glucose Levels in Persons with Type 2 Diabetes Not Requiring Insulin: Routine Use is Not Recommended](#) (Editorial Commentary, *Canadian Journal of Diabetes*, March 2011)
- [Perspectives and experiences of health care professionals and patients with diabetes regarding self-monitoring of blood glucose in Canada](#) (*Canadian Pharmacists Journal*, September 2010)
- [Efficacy of self-monitoring of blood glucose in patients with type 2 diabetes mellitus managed without insulin: a systematic review and meta-analysis](#) (*Open Medicine*, May 2010)
- [Utilization and Expenditure on Blood Glucose Test Strips in Canada](#) (*Canadian Journal of Diabetes*, March 2010)
- [Cost-effectiveness of self-monitoring of blood glucose in patients with type 2 diabetes](#) (*Canadian Medical Association Journal*, January 2010)

Citations and Other Key Publications

- [Self-monitoring of blood glucose in patients with type 2 diabetes mellitus who are not using insulin](#) (Cochrane Database Systematic Review; Jan 2012)
- [Self-Monitoring of Blood Glucose in People with Type 2 Diabetes: Canadian Diabetes Association Briefing Document for Healthcare Providers](#) (*Canadian Journal of Diabetes*; Sept 2011)
- [Self-Monitoring of Blood Glucose](#) (*British Columbia Ministry of Health*)
- [Self-Monitoring of Blood Glucose Levels in Persons with Type 2 Diabetes Not Requiring Insulin: Routine Use is Not Recommended](#) (Editorial Commentary, *Canadian Journal of Diabetes*, March 2011)
- [Evaluation of a Nova Scotia Diabetes Assistance Program for People with Type 2 Diabetes](#) (*Canadian Journal of Diabetes*, March 2011)
- [Perspectives and experiences of health care professionals and patients with diabetes regarding self-monitoring of blood glucose in Canada](#) (*Canadian Pharmacists Journal*, September 2010)



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- [Reflections on self-monitoring of blood glucose: Why do we recommend the things we do?](#) (Commentary, *Canadian Pharmacists Journal*, September 2010)
- [To test or not to test? Self-monitoring of blood glucose in patients with type 2 diabetes managed without insulin](#) (Commentary; *Open Medicine*, May 2010)
- [The Cost of Diabetes: A Game Changer](#) (Editor's Note; *Canadian Journal of Diabetes*, March 2010)
- [Self-monitoring of Blood Glucose in Individuals with Type 2 Diabetes Not Using Insulin](#) (Commentary; *Canadian Journal of Diabetes*, March 2010)
- [Self-monitoring of Blood Glucose in Individuals with Type 2 Diabetes Not Using Insulin: Leaving No Cornerstone Unturned](#) (Commentary; *Canadian Journal of Diabetes*, March 2010)
- [Regimens: Questioning Benefit of Diabetes Test Strips](#) (*New York Times*; January 2010)
- [Glucose testing challenged among diabetics who don't use insulin](#) (*Globe and Mail*, December 2009)

For more information, visit www.cadth.ca/smbg