ACHORD
Alliance for Canadian Health Outcomes Research in Diabetes

# ACHORD Knowledge Translation Case Study: Self-Monitoring of Blood Glucose in Type 2 Diabetes: Implications for Policy

For patients with chronic medical conditions like diabetes, self-monitoring is considered an integral component of their overall care. In many cases, self-care is as, or more, important then medical care. Self-management education has always included information on how to self-monitor, and in the ideal case, what to do when self-monitoring tells patients something needs to be done. Recommendations for self-monitoring of chronic conditions are therefore often considered sacred elements of patients education. Furthermore, educating patients on the importance of self care activities is intuitively the right thing to do. Even if we never really have the evidence to support such recommendations, we continue to make them, because it just seems to make sense. Such is the case of self-monitoring of blood glucose (SMBG) for most people with diabetes.

SMBG has been recommended as a cornerstone of self-management for all patients with diabetes for many years. This feedback in intended to inform the patient as to a pending concern with blood glucose going too low or too high. Acute lows (hypoglycemia) or highs (hyperglycemia) can be life-threatening emergencies, and need corrective action. The risk of blood sugar highs or lows is related to the amount of physical activity, food intake, the action of insulin therapy and the type of diabetes the patient has. SMBG has also been recommended to help improve blood glucose levels with a view to potentially reducing the risk of complications. Such guidelines were based on historical practice, however, rather than strong clinical evidence. While recommendations suggested individualized management, regular testing was recommended for all patients. The majority of patients in the population have type 2 diabetes, and most of these patients are treated with lifestyle modifications or oral glucose-lowering therapies. These patients have very little risk of hypoglycemia, and, for the most part, there is little that these patients can do with regular SMBG results. At the very high costs of SMBG, for individuals or for third-party payers, many people believed that for type 2 diabetes not treated with insulin SMBG was a waste of money.

In ACHORD, the rising cost of health care and the attention to clinical practice guidelines drew our attention to this particular issue. Given that both public and privately funded insurance programs in Canada and around the world have been spending millions of dollars on these supplies, the value really needs to be considered. We were interested to see if we could test a policy-related question related to the financial coverage of SMBG supplies and the impact on overall glycemic control in patients with type 2 diabetes not treated with insulin. With funding from IHE and the Canadian Diabetes Association, we undertook the **S**tudy of **T**esting **R**esponse **I**n **P**atients with type 2 diabetes (STRIP-Type 2) in 2002.[1] STRIP-Type 2 was a randomized controlled trial of a financial reimbursement policy. We found that reducing financial barriers by providing free strips did not improve glycemic control in patients with type 2 diabetes not treated with insulin. We therefore also questioned the value of policies that provided increased coverage for these supplies.[1]

At the time the STRIP-Type 2 study was underway, ACHORD was becoming engaged in discussions with various provincial ministries of health, discussing our findings and the growing concerns with SMBG for this patient population in the clinical literature. These discussions lead to the identification of the issue of the cost and benefits of SMBG to the Canadian Coordinating Office for Health Technology Assessment (CCOHTA), which was the precursor to the current Canadian Agency for Technology in Health (CADTH). CCOHTA undertook a pre-assessment and produced a report, released in May 2004. Dr. Jeff Johnson was asked to be a reviewer for that CCOHTA pre-assessment report

Following the completion of the STRIP-Type 2, to engage stakeholders in a broader discussion and to disseminate our research findings, we organized a consensus conference on SMBG. The Institute of Health Economics, in partnership with Alberta Health and Wellness and the Canadian Diabetes Association, sponsored the Consensus Conference. This international event as held in Edmonton in November 2006. The IHE Consensus Conference Panel was chaired by Michael Decter, a trained economist with more than 2 decades of experience as a senior manager and a leading Canadian expert on health systems.[2] Other panel members included physicians, regional health managers, nurses, economists, a bioethicist, a journalist, and a young person living with diabetes. Experts from around the world were invited to present research evidence on the benefit of SMBG in people with type 1 and type 2 diabetes, the role of self-management education, the cost and utilization of SMBG supplies, as well as the perspective of individuals living with diabetes. The Consensus Panel then crafted the Consensus Statement on Self-Monitoring in Diabetes[3] which was an independent report of the panel, not a policy statement of the sponsors, but a reflection of the Panel's assessment of the available scientific knowledge and advocacy opinion available at the time of writing. This Consensus Statement was published in its entirety in 2007[3] and shared with all provincial and territorial ministries of health.

In 2006, CADTH, at the recommendation of the provincial Ministries of Health, was also undertaking a comprehensive review of the costs and benefits of SMBG for diabetes. Canadian Optimal Medication Prescribing and Utilization Service (COMPUS), a service of the CADTH, undertook a number of investigations, with various reports and publications arising from the work from the COMPUS.[4] These culminated in the reports released in 2009, with the final recommendations released in the "Optimal Therapy Report: Optimal Therapy Recommendations for Prescribing and Use of Blood Glucose Test Strips".[4] The COMPUS/CADTH report cited the IHE Consensus Statement on SMBG, and indicated that the available evidence shows that most people with type 2 diabetes don't have to test as much as they currently do, and that this won't affect their health in a negative way. A number of articles were published arising from the COMPUS/CADTH reports and recommenations,[5-8] many of which were accompanied by editorials or commentaries from ACHORD investigators.[9-11]

Subsequent to the Optimal Therapy Report, CADTH sponsored a series of public discussions on SMBG for patients with type 2 diabetes not treated with insulin, in the form of Café Scientifics, where the findings and recommendations from the CADTH/COMPUS reports were presented in an open forum with public and health care professionals. CADTH sponsored 6 Cafés across Canada; at the Edmonton Café Scientific on October 29, 2010, Dr. Jeff Johnson was invited to serve on the expert panel, to share his views and experience on the topic, and to address questions from the public.

On February 16, 2012, The Honourable Fred Horne, Minister of Health and Wellness announced that Alberta Health and Wellness will change their policies for coverage of SMBG supplies on July 1, 2012, to be more in line with the CADTH recommendations.[12] Dr. Johnson was invited to present background on the topic and introduce the Minister at the press conference to announce these changes. Beginning in July 2012, annual coverage would be increased to $600 per year for people with diabetes treated with insulin, while funding for those not treated with insulin would be phased out over time.

In summary, on the topic of SMBG for type 2 diabetes, ACHORD has played a key role in the generation and dissemination of new knowledge to inform policy decision making in Canada. Through our sponsored research and engaged scholarship, we have produced research and been invited to provide reviews and commentaries on various reports over the past few years. At the time of the writing of this case study, the conversations are continuing in other provinces and territories, and ACHORD is committed to continue its involvement and support of informed decision making for diabetes related health policy in Canada.

**References**


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