

# EVALUATION OF THE LONG-TERM COST-EFFECTIVENESS OF THE DEXCOM G6 CONTINUOUS GLUCOSE MONITOR VERSUS SELF MONITORING OF BLOOD GLUCOSE IN PEOPLE WITH TYPE 1 DIABETES IN CANADA

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## Introduction / Background

- RT-CGM is associated with improved glycemic control and reduced incidence of hypoglycemic events and reduced fear of hypoglycemia (FoH) relative to self-monitoring of blood glucose (SMBG) but at higher cost.
- Therefore, a health economic analysis was performed to determine the long-term cost-effectiveness of the Dexcom G6 RT-CGM system versus SMBG in adults with type 1 diabetes (T1D) in Canada.

## Cost-effectiveness Model

- The analysis was performed using the IQVIA CORE Diabetes Model (CDM, version 9.0 E360).
- Validation of the model has been previously described in detail in publications by Palmer et al. (2004) and McEwan et al (2014).
- Outputs provided by the CDM include:
  - Life expectancy and quality-adjusted life expectancy
  - Cumulative incidence of long-term complications including cardiovascular, cerebrovascular, renal, ophthalmic and diabetic foot complications, mean time to onset of complications
  - Direct and indirect costs and the incremental cost-effectiveness ratio (ICER).

## Intervention Costs

- The annual cost associated with the Dexcom G6 system was CAD 3,588, which included a total of 36 sensors per year (based on a sensor lifetime of 10 days each) and four transmitters per year.
- Annual costs in the SMBG arm were CAD 1,226, which assumed a mean of 4.6 SMBG tests per day, based on findings from the DIAMOND trial.
- Direct costs associated with the treatment and management of diabetes-related complications were sourced from the literature, and where necessary inflated to 2019 CAD

## Results

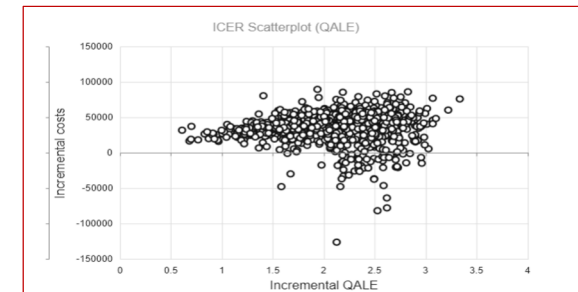
### Baseline Patient Cohort Characteristics

Characteristic	Baseline Value
Mean (SD) age, years	47.6 (12.7)
Mean (SD) duration of diabetes, years	20.3 (13.6)
Male, %	56
Mean (SD) HbA1c, %	8.6 (0.65)
Mean (SD) HbA1c, mmol/mol	70 (7)
Mean (SD) BMI, kg/m <sup>2</sup>	27.5 (5.5)

### Base Case Analysis

	G6	SMBG	Difference
Total direct cost, CAD	227,357	192,004	35,353
Treatment costs	87,153	29,416	57,737
Management costs	9,365	9,234	131
Cardiovascular complications	15,993	16,497	-504
Renal complications	65,763	80,779	-15,016
Ulcer/amputation/neuropathy complications	13,692	14,478	-786
Ophthalmic complications	33,163	35,230	-2,067
Severe hypoglycemia	2,229	6,372	-4,143
Quality-adjusted life expectancy, QALYs	15.517	13.429	2.088
ICER, CAD per QALY gained		16,931	
Likelihood of cost-effective at WTP threshold of CAD 50,000 per QALY		%99.7	

### Incremental Cost Effectiveness Ratio



## Conclusions

- Overall, findings of this long-term cost-effectiveness analysis suggest that for adult patients with T1D in Canada, the Dexcom G6 RT-CGM system is cost-effective relative to SMBG, particularly for patients with uncontrolled glycaemia.
- The Dexcom G6 RT-CGM system improves glycemic control and reduces the risk of costly long-term diabetes-related complications, providing a cost-effective disease management option (relative to SMBG) based on a willingness-to-pay threshold of CAD 50,000 per QALY gained.

Palmer AJ, Roze S, Valentine WJ, Minshall ME, Foos V, Lurati FM, Lammert M, Spinas GA. Validation of the CORE Diabetes Model against epidemiological and clinical studies. *Curr Med Res Opin.* 2004 Aug;20 Suppl 1:S27-40

McEwan P, Foos V, Palmer JL, Lamotte M, Lloyd A, Grant D. Validation of the IMS CORE Diabetes Model. *Value Health.* 2014 Sep;17(6):714-24