Overcoming Barriers to Safely Achieving Glycemic Target in Patients Living with Type 2 Diabetes: Key Learnings from a 2014 Canadian Personal Practice Assessment

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Disclosure

This project was sponsored by Sanofi Canada.

Martin Tremblay PhD

- Full-time employee at HIT Global Consulting Services, a for-profit CPD organisation based in Canada
- Over the last two years, we have been collaborating with: Abbvie, Boehringer Ingelheim, Biogen, Hoffmann-La Roche, Lundbeck, Novartis, Pendopharm, Sanofi, Shire, Valeant
Learning Objectives

After participating in this session, you will be able to:

✓ Explain common **barriers that limit patients living with type 2 diabetes** (T2D) to achieve glycemic target;

✓ Describe the different phases of the **Personal Practice Assessment (PPA)** educational program developed;

✓ Explain how participating physicians **acted on perceived barriers** for their patients to safely achieve glycemic target.
Diabetes

Diabetes is a **chronic disease** that occurs either when the **pancreas** does not **produce enough insulin** or when the body **cannot effectively use the insulin it produces**.

**Situation in Canada**

- **10 million Canadians** are living with diabetes or prediabetes
- More than 20 Canadians are newly diagnosed with the disease **every hour of every day**

**Type 2 diabetes** (T2D) results from the body’s ineffective use or production of insulin. T2D comprises **90% of people with diabetes** around the world, and is largely the result of **excess body weight and physical inactivity**.

**Hyperglycemia**, is a common effect of uncontrolled diabetes and over time **leads to serious damage** to many of the body's systems, especially the eyes, kidneys, nerves and blood vessels.

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1) www.who.int/mediacentre/factsheets/fs312/en.
2) www.diabetes.ca
Care Gap 1: Targeted Glycated Hemoglobin (A1C) Not Achieved

A target A1C ≤6.5% may be considered in some patients with type 2 diabetes to further lower the risk of nephropathy and retinopathy which must be balanced against the risk of hypoglycemia.

Consider 7.1-8.5% if:
• Limited life expectancy
• High level of functional dependency
• Extensive coronary artery disease at high risk of ischemic events
• Multiple co-morbidities
• History of recurrent severe hypoglycemia
• Hypoglycemia unawareness
• Longstanding diabetes for whom it is difficult to achieve an A1C <7%, despite effective doses of multiple antihyperglycemic agents, including intensified basal-bolus insulin therapy

Most patients with type 1 and type 2 diabetes

Timely pharmacological adjustments to attain target A1C within 3-6 months

- Half of Canadian patients with T2D are not achieving the CDA recommended A1C target of ≤7.0%.
- Despite advances in T2D pharmacological management, the percentage of patients achieving glycemic target has not changed in Canada over a decade

Care Gap 2: Overcoming T2D Barriers*

- Diabetes not thought to be serious
- Fear of hypoglycemia
- Fear of addiction to insulin
- Perceived patient noncompliance
- Weight gain
- Injection-related pain
- Patient too old

* Can be both patient and/or physician-related

References:

Lau ANC, et al. CMAJ 2012;184(7):767-776
Performance Improvement Program Objectives

- Identify patients with **type 2 diabetes (T2D)** who are on maximum oral agents and/or basal/premixed insulin and **not achieving target A1C values** according to current Canadian diabetes guidelines.

- **Increase awareness** of key diabetes targets and treatment guidelines through educational interventions and point-of-care interactions with patients.

- **Identify and act on barriers** to achieving an A1C level of $\leq 7.0\%$ for patients living with T2D.

**Chart inclusion criteria**

<table>
<thead>
<tr>
<th>Patients living with T2D and:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age $\geq 18$ years old; and</td>
</tr>
<tr>
<td>A1C $&gt; 7.0%$; and</td>
</tr>
<tr>
<td>Taking the maximum dosage of oral antihyperglycemic agents; and/or</td>
</tr>
<tr>
<td>Taking basal/premixed insulin.</td>
</tr>
</tbody>
</table>
Performance Improvement - Program Design

Hypoglycemia discussion guide

Patient Charts

Web Portal

Personalized Data Report

Share-the-Learning Reflective Discussion

Pharmacological Plan

T 0

T 3-6 months

T 9-12 months

optional

optional

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Performance Improvement - Program Design (Cont’d)

• Online gated learning platform (guidelines, slide decks, discussion tools, etc.)
• Participants (n=333) were trained to use the program by web teleconferences (n=32) in 2 months
• Program was run between April and November 2014.

• Prospective patient chart (15 questions, n=3,876) and follow-up patient chart (5 questions, n=969) included a combination of multiple choice and open-ended questions
• Automated reminders were implemented
• Charts were enriched with hyperlinks and support documents
• Honoraria incentive for data entry (up to 15 patient charts per physician)

• Individualized report comparing the participant’s performance against those of peers nationally
• Program key outcomes highlighted

• Key program outcomes presented to non-participating physicians
• Honoraria incentive for presenters (program participants)
Patient Characteristics

<table>
<thead>
<tr>
<th>Patient Data Characteristics</th>
<th>N= 3,876</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female (%)</td>
<td>43</td>
</tr>
<tr>
<td>Age (mean, years)</td>
<td>62.9</td>
</tr>
<tr>
<td>Patients (%)</td>
<td></td>
</tr>
<tr>
<td>Insulin naïve</td>
<td>40</td>
</tr>
<tr>
<td>On basal insulin (± NIAHA(s) ± prandial insulin)</td>
<td>49</td>
</tr>
<tr>
<td>On premixed insulin (± NIAHA(s))</td>
<td>11</td>
</tr>
<tr>
<td>Patients (%)</td>
<td></td>
</tr>
<tr>
<td>On insulin alone</td>
<td>9</td>
</tr>
<tr>
<td>On 1 NIAHA (± insulin)</td>
<td>30</td>
</tr>
<tr>
<td>On 2 NIAHAs (± insulin)</td>
<td>34</td>
</tr>
<tr>
<td>On ≥3 NIAHAs (± insulin)</td>
<td>26</td>
</tr>
<tr>
<td>A1C (mean, %) –overall (not on insulin; on insulin)</td>
<td>8.5 (8.3; 8.6)</td>
</tr>
<tr>
<td>Mean time to insulin initiation (years)¹</td>
<td>9</td>
</tr>
</tbody>
</table>

NIAHA: Non-insulin antihyperglycemic agent

¹ Time to insulin initiation is in line with a previously reported Canadian study. See: Harris SB, et al. Can Fam Phys. 2010;56:e418-24.
Acting on Barriers (Insulin Naïve Patients, n= 1,550)

- A1C: 8.3% (mean)
- Diabetes duration: 9 years
- 22% had at least one hypoglycemia episode in the last year

Planned

- **Resistance** to taking more medications (53%)
- Lack of patient self-monitoring (43%)
- Lack of patient’s understanding about benefits of and/or ease of insulin administration (36%)
- Lack of regular follow-up (25%)

- Referral to another HCP (36%)
- Insulin addition (27%)
- NIAHA addition (23%)
Pharmacological Management

**NIAHA addition** (n= 390)

- Biguanide: 8%
- Combination formulation: 4%
- DPP-4 agent: 39%
- GLP-1 agent: 15%
- SGLT2 inhibitor: 11%
- Sulfonylurea: 23%

**Insulin addition** (n= 474)

- Long-acting basal insulin: 84%
- Intermediate-acting basal insulin: 13%
- Premixed insulin: 3%
Acting on Barriers (Insulin User Patients, n= 2,326)

- A1C: 8.6% (mean)
- Diabetes duration: 13 years
- 48% had at least one hypoglycemia episode in the last year

- Lack of patient self-monitoring (40%)
- Concern regarding excessive insulin dose (34%)
- Resistance to taking more medications (34%)
- Fear of hypoglycemia (33%)

Planned

- **Titrate** current insulin (51%)
- **Referral** to another HCP (21%)
- **Prandial** insulin addition (14%)
- **Insulin switch** (13%)
- **NIAHA** addition (7%)
Pharmacological Management

**Insulin Switch** (n= 286)

- To a long-acting basal insulin: 85%
- To an intermediate-acting basal insulin: 8%
- To a premixed insulin: 7%

**NIAHA addition** (n= 185)

- Biguanide: 10%
- Combination formulation: 4%
- DPP-4 agent: 34%
- GLP-1 agent: 24%
- SGLT2 inhibitor: 24%
- Sulfonylurea: 4%

Percentage of patients

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## Acting on Hypoglycemia-related Barrier

<table>
<thead>
<tr>
<th>Hypoglycemia-related Topics Discussed</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms of hypoglycemia</td>
<td>76</td>
</tr>
<tr>
<td>How to treat hypoglycemia</td>
<td>61</td>
</tr>
<tr>
<td>Nocturnal hypoglycemia</td>
<td>49</td>
</tr>
<tr>
<td>General patient concerns about hypoglycemia</td>
<td>36</td>
</tr>
</tbody>
</table>
# Acting on Therapy Adherence and Self-monitoring

<table>
<thead>
<tr>
<th>Adherence-related Topics Discussed</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence to lifestyle changes</td>
<td>69</td>
</tr>
<tr>
<td>Patient self-monitoring</td>
<td>68</td>
</tr>
<tr>
<td>Benefits of adherence to diabetes medications</td>
<td>58</td>
</tr>
<tr>
<td>Importance of weight, BP and lipid targets</td>
<td>50</td>
</tr>
</tbody>
</table>
Follow-up Visit (3-6 Months Later)

Patient Follow-up Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N= 969</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean A1C (% change from baseline)</td>
<td>8.0 (-0.5)</td>
</tr>
<tr>
<td>Patient achieving targeted A1C (%)</td>
<td>33</td>
</tr>
<tr>
<td>Adherence to treatment recommendations (%)</td>
<td>67</td>
</tr>
<tr>
<td>Reported decrease in hypoglycemia incidence (%)</td>
<td>69</td>
</tr>
</tbody>
</table>
Share-the-learning Reflective Discussions (9-12 Months Later)

- **232 Share-the-learning** reflective discussions across the country (70% participation)
- Approximately **550 physician attendees**
- **177 physicians** participated in the 2015-2016 performance improvement program
## Performance Improvement Program Appreciation

212 participating physicians (64%) completed a post program evaluation form

<table>
<thead>
<tr>
<th></th>
<th>Out of 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program objectives were clear</td>
<td>4.4</td>
</tr>
<tr>
<td>Patient charts were easy to understand</td>
<td>4.4</td>
</tr>
<tr>
<td>The experience was worthwhile</td>
<td>4.4</td>
</tr>
<tr>
<td>Program was clear and non-biased</td>
<td>4.5</td>
</tr>
<tr>
<td>I would recommend this program to my peers</td>
<td>4.4</td>
</tr>
<tr>
<td>I would participate again in a similar program</td>
<td>4.5</td>
</tr>
</tbody>
</table>
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Thank you!

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