

Impact of the Diabetes Canada Guidelines Dissemination Strategy on the Prescription of Vascular Protective Medications

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BACKGROUND

- Despite evidence-based support for vascular protection in patients with diabetes, there remains an evidence to practice gap in the prescription of vascular protective medications ((statins, antihypertensive agents, antiplatelet agents) in Canada (1).
- The 2013 Diabetes Canada guidelines simplified the assessment for vascular protection in patients with diabetes and launched additional dissemination tools to help bridge this gap (2).

METHODS

CPCSSN

- A primary care Electronic Medical Records (EMR) based information system for chronic disease surveillance (3).
- More than 1,100 sentinels based in 10 practice based research networks across Canada.
- Data on over 1,500,000 Canadian patients.



Data Collection and Processing

- The study population included patients with at least one clinic visit from April 2010 to January 2016, age ≥ 40 years and defined as having the onset of diabetes using the CPCSSN validated algorithm.
- Extracted data from all 10 networks included demographic variables, lab records, comorbidities/risk factors and medication data.
- MD graduation year was retrieved from the UTOPIAN Network only.

Analysis

Prescription Rates

- An interrupted time series analysis was used to assess the proportion of eligible patients provided prescriptions for statins, ACEI/ARBs, and antiplatelets in each quarter (4).
- A longitudinal data analysis approach of lag4, lead1 quarters was used to conduct these analyses (5).
- Eligible patients included those age ≥ 40 years for statins, ≥ 55 years for ACEI/ARBs, and ≥ 40 with no CVD for antiplatelets.
- PPI prescriptions were used as a reference control.

LDL/BP Targets

- An interrupted time series analysis to assess achievement of low-density lipoprotein (LDL) (< 2 mmol/L) and blood pressure targets (BP) ($< 130/80$ mmHg) in patients age ≥ 40 years for LDL, age ≥ 55 for BP.
- Measurements were carried over to subsequent quarters, until a new measurement was recorded in the EMR.

Subgroup Analyses

- Student's t-test and one-way ANOVA were used to assess between-group differences.

OBJECTIVES

- To examine changes in the rates of vascular protective medications prescribed in primary care for older patients with diabetes associated with the launch of the 2013 Diabetes Canada Guidelines and additional dissemination efforts
- To examine differences in the rates of vascular protective prescriptions by patient, provider, and geographic characteristics

RESULTS

Trends

Prescription Rates

- There were no significant changes in prescription rates at guideline intervention (Fig. 1).
- After guideline publication, there was a significant change in slope for statins ($-0.52\%/quarter$; standard error [SE] 0.15, $p < 0.05$) and ACEI/ARBs ($-0.38\%/quarter$; SE 0.13, $p < 0.05$) prescribed. A significant change in slope was also seen for PPI prescriptions ($-0.18\%/quarter$; SE 0.05, $p < 0.05$). The change in slope was not significant for antiplatelets.

LDL/BP Targets

- There were no significant changes in proportion of patients achieving LDL or BP targets at guideline intervention and no significant change in slopes after guideline intervention (Fig. 2-3).

Geographic Characteristics

- Mean prescription rates were significantly higher in urban compared to rural practices for all 3 medications ($p < 0.001$).
- There were significant differences in prescription rates between provinces ($p < 0.001$).

Patient Characteristics

- There were significant differences between group prescription rates for age, SES quintiles, smoking status, presence of hypertension, cardiovascular disease and albuminuria for all 3 medications ($p < 0.05$).

Figure 1. Proportion of Eligible Patients Prescribed Vascular Protective Medications in Canada, 2011-2015

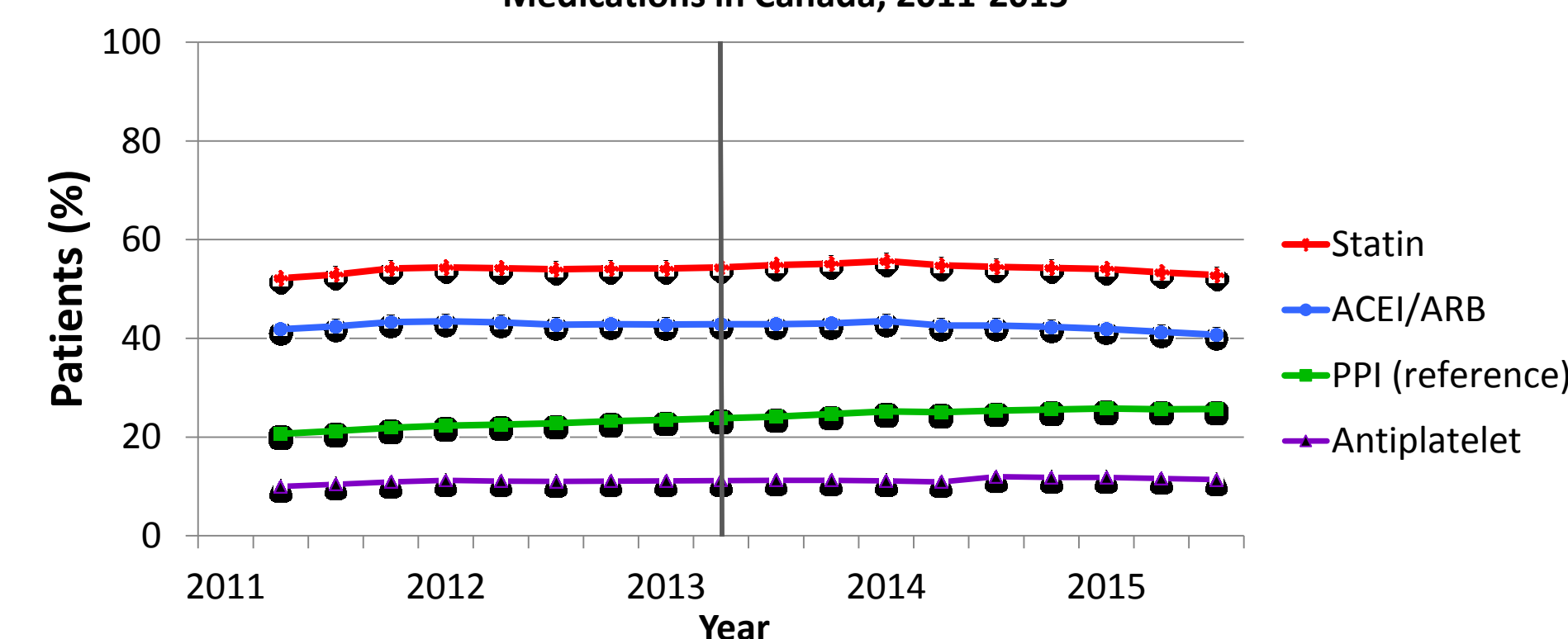


Figure 2. Proportion of Eligible Patients Achieving Recommended LDL Targets in Canada, Quarterly from 2010-2015

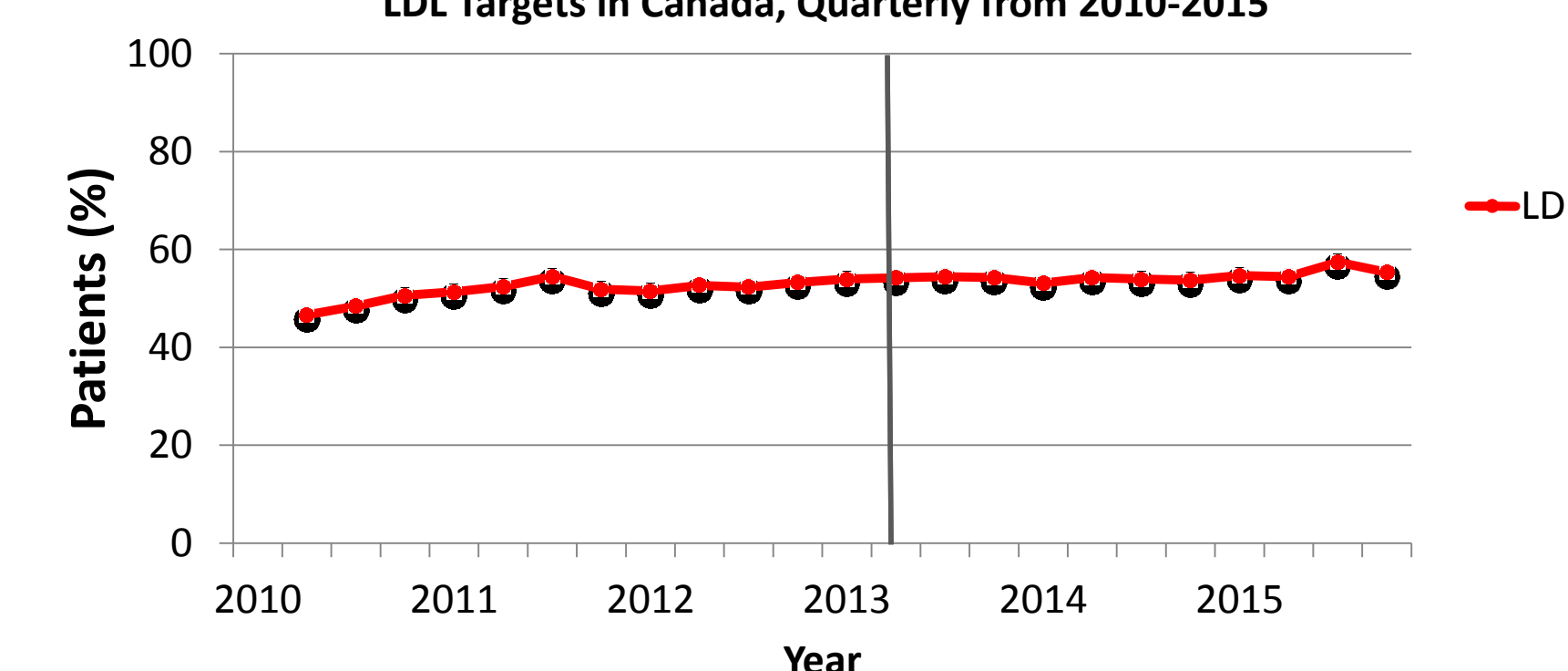
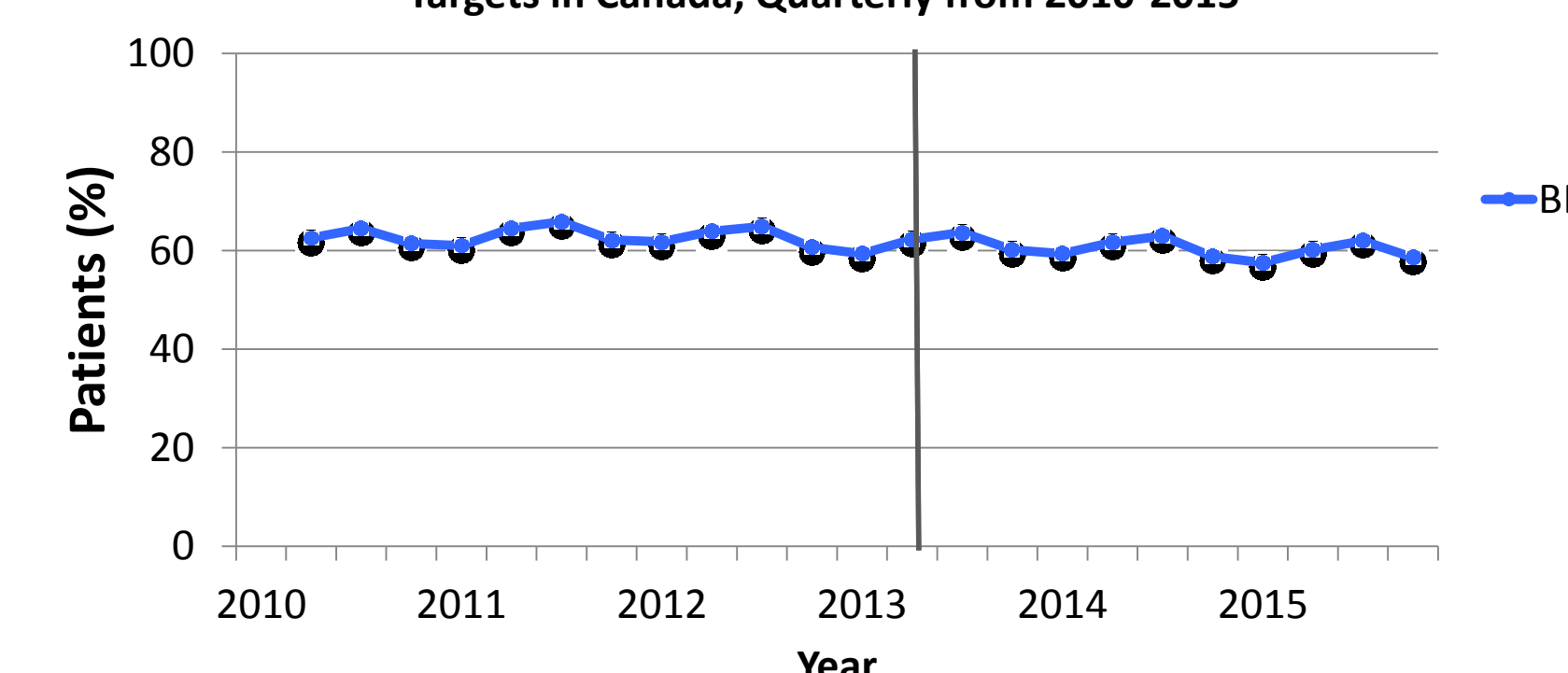


Figure 3. Proportion of Eligible Patients Achieving Recommended BP Targets in Canada, Quarterly from 2010-2015



CONCLUSIONS

- There was a decrease in prescribing trends over time that was not specific to vascular protective medications.
- Additional studies involving qualitative assessments may be warranted to explore the collective experience of physicians and elicit factors not captured in a quantitative design.
- Future dissemination efforts should be directed at groups with lower adherence rates including physicians from rural areas and those treating patients with low SES status.

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