

Integrating population-wide laboratory testing data with physician audit-and-feedback reports to improve glycemic and cholesterol control among Ontarians with diabetes

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Introduction

Improving the care and management of patients with diabetes, particularly those with extreme blood glucose and/or cholesterol levels, has been identified as a key priority area for health-care in Ontario. A multi-organizational collaboration produces audit-and-feedback reports distributed to consenting primary care physicians across the province for quality improvement purposes.

Objectives and Approach

We examined the feasibility of linking the Ontario Laboratory Information System (OLIS), a large and nearly population-wide database of laboratory test results in Ontario, with the existing provincial audit-and-feedback reporting structure to integrate aggregated, physician-level measures of glycemic and cholesterol control among patients with diabetes.

All Ontario residents alive on March 31, 2014, attached to a primary care physician, and diagnosed with diabetes for at least two years were included. These patients were linked to OLIS to extract laboratory test orders and results for glycated hemoglobin (HbA1C) and low-density lipoproteins (LDL) between April 1, 2013 and March 31, 2014.

Results

There were 1,108,530 diabetes patients included who were assigned to 10,085 primary care physicians. During fiscal year (FY) 2013, 70%, 64%, and 59% of diabetes patients were tested for HbA1C, LDL, and both measures, respectively. Among the 648,238 diabetes patients with at least one of each test in FY2013, 13% had a HbA1C test exceeding a threshold of 9%, 4% had a LDL test exceeding a threshold of 4 mmol/L, and 0.8% exceeded both thresholds. At the physician-level, the median (Interquartile Range) proportions of diabetes patients exceeding the testing thresholds were 12% (9%-16%)

for HbA1c and 4% (2%-6%) for LDL. In a multilevel logistic regression model, there was significant between-physician variability in the proportions of diabetes patients exceeding the HbA1C (p

Conclusion/Implications

We developed a mechanism for integrating population-wide, clinical laboratory test results into physician audit-and-feedback reports to improve diabetes care in Ontario. Significant variation observed in the aggregated, physician-level proportions of diabetes patients testing above clinical thresholds for HbA1C and LDL highlights the importance of reporting such information to physicians.

