Primary Care Practice Reports: Administrative Data Profiles for Identifying and Prioritizing Areas for Quality Improvement

Richard H. Glazier, Brian Hutchison, Alexander Kopp and Gail Dobell

Abstract

Information to help guide quality improvement activities in primary care should be readily available, routinely updated and include comparisons across groups, regions and jurisdictions. Primary care practice reports, developed jointly by the Institute for Clinical Evaluative Sciences and Health Quality Ontario, is one such effort. These data include practice demographics, the prevalence of common chronic conditions, the use of health services and measures of chronic disease prevention and management. All Ontario primary care physicians can register for the profiles online using a secure logon; the profiles are available only to them. Enhancements under development include new formats, targets and tools to support quality improvement.

The Issue

Historically, there has been little or no information available to primary care practices to help guide quality improvement activities. This has started to change in recent years with the availability in several Canadian jurisdictions of feedback to primary care practices about practice composition and certain aspects of healthcare use and performance (Katz et al. 2006; Birtwhistle et al. 2009; Tu et al. 2014). Quite extensive measurement of primary care practice takes place in other countries, including Accountable Care Organizations in the United States and within the Quality and Outcomes Framework in the United Kingdom (Rittenhouse et al. 2009; Gillam et al. 2012).

In the past few years, policymakers have become more aware of the widening gap in primary care practice internationally, with Canada most often in the bottom half of international comparisons of access to primary care and quality improvement activities (Schoen et al. 2009, 2013). These measures of performance vary widely, however, between practices, models of care and jurisdictions. To plan and set priorities for quality improvement, it would be ideal for every practice to be able to access routine reports that are frequently updated with group, regional and jurisdictional comparisons.

The Data

Although administrative data that are derived from physician billing claims, drug benefit claims and hospital reporting have limitations, they are readily available in many jurisdictions and are routinely updated. In the current initiative, the Institute for Clinical Evaluative Sciences (ICES) and Health Quality Ontario (HQO) partnered to identify, format and feed back to practices administrative data for quality improvement. These data include practice demographics, the prevalence of common chronic conditions, the use of health services, and measures of chronic disease prevention and management.

Practice demographics include the size of the practice population, the percentage rostered in a primary care patient enrolment model, age distribution of the practice, rurality, relative income distribution and patient complexity. Common chronic conditions that can be identified using validated algorithms included

hypertension, congestive heart failure, myocardial infarction, diabetes and visits for mental illness (Hux et al. 2002; Steele et al. 2004; Tu et al. 2008; Schultz et al. 2013). Use of health services includes emergency department visits by level of triage, hospital admissions for chronic conditions, hospital readmissions within 30 days, continuity of primary care and specialist visits. Measures of chronic disease prevention and management include cervical, breast and colorectal cancer screening and several aspects of diabetes management. Details about each of these measures can be found in Appendix B of the sample practice report available at https://www.hqontario.ca/quality-improvement/primary-care/practice-reports.

The Process

Physicians can register for the profiles at the website above. They provide consent using a secure logon at HQO, after which their data are generated at ICES, where data sets are linked using unique, encoded identifiers and analyzed. Data are securely transferred from ICES to HQO. HQO generates the reports in a custom Portable Document Format (PDF) file with run charts extending over several years of data, including comparisons of the individual practice to the practice group if applicable, to the Local Health Integration Networks (LHINs, Ontario's regional health authorities) and to the province as a whole. Small cells are not reported. Because healthcare use varies by age, sex and morbidity, practice-level healthcare use measures are reported as raw data and also after adjustment for these characteristics. The physician-level reports are available only to the consenting physician. A process is being implemented to make group-level reports available to the executive directors of family health teams and community health centres.

Key Findings

Large variability was found across practices, groups and LHINs for a number of measures included in the report. In March 2013, 23% of the Ontario population was age 18 and younger, 62% age 19–64 and 15% age 65 and older. About 75% of Ontario's population had been rostered in a patient enrolment model. Approximately 21% had hypertension, 19% had a mental health visit, 9% had diabetes, 2% had congestive heart failure and 1% had myocardial infarction. The rate of emergency department visits was 399 per 1,000 for Ontario, 40% of which were considered less urgent or non-urgent at the time of triage. The rate of hospital admissions for asthma, congestive heart failure, chronic obstructive pulmonary disease and diabetes combined was 3.6 per 1,000 patients. Of patients discharged for all conditions, 5% were readmitted within 30 days and 16% within one year. Just over 69% of primary care visits were with the patient's own physician. Specialist visit rates per 1,000 patients were 159 for psychiatry, 73 for general internal medicine, 71 for cardiology, 32 for endocrinology, 27 for respirology and 1,287 for all other specialties combined. Among those with diabetes, 43% had two or more glycated haemoglobin tests in the previous 12 months and 65% had at least one cholesterol test; 68% had a retinal examination in the previous 24 months. Among those with diabetes aged 66 and older, 72% had been prescribed angiotensin converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs) in the previous 12 months, and 70% had been prescribed a statin. For cancer screening, 66% of eligible women had a Pap smear in the previous three years, 52% had a mammogram in the previous two years and 60% had colorectal screening, including faecal occult blood testing in the previous two years, barium enema or sigmoidoscopy in the previous five years or colonoscopy in the previous ten years. Figure 1 uses simulated data to demonstrate how the indicators are depicted in the report.

Strengths and Limitations

These primary care practice reports have been accessed by several hundred Ontario primary care physicians. Feedback to date has been informal but positive. Team-based primary care groups in Ontario, including family health teams, community health centres and nurse practitioner-led clinics, are following quality improvement plans that generally include practice-based patient experience surveys and data extracted from their electronic medical records. The administrative data profiles are meant to supplement these other data sources. In the context of practice-based quality improvement, the major strength of these profiles is that they provide robust population-based comparisons between physicians and their group, their region and the province as a whole.

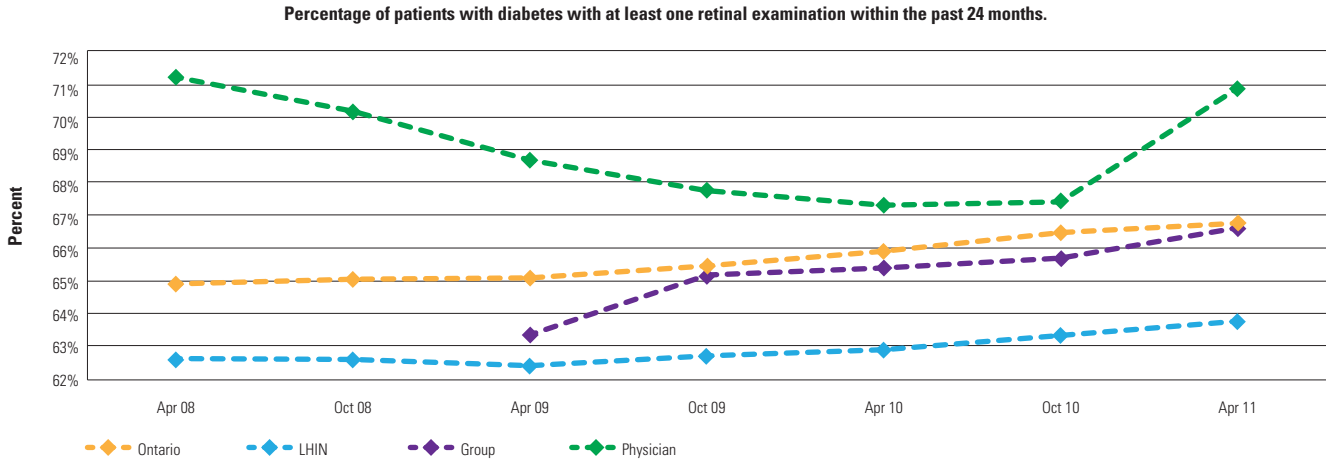
As a result of using administrative data, the profiles have a number of limitations. The data are not collected for research purposes, and therefore, some important data are missing and not all measures have been validated. In particular, the data do not include prescriptions for those younger than age 65 or tests done in hospital laboratories. They cannot be used to distinguish Type 2 from Type 1 diabetes mellitus, although the large majority of patients would be expected to have Type 2. The data include only physicians and not the activities of other interprofessional team members. They also do not capture provider–patient interactions that take place by telephone or email. The most important limitations are the long lag time between care provision and the release of administrative data, which is typically about a year, and the inability to identify individual patients as a result of current privacy policies.

Next Steps

In the current format, profile indicators are presented as a single PDF consisting of separate run charts, each comparing the practice with its group, its region and the province. These allow a direct visual impression of each measure in relationship to relevant comparators over time. The profile document is quite long, though, and it may take time and patience to locate

FIGURE 1.
Sample data from a primary care practice report

This graph and accompanying table show the percentage of patients with diabetes who have had at least one retinal examination with an opthalmologist or optometrist within the past 24 months for the physician, group, LHIN and the province.[1] The table also shows the number of patients with diabetes who have had at least one retinal examination within the past 24 months. Patients were considered to have diabetes if they had at least two physician claims or at least one hospital admission for diabetes within the past two years. The data was collected from OHIP.



Reporting Period	Apr 08	Oct 08	Apr 09	Oct 09	Apr 10	Oct 10	Apr 11
Physician	71.18% (85)	70.16% (86)	68.67% (87)	67.76% (88)	67.33% (89)	67.42% (93)	70.83% (102)
Group	DS	DS	63.37% (718)	65.22% (808)	65.44% (832)	65.70% (901)	66.61% (764)
LHIN	62.69% (64,173)	62.62% (67,181)	62.43% (71,427)	62.72% (74,673)	62.93% (76,529)	63.34% (80,444)	63.82% (84,420)
Ontario	64.95% (518,085)	65.10% (541,726)	65.13% (563,385)	65.49% (587,194)	65.93% (609,337)	66.49% (633,174)	66.78% (656,620)

DS=data suppressed; physician group size <6

the most relevant indicators for a particular practice. Current discussions with the design team at HQO include new format options with a dashboard of the measures most practices would find highly relevant, the addition of new measures of practice complexity and cost and an intention to continue to provide detailed graphs and tables in an appendix.

Current evidence suggests that this type of audit and feedback can lead to small but potentially important improvements in practice (Ivers et al. 2012). The current profiles lack explicit targets, a feature associated with greater effectiveness. The implicit targets in the report are the performance of the comparators. There are times when this is likely to be effective, but it could be problematic when the group, region and provincial performance levels are lower than desired, such as for cancer screening where provincial rates are below 70%. The development of targets could be helpful for practices that want to identify the largest gaps between their performance level and that which is considered ideal. Audit and feedback are also more effective when an action plan is included. Available tools could be adapted for use with the profiles so that links in the profiles lead readers to possible actions they could implement in their practice or group.

Conclusion

The primary care practice reports described in this paper are designed to help practices and groups identify and prioritize areas for quality improvement. The reports are available online for most Ontario primary care physicians and groups, they are routinely updated and they include relevant comparators. They are intended to be used with other sources of health-system and practice-level data, including surveys and electronic medical records. Further developments are planned to further increase their usefulness and actionability.

Acknowledgements

The authors would like to thank Blair Sandover, Stacey Johnson, Amy Thomas, Jonathan Lam and Daniel Yep for their important work in helping to develop the primary care practice reports.

This study was supported by the Institute for Clinical Evaluative Sciences (ICES), which is funded by an annual grant from the Ontario Ministry of Health and Long-Term Care (MOHLTC). The opinions, results and conclusions reported in this paper are those of the authors and are independent from the funding sources. No endorsement by ICES or the Ontario MOHLTC is intended or should be inferred. Richard H. Glazier

is supported as a clinician-scientist in the Department of Family and Community Medicine at the University of Toronto and St. Michael's Hospital in Toronto, Ontario. HQ

About the Authors

Richard H. Glazier, MD, MPH, CCFP, FCFP, is a senior scientist at the Institute for Clinical Evaluative Sciences (ICES); a scientist with the Centre for Research on Inner City Health, Li Ka Shing Knowledge Institute of St. Michael's Hospital; and a professor in the Department of Family and Community Medicine at the University of Toronto and St. Michael's Hospital. Dr. Glazier may be contacted at rick.glazier@ices.on.ca.

Brian Hutchison, MD, MSc, CCFP, FCFP, is professor emeritus in the Departments of Family Medicine and Clinical Epidemiology and Biostatistics and the Centre for Health Economics and Policy Analysis at McMaster University in Hamilton, Ontario, and senior advisor for primary care at Health Quality Ontario in Toronto, Ontario.

Alexander Kopp, BA, is a senior analyst at ICES.

Gail Dobell, PhD, is director of Performance Measurement at Health Quality Ontario.

References

Birtwhistle, R., K. Keshavjee, A. Lambert-Lanning, M. Godwin, M. Greiver, D. Manca et al. 2009. "Building a Pan-Canadian Primary Care Sentinel Surveillance Network: Initial Development and Moving Forward." *Journal of the American Board of Family Medicine* 22(4): 412–22.

Gillam, S.J., A.N. Siriwardena and N. Steel. 2012. "Pay-for-Performance in the United Kingdom: Impact of the Quality and Outcomes Framework – A Systematic Review." *Annals of Family Medicine* 10(5): 461–68.

Hux, J.E., F. Ivis, V. Flintoft and A. Bica. 2002. "Diabetes in Ontario: Determination of Prevalence and Incidence Using a Validated Administrative Data Algorithm." *Diabetes Care* 25(3): 512–16.

Ivers, N., G. Jamtvedt, S. Flottorp, J.M. Young, J. Odgaard-Jensen, S.D. French et al. 2012. "Audit and Feedback: Effects on Professional Practice and Healthcare Outcomes." *Cochrane Database of Systematic Reviews* 6: CD000259.

Katz, A., R.A. Soodeen, B. Bogdanovic, C. De Coster and D. Chateau. 2006. "Can the Quality of Care in Family Practice be Measured Using Administrative Data?" *Health Services Research* 41(6): 2238–54.

Rittenhouse, D.R., S.M. Shortell and E.S. Fisher. 2009. "Primary Care and Accountable Care—Two Essential Elements of Delivery-System Reform." *New England Journal of Medicine* 361(24): 2301–03.

Schoen, C., R. Osborn, M.M. Doty, D. Squires, J. Peugh and S. Applebaum. 2009. "A Survey of Primary Care Physicians in Eleven Countries, 2009: Perspectives on Care, Costs, and Experiences." *Health Affairs (Millwood)* 28(6): w1171–83.

Schoen, C., R. Osborn, D. Squires and M.M. Doty. 2013. "Access, Affordability, and Insurance Complexity are Often Worse in the United States Compared to Ten Other Countries." *Health Affairs* (Millwood) 32(12): 2205–16.

Schultz, S.E., D.M. Rothwell, Z. Chen and K. Tu. 2013. "Identifying Cases of Congestive Heart Failure from Administrative Data: A Validation Study Using Primary Care Patient Records." *Chronic Diseases and Injuries in Canada* 33(3): 160–66.

Steele, L.S., R.H. Glazier, E. Lin and M. Evans. 2004. "Using Administrative Data to Measure Ambulatory Mental Health Service Provision in Primary Care." *Medical Care* 42(10): 960–65.

Tu, K., Z. Chen and L.L. Lipscombe. 2008. "Prevalence and Incidence of Hypertension from 1995 to 2005: A Population-Based Study." *CMAJ* 178(11): 1429–35.

Tu, K., T.F. Mitiku, N.M. Ivers, H. Guo, H. Lu and L. Jaakkimainen. 2014. "Evaluation of Electronic Medical Record Administrative Data Linked Database (EMRALD)." *American Journal of Managed Care* 20(1): e15–21.