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Impact of a quality improvement program on primary healthcare in Canada: A mixed-method evaluation

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ABSTRACT

Purpose: Rigorous comprehensive evaluations of primary healthcare (PHC) quality improvement (QI) initiatives are lacking. This article describes the evaluation of the Quality Improvement and Innovation Partnership Learning Collaborative (QIIP-LC), an Ontario-wide PHC QI program targeting type 2 diabetes management, colorectal cancer (CRC) screening, access to care, and team functioning.
Methods: This article highlights the primary outcome results of an external retrospective, multi-measure, mixed-method evaluation of the QIIP-LC, including: (1) matched-control pre-post chart audit of diabetes management (A1c/foot exams) and rate of CRC screening; (2) post-only advanced access survey (third-next available appointment); and (3) post-only semi-structured interviews (team functioning).
Results: Chart audit data was collected from 34 consenting physicians per group (of which 88% provided access data). Between-group differences were not statistically significant (A1c [$p = 0.10$]; foot exams [$p = 0.45$]; CRC screening [$p = 0.77$]; advanced access [$p = 0.22$]).

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Qualitative interview ($n = 42$) themes highlighted the success of the program in helping build interdisciplinary team functioning and capacity.
Conclusion: The rigorous design and methodology of the QIIP-LC evaluation utilizing a control group is one of the most significant efforts thus far to demonstrate the impact of a QI program in PHC, with improvements over time in *both* QIIP and control groups offering a likely explanation for the lack of statistically significant primary outcomes. Team functioning was a key success, with team-based chronic care highlighted as pivotal for improved health outcomes. Policy makers should strive to endorse QI programs with proven success through rigorous evaluation to ensure evidence-based healthcare policy and funding.

1. Introduction

Primary healthcare is the foundation of any high-performing healthcare delivery system [1,2]. When organized and utilized to be effective and efficient, better healthcare can be achieved at lower costs, with successful early detection of disease, secondary prevention of illness, and improved health and well-being of individuals with chronic disease [2]. This can all be done within an environment that is familiar, comfortable, and accessible for patients [2]. Large-scale reforms targeting the Ontario primary healthcare system have been implemented over the past decade striving for this ideal, with a transition from a reactive model of acute, episodic care, to a proactive patient-centred system focused on health promotion, disease prevention, and chronic disease management [1,3–5]. One such reform introduced Family Health Teams (FHTs) in 2005 in Ontario, Canada, primary health care organizations characterized by: (1) group practice and practice networks; (2) patient enrolment and rostering; (3) changes to PHC governance and accountability; (4) funding and compensation; (5) creation of multidisciplinary care teams including family physicians, nurse practitioners/registered nurses, and other health care professionals (for example, social workers and dieticians); (6) internet technology infrastructure; and (7) education/training with a focus on quality improvement [3,6–8]. Similar to the team-based organization of Community Health Centres (CHCs), these transformations presented significant challenges to those delivering care, including the need to develop new care processes, make meaningful use of new technology, and adapt team-based approaches for chronic disease prevention and management [9–12]. To support primary healthcare organizations in Ontario with these challenges, the Quality Improvement and Innovation Partnership (QIIP), now amalgamated with Health Quality Ontario (HQO), was established as a provincial organization by the Ministry of Health and Long-Term Care (MOHLTC) in 2008.

1.1. Quality Improvement and Innovation Partnership

Between 2008 and 2010, the QIIP launched three waves of a quality improvement (QI) learning collaborative (LC) program based on the Institute for Healthcare Improvement Breakthrough Series (IHI-BTS) adult-learning model [13] and the Model for Improvement strategy of using small tests of change to determine impact prior to larger scale implementation [14]. Incorporating the concepts of the Chronic Disease Prevention and Management Framework [15], the purpose of this program was to educate, train, and enable primary healthcare teams to improve chronic disease management and outcomes of the population they serve by providing effective, efficient, accessible, comprehensive, and patient-centred, team-based healthcare. The LCs were designed to target the challenges of developing and adopting a chronic disease management approach by providing participants opportunities to learn to work together as a PHC team, and better utilize allied healthcare provider skills to improve care and adherence to clinical practice guidelines. Program activities focused on assisting interdisciplinary teams within FHTs and CHCs to: (1) improve type 2 diabetes (T2DM) management; (2) increase colorectal cancer (CRC) screening; (3) optimize patient access to primary healthcare ("advanced access"); and (4) improve team functioning. These four topic areas served as proxies for the ability of FHTs and CHCs to improve care in three domains: (1) chronic disease management; (2) disease prevention; and (3) office access and efficiency. Each wave of the QIIP-LC program consisted of three learning sessions, two action periods between the learning sessions, and one summative congress at the end. The learning sessions introduced Plan-Do-Study-Act (PDSA) methodology [16] and Ontario's CDPM framework [15]. A description of the program is provided in Table 1, with a detailed program logic model pending publication. Participation in the QIIP-LC program was voluntary and open to primary healthcare organizations across Ontario.

1.2. Evaluation of quality improvement initiatives

QI initiatives have the potential to improve chronic disease management, health promotion and disease prevention; however there have been few evaluations to support their significant financial and programmatic investment. More rigorous and comprehensive evaluations are needed to examine the effects of these programs on health outcomes and sustainability [17–23]. Thus, a rigorous and comprehensive external evaluation was designed to examine the impact of the QIIP-LC program on T2DM management, CRC screening, advanced access, and team functioning. Building from lessons learned from the recent evaluation of the Partnerships for Health program (PFH), a similar QI initiative in primary healthcare in Ontario, Canada [24], this evaluation incorporated a control group