Do Quality Improvement Plans in Primary Care Improve Perceived Quality of Care? A Mixed-Methods Study

by

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Abstract

This thesis explores whether the introduction of quality improvement plans in Ontario has improved, or has been perceived to improve, the quality of primary care. Quantitative findings suggest that there have been minimal changes in access to primary care from 2013/14 to 2014/15. Characteristics such as the type of primary care organization, availability of resources for quality improvement (QI), number of family physicians and rurality were not found to have statistically significant associations with performance change.

Eleven Directors and/or Quality Leads at family health teams or community health centres were interviewed until data saturation was achieved. Qualitative findings were organized into three inter-related themes: impact of quality improvement plans, success factors and challenges to improving the quality of primary care. Although most participants consistently expressed that quality improvement plans increased awareness and focus on quality improvement, substantial improvements in quality of care have yet to be achieved.
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Table of Contents

List of Tables ................................................................................................................... vi
List of Figures .................................................................................................................... vi

1.0 THE PROBLEM ............................................................................................................ 1
  1.1 Research Questions .................................................................................................... 2

2.0 BACKGROUND ............................................................................................................. 2
  2.1 Quality improvement ................................................................................................. 2
    2.1.1 A focus on quality in healthcare ........................................................................... 2
    2.1.2 Quality improvement in Ontario ....................................................................... 3
    2.1.3 Quality improvement plans in primary care ...................................................... 4
  2.2 Theories of behavior change ..................................................................................... 7
    2.2.1 Overview of theories ........................................................................................ 7
    2.2.2 Macro theory of behavior change ..................................................................... 8
    2.2.3 Mid-range theories on individual-level factors influencing behavior change .... 8
    2.2.4 Mid-range theories on social factors influencing behavior change ............... 10
    2.2.5 Mid-range theories on organizational factors influencing behavior change .... 10
    2.2.6 Mid-range theories on economic factors influencing behavior change .......... 11
    2.2.7 Approaches to improving quality of care ......................................................... 12
    2.2.8 Relevance of theories to Quality Improvement Plans ...................................... 13
  2.3 Factors influencing the success of quality improvement initiatives ......................... 14
  2.4 Factors influencing the quality of primary care ....................................................... 16

3.0 METHODS .................................................................................................................... 16
  3.1 Study design ............................................................................................................. 16
  3.2 Conceptual framework ............................................................................................. 17
  3.3 Phase 1: A retrospective cohort study examining predictors of perceived success for
    quality improvement initiatives in primary care ......................................................... 18
    3.3.1 Participants and setting .................................................................................... 18
    3.3.2 Outcomes ....................................................................................................... 19
    3.3.3 Predictors ....................................................................................................... 20
    3.3.4 Data collection ............................................................................................... 21
    3.3.5 Data analysis ................................................................................................. 22
  3.4 Phase 2: A qualitative descriptive study of the perceived impact of quality
    improvement plans on the quality of primary care ..................................................... 23
    3.4.1 Theoretical orientation .................................................................................... 23
    3.4.2 Reflexivity ..................................................................................................... 23
    3.4.3 Participants and setting .................................................................................... 24
    3.4.4 Data collection ............................................................................................... 25
    3.4.5 Data analysis ................................................................................................. 26

4.0 RESULTS ....................................................................................................................... 27
  4.1 Phase 1: A retrospective cohort study examining predictors of perceived success for
    quality improvement initiatives in primary care ......................................................... 27
    4.1.1 Description of study participants .................................................................... 27
List of Tables

Table 1. Characteristics of included organizations................................................................. 28

Table 2. T-test results comparing the type of organization and resource availability on mean performance change scores.............................................................................................. 29

Table 3. Multiple linear regression results of characteristics predictive of performance change................................................................................................................................. 30

Table 4. Characteristics of study participants........................................................................... 31

List of Figures

Figure 1. Conceptual model of factors that influence the success of quality improvement initiatives.......................................................................................................................... 18
1.0 THE PROBLEM

Although Canadians have consistently expressed that they are generally satisfied with the health care services they receive and are proud of our universal health care system (1, 2), the quality of care in Canada still has considerable room for improvement. With respect to primary care, for example, patients have reported difficulty accessing medical care outside of daytime hours, with many patients going to the emergency department for issues that could have been treated at their usual place of care had it been available. (3) Additionally, most Canadians reported that they were not able to get a same-day appointment with a doctor or nurse when they needed medical attention and 1 out of 5 patients reported that their time has been wasted due to poorly coordinated care. (3) Canadian primary care physicians have similarly negative views of the health care system in terms of access to primary health care, coordination of care among health care providers, use of information technology, and practice improvement initiatives when compared to physicians in other high-income countries. (4)

In an effort to improve quality of care across the health care system, Ontario enacted the Excellent Care For All Act in 2010. The legislation makes it mandatory for interprofessional team-based primary care organizations\(^1\) to complete annual quality improvement plans. However, little is known about whether the introduction of quality improvement plans in Ontario has improved, or has even been perceived to improve, the quality of care. Knowledge of the perceptions of quality improvement plans and quality improvement initiatives that have led to improved quality of care could support the development of novel strategies that can be used to enable system-wide quality improvement.

\(^1\) Interprofessional, team-based primary care organizations in Ontario employ more than 3,000 physicians and 4,300 interdisciplinary health care professionals, and provide care to approximately 3.9 million people
1.1 Research Questions

This mixed-methods study addressed the following research questions:

1. Are quality improvement plans perceived to enable improvements in the quality of primary care in Ontario?
2. What are the perceived barriers and areas for improvement with the quality improvement plan process in Ontario in primary care?
3. What factors impact the perceived success of quality improvement initiatives in primary care?

2.0 BACKGROUND

2.1 Quality improvement

2.1.1 A focus on quality in healthcare

In the early 2000s, several key reports highlighted significant problems with healthcare quality and patient safety, specifically with respect to the substantial number of medical errors occurring in hospitals. These reports played a substantial role in clinicians and policymakers placing a greater focus on quality improvement. (5-7) In Canada, several reports released by national and provincial commissions added to the concern and proposed reforms to improve quality of care. (8-10) In 2004, the creation of the health accord between the federal, provincial and territorial governments led to agreement amongst all governments to improve quality of care through reduced wait times for specific priority areas; increased supply of health care professionals; improved access to home care; improved access to primary health care; improved access to needed drug therapies; continued investment in health system innovations; and continuous reporting on health system performance. (11, 12) Several high-profile campaigns in Canada and the United States, such as Safer Healthcare Now! and the 100,000 Lives Campaign, provided support and resources for health care providers to improve quality and patient safety in their organizations. (13, 14)
Many organizations, including the World Health Organization, the Institute of Medicine and Health Quality Ontario, conceptualize quality of care across six dimensions: effectiveness, efficiency, accessibility, patient-centredness, equity, and safety.\(^{(5, 15, 16)}\) Effective care refers to care delivery that is evidence-based and results in improved health outcomes. Efficient care refers to care that is delivered in a way that maximizes resource use and limits waste. Accessible care is care delivery that is timely, geographically reasonable, and delivered in a setting that is appropriately resourced. Patient-centred care incorporates the preferences, aspirations, and culture of the patient. Equitable care is care delivery that is not influenced by personal characteristics such as gender, ethnicity, socioeconomic status, and geographical location. Lastly, safe care is care that is delivered in a way that minimizes harm and risk to the patient.\(^{(5, 15)}\)

2.1.2 Quality improvement in Ontario

In Ontario, the *Excellent Care for All Act* was enacted in 2010 to provide a system-level approach to drive quality improvement with the goal of improving the quality of patients’ experience and delivering evidence-informed care.\(^{(17)}\) Quality improvement is defined as “the combined and unceasing efforts of everyone – healthcare professionals, patients and their families, researchers, payers, planners and educators – to make the changes that will lead to better patient outcomes (health), better system performance (care) and better professional development”.\(^{(18)}\) Hospitals, interprofessional primary care organizations (i.e., family health teams, nurse practitioner-led clinics, community health centres and aboriginal health access centres), and long-term care homes are required to adhere to certain aspects of the legislation. A key requirement is for these organizations to submit annual quality improvement plans to Health Quality Ontario (an agency funded by the Ontario Ministry of Health and Long-Term Care), create quality committees and put patient satisfaction surveys in place.\(^{(19)}\)
2.1.3 Quality improvement plans in primary care

Quality improvement plans are formal, documented commitments to improve quality of care through focused performance targets and actions that ideally align with provincial and system priorities. Each organization must make its quality improvement plan publicly available. Each quality improvement plan contains information pertaining to the aim of the performance indicators, organization’s self-reported current performance, target performance for the upcoming year, planned improvement initiatives (change ideas), methods and process measures for the change ideas, and goals for the change ideas.

Quality improvement plans are developed by the primary care organizations and are meant to demonstrate a public commitment to improving quality of care. Health Quality Ontario provides the overall vision for the priority areas that organizations should focus on, which align with provincial priorities and are developed in collaboration with partners and patients across the system.

As of 2016, Health Quality Ontario recommends a focus on three quality dimensions—Timely, Patient-centred and Effective—with priority indicators specified for each quality dimension. Organizations are asked to review the list of priority indicators and determine which indicators are relevant to their organization. To do this, Health Quality Ontario suggests that organizations review their current performance against provincial data and benchmarks, if they exist. For indicators where organizations are performing poorly, Health Quality Ontario strongly encourages including these indicators in the quality improvement plan. If an organization decides not to report on a priority indicator, Health Quality Ontario asks that they explain why in their submission. Health Quality Ontario does not specify the targets that should be set for each indicator. In addition to the recommended priority indicators, organizations can choose to report on any additional indicators that are relevant to them.
Organizations complete quality improvement plans every year allowing them to monitor the progress they have made on selected indicators. Neither Health Quality Ontario nor the Ministry of Health and Long-Term Care provides rewards or imposes consequences, as the data are meant to identify areas for improvement where quality improvement interventions can be targeted.

During the study period (2013/14 to 2014/15), five priority indicators were recommended by Health Quality Ontario within three quality dimensions—Access, Integrated and Patient-centred (as of 2016/17, the priority areas were changed to Timely, Patient-centred, Efficient, Effective and Population Health as described above). These indicators, which were recommended by Health Quality Ontario, assess timely access to primary care, improved integration between primary and acute care and improved patient experience:

- Percent of patients able to see a doctor or nurse practitioner on the same day or next day, when needed (Access)
- Percent of patients who see their primary care provider within 7 days after discharge from hospital for select conditions (Integrated)
- Percent of patients who report that when they see their doctor or nurse practitioner, they often or always are given the opportunity to ask questions about recommended treatment (Patient-centredness)
- Percent of patients who report that when they see their doctor or nurse practitioner, they often or always are involved as much as they want in decisions about their care and treatment (Patient-centredness)
- Percent of patients who report that when they see their doctor or nurse practitioner, their provider often or always spends enough time with them (Patient-centredness)

During the study period, optional indicators were also put forth by Health Quality Ontario that could assess timely access to primary care, improved integration between primary and acute care, and improved population health:
Percent of patients who visited the Emergency Department (ED) for conditions best managed elsewhere (BME) (Access)

Percent of acute hospital inpatients discharged with selected Case Mix Groups that are readmitted to any acute inpatient hospital for non-elective patient care within 30 days of discharge for index admission (Integrated)

Percent of patient population over age 65 that received influenza immunization (Population Health)

Percent of patient population who are “up to date” in cancer (i.e. breast, colorectal, cervical) screening (Population Health)

A quality improvement plan contains the work plan, narrative and progress report. The work plan is the main portion of the quality improvement plan and describes the indicators, improvement initiatives and targets that the organization has committed to improving on. The work plan aligns with the Institute for Healthcare Improvement’s Model for Improvement; the improvement process is driven by understanding what the organization is trying to accomplish (aim), how the organization will know that a change is an improvement (measures) and what changes can be made that will result in the desired improvement (change). The narrative provides context for the information in the quality improvement plan. It communicates quality improvement goals and commitments for the organization for the upcoming year and describes how patients, staff, and leadership are engaged in establishing these quality commitments; the challenges and risks that have been identified in executing the quality commitments and how these risks will be mitigated; how the organization is using its information management systems to better understand patient needs and inform targets; and how organizational leadership will be held accountable for achieving the targets set in the quality improvement plan. Lastly, the progress report provides information on the progress that has been made in quality improvement over the last year. It contains an organization’s change ideas in the previous year, whether or not the change ideas were implemented as expected and lessons learned.
The quality improvement plan development process includes the organization (e.g., the Board, senior management and/or Quality Committee) identifying performance indicators (put forth by Health Quality Ontario and/or members of the organization) that are relevant to the organization; creating a plan to address each indicator selected for improvement (i.e. setting a target, identifying quality improvement initiatives to be implemented, determining methods and identifying process measures); completing the narrative to provide context for the information in the quality improvement plan; completing a progress report to describe the organization’s progress compared to the previous year’s quality improvement plan commitments and targets; and getting approval of the quality improvement plan by the Board, senior leadership and Quality Committee (if applicable) to demonstrate shared responsibilities and accountabilities at the governance, administrative, and clinical levels. (20)

2.2 Theories of behavior change

2.2.1 Overview of theories

Theories describe phenomena that are observed and offer explanations for why these phenomena occur. Theories can be classified into three categories based on their scope: macro, mid-range, and micro theories. (22, 23) Macro theories provide a comprehensive view of reality pertaining to a phenomena in a particular discipline; consist of highly abstract concepts; are non-specific with respect to setting; consist of concepts that are not operationally defined; and do not generate testable hypotheses. An example of a macro theory is Everett Rogers’ diffusion of innovation theory. Mid-range theories provide a framework for phenomena in more specific settings. (24) They consist of concrete concepts that are operationally defined and may generate testable hypotheses. Mid-range theories are less abstract than macro theories but more abstract than micro theories. An example of a mid-range theory is Icek Ajzen’s theory of planned behavior. Micro theories offer the narrowest view of reality of phenomena observed in specific populations or fields of practice and generate testable hypotheses. (24) Micro
Theories of behavior change in health care “predict the uptake of a specific behavior by a particular health professional group or subgroup when exposed to a given intervention”. (24) The following sections will describe a macro theory and mid-range theories that are relevant to quality improvement.

2.2.2 Macro theory of behavior change

Everett Rogers’ diffusion of innovation theory explains how innovations spread through a culture. (25) The theory suggests that there are five stages – knowledge, persuasion, decision, implementation, and confirmation – through which individuals proceed when adopting an innovation. In the knowledge stage, individuals become aware of the innovation. Persuasion refers to the development of a positive attitude towards the innovation. Decision refers to an individual’s intention to adopt an innovation. Implementation is the use of the innovation in an individual’s environment. Lastly, the confirmation stage refers to the continued use or abandonment of the innovation. (25)

Rogers suggests that innovations are more likely to be adopted if they align with individuals’ current beliefs and practice; are easy to use; are perceived as more advantageous relative to current practice; are observed to be in use by others; and can be pilot tested before formal adoption of the innovation. He posits that adopters fall into five categories: innovators, early adopters, early majority, late majority and laggards. Innovators consist of individuals who are the fastest to change with laggards being the individuals who are slowest to adopt an innovation. (24, 25)

2.2.3 Mid-range theories on individual-level factors influencing behavior change

Several types of theories – cognitive, educational, and motivational theories – have been developed that describe individual-level factors that can influence behavior change. (26) Cognitive theories focus on the way individuals think and make decisions. Educational theories focus on individuals’ ways of learning. Motivational theories focus
on individuals’ perceptions, attitudes and intentions towards the desired behavior change.

Cognitive theories focus on the decision-making processes of individuals. For example, rational decision-making theories assume that individuals weigh the advantages and disadvantages of a specific behavior, and will only change their behavior if they perceive that the advantages outweigh the disadvantages. Cognitive-psychological theories assume that behavior is based on previous experiences and contextual information. Additionally, other cognitive theories assume that behavior is influenced by existing behaviors, opinions and needs as individuals prefer “consistency in thinking and acting”.(26)

Adult learning theories, part of educational theories, suggest that healthcare professionals need to experience the negative consequences of an action before they will be motivated to change.(24) These theories suggest that abstract information, such as clinical guidelines, will not motivate individuals to change their behavior.

The theory of planned behavior, a motivational theory, suggests that individuals’ attitudes about a behavior influences intention to adopt the behavior, which in turn influences actual behavior change; with attitudes being influenced by perceived behavioral control and perceived social norms about the behavior.(27) Perceived behavioral control refers to an individual’s perceived ability to perform the desired behavior; it is an individual’s belief about whether he/she can achieve the desired behavior change. Perceived social norms are impacted by the judgments and behaviors of others towards the behavior change.(27)
2.2.4 Mid-range theories on social factors influencing behavior change

Several theories have been developed that suggest behavior is influenced by social factors such as an individual’s environment and social network. These theories include social learning theory and social influence theories.

Bandura’s social learning theory posits that behavior is learned through observation.(28) It suggests that contextual, personal and behavioral factors impact behavior. Contextual factors include characteristics of the environment in which behavioral reinforcement takes place. Personal factors—cognitive, affective and biological events—refer to an individual’s ability to learn through experience and observation of others’ behavior. Behavioral factors refer to the ability to perform a given behavior. The theory posits that learning is the result of continuous interactions between contextual, personal and behavioral factors.(28)

Social influence theories posit that shared beliefs, social norms and the culture of an individual’s social network influences behavior; change does not occur until local consensus has been achieved.(24, 26) These theories emphasize the importance of local opinion leaders, respected and influential people who represent the social norms in a network and model the desired behavior, to bring about desired behavior change.

2.2.5 Mid-range theories on organizational factors influencing behavior change

Organizational change theories suggest that behavior change can be accomplished by changing the system of care. These theories include theories of innovative organizations, Total Quality Management (TQM) or Continuous Quality Improvement (CQI), and theories on organizational culture.

Theories of innovative organizations propose characteristics of organizations that impact their ability to implement innovations. Damanpour found that organizational innovativeness was predicted by a number of characteristics: positive attitude towards
change among leaders, good communication internally and externally, decentralization of decision making, increased professionalism, diversity of specialization, functional differentiation, increased technical knowledge and increased budget.(29)

TQM/CQI is a theory in which inadequate performance is viewed as a system, rather than an individual, failure. It suggests that organizational changes, teambuilding and strong leadership play an important role in influencing change. TQM/CQI posits that change can be achieved through the following principles: an organization-wide effort to improve the quality of care; a patient focus; redesign of care processes with continuous improvement; periods of change are alternated with periods of stability; and evidence-based management of the change.

Theories on organizational culture assume that behavior change can be accomplished by changing the culture. In order to enable positive change in patient care, organizations need to develop a quality culture where patient-centeredness, teamwork and continuous learning are central to the organization.

2.2.6 Mid-range theories on economic factors influencing behavior change

Economic theories assume that individuals behave in a way that optimizes their goals and reduces risk. Reimbursement theories and theories on contracting are two types of economic theories that emphasize the importance of reimbursement systems in health care for changing professional behavior and improving care.

Reimbursement theories assume that the type of reimbursement model for health care providers is relevant to reducing financial risks and reaching financial goals. By changing the reimbursement model, individual and organizational performance can be influenced to change in a way that maximizes financial benefits.(26)
Theories on contracting assume that health care providers will change their behavior and adopt an innovation or best practice when financial risk is tied to their reimbursement. As such, individuals can be influenced to change by introducing positive incentives for a specific behavior into their contracts.\(^{26}\)

### 2.2.7 Approaches to improving quality of care

Numerous approaches to improving quality of care have been described. These approaches are all based on theoretical assumptions about behavior change (as described earlier) and include strategies directed at the cognitive, motivational, marketing, reinforcement, social interaction, management and control and compulsion levels.

The cognitive approach assumes that individuals engage in rational decision-making, so providing individuals with evidence-based information will influence them to change their behavior to improve care.\(^{26}\) The motivational approach assumes that individuals need to be intrinsically motivated to change; strategies that incorporate problem-based learning are optimal for creating change. The marketing approach focuses on developing an attractive message that is adapted to the needs of the target group; as such, strategies for this approach include conducting a needs analysis to understand the needs of the target group, adaptation of the message to fit the local situation and distribution of the message through multiple channels. The reinforcement approach assumes that external factors influence behavior, so strategies to improve care include economic incentives and performance feedback. The social interaction approach assumes that individuals are influenced to change through their interaction with others who are considered important; strategies to improve care include the use of opinion leaders, peer assessment and outreach visits by respected colleagues or experts. The management approach assumes that improving care is a systems issue, and therefore, focuses less on influencing individual behavior; as such, strategies to improve care include redesigning care processes, improving organizational culture and continuously
monitoring and improving care. Lastly, the control and compulsion approach assumes that behavior is influenced by external pressure and individuals do their best to avoid negative consequences; strategies to improve care include legislation, compulsory accreditation, financial sanctions and disciplinary measures.(26)

It is evident that there are numerous approaches to influencing behavior change and improving quality of care. In reality, it is likely that the multiple theories informing these approaches are applied (and would need to be applied) simultaneously in order to impact behavior change and result in positive quality improvements. For example, to enable system-level improvements in quality of care in Ontario, the Ministry of Health Quality Ontario has used the control and compulsion approach (i.e. legislation requiring organizations to submit annual quality improvement plans) and the reinforcement approach (i.e. linking executive compensation to hospital quality improvement plan results and performance feedback to clinicians). Locally, health care provider organizations have complemented these approaches with the use of some or all of the cognitive, marketing, social interaction and management approaches.

2.2.8 Relevance of theories to Quality Improvement Plans

Many of the theories regarding individual, social, organizational and economic factors that can influence behavior may help to design and/or explain the successful adoption and utilization of quality improvement plans in primary care. With respect to individual-level factors, clinicians who perceive that the advantages of using a quality improvement plan outweigh the disadvantages (i.e., time and resource investment) or who have a positive attitude towards quality improvement plans (e.g. that it can enable improvements in quality of care) may in turn use the quality improvement plans, according to cognitive (i.e., rational-decision making theory) and motivational (i.e., theory of planned behavior) theories. Social learning and social influence theories may help to explain why quality improvement plan utilization is more likely if peers are observed using quality improvement plans, there is local consensus regarding its use,
and local opinion leaders support its use. Regarding organizational factors, buy-in from leadership, changes at the organization-level to support efforts to improve quality of care and a quality culture (i.e., patient-centredness, teamwork, and continuous learning) can positively impact the utilization of quality improvement plans, as explained by total quality management/continuous quality improvement and organizational culture theories. Lastly, economic factors such as linking executive compensation to indicator results may improve uptake of quality improvement plans, as explained by theories on contracting.

2.3 Factors influencing the success of quality improvement initiatives

Structural, organizational, individual and innovation-level factors have been described as influencing the success of QI initiatives. Structural factors represent aspects of the external structure of the community or sociocultural context in which an organization is situated such as the physical environment, public policies, social or political climate, economic climate and infrastructure. Organizational factors represent aspects of the organization in which a QI initiative is being implemented such as leadership effectiveness, culture and employee satisfaction. Individual-level factors represent aspects of the individual provider who is involved in the QI initiative such as attitudes toward QI and perceived behavioral control over the QI initiative. Innovation-level factors represent aspects of the innovation or QI initiative to be implemented such as the relative advantage of using the innovation over usual practice and the quality of evidence for the innovation’s efficacy.(30)

Structural factors that impact the success of QI initiatives include external motivators and project sponsorship. External pressures and incentives to improve quality and performance as well as external contributions of resources such as personnel, money, expertise, and facilities may result in more successful QI initiatives.(31)
Organizational factors that impact the success of QI initiatives include the innovativeness of an organization and contextual factors relating to an organization, Microsystems within an organization and QI teams within an organization. Determinants of innovativeness within an organization have been described. Greenhalgh et al. conducted a systematic review and found that decentralization, good internal and external communication, positive attitude towards change by management, increased professionalism, complexity, functional differentiation, adequate resources, increased technical capacity and diversity of specialization had a significant and positive association with organizational innovativeness. The authors hypothesized that an organization’s readiness for innovation depends on several factors: tension for change, dedicated resources, support and advocacy, innovation-organization compatibility, assessment of implications and capacity to evaluate the innovation. They described several factors influencing the successful adoption of innovations within organizations: incorporation of end users’ perspectives during the development stage, positive and supportive change agents, and effective external change agents.

Variability in the context of QI initiatives have also been described as impacting QI success. Through a systematic review and expert opinion, Kaplan et al. identified important contextual factors that affect the success of QI initiatives. Contextual factors relating to the microsystem and QI team within an organization – QI leadership, culture supportive of QI, motivation to change, QI team diversity, physician involvement in the QI team, subject matter expert, prior QI experience, team decision-making process, team norms and team QI skill – are thought to directly impact the success of QI initiatives. Contextual factors relating to the organization – QI leadership, culture supportive of QI, maturity of organizational QI, and physician payment structure – are thought to indirectly influence the success of QI initiatives.

Individual-level factors that influence the success of QI initiatives include perceptions of self-efficacy, skill proficiency, potential benefits of an innovation and need for an
innovation. Providers who are confident in their ability to perform a specific behavior (self-efficacy), have the skills needed to use an innovation, believe an innovation will produce beneficial results and believe there is a need for an innovation are more likely to implement a QI program successfully.(33)

Innovation-level factors that impact the success of QI initiatives include the adaptability and compatibility of an innovation. Innovations or QI initiatives that can be modified based on the needs of the providers, organization and community have a higher chance of implementation compared to innovations that are not adaptable. Additionally, innovations that align with an organization’s existing practices, priorities and mission will be implemented more effectively compared to innovations that lack compatibility.(33)

2.4 Factors influencing the quality of primary care
Factors associated with high quality of care in primary care have been described. The physician remuneration model, presence of allied health professionals and/or specialist physicians, presence of mechanisms to maintain or evaluate competence, extent of sharing of administrative resources, average organizational access to the practice and number of physicians are associated with high quality of care.(34) Additionally, common features of primary care organizations that deliver high quality care is a continuous effort to develop a shared vision of high quality care, aligning resource use and work processes with that vision, and balancing professional aspirations with population needs (i.e. favoring access for registered patients rather than the general population).(35)

3.0 METHODS

3.1 Study design
A mixed-methods study was conducted to explore the perceived impact of quality improvement plans on the perceived quality of care in primary care. Incorporating
qualitative and quantitative techniques expands the scope and allows for a deeper understanding of the phenomena under study. (36)

An explanatory sequential design was used for the study. With this study design, there were two distinct interactive phases: quantitative data collection and analysis in Phase 1 followed by qualitative data collection and analysis in Phase 2. (37) The quantitative results helped to inform the sampling strategy for the qualitative study. The purpose of this study design was to use qualitative data to help explain or elaborate on initial quantitative findings. (37)

Specifically, a retrospective cohort study was conducted to examine predictors of perceived success for quality improvement initiatives in primary care. From this study, primary care organizations that are performing well or poorly on performance indicators were identified to inform the qualitative study.

A qualitative descriptive study was then conducted to examine stakeholders’ experiences and perceptions of quality improvement plans in primary care. Qualitative descriptive studies are the least theoretical of the qualitative approaches and stay close to the surface of participants’ words (36, 38, 39); they are particularly useful for investigating phenomena that are practice and policy-relevant. (36)

3.2 Conceptual framework

The lead author (KT) developed a conceptual framework based on literature describing structural, organizational, individual-level and innovation-level factors that may influence the success of improvement interventions, and an existing framework on effective implementation (i.e., Consolidated Framework for Implementation Research) [Figure 1]. (40) The framework was used to guide analysis and synthesis.
Figure 1. Conceptual model of factors that influence the success of quality improvement initiatives

* System and process changes refer to changes made to the underlying system of care (e.g., people, infrastructure, technology) or changes made to the processes of care/service delivery

Based on the conceptual model, quality improvement plans are considered a policy innovation. As such, the adaptability of quality improvement plans to local practice, its compatibility with existing workflow, its trialability and its ease of use affects the ability of quality improvement plans to influence practice changes that can improve quality of care.

3.3 Phase 1: A retrospective cohort study examining predictors of perceived success for quality improvement initiatives in primary care

3.3.1 Participants and setting

Quality improvement plans submitted by Ontario family health teams (FHTs) and community health centres (CHCs) in both 2013/14 and 2014/15 were evaluated for improvements in performance indicator scores, a proxy for improved quality of care. In 2013/14, a total of 183 FHTs and 75 CHCs submitted a quality improvement plan to Health Quality Ontario. In 2014/15, 185 FHTs and 75 CHCs submitted a quality
improvement plan. FHTs consist of interdisciplinary teams of family physicians, nurse practitioners, registered nurses and allied health who work together to provide primary health care. CHCs consist of interdisciplinary teams that provide primary health care along with health promotion and disease prevention programs to at-risk communities; they focus on underlying conditions that affect health such as social determinants of health, literacy and poor diet.

3.3.2 Outcomes

The outcome variables included two priority indicators. Priority indicators reflect organizational-, sector-specific and system-wide priorities. The two priority indicators reflect two quality themes: Access and Integrated. The following outcomes measures were included in the study:

Access

- Percent change in the proportion of patients able to see their primary care provider the same day or next day when needed from 2013/14 to 2014/15

Integrated

- Percent change in the proportion of patients able to see their primary care provider within 7 days after discharge from hospital for selected conditions (based on Case Mix Groups) from 2013/14 to 2014/15

These two indicators were selected based on data completeness. In 2013/14, 77% (198/258) of quality improvement plans submitted by FHTs and CHCs included the Access indicator and 69% (178/258) of quality improvement plans included the Integrated indicator.

The Access indicator was derived from self-reported survey data. Each organization administered a patient satisfaction survey, analyzed the data and reported the results on their quality improvement plan.
The *Integrated* indicator was derived from administrative data (i.e., Discharge Abstract Database, Claims History Database, data (M7), Client Agency Program Enrolment (Ontario Population Health Index of Databases), Corporate Provider Database). The inclusion criteria included patients who were rostered to an Ontario physician in a primary care practice model at the time of hospital discharge. Follow-up was restricted to services provided by a family physician, general practitioner, pediatrician or geriatrician in the practice group the patient was registered with. Organizations accessed their data via the Ministry’s Health Data Branch Web Portal and reported the result on their quality improvement plan.(44)

3.3.3 Predictors

The predictor variables consisted of primary care organizations’ characteristics:

- Type of organization (i.e. FHT or CHC)
- Type of community served (i.e. % rural population)
- Number of family physicians at the primary care organization
- Resources available for QI (i.e., yes or no)

FHTs are a relatively new model for primary care in Ontario. FHTs were established between 2005 and 2012, with just over a quarter being operationalized in 2011/12.(41) In contrast, CHCs have been in operation for over forty years.(45) As such, it is hypothesized that CHCs may have more mature QI programs than FHTs, which may have a positive impact on the success of QI initiatives.

Physicians practicing in rural and remote communities face practical and financial challenges with obtaining and maintaining additional skills training.(46) As such, it is hypothesized that family physicians practicing in rural and remote communities will have less access to QI training than physicians in urban communities, which may negatively affect the success of QI initiatives.
The number of physicians at an organization has been associated with quality of care. Evidence suggests that the greater the number of physicians, the higher the perceived quality of care. (34) It is, therefore, hypothesized that the number of family physicians at an organization will be positively associated with QI success, a proxy for quality of care.

Lastly, the availability of resources has been found to positively influence the success of QI efforts. (31, 32) As such, it is hypothesized that organizations that have resources available for QI will have more successful QI initiatives than organizations that do not have the needed resources. Although this would be more accurately represented as a gradient (e.g., number or amount of resources available), data were only available on whether or not resources were available.

The association between each of the predictor variables and the outcome variables was examined.

Data on innovation, individual, structural or other organizational factors that may influence the success of improvement interventions were not included due to a lack of available data.

### 3.3.4 Data collection

Quality improvement plans are submitted electronically by Ontario primary care organizations to Health Quality Ontario. Quality improvement plans submitted in 2014 and 2015 by FHTs and CHCs were collected from Health Quality Ontario for the study. Data for the outcome measures were collected from the work plan. The predictor variables were obtained from several sources:

- Data on the type of organization was collected from the work plan
- Data on the type of community (i.e., % rural population) served by the organization was collected from an online source (i.e., Statistics Canada’s 2011 census)(47)
• Data on the number of family physicians at an organization was collected via its website or telephone
• Data on resource availability was collected through the narrative (i.e., organizations that did not identify resources as a challenge/risk for QI were considered as having available resources for QI)

3.3.5 Data analysis
Statistical analysis was performed using R statistical software. Univariate analysis, bivariate analysis and multiple linear regressions were conducted to examine the study data and predictors (i.e., primary care organization characteristics) of the perceived success of quality improvement initiatives. Success was defined as improvements in self-reported performance indicators scores, which is a proxy for improved quality of care.

Univariate analysis was performed to generate descriptive statistics, examine the distribution of each model variable and ensure all model variables consisted of values within plausible ranges. Correlation analyses were conducted to test for significant relationships between predictor and outcome variables. For categorical variables with two groups, Student’s t-tests were performed to detect significant differences in group means.

A multiple linear regression was performed to examine the association between predictors and the outcome variables—perceived success of quality improvement initiatives, as indicated by the percent change in performance indicator scores. All variables that were considered potential predictors a priori were entered into the regression model. A sample size of 159 organizations was required to detect a 10% clinically significant absolute difference in performance scores with 90% power.

A type I error rate of 5% was used for this study. As such, p-values less than or equal to 0.05 were considered statistically significant. All p-values were two-tailed.
3.4 Phase 2: A qualitative descriptive study of the perceived impact of quality improvement plans on the quality of primary care

3.4.1 Theoretical orientation

A pragmatic epistemology guided this work. Epistemologies are beliefs about the nature and extent of knowledge especially with reference to its validity and limits. Pragmatic epistemology “presumes that phenomena operate independently of our ideas, but also grants that we must apprehend these phenomena through our ideas”. The term “pragmatic” suggests practical problems—rather than theory—are of interest; it obliges researchers to frame findings in accessible and actionable terms.(48)

Epistemologies flow from ontologies—beliefs about what makes up reality. Pragmatic epistemology falls between realist and idealist ontologies. Realist ontology presumes that phenomena exist independently of our ideas. Therefore, when researchers study phenomena the data would correspond directly to reality without bias created by one’s values and perspectives. Idealist ontology presumes that we only have access to our ideas and subjective experiences, which shape how we apprehend phenomena. Therefore, when researchers study phenomena they are only examining their mental constructs of it—the data are researchers’ representations and do not correspond directly to reality.(48)

3.4.2 Reflexivity

Researchers’ background and position affects “what they choose to investigate, the angle of investigation, the methods judged most adequate for this purpose, the findings considered most appropriate and the framing and communication of conclusions”; they bring their perspectives of their discipline, their research interests and their theoretical orientations, among other things.(49) In qualitative research, researchers must practice reflexivity—systematically reflecting on how their preconceptions (i.e. beliefs, motives,
background, and perspectives) might shape the research process and product. As such, a reflexive journal was produced to describe the researcher’s preconceptions prior to the start of the study and decisions made during the entire research process.

### 3.4.3 Participants and setting

Based on results from Phase 1, primary care organizations that were performing well, poorly or the same on performance indicators were identified. Organizations that 1) significantly improved in performance (≥10% improvement in performance indicator scores from 2013/14 to 2014/15), 2) significantly decreased in performance (≥10% decrease in scores) and 3) had no or little change in performance (0 +/- 1% change in scores) were identified.

Phase 1 focused on two indicators: 1) percent of patients able to see their primary care provider on the same or next day when needed and 2) percent of patients who visited their primary care physician within 7 days of hospital discharge for select Case Mix Groups. For these two indicators, a total of 30 organizations (i.e., FHTs and CHCs) were identified that had the following characteristics:

- Significantly improved in performance for both indicators (n=1)
- Significantly improved for one indicator but had no/little change in performance for the other indicator (n=10)
- Significantly improved for one indicator but significantly decreased in performance for the other indicator (n=9)
- Had no or very little change in performance for both indicators (n=3)
- Significantly decreased in performance for one indicator but had no/little change in performance for the other indicator (n=6)
- Significantly decreased in performance for both indicators (n=1)

Participants were purposively selected from these organizations for the qualitative study. Stakeholders who had been involved with quality improvement and the quality
improvement plan process were eligible to participate. The lead author (KT) reached out to stakeholders at the 30 organizations via email, and 11 agreed to participate and were interviewed until data saturation was reached. Participants included Directors and/or Quality Leads that worked at FHTs and CHCs in Ontario.

3.4.4 Data collection

In depth, semi-structured interviews were conducted with participants (Box 1). Participants were recruited until data saturation had been reached. Maximum variation sampling (based on type of organization, geography and performance), a form of purposive sampling, was used to ensure different groups of stakeholders with different views of the quality improvement plans were interviewed; this allowed us to examine the perceptions of the quality improvement plans across a broad range of demographically- and performance-varied cases. All interviews were audiotaped and transcribed.

Box 1. Semi-Structured Interview Guide

Background Information
Thank person for participating; go through the informed consent process (i.e. overview of the study, risks and benefits of participating, protection of confidentiality and anonymity, etc.); and obtain written consent (for in-person interviews) or verbal consent (for telephone interviews).

Warm-up and establishing rapport
- Could you describe your experience with quality improvement plans?
- What is your experience with the quality improvement plan process? How do you feel about the quality improvement plan process?
- What do you think has been the impact of quality improvement plans on quality of care in your organization?
- What do you think has been the impact of quality improvement plans on access to care in your organization?
- What do you think has been the impact of quality improvement plans on integration of care in your organization?
Innovation-level factors affecting adoption of innovations
- What do you think of quality improvement plans?
- What are the barriers to/issues with using the quality improvement plans, if any?
- What are some areas for improvement with the quality improvement plans, if any?

Individual-level factors affecting adoption of innovations
- What is your experience with quality improvement? How do you feel about quality improvement?
- How do you view/feel about quality improvement plans?
- How do others in your organization view/feel about quality improvement plans?

System-level factors affecting adoption of innovations
- Is there dedicated time and resources for staff to complete and utilize the quality improvement plans?
- Do staff have the appropriate skills to monitor and evaluate the impact of quality improvement initiatives?
- What was the culture of your organization with respect to quality improvement prior to and after the implementation of quality improvement plans?

Relevance of performance indicators
- Are the performance indicators in the quality improvement plan relevant (i.e. valid, reliable, accurate) assessments of the quality of care in your organization?

Wrap-up questions
- Is there anything else I haven’t asked you about that you’d like to add?
- The responses you have provided may stimulate some additional questions or need for further clarification. If so, may we contact you in the future?

3.4.5 Data analysis
Deductive and inductive thematic analysis was conducted. NVivo qualitative research software (QSR International, Australia) was used to manage the data.(52) The lead investigator (KT) coded interview transcripts to identify interesting features of the
dataset. Codes refer to “the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon”; they are used as a means of organizing data into meaningful groups. Code development was initially directed by the conceptual framework of factors influencing the success of QI initiatives (i.e., deductive thematic analysis). Additional codes were generated based on the content of the data (i.e., inductive thematic analysis). Codes and their coded interview extracts were collated into potential themes and sub-themes. All themes and coded interview extracts were reviewed by the lead investigator (KT) to ensure they had internal homogeneity and external heterogeneity; data within each theme should form a coherent pattern and a clear distinction between different themes should be evident. All authors also reviewed the themes and some coded interview extracts. Data collection and data analysis occurred simultaneously.

4.0 RESULTS

4.1 Phase 1: A retrospective cohort study examining predictors of perceived success for quality improvement initiatives in primary care

4.1.1 Description of study participants

A description of the study participants is shown in Table 1. A total of 147 organizations (i.e., FHTs and CHCs) were included in the analysis for the Access indicator. For the Integrated indicator, 156 organizations were included in the analysis.

From 2013/14 to 2014/15, the performance scores for the Access indicator, which measured the percent of patients who reported being able to see their primary care provider the same or next day when needed, had increased for 58 (39.4%) organizations, decreased for 73 (49.7%) organizations and remained the same for 16 (10.9%) organizations. On average, 48.5% of patients in 2013/14 and 47.0% of patients in 2014/15 were able to see their primary care provider the same or next day when needed; this represents a 1.6% decrease in access from 2013/14 to 2014/15. Nearly half
(47%) of the organizations that included the Access indicator on their quality improvement plan were located in communities with a 30% or greater rural population. The organizations had an average of 14 family physicians and more than a third (41.8%) indicated that they did not have sufficient resources for QI.

For the Integrated indicator, which measured the percent of patients who saw their primary care provider within 7 days of hospital discharge, the performance scores increased for 89 (57.1%) organizations and decreased for 67 (42.9%) organizations from 2013/14 to 2014/15. The mean performance score was 59.5% in 2013-14 and 59.8% in 2014/15. Organizations that included the Integrated indicator in their quality improvement plan were mostly located in urban areas (81%), had an average of 12 family physicians and more than half (59%) indicated that they did not have sufficient resources for QI.

Table 1. Characteristics of included organizations

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Access *</th>
<th>Integrated</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of organization, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHT</td>
<td>125 (85)</td>
<td>112 (72)</td>
<td></td>
</tr>
<tr>
<td>CHC</td>
<td>22 (15)</td>
<td>44 (28)</td>
<td></td>
</tr>
<tr>
<td><strong>Rural population, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td>52 (36)</td>
<td>126 (81)</td>
<td></td>
</tr>
<tr>
<td>1-29%</td>
<td>25 (17)</td>
<td>16 (10)</td>
<td></td>
</tr>
<tr>
<td>≥30%</td>
<td>69 (47)</td>
<td>14 (9)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of family physicians, mean (IQR)</strong></td>
<td>14 (6-16)</td>
<td>12 (4-13)</td>
<td></td>
</tr>
<tr>
<td><strong>Availability of resources for QI, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>82 (58)</td>
<td>63 (41)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>59 (42)</td>
<td>92 (59)</td>
<td></td>
</tr>
<tr>
<td><strong>% Performance in 2013-14, mean (min, max)</strong></td>
<td>48.5 (5.0, 100)</td>
<td>59.5 (8.0, 100)</td>
<td></td>
</tr>
<tr>
<td><strong>% Performance in 2014-15, mean (min, max)</strong></td>
<td>47.0 (4.9, 100)</td>
<td>59.8 (0.53, 100)</td>
<td></td>
</tr>
</tbody>
</table>
% Change in performance from 2013-14 to 2014-15, mean (IQR)  
-1.6 [-6.0, 3.0] 0.34 (-8.7, 11.2)

* Three organizations were excluded from the analysis because they did not have data for 2013-14 or 2014-15.

4.1.2 Bivariate analyses

There were no significant correlations between predictors—type of primary care organization, number of family physicians associated with the organization, perceived availability of resources for QI and rurality—or between predictors and the two outcomes of interest, percent change in performance scores for the Integrated and Access indicators from 2013/14 to 2014/15.

For both indicators, there were also no statistically significant differences in performance scores between FHTs and CHCs or between organizations with and without available resources for QI (Table 2).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% Change in Performance Score, mean</th>
<th>p-value (t-test)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of organization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHT</td>
<td>0.6</td>
<td>0.6</td>
<td>-6.1, 11.0</td>
</tr>
<tr>
<td>CHC</td>
<td>-1.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of resources for QI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-2.3</td>
<td>0.7</td>
<td>-4.4, 6.5</td>
</tr>
<tr>
<td>No</td>
<td>-1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Integrated</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of organization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHT</td>
<td>-0.3</td>
<td>0.5</td>
<td>-3.9, 8.6</td>
</tr>
<tr>
<td>CHC</td>
<td>2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of resources for QI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1.9</td>
<td>0.4</td>
<td>-3.2, 8.4</td>
</tr>
<tr>
<td>No</td>
<td>-0.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.1.3 Multiple linear regression model

Table 3 summarizes results of the multiple linear regression examining characteristics predictive of performance change, a proxy for the success of quality improvement initiatives. For the Access indicator, none of the characteristics examined were statistically significant predictors of improved performance scores from 2013/14 to 2014/15. The model explained 0.8% of population variance. Results were similar for the Integrated indicator, with the model explaining 1.1% of population variance.

Table 3. Multiple linear regression results of characteristics predictive of performance change

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error for β</th>
<th>p-value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beta (β)</td>
<td>Error for β</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Access</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHT</td>
<td>-0.3</td>
<td>4.1</td>
<td>0.9</td>
<td>-8.5, 7.9</td>
</tr>
<tr>
<td>Rural population</td>
<td>0.0</td>
<td>0.03</td>
<td>0.9</td>
<td>-0.05, 0.06</td>
</tr>
<tr>
<td>Number of family physicians</td>
<td>0.09</td>
<td>0.09</td>
<td>0.3</td>
<td>-0.09, 0.3</td>
</tr>
<tr>
<td>Availability of resources for QI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-0.4</td>
<td>2.7</td>
<td>0.9</td>
<td>-5.6, 4.9</td>
</tr>
<tr>
<td><strong>Integrated</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHT</td>
<td>-1.8</td>
<td>3.7</td>
<td>0.6</td>
<td>-3.2, 11.0</td>
</tr>
<tr>
<td>Rural population</td>
<td>0.006</td>
<td>0.07</td>
<td>0.9</td>
<td>-0.1, 0.2</td>
</tr>
<tr>
<td>Number of family physicians</td>
<td>-0.05</td>
<td>0.1</td>
<td>0.6</td>
<td>-0.3, 0.2</td>
</tr>
<tr>
<td>Availability of resources for QI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-2.8</td>
<td>3.2</td>
<td>0.4</td>
<td>-9.0, 3.5</td>
</tr>
</tbody>
</table>

4.2 Phase 2: A qualitative descriptive study of the perceived impact of quality improvement plans on the quality of primary care
4.2.1 Description of study participants

Eleven Directors and/or Quality Leads at 7 FHTs and 4 CHCs in Ontario participated in the study. Participants were recruited until the researcher determined that data saturation had been achieved.(50) Interviews were conducted between October and December 2015 and all occurred via telephone. Literature suggests that telephone interviewing is as valid as face-to-face interviewing.(53) Table 4 describes the study participants.

Table 4. Characteristics of study participants

<table>
<thead>
<tr>
<th>Interview</th>
<th>Type of organization</th>
<th>Role</th>
<th>Integrated – Performance score change</th>
<th>Access – Performance score change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FHT</td>
<td>Executive Director</td>
<td>Increased</td>
<td>Decreased</td>
</tr>
<tr>
<td>2</td>
<td>CHC</td>
<td>Director, Clinical Services</td>
<td>No change</td>
<td>Increased</td>
</tr>
<tr>
<td>3</td>
<td>FHT</td>
<td>Executive Director</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>4</td>
<td>FHT</td>
<td>Family physician, QI Committee Chair</td>
<td>Decreased</td>
<td>No change</td>
</tr>
<tr>
<td>5</td>
<td>CHC</td>
<td>Executive Director</td>
<td>Decreased</td>
<td>No change</td>
</tr>
<tr>
<td>6</td>
<td>FHT</td>
<td>Executive Director</td>
<td>Decreased</td>
<td>No change</td>
</tr>
<tr>
<td>7</td>
<td>CHC</td>
<td>Director, Clinical Services</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>8</td>
<td>FHT</td>
<td>Office Administrator</td>
<td>Decreased</td>
<td>No change</td>
</tr>
<tr>
<td>9</td>
<td>CHC</td>
<td>Executive Director</td>
<td>Increased</td>
<td>Decreased</td>
</tr>
<tr>
<td>10</td>
<td>FHT</td>
<td>Executive Director</td>
<td>Increased</td>
<td>No change</td>
</tr>
<tr>
<td>11</td>
<td>FHT</td>
<td>Executive Director</td>
<td>Increased</td>
<td>No change</td>
</tr>
</tbody>
</table>

Findings from the qualitative data have been organized into three inter-related themes: impact of quality improvement plans, success factors and challenges to improving quality of primary care. Each theme also includes several sub-themes.

4.2.2 Theme 1: Impact of quality improvement plans

Participants described the perceived impact of quality improvement plans on their organization. The implementation of quality improvement plans contributed to an
increased awareness and focus on quality improvement and led to the development of strategies to improve quality of care.

4.2.2.1 Increased awareness and focus on quality improvement

Although most participants expressed that the quality improvement plans have not had a substantial impact on quality of care, many felt that quality improvement plans have led to an increased awareness of performance measurement and QI. One participant (Participant #6, Executive Director, FHT) stated, “I think there is a lot of benefit to [quality improvement plans]. For one thing it makes the staff aware that we need to focus on quality improvement all the time.”

Another participant described how the quality improvement plan at her CHC has made both clinical and administrative staff more aware of QI, which has led to increased efforts to ensure patients are effectively transitioned from hospital to primary care and are receiving preventive health care services:

“...I’d say [quality improvement plans] had been a little bit of...a driving force. I wouldn’t say they’ve had a huge impact just because at a community health centre a lot of the things we’re already doing...it does make the providers more aware and...the front desk staff, like the medical secretary and receptionists who are booking appointments for example. It’s more in the forefront around them trying to get people in around 7 days of discharge from hospital. And the providers a bit more aware of making sure they’re pushing the screening and the flu shots and what not. It has had a minimal amount of impact I think but I wouldn’t say significant.” – Participant #2, Director of Clinical Services, CHC

Coupled with an increased awareness of QI, some participants felt that the quality improvement plan provided an overall focus on areas for practice improvement and provides a structure for reporting on performance. For example, quality improvement plans have enabled primary care organizations to discuss indicator findings and QI efforts with their staff, Board and QI Committees on a regular basis.
4.2.2.2 Strategies to improve quality of primary care

Between 2013/14 and 2014/15, four organizations reported better performance on scheduled post-discharge follow-up visits and one organization reported improved access to same or next day appointments, two indicators of quality care. The ability of quality improvement plans to increase focus on areas for improvement, as well as the general system-wide focus on improving quality, was often described as a driving force for implementing initiatives to improve post-discharge follow-up visits and access to primary care.

For the organizations that were able to increase post-hospital follow-up visits, the main strategy used was collaboration with local hospitals or patients. One participant (Participant #1, Executive Director, FHT) described how her organization formed a “great partnership” with the local hospital to track patients who were admitted to the hospital and to get information on their discharge. This allowed the primary care organization to follow-up with patients after discharge and provide them with the needed follow-up supports (e.g., visit with a family physician or a nurse practitioner). In addition, they also tracked all patients who were having pre-operative assessments and sent these patients letters asking them to call their primary care organization post-surgery. According to the participant, these strategies led to substantial improvements in the number of patients visiting their primary care provider after hospital discharge.

Another participant described how her organization implemented a “welcome home program”, which may have helped to increase follow-up visits post-discharge:

“To ensure people get an appointment following discharge from the hospital, through the health link initiative but also for the [quality improvement plan], we initiated and actually hired a full-time nurse and a part-time nurse practitioner who work with the hospital as a central point of contact for our patients being discharged. We call it the “welcome home program” and they link with the back
office line for the family practice offices to make sure the patient has an appointment and then circles back with the patient and then makes sure that the office has the discharge notes and all of the things they need for that patient. And then if the patient is unable to come, in many cases they’re not well enough to come, the nurse or nurse practitioner will make a home visit for the patient and then chart and discuss with the physicians.” – Participant #11, Executive Director, FHT

Another participant explained how the challenge of getting timely discharge information from hospitals was being overcome with e-notifications:

“With Hospital Report Manager we’re starting to get what they call e-notification. So now we know someone’s been discharged and that’s only in the last couple of months, allows us to now act on the information and actually call the patients to find out why they were discharged...now we are starting to put some mechanisms in place so we can start to record that. If a doctor finds out that we get an e-notification that a patient’s been discharged, a doctor will actually either message the nurse or pick up the phone and call the patient.” – Participant #10, Executive Director, FHT

Given that this program is relatively new (i.e., the organization started receiving e-notifications in 2016), it does not explain the increase in primary care provider visits post-discharge from 2013/14 to 2014/15. It may, however, explain improvements in the future, as e-notifications will provide timely information regarding patients’ discharge allowing organizations to act on this information and arrange the needed follow-up supports for patients.

For the organization that reported improved access to same or next day appointments, when needed, the strategy used was increasing the number of same-day appointments available for urgent issues. The participant expressed how the quality improvement plan helped to focus attention on improving access to care:
“We’re conscious of the fact that we have a quality improvement plan and we got to show an x number of people get in within 1 to 2 days. So you know, you review how many appointments you’ve got open and we have to look at our supply and demand and say okay there’s more demand for those appointments so we need to keep more if we want to move forward with our [quality improvement plan]. You’re taking more of those appointments and making them available for people to get in.” – Participant #2, Director of Clinical Services, CHC

4.2.3 Theme 2: Success factors
Several factors may contribute to the success of quality improvement plans. These factors relate to attributes of the quality improvement plans—adaptability and compatibility—and contextual factors—leadership and organizational culture.

4.2.3.1 Adaptability
Positive attributes of the quality improvement plan, as described by participants, include its adaptability to local practice. Participants recognized that there were certain indicators that they were required to address, but appreciated the ability to include additional indicators that were important to their particular organization and staff. A participant (Participant #1, Executive Director, FHT) stated: “I like that aspect of [the quality improvement plan] that these are the things [Health Quality Ontario] want answered, but these are the things [primary care organizations] can choose to answer. We picked up one extra thing this year to sort of work on but it gives us a bit more flexibility”. Another participant (Participant #5, Executive Director, CHC) said, “we had the opportunity to include things that we wanted to do, which was great...we did include some that were relevant”.

4.2.3.2 Compatibility with workflow
Some participants described how the quality improvement plan fit within their existing practice of performance measurement and aligned with their organizational efforts to improve quality of care:
“With the inception of our team, which operationally is 8 years, we were involved in a lot of early initiatives. So I think it became how we did work. So from a QI, we didn’t have the quality improvement plans then, we were always looking at ways of improving and becoming more efficient...[QI] is embedded in our values.” – Participant #10, Executive Director, FHT

“We’ve always measured quality things. We’ve always had indicators for what we wanted to improve on. So the fact that we’re mandated now [to use quality improvement plans] didn’t change the culture here. It just maybe changed what we were measuring. Or forced us to measure more than we already were. The culture was already here, it was already part of what we believed in and thought about.” – Participant #2, Director of Clinical Services, CHC

4.2.3.3 Leadership

Participants described how their Board provided guidance, support, oversight and direction setting of improvement activities. The existence of QI Committees to guide the organization’s measurement and QI efforts was also described. QI Committees often included representation from multiple professions including senior management, physician, nursing, allied health and clerical staff. Having QI Committees and being accountable to the Board for quality improvement work may help to increase use of the quality improvement plans.

The legislation, which makes it mandatory for primary care organizations to submit annual quality improvement plans, was also described as a critical factor for focusing attention on quality care. One participant felt that Health Quality Ontario was a good organization to lead the push to improving quality care and that, without quality improvement plans, “nothing happens”. Another participant described how the legislation increased attention on quality care:
“I think the legislation in Ontario has been helping at keeping quality front of the agenda and I would say that the plan itself as a tool for implementing the legislation...has been relatively useful and I think there’s been good improvements made each year.” – Participant #9, Executive Director, CHC

4.2.3.4 Organizational culture

Some participants felt that quality improvement plans (alone or in tandem with other initiatives such as AFHTO’s Data to Decision (D2D) and Multi-Sector Service Accountability Agreements between Local Health Integration Networks and primary care organizations) have “created an environment where we reflect on things” and has helped to shift organizational culture to one that was more supportive of QI. For example, the quality improvement plans helped shift one organization’s culture from “physicians versus FHT” to a more collaborative culture with physicians and FHT staff working together to look at performance data and areas for improvement:

“I think [our culture] was a little bit more separate. I think that was why it was so daunting the first year we collected this data. Now it’s more, let’s work together to figure out what else we can collect. It’s changed the culture from the physicians vs. the family health team to ‘okay, we have to report this let’s figure out ways of working around this together’ and it’s better. It’s taken a bit to get there. It’s more collaborative. There’s a little bit more engagement of looking at how we can do things better, which there wasn’t any of that at all. Before it was just ‘people should be grateful that we’re here and accept what we give them’.”
– Participant #1, Executive Director, FHT

4.2.4 Theme 3: Challenges to improving quality of primary care

All participants described challenges that affected the success of quality improvement plans. The success of an organization’s quality improvement plan (i.e., indicator results) did not appear to affect the types of challenges they experienced. The challenges are
related to data quality, staff and physician engagement and buy-in, and needed resources for measurement and quality improvement.

4.2.4.1 Data quality

Most participants felt that the indicators on the quality improvement plan were not always relevant assessments of the quality of care provided at their organization. This could be attributed to a lack of standardized data and a lack of real-time data to assess performance.

4.2.4.1.1 Lack of standardized data in electronic medical records

The lack of standardization on how patient data is recorded in electronic medical records (EMRs) contributed to poor data quality. A participant (Participant #11, Executive Director, FHT) described the lack of standardization, which led to concerns about indicator findings:

“EMRs are a disaster, there’s no standardization, there’s no drop down, there was none of that forethought when implementing these in the practice…people report things totally differently…we started pulling data on [the immunization indicator] and the numbers just didn’t look right. And again it has to do with the way the data is being recorded at the user level.” – Participant #11, Executive Director, FHT

4.2.4.1.2 Lack of real-time data to assess performance

Participants described how the lack of real-time data makes it hard to understand the current state of practice and to monitor performance. For example, data for the Integrated indicators—primary care visits post-discharge and emergency department visits for conditions Best Managed Elsewhere—are taken from administrative databases (i.e., Discharge Abstract Database, Claims History Database, Client Agency Program Data and Corporate Provider Database). As such, there are issues with the timeliness of the
data. Participants described how the indicator data were two years old and the frustration it causes:

“Well, some of the metrics the data that we get are old and I think they know that so some of the pieces we get, we’re submitting a quality improvement plan based on current work yet we’re using old data. Anything that can be whether it’s best managed elsewhere, 7 day discharge, the data is over a year and a bit old by the time we get it, which means it’s hard to see your improvements when you’re reporting on a current state yet you’re using old numbers. So it’s not, to me, I understand we had to start somewhere that’s understandable, but it’s hard to then say we’ve had an improvement because did the things we did last year really make a difference in that number, we really have to go back two years. And maybe we’ll see that information and data set over time and we’ll see change but that can be challenging and I think it’s challenging when you’re trying to relay the work to the frontline that’s doing the change management, it may not always be reflected.” – Participant #10, Executive Director, FHT

“A lot of the quality improvement plan data is old, which is really frustrating. It comes from other sources. It’s two years old. A lot of stuff has changed in two years, so it’s frustrating because you know you’ve done better but the results aren’t showing because it’s lagging.” – Participant #11, Executive Director, FHT

The fact that clinicians are not able to see the impact of improvement interventions due to a lack of timely data may negatively affect buy-in for the indicators and quality improvement plans.

4.2.4.2 Staff and physician engagement and buy-in

Participants expressed several factors affecting staff and physician engagement and buy-in: data does not reflect reality, differing opinions on what is important to measure, improvement outside of their control, competing priorities and lack of incentives.
4.2.4.2.1 Data does not reflect reality

Participants felt that indicators on the quality improvement plan did not reflect the full scope of their efforts to improve quality of care. For example, some felt that the Integrated indicator (i.e., primary care provider visits post-discharge) did not capture the full range of efforts made to follow-up with patients after discharge since it does not include home visits and phone consultations:

“The [7-day discharge] metric only measures when they’re seen in the office, billing code. But our team will do, so a nurse may go to the home but that’s not captured. A doctor may pick up the phone and actually call the patient because they know them really well and they have solid care support at home and say do you need to come in, and have those conversations over the phone. And they’ll say no, no, no I’m good and it might fall outside that 7-day discharge. There’s a variety of reasons why that might happen, we’re not measuring it at all the different ways we’re delivering care, so it doesn’t mean we’re not delivering care we just haven’t find a way of tracking that.” – Participant #10, Executive Director, FHT

“We have a post-discharge program way of contacting patients and much of the contact is via phone or via pharmacist or via nurses. So the data that the ministry gives us, which is really old data is not measuring what we’re actually doing.” – Participant #4, Family Physician and QI Committee Chair, FHT

Another participant described how a nurse practitioner spent a considerable amount of time trying to get a patient the resources she needed and coordinating her care, but this effort was not captured in the quality improvement plan:

“It’s so hard in a community health centre to really measure the things we do... how do you measure that four hours you spent with that lady and getting her health care that she never had before. How do you measure that? That’s what
we’d like to know. That’s what we’re proud of. The fact that we screened 2% more people this year than last year, okay, we get that, we can see that, but I think most people don’t get excited about that measurement. They might get excited if they felt that a person that didn’t ever have health care before finally got health care, that’s more exciting.” – Participant #2, Director of Clinical Services, CHC

4.2.4.2.2 Differing opinion on what is important to measure

One challenge facing the use of quality improvement plans is convincing health care providers that they are assessing real problems that need to be addressed. A participant recognized that quality improvement plans were helpful with directing attention to certain elements of quality care, but felt that some indicators on the quality improvement plan were not meaningful to their organization:

“I can appreciate the value of [quality improvement plans] as a means to focus the energy of the entire health care system in certain areas. But I got to say…they aren’t as meaningful to us in some cases…if we were making decisions on how we would improve quality, where would we focus our attention, we might focus on different things.” – Participant #5, Executive Director, CHC

Participants from organizations in rural communities or that address unique patient populations suggested needing a quality improvement plan that is more tailored to their organizational needs. The quality improvement plan, as it currently stands, was viewed as a standard ‘one size fits all’ tool. A participant from a family health team in northern Ontario stated:

“I would like to change [the quality improvement plan] so it’s more reflective of our area, for northern Ontario. We have very small hospitals here, we have small communities. Same day access, well really because it’s the same doc that works at the hospital that works at the clinic, if they can’t see their doc in the clinic then they could just go to the hospital, so it’s hard to answer that question. I
wish they had questions for the north or for smaller communities, than just for across the board. I get they want to compare but we are very different in the north so I would like it if they made a northern one and a Toronto one.” – Participant #1, Executive Director, FHT

The use of a top-down approach may have contributed to the difference in opinion (i.e., between Health Quality Ontario and primary care organizations) on what was important to measure. Some physicians were described as being resistant to quality improvement plan efforts because they felt that it a top-down approach to improving quality that was intruding on their professional autonomy. A participant (Participant #1, Executive Director, FHT) stated that physicians at her FHT, “were not pleased with the ministry looking at what they were doing...that was difficult because the first thing that they wanted us to measure in the quality improvement plan was how long does it take for patients to access their physicians.”

Another participant described how more input from frontline care providers is needed:

“We get a lot of push back because there are so many variables on a lot of them. Where’s this coming from? Where’s this going to be used? I think it’s just the consultation piece about the creation of the indicator and what actually would help. It should come from the, more input from the ground, from the physicians.” – Participant #11, Executive Director, FHT

4.2.4.2.3 Improvement outside of their control

Participants expressed that some of the indicators require collaboration across health care sectors and were, therefore, outside of the control of primary care. This perception contributed to a lack of buy-in for some indicators since they were viewed as more system-oriented. A participant stated, “There are some areas that we really don’t have control over. For example, emergency room use, we have no data, we don’t have access
to data on the emergency room use for our patients.” – Participant #7, Director of Clinical Services, CHC

Another participant described how her CHC has challenges with getting timely hospital discharge information:

“We don’t always get [hospital discharge information]...You might have an arrangement with the [hospital] you work the most closely with but we have patients who could be in 10 different hospitals and they all have different ways of doing it.” – Participant #2, Director of Clinical Services, CHC

The lack of hospital discharge information makes it difficult to follow-up with patients post-discharge in a timely manner.

Patient-driven factors, which were viewed as outside of the primary care organizations’ control, were also described. For example, a participant described that even though her FHT is working to see patients within 7 days of discharge, some patients cannot or do not want to visit their primary care provider:

“What we’re finding is we want to see the patients within 7 days, patients don’t want to come in. Patients cannot get in because they need a caregiver to bring them in and they’re not available within 7 days. The patient is going to see their specialist within 7 days so there’s a lot of factors that are in place that don’t allow us to see the patient within 7 days.” – Participant #6, Executive Director, FHT

Another participant (Participant #4, Family Physician and QI Committee Chair, FHT) described the discrepancy between the availability of appointments at his FHT and patients’ perceived access to same or next day appointments. He stated, “the way our office is set up is that any patient who calls any day of the year can be seen within 24 hours. So no limit, our on call system will cover that, and if you ask patients their satisfaction with that is 80%, so there is a disconnect with what’s reality.” A factor that
may contribute to this discrepancy is the perception that even though appointments are available, patients are not able to come to those appointments, which influences their perception on access to primary care.

In addition, participants mentioned that physicians were perceived as being outside of the control of FHTs and CHCs, but many of the indicators are physician-centric. A participant (Participant #8, Office Administrator, FHT) stated, “I don’t believe [physicians] have a sense of ownership. It’s difficult to have ownership if you don’t come to the table, so as much as we invite and have been inviting their cooperation, we don’t necessarily get it.” The lack of engagement from physicians makes it difficult to measure and improve on performance.

4.2.4.2.4 Competing priorities

Although all participants recognized the value of measurement and QI, some felt that it was not a priority given competing work demands or clinical duties, which affected the level of engagement in quality improvement work. One participant described the difficulty balancing multiple responsibilities, including quality improvement work:

“I have time to sort of dedicate to it [quality improvement]. Now when I say that, it’s on top of everything else I have to do, so there wasn’t any more time added to my schedule as a result of having to do that. But my agency knows I have to do it and is going to allow me time to do it. So the amount of time carved out to do [quality improvement] they’re going to support, but it’s at the expense of other things because there’s never enough time to do everything.” – Participant #2, Director of Clinical Services, CHC

Another participant expressed how patient care comes first, which means quality improvement work often falls behind:

“What we do find and struggle with is the capacity piece. So we have a team that meets and we have, we’ve tried hard to re-integrate it to everything we do but it
becomes difficult when you’re a smaller team because there is only so many people. If you’re directly impacting patient care you...have to serve the patient first and foremost. So fitting it in sometime in a more timely fashion is a challenge on teams because you’re always trying to shift priorities.” – Participant #10, Executive Director, FHT

4.2.4.2.5 Lack on incentives

Although the intrinsic motivation of staff is a key enabler for improving quality of care, some participants described how there was nothing holding their organization accountable for its performance, which affected the level of staff engagement and buy-in. For example, there were no ‘carrots’ or ‘sticks’ to encourage performance improvement and no actions taken to highlight organizations that did not meet their goals or targets:

“There’s no accountability. So these quality improvement plans are posted and they’re public so that’s good because then there’s more accountability but really somebody doesn’t meet their goals, well so what. There really isn’t, so unless there is a strong internal sort of oversight of the quality improvement plans and the board is holding people to account, there really isn’t much accountability.” – Participant #7, Director of Clinical Services, CHC

“I would like to see some more accountability with it. Cause right now we’re putting this out there, we’re trying to hold ourselves accountable, but there’s nothing to come back and say we just got our knuckle wrapped because we didn’t meet this target or ‘hey we’ve done really well look at this’. It’s very hard to make anybody have any responsibility for it if there’s no responsibility beyond submitting it.” – Participant #8, Office Administrator, FHT
As such, some felt that the quality improvement plans were just an exercise that needed to get done, which affected staff engagement and buy-in as considerable efforts were not taken to improve performance on the quality improvement plan indicators.

4.2.4.3 Needed resources to support measurement and quality improvement

Most participants expressed a lack of resources (i.e., time, personnel) that could be dedicated to measurement and quality improvement work. Participants described both a lack of internal resources and a lack of external contributions of resources.

4.2.4.3.1 Lack of internal resources

Although the value of performance measurement and QI was recognized, many participants described a lack of time and resources that could be dedicated to this work. A participant (Participant #1, Executive Director, FHT) stated, “sitting down and looking at what the results are and all that, no, we don’t unless in our [quality improvement plan] meeting...we talk about it. But no, someone doesn’t sit down and have time to think about what could I do to improve this and that, it’s just not on our radar yet.” Due to a lack of dedicated staff for QI, some described that the work associated with the quality improvement plan, such as preparing for QI Committee meetings, was done outside of clinical time such as on weekends and evenings. Given competing priorities, clinical duties are prioritized over QI. A participant recognized the importance of QI, but felt that patient care comes first:

“We have to serve the patient first and foremost. So fitting [QI] in a more timely fashion is a challenge on teams because you’re always trying to shift priorities. It’s important but it is also challenging.” – Participant #10, Executive Director, FHT
4.2.4.3.2 Lack of external contributions of resources

Although the Excellent Care for All Act resulted in additional QI responsibilities for interprofessional primary care organizations, participants expressed that there was a lack of investment to support the additional QI obligations required by primary care organizations. Some participants described how the quality improvement plan has led to an increased workload with no additional funding to support this workload:

“The 7 day post-discharge from hospital...does need to be a collaborative exercise between the hospital and the PCP, which is fine, but we have not been provided with any additional resources in which to do that. So these are all, even the idea of data and quality improvement, there’s been no investment, no sustainable investment in the sector to address the additional QI obligations and expectations that we have.” – Participant #5, Executive Director, CHC

“[Quality improvement plans] came on with no additional funds so my position as office administrator has been kind of carved out so I can do the QIP, and I really don’t have time for that but that’s what has to happen... It’s fine and dandy to put together the quality improvement plan and say we want to do this but if you don’t have the resources to be able to do that as I say, ‘honey I want to go on a vacation this year, well that’s nice honey but we don’t have the budget for that’. We’d like to be able to have dynamic data collection, we’d like to be able to have people that receive a stipend to be able to come in and do these surveys so we can be gathering surveys every single day, we don’t have that resource. We cannot create the data quick enough to be able to do something reasonable with it. We’ve been given this project, I appreciate that, but there’s nothing to back it up. There’s been nothing to make this real and tangible.” – Participant #8, Office Administrator, FHT

Another participant expressed a desire to have additional personnel who could help educate people on measurement and quality improvement, which is currently lacking:
“If we had quality improvement specialists who could help us work through [the quality improvement plan] and be able to identify the difference between methods and process measures and change ideas then that might be helpful but we don’t.” – Participant #7, Director of Clinical Services, CHC

Although participants acknowledged the helpfulness of some QI resources such as Health Quality Ontario resources and Quality Improvement Decision Support Specialists (QIDSS)—a position funded by the ministry to assist organizations in meeting their QI objectives—some felt that their QIDSS was responsible for the QI activities at multiple FHT/CHC sites and, therefore, had limited capacity. Other organizations had no access to a QIDSS.

5.0 DISCUSSION

5.1 Principal findings

Both the qualitative and quantitative findings of this study suggest that quality improvement plans in primary care have had minimal impact on the perceived quality of care. This is arguably an unexpected finding. It was recognized, however, that quality improvement plans enabled the development and implementation of improvement interventions and, therefore, have the potential to improve quality of care. In addition, quality improvement plans were perceived to increase awareness of the need for quality improvement, and enable an overall focus on areas for practice improvement and a structure for reporting on it. For some organizations, quality improvement plans have led to QI being engrained into the way organizations work.

Perhaps the most important finding is that most organizations consistently expressed that quality improvement plans raised awareness of the need for measurement and quality improvement, but substantial improvements in quality of care have yet to be achieved. Although quality improvement is often advocated as a way to improve health
care, the evidence that quality improvement improves health care quality is mixed. For example, a systematic review examining the effect of Lean (i.e., a quality improvement methodology commonly used in the automotive and manufacturing industries that has expanded to the healthcare sector) on health care found that Lean had no statistically significant association with health outcomes and patient satisfaction, a negative association with worker satisfaction and financial costs, and inconsistent benefits on process outcomes (e.g., safety).(54)

Literature suggests several reasons that could help explain why quality improvement may not improve health care. Firstly, quality improvement efforts are often small-scale, time-limited projects led by individuals who may not have the expertise, resources or power to create the desired change.(55) For example, participants described how clinicians and/or management often led the quality improvement work at their primary care organizations. With competing clinical or administrative duties and a lack of training in quality improvement, they may come up with workarounds or small fixes that fail to address the true problems.(55) Secondly, there may be a poor understanding of the basic principles of quality improvement methods.(55) A systematic review found that many quality improvement initiatives failed to adhere to the key principles of plan-do-study-act (PDSA) cycles (e.g., small-scale iterative tests of change that use data to continuously improve the intervention) and varied in the application and reporting of PDSA cycles.(56) This variation in practice may compromise the effectiveness of PDSA cycles to improve health care. Thirdly, there is a lack of information sharing about successes and failures.(55) In published reports of quality improvement work, outcomes are often described but not the reasons for why the interventions worked or failed.(57) At a minimum, descriptions of the activities undertaken and the mechanisms that contributed to improved outcomes would be of value.(57) Fourthly, there is a notion that quality improvement interventions are “magic bullets” that will lead to improvements, but the context in which the intervention is implemented in plays a large role in health care improvements.(55) For example, an organization that has been able
to implement a successful quality improvement intervention and sustain positive process or system change(s) is often an organization that has other qualities (e.g., quality culture, sufficient skills and resources, infrastructure supportive of quality improvement work) that facilitate quality care. As such, an innovation that has been successfully implemented in one organization may fail in another due to contextual differences. Lastly, in order for quality improvement to be successful, people need to recognize that improvements in quality of care are needed. The Dunning-Kruger effect—a cognitive bias in which “people tend to have overly favourable views of their abilities”(58)—suggests that some low-performing individuals do not easily recognize that they are, in fact, low-performing. If clinicians do not recognize that they need to improve the quality of the care they provide, they are of course unlikely to participate in quality improvement initiatives in a manner that would result in improved quality of care.

Improving timely access to primary care is a provincial priority. As such, since 2012, primary care organizations have been strongly encouraged to report on two indicators assessing timely access to primary care—access to same and next day appointments and access to primary care post-discharge. Findings suggest that, on average, only 47% of patients were able to see their primary care provider on the same or next day when needed and 60% of patients visited their primary care provider within 7 days of hospital discharge in 2014/15. For these two indicators, the change in performance between 2013-14 and 2014-15 was not statistically significant. Although the study had insufficient power to detect small effects, we can conclude that performance on both of the examined indicators did not improve substantially across all included practices, given that the 95% confidence intervals for the change were -6% to 3% for the access indicator and -8.7 to 11.2% for the post-discharge follow up indicator. Organizational characteristics such as the type of primary care organization, number of family physicians, availability of resources for QI and rurality were not found to have
statistically significant associations with performance improvement for either of the two indicators that were examined.

Participants expressed numerous challenges that affected the implementation and adoption of quality improvement plans. These challenges include poor data quality, lack of needed resources for measurement and quality improvement, and lack of staff and physician engagement and buy-in. Efforts to improve data quality such as providing organizations with real-time data on their performance and standardizing data entry in electronic medical records will likely lead to greater staff engagement and buy-in. Providing resources such as measurement and quality improvement training and funding for additional personnel could also increase staff engagement, as many participants described needing more time and personnel to dedicate to quality improvement work. It is important for Health Quality Ontario to work with these primary care organizations to identify their priority areas for measurement and select/develop indicators that represent these priority areas. Engaging primary care organizations and using a bottom-up approach will ensure their perspectives are incorporated in the quality improvement plans, which will increase the likelihood that these organizations feel that quality improvement plans are a useful tool for improving quality of care.

Several factors were described as impacting the level of staff and physician engagement with quality improvement plans. For example, some individuals did not believe the data was an accurate reflection of reality, felt that improving care was outside of their control, had differing opinions on what was important to measure, had competing priorities and/or were not motivated to improve care because of a lack of incentives. These factors likely contributed to the perception that quality improvement plans were just “one more thing” rather than a useful tool for quality improvement (attitude), which influenced their intention to adopt the tool, which in turn led to a lack of behavior change, as explained by the theory of planned behavior.
One factor influencing staff engagement and buy-in was the perception that the data was not an accurate reflection of reality. For example, data on access to same and next day appointments and access to primary care post-discharge do not capture patient choice (i.e., appointments may be available but patients choose an alternate date that is more convenient for them), medical advice provided over the phone or care provided by nurses or allied health professionals. The ability to account for these factors in the data would help convince primary care staff that the data are an accurate reflection of the efforts made by primary care organizations to improve timely access to primary care, which would increase buy-in for quality improvement plans.

Another factor influencing staff engagement and buy-in was the perception that improvement was outside of their control. Many participants expressed that improving transitions from hospital to primary care was outside of their control because it required relationship building and collaborating with hospitals, and hospitals were often unable to provide timely discharge information. To improve the quality of care transitions, it is important for all sectors to focus on this issue. As such, a potential strategy could be to include a priority indicator on hospital quality improvement plans that assesses the timeliness of discharge information provided to primary care providers; this will help direct attention and focus on the need to improve transitions from hospital to primary care.

5.2 Contributions to the literature

As far as we are aware, this is the first study examining the impact of provincially-mandated quality improvement plans on the quality of primary care. The study contributes knowledge on stakeholders’ experiences with quality improvement plans in primary care, a policy intervention with the goal of facilitating quality improvement across Ontario. Specifically, this study describes the perceived impact of quality improvement plans on the quality of primary care, the factors contributing to the successful adoption and use of quality improvement plans in primary care, and the
challenges encountered that interfere with clinicians’ ability to use the quality improvement plans to facilitate quality improvement. In addition, the findings show that quality improvement plans are not “magic bullets” to improving quality of care. In reality, innovation, individual, organizational and structural factors interact to create an environment that either supports or impedes the ability of quality improvement plans to improve quality of care. This is an important finding as the quality improvement literature often describes characteristics of the intervention and implementation process, but rarely offers an explanation for how and why an intervention succeeded or failed.

5.3 Comparisons with other work

The success factors and challenges to improving quality of care identified in this study have been described in literature. For example, the Health Foundation conducted a systematic review of empirical studies to understand factors that contribute to successful quality improvement interventions. This review found that leadership and supportive organizational culture positively affect quality improvement, which aligns with study findings.(59) In addition, Dixon-Woods evaluated 5 Health Foundation improvement programs and reviewed the relevant literature to identify challenges to improving quality of care: convincing people that there is a problem, convincing people that the solution chosen is the right one, getting data collection and monitoring systems right, excess ambitions (i.e., over-ambitious goals may lead to disillusionment if goals are not achieved), organizational cultures, capacities and contexts, tribalism and lack of staff engagement, leadership, incentivizing participation and hard edges, securing sustainability and risk of unintended consequences. (60) Study findings support some of these challenges. For example, some participants expressed that existing data collection systems produce poor quality data, that there is a lack of staff and physician engagement because they are not convinced that the indicators are assessing real problems, they are not convinced that quality improvement plans can lead to improved quality of care and there is a lack of incentives (positive or negative) to participate in
quality improvement work, and that there is a lack of capacity and resources to dedicate to quality improvement.

5.4 Strengths and limitations
An important strength of the study was the use of a mixed methods approach to examine stakeholders’ perception of quality improvement plans and its ability to improve quality of care. Mixed methods research can produce more complete knowledge to inform practice and can add insights that may not have been evident if only a single approach is used. Specifically, quantitative results suggested that there have only been slight changes in performance scores from 2013/14 to 2014/15. To complement this finding, qualitative data provided a greater understanding of the challenges primary care organizations’ face with improving performance in Ontario.

There are, however, several limitations of this study. For the quantitative portion of the study, a key limitation is that one of the performance metrics (i.e., access to a primary care provider on the same or next day when needed) is self-reported and each organization determines its own data collection strategy. As a result, the performance data is not collected in a standardized fashion, which may compromise data quality. Although the survey question measuring access to primary care is consistent across organizations, the sample size, time of administering the survey and frequency of administering the survey varies across primary care organizations. With respect to study design, an inherent disadvantage of retrospective cohort studies is that the range of predictors is limited to the existing data set and, as such, we do not have a comprehensive list of all potential predictors of success for QI initiatives. For example, we were not able to include any structural, individual or innovation-level predictors and were able to include only a subset of organization-level predictors of success for QI initiatives (see the conceptual framework for more information). As such, this may result in omitted variable bias—when a model leaves out important causal factors—which may compromise the internal validity of the study.
For the qualitative portion of the study, all interviews occurred over the telephone due to time or geographical constraints or participant preference. Some researchers view telephone interviews as an inferior option to face-to-face interviewing due to the loss of nonverbal and contextual information. (61) However, telephone interviews may make participants feel more relaxed and comfortable to talk freely and literature has reported that data gathered through the telephone can be of high quality and is as valid as face-to-face interviewing. (53, 61) Another limitation is that only one individual per primary care organization was interviewed. It is possible that the single individual’s views were not reflective of the range of views across their organization. However, interviews were conducted until data saturation so it is unlikely that new themes would have been identified if more people were interviewed. Lastly, the lead investigator (KT) was the only person to code the interview transcripts. All authors however reviewed the themes and some coded extracts, and were in agreement with the findings.

5.5 Implications
The Excellent Care for All Act has helped move the provincial quality agenda forward by increasing awareness and focusing attention on the need for high-quality patient care. Since the Excellent Care for All Act came into law in 2010, interprofessional primary care organizations have submitted three quality improvement plans. It is important to ensure that the quality improvement plan is viewed as an important tool to enable QI rather than a tool that has been imposed on people. To do this, there are different strategies—control and compulsion, motivation, cognitive, social interaction and management—to improve the success of quality improvement plans. These strategies have different theoretical assumptions about the effective implementation of innovations, and can be used to address some of the challenges that were identified.
5.5.1 Control and compulsion strategies

A strategy already being used is the power of external pressure, control and compulsion (e.g., legislation) to change performance. This type of strategy assumes that many people will change their behavior to avoid negative consequences and has been helpful with standardizing the approach to QI across the health care sectors. The *Excellent Care for All Act* sets out that organizations establish quality committees, create annual quality improvement plans that are publicly available and put patient satisfaction surveys in place, among other things. Neither Health Quality Ontario nor the Ministry of Health and Long-Term Care however provide rewards or impose consequences, as the data are meant to identify areas for improvement where quality improvement interventions can be targeted. Findings suggest that the requirements, as described in the *Excellent Care for All Act*, are being fulfilled by many organizations, but many organizations have yet to achieve improvements in quality of care.

It is important to be aware of challenges associated with top-down approaches such as bureaucratized management, effort substitution and draining of professional will. Bureaucratized management refers to the notion that management becomes reactive and focused on visual displays of compliance, which erodes the genuineness of improvement efforts. Effort substitution is when people become focused on performance that is being measured, which may have negative consequences on performance that is not being measured. Lastly, draining of professional will is the sense that innovations are being imposed on people, which inhibits their motivation to improve. As such, it is important to use both top-down and bottom-up strategies to get stakeholder buy-in and increase the success of quality improvement plans.

5.5.2 Motivational strategies

Motivational strategies assume that change can be created through an internal motivation to achieve optimal performance. Strategies to improve performance are to use bottom-up approaches that engage end users (e.g., frontline clinicians) in the
development of innovations. (26) Findings suggest that some organizations view the quality improvement plan as a top-down approach that had no input from those on the “ground”. Although the value of the quality improvement plan indicators and their role in driving system-level, cross-sector improvement was recognized, some organizations did not feel that the indicators were relevant to or addressed priority areas for their organizations. As such, greater involvement of frontline clinicians in the development of indicators and change ideas may help end users view the quality improvement plan as a critical tool for improvement. (65) In addition, benchmarking and providing comparative data highlighting how each organization is performing in comparison to similar organization may help to motivate performance improvement. (66)

It may also be helpful to encourage staff to focus on “small wins”—small improvement interventions that are relevant to their organization. Small wins can help mitigate the disconnection between a policy and its implementation, and can reduce the feeling that issues are so complex that they cannot be solved. (67) They can also build confidence, promote positive reinforcement and increase motivation for QI work. (68)

5.5.3 Cognitive strategies
Cognitive strategies assume that people make decisions based on considering and weighing rational arguments. (26) If clinicians do not adopt an innovation, it is because they have not been presented with sufficient or convincing evidence about its value. (26) Findings suggest that there are several concerns with respect to the performance data such as its quality and timeliness and, as such, clinicians may not be convinced that their performance needs to be improved. Efforts to improve data quality (e.g., standardizing data collection in the electronic medical records) and timeliness (e.g., using data sources that are capable of providing real-time data allowing clinicians to see the effect of improvement interventions on performance) may help improve the success of quality improvement plans.
5.5.4 Social interaction strategies

Social interaction strategies are based on the assumption that change can be achieved through interactions with and influence of individuals considered to be important such as opinion leaders—“respected sources of information who are connected to novel ideas and possess sufficient interpersonal skills to exert influence on others’ decision-making”. (26, 69) Many of the indicators on the quality improvement plan are focused on the performance of primary care providers (i.e., family physicians or nurse practitioners). Findings suggest that in some organizations, improvement interventions were led by management (e.g., Directors) and there was difficulty getting physician involvement and buy-in for the quality improvement plan and change ideas. Interventions driven by physician opinion leaders may be helpful with influencing performance and maximizing buy-in.(70)

5.5.5 Management strategies

Management strategies assume that poor quality of care is a “systems problem” and, therefore, focus on influencing organizational conditions needed for change.(26) Primary care organizations are in varying phases of their quality improvement journey, with some organizations having mature QI programs and others having no experience with QI prior to the implementation of quality improvement plans. For organizations that are new to QI, establishing a culture supportive of QI is essential for the success of quality improvement plans. Foundational elements of a QI culture include

- having strong leadership commitment to address the process side of change (e.g., building the infrastructure and processes needed for QI) and human side of change (e.g., maintaining transparency and accountability, alleviating staff resistance, attaining staff support and meeting training needs);
- having the infrastructure needed to support QI such as a QI Committee and performance management system (e.g., process of measuring, monitoring and reporting on performance);
• having empowered staff equipped with the necessary knowledge, skills and support to embed QI into their daily work;
• continuously assessing patient needs and implementing improvement efforts to address their needs;
• using teamwork and collaboration to solve problems, share ideas and lessons learned, and implement QI initiatives; and
• continuously focusing on process improvement to improve quality of care.(71)

Some organizations are in the beginning phases of establishing an organizational culture supportive of QI, but it is critical to getting buy-in for the quality improvement plan and its success.

5.6 Future directions
Efforts should be taken by Healthy Quality Ontario and primary care organizations to ensure innovation, individual, organizational and structural factors that optimize buy-in and success of innovations are taken into account. Regarding the innovation, it is important that quality improvement plans continue to be adaptable and compatible with existing workflow processes; this will increase the likelihood that the innovation becomes embedded into workflow rather than viewed as an administrative burden. Individual factors such as self-efficacy and the perceived advantages or disadvantages of quality improvement plans also influence buy-in; capitalizing on “small wins” to build confidence in QI and including indicators that are meaningful to frontline clinicians and align with organizational priorities can help motivate clinicians to use quality improvement plans. Social factors (e.g., ensuring local consensus regarding the use of quality improvement plans, using local opinion leaders who support its use), organizational factors (i.e., getting buy-in from leadership, implementing changes at the organizational-level to support QI efforts, creating a culture supportive of QI) and structural factors (i.e., having external motivators and contributions of resources) can also positively influence buy-in and the use of quality improvement plans.
Health Quality Ontario and primary care organizations should continue to work together to develop quality improvement plans that align with both system- and organization-level priorities and needs, and to ensure resources are available and effectively disseminated to support QI work. In addition, primary care organizations should continue to focus on improving the infrastructure and capacity for measuring, monitoring and reporting on QI, and nurturing a culture of quality by ensuring there is strong leadership that is supportive of QI and ensuring staff feel engaged and supported with QI work.

5.7 Conclusion

This mixed-methods study suggests that although quality improvement plans have helped to advance the provincial quality agenda by increasing awareness and focusing attention on the need for high-quality patient care, improvements in quality of care have yet to be achieved. Quantitative findings suggest generally low performance on access to primary care when needed and timely transitions from hospital to primary care; there have also been minimal changes in performance from year to year. Although organizational characteristics such as the type of primary care organization, availability of resources for QI, number of family physicians and rurality were not found to have statistically significant associations with performance change, qualitative findings suggest that numerous challenges are affecting organizations’ ability to improve performance. Primary care organizations are in different phases of their QI journeys with some being new to QI and others having mature QI programs. The Excellent Care for All Act was the first step to enabling QI across the system, but there is a long road ahead to getting buy-in from primary care clinicians and setting up the appropriate infrastructure and capacity for QI, which is essential for creating meaningful change.
6.0 REFERENCES
