12 Month Follow-Up Survey Results for the Clinical Quality Improvement Program: Cohorts 1 & 2

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Cohort 3 Appendix added January 2021

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Introduction

In 2017 the Health Quality Council, partnering with the Saskatchewan Ministry of Health and the Saskatchewan Medical Association, implemented the Clinical Quality Improvement Program (CQIP). The purpose of the program is to educate emerging physician leaders in quality improvement methods. Specifically, the program intends to provide clinicians with the knowledge and skill set to be able to:

a. Lead and facilitate clinical quality improvement projects
b. Serve as internal consultants on clinical quality improvement work
c. Teach clinical improvement tools and methods to others

At the time of this evaluation, three cohorts of clinicians have completed the program. An evaluation process has been implemented to capture feedback on successes and opportunities for improvement for future cohorts. This evaluation document is meant to provide an understanding of where the program and its participants are after two iterations of the program; has the program achieved its aim of contributing to quality improvement in Saskatchewan healthcare though participant engagement and knowledge translation.

About the Clinical Quality Improvement Program

CQIP is a 10-month formal education program designed to increase physician/clinician knowledge and skills for leading and participating in clinical quality improvement (QI) projects. Key elements of the CQIP program include:

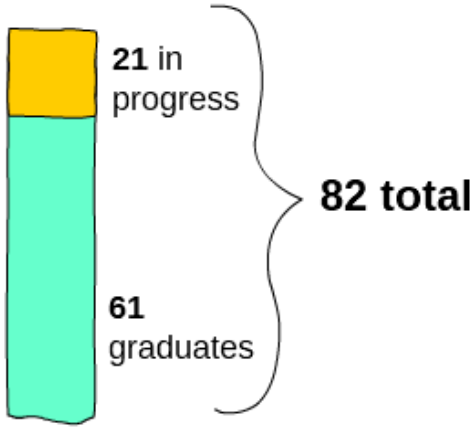
- **In-person learning**. Participants attend a series of workshops that offer a mix of theory and experiential learning.
- **Online learning**. Prior to workshops, participants review modules on fundamental QI concepts and approaches.
- **Project-based learning**. Each participant leads a team-based clinical QI project.
- **Mentorship and coaching**. Each participant is paired with a coach who has experience in leading clinical QI projects.
- **Expert physician faculty**. Workshop content is facilitated by physician faculty members who have extensive knowledge and experience in clinical QI.

Participants of CQIP are self-nominated or are encouraged to apply by leaders in their area. Faculty for the program are physicians who have leadership qualities and experience in quality improvement work. Participants are required to choose a project and obtain support from a sponsor. Participants are selected by a committee of representatives from the stakeholder group including: Ministry of Health, Saskatchewan Medical Association, Health Quality Council, Provincial Appropriateness of Care Program, and Patient and Family Advisors (PFAs).

Program snapshot

Since its launch, CQIP has run multiple cohorts:

- Cohort 1 began April 2017 and graduated 14 participants
- Cohort 2 began November 2017 and graduated 23 participants
- Cohort 3 began September 2018 and graduated 24 participants
- Cohort 4 began September 2019; as of January 2020, there are 21 participants in progress



A fifth cohort is tentatively scheduled to commence in September 2020.

Diversity of the participants

Since its launch, CQIP has attracted a diverse group of participants, from both a geographic and a practice perspective. While many participants have come from the province's two major centres of Saskatoon and Regina, cohorts have also included clinicians from smaller centres such as Prince Albert, Swift Current, North Battleford, Radisson and Yorkton.

The clinical specialties of the participants have included both family physicians and specialists, as well as non-physician clinical roles. The diagram below shows the variety of clinical roles, with the size of the text indicating volumes of roles.

Program Evaluation

Background

As part of CQIP design, an evaluation framework was developed to support both formative and summative evaluation of the program.

The evaluation framework for CQIP is based on the Kirkpatrick Model for Evaluation[1]. The Kirkpatrick Model is used to evaluate training effectiveness by measuring four areas:

1. **Emotional Reaction:** How did participants feel about the learning?
2. **Achieving Learning Objectives:** Did participants learn what was intended?
3. **Behavioural Change:** Has what participants learned changed their actions?
4. **Impact on Organization:** Has the learning changed outcomes?

During the program, immediate feedback was sought using surveys after workshops, at the mid-point, and at the conclusion of the program. As well, following the completion of the first pilot cohort in 2018, the Health Quality Council engaged independent researcher Dr. Lois Berry to conduct a more comprehensive program evaluation of CQIP. The purpose of Dr. Berry's evaluation was to assess the extent to which the program achieved its stated aims as well as understand the learning experience from multiple perspectives (participants, coaches, faculty, sponsors).

Dr. Berry's evaluation focused on the first two areas of Kirkpatrick; these evaluation results indicated that CQIP is a highly valued, well organized, relevant program. Immediately following the conclusion of the program, the evaluation also indicated that participants had achieved the stated learning objectives.

However, measuring areas 3 and 4 requires a longitudinal approach to evaluation as it often takes time to demonstrate behavioural changes and organizational impacts. The CQIP evaluation framework included post-program follow up to better understand these program impacts. As such, this evaluation focuses on the first two cohorts of the program to achieve the one-year follow up milestone.

One-Year Follow-Up Evaluation

This evaluation report is based on a 12-month follow-up survey sent to all Cohort 1 and 2 participants to collect reflections and subsequent activities of participants one year following program capstone[2].

The specific purpose of this evaluation is to understand:

a. The extent to which CQIP participants from the first two cohorts are continuing to apply the knowledge and skills they learned in the program
b. The extent to which the application of their CQIP learnings has had an impact in their workplaces

[1] AlYahya, Mohammed Saad, and B. M. Norsiah. "Evaluation of effectiveness of training and development: The Kirkpatrick model." *Asian Journal of Business and Management Sciences* 2, no. 11 (2013): 14-24.
[2] See Appendix A

Methods

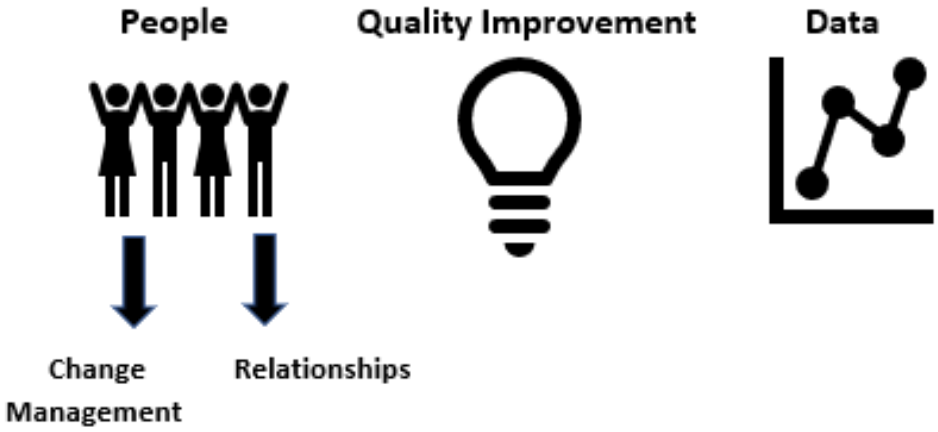
The data interpreted in the following analysis was collected from survey questionnaires sent to all graduates from cohorts 1 and 2. Participants responded anonymously at a rate of 35% (6/14) for Cohort 1 and 39% (9/23) for Cohort 2 (n=15). Responses described below are summarized and edited for ease of interpretation.

Results

Overall reflections on program learnings

The goals of the program are to develop both quality improvement science and leadership abilities in participants. Respondents were asked to list their top three learnings from their program and project experiences. The results of this survey question aligned well with the stated goals; respondents cited a mix of technical skills and social impacts as being their top take-aways from the program and activities.

The responses to this area of the survey can be categorized into three main themes:



Participants from both cohorts described QI science and theory as areas of learning. Although data collection and analysis are part of QI science, lessons related to data were specifically described by both cohorts. One interesting note is that while both cohorts identified the people side of change as a key learning, there were different focal areas. One cohort focused more on the change management aspect of working with people; the other cohort described improvement in their ability to maintain productive relationships with colleagues and patients.

Program aim – lead and facilitate quality improvement

Using QI in daily practice

Respondents were asked to what extent are they applying certain QI principles and skills in their daily practice on a 5-point Likert Scale (Never, Rarely, Sometimes, Often, Always). This question focuses on the third measure of the Kirkpatrick Model; asking if participants have used what they have learned to

change their behaviour. Evidence of changed behaviours was measured by asking if they are using their new skills to ***support a team, coach others on QI,*** use the ***PDSA framework,*** incorporate ***patient and family-centred care principles, analyse variation,*** and use ***root cause analysis.*** Based on respondents answering "always" and "often":

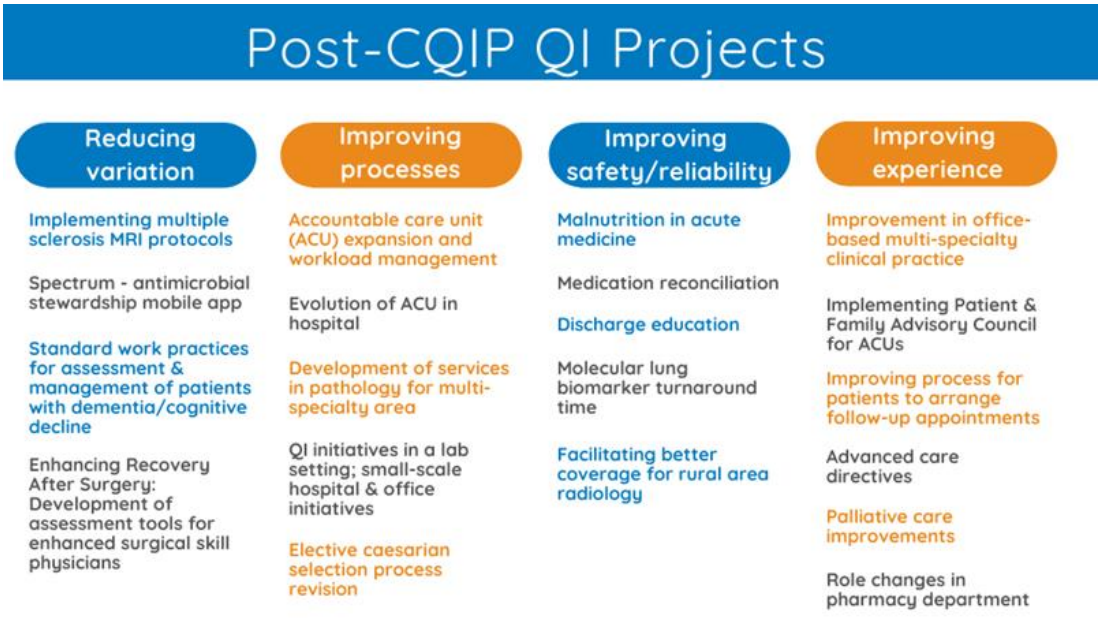
- 80% (12/15) are ***supporting a team*** towards identifying and achieving a quality improvement aim
- 67% (10/15) are:
    a. ***Coaching*** others on using quality improvement science tools
    b. Using the ***PDSA framework***
    c. Incorporating ***patient and family-centred principles*** into improvement work
    d. Using data to understand and ***analyse variation*** in healthcare
- 53% (8/15) are using ***root cause analysis*** to gain a deeper understanding of a problem

This data indicates that, for the most part, QI concepts and approaches are being understood by participants to such a degree that they are able to use quality improvement methods in their work, assisting others to use these methods, and practicing the use of specific QI skills.

Leading and supporting QI work

A key program aim for CQIP is to develop clinicians to be internal resources for quality improvement. Results from the survey indicate that most respondents are taking on leadership or consulting roles for QI projects. Of the 15 participants, 87% (13) indicated they have led or consulted on other QI projects, not including the CQIP project in the year following the program. In these projects, 53% of participants (8) are in lead or co-lead roles.

The diagram below shows the variety of projects that participants have initiated or been involved in within one year of them completing the program. The projects involve ***reducing variation, improving processes, improving safety/reliability,*** and ***improving experience***.

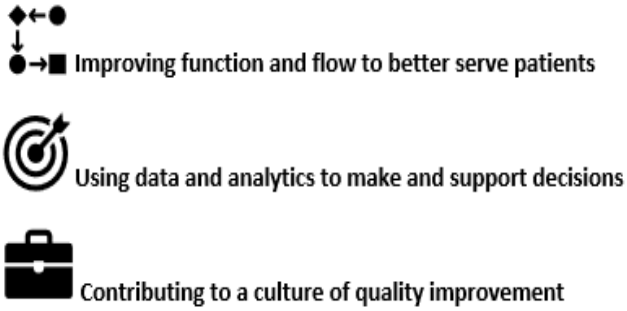


Participants contributions to the projects include:

- being involved in the planning and development stages of the initiatives
- data analysis
- team building
- designing the PDSA process
- providing leadership and guidance throughout projects
- helping to sustain projects by consulting external experts
- providing suggestions and asking questions

The fourth level of the Kirkpatrick Model measures if the learning has changed outcomes. In quality improvement, change can occur at the micro, meso or macro level. Typically, a CQIP project would impact at the micro or possibly meso level but would require system support to result in changes at a macro level.

Meso and macro level impacts are discussed further in the document. Regarding impact at the micro level, CQIP participants were asked if they believe they have impacted their areas of work, and if so, in what way. The participants responses can be categorized into three themes:



Specifically, participants describe using their acquired knowledge of QI to teach others in their area how to use the tools and encourage change by promoting the benefits of quality improvement science in everyone's work, no matter the department or role. Participants have made incremental improvements by using data and analysis to focus decisions which impact practice and patients.

Program aim – teach quality improvement tools and methods

A guiding principle of CQIP is "all teach, all learn". Not only is this an important aspect of adult learning, but also serves as a method of building capacity for teaching quality improvement to others.

As a function of measuring whether the program is contributing to organizational changes, participants were asked if they are leveraging their experience to teach and mentor others in QI. In the 12 months since their respective CQIP cohort concluded 80% of participants had been involved in teaching QI. They have not only taught their colleagues but have included other members of patient care teams at various levels within, and outside, of their networks.

These teaching opportunities include assisting in data collection, sharing quality improvement theory, and taking a leadership role in their work areas. Participants believe there have been positive impacts made in their areas of work which include fostering a better QI culture, data contributing to decision making, an increase of focus on identifying problems and engaging people to solve the problems, contributing to stronger network of professionals, and participants having more confidence in their skills as change leaders.

Other Findings

Barriers to active engagement

While most respondents indicated they have been engaged in QI, there were some that had not been involved in opportunities since the program ended. Although there were limited responses regarding not being able to participate in any further projects or teaching opportunities the responses did note a lack of confidence in QI methods or tools, changing responsibilities in their work, and a lack of available time.

Ongoing development needs

CQIP is intended to be one step along a lifelong quality improvement learning journey. With that in mind, respondents were asked to identify gaps or opportunities for additional training that they feel would benefit ongoing development as a QI leader. Feedback included a desire for a refresher on software used to interpret QI data and a recommendation to provide reminders and key concept reviews from time to time after the program has ended. Participants also expressed interest in being involved in future CQIP events as an opportunity to continue their learning.

When asked about observed measurable and sustained improvements which resulted from their CQIP project, no participants answered. The impact they were asked to identify would be considered macro in nature and perhaps beyond the scope of clinicians in the program. This is an area which should be considered for future evaluations of the program.

Take-Home Messages

- The Clinical Quality Improvement Program has three main objectives related to quality improvement: lead, serve, and teach. Through a variety of different learning opportunities, participants of the first two cohorts of CQIP have demonstrated that they are using the lessons from the program in their practice.

- Participants have reported back a variety of ways in which they are introducing, sustaining, and developing QI opportunities in different areas of health care in Saskatchewan.

- The impacts of participant involvement in QI projects throughout the program have contributed to a culture of QI in healthcare in Saskatchewan.

Appendix A – Program 12-month follow up survey

1. In reflecting back, what would you list as the top 3 learnings from your program and project experiences in CQIP?
2. Since completing CQIP, to what extent are you applying the following QI principles and skills into your daily practice?
    a. Supporting a team towards identifying and achieving a quality improvement aim
    b. Using root cause analysis tools to gain a deeper understanding of the problem
    c. Using data to understand and analyze variation in health care data
    d. Incorporating patient-and family-centred care principles into improvement work
    e. Using the PDSA framework to test and implement new changes
    f. Coaching others on using quality improvement science and tools
3. In the past 12 months, have you lead or consulted on any other clinical quality improvement projects (aside from your CQIP project)?
4. What were the specific projects/initiatives you were involved in?
5. What role(s) did you have in the projects/initiatives you described above? (select all that apply)
    a. Project lead (or co-lead)
    b. Team member
    c. Consultant (e.g., content knowledge, QI knowledge/skills)
    d. Other (please describe)
6. In what ways did you contribute to this work?
7. How did your project contributions make an impact in your organization?
8. Please describe the barriers that hindered your involvement in leading/consulting on additional improvement projects.
9. In the past 12 months, have you been involved in any formal or informal teaching opportunities to share clinical quality improvement methods and tools with others?
10. How would you characterize the nature of this roles (or roles)? (Select one or both options.)
    a. Formal (e.g., teaching)
    b. Informal (e.g., mentoring)
    c. Other (please describe)
11. Who were the learners (audience) you taught/mentored?
12. What responsibilities did you take on through this role (or roles)?
13. How did your teaching/mentoring contributions make an impact in your organization?
14. Please describe the barriers that hindered your involvement in teaching clinical quality improvement methods and tools.
15. In the past 12 months, have you observed measurable and sustained improvements as a result of your CQIP project work?
16. What measurable and sustained improvements has your project achieved?
17. How did you know that your changes were an improvement?
18. For how long have these changes been sustained?
19. What challenges have you encountered with your CQIP project?
20. What actions have you and your team taken to course-correct?
21. Now that you are more than one-year post-CQIP, have you identified any gaps or opportunities for additional training that you feel would benefit your ongoing development as a QI leader?
22. Please describe any other ways (not previously described) that your CQIP involvement has resulted in positive impacts within your organization.

Appendix B – Cohort 3 Results

Introduction

This appendix provides a synopsis of the results from the 12-month follow-up evaluation for Cohort 3 CQIP participants. As part of the evaluation framework, this assessment is sent to cohort participants a minimum of one-year after Capstone completion.

Initially the Cohort 3 survey was scheduled to be sent out June 1, 2020. However, due to COVID-19, the survey was delayed until mid-August. The survey was sent to the 29 participants who completed the program in full. Eleven participants completed the survey, for a response rate of 37.9%.

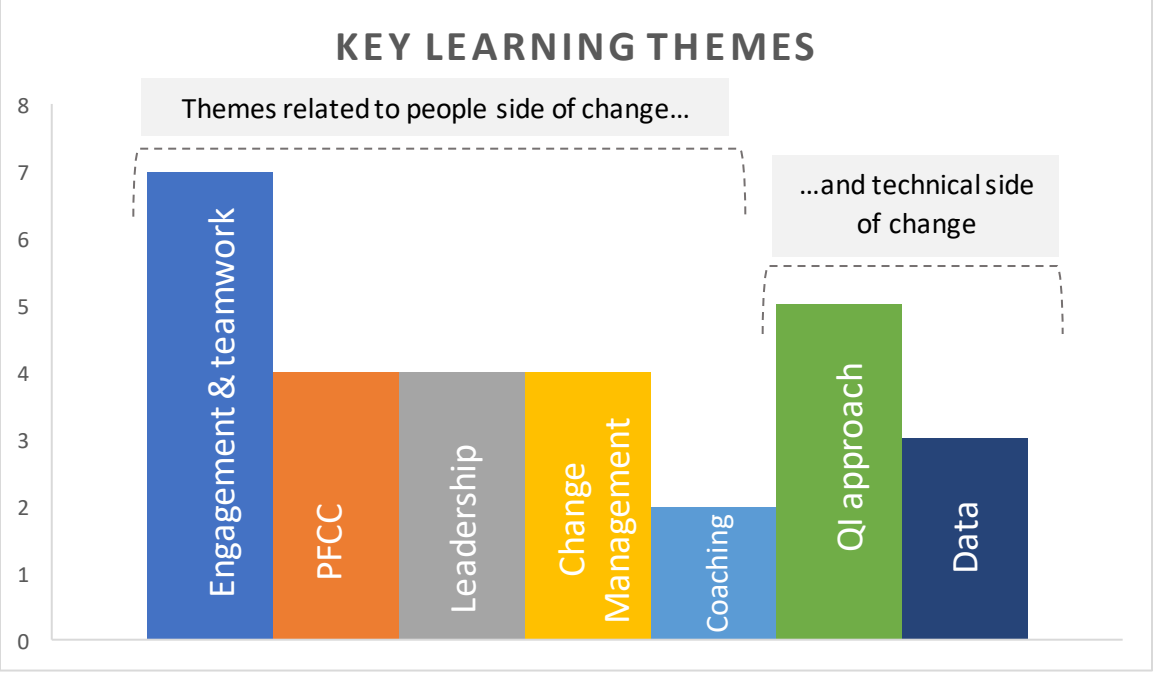
A full version of the survey questions can be found in Appendix A.

As with Cohorts 1 and 2, all responses are anonymous. Results shared below are summarized and edited for ease of interpretation.

Results

Key Learnings

Respondents were asked to share the top three learnings they gained from participation in the program. Like the previous two cohorts, the key themes focus on the people side of change and quality improvement methodology – including data.



Program Aims

Respondents were also asked to what extent they are continuing to achieve the program aims:

- Lead and facilitate clinical quality improvement projects
- Serve as internal consultants on clinical quality improvement work
- Teach clinical improvement tools and methods to others

Program aim: lead and facilitate quality improvement

Using QI in daily practice

Respondents were asked to what extent are they applying certain QI principles and skills in their daily practice. Evidence of changed behaviours was measured by asking if they are using their new skills to ***support a team, coach others on QI,*** use the ***PDSA framework,*** incorporate ***patient and family-centred care principles, analyse variation,*** and use ***root cause analysis.***

> ***I think CQIP provided an excellent framework for reviewing changes and assessing whether these made a difference.***

Most frequently used in daily practice	Least frequently used in daily practice
• 73% (8/11) are incorporating ***patient and family-centred principles*** into improvement work • 73% (8/11) are using data to understand and ***analyse variation*** in healthcare. • 73% (8/11) are ***supporting a team*** towards identifying and achieving a quality improvement aim. • 63% (7/11) are using the ***PDSA framework***	• 54% (6/11) are ***coaching*** others on using quality improvement science tools • 54% (6/11) are using ***root cause analysis*** to gain a deeper understanding of a problem.

Even though some tools and approaches are used more frequently than others, most respondents are incorporating QI into daily practice to some degree. There were only two areas where respondents said they "never" applied in their daily work:

- Using data to understand/analyze variation in health care (1 respondent)
- Using PDSA to test and implement new changes (2 respondents)

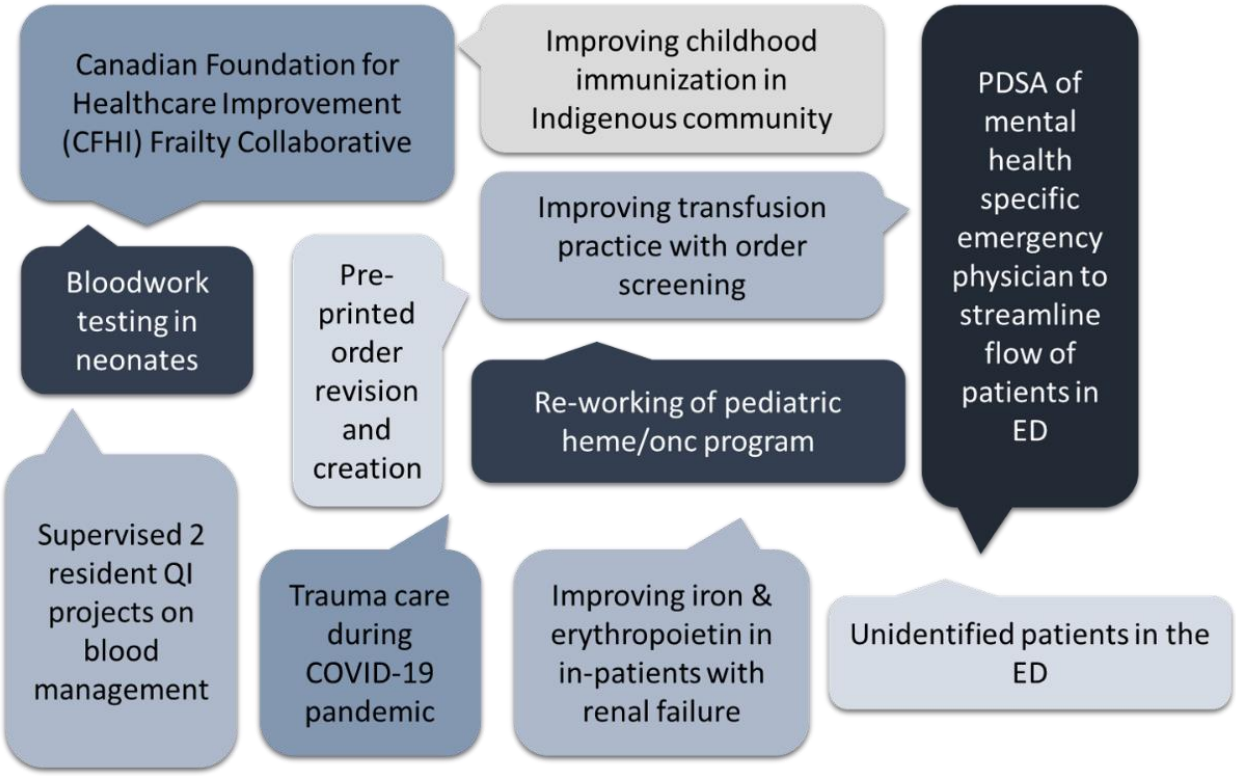
Leading and supporting QI work

A key program aim for CQIP is to develop clinicians to be internal resources for quality improvement. Results from the survey indicate that most respondents are taking on leadership or consulting roles for QI projects. Of the 11 respondents, **73% (8) indicated they have led or consulted on other QI projects, not including the CQIP project** in the year following the program. In these projects, **71% of participants**

(5) are in lead or co-lead roles. In previous cohorts, graduates were in leadership roles ~50% of the time. For the first time, there was also an indication that graduates are providing measurement lead support.

There were seven responses to this question, and based on number of responses for each option, at least some respondents are taking on multiple roles in supporting QI.

The visual below shows the projects that respondents are or have been involved with in their various QI roles:



Participants contributions to the projects include:

- Team member for project planning
- Analysis of measurement tools
- Data analysis
- Project scoping
- Leadership
- Context expertise
- QI knowledge transfer
- Conceptualization
- Organizing team
- Focus on QI methodology

CQIP participants were asked how their project contributions made an impact in their organization. Half the respondents (3/6) indicated that projects are still ongoing. Two responses cited COVID-19 as a disruptive factor to the work. Of the respondents who identified specific impacts, they described the following changes:

- Increase in childhood immunization rate
- Opportunity for team members to learn QI tools
- Improved standardization of care

Having completed the CQIP program, staff look up to me for QI ideas. I work with them to brainstorm and generate ideas using QI principles and methods. This is amazing as it gives everyone a sense of ownership.

Program aim: teach quality improvement tools and methods

As a function of measuring whether the program is contributing to organizational changes, participants were asked if they are leveraging their experience to teach and mentor others in QI. In the 12 months since their respective CQIP cohort concluded, **90% (9/10) of respondents had been involved in teaching QI in some capacity**. This included formal teaching (33.3%, or 3/9), informal or mentoring support (56%, or 5/9) and other roles such as case discussions (22%, or 2/9). Audiences for teaching/mentoring included colleagues, students, residents, and staff.

These teaching opportunities include using QI tools (A3, value stream mapping, driver diagrams, PDSA cycles), as well as more generally leading, coaching and organizing QI learning. Most respondents (5/6) identified positive impacts made in their areas of work, such as: improved care, more coordinated teamwork, standardized practice, uptake in using QI tools, better use of data, and development of a QI culture.

Other Findings

Barriers to active engagement

While most respondents indicated they have been engaged in QI, there were some that had not been involved in opportunities since the program ended. Barriers to ongoing use of QI included:

- COVID-19 pandemic caused a shift in focus
- Lack of organizational support for/interest in QI
- Personal circumstances

Ongoing development needs

CQIP is intended to be one step along a lifelong quality improvement learning journey. With that in mind, respondents were asked to identify gaps or opportunities for additional training that they feel would benefit ongoing development as a QI leader. Feedback included deeper understanding of data analysis, coaching skills, and opportunities to connect provincially for knowledge sharing and collaboration.

System impact of projects

As with the previous two cohorts, when asked about observed measurable and sustained improvements which resulted from their CQIP project, no participants answered. The impact they were asked to identify would be considered macro in nature and perhaps beyond the scope of clinicians in the program. This is an area which should be considered for future evaluations of the program.

> ***I hope to encourage and inspire other clinicians to take on CQIP. I have offered to coach future attendees.***

Conclusion

Key Takeaways

- The Clinical Quality Improvement Program (CQIP) has three main objectives related to quality improvement: lead, serve, and teach. Through a variety of different learning opportunities, participants of CQIP continue to demonstrate that they are using the lessons from the program in their practice.
- Previous cohorts have identified the networking component as a valuable part of CQIP. As the CQIP community continues to grow, opportunities to expand and nurture this network could be beneficial.
- All three cohorts have identified data/measurement as an area of significant learning, as well as a need for further development. While some development will come through ongoing hands-on experience with the tools, it might also be worthwhile to consider a system investment in this advanced learning.

Additional Information

The 12-month follow-up evaluation was combined for Cohort 1 and Cohort 2. Results from Cohort 3 and Cohort 4 are not being combined with Cohort 1 and Cohort 2 at this time, but instead will be shared as Appendices to the initial report. Cohort 5 will be shared as a combined report which looks at overall themes from all five cohorts, as well as highlighting any key differences between cohorts.

How to cite this document

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