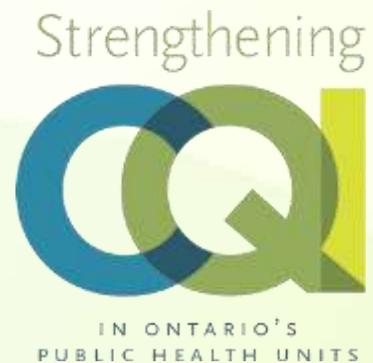


Cross Case Analysis

Summary Report

Continuous Quality Improvement (CQI) Locally Driven Collaborative Project



EXECUTIVE SUMMARY

Continuous quality improvement (CQI) is broadly defined as an overarching management philosophy and/or framework that drives the daily work of all employees towards organizational excellence. The goal of the CQI Locally Driven Collaborative Project (LDCP, 2015-2019) was to strengthen CQI in Ontario's public health units (PHUs). The research team consisted of staff from 30 PHUs and an academic partner (Appendix A).

The objective of this phase of the research project was to identify and describe the successes and challenges encountered by PHUs in their efforts to implement and support CQI by collecting and analyzing case studies from PHUs. The research question was: what can be learned from the efforts to implement CQI in local PHUs in Ontario?

This qualitative investigation used an exemplary multiple-case study approach to examine the cases separately to understand their unique factors, and also examined the data across cases to determine points of similarity and difference (Yin, 2014). Data were collected from 23 individual cases from 22 PHUs in Ontario that related to leadership, organizational structure, organization culture, data, and external supports. Both individual public health organizational documents and individual case templates were gathered. Fifty-six telephone interviews were conducted to gather contextual data from 62 interviewees across the 23 cases.

Using the constant comparison data analysis method (Yin, 2014), data from documents and interviews were analyzed by developing key themes through continually creating and assessing meaning units. Data were then compared to examine the relationships between the themes. Individual case analysis was sent back to research participants to be checked for accuracy. The cases were then distributed to the research team for cross case comparison during a face-to-face meeting that allowed for a collective review of the data and the examination of similarities and differences in the way that PHUs are implementing CQI. This process brought public health professionals and researchers together to develop the themes in order to ensure that they are grounded in both practice and research.

Individual and cross case analysis revealed that leadership support and engagement, quality improvement (QI) training, QI projects, multidisciplinary CQI committees, QI facilitators, CQI frameworks, dedicated time and resources, and buy-in from staff are important to implement CQI. These factors ultimately create and sustain a culture of quality within an organization. Critical success factors include having buy-in and support at all levels by engaging all staff in the process. Barriers include lack of resources and dedicated time to do CQI work, as well as not having the capacity for QI.

This research fills a notable gap in the literature, as it uncovered essential factors that are needed to implement CQI in Ontario's PHUs. The results align with the findings from Phase 1 of the CQI LDCP.

The CQI case studies have been posted to a sustainable online repository in the hopes of strengthening CQI efforts across the province.

INTRODUCTION

Continuous quality improvement is broadly defined as an overarching management philosophy and/or framework that drives the daily work of all employees towards organizational excellence. CQI has been studied and discussed in Ontario's PHUs for over a decade. However, understanding of CQI management principles and implementation of quality improvement practices varies among Ontario's PHUs, which makes it difficult to share information, learn from each other, and develop common standards of practice. In 2018, the Ontario Public Health Standards (OPHS) were updated, and placed new emphasis on CQI, including that PHUs "ensure a culture of quality and continuous organizational self-improvement." This makes it more important than ever to understand how to strengthen CQI in Ontario's PHUs.

The current phase of the CQI LDCP built on earlier work to explore how systematic CQI and QI can be strengthened within Ontario's PHUs. The overarching research question guiding the LDCP remains the same:

How can systematic CQI be strengthened within Ontario's public health units?

In Phase 1 (2015-2016), the Locally Driven Collaborative Project (LDCP) titled *Strengthening Continuous Quality Improvement in Ontario's Public Health Units* did two things:

1. We surveyed staff in 34 of 36 PHUs in the province using a QI Maturity Tool: Ontario Modified Version, designed to measure maturity across five stages. The QI Maturity Tool results showed that PHUs are almost evenly spread across the Beginning, Emerging, and Progressing stages when looking at individual results. No PHUs scored as Achieving or Excelling. As a group, Ontario's PHUs value QI and its potential positive impact on programs and services but rate their competency and capacity to implement and support QI as low or needing improvement.
2. We completed a scoping review which identified five domains where work at the local level could support and sustain CQI. The domains were: organizational culture; organizational structure; leadership; data; and external supports. We identified 15 potential enablers across the domains, although the literature to date left questions about how best to implement those enablers.

In Phase 2 of the project (2018-2019), the research team of 30 PHUs (two co-leads, seven co-applicants, and 21 knowledge users) and our academic partner focused on two research objectives:

1. Build agreement on CQI language for use in the public health sector.
2. Identify and describe successes and challenges encountered by PHUs in their efforts to implement and support CQI.

The team consulted with PHUs and other partners to build agreement on CQI language for use in the public health sector. The results support joint learning and will ultimately support the use of consistent CQI language across Ontario's PHUs. They are presented in a separate report.

To investigate the second objective, the group developed the following specific research question:

What can be learned from efforts to implement CQI in local PHUs in Ontario?

METHODOLOGICAL APPROACH

This qualitative investigation used an exemplary multiple-case study approach to examine the cases separately to understand their unique factors, and also examined the data across cases to determine points of similarity and difference (Yin, 2014). As outlined by Yin (2014), the following steps were taken within this case study methodology: 1) develop theory to guide the study; 2) select cases; 3) design data collection techniques; 4) conduct the case studies; 5) individual case analysis; and 6) cross case comparisons.

Methods

Data were collected from 23 individual cases from 22 PHUs in Ontario that related to leadership, organizational structure, organization culture, data, and external supports. Both individual public health organizational documents and individual case templates were gathered. Fifty-six interviews were also conducted via telephone to gather contextual data from 62 interviewees across the 23 cases.

Data Analysis

Using the constant comparison data analysis method, data from documents and interviews were analyzed by developing key themes through continually creating and assessing meaning units. Data were then compared to examine the relationships between the themes. Individual case analysis was sent back to research participants to verify accuracy.

The cases were distributed to the research team to organize into themes for within-theme cross case analysis (See Table 1). The themes correspond to specific scoping review domains and enablers (See Table 2). Members of the CQI LDGP, who met in Toronto in September of 2019, conducted within-theme cross case analysis (See Table 3). Cases within each theme were examined for similarities and differences in order to provide key observations and insights about best practices related to creating, implementing, and sustaining a culture of quality in Ontario's PHUs.

Cross case analysis across all of the cases within each theme were examined by the academic lead and the two research assistants to examine if there were overarching similarities and differences across all 23 case studies. This was done using an iterative research approach where all individual cases within each theme were analyzed using a large chart of the data that examined themes that were common or unique across all of the cases. This resulted in overarching cross case themes and sub-themes (See Table 4).

RESULTS

Individual Case Analysis

Six themes emerged from individual case analysis: CQI Plan/Framework; CQI Committee; Accreditation; Performance Management/Measurement Framework; Organizational Culture/Capacity/Structure; and Training. All of the case studies were assigned to one of the six themes based on the main focus of the case. Individual case analysis revealed essential factors to implement CQI: leadership support and engagement, QI training, QI projects, multidisciplinary CQI committees, QI facilitators, CQI frameworks, dedicated time and resources, and buy-in from staff. These factors ultimately create and sustain a culture of quality. Critical success factors include having buy-in and support at all levels by engaging all staff in the process. Barriers can include lack of resources and dedicated time to do CQI work and not having the capacity for QI. Table 1 displays the six themes and

PHUs within each theme. Table 2 displays the six themes and the corresponding scoping review domains and enablers.

Table 1 - Individual Case Theming	
Theme	PHU
CQI Plan/Framework	<ul style="list-style-type: none"> • North Bay Parry Sound District Health Unit (NBPSDHU) • York Region Public Health (YRPH) #1 • Region of Waterloo Public Health and Emergency Services (ROWPHE) • Public Health Sudbury and Districts (PHSD)
CQI Committee	<ul style="list-style-type: none"> • Northwestern Health Unit (NWHU) • Grey Bruce Health Unit (GBHU) • Hamilton Public Health Services (HPS) • Perth District Health Unit (PDHU)
Accreditation	<ul style="list-style-type: none"> • Ottawa Public Health (OPH) • Windsor-Essex County Health Unit (WECHU) • Eastern Ontario Health Unit (EOHU) • Leeds, Grenville and Lanark District Health Unit (LGLDHU)
Performance Management/M Measurement Framework	<ul style="list-style-type: none"> • Peel Public Health (PPH) • Halton Region Public Health (HRPH) • Simcoe Muskoka District Health Unit (SMDHU) • Toronto Public Health (TPH)
Organizational Culture/Capacity/Structure	<ul style="list-style-type: none"> • York Region Public Health (YRPH) #2 • Lambton Public Health (LPH) • Haldimand-Norfolk Health Unit (HNHU) • Niagara Region Public Health & Emergency Services (NRPHE&ES)
Training	<ul style="list-style-type: none"> • Brant County Health Unit (BCHU) • Haliburton, Kawartha, Pine Ridge District Health Unit (HKPRDHU) • Huron County Health Unit (HCHU)

Table 2 - Individual Case Theming and Scoping Review Domains and Enablers		
Theme	Domain/s	Enabler/s
CQI Plan/Framework	Domain 1: Organizational Culture	Strategically Aligned
CQI Committee	Domain 2: Organizational Structure	Multidisciplinary Teams
Accreditation	Domain 5: External Supports	Accreditation

Theme	Domain/s	Enabler/s
Performance Management/Measurement Framework	Domain 1: Organizational Culture	Strategically Aligned
Organizational Culture/Capacity/Structure	Domain 1: Organizational Culture Domain 2: Organizational Structure	N/A N/A
Training	Domain 2: Organizational Structure	Training and Education

Within-Theme Cross Case Analysis

Within-theme cross case analysis revealed there were a variety of key observations and insights across the cases within each theme. These key observations and insights can be used by other PHUs to learn what works and does not work, and as best practice if they want to replicate the CQI work done at other PHUs. Table 3 displays the analysis from within-theme cross case analysis in terms of key observations and insights.

Theme	Key Observations and Insights
CQI Plan/Framework NBPSDHU YRPH #1 ROWPHE PHSD	<ul style="list-style-type: none"> • Understanding of what quality is • QI is everyone’s responsibility • Education is provided but staff go back to doing what is best for the program • Need a comprehensive strategy in order to diffuse across the organization • If people do not have support, education, and resources then change will not happen • Keep tool kits simple • Create supports and tools that are simple and practical • Needs assessment on each individual division/program • Coaching and mentoring are part of capacity building • Need leadership buy-in • What goes into a QI plan • Sustain and control to keep momentum going
CQI Committee NWHU GBHU HPHS PDHU	<ul style="list-style-type: none"> • Great idea to have smaller, more focused committee • Bottom up came out as better approach • Need an end state to get to. Need to understand problem-end state and that it is continual to help staff to recognize/create awareness • Should be in everyone’s job description/has an impact on if seen as add on and if have enough time to do it • OPHS requirements act as a driver • Putting it into action/what next/tangible/understanding it is continual and how to keep it going on a continual basis • Capacity building within the organization

	<ul style="list-style-type: none"> • Language around supporting a culture of continuous quality improvement/goal/objective • Standard training • PHUs are investing in employees with training (e.g., yellow and green belt training) • Leadership is a consistent theme as champions and support/endorsement/resource allocation/championing/getting senior leadership endorsement • Staff do not always understand that it is continuous work • PHUs struggle with competing priorities/side of desk/unsure of roles/whose work it is to take on/staff turn-over • Incorporate standard work and principles into the policies and work • Committees need to be able to explain their purpose and state their value added • Quality committee needs training • Training and opportunities to share. Platforms so same training across the board. Online training platforms PHU's can share with others, has to be meaningful to frontline staff
<p>Accreditation / Certification</p> <p>OPH WECHU EOHU LGLDHU</p>	<ul style="list-style-type: none"> • There was no negative feedback about the accreditation / certification processes and no one is finished with it • You need to have a budget for accreditation/certification and since the board of health must be engaged, their support is vital • Staff at all levels of the organization involved • Accreditation / certification is used as a framework to achieve a culture of continuous quality improvement, meaning the framework is a way to guide quality improvement processes • Team-based approach is a key element of a culture of quality • Infrastructure (e.g., quality committee) in place • There must be a culture of quality that acknowledges standards are helpful • Leadership engagement and support is vital • The standards are a guidance tool, almost like a conceptual framework, as a roadmap to guide them • Increased awareness and knowledge around quality improvement as a result of accreditation/certification • It is an ongoing process since there are cycles (e.g., bronze, silver, gold with certification, and a 4-year cycle with accreditation) which means it is always at the forefront and the momentum keeps going • Importance of the OPHS requirements for quality improvement • There is a lack of time, competing priorities, and lack of human resources to work on quality improvement projects
<p>Performance Management/ Measurement Framework</p> <p>PPH HRPH</p>	<ul style="list-style-type: none"> • Start with a model that resonates with your agency and modify it to your agency. No one needs to start from scratch • Communication/dissemination strategy is important • Resources (staff/tools) available for staff who need to implement • Tools and templates for consistency across the PHU • OPHS requirements act as a driver • Importance of training

<p>SMDHU TPH</p>	<ul style="list-style-type: none"> • Leadership is important • Involve all levels of staff for success • Start with some kind of a pilot (i.e., start small) and learn/test and then scale up • Takes dedicated staff time to do this work • Strong emphasis on data and quality of data
<p>Organizational Culture/ Capacity/ Structure</p> <p>YRPH #2 LPH HNHU NRPH&ES</p>	<ul style="list-style-type: none"> • Top tier leadership is important for supporting staff with training, providing authentic and ongoing engagement in CQI work, and allocating dedicated time to staff for CQI work • Change management is important not just for the technical pieces of change but also behaviour change • Augmenting the QI skills training with a consulting firm helps to have different conversations to support the work from an outsider perspective • Embed CQI into daily workflow process so it does not feel like a huge new project to do QI • Consistency across the units and divisions so that QI is being embedded in the same way • Encouraging all staff to have a role in QI • Specialists Role should be clearly defined and articulated across the PHU • Clear communications plan so that people understand this work and how it links to the overarching plans of the organization • Embedding QI into job descriptions and organizational charts to see where things are situated and who is responsible for what • Middle management must support the frontline staff in the work that is done and they influence all aspects of the roll out of QI in operations, so they need to be supported with the right communications and tools to make this happen • QI Maturity Tool was a good jumping off point and benchmark that helped to get the QI culture started
<p>Training</p> <p>BCHU HKPRDHU HCHU</p>	<ul style="list-style-type: none"> • Leadership engagement and support is essential • It is critical that post-training supports are in place so that staff can put what they learn into practice • OPHS requirements act as a driver • CQI leads act as champions of CQI • QI training is beneficial and has provided staff with fundamental QI concepts • Training is a means to build capacity • Buy-in from staff is critical • It is difficult for staff to dedicate time/competing priorities/staff felt rushed/done “off the side of our desks”

Overarching Cross Case Analysis

Cross case analysis revealed that there are overarching motivators that influence PHUs to implement a culture of quality. Motivators include OPHS requirements, having CQI as part of the strategic plan, and accreditation / certification requirements. For a small minority of cases the results of the CQI LDCP QI Maturity Tool were a motivator.

Our analyses also revealed that there are overarching enablers that help PHUs to support a culture of quality. These include: leadership engagement and support; training; staff buy in; influencers among frontline staff; having a communication strategy/plan; having a multidisciplinary committee/workgroup/Community of Practice (CoP); and having a QI specialist/lead/champion. Across a small minority of cases, having QI projects and adopting a bottom up approach to CQI were also enablers that supported a culture of quality.

Furthermore, our analyses revealed that PHUs face common challenges when implementing CQI. These include: competing priorities and lack of time; staff resistance; lack of clarity surrounding the QI/CQI work; and lack of resources. For a small minority of cases there were challenges with staff turnover, as well as spreading and sustaining the QI/CQI work.

Moreover, there were common overarching areas for improvement recognized by PHUs that could have facilitated the culture of quality. Areas for improvement across the majority of cases include enhancing staff engagement to increase buy-in and providing dedicated time and resources. Alternatively, areas for improvement across a small number of cases include: developing a communication strategy/plan; sharing successes and lessons learned; enhancing communication to increase buy-in; formalizing informal QI/CQI work; and data and measurement for QI/CQI. Table 4 displays the overarching themes and sub-themes found across all cases and the number of cases within each sub-theme. Table 5 displays the overarching themes and sub-themes, as well as the corresponding scoping review domains and enablers.

Theme	Sub-theme	# of Cases
Motive	• OPHS Requirements	16
	• Strategic Plan	9
	• Accreditation / certification Requirements	8
	• CQI LDCP QI Maturity Tool Results	3
Enabler	• Leadership Engagement and Support	22
	• Training	17
	• Staff Buy-In	15
	• Influencer/Ripple Effect	13
	• Communication Strategy/Plan	11
	• Multidisciplinary Committee/Workgroup/CoP	10
	• QI Specialist/Lead/Champion	10
	• QI Projects	7
	• Bottom-Up Approach	3
Challenges	• Competing Priorities and Lack of Time	18
	• Staff Resistance	11

Table 4 - Overarching Cross Case Themes		
Theme	Sub-theme	# of Cases
	• Lack of Clarity	8
	• Lack of Resources	7
	• Staff Turnover	4
	• Spread and Sustain	4
Areas for Improvement	• Enhance Staff Engagement to Increase Buy-In	9
	• Dedicated Time and Resources	9
	• Communication Strategy/Plan	5
	• Celebrate/Share Successes and Lessons Learned	5
	• Enhance Communication to Increase Buy-In	5
	• Formalization of Informal QI/CQI Work	4
	• Data and Measurement	4

Table 5 - Overarching Cross Case Themes and Scoping Review Domains and Enablers			
Theme	Sub-theme	Domain/s	Enabler/s
Motive	• OPHS Requirements	• N/A	• N/A
	• Strategic Plan	• Domain 1: Organizational Culture	• Strategically Aligned
	• Accreditation / certification Requirements	• Domain 5: External Supports	• Accreditation
	• CQI LDCP QI Maturity Tool Results	• N/A	• N/A
Enabler	• Leadership Engagement and Support	• Domain 3: Leadership	• Senior Leadership • Middle Management • QI Facilitators • Frontline Leaders
	• Training	• Domain 2: Organizational Structure	• Training and Education
	• Staff Buy-In	• *Does not fall under one particular domain*	• *Does not fall under one

Table 5 - Overarching Cross Case Themes and Scoping Review Domains and Enablers

Theme	Sub-theme	Domain/s	Enabler/s
			particular enabler*
	<ul style="list-style-type: none"> Influencer/Ripple Effect 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Communication Strategy/Plan 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Multidisciplinary Committee/Workgroup/CoP 	<ul style="list-style-type: none"> Domain 2: Organizational Support 	<ul style="list-style-type: none"> Multidisciplinary Teams
	<ul style="list-style-type: none"> QI Specialist/Lead/Champion 	<ul style="list-style-type: none"> Domain 3: Leadership 	<ul style="list-style-type: none"> QI Facilitators Frontline Leaders
	<ul style="list-style-type: none"> QI Projects 	<ul style="list-style-type: none"> *Does not fall under one particular domain* 	<ul style="list-style-type: none"> *Does not fall under one particular enabler*
	<ul style="list-style-type: none"> Bottom-Up Approach 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Challenges	<ul style="list-style-type: none"> Competing Priorities and Lack of Time 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Staff Resistance 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Lack of Clarity 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Lack of Resources 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Staff Turnover 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Spread and Sustain 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Areas for Improvement	<ul style="list-style-type: none"> Enhance Staff Engagement to Increase Buy-In 	<ul style="list-style-type: none"> *Does not fall under one particular domain* 	<ul style="list-style-type: none"> *Does not fall under one particular enabler*
	<ul style="list-style-type: none"> Dedicated Time and Resources 	<ul style="list-style-type: none"> Domain 2: Organizational Support 	<ul style="list-style-type: none"> Internal Funding and Resources
	<ul style="list-style-type: none"> Communication Strategy/Plan 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Celebrate/Share Successes and Lessons Learned 	<ul style="list-style-type: none"> Domain 1: Organizational Culture 	<ul style="list-style-type: none"> Innovative, Non-Punitive Culture
	<ul style="list-style-type: none"> Enhance Communication to Increase Buy-In 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	<ul style="list-style-type: none"> Formalization of Informal QI/CQI Work 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A

Table 5 - Overarching Cross Case Themes and Scoping Review Domains and Enablers

Theme	Sub-theme	Domain/s	Enabler/s
	<ul style="list-style-type: none"> Data and Measurement 	<ul style="list-style-type: none"> Domain 4: Data 	<ul style="list-style-type: none"> Characteristics of the Data Leveraging Data

Motivators

There are both internal and external motivators that influence PHUs to implement a culture of quality. External motivators include the new and revised OPHS requirements as well as accreditation / certification requirements. A culture of quality is necessary for PHUs to meet OPHS requirements and to complete accreditation/certification. Internal motivators include the CQI LDCP [QI Maturity Tool Results](#) and an organizational strategic plan that strives for a culture of quality. The *QI Maturity Tool Results* allowed PHUs to realize where they are at in terms of their culture of CQI and therefore influenced them to progress to a more mature level. A strategic plan also motivates PHUs to implement a culture of quality by making CQI part of their organizational mandate and guiding the quality process.

Enablers

There are several key enablers identified in our analyses that help PHUs to create and sustain a culture of quality. Enablers include: strong leadership engagement and support; training; staff buy-in; influencers among frontline staff; having a communication strategy/plan; having a multidisciplinary committee/workgroup/CoP; having a QI specialist/lead/champion; QI projects; and adopting a bottom-up approach to CQI.

1. Strong Leadership Engagement and Support

Strong leadership engagement and support is a critical success factor for CQI in public health. Leaders guide the culture of quality through authentic engagement in CQI work and by allocating time and resources, providing opportunities for training, and actively encouraging CQI work across the organization.

2. Training

Training is another enabler that increases the culture of quality in PHUs by teaching and educating employees about what CQI is, the importance of CQI, and how to do CQI work. Training encourages staff to participate in CQI work and helps to increase the capacity for CQI.

3. Staff Buy-In

Staff buy-in is a critical success factor for a culture of quality in PHUs. Staff buy-in acts as an enabler for a culture of quality as most QI work is carried out by frontline staff. If staff have buy-in they will be more likely and motivated to do QI work and this enables a culture of quality in PHUs.

4. Influencers Among Frontline Staff

There is a ripple effect that can influence buy-in for QI work and ultimately enable the culture of quality in PHUs. Early adopters of CQI can influence other employees to buy-in to CQI work. Once one employee is interested and engaged in CQI work, other employees will hear about the work and may become interested and influenced to do CQI work as a result. Other

employees will then engage in CQI work and this trend will continue. This in turn promotes a culture of quality across PHUs.

5. Communication Strategy/Plan

A communication strategy or plan enables a culture of quality by serving as a platform for informing staff about QI work that is being done within the PHU. Clearly communicating CQI work greatly supports buy-in and influences the initiation of more CQI work. Communication plans can also be used as an accessible central location for training and housing CQI tools.

6. Multidisciplinary Committee/Workgroup/CoP

Having a multidisciplinary committee, workgroup, or CoP enables PHUs to implement a culture of quality by supporting teams within PHUs in their CQI endeavours. Multidisciplinary committees foster collaboration in CQI work across divisions within PHUs. CQI workgroups and CoP's help to focus QI work and provide a collegial space for sharing ideas and supporting CQI efforts.

7. QI Specialist/Lead/Champion

Having a CQI specialist/lead/champion is an enabler for a culture of quality in public health because they act as champions of QI work across the PHU. CQI specialists can be leaders or specially trained staff that help create, promote, and support QI projects across PHUs. CQI specialists also serve to educate PHUs about CQI and can influence buy-in from frontline staff and middle managers.

8. QI Projects

Engaging in QI projects enables a culture of quality through facilitating CQI work. QI projects can be done across the organization, by division, or even departmentally. Having a specific QI project helps to focus CQI/QI portfolio and thereby supports a culture of quality.

9. Adopting a Bottom-Up Approach to CQI

Since buy-in from frontline staff and middle management is a critical success factor for a culture of quality in PHUs, a bottom-up approach is an important enabler for implementing this culture in the organization. Rather than adopting a top-down approach to force QI work onto staff, a bottom-up approach encourages buy-in from staff and engages staff in QI initiatives that are relevant to their everyday work, which leads to more successful outcomes.

CONCLUSIONS

This research lends itself to improving CQI implementation within Ontario's PHUs. This aspect of Phase 2 of the CQI LDCP built on the work of Phase 1 by exploring how the five domains and supporting enablers identified in the scoping review are being implemented in Ontario PHUs. Based on the comparisons that were made, it is evident that the results from the case studies align with the findings from the scoping review. Thus, the local evidence is consistent with the broader literature, which further strengthens the notion that the findings from Phase 1 and Phase 2 are likely to be relevant and useful to strengthen CQI efforts in PHUs across Ontario.

This research has produced new and relevant knowledge and tools to support robust and sustainable CQI in Ontario's PHUs. Moreover, it provides an understanding and explanation of challenges and

opportunities related to implementing CQI within Ontario's PHUs. The CQI case studies have now been posted to Quorum, which is a sustainable online repository, as an open site, in the hopes of fostering shared learning and, ultimately, strengthening CQI efforts across the province. As Ontario's PHUs enter a time of significant transformation, it is more important than ever before to ensure a culture of quality and continuous organizational self-improvement. Thus, the findings from this aspect of Phase 2 of the CQI LDCP, along with the findings from Phase 1, hold the potential to support robust and sustainable CQI in Ontario's PHUs during this time of considerable organizational change.

NEXT STEPS

Moving forward, the project will create knowledge exchange products and strategies to disseminate the research findings. The open Quorum site will be maintained so that public health professionals will have sustained access to the CQI case studies. A blank template has also been made available on the site so that PHUs can create and upload new case studies over time to further encourage shared learning. Empirical articles relating to individual case analysis, within-theme case analysis, and cross case analysis will also be written for publication.

APPENDIX A – CQI LDGP PROJECT TEAM (AT JANUARY 2020)

Name	Organization
Larissa Filice	Brant County Health Unit
Madelyn Law, Kelly Pilato, Caitlin Muhl	Brock University
Stanley Ing	Chatham-Kent Public Health
Aurelia Pereira	City of Hamilton Public Health Services
Neal Mattes	Durham Region Health Department
Sandra Labelle	Eastern Ontario Health Unit
Tim Duivesteyn	Grey Bruce Health Unit
Chimere Okoronkwo	Haldimand-Norfolk Health Unit
Lisa Van der Vinne	Haliburton, Kawartha, Pine Ridge District Health Unit
Anna Larson	Halton Region Public Health
Andrew Landy	Hastings Prince Edward Public Health
Chisomo Mchaina	Huron County Health Unit
Kelly Monaghan	Kingston, Frontenac, Lennox, and Addington Public Health
Nancy Wai	Lambton Public Health
Shani Gates	Leeds, Grenville, and Lanark District Health Unit
Daniel Murcia	Middlesex-London Health Unit
Nicole Stefanovici	Niagara Region Public Health and Emergency Services
Danielle Hunter	North Bay Parry Sound District Health Unit
Alex Berry, Natasha Elms	Northwestern Health Unit
Kelly McKay	Ottawa Public Health
Monali Varia, Nancy Ramuscak	Peel Public Health
Karen Bergin-Payette	Perth District Health Unit
Tom Regan	Porcupine Health Unit
Carla Walters, Colleen Musclow	Renfrew County & District Health Unit
Casey Hirschfeld	Simcoe Muskoka District Health Unit
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