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## Assessment of Quality Improvement in Ontario Public Health Units

### Abstract

**Background:** Quality Improvement (QI) approaches are used extensively in healthcare settings and increasingly in public health. However, the proliferation of QI in Canadian public health settings is unknown.

**Purpose:** The purpose of this study was to (a) assess the QI maturity in Ontario local public health units in Canada, and (b) to determine the relevance of the QI Maturity Tool in a Canadian setting

**Methods:** The QI Maturity Tool (Version 5) was used to conduct a cross-sectional assessment of the QI maturity of 36 local public health units in Ontario, Canada. After tool items were reviewed for relevance, individuals most responsible for QI at each health unit were surveyed. Descriptive statistics were used to analyze the data.

**Results:** Thirty-one individuals responded (response rate: 86%). Respondents reported strong leadership support for QI, but limited training and resources available to advance this area. Approximately half of public health units were found to be at the 'beginner' stage of QI maturity; 19% and 26% were in the 'emerging' and 'progressive' stages, respectively. Only 3% were in the 'achieving' stage and none are in the 'excelling' stage.

**Implications:** The QI Maturity Tool is valuable for determining the maturity of QI in Ontario public health settings. There appears to be strong support for advancing QI across local public health in Ontario, but limited infrastructure to enable associated QI activities.

### Keywords

quality improvement, continuous quality improvement, public health

### Cover Page Footnote

No competing financial or editorial interests were reported by the authors of this paper.

## INTRODUCTION

Continuous quality improvement (CQI) and quality improvement (QI) have been commonly used by health system leaders to enhance service delivery quality and value. CQI in public health has been defined as a continuous and ongoing effort to achieve measureable improvements in the efficiency, effectiveness, performance, accountability, outcomes, and other indicators of quality in services or processes which achieve equity and improve the health of the community.<sup>1</sup>

CQI is popular in healthcare and there are many emerging quality initiatives in U.S. public health organizations. However, the adoption of QI approaches in Canadian public health settings is unknown.

The province of Ontario, Canada is served by 36 local public health units (similar in function and scope to U.S. local health departments [LHDs]). Several provincial initiatives have attempted to improve health service quality in Ontario. For example, the *Excellent Care for All Act*<sup>2</sup> requires nearly all health service providers (except local public health units) to establish quality committees, develop and publish annual organizational QI plans, and link executive compensation to the achievement of these plans.<sup>2</sup> Despite exclusion from this legislation and related provincial initiatives, CQI is topical in Ontario public health policy and practice circles. For example, an important public health system restructuring report recommended that all health units establish “quality and performance specialist” positions to foster CQI.

Ontario public health leaders face a challenging environment when they seek to advance CQI. The rationale to advance CQI is clear, but support and accountability for CQI are limited. In an effort to support public health leaders, this study aimed to explore the current state of quality in Ontario public health units using the QI Maturity Tool.<sup>3</sup> The aim of the study was to capture baseline information on the current state of CQI in order to determine opportunities to support its advancement. A secondary aim was to examine the validity of the QI Maturity Tool in a Canadian jurisdiction.

## METHODS

The QI Maturity Tool (Version 5)<sup>3</sup> was first piloted with a small group of public health leaders (N=4) to determine its appropriateness for the Ontario context. Leaders reported that all Tool items were clear and applicable to their organizations. Then a cross-sectional survey was conducted. A senior leader in each public health unit (N=36) was contacted to identify the individual most responsible for CQI. Nearly all identified individuals held middle- or senior-management positions. These individuals were surveyed as it was assumed they were most knowledgeable about QI activities within their organizations and would be able to speak to the overall QI maturity in their unit to inform provincial level discussions. The Tool<sup>3</sup> was administered via an online survey. One large multisite health unit requested that two additional individuals be allowed to participate. Thus, the survey was sent to 38 individuals from 36 health units. The Tool required participants to rank items on a 5-point Likert scale (1=strongly disagree, 5=strongly agree). Descriptive statistics were used to analyze responses. The study received ethics clearance from Brock University (File #12-314).

## RESULTS

While all participants (N=38) consented to participate, only 31 (86%) completed all questions. To ensure anonymity, participants were not asked to identify their organization. Table 1 reports the composite results of CQI maturity in Ontario public health units as well as the definition of each QI maturity category. Over half of respondents ( $n=16$ ) felt that their organizations were at the beginner stage, whereas 19% ( $n=6$ ) were emerging, 26% ( $n=8$ ) were progressive, and 3% ( $n=1$ ) was achieving. No participant reported their health unit as excelling at CQI.

**Table 1. Overall Ontario local public health system quality improvement maturity**

QI Maturity Category	Definition	Health units (% of Total)
<b>Beginning</b>	Not adopted formal QI projects, applied QI methods in a systematic way, or engaged in efforts to build a culture of QI <sup>3</sup>	16 (51.6)
<b>Emerging</b>	Newly adopted QI approaches, albeit with limited capacity. They have a limited QI culture and few, if any examples of attempts to incorporate QI as a routine part of practice <sup>3</sup>	6 (19.3)
<b>Progressive</b>	Some QI experience and capacity but often lack commitment, have minimal opportunity for QI integration throughout the agency and are less sophisticated in their application and approach <sup>3</sup>	8 (25.8)
<b>Achieving</b>	Fairly high levels of QI practice, a commitment to QI and an eagerness to engage in the type of transformation change described by QI experts <sup>3</sup>	1 (3.2)
<b>Excelling</b>	Achieving high levels of QI sophistication, a pervasive culture of QI <sup>3</sup>	0 (0)

Table 2 reports mean responses and the composite scores for each Tool category. Participants reported high levels of perceived leadership support for CQI activities, and a strong sense that CQI approaches were valuable for service delivery and community health improvement (perhaps not surprising, given participants were responsible for QI activities). In contrast, they reported limited staff training and organizational supports for QI.

The highest mean scores were reported for items: *spending time and resources on QI is worth the effort* ( $M=4.6$ ,  $SD=0.6$ ); *using QI approaches will impact the health of my community* ( $M=4.5$ ,  $SD=0.6$ ); and *leaders of my public health agency are receptive to new ideas for improving agency programs, services, and outcomes* ( $M=4.3$ ,  $SD=0.7$ ). These results suggest that QI activities are highly valued by health units.

In contrast, lowest scoring items were: *agency staff is aware of external QI expertise to help measure and improve quality* ( $M=2.5$ ,  $SD=1.1$ ); *staff at my public health agency who provide public health services are trained in basic methods for evaluating and improving quality* ( $M=2.5$ ,  $SD=1.0$ ); and *many individuals responsible for programs and services at my public health agency routinely use systematic methods to understand the root causes of problems* ( $M=2.4$ ,  $SD=1.1$ ).

**Table 2. Responses to QI Maturity Tool items**

Item Description	Item Mean (SD)	Composite Mean (SD)
<b>Organizational Culture</b>		
Leaders (e.g. board, senior management team) of my public health agency are receptive to new ideas for improving agency programs, services, and outcomes.	4.3 (0.7)	3.7 (0.5)
The impetus for improving quality in my public health agency is largely driven by external factors (e.g. Board of Health, funders, accreditation regulation, peer pressure).	2.9 (0.9)	
The board and/or the management team of my public health agency work together for common goals.	3.7 (1.0)	
Staff consult with, and help, one another to solve problems.	4.2 (0.7)	
Staff members are routinely asked to contribute to decisions at my public health agency.	3.6 (0.9)	
<b>QI Capacity and Competence</b>		
The leaders of my public health agency are trained in basic methods for evaluating and improving quality, such as Plan-Do-Study-Act.	2.9 (1.1)	3.0 (0.7)
Staff at my public health agency who provide public health services are trained in basic methods for evaluating and improving quality, such as Plan-Do-Study-Act.	2.5 (1.0)	
Many individuals responsible for programs and services in my public health agency have the skills needed to assess the quality of their programs and services.	2.9 (1.1)	
My public health agency has objective measures for determining the quality of many programs and services.	3.0 (1.0)	
Many individuals responsible for programs and services at my public health agency routinely use systematic methods (e.g. root cause analysis) to understand the root causes of problems.	2.4 (1.1)	
Many individuals responsible for programs and services at my public health agency routinely use best or promising practices when selecting interventions for improving quality.	4.0 (0.7)	
Programs and services are continuously evaluated to see if they are working as intended and are effective.	3.2 (1.2)	
My public health agency has designated a Quality Improvement Officer.	2.9 (1.2)	
The quality of many programs and services in my agency is routinely monitored.	3.2 (1.0)	
Job descriptions for many individuals responsible for programs and services at my public health agency include specific responsibilities related to measuring and improving quality.	2.9 (1.1)	
Good ideas for measuring and improving quality in one program or service USUALLY are adopted by other programs of services in my public health agency.	3.1 (0.9)	

<b>QI Alignment and Spread</b>		
Staff members at all levels participate in quality improvement efforts.	3.1 (1.2)	3.5 (0.6)
My public health agency has a quality improvement council, committee, or team.	3.1 (1.3)	
My public health agency has a quality improvement plan.	2.9 (1.0)	
Customer satisfaction information is routinely used by many individuals responsible for programs and services in my public health agency.	3.1 (1.0)	
Accurate and timely data are available for program managers to evaluate the quality of their services on an ongoing basis.	3.0 (1.0)	
Many individuals responsible for programs and services in my agency have the authority to change practices or influence policy to improve services within their areas of responsibility.	3.8 (0.8)	
When trying to facilitate change, staff has the authority to work within and across program boundaries.	3.2 (1.0)	
Improving quality is well integrated into the way many individuals responsible for programs and services work in my public health agency.	2.8 (1.0)	
Agency staff is aware of external quality improvement expertise to help measure and improve quality.	2.5 (1.1)	
Spending time and resources on quality improvement is worth the effort.	4.6 (0.6)	
The key decision makers in my agency believe quality improvement is very important.	4.1 (0.9)	
Using QI approaches will impact the health of my community.	4.5 (0.6)	
Public health agency staff and stakeholders will notice changes in programs and services as a result of our QI efforts.	4.3 (0.7)	

## IMPLICATIONS

This study is the first examination of QI maturity of a local public health system outside the U.S. Respondents reported strong support from organizational leaders for advancing QI in their health unit. However, they felt the capacity and competency of the Ontario public health workforce to engage in QI were limited. While some respondents reported their organization as further ahead in QI sophistication, the sector (51%) appears to be at the beginning stage of QI maturity, indicating that the majority of Ontario public health units have not completed formal QI projects, applied QI methods in a systematic way, or engaged in efforts to build a culture of quality. These results are similar to research that found few U.S. LHDs were in the advanced stages of QI maturity.<sup>4</sup> However, while half of Ontario health units appear to be in the beginner stage, the majority of LHDs reported being in the middle stages of QI maturity.<sup>4</sup>

These results suggest that future initiatives to advance CQI in Ontario public health should focus on practitioner training, as well as supports to encourage knowledge-exchange and skill-building. The multi-state collaborative networks<sup>7</sup> model is one example that has been shown to support training and knowledge-exchange to advance QI sophistication.<sup>5</sup>

Lack of QI professional development opportunities for Ontario public health practitioners may create an opportunity for universities and colleges to increase QI skills. In addition to programming for current practitioners, curriculum redesign could support future public health professional readiness to engage in QI activities once they enter the workforce. Involvement of universities could also provide pathways for future research and greater researcher-practitioner collaboration.

The chief limitation of the current study was its reliance on one respondent from each health unit. Gaining perspectives from staff beyond those most responsible for QI would have strengthened the results about the current state. Current efforts are underway to engage in a research project to explore the perspective of QI maturity from front-line staff that will help to advance the understanding of perceptions across professional groups.

Hopefully, these results will provide a baseline assessment for Ontario public health leaders and a “snapshot” of QI cultural maturity in Ontario public health units. They also suggest that the QI Maturity Tool is valid in the Ontario context and will likely be useful to public health leaders in other Canadian jurisdictions. Study results aim to contribute to the growing literature on CQI and QI in public health. In particular, we hope these results will stimulate discussion about how best to advance CQI in Canadian public health settings.

#### SUMMARY BOX

**What is already known about this topic?** QI is an emerging area for public health research and practice. The QI Maturity Tool has been useful for assessing QI adoption in U.S. local public health settings.

**What is added by this report?** This is the first study to explore QI and CQI adoption in a Canadian local public health jurisdiction.

**What are the implications for public health practice, policy, and research?** This research suggests the QI Maturity Tool has utility beyond the U.S. , and it supports Ontario public health leaders to determine opportunities to advance QI in Ontario health units.

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