

SNACKING MADE SIMPLE? EXPLORING THE POLICY AND ORGANIZATIONAL  
PRACTICES OF CONTINUOUS QUALITY IMPROVEMENT FOR HEALTH PROMOTION  
IN HEALTHCARE

by

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## ABSTRACT

Health promoting hospitals aim to create healthier environments to reorient health services towards population health and reduce costs, key parts of the healthcare Quintuple Aim. Continuous quality improvement (CQI) is a set of concepts originally introduced into healthcare to study issues of patient safety. However, its applicability for health promotion within healthcare is less understood. The overarching goal of this dissertation is to advance the understanding of practices of CQI for health promotion at policy and organizational levels in healthcare. This dissertation employed qualitative hermeneutical phenomenology in the healthcare setting of Nutrition and Food Services at Nova Scotia Health. Data collection included a policy and organizational document analysis, and semi-structured interviews (n=12) with key informants. Data were analyzed using directed content analysis. First, this dissertation confirmed that Canadian healthy eating policies contain benchmarks that guide implementation and CQI but focus on nutritional benchmarks and, to a lesser extent, promotions and fundraising. Second, practitioners' perspectives for CQI were broad, ranging from nutrients to food environments. However, monitoring was lacking for food environment benchmarks (e.g., promotion), revealing the complexity of promoting healthy food environments within healthcare, emphasizing the need to incorporate context. Third, participants engaged in PDSA cycles to demonstrate the potential benefits of health promotion and prove themselves, consistent with other retail food environment research that suggests the utility of small trials to facilitate changes. Barriers to CQI included nutrient criteria, lack of data and food culture, while facilitators included the policy, staff experiences, and leadership support. However, PDSA cycles may be an oversimplified approach. Fourth, leadership prioritized the availability and accessibility of healthy foods, while point-of-sale staff used local knowledge from informal and formal networks to identify opportunities to influence healthy eating. In conclusion, healthy eating policies guide monitoring benchmarks and investing in data collection that can reinforce how hospitals work as a health promoting setting. This dissertation examined the complexity of CQI for health promotion in healthcare retail food environments, a setting within a setting. The findings showed a shift in priorities from leadership to allocate resources for health promotion tasks to make food more accessible and available to staff.



## LIST OF ABBREVIATIONS USED

CQI – Continuous quality improvement

HEP – Healthy Eating Policy

HEPSC – Healthy Eating Policy Steering Committee

HPH – Health promoting hospitals

JBI – Joanna Briggs Institute

NS – Nova Scotia

NSH– Nova Scotia Health

QEII – Queen Elizabeth II Health Sciences Centre

SEM – Socio-ecological model

SOP – Standard Operating Procedure

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## CHAPTER 1 INTRODUCTION

Health promotion is the science of empowering communities to take ownership of health, recognizing that health is more than the absence of illness; health is a resource for personal development, allowing people to live high-quality, meaningful, and fulfilling lives (World Health Organization, [WHO] 1986). Over the last 40 years, researchers and practitioners have adopted health promotion approaches that alter the environments and conditions where people live, work, learn, and play, with the goal to reorient health services and reduce healthcare costs (WHO, 2005). The ‘settings’ approach to health promotion examines how policies and programs have been implemented in the context of specific spaces and places in communities, including schools, workplaces, recreation centers, and healthcare (Baric, 1993; Dooris et al., 2007; Frohlich & Poland, 2007; Poland et al., 2000).

The concept of Health promoting Hospitals (HPH) was introduced in the early 1990s by the World Health Organization (WHO, 1991). In healthcare, continuous quality improvement (CQI) has been used since the early 2000s (Institute of Medicine, 2000, 2003). Around the same time, scholars began examining CQI as a potential framework for supporting the implementation and evaluation of health promotion within hospital settings (Kahan & Goodstadt, 1999; Pelikan et al., 1997). Despite this long history of interest in health promotion in healthcare, how CQI is used to make improvements to policies and environments in this setting remains poorly understood (Gardner et al., 2010; Sollecito & Johnson, 2012). Advancing our understanding of CQI for health promotion at policy and organizational levels could help us understand how health promotion can be better integrated into the culture and fabric of healthcare as a unique setting. This dissertation is guided by the following research question: *What are the organizational and policy practices of CQI for health promotion in healthcare organizations?*

## **1.1 Health promotion**

According to the Declaration of Alma-Ata, health is a state of physical, social, mental, and emotional wellbeing, not merely the absence of disease or illness (WHO, 1978). In 1986, the Ottawa Charter for Health Promotion identified the five pillars of health promotion as beyond solely healthcare (World Health Organization, 1986), specifically: 1) building public policy; 2) creating supportive environments; 3) strengthening community action; 4) building personal skills; and 5) reorienting health services. In Canada, the Lalonde Report, a foundational federal health policy document outlining the necessity to focus disease prevention efforts upstream to avert illness, followed suit (Lalonde, 1974). As a result, many organizations began exploring health promotion policies and programs within particular community environments, what eventually became the focus of the influential ‘settings’ approach to health promotion (Poland et al., 2008, 2009). Research on the settings approach examined health promotion programs and policies embedded in the context of specific environments, such as cities, schools, recreational centers, and hospitals (Shoveller et al., 2016; WHO, 2024).

## **1.2 Health promotion in healthcare**

In 1991, the World Health Organization released the Budapest Declaration on Health promoting Hospitals (WHO, 1991). In addition to providing exemplary medical care, an HPH was defined as a healthcare environment that: 1) develops a corporate identity embracing the aims of health promotion; 2) develops a health promoting organizational structure and culture, including active, participatory roles for the patient and all members of staff, 3) develops itself into a health promoting physical environment; and 4) actively cooperates with its community (Garcia-Barbero, 1997). HPH seek to embed health promotion throughout healthcare structures,

following an explicit, or implicit, socio-ecological model (SEM). HPH typically focus on expanding the main focus of hospitals from diagnostics and therapeutics alone, to health promotion and disease prevention in areas such as physical activity, alcohol, tobacco, and healthy eating (Groene & Garcia-Barbero, 2005), some of the greatest risk factors contributing to non-communicable diseases (Murray et al., 2020).

In Canada, the advancement of HPH has been described as uncertain (Graham et al., 2014). Health promotion activity within Canadian hospitals was initially assessed by Baskerville & LeTouze (1990), who found that overall, surveyed hospitals in Canada reported health promotion as necessary, but fewer than half (37%) of hospitals reported implementing a health promotion program within their facility; overall, health promotion was described as being implemented in an ad hoc manner. Since this survey, a network of hospitals interested in healthcare health promotion has emerged in Ontario and Quebec; however, few standards exist to measure progress or impacts (Graham et al., 2014). Several Canadian provinces have developed sub-sector-specific health promotion policies, such as healthy eating policies, for healthcare settings (Kennedy et al., 2021), but the use of such policies to guide benchmarks for shifting healthy eating within healthcare organizations remains understudied (Rosewarne et al., 2020).

The HPH network comprises over 600 hospitals from 24 countries with some adoption of self-assessment tools and benchmarks, but what constitutes a model health promotion standard for healthcare, and how to implement it effectively, remains poorly understood (Groene & Garcia-Barbero, 2005; Svend et al., 2004). This means that even with a growing number of hospitals committed to health promotion, and some development of benchmarks, there is still a lack of organizational standards for health promotion within healthcare. Recently, scholars have suggested strengthening health promotion's ties to CQI to better incorporate health promotion

into the very fabric of healthcare (WHO, 2007).

### **1.3 Continuous quality improvement and health promotion**

CQI is a scholarly and practical approach derived from industrial organizations and management studies that is now a mainstay of healthcare (Batalden & Davidoff, 2007). In healthcare, CQI was originally adopted to examine interventions to address patient safety, namely, to explore and better respond to systemic causes of medical errors, such as falls and medication errors (Institute of Medicine, 2000, 2003, 2012). The implementation of CQI can occur through programs, policies, initiatives, and standards.

Yet incorporating CQI for health promotion into healthcare organizations and culture has proved challenging (Bloomquist et al., 2021). Despite the growing number of hospitals incorporating health promotion into their organizations, there is little evidence to date on how it occurs across varied policies, environments, and interventions adopted in healthcare organizations (Sollecito & Johnson, 2012). This is not due to a lack of standards (Groene & Jorgensen, 2005). Some analysis of the HPH network has examined how hospitals implement health promotion standards through processes of continuous improvement; however, it has been found that that “standards were assessed by health professionals to be applicable and relevant, but compliance with standards was low” (Groene & Jorgensen, 2005). This means that despite the significance of health promotion, adherence to standards low.

Although standards for HPH exist, there are calls for further development (CPHA, 2022). Groene & Jorgensen (2005) conducted a literature scan of health promotion interventions, finding increasing adoption but with little evidence to support that a HPH is better than a non-HPH. They concluded that, in addition to further developing health promotion standards, there

needs to be a building up of the health promotion quality improvement literature to demonstrate what can be accomplished by investing in health promotion that is integrated into quality improvement programs.

According to Groene & Garcia-Barbero (2005), there is a need to link health promotion and quality improvement methods to continuously measure, study, and alter health promotion interventions or policies within hospitals, in ways that better incorporate health promotion into the structure and culture of the organization, such as through policies and benchmarks (Groene & Garcia-Barbero, 2005). This literature suggests that until CQI for health promotion develops at policy and organizational levels, CQI will continue to be underutilized and stunted in its potential to study health promotion within healthcare. Studying health promotion and improvements at the organizational and policy levels could help us further understand the practice of CQI, and how to incorporate changes into healthcare to monitor and improve health promotion activities over time (Sollecito & Johnson, 2012).

The Inside out model was employed as a conceptual framework in this dissertation to explore health promotion activities within nested contexts (e.g., individual, interpersonal, organizational, and policy). This research was guided by the Inside out model developed by Golden et al., (2015) as it is an adaptation of the traditional SEM that has particular relevance to key issues in CQI. Unlike the traditional SEM, Golden and colleagues' model places policies at the center of a set of concentric circles of context, nested within other contexts influencing healthy public policies and environments, such as interpersonal connections, organizational monitoring, and community culture, and emphasizes individual autonomy within these structural forces.

The overall objective of this dissertation was to study CQI for health promotion in healthcare at these higher levels of organization and policy. Specifically, this dissertation explores the policy

and organizational practices of health promotion and CQI within the food environment at a provincial healthcare organization in Nova Scotia, Canada.

#### **1.4 Nova Scotia Health Nutrition and Food Services**

In 2018, Nova Scotia Health (NSH), one of two centralized provincial health authorities for the province of Nova Scotia, implemented an organizational Healthy Eating Policy (NSH, 2018). The NSH Healthy Eating Policy emphasized the importance of health promotion using a settings approach, specifically, healthy eating environments. Healthy eating policies within healthcare have grown over the years, with a policy review from Australia examining eight such policies in healthcare institutions in that jurisdiction (Rosewarne et al., 2020). Rosewarne and colleagues identified that while healthy eating policies provide an opportunity to create healthy food environments (e.g., nutrition standards), they lacked accountability mechanisms (e.g., evaluation and monitoring) to measure and benchmark food environments—the same gap that has been identified for health promotion and CQI more broadly. CQI is an integral approach used by the NSH organization, and Nutrition and Food Services, to test, alter, and sustain practice changes.

Under the auspices of the Healthy Eating Policy, in 2019, NSH implemented a multi-component food pricing and price salience intervention called *Snacking Made Simple* (Mah et al., 2023). NSH is the sole retailer for its hospital foodservices, and this constituted an organization and site-specific health promotion intervention that was retailer-led. This dissertation examines NSH as an organizational setting for the practice of CQI, guided by the health promotion framework of the Healthy Eating Policy, and uses the *Snacking Made Simple* intervention, among other smaller interventions implemented by the Nutrition and Food Services Team, as case studies.



The findings from this dissertation will help to inform our understanding of CQI in relation to health promotion including specific interventions across the levels of organizational and policy context. Improving consumer food environments within healthcare organizations is an opportunity to promote healthy diets for many subpopulations: staff, patients, and communities broadly. Suboptimal diets continue to be one of the leading causes of death and disability in Canada and globally (Abbafati et al., 2020; Institute for Health Metrics and Evaluation, 2017). This dissertation serves to increase our understanding of CQI and health promotion practices within healthcare policy and organizational contexts specific to the food environment, by using qualitative methods to allow for an in-depth phenomenological analysis of context, practice, and perspectives of CQI, among the NSH Nutrition and Food Services team. These findings could be transferable to other areas of healthcare health promotion to address noncommunicable disease risks through healthcare.

### **1.5 Research question and objectives**

The research question that guided this dissertation was: *What are the organizational and policy practices of CQI for health promotion in healthcare organizations?* Four sub-objectives to address this question were examined as follows.

- Objective #1: Examine and compare how CQI is integrated into healthcare healthy eating policies in Canada.
- Objective #2: Explore healthcare perspectives on CQI in the process of implementing health promotion interventions for healthy eating and food environments.
- Objective #3: Explore barriers and facilitators of CQI across four cases of health promotion interventions for healthy eating and food environments.

- Objective #4: Explore the practice of health promotion in healthcare, within the context of an overarching Healthy Eating Policy.

## **1.6 Dissertation overview**

This dissertation is a dissertation by manuscript, following Dalhousie University regulations. The dissertation is structured as follows. Chapter 2 presents the conceptual framework for the study as well as a literature review. Specifically, it examines the Inside out model, followed by a literature review with a particular focus on the health promotion and quality improvement literatures including CQI research for health promotion interventions and policies. Chapter 3 contains an overview of the setting for the research, specifically, NSH as a healthcare organization. This chapter explains the history of healthy eating within the organization, as well as the organization's core concepts and approach to CQI in general. Chapter 4 describes the design of the research and its methodology, including data collection and analysis, and positionality. This chapter furthermore explains what steps were taken to optimize trustworthiness for the findings.

Chapters 5 through 8 then present the results of the dissertation research formatted as four manuscripts for peer-reviewed publication in a scholarly journal in applied health management and/or health promotion. Chapter 5 presents the outcomes of a comparative policy analysis examining how CQI is integrated into recent healthcare healthy eating policies in Canada. Specifically, it describes policy design, policy components, and benchmarks (encompassing nutrient profiling criteria and other metrics for monitoring and evaluation) (Objective #1). Chapter 6 presents the findings of an investigation exploring healthcare perspectives on CQI, in the process of implementing health promotion interventions for healthy eating and food

environments (Objective #2). Chapter 7 presents the findings from a comparative case study analysis, exploring the barriers and facilitators of CQI across four cases of health promotion interventions within the retail food environment (Objective #3). Chapter 8 describes the outcomes of an exploration of the practice of health promotion in healthcare, within the context of an overarching Healthy Eating Policy (Objective #4). Due to common data sources, there is some repetition in the methodology sections across Chapters 6, 7, and 8.

Chapter 9 presents the discussion of the results across the manuscript findings and presents the conclusions of this dissertation, followed by a list of references used throughout the dissertation. The Appendices include a supplementary commentary manuscript previously published (Appendix A), the literature search strategy (Appendix B), interview guide for the semi-structured interviews (Appendix C), and codebook developed during data analysis (Appendix D).

## CHAPTER 2 LITERATURE REVIEW

The following chapter provides an overview of the conceptual framework for this dissertation, the Inside out model, and a review of literature on health promotion in healthcare explored using CQI, to situate the research question: *exploring the organizational and policy practices of CQI and health promotion in healthcare organizations*. The chapter ends with a discussion and overview of evidence gaps, highlighting the significance of advancing this area of research.

### 2.1 Conceptual framework: Inside out model

The SEM is central to health promotion (WHO, 1986). It was introduced by McLeroy et al. (1988), building from the ecological work of Bronfenbrenner (1977), suggesting the importance of adopting an ‘ecological perspective’ regarding the determinants of health. An ecological perspective can be defined as a series of related, encapsulated contexts of environments for understanding the various factors influencing population health (Bronfenbrenner, 1977). The SEM has been widely adopted by health promotion scholars across a variety of population health topics to explain the interconnectedness of these factors (Bronfenbrenner, 1977).

One key area of focus in the Ottawa Charter for Health Promotion (1986) was the creation of supportive environments for health promotion, emphasizing the important role that environments have on the health of individuals and communities. These environments have been further explored in the literature and are a part of the science examining health promoting settings (Dooris et al., 2007). Health promoting settings are defined as “places or social contexts in which people engage in daily activities in which environmental, organizational, and personal factors interact to affect health and wellbeing” (WHO, 2024).

The SEM explores the interconnectedness and interactions between people and those environments as a complex system (Dooris et al., 2007; Paton et al., 2005), including interpersonal relationships, communities, organizations, and policies. Further development of the ‘settings’ approach explored the sociological interplay between the various levels and parts of systems which may be influential in community health (Dooris et al., 2007; Neufeld & Kettner, 2014). The settings approach to health promotion emphasizes the influence of community environments as a social environment in health (Poland et al., 2008, 2009). Research on settings has examined programs, policies, and initiatives within cities, as well as organizations such as universities, schools, workplaces, recreation centres, and hospitals (Shoveller et al., 2016; WHO, 2024). An important development has been the evolution of the study of built and physical spaces as social (relational) environments (Cummins et al., 2007), i.e., settings as (social) networks and nodes of interactions between people and their environments (Archer, 2010).

As theorized by Golden et al. (2015), the Inside out model conceives of the context for health promotion in a way that reduces the structuring emphasis on policies and environments in the traditional social-ecological model, by placing individuals at the outermost (leading) edge of concentric circles of context. Rather than focusing on how policies and environments influence individuals (the implied direction of effect from ‘outer’ to ‘inner’ domains in the traditional model), Golden and colleagues’ model aims to explore structural changes via examining the varied practices and efforts of individuals to support or hinder organizations, settings, community networks, and policies, with policies becoming the core (inner circle). The model thus builds on the traditional SEM by emphasizing individual autonomy, “by turning it inside out, placing health-related and other social policies and environments at the centre, and conceptualizing how individuals, their social networks, and organized groups produce a

community context that fosters healthful policy and environmental development (p. 9S).” The Inside out model explores the influence of environments on individuals, as well as the inverse, the influence that individuals may have on environments.

The Inside out model concentric circles are as follows, starting at the center and building outwards (from the inner to the outer level).



Figure 2-1. Inside out model derived from Golden et al., (2015).

*Policies and environments* are at the center of the framework and are defined as any kind of policy or environment that facilitates healthy and autonomous decisions for all. Examples include public policies with ties to health (e.g., bicycle helmets), access to resources (e.g., minimum wage laws, taxation policies), organizational policies (e.g., healthy eating policies), physical environments (e.g., access to safe injection sites or community parks) and environmental factors (e.g., access to WIFI or public transit systems) (Golden et al., 2015).

Next, the framework describes *community* as “the immediate infrastructure that identifies different policy or environmental options and chooses among them” (Golden et al., 2015,p.10S). Examples could include decision-making groups, such as boards or steering committees. This framework also highlights the role of health champions, individuals or a core group of people advocating for the policy or environmental change or events that might elevate the significance of the policy issue (McLeroy et al., 1988).

Next, *organizations* are defined as groups of people who are well-networked and well-resourced, who come together around a specific policy, topic, or idea. Golden and colleagues’ definition of organizations includes interest groups, community coalitions and other advocacy clusters promoting particular policy options.

*Interpersonal connections* are informal social networks or groups that provide opportunities for further policy development. This could include lay leadership and social networks of varying levels of influence or power. Influential connections are those with high levels of trust and reciprocity.

Lastly, the outermost layer of the model encompasses *individuals*. Essential characteristics include autonomy, power, and the ability to participate in policy activities. Golden et al., (2015) explain that individual aptitude to participate may determine the likelihood they have to influence policy or change. This layer concerns control, power, and whether people can engage in various social opportunities (Golden et al., 2015).

The Inside out model provides a possible theorization for how policies and environments are reinforced or co-produced by organizational, community, interpersonal, and individual factors. It builds upon the standard SEM, which focuses on the influence of environments on health, adding more explanatory detail about how policies are actively implemented and maintained (Golden et

al., 2015; Zhang et al., 2023). Golden et al., (2015) highlight that without a focus on the reciprocal determinism between individuals and policies (and vice versa) there could be an assumption that policies are happenstance (Bronfenbrenner, 1977; Schensul, 2009). Golden et al., (2015) created the Inside out model to highlight the complexity in adopting or maintaining a policy, highlighting that neither is guaranteed without a dynamic reinforcement from other aspects of the model (e.g., interpersonal relationships, community support) (Bronfenbrenner, 1977; Schensul, 2009). This aligns with other policy studies, such as a narrative study by Gielen & Green (2015) capturing the lessons learned from public policy successes (e.g., tobacco control and motor vehicle safety). This study spoke to the complexity of factors actors supporting these policies, such as data, partnerships, and shifting community norms. Several scholars have since adopted or applied the Inside out model to explore the policy complexity and supports required for implementation of nutrition policies (Kirk et al., 2021); community campaigns to reduce consumption of sugar sweetened beverages (Schwartz et al., 2022) and community health promotion (Paulsen et al., 2023). These studies reference using the model because of its focus on policy and further exploration of the factors needed to support policy (e.g., individual agency).

A strength of the Inside out model is Golden et al's emphasis on the variety of partners involved in policy maintenance, including individuals, champions, and coalitions (Golden et al.,2015). While the Bronfenbrenner (1977) model emphasizes the importance of interpersonal relationships for health (e.g., relationships with peers or community elders), Golden et al., (2015) stress that interpersonal relationships in the form of partnerships are required to support policies. In other words, partnerships can support policy success (Gielen & Green, 2015). Again, the focus on partners speaks to the complexity of policy support and maintaining a policy even when it is in place (Golden et al., 2015). This is echoed by Kirk et al., (2021) describing the bottom up



(grassroots) work necessary to support policies through interventions and advocacy, and De Jong et al., (2023) exploring intersectoral collaborations in community health promotion programs.

Golden et al., (2015) describe several limitations to the Inside out model. They describe that within communities and the population more broadly, knowledge regarding public health issues is lacking and that this may have excess influence on policy implementation; members of the population may not understand and be less likely to accept the importance of health promoting investments in policies or upstream determinants (Golden et al., 2015). This limitation is especially important to consider as this dissertation applies the Inside out model to research taking place within a healthcare setting. Historically, healthcare organizations are ‘downstream’ systems in the community with regards to health promotion, with a remit primarily focused on treatment and diagnostics (Canada Health Act, 1984), which may mean that factors that explain ‘upstream’ policy implementation may not align with the healthcare context or its competing priorities (Pelikan, 1997). Additionally, the Inside out model has been criticized for de-emphasizing other influential factors (e.g., formal leaders, political structures) contributing to upstream changes within settings. For example, the model does not explicitly speak to institutional structures or politics, and their influence on policy implementation (Oladele et al., 2015). Lastly, there is overlap between the different levels of the Inside out model, as noted by Kirk et al., (2021). According to their study, it was difficult to differentiate between certain levels of the model, such as interpersonal connections that foster collective action and distributing resources and power across individuals.

Nevertheless, the Inside out model is a useful framework to explore this dissertation’s topics of CQI for health promotion within healthcare. The Inside out model allows us to explore how policies and environments are reinforced or co-produced by factors at individual, interpersonal,

organizational and community levels. As other scholars have mentioned, this model emphasizes the role of policy alongside the necessary conditions to support and enhance policy efforts (Kirk et al., 2021; Paulsen et al., 2023; Schwartz et al., 2022), specifically the roles that dynamic interpersonal relations and individuals play in supporting policies. Most importantly for this dissertation, the Inside out model aligns well with CQI, as both emphasize individual agency and the role of individuals in supporting policies and environments. Use of the model therefore provides a valuable way to frame this dissertation's study of processes within organizations, to determine how these factors support policies.

The following section provides an overview of the literature on CQI research for health promotion interventions and policies in healthcare.

## 2.2 CQI

CQI is integral to the functioning of healthcare (Institute of Medicine, 2000, 2003). Defined as a science of *people* and *process*, CQI is the “structured organizational *process* for involving *personnel* in planning and executing a continuous flow of improvements to provide quality healthcare that meets or exceeds expectations” (Sollecito & Johnson, 2012, p. 40). These expectations are outlined in national healthcare accreditation standards, institutional mandates, and organizational policies to improve care, also known as the healthcare ‘Quintuple Aim’. The overall goals of the Quintuple Aim are improving patient experiences, worker health, population health, health equity and lowering healthcare costs (Itchhaporia, 2021).

In healthcare, CQI is often a feature of entire teams dedicated to advancing quality improvement in healthcare and improving the quality of care for patient safety, medical errors, hand hygiene, and length of patient stay (bed management) (Sollecito & Johnson, 2012). CQI

investigates processes by continuously collecting and studying data to improve interventions, programs, or initiatives. The emphasis on process differentiates CQI from the procedures of quality control (assessing outcomes) and quality assurance (maintaining standards) (Sollecito & Johnson, 2012).

Healthcare adopted CQI from commercial industries (e.g., auto industries) as healthcare shifted from a small, scattered cottage hospital model to large, centralized infrastructures (Black & Fierlbeck, 2006). In the early 2000s, the United States Institute of Medicine (now the National Academy of Medicine) wrote two foundational reports that have subsequently informed CQI approaches in healthcare, *To Err is Human*, and *Crossing the Quality Chasm*, reporting that 44,000 – 98,000 people die each year from medical errors, which were found to be due to inefficient processes and systems rather than individual personnel errors (Institute of Medicine, 2003; Kritchevsky & Simmons, 1991). CQI thus promotes a spirit of inquiry, encouraging staff to reflect on current practices asking members of healthcare teams what works well and what does not. CQI also redirects blame for adverse outcomes that might have been directed to individual practitioners, towards a stronger understanding of systems and processes (Kahan & Goodstadt, 1999).

One important feature of CQI often examined in management studies is how it encourages healthcare practitioners to self-study through iterative cycles of small changes to inform future practice. The most common framework guiding this practice is the plan-do-study-act (PDSA) cycle (Radawski, 1999). PDSA cycles involve four stages. First, *plan* an intervention that improves practice. Second, *do* the change. Third, *study* the results of the change. Fourth, *decide* further actions. A team engaged in CQI can stop after one cycle or continue with multiple cycles (Levin et al., 2010). Multiple PDSA cycles can then be used at the organizational or policy levels

in healthcare to detect changes over time as interventions unfold, the continuous aspect of CQI (Knudsen et al., 2019), changes that might otherwise go undetected in routine pre-post studies. PDSA data may be quantitative, assessing effectiveness or change in cost, or qualitative, assessing intervention acceptability through focus groups or interviews. PDSA cycles are also intended to be nimble, suggesting that practitioners try new interventions and alter interventions throughout the quality improvement process (Knudsen et al., 2019). With leadership support, PDSA cycles provide autonomy to healthcare practitioners as they evaluate their practices and consider future actions (Kahan & Goodstadt, 1999). Leadership support is necessary to facilitate this iterative process of innovation and risk taking (Radawski, 1999).

Our understanding of CQI in healthcare to date, however, has typically come from research in clinical or patient areas with a particular focus on healthcare safety and quality, such as reducing surgical wait times, decreasing infection rates, completing intake assessment forms on admission, falls reduction, and reducing medication errors (Institute of Medicine, 2003). The bulk of this evidence, examining CQI interventions within healthcare, stems from a clinical focus examining the effectiveness of CQI interventions for improved outcomes and cost savings. A systematic review by Hill et al. (2020) sought to review CQI RCT effectiveness and consideration of the social determinants of health in CQI interventions. Upon reviewing 28 RCTs comparing CQI and non-CQI interventions, the authors found that intervention effectiveness was limited with no mention of the socio-economic determinants of health in any study. They identified the need to incorporate social determinants into future CQI initiatives and to consider factors influencing CQI effectiveness (e.g., resources, structure, complex organizations). Thus, despite the addition of ‘Quintuple Aim’ goals to healthcare over the years (i.e., health equity, population health), our understanding of CQI in these domains is less advanced than other areas

of healthcare (Hill et al., 2020).

The study of CQI within healthcare has expanded to health promotion and population health. For example, in addition to improving patient care, the HPH is a healthcare corporation that seeks to expand the focus of healthcare to health promotion and disease prevention (Groene & Garcia-Barbero, 2005). This focus on health promotion targets upstream determinants of health with the goal of reducing healthcare costs and improving population health. HPH is an example of a health promoting settings approach.

The next section provides an overview of what is known about CQI specifically for health promotion in healthcare, using the Inside out model, at policy, organizational, interpersonal and individual levels (in this order). Wherever possible, literature cited pertains specifically to diet, nutrition, and/or food environments.

### **2.3 CQI and policies**

Several studies have found a variety of policy and environment-related factors that contribute to the practices of CQI. Broad-based policies covering a wide range of chronic diseases and populations, rather than single patients, appear to be most effective (Epping-Jordan et al., 2004). In particular, Epping-Jordan et al. (2004) designed a new framework, Innovative Care for Chronic Conditions (ICCC), in collaboration with the WHO, to improve chronic disease outcomes by using principles of CQI embedded throughout the policy structure of healthcare to improve practices in primary care settings. The model targets improvements at multiple levels, including patient health outcomes (micro), supporting organizations and communities (meso), and a favourable policy environment (macro) consisting of partnerships, financing, human resources, leadership, advocacy, and supportive legislative frameworks. Epping-Jordan et al.'s (2004) model emphasizes that any healthcare practitioner can be a 'policymaker,' from all levels

of influence (point-of-sale to senior leader); and can impact healthcare quality through many macro-level avenues, such as legislation, regulation, accreditation, minimum standards, and monitoring. Further details about these diverse organizational practitioners and their influence is discussed further on in the practitioner section below.

One key aspect of an enabling positive policy environment for health promotion in healthcare is long-term policy and infrastructure support for CQI tools. Gardner et al. (2010) used a multiple case-study, mixed-methods design to study various healthcare sites in their uptake of a CQI program in Indigenous primary healthcare, called the Audit and Best Practice for Chronic Disease (ABCD) project. ABCD was an Indigenous-led action research project that began as a pilot in the Northern Territory in Australia and has investigated a number of impacts of organizational CQI systems on service delivery and the quality of chronic disease care in primary healthcare settings. Bailie et al. (2017), examining uptake of CQI using standardized ABCD tools, reported that over time, uptake of CQI activities followed by improvements or maintenance of high-quality care, were more likely to have occurred where there was long-term policy and infrastructure support for CQI. For example, in a service region with comparatively consistent long-term policy support for CQI, steady improvements in quality primary care were detected (including priority aspects of type 2 diabetes, maternal, and childcare). By contrast, there was a rapid rise and subsequent fall in relevant CQI activities in regions where policy and infrastructure support was not sustained. Bailie and colleagues' study also found low uptake of CQI in regions lacking policy and infrastructure support to maintain CQI initiatives. Allocating necessary resources, such as personnel and finances, to ensure the achievement of standards was paramount for CQI's success (Bailie et al., 2017; Epping-Jordan et al., 2004).

As identified in the Inside out model, policies are nested within social and systems contexts.

One comparable finding from the CQI literature is that it is essential to align with the nested structure of the policy landscape or context, where healthcare policies and programs are situated (Øvretveit, 2011; Riddell Bamber et al., 2014). For example, Gardner et al. (2010) described broader policy and program developments at the national and state levels as providing a conducive backdrop for developing and implementing the ABCD program. The program also had the “right timing” when considered in a macro-policy context. This finding is essential for researchers and practitioners to consider when implementing similar CQI interventions within their facilities. Some research on context within CQI processes has critiqued context as a ‘black box’ where practitioners express an understanding of what is going in (e.g., the intervention) and coming out (e.g., outcome), but are perplexed at what happens in-between (i.e., context) (Ramaswamy et al., 2018). However, further studies have attempted to open this ‘black box,’ identifying strong leadership, strategic application of CQI, and ‘point-of-sale’ engagement as possible mechanisms for effective CQI management across policy and organizational contexts (Coles et al., 2020). The CQI literature, similarly to the broader population health intervention research literature (Minary et al., 2018), has also issued calls to further our understanding of context so that interventions are always adequately adapted to local settings (Coles et al., 2020).

## **2.4 CQI and organizations**

Several researchers have explored CQI at organizational levels. Percival et al. (2016), another study from the ABCD initiative team, used two data collection cycles to assess the number and types of local health promotion activities implemented at an Australian health center. The scholars used objective quantitative data comparing the number and types of health promotion interventions among health centers and from year to year (Percival et al., 2016). As part of the ABCD CQI model, researchers shared data with organizational staff after the first data collection

cycle, which was used to adjust for further planning and strategy implementation. The researchers then collected a second data cycle, finding that the number of health promotion activities had increased, but that the types of activities and health issues addressed had remained unchanged. One possibility is that CQI interventions may need to use both quantitative and qualitative methods to detect CQI outcomes such as empowerment and resiliency (Kahan & Goodstadt, 1999).

Organizational factors can influence the practice of CQI in several ways. Practitioners' perceptions and attitudes during CQI can shape organizations, such as in one of the studies examining ABCD quality improvement tools, where "absorptive capacity for new knowledge, good leadership and management were more likely to have success with the uptake of innovations" (Gardner et al., 2010, p. 6). Absorptive capacity has been defined as a process by which organizations acquire, assimilate, transform, and exploit knowledge to produce an organizational change (Cohen & Levinthal, 1990; Zahra & George, 2002). This capacity is facilitated by the organizational presence of practitioners who can interpret, collect, and use data to inform decisions and next steps. The authors explained further about practitioners' use of ABCD tools, that "these people had a good feel for how data could be used to underpin discussion about improvement and could see opportunities for acting on practice" (Gardner, 2010, p.6). This corresponds to CQI's Plan-Do-Study-Act cycle, where data are routinely processed, understood, and used by organizational practitioners to inform change.

Nevertheless, Gardner et al. (2010) also discussed interpersonal tensions amid change, when one practitioner in an organization might support the intervention, and another might oppose or express ambivalence. The presence of interpersonal opposition or ambivalence to CQI may be a function of the competing pressure and demands of the organization, not the intervention itself,



or individual practitioners. Structures of organizations can influence support for new interventions and what a practitioner may have time to focus on; ambivalence could also come from the individual values and perceptions held by individuals. For example, participants in Gardner et al., (2010) expressed concerns about auditing the initiative, voicing its resemblance to ‘policing’, an important finding relevant to the Indigenous research context, but that may shed light on a range of CQI processes in other healthcare settings. Encouraging practitioners to collect data alone in CQI may help to measure indicators and benchmarks, but does not necessarily describe the underpinning processes of implementation at work in the organization, or the mechanisms at work to explore how a benchmark is achieved (Freeman, 2002). A hesitation to audit and ‘police’ or enforce interventions internally, once they are implemented in organizations, brings us to the concept of benchmarking, a key component of CQI to monitor progress and improvement.

#### **2.4.1 Benchmarking**

Benchmarking compares indicators to assess healthcare performance (Klazinga et al., 2011; Lovaglio, 2012) in ways that can be compared across contexts, such as organizations (e.g., wait times in Halifax vs. Yarmouth) or chronologically (e.g., wait times during the leadership of Conservative or Liberal governments).

Practitioners can use benchmarking to improve practice. In one CQI study by Shaikh et al., examining the Healthy Eating Active Living TeleHealth Community of Practice (HEALTH COP) CQI Intervention at rural California clinics, intended to support clinicians in preventing and managing obesity, researchers used the clinic’s performance benchmarks during focus groups to discuss the facilitators and barriers for the intervention (Shaikh et al., 2015). The focus groups

added contextual insight to the benchmark data, highlighting that health promotion is not a one-size-fits-all approach and that benchmarks may look different across sites. Shaikh et al.'s findings thus stress that benchmarks, although valuable in measuring performance, may need to remain flexible based on an organization's resources and available data; and as Tinney et al., (2021) mention, the overall receptiveness of staff to collect and monitor those specific benchmarks.

Benchmarks have the potential to demonstrate to staff and decision-makers the (in)effectiveness of health promotion interventions in several ways. In addition to being an *outcome*, recent literature on CQI has shifted to explore benchmarking as a *process* promoting “discussions among point-of-sale workers on their practices to stimulate cultural and organizational change within the organizations being compared” (Ettorchi-Tardy et al., 2012, p)103). This means that benchmarks not only involve a certain measure or indicator but entail implementation of a complete process to examine and interpret practices, where the status quo is discussed and may be challenged through talk. Benchmarking as process is not yet well documented, but has been suggested to be salient in adaptability of CQI initiatives to certain contexts (Reponen et al., 2021).

Of specific interest to CQI researchers is how organizations permit the use of iterative cycles for smaller interventions to collect data that inform practice. As noted earlier, one important framework guiding these iterative cycles from the CQI literature is the Plan-Do-Study-Act (PDSA) cycle (Radawski, 1999; Sollecito & Johnson, 2012). For example, Shaikh et al. (2015) evaluated a pediatric CQI health promotion tool for providing healthy weights advice in six rural clinics and its impacts on preventing and managing obesity. The tool influenced practitioners to adjust their approach when addressing weights, shifting from counselling individuals to families.

Then during the aforementioned focus groups, the researcher shared performance benchmarks for the tool with clinic practitioners, to determine the likelihood of its use and scale-up in other clinics or adapted for urban areas (Shaikh et al., 2015).

## **2.5 CQI and practitioners**

Beyond their roles in organizations, health practitioners may be involved in CQI interventions pertaining to health promotion in healthcare in a few ways. It has been noted, for example, that healthcare practitioners may be thought of as a partners to the CQI process or as target populations for certain interventions (Kahan & Goodstadt, 1999; Boelsen-Robinson et al., 2019). While the literature focused on CQI and practitioners is limited, it supports the notion that CQI is meant to promote a spirit of inquiry (Kahan & Goodstadt, 1999). Assessing gaps in practice can lead to finger-pointing or blame directed at individual healthcare practitioners; however, using a CQI process can in turn, lead to a focus on improving the system rather than blaming individual practitioners (IOM, 2003). For example, the CQI intervention in Shaikh et al. (2015) focused on systems to support parents and children and their health goals, rather than blaming practitioners for not addressing obesity prevention, and also diverting blame directed towards patients, children, or parents for not consuming or purchasing healthier foods. Shifting blame from practitioners, moving away from punitive measures, and shifting towards systems can support a focus on processes of improvement (IOM, 2013).

Bailie et al., (2007) explain furthermore that it is inadequate for organizations to rely solely on local service managers and clinicians to implement quality improvement initiatives or interventions, even if the specific changes desired in practice are at point-of-sale. This is because point-of-sale practitioners' actions are heavily influenced by organizational structural factors

such as policies, allocation of resources, and clinical regulations (Bailie et al., 2007). Therefore, it is essential to include formalized quality improvement leaders in this work as well (Sfantou et al., 2017). Organizational leaders, such as directors and executives, can administer resources needed for change (e.g., human, and financial resources). However, it is important to note that leadership for quality improvement can occur through formal or informal organizational roles, including organizational champions or change agents who have buy-in for an initiative or cause (Shaikh et al., 2015). The concept of a CQI 'champion' often refers to how practitioners are sometimes responsible for leading grassroots change, where innovations are led bottom up and then scaled up throughout organizations. Several approaches to CQI suggest a shared input and responsibility amongst various healthcare community practitioners, administrators, and leaders (Price et al., 2017), the *people* component of CQI, one that leans heavily on the local knowledge of people within healthcare practice.

Practitioner involvement in CQI initiatives has been found to be essential to intervention uptake (Adams, 2018) given practitioners' knowledge and expertise about their work and setting (Sollecito & Johnson, 2012). However, the CQI literature has also shown that it is not always feasible to engage point-of-sale practitioners and there are challenges to engaging practitioners working on the frontlines or directly with patients. For example, Gardner et al., (2010) noted that frontline practitioners (e.g., nurses) were the most difficult to engage due to institutional employment arrangements such as time and scheduling. The dynamic inter-relationship between practitioners and organizational factors requires further exploration.

## **2.6 CQI and patients**

To date, research on CQI has placed a significant emphasis on how CQI can improve patient care experiences. In particular, policymakers and decision-makers have shown interest in CQI interventions to determine their cost-efficiency to improve patient health outcomes (Hill et al., 2020). Assessing ‘customer satisfaction’ (in healthcare, patient experience satisfaction) is widely used in the CQI literature, likely stemming from CQI’s industrial origins in the automobile industry, where developing effective management strategies prioritized customer satisfaction to guide decisions (Blumenthal & Kilo, 1998). Similarly, several healthcare health promotion studies using a CQI framework have assessed satisfaction with a service or “product.”

Specific to food environments, several CQI studies have focused on quality outcomes assessed in terms of the consumption of particular food and beverage items, or patient satisfaction. A study by Jester et al. (2018) evaluated the effectiveness of an evidence-based educational tool to improve pediatric patients’ healthy eating and physical activity, implemented in an outpatient primary care setting in rural Delaware in the United States. The study found that the tool increased the number of fruits and vegetables consumed and decreased the intake of sugary drinks, however with no impact to children’s body mass index. The authors noted that improvements in diet did not correspond to clinical improvements in body weight within the study’s time frame.

Focusing on a different population, Schroeder & Hickey (2020) assessed quality in terms of the satisfaction of adult patients receiving diabetes care at an outpatient clinic, with health education for diet and physical activity. The authors found a 72% satisfaction rate for the treatment of diabetes and 76% for knowledge of diabetes (Schroeder & Hickey, 2020).

Other CQI studies have examined customer satisfaction following health promotion alterations to healthcare retail food environments. One hospital in Australia removed sugar-

sweetened beverages (SSBs) under the auspices of a Healthy Beverage Initiative. Tinney et al. (2022) assessed customer satisfaction six months after removing SSBs retail services in an Australian hospital, with 58% of respondents agreeing or strongly agreeing with removing SSBs. Notably, this study presented an alternative view on the concept of a ‘patient’ as the primary service user for whom services were being improved. Rather, the majority of outcomes satisfaction surveys in Tinney and colleagues’ study were completed by healthcare staff (92%); despite the majority reporting agreement or satisfaction, the study also found that some perceived the removal of SSBs as an infringement on their personal choice.

CQI intervention satisfaction is one set of outcomes that can inform our understanding of quality care when investing in upstream interventions. For example, assessing patient satisfaction provides data for practitioners to reflect on and understand if providers or interventions meet patient needs and expectations. These results may be tailored to the patients already receiving the service; staff can readily incorporate feedback into existing practices that could influence organizational change, such as the scaling-up of a routine educational tool.

However, the above studies also show variation in how the term customer is used in CQI studies. This is evident in Tinney and colleagues’ SSB study, where all users of healthcare retail services were considered a ‘customer’ whose experience should be monitored, as compared to studies where the customer is a specific cluster of patients. Kahan & Goodstadt called this the ‘elusive customer’ when CQI is used for health promotion, meaning that *everyone* may be considered a customer in health promotion given its focus on populations (Kahan & Goodstadt, 1999): the parameters around who is and who isn’t a customer are much more blurred. The elusive customer concept is important to keep in mind as we study health promotion within healthcare, specifically CQI initiatives that target large populations (e.g., patients, visitors, staff).

## **2.7 Opportunities to examine the organizational and policy practices of CQI for health promotion within healthcare**

This literature review summarizes the evidence of CQI health promotion interventions implemented in healthcare organizations, with a particular focus on examples from diet, nutrition, and food environments research. Studies varied in population (patient, practitioner, organization and policy), interventions (patient education, education tools, screening tools and uptake of complete CQI programs into systems or organizations), and outcomes (patient satisfaction, number of health promotion interventions over time, fruit and vegetable intake and uptake of programs). The majority of studies captured a variety of quality outcomes and study designs. Overall, CQI interventions were found to be generally acceptable to ‘customers’ in their settings but with minimal impacts to service outcomes in both retail and inpatient settings. This literature review highlighted four key gaps that will be examined in the four sub-objectives of this dissertation.

First, policies are essential for supporting and sustaining CQI efforts in healthcare, with greater policy support resulting in sustained CQI activities (Gardner et al., 2010). This means that in order for healthcare to support CQI efforts in health promotion, policies are a crucial component to examine for improvement. Many of the organizational programs in the review by Gardner et al., (2010) and Bailie et al., (2017) were broad based chronic disease programs and located in Indigenous primary healthcare in Australia. Recent development of healthy eating health promotion initiatives has specifically focused on policies, such as for food environments (Swinburn et al., 2013b). Scholars such as Rosewarne et al., (2020) who have explored these policies within specific settings, such as schools and hospitals, have found only limited standards or benchmarks for these policies (Rosewarne et al., 2020). Examining and comparing such

policies could provide insight into how CQI is integrated into healthcare in Canada.

Second, using a CQI framework has shed light on the differing ideas and definitions of health promotion at work in healthcare. Several studies examined within this review took a disease or risk factor approach, addressing a particular behaviour (e.g., eating fruits and vegetables) or measuring clinical outcomes (e.g., BMI). However, some critical approaches to health promotion scholarship have critiqued disease prevention efforts in healthcare for their focus on healthy lifestyle and personal practices, sometimes referred to as “lifestyle drift”, where an ideal of upstream health promotion instead ‘drifts’ towards assessing outcomes in terms of individual behaviour change (Baum & Fisher, 2014; National Collaborating Center for Determinants of Health, 2017). Critical scholars have therefore argued that lifestyle drift risks the focus of health promotion being placed back on the individual rather than environments and organizational structures as underpinning principles. Despite this critique, the literature examined also shows that assessing ‘customer’ outcomes remains a valid indicator of the effectiveness of quality management, with the understanding that using them does not preclude other domains of quality improvement being focused on processes and structures at the policy and organizational levels (Ottawa Charter of Health Promotion, 1986). One possible explanation for the imbalance in the literature, therefore, is that incorporating health promotion at policy and organizational levels is regarded as a greater challenge than one-off programs or interventions addressing individual health (Graham et al., 2014; Von Thiele Schwarz et al., 2015).

Third, while the literature describes some important organizational and policy components of CQI programs, such as using data, absorptive capacity, and engaging leaders, it has yet to explain how these practices and processes interact in a dynamic way at different levels specific to health promotion (Sollecito & Johnson, 2012). For instance, quality improvement studies have denoted



that even policy acts in myriad ways throughout a complex healthcare organizational structure. One of the key findings mentioned repeatedly in the literature reviewed was the importance of support at all levels of the healthcare organization from leaders and managers (including those perceived to be ‘champions’ or informal leaders). This reinforces that success of CQI interventions depends on a complex interaction between individuals and structure, as well as interpersonally between practitioners, such as between point-of-sale staff and management or executives (Bailie et al., 2017). Moreover ‘buy-in’ of point-of-sale practitioners to garner support for policies and intervention has been described as essential. This aligns with the empowerment focus of health promotion, where ‘bottom-up’ change at the frontline is necessary to facilitate changes that “chip away [at structure] over time” (Gardner et al., 2010). Indeed, these ‘bottom-up’ trials have been found to lower perceived risk among higher level decision-makers, especially if there is a potential loss of revenue anticipated (Boelsen-Robinson et al., 2019). Lower risk trials or as examined in some CQI studies, PDSA cycles, empower practitioners to try new practices, and can thus enact cyclical change.

Fourth, in theory or an idealized setting, CQI is a science of people that flattens hierarchies in an organization, enabling voice in the decision-making process, including point-of-sale staff (Price et al., 2017). This approach is intended to facilitate iterative learning and buy-in for interventions (Coles et al., 2020). However, staff engagement in complex organizations is not equal, and some staff may have differential agency to act due to institutional relations and power dynamics as Gardner et al., (2010) and others have noted. On the one hand, resistance to ‘policing’ interventions has been observed in the CQI health promotion literature, and yet, appears to be in tension with how monitoring and evaluation, including reflexive use of measurable benchmarks have been described as essential to organizational learning and the

success of CQI. Although critiqued externally by scholars of health promotion, the health promotion in healthcare literature has yet to articulate its organizational power structures around quality and how decisions are made. Policing implies an exertion of power and there is a need to explore further the connection between practices of monitoring and policing and the possible power structures involved. As a first step, a greater understanding of these practices between individuals, interventions, and organizations could help us understand how CQI is practiced within healthcare and the mechanisms at work.

## **2.8 Conclusion**

This chapter presented an overview of the conceptual framework and literature review to date exploring CQI and health promotion interventions within healthcare. The Inside out model provides a conceptual framework to organize an investigation of how policies are supported by organizational, interpersonal, and individual factors. The Inside out model specifically focuses on the role of individuals to influence policies and environments, making it an ideal framework to explore CQI, a science focused on people. This review of literature furthermore highlights four opportunities to advance our knowledge of the policy and organizational practices of CQI for health promotion, and are the basis for the empirical studies comprising this dissertation. First, we will explore how CQI is integrated into healthy eating policies (e.g., benchmarks) (Objective #1). Second, practitioner perspectives and interpersonal organizational relationships were an important facilitator for implementing CQI programs within healthcare. We will explore these perspectives and relationships while implementing health promotion interventions, specifically related to the retail food environment in the NSH setting (Objective #2). Third, we will explore the barriers and facilitators of conducting CQI for health promotion interventions at the various

levels of the Inside out model, analyzing this according to the Plan-Do-Study-Act cycle (Objective #3). Lastly, to further build upon the research that explores the practices of CQI and health promotion (e.g., leadership support, data) we will explore the practices of practitioners as they conduct CQI for health promotion within healthcare (Objective #4).

The next chapter provides a description of organizational context for NSH to examine the baseline structures and policies within which this dissertation research was conducted.

Specifically, Chapter 3 introduces NSH as a centralized provincial health authority, its Healthy Eating Policy, as well as the organization's overall approach to CQI and the Quintuple Aim.

## CHAPTER 3 POLICY CONTEXT

This chapter contains contextual and organizational information about the provincial health authority, NSH, the setting for this dissertation research. The chapter describes components of NSH as follows: 1) organizational structure; 2) Nutrition and Food Services provincial program; 3) the Healthy Eating Steering Committee (HEPSC); and 4) CQI structures.

### 3.1 NSH

NSH is the provincial health authority for Nova Scotia, a province with a growing population of just over 1 million people (Statistics Canada, 2019). As the largest employer in the province, NSH employs 24,897 staff, 2,951 physicians, 6,556 learners and over 6,000 volunteers (NSH, 2022). In 2021 - 2022, NSH operated on a budget of CAN \$2.5 billion (NSH, 2022). NSH conducts operations within four management zones: Central (Halifax and surrounding area), Western (Annapolis Valley, Southern Shore, and Yarmouth counties), Northern (New Glasgow, Amherst and Truro), and Eastern Zone (Antigonish, Guysborough and Cape Breton) See Figure 3-1 for a map of NSH's organizational structure.



Figure 3-1. Map of Nova Scotia Health with the four operational zones (Central, Eastern, Northern and Western). ©Nova Scotia Health Authority. Used with permission.

### **3.2 Centralized health authority**

NSH is considered a centralized health authority (Health Authorities Act, 2014).

Centralization and regionalization are strategies of healthcare governance that shape decision-making, resource allocation, and policies. Regionalization offers budget control to regions, allowing for more spending on desired services and, ideally, leading to reductions in overall spending due to close monitoring at the local level (Black & Fierlbeck, 2006). In contrast, centralized healthcare authorities are suggested to have a reduced bureaucracy (e.g., fewer CEOs in each region) and greater service efficiency due to a more systematic approach and cost savings (Borsellino, 2011). However, Borsellino also noted that more extensive systems may add complexity and could lead to less nimble decision-making.

NSH's centralization is an important aspect of context to consider as this dissertation explores the organizational practices of CQI for health promotion within healthcare. The centralized structure of the organization could hinder or expedite certain aspects of health promotion or CQI as a baseline. For example, drawing from Borsellino's study, NSH could benefit from its centralized system in being able to scale up health promotion interventions to a wider scale (e.g., provincial) with less administrative coordination, but could also suffer from complexity of rolling out a centralized health promotion initiative (such as the organization-wide Healthy Eating Policy), requiring more time and resources to implement.

Prior to 2015, the Nova Scotia healthcare system was decentralized, consisting of nine district health authorities with some shared management services existing across districts. In 2014, the implementation of Health Authorities Act (2014) created a centralized health system within the province, which continues to operate to this day (Black & Fierlbeck, 2006). This next

section explores the organizational context of Nutrition and Food Services, a streamlined service within a centralized system.

### **3.3 Nutrition and Food Services**

NSH Nutrition and Food Services is responsible for 1) preparing, cooking, and delivering inpatient meals, 2) selling and procuring food and beverages sold within retail services and 3) clinical nutrition services (Capital Health, n.d.). The program consists of a provincial senior director, regional directors and managers, clinical dietitians, administrative dietitians, supervisors, and point-of-sale workers (e.g., cashiers and cooks) (NSH, 2024). Since the early 2000s, staff in some districts expressed concerns about the healthiness of the food offered within the health authority's food retail services, such as the hospital cafeteria (Capital Health, n.d.). These staff found it alarming that a health organization was offering unhealthy foods of poorer nutritional quality (e.g., fried foods) to patient populations simultaneously receiving treatment for diet related chronic diseases (Capital Health, n.d.). These discussions regarding healthy food were also happening amongst external community groups, such as the Nova Scotia Alliance for Healthy Eating and Physical Activity, a network of governmental, non-profits and health professionals advocating for healthy eating strategies to promote breastfeeding, increasing fruit and vegetable consumption for youth and increasing the affordability of foods across the province (Nova Scotia Alliance for Healthy Eating & Physical Activity, 2024).

From 2007 to 2011, one of the former district health authorities, Capital Health District Authority (CDHA) (serving the largest population of Nova Scotians within the Halifax Regional Municipality and area) engaged staff, experts, and decision-makers from across the organization to explore future policy options regarding healthy food options. Three approaches were presented

for moving the organization towards healthier hospital food: Option 1, informed choice: including more education and awareness while disincentivizing unhealthy foods (e.g., price increases); Option 2, informed choice and limited unhealthy options: similar to option one but included phasing out the unhealthiest choices, increasing availability of healthy foods and limiting processed foods; and Option 3, healthy only choices: phasing out all unhealthy foods, promoting and educating about the health benefits of healthy eating, and eliminating as much processed food as possible (Capital Health, n.d.).

In 2011, CDHA approved a Healthy Eating Policy, becoming the first Canadian healthcare district to adopt such a policy for the organization. The Healthy Eating Policy at CDHA ultimately issued was based on a healthy food only approach (option 3 above), which involved phasing out all unhealthy foods, promoting and educating about the health benefits of healthy eating, and eliminating as much processed food as possible. CDHA policy goals included 100% healthy choices (based on Capital Health's Healthy Food and Beverage Guidelines), offering food variety, training retail staff, promoting locally grown and produced products and promoting healthy eating campaigns and information sessions (CDHA, 2011).

Colchester East Hants Health Authority (CEHHA) (Truro and surrounding area) also adopted and implemented a healthy eating policy in 2011. CDHA's policy was designated as a guide for promoting healthy eating in inpatient and retail food services at CEHHA (CEHHA, 2011). In addition, the guiding principles and values of the CEHHA policy included several areas not covered in the CDHA policy. The CEHHA policy components included health promotion action as referenced in the Ottawa Charter (e.g., creating supportive environments, building public policy), workplace health promotion to improve health and reduce costs to employers, evidence-based practice, and the prevention of chronic diseases. The policy also identified affordability

and accessibility of food choices as an area of concern, stating that healthier choices are more difficult choices.

It is possible there are other past policies for the regional health authorities that are not mentioned in these internal documents. This context is mentioned to show the progression of healthy eating at, what is now, NSH. The policy analyzed in this dissertation, introduced next, is an iteration of a past policy, as well as other regional health authorities who also implemented healthy eating policies in the past.

### **3.4 HEP and the HEPSC**

In 2018, the nutrition team of the newly centralized provincial health authority, NSH Nutrition and Food Services, developed and adopted a comprehensive authority-wide organizational Healthy Eating Policy (NSH, 2018). The Healthy Eating Policy at NSH is supported by the provincial HEPSC, a group of directors, managers, dietitians, patient partners, academics, auxiliary and foundation members, including representation from each of the management zones (NSH, 2024). The purpose of this committee is to provide further direction for the policy as it is implemented across NSH.

I have outlined the main components of the policy in my paper published in the Healthcare Management Forum (Kennedy et al., 2021) (Appendix A). The purpose of the Healthy Eating Policy is to create supportive food environments for patients, staff, and visitors, with the rationale that healthy food environments support healthier diets, one of the most effective ways to influence health (NSH, 2018). The Healthy Eating Policy focuses less on individual choice, and names NSH as the leader to model and support health promoting environments. The Policy applies to all food and beverages sold or served within NSH, including inpatient, retail, events,



staff meetings, and fundraisers (NSH, 2018). The Policy does not apply to food that staff bring from home for personal consumption (e.g., lunch, snacks). The Policy supports breastfeeding and the procurement of local foods (from farm to table). There is also mention of innovation and investing in research and study of the policy.

Overall, the policy demonstrates a shift in focus even from the earlier 2011 regional policies, from healthy options, to health promoting environments. The foundation of the NSH Healthy Eating Policy is on the organization's leadership creating supportive food environments, through policy levers such as affordability, advertising, and access. The team responsible for overseeing the Policy is the HEPSC.

The HEPSC is an interdisciplinary committee with membership from across the province (e.g., directors, managers, dietitians) as well as advisors from outside of the organization's personnel (e.g., researchers, auxiliary members, and patient representatives) (NSH, 2024). The purpose of the Steering Committee is to provide oversight and direction for policy implementation, policy initiatives, engagement, communication and evaluation plans to zones, sites and working groups (NSH, 2024). The initiatives guided by the Healthy Eating Policy are planned provincially but implemented locally. Some of the initiatives will be further explored in the findings chapters of the dissertation (Chapters 5-8).

According to the most recent Terms of Reference, the Steering Committee is committed to researching leading practices that help to achieve the overall goal of creating supportive food environments for all. Other purposes of the Steering Committee include developing partnerships and coalitions and determining funding opportunities for students, trainees, and researchers (NSH, 2024). The Steering Committee meets quarterly and is led by the appointed Chair. In addition to the Healthy Eating Policy, the Steering Committee follows a strategic plan that

highlights the importance of CQI in the work that they do.

### 3.5 CQI and NSH

At a provincial level, quality improvement is an overarching legislated requirement for healthcare in Nova Scotia, as governed through the *Quality Improvement Information Protection Act* (Quality Improvement Information Protection Act, 2015). This Act states that storage of personal health information will be stored in the same secure manner at the provincial government as it is at the health authorities (Government of Nova Scotia, 2021). This legislation is meant to protect patient data that may be used for ongoing system transformation and improvement initiatives. This legislation, while significant, is not overly relevant to this dissertation given that we are not discussing patient data. However, this document is mentioned to highlight the presence of a provincial governing body and its potential influence on quality improvement. This reinforces the concept of CQI as a collective responsibility, involving stakeholders from multiple sectors and areas of government (Adam, 2018). This legislation has implications for this dissertation research, in that there is another potential partner to engage when conducting CQI work locally (if and when using personal health information).

At the organizational level, NSH describes quality improvement as an approach to “test change ideas, adapt to local resources and contexts, and build the will to sustain and spread improvement” (NSH, n.d.). The health authority’s quality improvement strategy feeds into its broader strategic plan, *Action for Health: A Strategic Plan 2022-2026*, which aims for NSH to be a high performing health system. The Institute for Health Improvement (Institute for Healthcare Improvement, 2022) and the Highly Adoptable Improvement Model (Highly Adoptable Improvement, 2015), guide the NSH approach to quality improvement, which is described by

NSH as engaging in PDSA cycles to test and improve healthcare practices in order to create a culture of quality (NSH, n.d.).

Lastly, CQI guidance can be observed at a program level as well. Specifically, the Nutrition and Food Services program operates from an internal strategy emphasizing “continuous improvement in everything we do” (Nutrition and Food Services, n.d.). This includes specific objectives such as, develop a healthy eating policy implementation, engagement and communication strategy and building collaborative relationships with foundations and auxiliaries on healthy eating strategy (NSH, 2024). The HEPSC also mentions “gathering information through collective efforts that lead to action” in their Terms of Reference.

### **3.6 Conclusion**

This chapter provided a detailed description of the NSH structure as a healthcare organization, in order to provide an overview of the setting for this dissertation research. As a centralized organization, NSH engages in CQI approaches throughout the organization and service levels that are intended to be coherent and consistent authority-wide. The organization’s approach to healthy eating has changed over the years, informed by prior district health authority policy agendas, and ultimately shifting from a healthy eating only approach to a healthy eating environments approach. The current NSH Healthy Eating Policy focuses on the latter and is guided by the HEPSC who have expressly prioritized CQI as part of the work that they do in Nutrition and Food Services.

The following chapter, Chapter 4, is an overview of the methodology used to answer the research question, including the study design, data collection, analysis, and researcher positionality, including worldview and insider status.

## CHAPTER 4 METHODOLOGY

This chapter begins with an overview of the qualitative methods and study design, including the hermeneutical phenomenological approach. This is followed by a summary of data collection and data analysis; because this is a dissertation by manuscript, this chapter presents an overview of all methods and then additional methods specific to each of Chapters 5, 6, 7, and 8 are included there. Lastly, I shared my worldview and insider status.

### 4.1 Qualitative methods

This dissertation uses a qualitative study design to explore the organizational and policy practices of CQI for health promotion within healthcare. Specifically, this dissertation uses a hermeneutical phenomenological qualitative design. Phenomenology is the “design of inquiry from philosophy and psychology in which the researcher describes the lived experiences of individuals about a phenomenon as described by participants” (Creswell, 2014, p. 14). Phenomenology allows a researcher to understand a phenomenon through the lived experiences of a cohort experiencing a similar phenomenon. These phenomena are often explored by conducting in-depth interviews or through focus groups, and asking participants questions about their daily lives (Teherani et al., 2015). Other data collection methods used in phenomenology may include observations or written texts, such as journals, diaries, or field notes (Kees van der Waal, 2009; Yanow, 2000).

There are two main philosophical approaches to phenomenology: 1) hermeneutical and transcendental. Hermeneutical phenomenology originated from the studies of Heidegger, building on transcendental phenomenology (Husserl, 1931; Lafont, 2015). Hermeneutical phenomenology focuses on the lived experience of people supposing that people understand the world they live in and can speak to it. This type of phenomenology focuses on the relationship

between an individual and their lifeworld (Neubauer et al., 2019) and acknowledges that individuals are influenced by the world they live in. The researcher learns about someone's experiences in their daily lives and then interprets what those experiences mean within specific contexts in which they live (Neubauer et al., 2019; Yanow, 2000). An underlying assumption of hermeneutics is that people have situated freedom, meaning they can choose and make choices, but these choices are constrained by their environments (Neubauer et al., 2019).

Transcendental (or descriptive) phenomenology, introduced by Husserl, also relies on the lived experience, but is primarily concerned with the essence of a phenomenon. In contrast, this dissertation adopts the strategies of hermeneutical phenomenology, which is understood through interpretive means, whereas transcendental phenomenology approaches phenomena through description, viewing interpretation as outside of scope (van Manen, 1990). Another difference between the two approaches is observer or researcher bias, with transcendental phenomenology scholars bracketing personal bias and subjectivity. This dissertation aligns with the tradition among hermeneutical scholars who view researchers as part of the lifeworld and bias as something a researcher reflects on throughout the course of collecting data (Neubauer et al., 2019).

Finally, this dissertation adopts practical approaches to qualitative data analysis as discussed by Miles, Huberman and Saldana (2020), whose approach to analysis is situated broadly within pragmatism and is inclusive of interpretive approaches that examine policies and organizational structures. Qualitative findings in this dissertation are therefore seen as one element in building a tapestry of understanding (Braun & Clarke, 2022). This dissertation interprets participant actions and organizational texts based on the worldview that knowledge is socially constructed, discussed further below in section 4.6.2. Participant actions are complex and occur within

specific settings (e.g., healthcare); studying these patterns and action sequences can shed light on what is happening within those settings, and also lead to broader “why” and “how” questions, thus contributing to a greater understanding of the explanations for and causal mechanisms of policy and organizational phenomena.

## **4.2 Ethics approval**

NSH Review Ethics Board granted ethics approval on August 22, 2022 (REB#1028236). Ethics was renewed after one year after the initial submission as per REB protocols.

## **4.3 Data collection**

This study consisted of three main types of data sources: 1) healthy eating policy documents from healthcare organizations across Canada; 2) policy documents from NSH; and 3) semi-structured interviews key informant interviews with the NSH Nutrition and Food Services program team.

### **4.3.1 Healthy eating policy documents from healthcare organizations across Canada**

I conducted a comparative policy analysis informed by the Joanna Briggs Institute (JBI) systematic review of policy and texts (McArthur et al., 2020). My dissertation review followed the eligibility and screening processes of the JBI method during documents searches but did not include a quality appraisal of each policy. Inclusion criteria included for policy documents included: policies had to be publicly accessible; adopted by a Canadian provincial or territorial health authority, healthcare organization, or individual healthcare facility (such as a hospital) for adults; and applicable to healthcare food environments in that jurisdiction. Where relevant, when a policy was found, policy-adjacent documents referenced in the main policy (e.g., separate

provincial nutrient profiling systems referred to in a broader healthy eating policy document) were also collected. This search was conducted using healthcare organization websites and Google Scholar. I had a bilingual colleague search healthcare organizations in Quebec.

This policy analysis was also informed by a policy scan of healthcare food policies completed in 2018 by Reynolds (2018). As stated in this report, the scan mapped out various healthcare food policies throughout the country, covering in-patient food, promoting local foods, and procurement, providing a detailed landscape of food policies, but lacking in-depth analysis. The definition of policy for this review also included frameworks, practices (e.g., Group Purchasing Organization), surveys and programs.

Data extraction occurred using a healthy eating policy framework, including components such as nutrient criteria, promotions, fundraising, monitoring, and evaluation (Swinburn et al., 2013a). I included components of CQI to explore the policy connections between policy and CQI. A second coder extracted data and we compared our results discussing any discrepancies. The detailed methods of the policy analysis are found in Chapter 5.

#### **4.3.2 Policy documents from NSH**

This dissertation began by reading and interpreting a text: the NSH Healthy Eating Policy. Policy researchers incorporate document analysis into their methods, typically one of the first steps, to access local knowledge and context about a specific topic or community (Yanow, 2000). Documents are described by Yanow (2000) as artifacts that come loaded with human values, beliefs, attitudes, and meanings. Artifacts such as texts provide insight into policy issues and carry meaning for how policy actors and organizations interpret these problems (Yanow, 2005). The documents I reviewed for this dissertation provided context for interview questions and insight into policy actors for interviews.

I reviewed internal and publicly accessible NSH Nutrition and Food Services documents. The internal documents were sent via e-mail during my participation as a HEPSC member. The publicly accessible documents were retrieved through Google search engine and the organization’s website. See Table 4-1 for an overview of the policy documents. I did not use my employee NSH access to files (e.g., NSH intranet) to allow key informant participants to primarily guide my document retrieval and identify documents most pertinent to their work.

Table 4-1. Overview of the internal NSH and publicly accessible documents included in data collection

	Document	Purpose	Sourced
Internal document	NSH HEPSC terms of reference	Outlines purpose and goals of the Steering Committee	E-mailed by Steering Committee chair
	Nutrition and Food Services Strategic Plan	Highlights the strategic priorities for the Nutrition and Food Services team	Discussed during interview, sent via e-mail
	NSH Food and Beverage Costing Retail Pricing Standard Operating Procedure	Procedure to streamline cost of food and beverages within retail services.	E-mail from Steering Committee member
Publicly accessible document	NSH Healthy Eating Policy	Includes the values and purpose of the NSH policy	Online
	Nova Scotia Nutrient and Beverage Criteria	Outlines nutritional categories of food (maximum, moderate and minimum)	Online
	The Journey to Healthy Eating at	Historical narrative of healthy eating initiatives, strategies	Online



	Document	Purpose	Sourced
	Capital Health: Doing the Right thing	and policies over the last 20 years	

*4.3.2.1 Internal documents*

I reviewed the following internal policy documents: 1) The first was the terms of reference for the HEPSC. This document outlines information about the purpose and goals of the Steering Committee mentioned in Chapter 3. This document was e-mailed to me during the beginning of my dissertation studies when I joined the Steering Committee. It is relevant due to its overview of the committee and the context it provides for the findings and discussion. 2) The second document is the Nutrition and Food Services Strategic Plan, also mentioned in Chapter 3. This document highlights the strategic priorities for Nutrition and Food Services, including CQI. This document was discussed during one of the participant interviews, and the participant offered to send it via e-mail. 3) I reviewed the NSH Food and Beverage Costing and Retail Pricing Standard Operating Procedure (SOP). The SOP was created to standardize food costing and pricing methodology across retail services regarding ready-to-eat foods and recipes (homemade foods). For example, ready-to-eat foods that meet the maximum nutrient criteria will be sold at the manufacturer’s suggested retail price minus 5% for a healthy eating incentive. This document was sent via e-mail from a member of the HEPSC.

*4.3.2.2 Publicly accessible documents*

4) The fourth document I reviewed was the NSH Healthy Eating Policy (Chapter 5). This document is the organizational policy detailing the purpose and scope of healthy eating for NSH, which is to create supportive environments for staff, visitors, and patients. This document is discussed in Chapter 3. 5) The fifth document I reviewed was the Nova Scotia Food and

Beverage Nutrient Criteria. This document is a resource to support healthy eating policies and guidelines across NS sectors. The Nutrient Criteria limits salt, sugar, and fat in foods and beverages while promoting vegetables, fruit, and whole grains. This is a provincial document. I accessed this document through a link in the Healthy Eating Policy. 6) Lastly, the sixth document I reviewed was an internal historical document describing the healthy eating policy work at CDHA (Chapter 3). This document contained dates, milestones, and policy options.

### **4.3.3 Semi-structured key informant interviews with the NSH Nutrition and Food Services program team**

Semi-structured interviews are an interviewing technique to gather in-depth participant experiences, ideas, or perspectives about a phenomenon with a small number of participants (Boyce & Neale, 2006; Creswell, 2014). The interviewer asks open-ended questions to guide the discussion, typically using an instrument to conduct the interview (e.g., interview guide), but remains open to allow the interview to go where the interviewee leads. Unlike a focus group that gathers multiple people's perspectives at once, an interview focuses on one individual's experiences and explores them in-depth (Cresswell, 2014). Semi-structured key informant interviews are an important research instrument in phenomenology, as they are used to explore the lived experiences, perceptions and feelings of a phenomenon (Kvale, 1996; Miles et al., 2020).

### **4.3.4 Consent**

The consent form was sent to each participant in advance. During the interview the interviewer reviewed the consent form and received either verbal or written consent from participants to conduct and record the interview. Recordings of the interviews were stored on Dalhousie University's One Drive, a secure shared drive with double authentication sign-in.

#### **4.3.5 Interview guide**

The interview guide was developed using open-ended questions and probes (Kvale, 1996). I developed the interview guide by using existing CQI for health promotion evidence, my published work (See Appendix A), and HEPSC meetings. The interview guide was written as an instrument to guide the conversation and was not meant to be prescriptive. For example, if a participant worked at point-of-sale and had no interactions with the HEPSC, I tailored questions to explore healthy eating at point-of-sale and asked briefly about communications with the steering committee. Since participants varied in roles, questions were adapted to each role. The interview guide is attached as Appendix C.

#### **4.3.6 Participant recruitment**

Participant recruitment occurred using a purposive sampling strategy, using a snowballing technique to recruit further participants. Snowballing occurs when participants are asked if they know of others who would like to participate in the research (Palinkas et al., 2015). Potential participants were contacted via e-mail with an introduction to the study. One potential participant asked for the interview guide and declined to participate, based on the question topics. Participants who expressed interest participating in the study were sent the consent form and a scheduled interview meeting invite, working around the participant's schedule. Participants were included in the research based on the following criteria: 1) full-time employment at NSH, 2) experience working in the Nutrition and Food Services, retail environment for at least three years, and 3) at least 18 years of age.

Participants were offered the opportunity to have the interview by telephone, virtual, or in person. Nine interviews were ultimately conducted virtually, with one in person and two by telephone. Regarding the quality of data, recent qualitative health research literature has found

no significant differences in the quality of in-person and telephone interviews, a long-contested argument to defend in-person interviews in qualitative methodologies (Johnson et al., 2021; Sturges & Hanrahan, 2004). More recently, it has been found that virtual interviews are especially appealing for healthcare providers, given the COVID-19 restrictions in hospitals (Hanna, 2012).

A total of 12 participants were included for this dissertation. Table 4-2 describes the demographic characteristics of the participants. Participants fell into one of two categories: point-of-sale or administration. Of the 12 participants, five worked at point-of-sale (e.g., cashiers, food service workers) and seven worked in administration (e.g., manager, administrative dietitian, director). All administrative personnel were registered dietitians and had received formalized training. Many individuals noted that they had also completed their training placements earlier in their careers with NSH as students or interns. Both managers and point-of-sale participants split their responsibilities between retail and inpatient food services.

Table 4-2. Description of the participants (n=12) from Nutrition and Food Services at Nova Scotia Health

<b><u>Characteristic</u></b>	<b><u>n</u></b>
<b><u>Type of work</u></b>	
Point-of-sale	5
Administration	7
<b><u>Highest level of education</u></b>	
High school	1
College	1
Undergraduate	9
Registered Dietitian	9
Graduate	1
<b><u>Participant location</u></b>	
Rural	7

<b><u>Characteristic</u></b>	<b><u>n</u></b>
Urban	3
<b><u>Zone location</u></b>	
Provincial	1
Central	2
Western	5
Eastern	1
Northern	3
<b><u>Years of worked experience at NSH</u></b>	
3 to 5 years	3
5 to 10 years	3
10 to 20 years	1
Greater than 20	4

#### **4.4 Data analysis**

Data collection and analysis occurred concurrently. As the transcripts were coded, I adapted the codebook to reflect emerging codes, adding new codes, and adjusting existing codes (Miles et al., 2020). This iterative process occurred throughout the interview process until I began writing up the findings. Saturation, the point at which there is no new information or themes, occurred after twelve interviews, which is consistent with other similar qualitative research studies (Guest et al., 2006; Malterud et al., 2016; Saunders et al., 2018).

##### **4.4.1 Transcription and coding**

Interviews were manually transcribed verbatim and I uploaded them to NVivo qualitative analysis software (cloud version) (Releases 1.7.1). The transcripts included all words spoken by participants, including all utterances such as “like” and “you know” as well as repeated words, so that analysis could consider the tone and hesitation or reassurance in the participant responses; in the results of Chapters 6-9, filler words have been removed and replaced by ellipses for succinctness of representation in the text (Lingard, 2019). Quotations from the transcripts

included in the results were selected based on the following criteria: illustrative, succinct, and representative (Lingard, 2019) in tandem with peer debriefing with my supervisory committee.

Content analysis is one qualitative approach to analyzing data, along with Thematic Analysis (Braun & Clarke, 2022) and Interpretive Phenomenological Analysis (Neubauer et al., 2019). This dissertation uses content analysis for data analysis (Cavanagh, 1997; Assaroudi et al., 2018). There are three common types of content analysis: conventional, directed, and summative (Hsieh & Shannon, 2005). This dissertation used directed content analysis. Directed content analysis is used when preexisting theory about a topic exists but is incomplete or would benefit from further description (Bengtsson, 2016; Hsieh & Shannon, 2005; Humble & Mozelius, 2022). The goal is to “validate or extend conceptually a theoretical framework or theory” (Hsieh & Shannon, 2005, p. 1281). Preexisting theory and research guide the coding process with some codes arriving from evidence and other arriving from transcripts (Hsieh & Shannon, 2005). As a result, directed content analysis uses both inductive and deductive analysis. This is fitting with phenomenology as participant experience data (e.g., transcripts and texts) are organized and condensed (e.g., codes) with the researcher making decisions about text to code or not code and comparing with existing theories to explore causal mechanisms (interpretation), which is consistent with the qualitative analysis of Miles et al., (2020).

Coding was considered part of the analysis as a way to think about the meaning of the data (Miles et al., 2020). A piece of text was considered a code if mentioned repeatedly, or if it was consistent with literature defined categories. After interviews one through three, an initial codebook was created, based on existing literature (Chapter 2), as well as topics introduced by participants. The interviews were coded using the NVivo Software (Release 1.7.1) and I reflected on the possible meaning of the codes. Following interviews four through nine, the codebook was

revised multiple times and emergent sub codes were added. For example, initially interventions were coded as “interventions”, but subcategories emerged such as challenges, outcomes, and types of data. The remaining interviews were coded using the final version of the codebook. For the interviews that were not audio-recorded (n=2) I coded the field notes taken during the interview. The final version of the codebook can be found in Appendix D.

To increase credibility, codes for a random sample of 10% of the transcripts were cross-checked by a peer researcher (O’Connor & Joffe, 2020). O’Connor & Joffe (2020) call for a random sample of 25%, however the purpose of this cross-check was to discuss potential meaning and theme of the findings, not to determine coding accuracy.

#### **4.4.2 Theming**

A theme is defined as an extended phrase that describes what a unit or group of data means (Miles et al., 2020). Themes were determined using a variety of methods. First, I reviewed the data extensively by grouping codes of data together (See Appendix D for codebook). This occurred through immersion in the data and reviewing the literature to determine if the themes confirmed or aligned with concepts in prior evidence or contributed to new parameters or conceptualizations. Second, I discussed codes and potential themes through peer debriefing with my supervisor and supervisory committee. Peer debriefing provided the opportunity to reflect on potential biases (Amin et al., 2020). Third, a peer researcher independently coded a random sample of 10% of transcripts (three full interviews), after which we discussed meanings and potential themes in the data (O’Connor & Joffe, 2020). The second coder was not used to reach consensus on the codes, but to inform an interpersonal discussion on the meaning of codes and potential themes.

This dissertation includes “thick” descriptions of participant narratives to situate contexts and

events. Established by anthropologist Clifford Geertz, thick description is used in social science to study the culture, interactions, and symbols of communities (Geertz, 1973). Thick description involves written detailed accounts of complex cultural situations and is used to garner trustworthiness. Thick description helps us to simultaneously explain the actions of the participants as they describe their work at NSH. In other words, we need to understand the particular context where people work in order to make sense of their actions. Yanow (2004) describes the local expertise of people as local knowledge, defined as “a collective knowing developed and learned in action and interaction *in particular historical, social and or cultural contexts*” [emphasis mine] (p. S10). Thick descriptions allow for further exploration of the specificity of this context.

## **4.5 Trustworthiness**

### **4.5.1 Credibility**

Credibility speaks to the validity of the data. Triangulation is used in qualitative research methods to increase credibility by confirming the findings using multiple sources of data, thus, increasing trustworthiness (Leung, 2015). Between-methods triangulation refers to the process of confirming results with multiple sources of data using multiple data points (Bryman et al., 2009). This research triangulates between policy documents and semi-structured interviews throughout the findings and discussions of Chapters 5-8. The findings of the interviews are furthermore contextualized in light of the policy analysis and context of the healthcare environment studied, outlined in Chapter 3. For example, I compared the benchmarks in the policy documents to the benchmarks mentioned by participants. I found similarities and discrepancies between the two sources of data, in which I used further findings from the interviews and literature to explore



potential explanations for this.

Additionally, I used a multiple case study approach in Chapter 7 to explore the barriers and facilitators of CQI across multiple case studies. Using multiple interventions from different sites (both rural and urban) allowed for triangulation across these sub-contexts to confirm multiple barriers and facilitators. I also used a negative case study to further confirm these findings (Yanow, 2000). Findings that are confirmed or disputed through various sources of data (e.g., sales data, policies) or experiences (e.g., managers, point-of-sale, practitioners, directors), increase the validity of the findings and shed light on unexpected findings as well (Creswell, 2014).

#### **4.5.2 Transferability**

Transferability is the applicability of the findings to other contexts or settings. Chapter 3, on the setting for the research, as well as descriptions of methodological issues such as positionality and insiderness (see section 4.6 below), encompass thick descriptions of historical and policy contexts at NSH vis-à-vis the researcher, the research topics, and participants. This is necessary baseline for thick descriptions later in the analysis, which can transport the reader to the setting and support transferability, where the reader can assess whether these findings apply to their settings (Creswell, 2014; Geertz, 1973). Describing the environment in which the research was conducted makes the data results more realistic and richer and can add to the validity of the findings.

Additionally, prolonged engagement with the HEPSC adds to the trustworthiness of the results. I have spent four years embedded in the organizational environment and communicating with the committee and am aware of the political and institutional culture of the organization (also see further discussion of positionality and insider status in Section 4.6 below).

### **4.5.3 Confirmability**

Confirmability is the process of checking data to remove potential sources of bias. I completed an audit trail for my code book and policy analysis to document my thoughts and decisions for data analysis. This was discussed with peer researchers (peer debriefing) to expose potential sources of bias given my insider status throughout the research (Amin et al., 2020).

## **4.6 Positionality**

According to the underpinnings of phenomenology, a researcher brings their own personal experiences and biases into the research process (Creswell, 2014). These biases are unavoidable as everyone has biases, experiences, and training that they draw from to conduct research and interpret findings (Connelly, 2010). Phenomenologists believe that these biases can be disclosed and reflected on but cannot be set aside entirely (Connelly, 2010). Biases can actually benefit the research as the researcher relies on their past experience to guide questions and data analysis (Neubauer, Witkop, and Varpio 2019). In order to further explore my biases, I engaged in reflexivity, which is when the researcher describes the intersecting relationship between the participants and themselves. This can increase credibility of the findings and contextualize the research (Dodgson, 2019). In addition to reflexivity, I engaged in peer debriefing with classmates and my supervisor, participated in discussions during HEPSC meetings, and created memos with my reflections while coding data.

I have spent a prolonged time in the research field and have built a professional relationship with the NSH HEPSC for two-and-a-half years. I developed an in-depth understanding of staffing structures, data collection systems, and the retail food environment at NSH. I attended

quarterly meetings, presented research findings in small and large group presentations, and engaged in informal discussions with NSH staff about food culture. These experiences build the foundation to my dissertation research question to explore the organizational and policy practices of CQI for health promotion. The amount of time and experience I have within the field lends credibility to the findings and can improve accuracy and validity of the results.

Qualitative research marries the interpretive to the practical (Wagenaar, 2011). I used interpretive hermeneutics to discuss meaning of policy and its pragmatic application to the organization (Miles et al., 2020). My connection to the organization and many of the participants informed my results and implications, many of which are pragmatic. My immersion in NSH makes me aware of the real-life issues with the policy and insight into how others talk about and see the policy, but also introduces potential biases, as discussed further below.

#### **4.6.1 Insider status**

I used an insider approach to conduct this research. Insiderness is when a researcher is positioned within the setting where data collection and analysis occurs (Labaree, 2002). I consider myself an insider because I am an employee of NSH, and thus belong to the organization where my participants work. Being an insider and sharing commonalities with a group is beneficial in that it can lead to acceptance and build trust with research participants (Adler & Adler, 1987; Mullings, 1999). I believe the shared experiences of working at NSH helped me build trust and open exchanges between participants (Labaree, 2002). I am also a member of the HEPSC, representing the Food Policy Lab at Dalhousie University. As an insider I understand, to a certain extent, how information is exchanged between participants and how decisions are discussed because of this experience. These experiences impacted my relationships with the participants, many of which were included in this research, because they met me and

interacted with me during these Steering Committee meetings.

There are downsides to being an insider. One of the biggest critiques of insiders conducting research within their own communities is their lack of objectivity (Dwyer & Buckle, 2009). This means the insider lacks neutrality when observing or conducting interviews and can introduce bias into the research due to their experiences and preconceived notions about the community where they are conducting the research (Mullings, 1999). However, this is contested with the very nature of qualitative research being a subjective exploration of truth (Husserl & Kersten, 1931). Also, for some types of research (e.g., cultural studies, parent research) being an insider has been found to be an asset to build a relationship with participants. For example, Dwyer & Buckle's (2009) studied parents' experiences with the loss of a child and found that participants critiqued their outsider status (never experiencing the loss of a child) as a concern. For this dissertation, sharing a common experience and shared organizational and health practitioner language may have been crucial to gaining trust and rapport with participants.

At times, however, I felt more like an outsider; during interviews, some participants referred to me as a researcher or a 'Dalhousie person'. I am also a nurse and not a dietitian (like many of the participants) so felt like an outsider in this regard. This back-and-forth status between insider and outsider is discussed in the literature as a continuum or the space in between (Dwyer & Buckle, 2009; Griffith, 1998). My status reflects Griffith's (1998) concepts of insiderness, as a back and forth between insiderness and outsidership. For example, when participants discussed dietetics and nutrition I felt like an outsider. But, when participants discussed the Steering Committee, they used inclusive language like we and our, making me feel like the insider.

I chose to make my insider status known to participants at times in order to ask clarifying questions. I used my own discretion to decide when and when not to do this. If participants

disclosed something negative or critical, I would sometimes emphasize my insiderness as a fellow colleague working within a large bureaucratic structure. This disclosure was a way for me to build shared experience and trust with the participant but may have also introduced my own bias.

#### **4.6.2 Worldview**

This dissertation uses a constructionist worldview, which views reality as created by humans and constructed through our interactions with our environments and with others (Creswell, 2014). This is contrast to other worldviews, including positivism (Macintyre et al., 2002) and structuralism (Braveman & Gottlieb, 2014). Regarding constructionism, knowledge is created and then interpreted through our social interactions with the world, thus, forming constructs (Creswell, 2014). A social construct is anything humans ascribe meaning to, such as race, gender, money, and marriage. In order to understand these meanings and constructs, this worldview focuses on lived experiences. This worldview also emphasizes the importance of language as ascribing value and meaning to things and processes (Berger & Luckmann, 1996). Language, for example, is not something we are born with or an innate part of our psyche but is learned from the people and the world around us (Berger & Luckmann, 1996). Within health promoting settings social constructionism explores the relational aspects of settings and individuals, acknowledging the influence of settings on people, as well as people on settings (Cummins et al., 2007).

#### **4.7 Conclusion**

This research was a qualitative study (phenomenology) that used a social constructionist worldview to explore the practices of CQI for health promotion at policy and organizational

levels. Data were collected from multiple sources (policy documents, semi-structured interviews, and insider knowledge) and analysis occurred concurrently using directed content analysis. I was immersed within the research setting from the beginning of the doctoral program. I reflected on my positionality throughout the course of the research to mitigate bias.

## **CHAPTER 5 COMPARATIVE POLICY ANALYSIS OF HEALTHCARE HEALTHY EATING POLICIES IN CANADA**

Credits:

This chapter represents a pre-publication version of a multi-authored paper with the following anticipated authorship order: Kennedy LJ, Kirk SFL, Dykeman A, Sim M, Parsons Leigh J, Mah CL (senior author)

Statement of contributions: LJK and CLM co-led the conceptualization of the research and methodology; LJK and AD conducted data collection; LJK, AD and CLM validated the results; LJK wrote the original draft.

## 5.1 Abstract

Healthy eating policies are of growing importance to management of retail food environments in healthcare (e.g., hospital cafeterias). Several researchers have begun to analyze health promoting benchmarks within these policies. However, little is understood about the relationship between policy and quality improvement for health promotion in healthcare. Furthering our understanding of benchmarks within these policies could provide insight into how we can measure and create standards in health promotion. This policy analysis examined publicly accessible healthcare healthy eating policies in Canadian health authority jurisdictions, up until November 22, 2022. Data was extracted using a monitoring and evaluation framework developed by INFORMAS (International Network for Food and Obesity / non-communicable Diseases Research, Monitoring and Action Support), with adaptations based on organizational quality improvement concepts. Policy components analyzed included: policy design, nutrient profiling systems, nutrition standards, evaluation, and monitoring. A second reviewer independently extracted data and peer debriefing was completed on the extractions. This analysis identified five healthy eating policies meeting the inclusion criteria, from Alberta, British Columbia, Newfoundland and Labrador, Nova Scotia, and Winnipeg. Policies included nutrient profiling, including benchmarks for selling healthy, moderately healthy, and less healthy food and beverages. Other benchmarks were mentioned but contained fewer indicators (e.g., fundraising, catering, and advertising). Policies included benchmarks about product and placement (e.g., healthier items in visible places) but less about price. The included policies promoted collaboration amongst healthcare providers but lacked details about evaluation and monitoring. This policy analysis suggests that different healthcare settings may require different benchmarks, tailored to their contexts. Furthermore, standardization may not be optimal if further experimentation is needed to identify



benchmarks for health promotion practices, as is common in healthcare quality improvement. Policy implementation requires a combination of top-down and bottom-up approaches and collaboration with multiple partners may be necessary for success.

## **5.2 Background**

Unhealthy diets are one of the leading modifiable risk factors contributing to noncommunicable diseases, such as stroke, heart disease, and diabetes (Global Nutrition Report, 2022; WHO, 2018a, 2020). Healthy eating policies are one important approach for improving population diets, with recent approaches aimed at informing customers (e.g., nutrition labelling, public awareness campaigns) as well as changing the market-based food environment (e.g., taxes, subsidies, restrictions on marketing) (Capacci et al., 2012; Peeters, 2018). Healthy eating policies focused on improving food environments have received growing recognition within healthcare organizations (Naicker et al., 2021; Worley et al., 2022). However, these policies are still evolving and what constitutes a healthy eating policy within healthcare remains poorly understood (Torquati et al., 2017). Understanding the components of healthy eating policies could guide other healthcare organizations as they develop policies to invest in health promotion (WHO/FAO, 2003; Worley et al., 2022).

Scholars have developed evaluation and monitoring frameworks informed by health promotion principles to assess key features of healthy eating policies and their components (Swinburn, et al., 2013a) and include design, nutrient profiling systems and evaluation and monitoring. For example, an Australian policy review by Rosewarne et al., (2020) found seven healthcare healthy eating policies active in that jurisdiction, but noted wide variation in policy evaluation, monitoring, nutrient profiling systems, and promotions among the policies. One of the consistent findings across policies was having a nutrient profiling system, which is a ranking

of foods and beverages by their nutritional composition (WHO, 2015) and is a way to standardize the nutritional quality of foods offered across jurisdictions (L'Abbé et al., 2013). Yet previous studies comparing nutrient profiling systems in hospitals have found inconsistencies in food and beverage classifications, and a lack of benchmarks detailing what foods to serve (Dickie et al., 2022). Additionally, a policy scan by Reynolds, (2018) examined publicly available policies pertaining to food in healthcare noted that a growing number of provinces support healthier food environments in healthcare settings. This scan, however, did not provide an in-depth look into policy components.

Benchmarking is a major component of continuous quality improvement (CQI), a scholarly and practical approach derived from industrial organizations and management studies that is now a mainstay of healthcare (Institute of Medicine, 2000; Kahan & Goodstadt, 1999; Sollecito & Johnson, 2012). Research that has examined how healthcare implements health promotion standards has found that benchmarks, among other “standards were assessed by health professionals to be applicable and relevant, but compliance with standards was very low” (Groene & Jorgensen, 2005, p. 7). CQI has yet to be incorporated consistently into evaluation and monitoring frameworks for healthy eating policies (Sollecito & Johnson, 2012). Furthermore, little is understood about the relationship between policy and quality improvement for health promotion in healthcare.

To investigate this, the purpose of the following paper was an environmental scan and policy analysis to describe and compare healthy eating policies in Canadian healthcare organizations. This scan and analysis combines a healthy eating policy monitoring and evaluation framework from the International Network for Food and Obesity / non-communicable Diseases Research, Monitoring and Action Support (INFORMAS) inclusive of analysis of benchmarks, with an

exploration of how such benchmarks align with what is known about benchmarking more broadly in healthcare quality improvement (Swinburn et al., 2013b). A stronger understanding of organizational benchmarks within healthy eating policies could identify potential opportunities to improve these benchmarks; and in turn help us to understand quality improvement at the organizational level in its relationship with healthy eating policy.

### **5.3 Methods**

This analysis compares an environmental scan and policy analysis of existing publicly available healthy eating policies inclusive of food environments, adopted in healthcare organizations in Canadian provinces and territories from policy inception, up until November 22, 2022. The sampling frame for collection of policies was each Canadian healthcare authority website or comparable provincial/territorial health department website in each of the ten provinces or two territories and Nunavut. Each organizational website was searched directly using its own search function, as well as via Google search, in English and French, from September to November 2022, using the following search terms: “*healthy eating*”, “*healthy eating policy*” and “*healthy eating environment.*” French search terms were: “*alimentation saine*” and “*politique d'alimentation saine.*” English language and French language searches were conducted separately, by authors LJK and AD respectively.

Policies were included in the scan based on the following inclusion criteria. Policies had to be publicly accessible, applicable to healthcare food environments in that jurisdiction, and adopted by a provincial or territorial health authority, healthcare organization, or individual healthcare facility for adults (such as a hospital). Where relevant, when a policy was found, policy-adjacent documents referenced in the main policy were also collected (e.g., standalone

provincial nutrient profiling systems, which were referred to in the healthy eating policy document).

Excluded were healthy eating guidelines, initiatives and position statements for healthy eating that comprised exhortations without an accompanying policy, and inpatient dining guidelines for public facilities. We excluded guidelines and position statements, such as Canada's Food Guide since they were general recommendations and non-mandatory. This is unlike policies that state an institutional position and are mandatory (non-negotiable) (University of Wisconsin-Madison, n.d.). Initiatives or programs, which are short-term interventions, were excluded because of their temporary nature.

Initially, a single researcher with experience in policy analysis (LJK) screened and then extracted data from the returned policies. Fourteen documents were screened in initially. Reasons for removal after screening included wrong tool (e.g., position statement or program), wrong focus (e.g., COVID-19 guidelines for catering) or inaccessibility. See Figure 5-1 for a flow chart for the search strategy.

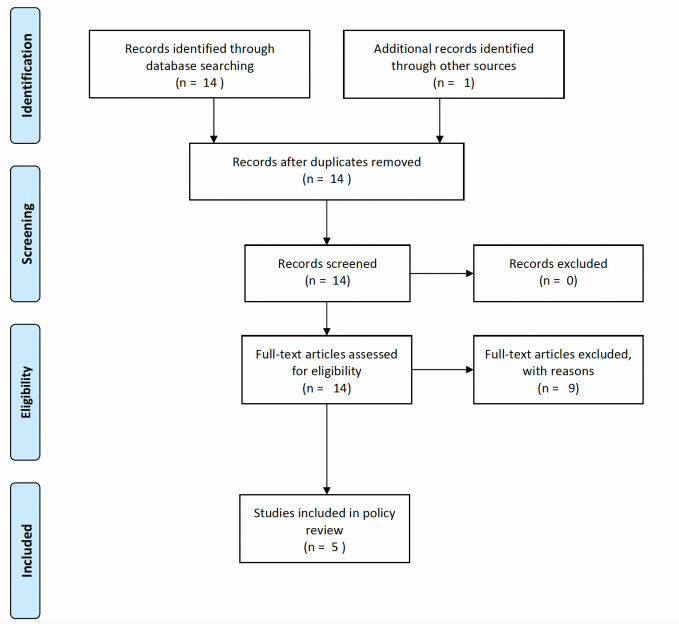


Figure 5-1. Inclusion and exclusion flow chart for healthy eating policies search strategy

Policy data were extracted into a Microsoft Excel spreadsheet. The spreadsheet was comprised of variables using categories from the monitoring and evaluation framework developed for the INFORMAS to extract policy content and examples of text for public sector healthy eating policies (Swinburn et al., 2013a). The INFORMAS monitoring and evaluation framework was developed as a way to examine and externally benchmark public monitoring of foods and beverages provided and sold in public sector settings. In addition, one focus of the framework is on nutritional profiling systems that determine the nutritional quality of foods and beverages within these settings. Rosewarne et al., (2020) have previously applied the framework to examine hospital healthy eating policies in Australia including sub-national policies, suggesting that the framework would be relevant to the similar jurisdictional policy context in Canada. Categories were then added to the INFORMAS framework to capture quality improvement approaches and processes as expressed in the policies, drawing from quality

improvement theory. Components of policies extracted included: name, mandatory/voluntary, nutrition standards, supporting documents, fundraising, catering, marketing, implementation, evaluation, and quality improvement.

Two researchers independently reviewed all included policies, then the researchers met to come to a consensus on aspects extracted from the policies through discussion. Patterns across the policies were summarized into key themes using directed content analysis (Assarroudi et al., 2018).

Throughout the data extraction, consensus-building, and analysis processes, emerging patterns and findings were sequentially discussed with the four other co-authors to verify interpretations against key concepts in the literature (deductive) and against the text (inductive).

Institutional ethics approval was not necessary since only publicly available documents were retrieved.

## **5.4 Healthy eating policies**

### **5.4.1 Policy design and components**

First, this section explains the content of the included dataset of policies, focusing on key components as well as any ancillary documents, and their design. Table 5-1 contains a summary of the components of the policies.

We identified five publicly available healthy eating policies adopted by Canadian healthcare organizations applicable to healthcare food environments, including two from Atlantic Canada (Nova Scotia Health; and Eastern Health (province of Newfoundland and Labrador) and three from Western provinces (Alberta Health Services; Winnipeg Regional Health Authority (RHA) (province of Manitoba); and British Columbia). As a consequence of the specific inclusion

criteria that removed broad exhortations to healthy eating, all five included policies were mandatory, meaning they were required by the organization at regional and provincial levels at the time of identification. Included policies applied to a variety of healthcare food environments, such as cafeterias, canteens, and cafes; the British Columbia policy only applied to vending machines. Dates for the policies ranged from 2014-2022, with policies from British Columbia and Alberta Health Services providing details about updated revisions. See Appendix C for more details.

All included policies made reference to nutrient profiling systems (discussed further below). Three of the five policies included guidelines for catering (Alberta Health Services, Winnipeg RHA, and NSH); two of the five included guidelines for fundraising (Alberta Health Services and NSH), and three of the five included guidelines for marketing/advertising (Winnipeg RHA, Eastern Health, and NSH).

Each policy named numerous collaborative stakeholders for implementation and monitoring of the policy on an ongoing basis. Alberta Health Services (2021) mentioned a Healthy Eating Steering Committee, staff members at large, leadership, foundations/auxiliaries/trusts and workplace health and safety representatives. (NSH, 2018) and Winnipeg Regional Health Authority (RHA) (2018) mentioned collaboration with external and internal stakeholders. The policy in the Province of British Columbia (2014) discussed partnerships with third-party vendors and suggested how future vendor contracts should include vendors who are able/willing to uphold nutrient criteria standards.

Four of the five policies mentioned evaluation and monitoring within the policy, with some detail on how implementation should unfold. For instance, the policy from Winnipeg RHA (2018) included a three-stage implementation guide (Phase 1: 5 years; Phase 2: 5 years; Phase 3:

10 years) with benchmarks for each phase for food retail, such as in Phase 1, where whole grains sold at retail would be expected to increase to 50% of offerings, in Phase 2 to 75%, and in Phase 3 to 100%.

All included policies contained provisions for components of quality improvement, such as steering committees (Alberta Health Services, NSH, and Eastern Health), collaboration, benchmarks, or leadership. Specific benchmarks denoted included standards for access to healthier food options. For example, at Alberta Health Services (2021), vending machines were required to have 50% *Sell More* options, a maximum of 50% *Sell Less* options, and zero *Do Not Sell* options.

All the policies we examined made reference to supporting documents, which would be expected for these kinds of healthcare organizational policies, such as other stand-alone nutrient profiling systems, or separate implementation guidelines. Supporting documents referred to several jurisdictional levels of inter-related policy documents, including: organizational guidance (e.g., position statements about healthy eating); provincial standards or standalone policies (e.g., nutrient profiling systems, Brand Name Food Lists); and federal guidance (e.g., Canada's Food Guide). Indeed, all policies referenced a corresponding version of Canada's Food Guide, Canada's national food-based dietary guidance document, often for types of foods and beverages recommended to serve in the healthcare setting as well as serving sizes.



Table 5-1. Overview of healthy eating policies encompassing food environments in Canadian healthcare

Healthcare organization, year introduced and province	Name of policy	Mandatory or Voluntary	Components	Outline of roles/responsibilities	Monitoring and evaluation plan	Supporting Documents
<b>Alberta Health Services (2021)</b> <b>Alberta</b>	Healthy Eating Environments – 1138	Mandatory	NS, S, F, C, E, QI	Healthy Eating Steering Committee AHS people, AHS site leadership, AHS people foundations/auxiliaries/trusts, workplace health and safety, retailers,	No details provided	<b>Provincial</b> – Alberta Nutrition Guidelines; Healthy Eating Environments Statement of Principles. <b>Federal</b> – Canada’s Food Guide
<b>Winnipeg Regional Health Authority (2018)</b> <b>Manitoba</b>	Healthy Eating Environments	Mandatory	NS, S, C, I, E, QI	Contractors, external retailers	No details provided; staged implementation strategy	<b>Organizational</b> – Position statement of Healthy Eating. <b>Federal</b> – Canada’s Food Guide. <b>International</b> – Sugars Intake for Adults and Children Guideline
<b>Nova Scotia Health (2018)</b> <b>Nova Scotia</b>	Healthy Eating	Mandatory	NS, S, C, M, F, QI	Working collaboratively with internal and external stakeholders (unnamed)	No details provided	<b>Provincial</b> – NS Food and Beverage Criteria. <b>Federal</b> – Canada’s Food Guide.
<b>Province of British Columbia (2014)</b> <b>British Columbia</b>	Healthier choices in vending machines in BC public buildings	Mandatory *Vending machines only	NS, S, I, E, QI,	All Ministries, Ministry of Health, procurement	No details provided; implementation guidelines included	<b>Provincial</b> – Brand Name Food List. <b>Federal</b> – Canada’s Food Guide
<b>Eastern Health (2022)</b> <b>Newfoundland and Labrador</b>	Healthy Food Policy for Retail (ADM-010)	Mandatory	NS, S, M, I, E, QI	Executive team; Department of Human Resources Program and Policy Development; Health Promotion, Division, Population and Public Health Department; Food Service providers; managers; volunteers; coordinator	No details provided	<b>Organizational</b> – Taxation and sugar-sweetened beverages – position statement. Capital Health – Healthy Eating Strategy; Central Health’s Workplace Healthy Eating policy. <b>Federal</b> – Canada’s Food Guide. <b>International</b> – World Health Organization “Sugar Intake for Adults and Children” Guidelines

Components: NS = nutrition standards; S = supporting documents; F = fundraising; C = catering; M = marketing; I = implementation; E = evaluation; QI = quality improvement

### 5.3.2 Comparison of nutrition standards

The next section delves deeper into benchmarking with a specific analysis of nutrition standards, drawn from both the main policy as well as considerable detail from supplementary documents. Table 5-2 provides a summary of key features of the policies' nutrient profiling systems and nutrition standards, including how policies handled specific foods and beverages with regard to their nutrient composition.

First, the nutrition standards or nutrient profiling of policies were differently applicable to different food environments across healthcare. The policy from NSH (2018) was most comprehensive among the five jurisdictions in the food environments described, with cross-cutting services such as fundraising or marketing covered as food environments to which all the benchmarks applied. For instance, the NSH (2018) policy explained that food and beverages for fundraising and advertising must meet the maximum nutrient criteria. In comparison, policies from Winnipeg RHA (2018) and Alberta Health Services (2021) included standards for varied food environments, but had specific requirements for certain food environments such as catering, where outlets were subject to a broad nutrient profiling system. The policy at Winnipeg RHA (2018) had benchmarks for vending machines (Smart Pick program) and included an implementation plan, where 20% of snacks would be offered as 'Smart Pick' items, with a gradually increase over time to 50%. The benchmark for the policy in Eastern Health (2022) was to phase out specific products high in sugar, fat and processing all together.

Table 5-2. Overview of nutrient profiling systems and nutrition standards for foods and beverages sold at outlets, canteens, and vending machines

	Name of Policy	Rating System	Percentages or frequency of different foods permitted for food outlets/canteens and vending	Percentages or frequency of different foods permitted for catering, fundraising and advertising
<b>Alberta Health Services (2021)</b>  <b>Alberta</b>	Healthy Eating Environments	Sell More, Sell Less, Do Not Sell	<b>Outlets:</b> Min 30% Sell More options. Max of 70% Sell Less options. 0% Do Not Sell options. <b>Vending:</b> Min of 50% Sell More + Sell Less combined options; Max 50% Do Not Sell options (working toward 0%). <b>Beverages (outlets + vending)</b> – Min 50% Sell More options. Max 50% Sell Less options. 0% Do Not Sell options,	<b>Catering</b> - Serve 100% fruit/vegetable juice, opt for smaller portions (< 355 ml), choose whole grains for baked goods, serve desserts in smaller portions (e.g., bite sizes)
<b>Winnipeg Regional Health Authority (2018)</b>  <b>Manitoba</b>	Healthy Eating Environments	Smart Pick (Vending Machines)	<b>Outlets</b> - increasing availability and promoting vegetables and fruits; increasing whole grain offerings (to 50%); increasing baked goods that meet the nutrition standards (to 25%); decreasing offerings of processed meats; reducing sodium in soups and entrees; reducing the portions of deep-fried foods; decreasing the portion sizes of pop (to 355 mL can) and sweetened beverages; removing energy drinks. <b>Vending</b> - 20% of snacks Smart Pick items, gradually increase to 50%	<b>Catering</b> - offer lower fat milk for coffee and tea; for snacks, foods from 2/4 food groups are offered (including from the Vegetables & Fruit Food Group); For catered meals, foods from 3 out of the 4 food groups are offered, including one from the Vegetables & Fruit Food Group; For meals, include two vegetable and /or fruit options (e.g., vegetables as part of the main entree, side salad, fruit for dessert); limit processed meat toppings if meat is offered;
<b>Nova Scotia Health (2018)</b>  <b>Nova Scotia</b>	Healthy Eating	Maximum/moderate/minimum nutrient criteria	<b>Outlet and vending</b> - Maximum and moderate > 70% of items offered;	<b>Fundraising</b> - items that meet maximum/moderate nutrient criteria; <b>Marketing</b> - maximum moderate nutrient criteria.
<b>Province of British Columbia (2014)</b>  <b>British Columbia</b>	Healthier choices in vending machines in BC public buildings	Sell More, Sell Less, Do Not Sell	<b>Vending</b> - At least 50% Sell Most food and beverage choices; Up to 50% Sell Sometimes food and beverage choices; No Do Not Sell food or beverage choices	None
<b>Eastern Health (2022)</b>  <b>Newfoundland and Labrador</b>	Healthy Food Policy for Retail	Phase out	Foods and beverages high in sodium, saturated fat and sugar that will be phased out of all Eastern Health facilities, such as 1) deep/partially fried foods, 2) sugary and artificially sweetened drinks and 3) highly processed/refined snack foods	<b>Marketing</b> – market and promote healthy choices

Second, each jurisdiction varied in terms of its approach to nutrient profiling. Routinely used nutrient profiling systems have been denoted in the literature to be categorized into two broad types: *Boolean* (that is, based on only two defined categories, e.g. unhealthy and healthy options) or *ranges* (typically, still comprising categories but not quite interval data, e.g., less healthy, moderate, and healthy; ‘traffic lights’ systems would reflect this type) (Rayner, 2017).

The policies from Alberta Health Services (2021), British Columbia (2014), and NSH (2018) each had a range-based nutrient profiling system with three categories: maximum nutrient criteria (Sell More), moderate nutrient criteria (Sell Less), and minimum nutrient criteria (Do Not Sell). The Maximum/Sell More categories consisted of the healthiest options, higher in essential nutrients and lower in sodium, sugar, and fat (e.g., yogurt, milk). The Moderate/Sell Less categories consisted of moderate sodium, sugar, fat, and some processed foods (e.g., muffins, fruit/vegetable juice). The Minimum/Do Not Sell categories consisted of items with higher levels of calories, sodium, sugar and fat and lower levels of essential nutrients, as well as addressing processing. Eastern Health (2022) named certain food items to transition out over the course of a few years, such as deep/partially fried foods, sugary and artificially sweetened drinks and highly processed or refined foods (e.g., chips).

In contrast, the Winnipeg RHA (2018) and Eastern Health (2022) policies used Boolean categorization systems. The policy in Winnipeg RHA (2018) covered retail food, with nutrition standards only applied to items within vending machines labelled as ‘Smart Pick’ items (inferring that other foods and beverages were ‘not’ Smart Picks).

Each policy had defined quantitative benchmarks for nutrient categories, whether Boolean or range. See Table 5-2. However, these quantitative benchmarks also varied for implementation among the various food environments in healthcare. For example, the policy in Alberta included

separate benchmarks for catering (e.g., 100% fruit or vegetable juice and serving smaller portions of desserts); retail outlets (minimum 30% Sell More, maximum 70% Sell Less, 0% Do Not Sell); and distinct from that for vending machines (maximum 50% Do Not Sell). Moreover, beverages within outlets and vending machines were further differentiated (minimum 50% Sell More, maximum 50% Sell Less, 0% Do Not Sell).

Similarly, in the Province of British Columbia (2014), where the policy itself applied to vending machines exclusively, the benchmark was 50% Sell Most / 50% Sell Less, and 0% Do Not Sell food or beverage choices. The policy at NSH (2018) contained a goal of 70% Maximum and Moderate nutrient criteria items for both outlets and vending machines and no more than 20% Minimum nutrient items. NSH (2018) only specified fundraising and marketing of products that meet the maximum and moderate nutrient criteria.

### **5.3.3 Comparison of monitoring and evaluation**

Two policies (Province of British Columbia and Alberta Health Services) mentioned evaluation and monitoring but provided few details about who was responsible for the evaluation or specifically what aspects of the policy would be monitored. For example, the Province of British Columbia (2014) stated that the Ministry of Health is responsible for providing the monitoring and reporting framework used by health authorities as an example for other Public Bodies implementing the Policy. The policy from Winnipeg RHA (2018), described a 10-year implementation process (from 2018 – 2028) broken into segments with various targets. For example, a target in phase one is to increase whole grain offerings to 50%; phase two, increase whole grain offerings to 75%; phase three, offer whole grains exclusively by 2028 (100%).

None of the five included policies specified quality improvement or CQI explicitly as a framework, however, contained language in line with CQI principles that were reasonably

interpreted as referring to healthcare quality. For example, the Alberta Health Services policy contained text: “evaluate healthy eating environment strategies for ongoing improvement and the development of evidence and best practice” (Alberta Health Services, 2021, p.3) and “inform and work collaboratively with third-party operators to monitor compliance with the Retail Food Service Contract and continuously improve their operations availability and promotion of healthy food choices” (Alberta Health Services, 2021, p. 3). This language aligns with the method of CQI to test changes iteratively in a collaborative approach, with the input of multiple stakeholders.

All policies contained specific benchmarks and aspects of collaboration, which also suggested attention to healthcare quality improvement principles within their design. For example, three of the policies (Alberta Health Services, Eastern Health, and NSH) had steering committees guiding the vision of the policy. Collaboration stakeholders were mentioned, such as employees, leadership, foundations, retailers, contractors, vendors and workplace health and safety. However, policies differed in the primary responsibility of various stakeholders mentioned. For example, Alberta Health Services (2021) identified a specific authoritative role (Senior Operating Officer) and the department (Nutrition, Food and Linen and Environmental Services) responsible for the policy, suggesting a direct line of accountability for implementation, whereas other policies named government more broadly (e.g., Province of British Columbia) or used non-descriptive language (e.g., a person within the Winnipeg RHA facility). See Table 5-3 for a comparison of CQI components.

Table 5-3. Components of continuous quality improvement for healthy eating policies in healthcare

	Name of policy	Steering Committee	Benchmarks	Leader and/or Department Assigned	Collaboration	Scope	Statistical thinking (measurement)	Customer focus
<b>Alberta, Alberta Health Services (2021)</b> <b>Alberta</b>	Healthy Eating Environments	Yes	Yes	Yes. Senior Operating Officer, Nutrition, Food, Linen and Environmental Services	Yes	Provincial	Not disclosed	Yes
<b>Winnipeg Regional Health Authority (2018)</b> <b>Manitoba</b>	Healthy Eating Environments	No	Yes	Person within the WRHA facility	Yes	Regional	Yes	Yes
<b>Nova Scotia Health (2018)</b> <b>Nova Scotia</b>	Healthy Eating	Yes	Yes	Yes. Integrated Health Services Primary Care and Population Health	Yes	Provincial	Not disclosed	Yes
<b>Province of British Columbia (2014)</b> <b>British Columbia</b>	Healthier choices in vending machines in BC public buildings	No	Yes	Government of British Columbia	Yes	Provincial	Not disclosed	Yes
<b>Eastern Health (2022)</b> <b>Newfoundland and Labrador</b>	Healthy Food Policy for Retail	Yes	Yes	VP of Corporate Services and VP of Clinical Services	Yes	Regional	Not disclosed	Yes

## 5.4 Discussion

This environmental scan and policy analysis aimed to describe and compare healthy eating policies in healthcare in Canada. Using a healthy eating monitoring and evaluation framework this analysis explored policy components including nutrition standards, supporting documents, implementation, evaluation, and quality improvement.

This study provides a novel contribution to the literature with further analysis of the benchmarks found within these policies that can be linked to quality improvement, which could increase our understanding of the connections between policy and CQI.

### Healthy eating policies, monitoring, and benchmarking

The healthy eating policies in this analysis focused on building supportive food environments containing nutrient profiling systems and related benchmarks (e.g., selling 70% of Sell More (healthy) food items). The findings are similar to those of Rosewarne et al. (2020), who examined a range of nutrient profiling systems and benchmarks for healthy eating policies implemented within hospital settings in Australia. The presence of nutritional benchmarks aligns with organizations calling for policies that support nutrition standards, such as the WHO (WHO, 2024), as well as research collaboratives calling for food environment benchmarks (Sacks et al., 2013; Swinburn et al., 2013a; Swinburn et al., 2013b).

Benchmarks in the policies were outcomes and processes (Ettorchi -Tardy et al., 2012). For example, the policy from Winnipeg RHA had incremental benchmarks for food offerings over phases of implementation. Scholars have noted the role and importance of incremental benchmarking in CQI studies. Shaikh et al. (2015), used the benchmarking results from multiple rounds of study for a healthy eating screening tool to inform decisions about the tool's scale-up and applicability to other sites. The iterative rounds of benchmarks were used by organizational practitioners to learn more about meeting organizational goals over time. This study speaks to benchmarking as not only a goal but, as Ettorchi-Tardy et al., (2012) explains, a process potentially evoking cultural changes within organizations, and, regarding our study, cultural shifts towards the offering of healthier food products. Benchmarking as a process to challenge



the status quo could shape policymakers' understanding of a healthy eating policy within healthcare (Reponen et al., 2021; Swinburn et al., 2013b).

It has been suggested for healthy eating policies that benchmarks and standards can improve evaluation and monitoring (L'Abbé et al., 2013; Pérez-Cueto et al., 2012). However, based on CQI principles and evidence, organizations will likely need context-sensitive standards based on local settings and needs (Coles et al., 2020; Ramaswamy et al., 2018). In their study of adapting CQI to public health departments, Price et al., (2017) found that performance indicators lacked context to address why the results were the way they were. These findings are similar to a systematic review by Reponen et al. (2021) examining contextual aspects of benchmarks, which found that reporting of context was highly variable among studies, making it difficult to generalize a benchmark from one organization to another. Standardization may not be optimal if further experimentation is needed to identify benchmarks for health promotion practices (Bloomquist et al., 2021; Boumgarden & Branch, 2013). These authors recommend additional research to identify contextual aspects for benchmarks to enhance the generalizability and applicability of benchmarking.

The policies included in this study were all mandatory. The alternative, a voluntary approach to policy, has been found to have limited effectiveness for food environments given the need for industry regulation (Roberto et al., 2015) and counteracting macro-level forces within the food system, such as vendor contracts, financial limitations, and power imbalances (Olstad et al., 2012). For example, a study exploring healthy eating policies in recreation centers found that only 14% of facilities adopted voluntary provincial nutritional guidelines, and only 6% were implemented (Olstad et al., 2012). Additionally, healthcare healthy eating policies are top-down approaches to influencing food environments but likely require grassroots efforts to sustain

policies, where a broad range of stakeholder preferences can be considered to influence policy uptake and implementation. For example, Blake et al., (2019) conducted a scoping review of business implications of healthy food retail strategies in hospitals. They found that revenue and customer satisfaction were highly relevant to participants, meaning that access to nutritious foods was just one of many possible outcomes of interest. The Canadian policies in this review did not include revenue as a benchmark. However, we did note that the policies approached healthy eating with a customer mindset, drawing further connections to CQI and healthy eating policies (e.g., customer satisfaction). In studies exploring nutrition policies in schools, researchers emphasized that grassroots efforts with internal and external partners were needed to implement and support healthy eating policies (Kirk et al., 2021a; McIsaac et al., 2015; McIsaac, Spencer, Chiasson et al., 2019). This suggests that to understand CQI processes, such as benchmarking, it is also essential to explore the people necessary to sustain and support these policies.

#### Policies and their explicit connection to quality improvement

Examining how CQI is integrated into healthy eating policies provides insight into how we can further implement CQI for health promotion in healthcare. The Canadian healthy eating policies reviewed here contained well described aspects of evaluation and monitoring for health promotion (Swinburn, et al., 2013a; Swinburn et al., 2013b), that are also relevant to CQI concepts for healthcare more broadly (e.g., benchmarks, collaboration, some accountability aspects).

Studies exploring the relationship between CQI and policy for health promotion in healthcare show that well-resourced, long-term policies and infrastructure support provide an essential backing for CQI initiatives (Bailie et al., 2017). Gardner et al., (2010) found that when policies

were in place, CQI implementation and uptake were better supported and occurred more consistently; without the structuring benefit of policy support, CQI efforts ebbed and flowed more drastically. A systematic review by Coles et al., (2020) explored the contextual mechanisms at macro (e.g., policy), meso, and micro levels influencing CQI initiatives and found overlaps between policies and other context-sensitive domains such as leadership, change agents and collaboration. In other words, policies may have supported CQI culture, however, creating a culture of improvement also came from empowering staff with autonomy to initiate improvement and develop ideas they could implement in practice. This suggests that there are dynamic mechanisms between policies and other levels of influence at work within healthcare (e.g., organizational, community, interpersonal and individual) (Zamboni et al., 2020), which healthcare healthy eating policies need to anticipate, especially where challenging the status quo may be needed.

Lastly, CQI theory stems from values such as efficiency, patient-centeredness, timeliness, and safety, all centered around the Quintuple aim to improve services while reducing cost (Itchhaporia, 2021). It is possible these CQI values may or may not align with health promotion practices outlined in the policies, presenting a tension for those practitioners responsible for policy implementation. For example, Bloomquist et al., (2021) reflexively examined their own experience as a population health promotion unit within a provincial regionalized health authority in Saskatchewan that adopted CQI tools to improve their work with community partners. Despite a common aspiration to adopt CQI, practitioners in the unit found discrepancies between CQI and population health promotion. The authors found that staff were motivated by partnerships and client-centered care (outward focus) rather than standardization and efficiency (inward focus). For these groups of healthcare practitioners, preserving partnerships and

relationships took priority over implementation of CQI measures. This suggests that the clinical values of CQI may not directly translate to health promotion practice without significant adaptation (Kahan & Goodstat, 1999), meaning that practitioners may need to adapt CQI tools (e.g., PDSA cycles) to measure health promotion goals and objectives while meeting the accountability benchmarks of the healthcare organization and its policies.

### Strengths and limitations

This policy analysis compared and analyzed healthy eating policies within Canadian healthcare organizations. This is the first Canadian policy analysis to provide an overview of the healthy eating policy landscape vis-à-vis healthier food environments in healthcare. The analysis shows the complexity of healthcare food environments, which may involve systems and processes to monitor dimensions from nutrients, partnerships, to a range of other food environment benchmarks (e.g., retail promotion and placement).

Scholars exploring CQI health promotion policies have evaluated broad-based chronic disease prevention programs (Bailie et al., 2017; Gardner et al., 2010), encompassing healthy diets and a range of other health behaviours. This policy analysis is unique because it focuses on upstream healthy eating policies that are not disease-specific but environment-specific, a recent development in both local and global study (Swinburn et al., 2013b). By studying specific population health topics related to health promotion policies, such as healthy eating, we may capture benchmarks specific to the food environment and healthy eating (e.g., promotion, placement) that broad-based policies may not capture. These findings may be useful for policy and decision-makers working in the fields of health promotion and healthcare.

The monitoring and evaluation framework used in this study from INFORMAS allowed for a comparison of policies to other regions (e.g., Australia); a strength of our approach was adding new measures regarding CQI. Policy analysis calls for the use of more frameworks and theories to study policies systematically. The INFORMAS framework, however, is not specific to hospitals and excludes policy components relevant to the hospital environment (e.g., hours of operation) which would be important for quality improvement. Hospital context was explored in the discussion to further expand upon some potential other benchmarks to include in future policy analyses regarding hospitals.

This analysis studied policy design, which necessarily requires considering how the design may inform implementation, however, we did not investigate policy implementation (the uptake of the policy into practice) or evaluation (effect of policy on creating supportive environments) per se (Walt et al., 2008). Our analysis also provides a snapshot of the policies but does not explain the policy impact within the organization as they were adopted. Another limitation is that we only included the most recent versions of the policies. For example, NSH had two previous policies from district health authorities before restructuring to a centralized structure. Historical policy review could add details about how policies have changed over time and provide further insight into the policies. Policies were searched manually using Google search engine. It is possible there are other healthy eating policies accessible through internal platforms (e.g., healthcare intranets). To mitigate we compared our findings to a former policy scan of healthy eating policies in Canada by Reynolds (2018). This policy analysis found the same number of policies as the former policy review, with the addition of the most recent policy from Eastern Health, Newfoundland and Labrador.

This policy analysis excluded initiatives, position statements and guidelines. Although these documents can support policy change, they do not function the same way as policies; we elected to include only specific policy-adjacent documents referenced in the main policy such as the nutrient profiling systems. Inclusion of additional guideline documents could have enhanced our findings and provided further contextual information about the policies themselves.

## **5.5 Conclusion**

Healthy eating policies in this analysis varied but across the included policies demonstrated common overlapping benchmarks for healthy eating environments. All policies included nutritional benchmarks about the nutrients of food, but lacked details about other healthy eating environment benchmarks, such as promotions, placement, and fundraising. Benchmarks and standards are needed for future policies and further comparisons but the variation among the policies suggests a need to adapt to local contexts and remain relevant to practitioners. Practitioners and researchers can continue to monitor and evaluate food environments in healthcare and collect data to inform quality improvement processes. Further research can explore the aspects of policies most pertinent to supporting CQI practices.

The next chapter, Chapter 6, outlines the findings of Research Objective #2: explore the perspectives for health promotion in light of CQI interventions within Nutrition and Food Services.

## **CHAPTER 6 LET THEM EAT (BIRTHDAY) CAKE: REFRAMING HEALTHY EATING IN HEALTHCARE ORGANIZATIONS**

Credits:

This chapter represents a pre-publication version of a multi-authored paper with the following anticipated authorship order: Kennedy LJ, Kirk SFL, Sim M, Parsons Leigh J, Wong H, Mah CL

Statement of contributions:

LJK and CLM co-led the conceptualization of the research and methodology; LJK conducted data collection; HW, CLM and LJK validated the results; LJK wrote the original draft.

## **6.1 Abstract**

Healthy eating is influenced by myriad factors ranging from individual to societal. Healthcare organizations have recently adopted healthy eating policies in order to improve food environments; however, how such policies work to shape practice is still not known. This qualitative study explores perspectives on quality improvement among healthcare staff and managers working in hospital foodservices post-implementation of a healthy eating policy aimed at improving food environments. Healthcare staff and managers' approach to quality revealed a range of definitions of healthy eating, from health promotion efforts directed towards individual behaviour change management, to a broader emphasis on supportive food environments. This research also highlighted the complexity of the healthcare food environment in which health promotion was being implemented, a 'setting' as per the 'settings approach' to health promotion, but also revealing a 'setting within a setting': food environments within healthcare environments. These nested environments are alternatively, more business or healthcare service-centric, within the larger environment of healthcare. Healthcare practitioners' views on effective implementation of the policy also spanned many scales of healthy eating, informed by concepts both within their core healthcare practice (dietetics: nutrients), the organization (historical nutrition contexts), and broader food culture (food trends and choice). This study has demonstrated that quality improvement for a healthier food environment within healthcare needs a broader focus to advance benchmarks for health promotion.

## **6.2 Background**

According to the 2019 Global Burden of Disease study, suboptimal diets contribute to 14.6% of male deaths (4.47 million) and 13.5% of female deaths (3.09 million) worldwide (Abbafati et



al., 2020), making nutrition a critical component of health promotion and disease prevention (WHO, 2018;WHO, 2021). The meaning of the term *healthy eating*, however, has expanded over the years, coinciding with our understanding of the factors influencing health.

Traditionally, healthcare practice viewed diet and many other health behaviours as a direct result of behaviour and willpower, also known as the lifestyle approach (McLeroy et al., 1988). The adoption of the Ottawa Charter for Health Promotion began the shift in focus to upstream influences altering the social and structural determinants of health positively to influence diet (Lalonde, 1974; WHO, 1986). Later scholars of health promotion have gone further to emphasize society-wide commercial influences, industry marketing practices, and the built environment (Clary et al., 2017; Lapierre et al., 2017). Recently, an emphasis on ‘food environments’ as settings where people purchase and access food have become central to health promotion efforts, where interventions such as altering the price, promotion and placement of food and beverages have been developed to influence diets and food choice (Peeters, 2018; Mah et al., 2019).

A health promoting setting can be defined as a physical and social space (e.g., hospital, school, city, workplace) that supports the health and wellness of visitors, staff, and communities (Poland et al., 2000). Healthcare settings have been suggested as an optimal level of organization for health promotion since they are valued by the community, open to the public and well-resourced (Graham et al., 2014; WHO, 2007). They also have mission statements and values centred around healthy communities (Groene & Garcia-Barbero, 2005; Groene & Jorgensen, 2005). Yet, incorporating upstream efforts to promote health within healthcare has been recognized as challenging (Miedema et al., 2022). Recent literature suggests, for example, that the international HPH network comprises over 600 hospitals from 24 countries with some adoption of self-assessment tools and benchmarks, but what constitutes a model health

promotion standard for healthcare, and how to implement it effectively, remains poorly understood (Groene & Garcia-Barbero, 2005; Svend et al., 2004). Of note, researchers have observed that standards and benchmarks measuring health promotion are lacking within healthcare to ascertain if interventions or policies are efficacious (Klazinga et al., 2011).

In recent years, healthcare organizations have adopted health promotion policies that promote healthier eating environments (Rosewarne et al., 2020). Scholars have also suggested strengthening health promotion's ties to continuous quality improvement (CQI) to better incorporate health promotion into the fabric of healthcare (WHO, 2007). The purpose of the following study is therefore a phenomenological study to explore perspectives on quality improvement among healthcare staff and managers working in hospital foodservices and nutrition post-implementation of a healthy eating policy integrative of food environments. The goal of this research was to uncover how healthcare ideas around quality improvement may have informed the implementation of the healthy eating policy.

As a conceptual framework for this study, we used the Inside out model by Golden et al., (2015). Although not explicitly a quality improvement framework, it nevertheless adapts the traditional social-ecological model in ways that are conducive to understanding how healthcare practitioners make sense of quality in their health promotion efforts around healthy eating. Specifically, the Inside out model enables us to focus on individual practitioners' experiences, to better understand the dynamic inter-relationships between policy and organizational structures (e.g., monitoring, leadership) and individual resources (e.g., power, participation). This model inverts the concentric circles of the traditional SEM, and places policies at the center of the framework so as to highlight the larger organizational conditions and individual and interpersonal factors contributing actively to policy 'success' and support, such as monitoring

requirements, health champions, collaborative intrapersonal relationships, and resource distribution (Golden et al., 2015). The following factors from the Inside out model were examined in this study: *Communities*, including decision-making groups, champions or advocates, or public support; *Organizations*, defined as groups of people united around a common goal involved in policy monitoring and evaluation to track policy outcomes; *Interpersonal connections*, including partnerships and coalitions between people across different departments with different skill sets; and *Individuals*, specifically, individual health practitioners in this study who are assumed to be able to exercise autonomy and can exert power.

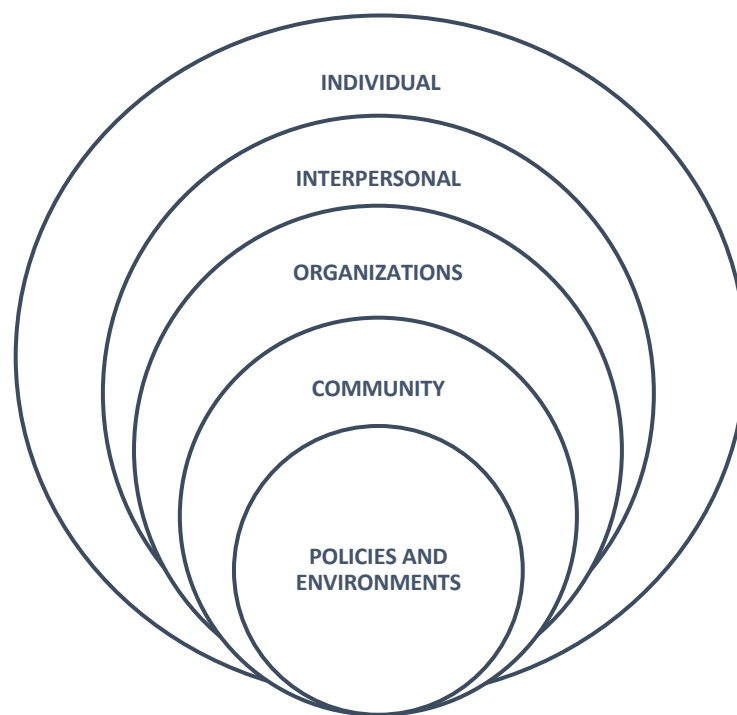


Figure 6-1. Inside out model derived from Golden et al., (2015).

### 6.3 Methods

*Setting.* This research was conducted in the Atlantic Canadian province of Nova Scotia (NS). In 2018, the provincial health authority, Nova Scotia Health (NSH), implemented an organizational Healthy Eating Policy. Novel to the policy as compared to earlier efforts within

healthcare in the province was its comprehensive emphasis of a whole-of-organization role in supporting healthy food environments. The policy presents “food as medicine,” with supportive food environments as an essential component to the patient’s overall treatment (NSH, 2018). The Healthy Eating Policy references Food and Beverage Nutrient Criteria, but unlike previous versions, covers a wide range of food provisioning and foodservices across the whole of the organization, encompassing broad areas of affordability, access, advertising, fundraising, and catering. The policy also specifies benchmarks, guided by nutrient criteria in a provincial nutrient profiling system that are provided in a supplemental document, a ‘traffic light’ style system with three tiers: foods as maximum, moderate, and minimum nutrition (NS Government, 2016). Policy implementation is intended as organization-wide but coordinated by NSH Nutrition and Food Services and a HEPSC with representation from across a diversity of healthcare services. The policy has some limited areas that it does not cover, such as ‘brown bag’ lunches, i.e., food brought from home by staff members intended for personal consumption.

#### *Data Collection and Participants:*

This study used a phenomenological approach, defined as the “design of inquiry from philosophy and psychology in which the researcher describes the lived experiences of individuals about a phenomenon as described by participants” (Creswell, 2014, p. 14). Phenomenology allows a researcher to understand a phenomenon through the lived experiences of a cohort experiencing a similar phenomenon. In our study, healthcare practitioners at varying levels of the organization (frontline retail to management) were recruited for in-depth interviews to develop greater insight into their work life experiences and the drivers of those experiences while implementing the Healthy Eating Policy (Teherani et al., 2015).

Semi-structured interviews were conducted from January to June 2023. An initial interview guide was pilot tested with a peer researcher for coherence and clarity. The interview guide was designed as part of a larger study on health promotion in healthcare examining organizational and policy practices of continuous quality improvement and is a component of the lead author's dissertation requirements at Dalhousie University. This research received institutional ethics approval from NSH (REB# 1028236).

Participants were recruited using a snowball technique, starting from HEPSC members (Palinkas et al., 2015), with the goal to recruit a diverse group from a variety of formal organizational roles (e.g., regional, career stage, point-of-sale to senior managerial). In particular, this was done because quality improvement is a science that involves people at all levels of the organizations; therefore, it was seen to be important to our understanding of quality improvement for health promotion to capture the views of a variety of practitioners at different levels of the organization.

Interviews were conducted by the lead author (LJK) and lasted between 45 and 75 minutes. Consent forms were provided in advance in writing, then reviewed with participants to obtain written informed consent, prior to completing the interviews. Interviews were audio recorded with consent. Participants were offered the choice of completing the interview in person or virtually. One interview took place in person, two over the phone, and nine virtually using Microsoft Teams. All participants worked within Nutrition and Food Services for a minimum of three years. All interviews were conducted between January and June 2023. Participants were also welcomed to provide supporting textual documents (e.g., strategic plans, organizational charts) to complement their responses if they wished at the conclusion of the interview.

### *Data analysis:*

Interviews were transcribed verbatim (by LJK) and coded using the NVivo Software (Release 1.7.1). Directed content analysis was used to make sense of the meaning of the data based on participants' experiences (Assarroudi et al., 2018; Humble & Mozelius, 2022). An initial codebook was created based on theory and research team discussion (deductive aspect) (LJK and CLM). The codebook was revised after reading through the transcripts and on further examination of emerging concepts (inductive aspect). Codes and emerging concepts were discussed through peer debriefing, analyzed using the Inside out model as a conceptual framework in particular for the deductive aspects. The Inside out model was described above (Golden et al., 2015).

It is noteworthy for analysis considerations that LJK's positionality is as an 'insider' to the organizational context. LJK attended meetings with the HEPSC, and listened to members discuss the policy and its future direction. Several co-authors on the research team possessed prior knowledge and lived experience with the history and organizational structure of NSH. This insider status presented both potential advantages and risks (Dwyer & Buckle, 2009; Giffith, 1998; Mullings, 1999). LJK was known to the participants allowing for trust to be built quickly during the interview process. LJK also possessed a rich understanding of organizational knowledge providing contextual insight into participants responses. Alternatively, insiderness presents the risk of lacking objectivity and introduces bias. LJK mitigated insider bias by writing memos after interviews, peer debriefing with other researchers, and details from interviews were further corroborated through triangulation from supporting policy documents provided by participants. Triangulation occurs when a researcher collects data from multiple sources with the goal of corroborating the same phenomenon (Yin, 2017). To reduce the potential effect of

‘insider bias’ (Labaree, 2002) LJK engaged in reflections, interview memos and peer debriefing. In addition, LJK completed an audit trail for the codebook to document the inductive and deductive coding process (Rodgers & Cowles, 1993). LJK also engaged in reflections, interview memos and peer debriefing (Amin et al., 2020).

## **6.4 Findings**

In total, 12 participants were interviewed, from across the healthcare organization. All participants were members 'internal' to the Nutrition and Food Services program and varied in career stage, geographic region of service, and formal organizational roles: point-of-sale staff (n=3), supervisors (n=2), managers (n=3) and directors (n=4).

### Reframing *healthy eating* in practice: “Do I care if it’s real bacon or turkey bacon”?

Across the group of participants, a range of perceptions and interpretations of quality health promotion practice as informed by the Healthy Eating Policy were detected. Participants spoke about how they aimed to address healthy eating in various ways, and indicated what ideas within the policy resonated most closely with them in practice. Some participants described health promotion in terms of the broadest environmental aspects of healthy eating, such as access and affordability, while others focused on specific nutrients; for example, one participant described healthy options as those lower in sodium, sugar, and processing, and another frontline staff participant highlighted their actions towards reducing the availability of less healthy options, *“Unhealthy food and pop like a lot of soda pops and like even some of the iced teas were like so high in the sugar content.”* (Participant #11, point-of-sale worker)

Frequent examples of less healthy foods were introduced during the interviews, such as hot dogs, pop, and iced teas, as examples of drinks high in sugar. Less healthy options were also described as larger portion sizes, with one participant describing large, sugary muffins as *bucket muffins* when recalling a former food item offering from a third-party vendor, prior to the adoption of the policy. In contrast, the same participant described healthy food options as ‘better’:

*“Muffins were massive ... I think there was like 19 grams of sugar or something in a muffin. When the health authority took it over, they have a very standard smaller size made homemade not bucket muffins ... with whole wheat flour like those things are much better than what we had before ...”* (Participant #11, point-of-sale worker)

In contrast, some participants expressed concerns about being solely nutrient-focused, noting the dependency it could create for Nutrition and Food Services to interpret the policy on a case-by-case basis during implementation. One participant, who identified as a dietitian, presented what they referred to as an alternative approach, moving towards a holistic view of foods and beverages: *“So, I think, and really our dietetics profession has moved toward ... the holistic view of food and less about ... the nutrient criteria ...”* (Participant #3, manager)

Participants discussed one reason for a persistent nutrient focus as a remnant of past healthy eating policies. In contrast, following the implementation of the new Healthy Eating Policy, a more holistic approach could be taken: *“I’m looking at what is being offered ... on the menu as a whole instead of which options on this menu are healthy and which ones aren’t.”* (Participant #3, manager). In other words, past healthy eating approaches focused on offering healthy choices *only*, with foods perceived to be dichotomized as healthy or unhealthy. In contrast, the current



policy focus on healthy eating environments, was seen as providing individual practitioners as well as eaters with autonomy, and purchasing power to the customer to choose within retail foodservices offered in healthcare. Participants referenced, for example, a recent retail intervention that decreased the price of healthy snack items and increased the price of less healthy snack items to encourage healthier purchases, the *Snacking Made Simple* intervention.

*“So, it’s not a this is good this is bad kind of aspect. It is ... creating that environment that supports it, and the environment is, of course, the food choices, but it’s even, I think, how we market things and advertise items. So, we’re always focusing on ... the things that are, of course, healthy”* (Participant #2, director)

Several participants commented that one vital component of implementing the policy was their new capacity to combine different approaches within the same intervention to promote health, such as altering prices for more nutrient-dense foods to make that same food more affordable. This goes further than offering a healthy option; it provides an affordable healthy option. Another participant mentioned affordability as essential to their definition of healthy eating.

*“There is a financial component, of course, making sure that we are not giving things away, but we are also looking at making sure that healthy choice is the easier choice. So, for example... our bottles of water are \$1.00, whereas our cans of pop or diet pop ... \$2.79 [laughter] ... quite a drastic difference in terms of price point to try and make that bottle of water the easier choice; same with maybe a sparkling water with no sugar, might be at a much more economical price than a can of pop.”* (Participant #9, director)

In other words, for several participants, healthy eating meant creating an environment that supports healthier options without abandoning a focus on nutrients. Noted one manager, *“My values are measuring the healthy eating environment right now, not whether there’s real bacon or turkey bacon like offered as an option on the grill, but our measures are really based on nutrient criteria and the availability.”* (Participant #3, manager)

Participants identified past issues with previous healthy eating policies and expressed interest in improving its approach to healthy eating by focusing on food environments. The organization monitors aspects of the policy, such as the healthy eating audits completed by the team, aiming for no more than 30% of options to be minimum in nutrient criteria, suggesting that measuring progress and success of policy implementation within food environments remains at least to some practical extent nutrient-focused.

*“Not everything in our cafeterias reflects the healthy eating policy in terms of maximum or moderate. Some items are obviously minimum, but we’re aiming for that 70 – 80% of maximum and moderate offerings in terms of retail outlets ... we fluctuate based on what’s available from our food vendors, so some days, we may be at 75%. Some days we may be at 85%, and sometimes we might be at 65%.”* (Participant #9, director)

Despite this, participants indicated their openness to benchmarks beyond nutrients. One participant discussed future benchmarks that might be used to measuring food environments and commented on the difficulty of ‘benchmarking’ health promotion.

*“I think the benchmark of 70/30 is a starting place, and it certainly not our end all be all. Even when it comes down to our 70/30, it’s only measuring availability of items like there*

*is no benchmark for placement, there is no benchmark for product, there is no benchmark for promotion right now.” (Participant #3, manager)*

Participants further expressed interest in developing future benchmarks for other aspects of the food environment (e.g., advertising) that are outlined in the policy (e.g., promotion).

#### Navigating culture: Let them eat (birthday) cake

The Healthy Eating Policy focuses on building supportive environments. As examined earlier in Chapter 5, Nova Scotia’s policy is particularly comprehensive relative to other Canadian examples in how it applies to food environments across the entire healthcare organization, from breakrooms to vending machines; however, it does not apply to food brought in for personal use by staff. Yet in discussing this feature of the policy, participants explained that it also raised tensions in terms of their approach to policy implementation. Here, participants mentioned various events that shed light on how broader aspects of food culture had informed their interpretation within the policy and the nuanced exceptions to the policy: among them, birthday cake. Noted the participant:

*“[According to the policy,] Food shouldn’t be used as a fundraising event or as a recognition event, but there are times when, yes, it probably does need to be because we have traditions, so like birthday cake – that’s tradition. Are we going to interfere with anyone having a birthday cake? No. Right?” (Participant #4, manager)*

This response highlighted how there are certain traditions, like celebrating a staff member’s birthday, when the policy does not obviously align, requiring an adaptation in practice. These tensions between traditions and nutrients speak to the intersection between healthcare

organization culture and food culture more broadly. Another participant further expanded on this idea when discussing birthday cakes, which were presented in a contrast with fruit.

*“I completely agree. If people make a conscious decision, what I would measure as a win [is] for somebody to make a conscious decision. I know there’s a Healthy Eating Policy at this organization; it’s my coworker’s birthday, and I’m really wondering what I can do. I really want to make them this cake ... I’ve told them about this cake a bunch of times. I’m going to bring the cake, but I’m also going to bring fruit ... that is such ... a win ... that says I’m creating an environment where I can make a healthy choice, I’m not forcing anybody to make an unhealthy [choice].”* (Participant #3, manager)

Here, the participant also mentions existing interpersonal relationships between staff (e.g., telling staff about a cake). Participants valued these connections and did not want the policy to alter interpersonal relationships: *“My goal is to not be the restrictive team. My goal is to make the healthier option, the easier option, and the more accessible option.”* (Participant #9, director)

This was also evident when it came to participants views on ‘policing’ the policy. Several participants tied the concept of enforcement during policy implementation to an action of ‘policing.’ As one director level participant noted, *“We didn’t want to be the food police. Right.”* (Participant #2, director) ‘Policing’ the policy was discussed negatively by all participants, and spoke to how participants believed that policing implies punishment for non-compliance.

Monitoring, however, was described in a positive light when discussing the healthy eating audits, used within the retail environment to monitor nutrient criteria within the foods sold. In contrast, policing could be seen as an infringement on people’s autonomy. One participant explained their interpretation of the policy in that it holds NSH accountable for providing healthier options but is

not interested in monitoring people's choices. They described policing using the example of a candy dish:

*"I'm not going around to people's desks and removing their candy dishes. I may remind them if I happen to be sitting in their office and say you know, as an FYI, this is not necessarily in line with the Healthy Eating Policy, but maybe if you had some fruit beside it, that might be a great option ... whatever you bring in from home and consume of your own accord is your choice ... we have absolutely no interest in guiding that choice in terms of what you can and cannot bring for lunch that is not what this policy is about. This policy is about providing and leading by example and providing access to healthy food."* (Participant #9, director)

Several situations were described when participants needed to adapt the policy based on context, a modification that appeared to go beyond a specific interpretation during standard implementation. For example, one participant described a scenario they had managed where a patient receiving palliative care had made a request for a sundae bar. Ice cream is not made available through hospital catering, since catering abides by the Healthy Eating Policy and nutrient criteria, so the sundae bar would need to be externally procured. In this case, the manager described an 'exception' to the policy and identified that principles of patient-centred care or specific circumstances may arise requiring practitioners to go around the policy:

*"They're always going to be exceptions of the policy, and it's not even worth having like having different conversations with and stuff, and so it never ceases to amaze me the different requests in food environments that do exist in the hospital environment and like 99% of them we're going to let the Healthy Eating Policy like guide this conversation but*

*there is that 1% where you're just like a human and you're just like yeah we're going to have a Sundae bar.” (Participant #3, manager)*

This example also highlights that health promotion policies present a unique challenge for healthcare quality improvement, in that they may encompass an array of sub-settings across healthcare. Here, a policy that promoted healthy food environments had to inform the manager's actions to navigate the dual aspects of retail and in-patient simultaneously. This adds further complexity to this health promoting space and suggests potential sub-settings to health promotion environments, reflecting different 'rules' within each.

#### Fish and chips “fills” the cafeteria: The appeal of selling less healthy food

The paradoxes of different principles guiding policy implementation for different sub-environments was evident in several ways in our study. Participants mentioned that offering certain options, like fish and chips, “fills the room” of the cafeteria: in other words, optimizing revenue and appeasing customers. Participants reflected on how they wanted healthcare retail spaces to be sought after by staff, patients, and visitors and several participants mentioned restaurants and take-out establishments surrounding hospitals as direct competition, as well as identifying digital applications such as Uber Eats and Skip the Dishes that have made take-out readily accessible to healthcare workers as a meal option. Health promoting healthcare retail services are thus not selling foods in isolation, but within an even broader community food environment.

A number of participants described “food as medicine,” and contrasted conventional or policy-informed approaches to healthcare outpatient and inpatient environments. For instance, food may be provided in healthcare as a component of treatment for an inpatient, who turns

customer, if they or their families then shop in the cafeteria or vending machine. Participants in this study therefore saw hospital-based food retail spaces as part of a patient's treatment pathway, noting inadequate nutrition as a risk factor for adverse health outcomes experienced by the larger population of Nova Scotians. One participant highlighted the paradox of traditional healthcare retail services selling less healthy food options: *"There is something terrible about our patients coming and getting a stent put in place for their heart disease and buying a doughnut on the way out or buying French fries with gravy on the way out."* (Participant #1, dietitian)

Other participants went on to compare the selling of less healthy food to an earlier era, when smoking was allowed in hospitals. As hospitals banned smoking within facilities, they became involved in a broader cultural shift denormalizing smoking within environments and settings. It was evident that participants in the study had internalized the idea that building a health promoting setting is an active process of challenging the status quo over time and reflecting on the organization's mission and values. Several participants were also keenly aware of the potential for pushback to health promotion activities, again recalling when smoking was banned in public places, including hospitals. This pushback had required champions and coalitions to continue promoting the policy even when it was unpopular. This also suggests that participants were committed to moving beyond a simplistic understanding of food towards a more complex one.

*"They're [younger people] not saying I wish there were some French fries. You don't really hear that...it might take time, sort of like when cigarettes...people grumbled because they couldn't smoke in public... if you smoked in public, you would be*

*ostracized...I think there's going to be a change. Unfortunately, it's going to take some time.*" (Participant #11, point-of-sale)

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*"Like what's in the vending machines or who owns the vending contract? Should we be doing that differently? There are so many questions about food and access to food, and I see that not as working against healthy eating but...that we've already jumped the healthy eating hurdle, and now it's just about access to food –access to that healthy food.*  
(Participant #3, manager)

The focus of the Healthy Eating Policy is to create supportive food environments and to support healthier choices, but it is not to eliminate all less healthy choices. This was a policy design feature of interest to participants, who expressed the appeal of offering less healthier options and the issues of previous approaches of selling healthy foods *only*. One of the benefits of selling less healthy options is the influx of customers and, therefore, revenue generation. When asked about how the policy had evolved, one participant responded:

*"I need to think about so how do we implement how do we operationalize and how do we ensure that we're successful not only with what the policy's aiming to do but also the big pressure point for us has always been around make money break even in your retail services. And that's how do you balance that when we typically know if you put fish and chips on, people are going to buy. Right?"* (Participant #4, director)

Participants moreover emphasized their perception of a widespread cultural importance of less healthy food, which introduced complex implications when removing or changing these products



in the healthcare environment. One participant highlighted how removing items may result in customers being highly focused on food that used to be available (e.g., chicken fingers), and if newer healthy options aren't introduced in a certain, appealing way, that they could expect pushback. As an implementation strategy, they needed to 'make [healthy eating] fun.'

*"I was trying to implement all these healthy food things ... why are we not making it like fun –let's make it fun. So then, I think back to my role in nutrition and food services and the whole nutrition. Food is medicine. So that's then where the food is medicine came from, having the idea that creating more healthier options but also just doesn't mean we only have healthy stuff, it just means that there are majority options. (Participant #12, point-of-sale)*

## **6.5 Discussion**

This qualitative phenomenological study aimed to explore healthcare perspectives on policy implementation and quality improvement, revealing a complex array of interpretations of healthy eating in light of a healthy eating policy. This study used the Inside out model to interpret participants' perceptions and experiences, which places the policy and environment at the center and emphasizes individual agency in exploring the factors (individual, intrapersonal, organizational, and community) supporting health promoting environments (Golden et al., 2015).

In the NSH policy context, we found that participants continued to define healthy eating through nutrients despite the presence of the food environment-focused policy. The Healthy Eating Policy refers to a specific provincial nutrient profiling system, including nutrient criteria outlining which foods to sell more and less, similar to other hospital policies (e.g., 70% of products must meet maximum or moderate nutrient criteria) (Rosewarne et al., 2020). It was

evident that participants understood that in implementing the policy, they would need to reflect nutrients as part of their definition of healthy eating. This is similar to CQI health promotion studies for diet and nutrition, for diet-related health education (Schroeder & Hickey, 2020), fruit and vegetable screening tools (Jester et al., 2018), and food environment interventions such as the removal of sugar-sweetened beverages from retail facilities in hospitals (Tinney et al., 2022).

However, our study also demonstrated several ways in which participant definitions of healthy eating revealed evidence of a broader adoption of health promotion principles, including shifts upstream toward food environments and the need to modify their implementation and enforcement of the policy in ways that reflected other principles and domains of healthcare (such as patient-centredness) as well as larger cultural norms, mirroring the evolution of healthy eating in Canada's Food Guide (Health Canada., 2019) and the Ottawa Charter (WHO, 1986).

These findings demonstrate the complexity of health promoting settings, revealing a setting within a setting: the food environment within the healthcare environment. This aligns with calls to consider interventions' internal and external context, or policies' and interventions' context-sensitivity, when making changes to practice within healthcare (Coles et al., 2020; Minary et al., 2018; Poland et al., 2008). Interventions within this setting must consider contextual precision, much like treatment interventions within healthcare.

### Improving the quality of health promotion in healthcare: the Inside out model

Health promotion policies within healthcare are situated within nested, or multi-level, organizational contexts. Research on quality improvement has suggested that policies targeting multiple contexts (macro, meso, micro) are needed to effectively support CQI initiatives (Epping-Jordan et al., 2004). As Epping-Jordan et al., (2004) explored in a study evaluating a

CQI healthcare policy for chronic disease management, policies targeting multiple levels influenced patients, staff, organizations, and macro-levels, such as accreditation, standards, and monitoring. Similarly, the Healthy Eating Policy in this study addressed multiple contexts for the hospital environment, including physical (e.g., promotions, price, placement) and social (e.g., staff lunchrooms, catering, fundraising), as well as individual food choices (e.g., nutrient criteria). A review by Coles et al., explored contextual factors influencing clinical CQI studies and identified that in addition to policies, CQI required strong leadership, strategic application and ‘point-of-sale’ or frontline engagement as possible mechanisms for effective CQI management across policy and organizational contexts (Coles et al., 2020). These findings and ours suggest synergies working across policy and organizational contexts, contributing to CQI advancement, meaning that policies work in a dynamic interrelationship with organizational support to evoke CQI practices (Bailie et al., 2017).

Most of the policy-defined monitoring in this study centered around nutrient criteria. This is consistent with past healthy eating policy analyses reviewing Australian healthcare policies (Rosewarne et al., 2020) and guidelines for monitoring the nutrition of products in schools (L’Abbé et al., 2013). However, there was interest among the practitioners in our study in monitoring other food environment benchmarks (e.g., price and promotion). Based on a CQI policy study by Gardner et al., (2010), such a shift in monitoring a range of practice outcomes, and using this information to incorporate and adapt new practices, could reflect the organization’s absorptive capacity, the ability to absorb new knowledge and adapt practices based on data and information. However, monitoring has also been raised as potentially an unpopular aspect of quality improvement in health promotion in healthcare. During Gardner et al.’s (2010) evaluation of a chronic disease program in Indigenous community-based primary

healthcare settings, monitoring was viewed by some health practitioners negatively and specifically viewed as ‘policing.’ CQI monitoring tools may need to be further studied for their acceptability, as Shaikh et al. (2015) have suggested, who used iterative rounds of benchmarking to improve primary care dietary tools in order to improve their relevance and adoption within the organization. Other scholars have suggested that CQI tools may need to be adapted substantially for health promotion, as Bloomquist et al., (2021) found in their study of quality improvement to address population health promotion in a regional health authority in Saskatchewan. Participants in Bloomquist et al.’s study reflected their feeling that CQI tools to improve health promotion partnerships had ironically put these partnerships in jeopardy. Considering the local context within CQI interventions could improve their implementation and continue to shift conversations from individual responsibilities towards power, inequities, and environments (Golden et al., 2015).

The community discourses about healthy eating varied in our study. They unveiled tensions where culture had not entirely adapted to the policy (e.g. fish and chips, selling breakfast sandwiches with real bacon). This could be explained by the lack of community readiness (Agron et al., 2010), as identified by McIsaac et al., (2017) in their study of school healthy eating policies where the community response was described, at times, as obstructive. Resistance to health promoting changes to environments could also reflect the nature of upstream health promotion and how it differs from traditional treatment and diagnostic programs within hospitals (Miedema et al., 2022). For example, a CQI retail intervention by Tinney et al., (2022) found that customers were hesitant about restrictions for sugar-sweetened beverages and some expressed concerns about eliminating choice. Discourses such as these are still focused on downstream behaviour change, and practitioners may need to use their own discretion as they implement the

policy, as we found in the example of the inpatient sundae bar. Practitioners who can exercise discretion and power within organizations have been found to be more engaged in quality improvement efforts (McPhail-Bell et al., 2018).

### Strengths and limitations

This qualitative study contained data from semi-structured in-depth interviews, allowing for a rich analysis of perspectives regarding quality and healthy eating within healthcare. The breadth of interviews provided insight at multiple levels of Nutrition and Food Services and consistent with quality improvement theory. Data analysis used both iterative and deductive coding, a strength, and a peer researcher independently examined a random sample of 10% of interview transcripts to discuss meaning and interpretation of the data.

LJK was an insider which allowed for trust to be built throughout the interview process. Alternatively, insiderness can introduce bias and risk objectivity (Mullings, 1999). To mitigate researcher bias the codebook and themes were discussed extensively with the primary author's committee, supervisor, and research lab. The snowballing technique may have introduced sampling bias, disproportionally attracting participants with positive experiences (response bias). Participants responses may have reflected answers they believed the interviewer wanted to hear (social desirability bias). LJK engaged in peer debriefing with research team members to mitigate these biases.

A novel contribution of this study is that it used the Inside out model to further our understanding of policies and quality improvement within nested contexts, such as organizational, community, interpersonal and individual. These findings add to usefulness of this model to understand how policies are reinforced and maintained through reciprocal relations

with individuals tasked with implementing them. However, as cited by other scholars the Inside out model does not speak in depth about to political influences or other external factors (Oladele et al., 2015), which could have been a limitation of its use in this study. Also, it has been suggested by scholars implementing the Inside out model that the levels of the model may overlap, which suggests our effort to distinguish between the effects at different levels may not have been accurate (Kirk et al., 2021). For example, interpersonal connections that foster collective action may have overlapped with how the distribution of resources and power for policy implementation varied across practitioners.

## **6.6 Conclusion**

Health promotion interventions within retail settings are complex and require evidence and precision when altering aspects of the food environment, such as promotions, price, placement, and convenience. Healthcare food environments are a setting in and of themselves, which revealed the complexity of health promotion for this setting: a setting within a setting (food environments within healthcare). The Healthy Eating Policy acted as a guide for decision making within the healthcare food environment. Researchers and practitioners must consider a range of context-specific factors when implementing policies and interventions, which includes food culture, traditions (e.g., birthday cake), past policies, and revenue. Organizations could also consider benchmarking environmental aspects of the food environment, in addition to nutrients, since the value of the policy in practice appears to have already exceeded what is currently monitored.

## **CHAPTER 7 EXPLORING BARRIERS AND FACILITATORS OF CQI FOR HEALTH PROMOTION WITHIN HEALTHCARE FOOD ENVIRONMENTS**

### **Credits:**

This chapter represents a pre-publication version of a multi-authored paper with the following anticipated authorship order: Kennedy LJ, Sim M, Parsons Leigh J, Kirk SFL, Mah C,

### **Statement of contributions:**

LJK and CLM co-led the conceptualization of the research and methodology; LJK conducted data collection; CLM and LJK validated the results; LJK wrote the original draft.

## 7.1 Abstract

In addition to providing treatment, hospitals can potentially be health promoting settings. Continuous quality improvement (CQI) is an important approach central to healthcare that aims to optimize health services while lowering healthcare costs. However, there is a lack of understanding of what organizational and policy processes are necessary for successful implementation of quality improvement for health promotion in healthcare. This research explores the barriers and facilitators of CQI for health promotion at policy and organizational levels. This study uses a qualitative multiple exploratory case study design informed by the Inside out model and key informant interview data from semi-structured interviews that were conducted with 12 healthcare staff working in Nutrition and Food Services in the provincial health authority. Cases of small interventions that prompted practitioners to engage in reflexive quality improvement cycles, known as Plan-Do-Study-Act (PDSA) cycles, in the course of Healthy Eating Policy implementation, were identified using directed content analysis from the interview data, and then organizational barriers and facilitators to the effectiveness of the PDSA cycles were analyzed and compared. The cases were: 1) pricing subsidies, 2) a smart phone app, 3) a corner store selling household products, and 4) a cost control salad bar. Barriers to PDSA cycles included expertise to interpret nutrient criteria, lack of data, conflicting benchmarks (e.g., finance and health), third-party vendors, past negative experiences, and a lack of time to monitor and evaluate. Facilitators included an organizational Healthy Eating Policy, understanding of community context, local knowledge, partnerships with researchers, champions, and leaders. This study confirms that overarching major policies, accompanied by organizational support, can facilitate quality improvement and engaging in PDSA cycles in practice, but can also create barriers and a dependency on certain practitioners who become accountable for aspects of the



policy. This study suggests that barriers and facilitators to CQI for health promotion are similar to that of clinical CQI but also raise new tensions between traditional healthcare CQI principles (e.g., efficiency) and those in health promotion (e.g., empowerment). Examining PDSA cycles demonstrated that given the opportunity to make small changes to practice, point-of-sale staff were able to take a chance to prove themselves and incorporate local knowledge into practice, shedding light on new opportunities for benchmarking quality for health promotion in healthcare. To advance the study of CQI and health promotion, health systems could consider further studying the factors that lead to the sustainability of interventions implemented in retail food environments.

## **7.2 Background**

Continuous quality improvement (CQI) in healthcare has been defined as the process of challenging the status quo to meet the Quintuple Aim, improving patient care, health equity, population health, and worker health while lowering costs (Itchhaporia, 2021). One widely described fundamental approach for health practitioners engaging in CQI in healthcare practice is the Plan-Do-Study-Act (PDSA) cycle, which involves identifying a problem in practice (plan); changing practice (do); collecting and reviewing data (study); and then determining further next steps (act) (Adams, 2018). A systematic review by Hill et al. (2020) examined 28 randomized controlled trials assessing the effectiveness of different CQI approaches, such as PDSA cycles, Root Cause analysis, and others, on the development of professional practices and healthcare outcomes, in comparison to control (no CQI). Although all studies were found to be at risk of bias, Hill and colleagues nevertheless found that study effectiveness was limited when health outcomes were examined; however, benefits to professional practice and process were found.

Where there were benefits, Hill et al. (2020) found that the use of CQI models including PDSA cycles, as well as involving leaders, and meeting frequency, had an effect on process.

PDSA cycles are designed with practitioners across the organization (e.g., frontline, manager) in mind, and are designed to flatten hierarchies by incorporating frontline local knowledge with input from leaders in decision-making roles (Kahan & Goodstadt, 1999). Some of the most prominent risks to PDSA cycles comes from organizational factors, such as poor study design, lack of leadership or unclear purpose, and not from practitioner unwillingness to become involved in improvement processes nor engaged in the improve processes (Radawski, 1999).

The following paper is a multiple-case study to examine how healthcare practices were developed in the course of implementing a health authority Healthy Eating Policy in the Canadian province of Nova Scotia. Drawing from data on problem-solving and sense-making collected through semi-structured interviews with key organizational informants, we described cases of PDSA cycles, then completed a cross-cutting analysis of cases using the Inside out model by Golden et al., (2015) to assess barriers and facilitators to conducting CQI. The Inside out model positions policies at the centre to discuss the dynamic interplay between individual, interpersonal, community and organizational factors contributing to successful implementation of health promotion policies (Golden et al., 2015).

Facilitators of CQI that have been identified in the literature include leadership support (Coles et al., 2020; Gardner et al., 2010; Price et al., 2017), long-term policy and infrastructure support (Bailie et al., 2017), and champions (Coles et al., 2020). For example, Bailie et al., (2017) evaluated a CQI program (Audit and Best Practice in Chronic Disease) that used a systemic approach to enhance care through Indigenous primary healthcare. They found that long term policies were associated with an increased in uptake of CQI initiatives. However, the role

that policy plays when conducting CQI remained opaque. Other scholars have found an interaction between how policies work and certain organizational characteristics (e.g., leadership, resources) (Reponen et al., 2021).

In contrast, barriers for effective CQI that have been found by health promotion scholars have included its time intensity, performance measurements, resources of staff and resistance to change within organizations (Price et al., 2017; Reed & Card, 2016). In addition, a concern has been raised that health promotion and CQI can be inherently at odds with each other (Kahan & Goodstadt, 1999), given that CQI values include efficiency, timeliness, safety, and cost-effectiveness (Institute of Medicine, 2003), whereas health promotion tends to prioritize empowerment, environments, and advocacy (Kahan & Goodstadt, 1999; WHO, 1986). For example, one Canadian study examining a provincial health authority team detected that there was practitioner resistance to use of CQI tools meant to improve the quality of community partnerships, because participants felt these very tools jeopardized the partnerships, on the basis of values (Bloomquist et al., 2021).

To date, the facilitators, and barriers for CQI for health promotion have largely been drawn from research in clinical environments such as community-based primary care or adapting CQI lessons from hospitals to public health. What remains less understood, however, are the barriers and facilitators for adopting CQI for health promotion interventions within hospitals (Hill et al., 2020). As such, this paper uses case studies of PDSA cycles for healthy eating health promotion among a hospital nutrition and foodservices team to answer the following question: *what are the barriers and facilitators for conducting CQI for health promotion within retail food environments?* We will explore CQI PDSA cycles through the experiences of Nutrition and Food Services at Nova Scotia Health (NSH).

### **7.3 Context**

NSH is the largest provincial health authority in Atlantic Canada, delivering healthcare services to approximately one million residents of the province and the broader Maritime region (NSH, 2020). In 2018, NSH adopted an organization-wide Healthy Eating Policy, encompassing a wide variety of evidence-based practices to promote healthier food environments, such as increasing access to nutrient-dense foods and beverages, non-food-based fundraising campaigns, restricting the marketing and advertising of less healthy foods and collaborating with internal and external stakeholders (NSH, 2018). Accompanying this policy were provincial Food and Beverage Nutrient Criteria, a standard provincial nutrient profiling system that is also used for settings outside healthcare, such as in schools (Nova Scotia Government, 2016). Implementation of the Healthy Eating Policy at NSH was also accompanied by development of procedural guidelines, such as for pricing and auditing of offerings in hospital retail foodservices.

### **7.4 Methods**

This study used a qualitative multiple exploratory case study design (Yin, 2014) to examine cases of NSH practitioners engaging in PDSA cycles in the process of implementing the Healthy Eating Policy. Case studies are an in-depth inquiry into a phenomenon and its surrounding context (Yin, 2017). Using a case study approach in this instance based on data collected through key informant interviews allowed for an in-depth analysis of practitioners' active sense-making throughout implementation and evaluation (Yin, 2017). PDSA cycles are a widely used approach to CQI in healthcare, originally established for industrial manufacturing production (Deming, 1986), and typically involve four stages, that may or may not be used iteratively to adapt and

change practices. The first step, *plan*, is when an issue is identified within practice. The second step, *do*, is the change. The third step, *study*, examines the results of the change, and the fourth step, *act*, to decide on further actions. PDSA cycles can either stop (inaction) or continue, thus sustaining the continuous process of CQI (Knudsen, 2018; Levin et al., 2010). The CQI literature suggests that PDSA data may be quantitative, assessing effectiveness or change in cost, or qualitative, assessing intervention acceptability through focus groups or interviews (McNicholas et al., 2019), and that is the spirit in which ‘data’ were coded and analyzed in the development of the case studies below (Kahan & Goodstadt, 1999).

Each case represents a complete ‘cycle’ implemented by participants within NSH foodservices operations. We aimed for maximum variation in practitioner decision-making features in the selection of the cases for analysis here, in that they varied in scope of policy implementation as well as practical changes necessary, with some focusing on technology and others on food price. Negative cases are used in policy research to engage in member checking to validate findings from qualitative data. Negative cases act as contradictory evidence allow a researcher to explore findings that may be contrary to what they expect (Lincoln & Guba, 1985; Yanow & Schwartz-Shea, 2006). Content for case studies had to have been introduced or commented upon by more than one practitioner interviewed, representing a team or organizational case as compared to decision-making conducted alone.

The final set of included cases were decided upon by two authors (LJK and CLM) during peer debriefing (Amin et al., 2020). Cases were analyzed individually and then compared for barriers and facilitators using directed content analysis guided by the Inside out model as a conceptual framework. This research was collected to meet the requirements for a doctoral

program at Dalhousie University. This study received ethics approval from NSH (REB # 1028236).

### Interview data collection

The data source for identification of the cases comprised semi-structured interviews with 12 staff working at NSH Nutrition and Food Services. Inclusion criteria included full-time employment for at least three years and at least 18 years of age. The participants worked in various roles, such as point-of-sale (n=5), and administration (n=7). Nine of the participants had a dietetic background or formalized health professional registration/licensing in dietetics. Interviews were completed by LJK from January to June 2023. LJK recruited participants using a snowballing technique, a type of purposive sampling that occurs when the researcher starts with one participant and asks participants to identify others who may be interested in sharing (Palinkas et al., 2015). Interviews lasted between 45 and 80 minutes, with nine interviews conducted virtually, two interviews over the phone, and one interview in person to align with the preference and availability of the participant. Interviews were transcribed verbatim and uploaded to NVivo (Release 1.7.1) for coding.

This study used directed content analysis to code and interpret data (Hsieh & Shannon, 2005), using both deductive and inductive coding methods during analysis (Assarroudi et al., 2018; Hsieh & Shannon, 2005; Humble & Mozelius, 2022). To increase credibility of the findings LJK engaged in peer debriefing with peers; peer debriefing is the process of sharing findings with a disinterested peer to explore biases, explore multiple meanings and clarify interpretations (Amin et al., 2020; Lincoln & Guba, 1985).

Insider status is when a researcher is known to the community of study (Labaree, 2002) and

has recently been explored as a continuum (back and forth between insider/outsider status) rather than a duality (Griffith, 1998). LJK was an insider to the organization and had pre-existing knowledge about the institution, which supported the development of the cases from the raw data of the interviews, from a phenomenological perspective. Insiderness can be beneficial and can allow researchers to build trust with participants who would otherwise view them as outsiders (Dwyer & Buckle, 2009); that being said, insiderness can also curb objectivity and introduce bias into interpretation of findings (Mullings, 1999). To mitigate bias LJK engaged in reflexivity and peer debriefing with colleagues and fellow researchers (Dodgson, 2019; Finlay, 1998).

### **7.5 Cases of PDSA cycles for healthy eating policy implementation in the healthcare food environment**

See Table 7-1 for a summary description of all four case studies, highlighting the key features of how practitioners navigated a PDSA cycle to initiate, enact, study, and collect data, and modify small changes to practice in the course of implementing the organization’s new Healthy Eating Policy. The following four case studies vary in scale, focus and action; for coherence to a specific area of healthcare practice and comparability, we focused on problem-solving within hospital retail foodservices (i.e., cafeterias/café outlets). An exemplar quotation from the interview data is also provided for each case.

Table 7-1. Four cases of Plan-Do-Study-Act cycles for health promotion at Nova Scotia Health

<b>Case Study</b>	<b>Plan</b>	<b>Do</b>	<b>Study</b>	<b>Act</b>	<b>Quotation</b>
Snacking Made Simple	Healthy food perceived as too expensive by staff (survey)	Pricing intervention altering the price of 5 healthy and five less healthy snack items	Sales data analysis by Food Policy Lab at Dalhousie University	Scaled up to other sites	<i>“And it was really just in talking with our staff that they were like I think people would buy like the healthier things if they weren’t so expensive and so that’s where it started then we started being like what is it about like pricing is there any like little pricing research that we can do.” (Participant #3)</i>

Case Study	Plan	Do	Study	Act	Quotation
Get App	Staff complain about waiting in line too long	Create an online method for ordering food	In progress – staff feedback, number of people using	Pilot to other sites	<i>“It was a pretty simple app but it enabled us to just put healthy eating healthy foods on there...so maybe people that we work with don’t have time to go and stand in a line up in our retail locations we have peak times and certainly everyone comes or everybody wants to come at a similar time – (Participant #2)</i>
Healthy Corner Store	Staff wanted to limit exposure to COVID-19 in public shopping places like grocery stores	Mini grocery stores where staff could pick up milk, eggs, bread, coffee, and other household staples	Informal feedback from staff	Still in place today.	<i>“We had a healthy grocery store option that we did so placing those we had like eggs and milk and bread thinking about those products as like easy to grab and go they were showcased at the front of our grab and go fridge so that was something that we offered during covid” (Participant #8)</i>
Salad bar	Costs of food are rising. Portion sizes are not enforced.	Limit salad toppings to prevent “salad mountains”	Informal feedback from staff	Still in place today	<i>“People were getting massive salads which is wonderful but from a cost and ingredient control perspective it wasn’t great, so we implemented categories, so it was like choose four vegetables.” (Participant #10)</i>

### Case Study #1: Snacking Made Simple

Snacking Made Simple was a pricing intervention with accompanying price salience merchandising (e.g., promotions, placement) implemented in all four food outlet locations at the Queen Elizabeth II Health Centre, the central urban hospital campus in the city of Halifax, NS. Participants had conducted a staff survey to determine the barriers for purchasing healthier snacks for staff, and healthy food affordability was returned as being the top reason. This finding resonated with the appraisals of Nutrition and Foodservices staff, who noted, *“I think people would buy the healthier things if they weren’t so expensive” (Participant #3).*

Upon gathering this information, Nutrition and Foodservices practitioners implemented a CQI pricing intervention named Snacking Made Simple. Price is a known modulating factor influencing food purchases (Harding & Lovenheim, 2017). The purpose of the intervention was to promote and price healthier snack items, while at the same discouraging the purchase of less healthy items, merchandised in such a way to make healthy eating seem ‘fun’, as one practitioner described: *“how do we make snacking healthy seem fun and lighthearted.” (Participant #2).*



Snacking Made Simple decreased the prices of five healthy snack items (apples, bananas, small and large white milk, and bottled water) while concurrently increasing the price of five unhealthy snack items (baked loaves, cinnamon buns, small and large chocolate milk, and Rice Krispie treats).

The targeted items were selected by NSH staff and categorized based on the Nutrient Criteria for Food and Beverages (Nova Scotia Government, 2016). The intervention also included the placement of intervention items, either side by side, to emphasize price changes or placed close to impulse shopping areas (e.g., near cash registers), a promotional campaign including t-shirts, table signs and zip banners promoting healthier items (apples, bananas, and white milk). The intervention was slightly altered at each site depending on the store layout and availability of promotional materials.

Practitioners aimed to examine the quantitative effect of the pricing intervention through use of sales data and concluded on a cross-sectional examination of aggregate sales that suggested the intervention had not resulted in a loss of revenue. However, on further discussion of the intervention with researchers participating in the Healthy Eating Policy steering committee, it was collaboratively decided that further analysis of the administrative sales data collected might shed additional light on intervention outcomes.

Researchers proceeded to conduct a time series analysis using the sales data and found that prior to the intervention weekly purchases of unhealthy snack items outpaced that of healthy snacks ( $\beta = -11.02$ ,  $p = 3.68E-14$ ), however after the intervention the weekly purchases of healthy snacks increased ( $\beta = 21.41$ ,  $p = 0.0024$ ) (Mah et al., 2023). Results varied for each individual snack item, for example, demand for unhealthy snacks also increased for loaves and mini cinnamon buns, but decreased for rice krispie squares during the intervention period. In

working with the practitioner team to interpret the results, researchers noted that the ‘unhealthy’ baked good products were still relatively healthy and met the moderate nutrient criteria (e.g., limiting the amount of sugar) within the larger Healthy Eating Policy and nutrient profiling framework at the health authority (Mah et al., 2013).

Practitioners including directors, managers, and point-of-sale workers, reported that they scaled up the intervention to other sites across the province. In light of the detailed externally conducted research results, while practitioners noted that they had seen the benefits of the intervention, they shared the difficulty finding time to monitor its progress and effectiveness. One practitioner described this as *“that’s just a result of being busy; we do this, we do that [then] we’re on to the next thing” (Participant #4).*

#### *Case Study #2: Get App*

According to another internal workplace survey, NSH staff purchasing food at retail sites wanted food to be fresh (not grab-and-go premade options) and quick to order. Many staff reported further detail that they did not have time to wait in line on their break, or had lunches at non-traditional hours and therefore needed more flexibility in their foodservices options.

The ‘Get App’ or Get Mobile App is a pre-order mobile smartphone application for online foodservices ordering at NSH food outlet locations. Nutrition and Food Services staff obtained customized app software to procure the Get Mobile App. The app includes a Nutrition and Food Services-defined, smaller, curated menu that comprises a selection of meals meeting maximum and moderate nutrient criteria from the standard in-person cafeteria menu, including a Make it Your Way menu that includes bowls, salads, and smoothies which usually require customers to wait at the cafeteria while their custom order is made.

Get App offers 14 menu items staff and visitors can order ahead of time and have ready for pick-up. There are multiple payment options, including automatic payroll deduction, designed to save onsite healthcare workers further time in their food outlet experience, from waiting at the cash register.

The provision of only healthier options through the Get Mobile App was purposeful. This was a strategic decision to support access to healthy foods. Practitioners piloted the app in two hospitals and have since implemented the app in a third location. One practitioner highlighted in particular the feature of selling healthy foods only and the pilot and scale up, saying: “...*doing a little pilot in two locations and now we’ve just rolled it out to a third one in [another location]. It was a pretty simple app but it enabled us to just put healthy eating healthy foods on there.*” (Participant #2)

Participants referred to the Get Mobile App as “*modernizing*” (Participant #4) the healthcare facility, drawing from technology and smartphone devices. Participants also custom-built data infrastructure into the app so that they could have data to analyze sales, as one participant said: “*digital infrastructure behind the healthy eating work so that we can have data.*” (Participant #2). The data collected from the App includes reports of items sold (e.g., burrito bowl), sales reports (sale price and total revenue), and user reports (# of active users). The team decided to build data collection infrastructure into the Get Mobile App so they could study sales data on-going basis. The Snacking Made Simple intervention (case study #1) had highlighted a gap in data use practices among the practitioner team. Before working with the researchers at Dalhousie University, Nutrition and Food Services had relied on routine outputs of cross-sectional aggregate administrative sales data to determine if interventions had been successful. They often felt confident they had not lost revenue but had no idea if the intervention had “worked.”

### *Case Study #3: Healthy Corner Store*

Retail food services in the health authority remained open throughout the COVID-19 pandemic, a priority for the organization, although many additional protocols were added. As one practitioner emphasized, they altered the spaces to accommodate social distancing, “*but we never closed the cafeteria*” (Participant #11).

The COVID-19 pandemic led to myriad systemic, process, and practice changes throughout hospitals, including retail foodservices. One of the broader public health measures to reduce the spread of COVID-19 outside the healthcare environment included recommendations for having a designated grocery shopper per household, which often fell to essential workers including a range of frontline and other healthcare workers, since they were already effectively ‘exposed’ in public-facing environments (Campbell, 2020). However, healthcare workers expressed concerns about catching or spreading COVID-19 when grocery shopping.

In response, Nutrition and Food Services created a ‘Healthy Corner Store’ within retail spaces at the health authority, intended to put staff at ease. The healthy corner store is a comprehensive population health intervention that transforms business practices to health promoting practices through multisectoral partnerships, including health practitioners, community retailers, businesses, and partners (Mah et al., 2017). This version of a Healthy Corner Store had ‘health’ in terms of both nutrition promotion and communicable disease control in mind, including stocking everyday household grocery items, such as bread, milk, and eggs, that staff could purchase on their way home from their shift in healthcare. One practitioner we interviewed described the Healthy Corner Store as a “mini supermarket” (Participant #5) and another as, “*our retail outlet*”:

*“So, people can buy 2 litre milk, a loaf of bread, a couple of those staples – bananas – that you know if they don’t have time to stop on their way home. They can get at our retail outlet and take home especially for our working parents that might need to make sure they have access to those things just to get through the night.” (Participant #9)*

The intervention provided access to common household items to tie someone over until they could go to the grocery store. Another practitioner talked about its continuation post-COVID-19, ensuring that prices were comparable with other retail grocers that healthcare staff might access: *“We obviously, provide [food items] at a very comparable price in terms of the economics of it ... Yes, we’ve continued on with that. It’s not accessed as often as I would have thought but it’s there and it’s available for people that need it.” (Participant #9)*

The Healthy Corner Store remains in place today, providing opportunities to source and sell local, healthy grocery products through the foodservices offerings of the health authority.

#### *Case Study #4: Salad Bar*

Food price inflation in recent years has forced many retailers to consider ways to control rising input costs, including within healthcare and other public sector foodservices. One option for cost control often discussed in the media during inflation has been to reduce portion sizes while maintaining prices, referred to pejoratively as ‘shrinkflation’ (Evangelidis, 2023). Nutrition practitioners’ experiences with a salad bar in healthcare food retailing exposed an alternative way to think about ‘shrinking’ and ‘growing’ portions.

For many years, one hospital retail site at NSH had a salad bar. The salads were a set cost, and customers could choose any toppings that fit on the plate. One participant referred to it as a ‘Subway-like’ model, where the customer served themselves a protein or a plant-based protein,

along with a variety of vegetable options that had to fit into a specific takeout container. The salad bar offered customers a tailor-made meal, with a wide selection of fruits and vegetables.

At implementation, however, no scale was available at the hospital cafeteria to cost the salads by weight. Over time, the portions of the salads self-served by cafeteria customers began to grow, becoming unmanageable or as one practitioner interviewed recalled, *“a free for all.”* (Participant #8). For example, some customers ‘loaded up’ their plates, described by one participant as a *“salad mountain with every single topping”* (Participant #10), with one practitioner recalling how customers used an additional takeout side plate for vegetable toppings in order to maximize the container use for proteins, making it difficult for staff to control costs. While consuming fresh vegetables was seen as ideal from a nutrition perspective, the salad bar had become less than ideal from an organizational business cost and ingredient control perspective.

In response, Nutrition and Food Services practitioners decided to implement structures defining and narrowing the choices available to customers, focusing on categories of options, beginning with a choice of four vegetables and one protein per customer.

One participant described the response as: *“we implemented categories ... choose four vegetables. I got a lot of feedback around this ... ‘this is not enough vegetable options’, which is great I mean that’s great feedback to get”* (Participant #8). Feedback was communicated through e-mails, software (e.g., Safety Improvement and Management Systems), and passed along from point-of-sale workers to managers. Practitioners responded once again, increasing the number of categories with the goal to appease customers and mitigate negative responses.

*“We have to be mindful of the emotions of healthcare and ... the things that other members of the multidisciplinary team are dealing with [so that] we can accommodate at*

*times. I thought four was an appropriate [number of] options. We ended up increasing it to five based on feedback.” (Participant #8)*

The feedback from the healthcare workers using the salad bar was described as frustration, as described by one interviewee, which appeared to decrease with time:

*“At first people were really upset about it [salad bar] in the cafeteria who frequently got those large salads but now they’re used to it ... I was just explaining to them like either we get rid of the salad bar all together or we streamline it and kind of watch what we’re giving people and just portion control...” (Participant #10)*

## 7.6 Cross-cutting barriers and facilitators

Table 7-2. Cross-cutting barriers in conducting CQI for health promotion within retail food environments as identified by Nutrition and Food Services staff

	<i>Inside out model</i>	<i>Theme</i>	<i>Context</i>	<i>Quote</i>
BARRIERS	Policy and environments supportive of health	Difficulty interpreting nutrient criteria	A reliance on dietetic professionals to grade products as maximum, minimum, and moderate nutrient criteria	<i>“We create a dependency on nutrition and food services for our organization to even use the healthy eating steering or healthy eating policy ... because even to identify something as maximum minimum or moderate nutrition requires a registered dietitian.” (Participant #8)</i>
	Communities that recognize health problems	Hospital food is viewed as expensive, too serious, and unhealthy	The deep fryer was removed in the late 2000s when high school students came to the hospital to eat fried foods	<i>“...they got rid of the deep fryers and that was a big change.” (Participant #1)</i>
	Organizations that monitor and promote policies	Lack of data	When participants lacked data to inform decisions, they relied on experience and gut instincts. Other participants created data collection tools, like customer surveys or environmental surveys.	<i>“If I don’t have site specific feedback or any type of hard based evidence I think I would either lean on past experience or I’d reach out to other zones and my provincial network see if you know they have any past experience or feedback.” (Participant #9)</i>
		Conflicting benchmarks	Participants described the tension between health and financial benchmarks. Interventions involve both consideration of health and financial viability (e.g., break-even). Fundraising faced difficulties in prioritizing the healthfulness of food.	<i>[Salad bar intervention] “At first people were really upset about it in the cafeteria who frequently got those large salads but now they’re used to it.... was I was just explaining to them like either we get rid of the salad bar all together or we streamline it and kind of watch what we’re giving people and just portion control ...” (Participant #10)</i>

<i>Inside out model</i>	<i>Theme</i>	<i>Context</i>	<i>Quote</i>
	Third-party vendors	NSH owns and operates many retail services; however, some are run by third-party vendors who may not be accountable for the healthy eating policy.	<i>"I never did like some of the things I was selling. I didn't really feel good about it. But, it wasn't my place as the employee to say anything."</i> (Participant #11)
Interpersonal connections that foster collective action	Supporting frontline staff	Point-of-sale staff receive the brunt of the complaints for improving interventions. Interventions can also increase workload.	<i>"I think our frontline team found it easy to understand which is a big piece of it too."</i> (Participant #8)
Individual	Past negative experiences	Participants described past healthy eating interventions as unsuccessful.	<i>"We were so worried, like so worried, that it was going to be, again, our frontline team that would take on the brunt of this, like fluky thing. We were going to try when we were like trying so hard to gain their trust too."</i> (Participant #3)
	Not enough time to monitor and study	Participants said research is something they don't have time for, and when done, it is done off their desks. Nutrition Services also balances time and resources with inpatient services.	<i>"We roll it out to the other sites around the cheaper and somehow, we lose sight of what was that all about. We did the work, but wait, that was called snacking made simple ... that's just a result of being so busy we do this we do this we're on to the next thing."</i> (Participant #4)

## Barriers

Our cases demonstrated that practitioners face key barriers when implementing CQI health promotion in healthcare in the process of implementing and monitoring a Healthy Eating Policy.

Table 7-2 summarizes barriers across the included case studies at policy, community, organizational, interpersonal, and individual levels.

The Healthy Eating Policy is meant to act as a guide for supportive food environments within the organization. The policy is not prescriptive and allows for practitioners' interpretation by practice situation, and relative flexibility. However, the interviewees in our study described that nuances in the policy, especially the Food and Beverage Nutrient Criteria, as complex and cumbersome to navigate. The criteria were perceived as 'creating a dependency' on Nutrition and Food Services team members, especially those staff with a background in dietetics and nutritional sciences. One participant said,



*“We create a dependency on nutrition and food services for our organization to even use the healthy eating steering or healthy eating policy ... because even to identify something as maximum minimum or moderate nutrition requires a registered dietitian.” (Participant #8)*

The majority of barriers were due to existing organizational factors, such as lack of data, navigating third-party vendors, and conflicting interpretation of benchmarks. When practitioners encountered problems during policy implementation (e.g., why aren't people buying healthier items?) they did not always have the specific routine data to inform a decision or intervention, challenging them in the PDSA effectively mid-cycle. For example, in attempting to examine items sold most in a particular week (e.g., Case Study #1), there was no way of knowing because the data were aggregated, and all sales items were entered under one category (such as both apples and oranges keyed into the point-of-sale using the same code).

Participants interviewed viewed collecting and understanding data as essential components to CQI, expressing the importance of assessing pre- and post- intervention effectiveness to staff and leadership. Thus, when quantitative data did not exist, practitioners would capture qualitative data to inform their practice, such as rapid customer feedback surveys. In some cases, practitioners relied on staff experiences when they did not have data to monitor interventions, for example:

*“If I don't have site specific feedback or any type of hard based evidence, I think I would either lean on past experience or I'd reach out to other zones and my provincial network to see if they have any past experience or feedback.” (Participant #9)*

In contrast, for interventions such as the *Get App*, where practitioners had greater design

oversight in the first place, purpose-built data infrastructure was integrated into the intervention design in order to collect anticipated data that would be needed.

Benchmarks varied throughout the PDSA cycles. Participants discussed two prominent benchmarks frequently: financial and nutritional. The first, financial, involved only ‘breaking even,’ not a profitability expectation in this publicly funded healthcare setting, and the second was relatively flexible in offering ‘at least 70%’ of products that meet the maximum and minimum nutrient criteria. Yet at times, these benchmarks nevertheless conflicted with each other. For example, the salad bar intervention (Case Study #4) required limiting the amount of vegetables customers were allowed on their plates so that the cafeteria could meet specific financial benchmarks in response to customer behaviour observed. Essentially, staff discouraged the consumption of vegetables to break even.

A similar tension was also mentioned when participants discussed fundraising within hospitals. Auxiliary fundraising organizations in healthcare run a select number of gift shops throughout hospitals in Nova Scotia. For the auxiliary, the main goal is to raise money, including using food products. The Healthy Eating Policy suggests only fundraising with products that meet maximum nutrient criteria, however, the popular items sold in these shops are candy, chocolate bars, and chips. One practitioner interviewed described the items sold in the gift shops as getting out of hand, similar to the ‘free for all’ described in Case Study #4, the salad bar, meaning that auxiliary products were escalating counter to the Food and Beverage Nutrient Criteria and needed to be therefore *“reined in”* (Participant #12).

Although the Healthy Eating Policy adoption was accompanied by a broad organizational shift to required on-site cooking for all retail foodservices, some retail sites in regional community hospitals remained owned and operated by third-party retailers (e.g., coffee shop

chains and vendors) as the vendors may have been ‘grandfathered’ in. This was the case for a cafeteria in one rural district. One participant said they previously did not feel good about what they were selling (e.g., large sized muffins they referred to as “bucket muffins”) but felt disempowered to say anything. Now, with NSH oversight, they felt heard and could respond right away in practice, providing suggestions about certain items they offered. They said:

*I didn't really feel good about it but it wasn't my place as the employee to say anything. I didn't but now with [name] and the supervisors and the team I can. Not that I they have some great ideas, but they take my ideas. It's not just like “oh dear that's alright you just do the work.” They really are interested in my input so it's been really great (Participant #11).*

In the cases we examined, the results of the changes received mixed reviews from other stakeholders outside the Nutrition and Food Services team. Practitioners described past initiatives as top-down and, while prioritizing health, lacked consideration for other aspects of eating, such as taste, appeal, and loss of revenue. Point-of-sale staff were especially vulnerable to complaints, suggesting a differential barrier for those at the customer point-of-sale. Managerial staff shared that quality improvement must consider the potential negative impacts on point-of-sale staff interpersonally and incorporate ways to mitigate these impacts.

For example, the Snacking Made Simple intervention (Case Study #1) incorporated t-shirts for point-of-sale staff to wear as they implemented the intervention to symbolize a ‘united front’ amongst Nutrition and Food Services staff: *“We were so worried, like so worried, that it was going to be, again, our frontline team that would take on the brunt of this, like fluky thing. We were going to try when we were like trying so hard to gain their trust too.” (Participant #3)*

## Facilitators

We also detected facilitators described in the cross-cutting analysis across cases, summarized in Table 7-3. The Healthy Eating Policy provided guidance towards building a supportive food environment, including levers such as marketing, fundraising, and placement of food and beverage items.

Table 7-3 Cross-cutting facilitators in conducting CQI for health promotion within retail food environments in hospitals as identified by Nutrition and Food Services staff

	<i>Inside out model</i>	<i>Theme</i>	<i>Context</i>	<i>Quote</i>
FACILITATORS	Policy and environments supportive of health	Healthy Eating Policy	Food and Beverage Nutrient Criteria guide what foods to sell more of and less of—supposed to help classify foods.  Staff to support policy and interventions	<i>“We need to be grounded in a nutrient criteria that helps us define what’s healthy and unhealthy .... but to me, it’s such a small piece of the policy.” (Participant #3)</i>
	Communities that recognize health problems	People are busy and don’t have a lot of time; people want a choice	Interventions that allow staff to avoid grocery stores avoid long lineups for lunch	<i>“Increasing our access to a very busy healthcare system so that our caregivers and visitors have time to actually eat and nourish themselves.” (Participant #2)</i>
	Organizations that monitor and promote policies	Steering committee	Group of interdisciplinary members who provide strategic direction for the Healthy Eating Policy.	<i>“The steering committee is such an important aspect of you know the policy implementation. So, one of the guiding principles in my mind of any steering committee, but definitely the one that promotes the healthy eating environment, is to have interdisciplinary membership.” (Participant #2)</i>
	Interpersonal connections that foster collective action	Local knowledge  Low-risk trials	Engagement with customers provided a lot of information to tweak interventions. People with the greatest access to customers are the point-of-sale staff.  Small trials allowed participants to prove themselves and gain the trust of managers and other staff	<i>“So maybe didn’t have a whole picture of the why but maybe it was just more of an ask, but I think you have to be sensitive I think of the needs of the site.” (Participant P#8)</i>  <i>“It’s yeah when we talk about how do you make a change or have you ever done something without any data if we didn’t do that original study it would have been very difficult for us to say let’s take a huge chance and just do this everywhere. Like you have to prove to yourself that it’s</i>

<i>Inside out model</i>	<i>Theme</i>	<i>Context</i>	<i>Quote</i>
	Longstanding partnerships with researchers	Involvement of researchers allows for longitudinal study and application to grants, funding and future research opportunities.	<p><i>worthwhile doing first and then that's those little studies." (Participant #3)</i></p> <p><i>"So as far as I know I think there's great opportunities through Dalhousie and we need to partner with them because they can access you know grants and things that we can't." (Participant #4)</i></p>
Fair and equal resources distributed across Individuals	Champions and leaders	Participants mentioned specific people when discussing interventions. There are people they go to for resources and information about interventions.	<p><i>I: "How do you decide what products to put at eye level and which to put on bottom shelves like how does that work?"</i></p> <p><i>P: "Sometimes it comes through [name] I guess through like a provincial group so she provides I know when I started we did a lot of work around pricing and placement and she's provided a lot of guidance for us." (Participant #8)</i></p>

Practitioners interviewed described the policy as providing “*a leg to stand on*” (Participant #3) when other staff reached out and asked questions about food fundraisers, offering space to different restaurants, or introducing new products. Participants described the policy as something they could fall back on in discussions with other hospital staff. Because the policy speaks broadly about food environments, it left room for policy interpretation and practice-based improvements. When staff wanted to try something new and seek buy-in, as we saw across the cases, they could problem-solve by tying the intervention back to the policy, for example,

*“...pushing the purpose and premise of the policy that is creating a supportive environment for healthy eating that extends way beyond what we provide the patients what we have in the vending machines what's in the cafeteria is how do we create that culture among people who work in our organization and who utilize the services of our organization.” (Participant #2)*

Champions and leaders propelled problem-solving forward in all four case studies. One

manager was repeatedly named the “go-to” person for sense-making what to do next in retail interventions. They were identified as someone who had tried things in the past and could have insight and provide guidance when trying something new. Many participants also named past organizational leaders who had supported their work, interpersonal relationships that were lasting. As one point-of-sale staff member stated, *“I’ve had good leaders good strong female leadership my entire career”* (Participant #6).

Point-of-sale staff had the greatest access to customers—and also customer feedback, both positive and negative. They frequently incorporated this feedback (a form of ‘local data’) into their products and practices. For example, customers described the long lunch lineup and how it deterred them from purchasing at the cafeteria. This informed the design of Get App in Case Study #2, which was designed to reduce wait times and increase access to healthier lunch options. This is also evidenced in Case Study #3, the Healthy Corner Store intervention; during the pandemic, staff across healthcare organizations expressed concern about going to the grocery store after a shift, fearful they would be exposed to or spread COVID-19.

Smaller pilot interventions created low-risk opportunities for staff to prove themselves. The ultimate goal was to scale up the intervention if it went well, but they needed buy-in first. Examples included introducing new products to see if they would sell, moving products to different locations, and piloting an intervention before scaling up. Where staff did not have data or evidence proving something will work, they adapted the intervention to what they thought might work to try something new, and relied on the experiences of others in the organization with whom they had interpersonal relationships, for example:

*“It’s yeah when we talk about how do you make a change or have you ever done something without any data if we didn’t do that original study it would have been very difficult for us to say let’s take a huge chance and just do this everywhere. Like you have to prove to yourself that it’s worthwhile doing first and then that’s those little studies.”*

*(Participant #3)*

Researchers from Dalhousie University were involved in quarterly meetings with the Healthy Eating Policy Steering Committee and side research projects such as the quantitative analysis of the Snacking Made Simple intervention, Case Study #1. According to the participants, the researcher partnerships provided opportunities for studying interventions and applying for grants. The partnership was described as opportune, and as one interviewee commented: *“So as far as I know I think there are great opportunities through Dalhousie, and we need to partner with them because they can access you know grants and things that we can’t.”* (Participant #4)

## **7.7 Discussion**

Through a multiple case-study approach examining PDSA cycles focusing on the retail food environment, we were able to examine how healthcare practitioners engaged in quality improvement through the process of implementing the Healthy Eating Policy. A cross-cutting analysis was also done of barriers and facilitators to CQI using the Inside out model, which places the policy at the center and explores the many contexts reinforcing policies (e.g., community, organizational, interpersonal and individual). Many of the facilitators supporting CQI are similar to factors supporting policies, as per the Inside out model (e.g., leadership, champions, individual autonomy). This suggests that CQI requires contextual support at a variety

of levels to be successful. This study also explored barriers, revealing that certain factors can diminish the efforts of CQI and staff improvements.

### Barriers and facilitators for health promotion CQI within healthcare food environments

The Healthy Eating Policy supported several kinds of practice innovations and self-study to change practice in the healthcare food environment. Our findings are similar to those of McIsaac et al. (2017), who reported that top-down nutrition policies helped shape the cultural norms of acceptable healthy food options in school food environments. This is also echoed in the CQI literature, which includes policies supporting the consistency of CQI initiatives (Bailie et al., 2017; Gardner et al., 2010). However, unlike Kirk et al. (2021), who found no guideline-related barriers when exploring voluntary healthy eating guidelines implemented in recreational facilities, our study found obstacles to the policy's adjacent document, the Food and Beverage Nutrient Criteria. Participants, particularly those working at point-of-sale felt that classifying food was a specialized skill that required a dietitian. However, it is important to note that there may be differences between implementation processes between this study and the study by Kirk et al., (2021) who explored the implementation of optional nutritional guidelines within recreational centers, and not mandatory policies, which could explain the barriers discovered in this study. These findings align with the limitations of PDSA cycles in addressing more complex problems. Additionally, PDSA cycles can be an oversimplification of the problem-solving and sense-making process, when in practice, conducting PDSA cycles can be complex and require pre-existing support, teaching, and mentorship (Reed & Card, 2016; Zamboni et al., 2020).

Effective leadership styles have positive effects on CQI outcomes (Sfantou et al., 2017). In our study leaders were identified in formal leadership roles and described as 'strong females'.



These leaders provided support to staff when engaging in retail interventions and supported point-of-sale staff when implementing a new intervention. Leaders who are engaged in CQI play a key role in the vision and direction of CQI interventions (Zamboni et al., 2020). Certain types of leadership styles impact patient and organizational outcomes differently, with transformational leadership having positive effects on organizational culture and transactional leadership having weaker effects, as demonstrated in a recent systematic review (Sfantou et al., 2017). Leadership engagement in CQI is influenced by the organizational supports in place to conduct CQI (e.g., resources, tools); therefore, the responsibility to facilitate innovation is not just up to a leader but also the organization where they work (Sfantou et al., 2017). Leadership has also been studied in clinical CQI and outcomes may vary for health promotion interventions (e.g., empowerment, resiliency) (Graham et al., 2014; Kahan & Goodstadt, 1999)

Much of our knowledge about facilitators and barriers for CQI comes from clinical literature (Hill et al., 2020). Conducting health promotion interventions within healthcare has the added burden of focusing upstream on prevention which may pose challenges in a system largely organized, funded, and focused on downstream clinical outcomes (Pelikan et al., 1997; Pelikan, 1997), where the priority outcomes may conflict (such as nutrition promotion and financial benchmarks). In addition to further developing health promotion practice, our study has suggested a need to build up further evidence on case examples for the health promotion quality improvement literature demonstrating what can be accomplished by investing in health promotion being integrated into quality improvement programs (Groene & Jorgensen, 2005).

### Strengths and limitations

This study used in-depth interviews analyzed through a multiple in-depth case study approach to arrive at the findings. The in-depth interviews allowed for a rich understanding of the interventions and experiences of hospital staff. Although these findings are not generalizable to other healthcare organizations but may be transferable to other organizations or retail settings (e.g., schools and recreation centers). This is important considering the healthcare organization's increasing interest in Healthy Eating Policies.

This multiple case study of CQI interventions within healthcare demonstrated a variety of benchmarks explored within healthcare settings and allowed for a rich understanding of context surrounding the interventions. Selecting the four case studies was challenging given how much they differed in benchmarks, scope, geographic region and scale-up. However, this is arguably reflective of real-world practice and practitioner-led CQI. To strengthen the coverage of the cases to reflect a wider variety of healthcare health promotion practices, this paper included a negative case study (cost control salad bar) where healthy items were removed instead of added. Negative case analysis acts as a member check and demonstrates that the researchers didn't only look at confirmatory evidence (Lincoln & Guba, 1985; Yanow & Schwartz-Shea, 2006). Negative case analysis is a technique to prevent a researcher from jumping too quickly to an interpretation, and the negative case study included here was important in highlighting the financial impacts of a shift towards health promoting environments and how at times, revenue is prioritized, and healthy food options can also be viewed through a business case model.

This paper used the Inside out model by Golden et al., (2015) which was useful in the cross-cutting examination of cases from multiple angles, including individual to policy levels. This model is useful for providing a possible theorization of the interconnectedness of healthcare contexts and how they support policies. The Inside out model ascribes agency to individuals and

is well aligned with CQI as a science that focuses on people. The model also speaks to the interpersonal relationships necessary for policy reinforcement, which emerged as a facilitator to advancing CQI initiatives. The Inside out model has been criticized for downplaying political factors contributing to upstream changes within public settings. This study does not speak to external political factors influencing CQI and health promotion, a limitation (Oladele et al., 2015). A second limitation is a potential misalignment of CQI and socio-ecological theory. For instance, the Inside out model focuses on upstream policy issues where as CQI models have been largely drawn from downstream clinical care primarily implemented for efficiency and safety reasons (Kahan & Goodstadt, 1999).

## **7.8 Conclusion**

Overall, the NSH Healthy Eating Policy strongly supported health promotion practice innovations; however, the Food and Beverage Nutrient Criteria was also seen to be a barrier. Although lack of data was an issue in solving problems in practice, the case studies included in this paper demonstrated evidence of building data infrastructure into new interventions. These CQI case studies explored multifaceted healthy eating objectives, such as healthy food affordability and healthy convenience, beyond the routinely monitored benchmarks of nutritional content of food offerings, and financial ones of breaking even. Developing benchmarks for other aspects of the food environment could lead to further interventions and small tests of change that empower staff to try new practices. Study of how PDSA cycles are implemented and evaluated within healthcare settings may shed light on factors that might impede or enhance the effectiveness of CQI. It is important for policy and decision makers to understand these barriers and facilitators in order to maximize health promotion within healthcare.



**CHAPTER 8 BEYOND THE VENDING MACHINE: EXPLORING THE  
PRACTICES OF HEALTHCARE PRACTITIONERS DURING THE  
IMPLEMENTATION OF A HEALTHY EATING POLICY**

Credits:

This chapter represents a pre-publication version of a multi-authored paper with the following anticipated authorship order: Kennedy LJ, Parsons Leigh J, Kirk SFL, Sim, M, Mah C.

Statement of contributions:

LJK and CLM co-led the conceptualization of the research and methodology; LJK conducted data collection; CLM and LJK validated the results; LJK wrote the original draft.

## 8.1 Abstract

Health promotion policy is an effective way to improve population health and reduce the burden of chronic disease, yet how implementation of health promotion at policy levels occurs within healthcare remains unclear. Healthcare organizations on the one hand, aim to improve population health and ‘upstream’ health determinants through the Quintuple Aim, but, on the other, are complex and dynamic organizations, with a particular emphasis on downstream clinical care services. Many types of practitioners interpret health promotion policies within the healthcare setting and must implement them in their everyday work: policy implementation as an everyday occurrence. This qualitative study uses organizational social theory on street-level bureaucrats to explore the experiences of healthcare practitioners during the implementation of a healthy eating policy within healthcare food retail services. The findings showed a shift in priorities from leadership to allocate resources for health promotion tasks to make food more accessible and available to staff. Participants considered context as they implemented the policy using local knowledge arising from informal and formal networks and identified other opportunities to influence healthy eating. Further advancements in health promotion policies could lead to improved environments for staff and patients, healthcare savings, and reduced use of healthcare services. Studying the actions of healthcare practitioners in everyday policymaking could provide essential context and expand our knowledge of how policy implementation unfolds.

## 8.2 Background

Over the last few decades, healthcare organizations have invested in health promotion, the science of empowering individuals and communities to take ownership of health (WHO, 1986). Health promotion examines the social determinants influencing health, such as income, gender, and education, moving beyond the traditional, individual behaviour-focused view of health (WHO, 1986). In the early 1990s, the Health Promoting Hospitals (HPH) movement formed a network of hospitals adopting health promotion practices and standards within their facilities under the auspices of challenging the status quo and asking how environments could be improved (Pelikan et al., 1997). Examples of HPH interventions and policies include labelling of food and beverages in hospital cafeterias, lunchtime exercise classes, smoke-free spaces signage and price increases for less healthy food and beverage options (e.g., soda) (Štěpánková et al., 2020; Thorndike et al., 2014; Tinney et al., 2022; Worley et al., 2022).

Healthy eating policies are one type of health promotion policy that has become increasingly important to health policy efforts to influence population diets and reduce the burden of non-communicable diseases (Mah et al., 2019). Unhealthy diets are one of the leading causes of death and disability worldwide (Abbasfati et al., 2020; Murray et al., 2020). Healthy eating policies have been enacted across multiple community settings, such as workplaces, schools, and healthcare. Although many healthy eating policies include in-depth nutritional science aspects such as specific nutrient criteria using nutrient profiling systems to guide which foods to sell more or less (Rosewarne et al., 2020; Swinburn et al., 2013b), an important recent development in healthy eating policies is the focus on building supportive food environments. For example, the literature suggests that community organizations such as schools and recreation centres have increasingly adopted healthy eating policies that include food environment restrictions for

advertising less healthy foods (e.g., chips, candy bars), and guidance around fundraising (Ni Mhurchu et al., 2013).

A review of jurisdictional policies conducted in Australia by Rosewarne et al., (2020) found seven examples of healthy eating policies implemented within healthcare focused on the food environments, and determined that these policies contained a range of novel environmental benchmarks and indicators, such as selling foods high in certain nutrients (e.g., salt, sugar), however, lacked guidance for organizations and organizational practitioners on implementation, monitoring, and evaluation. Furthermore, how healthy eating policies are implemented in the everyday practice of healthcare practitioners remains unknown. An examination of healthy eating policy implementation is important to better understand how health promotion is integrated into organizations.

The purpose of this paper is a qualitative study of organizational healthy eating policy implementation taking place in the healthcare retail environment, a setting where food and beverages are sold to staff, visitors, and patients, and focusing on the lived experience and active sense-making of the everyday policy environment by healthcare practitioners at different levels of the organization, from the frontline to senior management. Using street-level bureaucrat theory from organizational studies of public policy, we conducted a series of in-depth policy key informant interviews with practitioners working in retail food services are interacting with clients who are considered outside the organization (e.g., patients, community members), as well as those interacting with who we might refer to as fellow street-level bureaucrats (e.g., nurses, dietitians, physicians) in an organizational context. In addition to health practitioners grappling with their own interpretation of the policy, they are also therefore interacting with fellow practitioners who have their own interpretations of the policy. Practitioners within this setting



have more than likely received health training in their respective health field, which may or may not have touched on diet and nutrition, therefore potentially influencing their interpretation of the Healthy Eating Policy.

The primary objective of this study was to explore the street level bureaucrat's implementation of the Healthy Eating Policy within an organization prioritizing quality improvement, and second, to understand these relationships between fellow street-level bureaucrats. The next section of the background provides a foundation for the empirical examination to follow, by introducing two areas of organizational social theory important to this study: street-level bureaucrats and the concepts of discretion and policy networks; and quality improvement, a major approach to the development of effective professional practice in healthcare organizations.

### Street-level bureaucrats

Healthcare is a bureaucratic system with organizational rules and policies (Mintzberg, 1983). Based on the public administration studies of Lipsky (1980), street-level bureaucrats are the public agents working at point-of-care in large organizational and administrative contexts who implement policies, typically employed in frontline positions in health and social care, such as nurses, police officers, and teachers (van Hulst et al., 2011).

A defining feature of Lipsky's street-level bureaucrat is how they use discretion in practice as they adapt top-down policies and implement them based on individual client or broader community need. In a sense, street-level bureaucrats are de facto policymakers, as they action out the policy in their work and shape the policies and institutions where they work (Lipsky,

1980; Thomann et al., 2018), effectively becoming what Lipsky referred to as the face of policy for those outside the organization.

In addition to implementing top-down policies, Thomann et al., (2018) studied the importance of discretion in practice in street-level bureaucrats' everyday work, and how it allowed street-level bureaucrats the freedom to tailor policies to communities, operating from a bottom-up implementation model (Thomann et al., 2018). Discretion is necessary since policies on paper play out differently in practice; however, street-level bureaucrats do not function independently and are part of networks of decision-making. Street-level bureaucrats may work independently and autonomously as they implement policies, but they also build networks horizontally and vertically, known as micro-networks (Hupe and Hill, 2007; Keiser, 2010).

Horizontal connections may include partnerships with people outside of the organization. A study by Cohen & Cohen (2023) examined street-level bureaucrats' partnerships outside the organization, stating part of their necessity was when formalized networks were no longer effective. Street-level bureaucrats also build vertical networks within the hierarchies of the organization (e.g., from front-line to managers and directors). The process of communicating this information back and forth between levels is known as bi-directional translation and can be difficult if the two networks communicate differently (Yanow, 1996, 2004). Part of the role of the street-level bureaucrat is to communicate the information in such a way that it makes sense within both types of networks.

A potential third network is with fellow street-level bureaucrats, or people within the organization (Lotta & Marques, 2020). Lipsky discussed this in his original book and described how practitioners' relationships with their fellow street-level bureaucrats can result in putting their 'best foot forward' knowing their work will be viewed by others with similar roles and

credentials (Lipsky, 1980). The influence of the perceptions of others was confirmed by Keiser (2010), who in a survey of social security offices, found that street level bureaucrats were heavily influenced by the perceptions of actors in other departments (within the system) even without high levels of interaction. An important topic that remains underexplored are these parallel networks between fellow street-level bureaucrats.

### Quality improvement

Defined as a science of *people* and *process*, quality improvement for health promotion in healthcare is the “structured organizational *process* for involving *personnel* in planning and executing a continuous flow of improvements to provide quality healthcare” (Sollecito & Johnson, 2012, p. 40). Originating in industrial organizations, healthcare has embraced quality improvement for several decades now and its expectations are outlined in national accreditation standards, institutional mandates, or organizational policies to improve care, also known as the healthcare ‘Quintuple Aim’ (Itchhaporia, 2021). The overall goals of the Quintuple Aim include improving patient experiences, worker health, population health, health equity and lowering healthcare costs (Itchhaporia, 2021).

Quality improvement is often a feature of entire teams dedicated to advancing quality improvement in healthcare and improving the quality of care for patient safety, medical errors, hand hygiene and length of patient stay (bed management) (Batalden & Davidoff, 2007). Quality improvement frameworks are intended to encourage practitioners from frontline to executive roles to de-emphasize individuals in systems and place an emphasis on self-study in practice, as well as investigating processes and systems, by continuously collecting and studying data to improve interventions, programs, or initiatives. The widespread uptake of quality improvement among healthcare organizations may have implications for the tasks of a street-level bureaucrat.

Further understanding the relationship between quality improvement and the active sense-making in practice by those conceived of as ‘street-level’ could shed light on health promotion policy implementation (Sollecito & Johnson, 2012).

### Context: Healthy Eating Policy, Nova Scotia Health

Nova Scotia Health (NSH) is a provincial health authority in Eastern Canada, providing services for over 1 million people and employing over 24,000 employees in the province of Nova Scotia (NSH, 2022; Statistics Canada, 2019). In 2018, NSH implemented a novel organizational Healthy Eating Policy, emphasizing the organization’s role in supporting healthy food environments (Kennedy et al., 2020; NSH, 2018). This policy requires that healthy food options be available, affordable, and promoted throughout retail services, inclusive of fundraising and catering events. Although the policy pertains to the organization, the daily operations of retail fall under the purview of the Nutrition and Food Services team.

Nutrition and Food Services is a provincial team divided into four management zones (Central, Eastern, Northern and Western). The teams within retail consist of managers, supervisors, administrative dietitians, and point-of-sale workers. In light of the policy, the team implemented a healthy retail intervention, *Snacking Made Simple*, that reduced the price of five healthier snack options and increased the price of five less healthy snack items (Mah et al., 2023).

## **8.3 Methods**

### Study Design

This study comprised semi-structured qualitative policy key informant interviews with 12 Nutrition and Food Services staff at NSH. Inclusion criteria included full-time staff aged 18 years or older, employed for at least three years within Nutrition and Food Services at NSH. The participants worked in point-of-sale (n=5) and administration roles (e.g., managers, directors) (n=7). Years of employment ranged from less than 1 to 5 years (n=3), 5 to 10 years (n=3), 10 to 20 years (n=1) and greater than 20 years (n=4). Participants worked in rural (n=7) and urban (n=3) areas of the province. Most of the participants (n=9) had a dietetic background or formalized training in dietetics. The remaining participants had high school and college level education. Participants did not receive an honorarium for their contributions. The majority of participants identified as women (n=11) and one as a man (n=1).

#### Data collection

Semi-structured, audio recorded interviews were completed by the lead author (LJK) from January to June 2023. Interviews are used in qualitative research to explore the lived experiences of participants in their everyday life (Kvale, 1996). The interview guide was informed by a literature review and policy scan of healthy eating policies in Canada (Kennedy et al., 2021). This study used a snowballing recruitment approach, a type of purposive sampling that occurs when the researcher frames the selection of information-rich experiential data by asking participants to identify others who have similar roles and knowledge (Palinkas et al., 2015). Interviews lasted between 45 and 80 minutes.

#### Data coding and analysis

LJK transcribed interviews verbatim. Interviews were uploaded to NVivo (Release 1.7.1) for coding. This study used directed content analysis to code and interpret data. Directed content analysis starts with theory and codes being defined before and during data analysis. This analysis is iterative in nature using both deductive and inductive coding methods (Assarroudi et al., 2018; Hsieh & Shannon, 2005; Humble & Mozelius, 2022). An initial code book was created using pre-existing literature (deductive). After the initial round of coding by LJK the codebook was revised (inductive). Sequential coding followed. Observer notes were also coded using the same codebook. A second coder analyzed a random sample of 10% of the transcripts; LJK and the second review met to discuss codes. This was done not to reach a consensus but to discuss the meaning of the findings.

### Insiderness

LJK is an insider, both an employee of NSH and member of the HEPSC. LJK is known to many of the participants and built trust during the interview process. LJK also has institutional knowledge which they used during the analysis of the interview findings. This insider status likely introduced bias into the findings. However, LJK engaged in reflexivity (e.g., memo writing and journaling) to consider these biases and their influence in the research (Birt et al., 2016). LJK also engaged in peer debriefing with colleagues to discuss these biases and their potential influence (Amin et al., 2020) and member checking, with a second researcher coding a random sample of results (Birt et al., 2016).

### Institutional Ethics

This study received ethics approval from NSH (REB # 1028236)

## 8.4 Findings

### How bureaucrats allocate resources: Trade-offs between inpatient meals and retail food services in healthcare

The participants in this study are all policy practitioners within the healthcare setting, with most also identifying as healthcare practitioners with some kind of formal health professional training, in this case, dietetics. All participants were members of the healthcare organization's Nutrition and Food Services program team, making them each responsible for some part of service delivery either within one area (e.g., point-of-sale cafeteria staff), or for more senior practitioners, overseeing multiple service areas such as in-patient and retail food services.

Participants involved in more than one service area discussed their inpatient responsibilities as the tasks they did first thing when their day started, and those typically requiring their core dietetic professional expertise. Examples included entering overnight admission diets and printing off inpatient dietary lists for those delivering meals to inpatients; as one participant described:

*"I would print off a diet report because our food service workers go up and take patient meal orders, and they have to divide that up [make sure patients get seen their meal orders in] and, then usually a lunchtime it's making sure they're all set up for lunch"*

*(Participant #10, admin dietitian)*

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*"I start my day with making sure we're staffed, always first thing I go and do some reports just running [inpatient] diets and allergies making sure nothing conflicts... but then periodically throughout the day as each meal services I also go and see the retail*

*space in the cafeteria making sure they're all running.” (Participant #12, retail supervisor)*

In other words, these participants described a kind of priority-setting in practice where they tended to attend to inpatient tasks first. However, they also explained that a shift in their practice had occurred under the new Healthy Eating Policy, where greater accountability in their practitioner role was given to retail foodservices, and taking a broader view of the range of food environments for which they were responsible. For example, participants discussed instances where they felt comfortable ensuring that the retail foodservices under their supervision were supported to stay open. One participant discussed this change as a designating a specific human resources (staffing) role for retail that would remain in retail, even if there were sick calls or absences throughout inpatient areas—resources might have been diverted to inpatient priorities in the past, but this was now less likely to be the case.

*“Financial accountability used to be the number one accountability in the cafeterias, and now it’s about [healthy food] availability, which means being open... it used to be the case... if you were feeding the patients and you had a cafeteria and somebody didn’t show up for work you would close the cafeteria, you would pull that person over, and you would feed the patients. That’s no longer the expectation from our leadership.”*

*(Participant #3, manager)*

Participants explained a substantive shift in organizational practice expectations to keep retail services open, by no longer pulling staff from one service to another. In healthcare foodservices and nutrition, staffing resources are often shared between retail and inpatient services. However, working in retail has become its own designated position in the organization, with staff referring



to themselves as “cafeteria workers” (Participant #11, point-of-sale). As explained by another participant:

*“If we’re full staff, I just do that kind of work [retail]; if we’re not full staff, I try to do my job and work out in the kitchen to help deliver food to the patients and stuff until they can get fully staffed.”* (Participant #6, point-of-sale)

In other words, participants saw ‘retail work’ as their healthcare work. Moreover, formal organizational leadership was named as a catalyst behind the shift in how resource-allocation decisions could be made. Making retail services accessible as well as affordable as a part of the holistic healthcare food environment was identified as a priority for leadership. In addition to food access, participants noted an emphasis placed on affordability. For example:

*“They [leadership] want our cafeterias and coffee shops to be open; they want people to be able to access comforts like coffee and tea along with nourishment, and they want that to be affordable.”* (Participant #3, manager)

Two objectives (accessibility and affordability) frequently mentioned by participants aligned with the Healthy Eating Policy. Participants explained how the policy guides the organization’s approach to healthy eating in practice, including its values and objectives regarding healthy foods, which were now viewed as part of the larger objective of being supportive of a creating a healthy food environment, as one participant states:

*“... [the purpose of the policy] that is creating a supportive environment for healthy eating that extends way beyond what we provide the patients, what we have in the vending machines, what’s in the cafeteria, is how do we create that culture among people*

*who work in our organization and who utilize the services of our organization”*

*(Participant #2, director)*

### Consider multiple aspects of context

Participants described various aspects of organizational context that they needed to navigate in practice while implementing the Healthy Eating Policy, including staff knowledge, preferences, and concerns. The Healthy Eating Policy had ushered in a transition to removing all third-party foodservices vendor contracts from the health authority, in favour of food prepared on-site which could be more closely tailored to nutritional and health aims, however, some regional organizations in the health authority had ‘grandfathered’ existing vendors with shifts towards in-house food preparation occurring stepwise over time. One hospital site had changed foodservice vendors (from a third party to NSH) at the beginning of the COVID-19 pandemic. This change in vendor led to some change and upheaval in the retail environment, as reported by participants in our study. Participants explained how the practitioners needed to consider both contextual aspects (food preference and price) of food selection in their service areas, in addition to the nutrient composition of the food. To hear further from staff about unwanted or desired changes and their impacts, one participant (a manager) held focus groups:

*“And so that’s really where [focus groups] I learned a lot about providing access and providing choice and making healthier things an easier choice versus restrictive eating...we still sell bacon at breakfast time, and we make bacon breakfast sandwiches, but we also make just egg and cheese breakfast sandwiches on whole wheat English muffins. All of them are on whole wheat English muffins, but we deal, but the egg and*

*cheese are significantly more economical than the ones with bacon, and if you want to buy bacon on its own, it's like a dollar a strip"* (Participant #9, director)

The Healthy Eating Policy referenced a nutrient criteria outlining foods to serve more and less. This created space for ambiguity within the policy and space for participants to exercise their discretion and interpret the policy. Participants in particular considered the food culture of the region and the meaning certain items held for the community. One retail site recognized the importance of sugar sweetened beverage to the community and spoke about this as culture, for example:

*"It's just different, whereas at the [specific hospital] we have not even been able to fully eliminate sugary beverages, so there is a very different culture across the zones in different areas."* (Participant #9, director)

In addition to site context, practitioners considered historical context as relevant to their decision-making. A previous approach to healthy eating programming at the organization had been focused mainly on nutrition and offering healthy food only. Practitioners expressed worry that nutrition would be the only focus and interventions would be implemented without considering other important aspects of context, such as the evolving community food environment and food culture. For example, one participant spoke about their negative experience with French Fries, going from fried products to baked, and the loss of revenue. One participant said:

*“...their past experience with that [healthy eating] had only been negative, taking French fries that used to be deep fried and then putting them in the oven ... that they sold less French fries, and they were really worried for that.”* (Participant #3, manager)

There was also recognition of a food environment outside of healthcare to consider. As an urban hospital campus, many healthcare retail foodservices outlets at the organization are in community neighbourhoods situated next to restaurants, cafes, food trucks, and readily within access to virtual delivery services (e.g., UberEats). One participant described the potential need for an audit tool for their practice decision-making, capturing the external food environment, in order to better understand their local internal organizational sales data. Participants used this contextual information to interpret the ‘why’ for ‘what’ is or isn’t selling, highlighting that sales are influenced by myriad other factors outside of the direct control of the practitioners involved, or even external to the organization.

*“...what I make my cafeteria person do is I made a sheet. [I write down if there was a food truck that day, ‘maybe that’s why you were dead,’ but then that helps with then it doesn’t misinform me ‘oh we’re not busy on those days anymore’”* (Participant #12, point-of-sale)

### Incorporating and translating local knowledge

The Healthy Eating Policy provided guidance to practitioners in our study for creating supportive food environments while leaving considerable room for interpretation, suggesting that the discretionary parts of their practice were at the forefront of their everyday works. This occurred at all levels of practice, from the point-of-sale cafeteria staff to senior managers. Several participants reported frequent examples of implementing changes on-the-spot, based on

customers' preferences. For example, one point-of-sale staff recalled an experience where a director and point-of-sale practitioner had worked together to establish a grab-and-go fridge containing take-away snack items (e.g., trail mix) for healthcare staff frequenting the hospital cafeteria. The majority of customers were internal to the organization, fellow health practitioners and shift workers, who needed quick-to-purchase snacks due to break schedules and fast paced work environments. In addition to being located in an easy-to spot fridge, the grab-and-go service in the cafeteria presented nutritious food items prepared on site, but pre-packaged in serving sizes and containers which staff could consume readily as packaged foods, such as opening and closing an item easily so that they could eat the food at their desk or leave it unfinished at the nursing station. This innovation was described by participants as:

*“You could just grab your carrot sticks or the trail mix, or the that’s [fridge] where we keep our yogurt and our cheese pieces, overnight oats, so all that stuff’s done up in little containers. They don’t have to wait. They just come in, grab it outta the fridge and on their way, they are to the cash register.”* (Participant #6, point-of-sale)

Participants used a depth of local knowledge, as well as discretionary aspects of their practice to implement changes to routinely offered products based on evolving customer needs for more convenient and take-away items. This knowledge exchange between participants and other healthcare staff seemed to occur bi-directionally, with feedback loops among the practitioners evolving the practice. In addition, we noted an integration of both horizontal and vertical sensemaking within and outside the team, from joint efforts between directors and point-of-sale workers, as well as customer-driven (convenience) alongside leadership driven (healthy food availability) changes. Point-of-sale workers explained how they had incorporated local knowledge into their daily decisions using local data they received through other healthcare staff

and leaders through iterative cycles of local knowledge exchange. This was done through informal and formal networks. One participant discussed changes to how they marketed products based on intel from a staff that students would be arriving at the hospital, saying: *P: "So one of the head nurses was just e-mailing me ... next week we're getting a bunch of NSCC students I: ...and you could have potentially a whole group of new customers? Yes."* (Participant #12, point-of-sale)

We saw the multi-level network of decision-making further explored in a quality improvement healthy pricing intervention called Snacking Made Simple. Lacking a routine way to readily explore the detailed sales performance of individual food items, the Nutrition and Food Services team had conducted a short internal organizational survey to determine why healthier items were or were not selling well. Staff responses highlighted their perception that healthier items were too expensive. This led to a retail intervention altering the prices of five healthier snack items, and five less healthy snack items, alongside price salience merchandising to encourage healthier purchases. This issue of pricing and affordability resurfaced again a few years later during the pandemic, as senior leadership debated the rising inflationary input costs, and yet decided not to raise retail foodservices prices for staff. As one manager explained, this decision was supported from the highest levels of the organization (executive), noting,

*"We see more and more now our leadership coming down and really saying I know that food has gone up in price ... I understand that you want to raise your prices, but we want food to be accessible to the people who use our services. We understand that Nova Scotians are paying more for their groceries when they go in the grocery store, but we don't want them to have that same experience when they go into the cafeteria."*  
*(Participant #3, manager)*

### Staff as ambassadors inside and outside of retail spaces

Participants saw the Nutrition and Food Services program and themselves as organizational ‘ambassadors’ for carrying out the main objective of the policy, to build supportive food environments. One participant described the role of the Nutrition and Food Services program as being a symbolic or normative representative for the Healthy Eating Policy, stating:

*“[Nutrition and Food Services] see our role as being really that ambassador or building that environment that supports our customers or clients making healthy choices. So, our goal is to put as many healthy choices in that environment so that the decision making is a little bit simpler for folks...and it normalizes I think, healthy eating.”* (Participant #2, director)

In this instance, the ambassador is described as Nutrition and Food Services, with the norm of creating supportive food environments, in contrast to the choice, per se. Other participants mentioned a certain practitioner as an individual champion or ambassador behind the policy, and explained how other practitioners would see this individual as the go-to person for questions or ideas about how to solve practice problems, for example:

*I:” ... how do you decide what products to put at eye level and which to put on bottom shelves... how does that work?” P: “Sometimes it comes through [the senior director] , I guess, through like a provincial group, so they provide, I know, when I started, we did a lot of work around pricing and placement.”* (Participant #8, manager)

The dual function of ‘ambassadorship’ as both program and person-level descriptor, suggests that perhaps participants did not view themselves as personally championing the Healthy Eating

Policy, but rather, that the Healthy Eating Policy was a part of the organization as a whole. When further exploring this concept of championing the Healthy Eating Policy, participants identified several healthy eating areas of influence well outside of the physical retail space of the organization. Participants frequently discussed the cost of food as a broad social issue faced within and outside retail services. For example, one participant identified societal factors influencing the pricing of products within retail and outside of retail, stating:

*P: "That term 'access' and 'accessibility' to food, I think, means something different than when we rolled out some of those initiatives a couple of years ago." I: "In what way?"*

*P: "In the sense of the cost of food and the ability to afford food...there was a stigma around maybe people that were much lower class than what that means for people today that are middle class or - work full time make a decent living wage but cannot afford food" (Participant #9, director)*

Healthcare workers experience high workloads and stress during their jobs. Participants discussed how their co-workers from across the organization, would arrive at the cash register looking like *"they've had a day"* (Participant #6), or presenting challenges to the practice of point-of-sale staff who were in most frequent face-to-face interactions with their co-workers. One participant saw the struggle between work-life balance and used her discretion to offer personalized care in practice, packing brown paper bag suppers and snacks for staff workers and their children. As she described,

*"You know, sometimes people will get veggie cups and take home to their kids if they're going to hockey or whatever, or they'll buy a salad. I have brown paper bags lots of times. I'll pack lunches for them. They'll buy a sandwich and a little salad, and you know,*



*a container of milk, and I'll put it in a brown paper bag for them because their kid's going to hockey in a hurry, so they need to pick their child up from school and then get on the road. It's better than going to Subway or MacDonalds on their way to [town] or wherever you're going* (Participant #6, point-of-sale)

In other words, participants saw a role they could play in co-worker care, as healthcare staff left the workplace and returned home to their families, providing healthier options than accessible community alternatives.

Ambassadors, sometimes referred to as 'champions', a common term in healthcare quality improvement, were identified as the "easy-to-work with", inspiring practitioners who lead or spearhead policy implementation in novel ways. They were also seen by peers as the "go-to" people when it comes to policy implementation practice. The HEPSC was a formalized working group that also guided the future direction of the policy, and in particular where 'policing', enforcing the policy, was raised and discussed negatively: as a non-discretionary or relatively rigid and formalized approach to policy implementation practice. Participants referred to the term "food police" countless times as a role they wanted to avoid, "*We didn't want to be the food police, right?*" (Participant #2, director). Policing was associated with monitoring, and often focused on the nutritional composition of food items.

## **8.5 Discussion**

This study used street-level bureaucrat theory and an in-depth qualitative study with key informants from healthcare health promotion practice on an organizational Nutrition and Food Services team to advance our understanding of how practitioners implement healthy eating policies, within healthcare organizations prioritizing quality improvement. These results

demonstrate a shift in priorities and guidance from leadership to make food more accessible and keep retail spaces staffed, as well as practitioners adjusting practices to specific contexts, in ways that illustrate their organizational adoption of quality improvement strategies, but also highlights the myriad forms of discretion they apply to solve problems, practical and interpersonal.

Although the community food environment was sometimes introduced as a negative external cultural influence on organizational practices (e.g., delivery services), our study has also highlighted how the practice within a healthcare organization can extend to impacts well outside (e.g., healthy paper-bag take out options for fellow health workers). This contributes to the purpose of the Healthy Eating Policy, building supportive food environments, as staff aimed to influence the food environment inside and outside the hospital.

#### Policy implementation and quality improvement

Triaging occurs when specific resources or populations are prioritized over others as a mode of organizational practice (Lipsky, 1980). Practitioners in this study had learned to negotiate their responsibilities regarding policy implementation with limited resources and make decisions to optimize these resources, such as when participants decided to priority-set between inpatient and retail tasks, or conversely, did not have to priority-set where health promotion trade-offs were already integrated into the principles of the policy. One possible explanation for such triaging could be due to pre-existing beliefs and values regarding the healthy eating policy, with retail and health promotion activities being viewed as secondary in healthcare to inpatient services (Keiser, 2010; Meyers & Vorsanger, 2003), or could be an indicator of how practitioners were still evolving new practices in response to the shifting imperatives that the Healthy Eating Policy might offer (e.g., not needing to automatically re-staff from retail to inpatient services).

An alternative explanation for triaging could be the legislative remit (or macro-level influences) on healthcare delivery outlined in overarching policies governing healthcare. Unlike clinical care, public health systems have few standards in Canada and there remains no formal legislative jurisdiction guiding hospitals on health promotion efforts (CPHA, 2022). This could explain the triaging of street-level bureaucrats as a coping mechanism so that participants could focus on more concrete tasks and avoid open-ended tasks (Lipsky, 1980; Lotta & Marques, 2020). This aligns with the findings of Nugus et al. (2018), suggesting that multiple aspects of organizational contexts structure the behaviour of practitioners, therefore, policy implementation. This is not to say that national legislation is the panacea; a systematic review by Sfantou et al., (2017) regarding quality improvement vis-à-vis contextual factors emphasized the importance of transformational leadership when leading teams to engage in quality improvement (Sfantou et al., 2017). Our study demonstrated numerous examples of steady progress in ways that leaders were influential to allocate resources and expressions of organizational support towards health promotion goals, even tweaking those resources as staff gained further insight into these new practice decisions (e.g., assigning staff to retail positions; not necessarily increasing cafeteria prices in response to external inflation). National standards could provide guidance and direction for health promotion in healthcare but still requires leadership at the organisational level for success.

Benchmarking is crucial for quality improvement and improving the status quo (Ettorchi-Tardy et al., 2012; Klazinga et al., 2011). While there were few defined standards for health promotion, there was evidence of cultural shifts in our empirical study, seen in the increasing priority given to retail staff and the staff implementing changes within the retail environments. This shows alignment with Ettorchi-Tardi's (2012) definition of benchmarking as a process (to

challenge the status quo), more so than benchmarking as outcome monitoring. Building standards for health promotion within healthcare could provide more precise goals for practitioners to work towards and facilitate more outcome monitoring (Swinburn, et al., 2013b). However, based on street-level bureaucrat theory, it should be anticipated that practitioners will nonetheless implement these standards by using discretion and adapting them to meet the specific context. This aligns with CQI research as well, critiquing that standards may need to be adapted to local contexts and local knowledges (Reponen et al., 2021). Practitioners may need to consider food culture and past organizational policies when implementing healthy eating policies, similarly to that found in other settings, such as schools (Chote et al., 2022; McIsaac et al., 2017). Standards must be adapted to local settings and consider the internal and external contextual factors for policy implementation.

#### Interactions with street-level bureaucrats

‘Policing’ policies, in this study, a particular non-discretionary form of enforcement, was viewed in a negative light. Participants did not feel comfortable ‘policing’ the policy. de Boer (2019) outlined three enforcement dimensions corresponding to the variety of ways in which discretion can or cannot be applied. Firstly, the policy is upheld and applied formally (first dimension). Second, the practitioners provide information and explain the policy rules (second dimension). Lastly, practitioners accommodate the policy rules based on particular situations (third dimension) (de Boer, 2019). In this study, there is evidence of all three types of enforcement. The variety of dimensions is another example of practitioners exercising discretion and using their experiences to determine the type of enforcement to apply and considered that some aspects of the policy might be implemented differently in different contexts (Akosa &

Asare, 2017; Nugus et al., 2018). This issue of policing sheds light on how the participants relate to one another and the priority of maintaining relationships (Bloomquist et al., 2021).

According to street-level bureaucrat theory, practitioners interact with community members (outsiders) to gain local knowledge that is passed up to higher levels of bureaucracy (Cohen & Cohen, 2023; Lipsky, 1980; Yanow, 2004). In our setting the community member or customer, was a fellow insider (e.g., nurse, doctor, social worker). These customers engaged in focus groups and interacted with managers, e-mailing them directly about their concerns, questions, and complaints, meaning they didn't have to rely on the street-level bureaucrat to translate local knowledge up to higher levels of bureaucracy. Customers were described as having insider knowledge to navigate bureaucratic channels and could communicate upwards using the organizational language. Direct access and contact with practitioners could facilitate local knowledge being incorporated within the organization and build on our understanding of bi-directional translation (Yanow, 2004).

These findings speak to practitioners navigating healthcare bureaucracies, described by Weber (1949) as hierarchical organisational structures characterized by laws, policies, protocols, and procedures. Customers, described primarily as staff, were insiders to the organization, and knew how to navigate communication channels to advocate for certain changes or preferences. (van Hulst et al., 2011). Exemplary practitioners, specifically frontline workers, are described as people who are dynamic and react on the spot to the situations in front of them. van Hulst et al., (2012) studied exemplary practitioners in five Dutch cities, using informant conversations as well as fieldwork (e.g., observations) and found that these practitioners exemplified entrepreneurialism, strategic networking, and empathetic engagement. The motivations for their work included empowerment and redistribution of resources, and in order to do so they would

persuade bosses or use one's personal resources to bend rules (Maynard-Moody & Musheno, 2003). This navigation of bureaucracy could be individual, with more motivated staff speaking up, or due to the close personal relationships with managers and directors. It does pose the question that without this insider status would the same type of navigation occur? Based on street-level bureaucrat theory, these findings may suggest that community members (outsiders) are not as easily able to navigate the bureaucratic channels to evoke changes in healthcare. One possible avenue to facilitate feedback is with patient advisory representation, which provides a voice to patient concerns in healthcare (Willard-Grace et al., 2016).

## **8.6 Implications**

Health promotion in hospitals provides opportunities to work upstream, contributing to the wellness of staff, visitors, and patients. Future studies can keep in mind that the primary customer in healthcare health promotion settings are fellow healthcare staff, who are street level bureaucrats themselves, meaning that essential to an understanding of health promotion practice is how practitioners navigate bureaucracy and form horizontal as well as vertical networks within their own organizations. Healthy eating policies focused on the food environment can have impacts beyond the hospital environment. Future studies can explore the impacts of health promotion within hospital beyond diet and nutrition. Lastly, this study echoes the calls for public health standards across healthcare systems. The current ambiguity in health promotion standards may contribute to difficulties for street-level bureaucrats to focus on specific goals and measure outcomes. Building up health promotion benchmarks, that are flexible and shy away from policing, could provide further insight into progress and improvement over time.

## Strengths and Limitations

This study adds to our understanding of quality improvement and healthy eating policies implemented within healthcare, applicable to policy researchers and healthcare administrators. This research used in-depth interviews to explore the practices of retailers working in hospitals.

This research included participants across Nutrition and Food Services with diverse roles in retail settings (e.g., administrative dietitians, point-of-sale, managers). This recruitment strategy aligns with CQI theory to involve staff across the organization in change processes.

One potential limitation is that our recruitment strategy introduced participant bias, where we likely recruited people who are most passionate about this work and had positive experiences to share. We did not recruit employees who had retired or left the organization who may have more negative experiences or critiques. To mitigate this risk LJK asked questions about challenges when conducting CQI meant to draw out the difficulties that arise.

At the time of the study the interviewer (LJK) was an employee at NSH and was a member of the Healthy Eating Policy steering committee (2019 – 2024). This insider status provided insight into the conceptualization and implementation of the policy. LJK was known to many of the participants and established trust during the interview process. However, insider status can introduce (researcher) bias and reduce objectivity in interpreting the outcomes of research. To limit bias, LJK discussed findings and meaning with members of the Food Policy Lab at Dalhousie University during peer debriefing and member checking (Amin et al., 2020; Birt et al., 2016).

A strength of this study was the novel application of street-level bureaucrat theory to explain some findings about health promotion practice interactions with fellow street-level bureaucrats. To date, this theory does not account for the changing structure of healthcare organizations and

governance (e.g., centralization/decentralization of health authorities), however, or critical/crisis-specific external factors influencing street-level bureaucrats' efforts (COVID-19).

## **8.7 Conclusion**

Healthy eating policies must be flexible and implemented based on local context, keeping in mind past policy experiences. Context matters to practice and how healthcare practitioners tailor the policy through the active application of discretion during implementation to fit their practice settings. The results of this research demonstrate a shift in priorities guided by the new Healthy Eating Policy as well as how more formal organizational guidance from leadership was necessary. Practitioners can consider using multiple networks (horizontal and vertical) to incorporate local knowledge into practice and optimize multi-directional organizational communication. Even without health promotion benchmarks, staff can engage in quality improvement initiatives to challenge the status quo and improve food environments. Research can continue to study policy implementation overtime to understand how practices changes as hospital priorities shift in hospitals towards more health promoting missions and values.



## CHAPTER 9 DISCUSSION

This dissertation found that healthy eating policies for healthcare organizations supported healthy eating environments and included varying benchmarks for nutrient criteria. Likewise, the perspectives of quality improvement for healthy eating involved a cultural shift in the definition of healthy eating that encompassed ideas including nutrients and food environments. The environment contained physical, social, and cultural aspects, thus adding complexity and presenting as a setting within a setting: food environments within a healthcare settings. Healthy eating policies demonstrated other benchmarks as well, such as for price, promotion, and fundraising. Participants used PDSA cycles to “try new things” and explore other aspects of food environments, like convenience, price and cost. Facilitators of conducting CQI included the policy, champions, leaders, and partnerships, while barriers included the nutrient criteria, time, resources, and negative past experiences. The practitioners conducted CQI in their various roles (e.g., retailer, manager, entrepreneur) and our results showed a shift in priorities from in-patient to retail services coming top down from leadership. Participants used their local knowledge and adapted the policy to specific contexts, while refraining from policing the policy to prioritize interpersonal relationships with other coworkers.

One of the key findings of this dissertation is that the NSH Healthy Eating Policy acted as a guide for practitioners in a dynamic way in practice, as the meaning of healthy eating shifted from specific nutrients to healthy environments within this healthcare organization setting. This aligns with other findings that strategic and long-term policies support individuals as they are conduct quality improvement (Bailie et al., 2017; Coles et al., 2020; Gardner et al., 2010) and can shift perspectives and language pertaining to health

promotion, as demonstrated by Kryzanowski et al., (2019) as they measured an increase in counts for language regarding health equity and cultural safety following CQI initiatives. The shift in an organizational understanding of health promotion for healthy eating from individual behaviour to environments reinforced in the policy supported practitioners to explain why many of the interventions did not target individual food items but aspects of the food environment such as convenience, hours of operation, affordability, and placement. Other health promotion CQI studies examining the response to food retail environment policies among practitioners has referenced policies and strategic initiatives, further reinforcing the idea that policies are not only guides but something to lean on as organizational practitioners implement interventions (Tinney et al., 2022).

According to the Inside out model, individuals use their autonomy and influence to support policies (Golden et al., 2015). This dissertation advanced our understanding of CQI policy practices by demonstrating that individuals in various roles throughout retail conducted CQI innovations guided by the Healthy Eating Policy. These practitioners, sometimes referred to reflexively or by others within the organization as champions or ambassadors, were not specific to formal positions or roles, but were rather, active “go-to” practitioners, and ranged in organizational position from senior director to point-of-sale staff. This is reflective of how champions have been identified as facilitators for implementing healthy eating policies in other health promotion settings, such as schools (Kirk et al., 2021).

In our study, furthermore, practitioners took on many roles corresponding to their problem-solving situations in practice in the retail setting. Erving Goffman has described policymakers as “actors” who present themselves differently based on their settings

(Goffman, 1974). My dissertation research found that practitioners acted as administrators, retailers, ambassadors, colleagues, entrepreneurs, and innovators, depending on the setting, and under the auspices of the same Healthy Eating Policy. These practitioners were dynamic in how they presented themselves, acting as exemplary practitioners thinking on the spot and responding to current events based on different “roles”.

Benchmarks in other policy scans and analyses show variation across policies, noting varying benchmarks for nutrient criteria, promotions, placement, catering and fundraising. As the policy analysis in this dissertation demonstrated, healthy eating policies differed in benchmarks. One possible explanation for this is that there are no national standards for health promotion in healthcare food environments in Canada, or health promotion more broadly (CPHA, 2022). This policy positioning aligns with Ettorchi-Tardy’s definition of benchmarking within quality improvement as, rather, shifting conversations to invoke cultural changes (Ettorchi-Tardy et al., 2012; Kennedy et al., 2021). This does not dismiss the need for quantitative and qualitative data to examine interventions and other types of benchmarks, such as the healthy eating audit, but expands on the concept of benchmarking to show a more comprehensive picture of what the policy is trying to achieve: *shifting culture*, in healthcare *process*. This dissertation demonstrated that a mix of qualitative and quantitative data, measuring other aspects of the food environment (e.g., promotions, placement, convenience) could provide additional insight into shifts from healthy eating to healthy environments especially as new benchmarks are being explored. That being said, this dissertation also found that any new benchmarks ought to draw from the local knowledge of organizational practitioners in ways that meet the unique context of each healthcare setting. This idea that “context matters” has been explored in several other

health promotion policy implementation studies within schools and recreation centres (McIsaac et al., 2017, 2019; Olstad et al., 2012), as well as systematic reviews exploring contextual factors of CQI (Coles et al., 2020; Reponen et al., 2021). Across these studies, a body of evidence is emerging that given the emphasis of modern health promotion on supportive environments, local contextual data from point-of-sale workers is paramount because they have their pulse on what is actively happening in the environment and what their main customers need—including those who are fellow healthcare staff.

Unlike other studies, this dissertation revealed aspects of how certain benchmarks that have been encouraged in nutrition promotion, such as nutrient criteria, acted as a barrier in specific contexts and in the course of problem-solving, causing staff to get ‘stuck’ on the specific nutrients rather than the food environments as a whole. The findings in this dissertation thus highlight the potential barriers that policy adjacent documents may create, which has not been explored in other literature, where nutritional guidelines and policies had only discussed in light of their benefits as a facilitator (Kirk et al., 2021; Rosewarne et al., 2020). This could furthermore explain why some practitioners in our study referred to other practitioners in the organization (e.g., dietitians) as ‘health people’, implying they did not see themselves as such. This reliance on a profession to interpret the policy documents could become problematic given health promotion principles. For example, at NSH, the Steering Committee promotes the Healthy Eating Policy as an organizational policy and not as a departmental policy; CQI frameworks also suggest that shifting away from accountability patterns directed towards specific individuals towards systems and process is essential for success (Ettorchi-Tardy et al., 2012). One potential solution that future research could consider is other criteria for assessing foods and the dissemination of

benchmarking tools to a wider population health audience than the target to whom they are originally intended (Bloomquist et al., 2021).

In light of the Healthy Eating Policy as a single, organizational reference point for all healthcare practitioners, there were times shown in this dissertation when practitioners interpreted, adapted, and implemented the Healthy Eating Policy to their specific everyday retail and organizational sub-settings and local environments, as per street-level bureaucrat theory (Lipsky, 1980; van Hulst et al., 2011). Tensions arose when staff spoke about ‘policing’ the policy, which was explained in a negative light, similar to that of past CQI research such as Gardner et al., (2010) when implementing the ABCD chronic disease program within a larger power-relations context. One participant in Gardner et al.’s (2010) study referred to not wanting to “mess with tradition” and the way people are used to doing things – or the status quo. Here, it is possible that this dissertation research has shown that the most important organizational dynamic is for practitioners to preserve their existing interpersonal relationships amongst other staff. As Bloomquist et al., (2021) et al., describe in their efforts to implement CQI into population health programs, they describe the heart of their challenge as prioritizing change over the expense of the longstanding community partnerships necessary to instigate those changes (Bloomquist et al., 2021). Quality improvement efforts may need to move at the pace that practitioners are comfortable with and build readiness both individually, interpersonally, and at a community level before implementing change. Building readiness for innovation was evident in the case study interventions mentioned by staff as they tried something small and then scaled up (e.g., low-risk trials), however, PDSA cycles have also been critiqued in the quality improvement literature for showing an oversimplified version of organizational change management and

cycles within this complex setting may need mentorship, guidance and training (Reed & Card, 2016).

## **9.1 Implications**

This dissertation has highlighted a number of implications that point to directions for future research, practice, and policy.

The food environment within healthcare is a complex setting-within-a-setting for conducting health promotion, as has been also found in prior research in schools and recreational centres (Kirk et al., 2021; Olstad et al., 2012). Unique to healthcare, this dissertation has shown how in-patient representation of food and the social dynamics of healthcare settings may fundamentally conflict or present tensions with health promotion. Research can continue to explore the unique facets of health promotion in healthcare food environments, for example, as they expand to monitoring and experimenting (e.g., PDSA cycles) for other aspects of the food environment (e.g., promotions, convenience, atmosphere, revenue).

Healthcare systems can continue to explore new benchmarks as they measure other aspects of the food environment beyond nutritional and financial. As seen in the retail interventions, other priorities were convenience, hours of operation, atmosphere and the 4Ps (promotion, price, placement, and product).

Kahan and Goodstat (1999) refer to health promotion CQI as having an elusive customer, implying that everyone is a customer. While this is partially true for retail food environments in hospitals, seeing as they are public spaces where anyone could enter, there was an obvious customer mentioned throughout the data: staff. This removes some of the opaqueness from their theoretical propositions and allows for a more strategic agenda when

planning interventions. This is important for other healthcare organizations to consider as they implement retail interventions.

Based on street level bureaucrat theory, practitioners use discretion as they make decisions about resource allocation as they implement policies. Similarly, in this dissertation participants relied on their experiences, and on the expertise of other practitioners, especially when they did not have all of the data to inform their decisions. At times, this expertise included retail interventions, like the Snacking Made Simple intervention. These potential connections between current healthy eating interventions and future innovations require further investigation to understand the impact of the co-interventions, which are additional interventions that a customer may receive at the time of the intervention (Coles et al., 2020). Co-interventions within CQI are not well understood and within clinical studies are underreported (Moutzouri et al., 2020). Understanding these context of health promotion interventions could help us understand how to harness what is already being done in-patient and transfer to retail settings.

## **9.2 Strengths and limitations**

Each of the manuscripts of this dissertation (Chapters 5 through 8) has previously addressed specific strengths and limitations. This section describes a few additional overarching strengths and limitations for the dissertation as a whole. First, this dissertation addressed organizational and policy processes for CQI for health promotion, a science explored thoroughly for clinical interventions but less so for health promotion. Without understanding how to incorporate CQI into the health system and within policies, CQI will continue to tackle health promotion changemaking one person at a time and lack a broader policy and population approach. This dissertation has advanced our understanding of health promotion in the healthcare setting, and

could have implications for advancing our understanding for how to embed health promotion into the very fabric of healthcare organizations.

Second, this research used multiple forms of data and analysis, such as in-depth interviews, healthy eating policy documents, and internal documents shared by participants, as well as conceptually driven directed content analysis, text-based policy analysis, and multiple case study interpretation. The interviews in particular provided a backbone of rich data with 12 participants from various roles across the organization whose experiences were further interpreted using thick description. Some participants had worked for the organization for over twenty years and provided in-depth details about CQI within retail services. These multiple data sources and analytic approaches were triangulated to confirm and contrast findings to increase trustworthiness. This study also used investigator triangulation when multiple researchers interpret evidence. For instance, for the interview coding, a peer researcher reviewed a random sample (10%) of transcript data and we met to discuss the meaning of the findings. Multiple techniques addressed potential sources of bias, such as response bias, researcher bias, and selection bias. Within the case study approach, further, a negative case study analysis was employed in Chapter 7 to present alternative findings and mitigate confirmability bias. As explained with regard to my positionality and worldview, I engaged in reflexivity, particularly on my ‘insider’ status, member checking and peer debriefing (random 10% of interview transcripts) to reduce researcher bias.

There are limitations to this research. First, these findings were not generalizable to all Canadian healthcare organizations but could be transferable to other healthcare organizations working with adult populations. In addition, much of the literature included in the policy and literature reviews came from other countries, with a particular emphasis on Australia, and



findings may not translate to Canadian healthcare systems. That being said, there are similarities between the two countries' health systems (e.g., healthcare governance, Anglo-American forms of parliamentary liberal democratic governments, publicly funded, population size, commitment to CQI, health promotion as a discipline), and our findings may be transferable there. To enhance transferability, this dissertation also included thick description of the context and setting to immerse the reader within the research environment (Chapter 3).

Second, we cannot attribute the policy and organizational practices within this research as the only factors contributing to CQI for health promotion. We did not conduct a formal implementation contextual analysis to determine confounding factors influencing CQI and health promotion within NSH meaning there are likely factors that were overlooked throughout the study (Poland et al., 2009). Further studies could compare healthcare organizations with and without healthy eating policies (e.g., through a pragmatic interventional trial design) to explore if policies are as influential as found in this research. Also, I did not use my insider status to search internal documents for Nutrition and Food Services. These documents could explain some of the other factors influencing CQI for health promotion at NSH.

Third, the literature included in this review mostly spoke to CQI for health promotion within primary care or used broad-based chronic disease programs, whereas the setting for this research was a provincewide health authority with responsibility for tertiary healthcare. This dissertation drew from other literature sources, such as CQI clinical studies and public health studies, to bridge these gaps in knowledge.

Lastly, participants with more positive experiences could have self-selected themselves for this study (selection bias). Additionally, participants who participated may have downplayed negative experiences to provide answers they thought the interviewer wanted to hear (response

bias) or as a consequence of speaking with an ‘insider’ with whom they had a form of an existing relationship. It is possible the participants selected for this research were some of the most passionate, committed, and innovative practitioners within Nutrition and Food Services. According to Yin, in addition to having data from multiple sources, triangulation can occur by researching a topic through various methods (Yin, 2017). Further research could compare Nutrition and Food Services team to other teams within the organization to determine if similar organizational and policy factors are present. Further studies could also compare these findings with healthcare organizations who do not have a healthy eating policy, but may have healthy eating initiatives or position statements. Triangulating the findings of this dissertation to that of other teams within NSH or external healthcare organizations could be used to further enhance the validity of the findings and mitigate bias.

### **9.3 Conclusion**

This dissertation explored the policy and organizational processes of CQI for health promotion within healthcare, a growing area of interest amongst researchers, practitioners, and administrators across the globe as the focus on HPH develops an accompanying evidence base. This dissertation has reinforced that addition to having policies that support strategic directions for healthy eating, healthcare organizations must collect varied data, including varied forms of data, invest in champions, and emphasize local knowledge to support these policies. Monitoring benchmarks and investing in data collection that focuses on healthy eating environments could help to improve the status quo within this environment and build a stronger framework for quality assessment and improvement but must remain flexible to context. Given the complexity of healthcare food environments (a

setting within a setting), researchers can continue to explore other facets of the retail food environment within hospitals, such as potential benchmarks and innovations within promotions, price, placement, atmosphere and convenience, to name a few.

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## APPENDICES

### Appendix A: Setting the standard for healthy eating: CQI for health promotion at NSH



ORIGINAL ARTICLE



## Setting the standard for healthy eating: Continuous quality improvement for health promotion at Nova Scotia Health

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### Abstract

Healthcare organizations engage in continuous quality improvement to improve performance and value-for-performance, but the pathway to change is often rooted in challenging the way things are “normally” done. In an effort to propel system-wide change to support healthy eating, Nova Scotia Health developed and implemented a healthy eating policy as a benchmark to create a food environment supportive of health. This article describes the healthy eating policy and its role as a benchmark in the quality improvement process. The policy, rooted in health promotion, sets a standard for healthy eating and applies to stakeholders both inside and outside of health. We explain how the policy offers nutrition but also cultural benchmarks around healthy eating, bringing practitioners throughout Nova Scotia Health together and sustaining collaborative efforts to improve upon the status quo.

### Background

#### *Benchmarking for healthcare quality improvement*

Originating in a critique of patient safety,<sup>1</sup> quality improvement in healthcare management has evolved into a diverse field of practice.<sup>2</sup> Organizations engage in quality improvement to improve performance and value-for-performance, but the pathway to change is often rooted in practice—for instance, changes optimized in a specific service area, which can then be scaled (eg, virtual care pilot projects in rural Nova Scotia).<sup>2,3</sup> Continuous quality improvement refers to the idea that quality improvement is a process and requires repeated tests of change.<sup>4,5</sup>

Identifying and setting benchmarks has become a critical component of quality improvement measures.<sup>6</sup> Benchmarks are measures that set intra- and inter-organizational performance goals while balancing cost considerations and stakeholder/public expectations.<sup>7</sup> They are essential to achieving the healthcare “triple-aim.”<sup>8,9</sup> Benchmarking can also be considered an active *method* for quality improvement.<sup>7</sup> For instance, intra-organizational benchmarks can be established in an integrated care pathway development process<sup>10</sup>; inter-organizational benchmarks such as wait times can support analysis of appropriateness of care.<sup>11</sup>

In the following article, we focus on benchmarking in intra-organizational quality improvement through an applied discussion of the Nova Scotia (NS) Health healthy eating policy. As per Ettorchi-Tardy, we will examine benchmarking as a “comparison of outcomes...to stimulate *cultural* and organizational change *within* the organizations being compared” (*emphases added*).<sup>7</sup> Although benchmarking commonly occurs between organizations, we examine this benchmark within NS Health, an organization with a wide variety of facilities, areas of practice, and past histories with healthy eating policies.

In addition, we address gaps in the literature on benchmarks that serve health promotion functions. To date, much healthcare benchmarking research has centred upon inpatient care.<sup>6,12,13</sup>

Some authors have examined how healthcare benchmarking and quality improvement *can* be adopted in health promotion organizations<sup>14</sup> and community settings such as schools.<sup>15</sup> Others have challenged whether or not benchmarking *should* be applied to health promotion, given benchmarking’s more transactional industrial origins and focus on quantitative metrics, in contrast to the relational issues central to health promotion.<sup>16</sup>

However, increasingly, attention has been drawn to the role that healthcare service delivery organizations themselves play in broader population health and health promotion.<sup>17</sup> Health organizations’ internal policies and practices can affect health behaviours well beyond their patient populations and have even been referred to as anchors within their communities.<sup>18</sup> By examining a healthcare organization’s healthy eating policy, we have the opportunity to consider how benchmarking in healthcare can benchmark *health* for a wider variety of stakeholder audiences.

First, we will provide a brief introduction to healthy eating policies developed in Canada for healthcare organizations. Second, we will describe the governance context and content of the NS Health healthy eating policy. Third, we analyse the NS Health policy as an internal benchmark to influence culture

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**Table 1.** A comparison of major healthy eating policies in Canadian provinces and territories

Province or territory	Administering organization or agency	Policy	Increase access to healthy foods	Nutrition requirements/criteria	Fundraising	Altering industry practices (e.g. marketing)	Collaboration	Evaluation or research
Nova Scotia	Nova Scotia Health	Healthy Eating Policy (2018) <sup>22</sup>	Y	Y	Y	Y	Y	Y
Alberta	Alberta Health Services (AHS)	Nutrition Guidelines for Foods and Beverages in AHS Facilities (2018) <sup>23</sup>	Y	Y	Y	N	Y	Y
British Columbia	BC Ministry of Health	Healthy Eating Environments (2011) <sup>24</sup>	Y	Y	N	Y	N	Y
Ontario	Champlain LHIN (20 participating hospitals)	Healthier Choices in Vending Machines in BC Public Buildings (2014) <sup>25</sup>	Y	Y	N	N	Y	Y
Quebec	Quebec—Santé et Services sociaux Quebec	Miser sur une saine alimentation: une question de qualite (MSSS, 2009) <sup>27</sup>	Y	N	N	N	Y	N
New Brunswick	Vitalite Health Network/ Government of New Brunswick	Health Food Environment Framework <sup>28</sup>	Y	N	N	Y	Y	Y
Northwest Territories	NWT Health and Social Services Health	Healthy Foods in Facilities (2006) <sup>29</sup>	Y	Y	Y	N	Y	N
Newfoundland and Labrador	Government of Newfoundland and Labrador	Provincial Food and Nutrition Framework and Action Plan <sup>30</sup>	Y	N	N	N	Y	Y

and explain how benchmarking has begun to emerge through Plan-Do-Study-Act cycles following adoption of the policy. Fourth, we conclude with the generalizable lessons from this health promotion example for quality improvement and the potential application of findings in cases of external benchmarking.

### Context and setting

#### *Healthcare organization healthy eating policies in Canada*

Healthy eating policies are a growing healthcare priority.<sup>18</sup> Diet-related diseases are a leading cause of death and disability in Canada and driver of healthcare costs,<sup>19</sup> making dietary improvement essential to population health promotion.<sup>20</sup> Previously, healthy eating initiatives in healthcare tended to fall within service lines for cardiovascular disease prevention.<sup>21</sup> Over the last decade, hospital healthy eating policies have shifted to focus on the consumer food environment (eg, retail merchandising such as placement, promotion, and pricing) and the information environment

(eg, nutrition labelling, sponsorship). Table 1 provides a comparison of major healthcare healthy eating policies in Canadian provinces and territories.

Some jurisdictions have cross-cutting policies that cover public institutions. For example, the Northwest Territories policy deals with nutritious and affordable food and beverage options in schools, recreation centres, and government buildings. Other policies target specific consumer environments to encourage upstream food supply reformulation, such as the BC vending machines policy.

Two provinces have comprehensive healthcare healthy eating policies, integrative of the food environment. The policy by Alberta Health Services looks at food and beverages offered, optimizing the availability of nutritious choices, but also looks at promotions, marketing, and an overall culture of healthy eating. Similar to NS Health, Alberta is the only other province whose policy centres upon supportive environments. In 2009, Nova Scotia's Capital Health (now NS Health Central Zone) was the first health authority in Canada to establish a comprehensive organizational healthy eating policy and strategy.<sup>18</sup> However,

the standard, or benchmarks, of a supportive eating environment within health institutions has not been well defined, which makes it difficult to compare inter-organizational healthy eating policies and engage in inter-organizational benchmarking. Therefore, we will focus on the benchmarks and benchmarking (intra-organizational) of the NS Health healthy eating policy.

### *Nova Scotia Health*

In 2015, NS Health amalgamated to one health authority, becoming the largest provincial health authority in Atlantic Canada, responsible for delivering healthcare services to 923,598 provincial residents<sup>31</sup> through 10 hospitals, 8 ERs, and 135 community locations.<sup>32</sup>

Prior to amalgamation, five of the nine regional authorities had their own healthy eating policies. Each policy defined healthy eating differently and differed in scope, resulting in a patchwork. For example, in 2009, the aforementioned Capital Health was an early adopter of a healthy eating policy.<sup>18,33</sup> Their policy focused on promoting health and wellness through measurable standards for food retail settings, cafeterias, and vending machines. In contrast, the Colchester East Hants Health Authority targeted healthy eating within occupational health and safety<sup>34</sup> but did not mandate nutritional standards when serving food and beverages at internal and external events.<sup>22</sup>

Three years after amalgamation, NS Health adopted a new healthy eating policy, resembling elements of former regional policies, while embracing a new population health approach.<sup>22</sup> This policy replaced the five former policies and integrated updated nutrition evidence, federal guidance, and best practice (see Figure 1) across all NS Health facilities.

### *NS Health healthy eating policy*

The 2018 NS Health policy falls under the service mandate of NS Health Nutrition and Food Services, with advisory support from a Steering Committee comprised of a Senior Director, Nutrition and Food Services directors and leadership, dietetic and nutrition practitioners, communications, and representation from the Foundation and Auxiliaries, patient and family advisory, and external research.

The policy applies to all food and beverages sold or served at NS Health facilities, events, or functions and draws an explicit evidence link between food, nutrition, and downstream health outcomes. The policy is aligned with other jurisdictional frameworks on healthy eating, including the federal Healthy Eating Strategy and Canada's Food Guide.<sup>35</sup> Its explicit purpose is the creation of supportive food environments, which according to best practice is one of the most effective ways to influence health (see Figure 2).<sup>22</sup>

*The policy goes beyond physical locations.* It is applicable to all NS Health social and built environments in which food and beverages are served: food retail and food services settings across the province, including cafeterias, coffee shops, and

vending machines; special events and catering; associated procurement; and staff-specific consumption in healthcare settings as well. These social and built environments vary across the province, in communities ranging from urban centres to rural villages. This broad conceptualization of the food environment is consistent with other institutional contexts such as schools and shows that healthy eating is more than what we eat—it is how, why, when, and where eating occurs.<sup>35</sup> The policy explicitly states its intent to shift food “culture” towards healthier eating by engaging stakeholders throughout the system<sup>18</sup> and moving away from healthy eating as a “cafeteria policy” or “nutrition policy.”

Notably, the policy takes a food systems approach, addressing the pathway from farm to table. It also considers food waste and sustainability, including the ecological footprint of procurement, prioritizing food that is locally grown or combination meals cooked from scratch ingredients and prepared in site kitchens.

*The policy reaches beyond food as an individual choice.* The policy reinforces that food choices are more than the combined choices of individuals alone. It names NS Health as the “leader” to create a supportive environment, establishing avenues to implement further evidence-based programs and interventions under the auspices of the policy. The nutrition standards associated with the policy are based on province-wide nutrient composition guidelines within the Nova Scotia Food and Beverage Nutrient Criteria, also adhered to by public schools, recreation centres, and daycares.<sup>36</sup>


*The policy accommodates both exceptional and everyday circumstances.* In comparison to the earlier patchwork of regional policies, the new policy addresses routine service delivery as well as special circumstances where performance standards might be needed. For instance, while past regional policies contained exceptions, the new policy is inclusive of all events under the auspices of the health authority—from a retirement celebration to an auxiliary fundraiser.

## **Healthy eating and quality improvement**

### *Healthy eating policy and benchmarking*

The following section will explore two specific aspects of intra-organizational benchmarking based on the criteria and definition by Ettorchi-Tardy: to set a standard for healthy eating culture, and second, how it prompts tests of change.

First, the policy is clear that a culture of healthy eating must be cultivated through practices of all individuals engaged through NS Health mandate—from executives to clinical service and support managers, frontline care and service providers, volunteers, patients, and visitors. These stakeholders have different priorities and roles when it comes to food decision-making. For example, a hospital foundation may raise money through catered events; clinical practitioners may be customers at the cafeteria; retail workers make decisions through everyday stocking and cooking operations.



**ADMINISTRATIVE MANUAL  
POLICY**

<b>TITLE:</b>	Healthy Eating	<b>No:</b>	AD-AO-015
<b>Sponsor:</b>	NSHA VP Integrated health Services Primary Care and Population Health	<b>Page:</b>	1 of 7
<b>Approved by:</b>	NSHA Executive Leadership	<b>Approval Date:</b>	Dec 14, 2017
		<b>Effective Date:</b>	Jan 19, 2018
<b>Applies To:</b> All foods and beverages served or sold by NSHA owned or operated facilities, settings, events and programs.			

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**PREAMBLE**

The Nova Scotia Health Authority (NSHA) is committed to providing foods and beverages that promote health throughout its facilities.

The NSHA Healthy Eating Policy was developed using evidence, research and best practice. Evidence and research shows that the most effective way to enhance healthy eating and support the health of a population is through the creation of supportive environments.

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**Figure 1.** The NS Health healthy eating policy.

Yet a supportive food environment requires aligned efforts by each of these individuals and service teams.

Bringing together frontline practitioners to build consensus and manage change is a key aspect of benchmarking.<sup>4</sup> The involvement of practitioners relies on lived experience and knowledge at the patient or staff level and sets up the process of quality improvement for a greater orientation to the specific changes to practice that need to be implemented.<sup>4,5,37</sup>

By creating a Steering Committee that features experienced interdisciplinary and frontline representation from diverse teams across the province, NS Health has

attempted to create a forum for advancing a cultural conversation. The committee flattens the management hierarchy and gives voice to those with differing responsibility and power in the organization. In meetings to date, discussion has featured practical observations about “junk food hot spots” to concerns about being labelled “food police” among those responsible for monitoring and measuring implementation of the policy. The design of the policy has served as a guide for deliberation: to challenge the way things are done, comparing what is to what could be, and to ask “how can this be done better.”<sup>38</sup>

- To shape a supportive environment the Healthy Eating Policy promotes:
- Increasing access to healthy food and beverages for all staff and visitors
  - Selling foods and beverages that are nutrient dense, as according to the Nova Scotia Nutrient and Beverage nutrient criteria guide
  - Fundraising that is non-food and beverage item based, or if fundraising with food, items meet the maximum and moderate nutrient criteria
  - Restricting the marketing and advertising of foods that are of minimum nutrient criteria
  - Raising awareness that breastfeeding is welcome and providing physical space for staff and visitors to breastfeed
  - Engaging in food safety practices that meet provincial standards
  - Collaborating with internal and external stakeholders

**Figure 2.** Excerpt from the NS Health Eating Policy, 2018, defining supportive environments.

Second, the NS Health healthy eating policy embeds principles of health promotion within a quality improvement implementation paradigm. The Plan-Do-Study-Act cycle (Shewhart or Deming cycle)<sup>16,37</sup> is a way of ordering tests of change to organizational practice within quality improvement. The cycle involves an assessment of the problem (*Plan*), followed by a change in practice (*Do*) and analysis of the outcome (*Study*) to inform future practice (*Act*).

Accessibility, comprised of affordability and availability/variety of healthy products, is a key part of the healthy eating policy and provides an opportunity to integrate healthcare organizational (cost) and health promotion (equitable access) considerations. Price promotions to encourage purchasing of healthier options have been a growing area of food environment research,<sup>39</sup> becoming increasingly relevant to concerns of nutrition managers. A workplace survey had also been carried out with retail food services employees, prior to implementation of the policy, where staff shared the perception that healthy foods within the cafeteria were “too expensive.” Healthcare organizations are different from other retail food operators in that they may be able to operate on a “break-even” rather than profit motive. This is the case for NS Health, which used this capacity to establish a linked standard operating procedure to the healthy eating policy explicitly targeting affordability and accessibility for consumers—who might be staff at different compensation grades or diverse patients and visitors.

The NSH’s Nutrition and Food Services team has also begun to experiment with retail merchandising efforts that integrate price promotions to incentivize healthier choices. A PDSA cycle “makes it easier for previous practice to be discontinued and innovations to be accepted, implemented and spread throughout the healthcare organization.”<sup>37</sup> Rather than implementing these best evidence practices simultaneously throughout the province, price modifications were first identified by staff and then tested incrementally. Further, partnering with academic research partners (our team of co-authors), NS Health has evolved these tests of change to evaluate the impact of targeted *pricing* changes (increase in

price for less healthy options, decrease in price for healthier options) in combination with *placement* (healthy and unhealthy alternatives side by side) and *promotion* (large pull-up banners marketing healthier items) strategies, through analysis of point-of-sales (POS) data.

Sales data represent a valuable administrative dataset within healthcare organizations and food environments research. It is typically used for supply management, but the nutrition literature has demonstrated the value of in-depth sales data analysis as an important proxy measure for dietary outcomes.<sup>40</sup> The NS Health policy has catalyzed the development of both internal and external expertise to evaluate sales data. The findings from the initial evaluation will inform the next cycle of testing and facilitate a comparison of sales outcomes between sites.

### Discussion and implications for future practice

This paper describes the NS Health healthy eating policy and its role as a benchmark to shift the food environment towards one that is supportive of healthy eating for staff, families, and entire communities within NS Health. Benchmarking within healthcare systems is a method of practice within quality improvement that often focuses on comparing clinical indicators between organizations; however, it is also used for intra-organizational or system-wide evaluation.<sup>7,41</sup> Benchmarking for health promotion, and specifically nutrition promotion, is a newly evolving area of study, primarily studied within schools. For instance, Biggs et al recently used a process map to analyse the quality of a nutrition primary prevention program in Australian schools. In Nova Scotia, researchers have also assessed policy adherence to nutrition policies in schools from an implementation perspective.<sup>42</sup> Yet as we have discussed in this paper, NS Health has demonstrated that healthcare healthy eating policies can become an important exemplar for benchmarking for health promotion purposes. Furthermore, the internal benchmarking process initiated by the NS Health healthy eating policy has highlighted emergent areas for future research in this area.

**Novel data collection:** Benchmarking within health promotion can be challenging because the indicators and goals are often focused “upstream” on concepts like empowerment, resilience, and here *culture*.<sup>16</sup> These changes may be difficult to measure using traditional benchmarking methods. Collecting qualitative data, or in our case, establishing deliberative forums, and creative use of administrative data (eg, POS data) are just a couple of promising approaches.

**Ongoing improvement is critical:** An upfront investment is required in quality improvement to demonstrate value and cost-effectiveness. As we have discussed in this essay, healthy eating policies, because of their organization-wide impact, can support diverse managers and frontline staff alike to adopt processes to evaluate practices within and across teams.<sup>16,43</sup> This must be done with some care, since engaging in tests of change, without controlling for context or confounders, may oversimplify findings.<sup>44</sup>



**Systems approach:** Healthy eating policies are designed for internal impacts within the organization, yet due to their harnessing of food systems, integrate community impacts as well.<sup>16</sup> Since there is skepticism among some scholars and practitioners that quality improvement leads to practical changes, critics may suggest quality improvement may simply pave the path to cost containment rather than the health of a patient or community<sup>16,45</sup>—in essence, the opposite of a systems shift. A food system lens integrated into healthy eating policies can help healthcare organizations refine their understanding of healthcare service delivery beyond service lines. It can alert staff and decision makers to the broader opportunities for society-wide change.

## Conclusion

In this article, we have explored the NS Health healthy eating policy as a benchmark for creating supportive environments to promote health. The policy emphasizes the importance of the food environment and its impact on improving diets at a population level. The policy brings NS Health stakeholders together and prompts tests of change to shift towards a culture of healthier eating.

Benchmarking in healthcare is not yet well understood outside of clinical care. In health promotion, the definition of the population and methods can diverge from the traditional quality improvement literature and present challenges when trying to “fit” health promotion within the traditional quality improvement approach.<sup>16</sup> Healthy eating policies can serve as a bridge for healthcare organizations to consider the pathways to enacting supportive environments for changing population health.

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## Appendix B: Search strategy for literature review

### Search strategy for lit review

Research question:

*Table 1. Population (P), intervention (I), comparison (C) and outcome (O) for the research question*

Population (P)	Adults, healthcare settings (hospitals, healthcare, health facilities)
Intervention (I)	CQI; healthy eating; health promotion focused (as per Ottawa Charter)
Comparison (C)	Status quo
Outcome (O)	Changes to practice; changes to organization; changes to patient behavior

Search terms:

*Table 2. Search terms for the literature review*

	Search terms	Definition
	“quality improvement” or “healthcare improvement” or “continuous quality improvement” or “lean”	An intervention that measures changes to practice, patient satisfaction, iterative rounds of outcome measurements, policy practices
AND	“healthcare” or “health care” or “hospital” or “health services” or “health facilities”	
AND	“Health promotion” or “health promoting”	The process of empowering people or communities to take ownership over health (could include health education, intervention,
AND	“diet” or “nutrition” or “healthy eating” or “healthy eating policy”	
NOT	“school” or “breastfeeding”	

Search results:

This search resulted in 606 articles published from 2013 to 2024. After the following criteria were selected: English, academic journals, there were 553 articles. The number of articles per database is in Table 1. Articles were excluded for the following reasons: wrong intervention type (e.g., clinical, community), wrong setting (school, college, acute care), alternative use of the term health promotion targeting individualized patients with a specific condition, interventions focused on other behaviours (e.g., tobacco, alcohol) and wrong article type (e.g., editorial).

*Table 1. Overview of healthy eating po 1. Number of articles in each database*

Database	Number of articles after search
CINAHL with full text	228
Academic Search Premier	185
CAB Abstracts	93
APA Psych Info	84
FSTA – Food Science and Technology Abstracts	15
APA PsycArticles	1

Other articles included in the literature review included foundational health promotion documents (e.g., Ottawa Charter for Health Promotion) and quality improvement articles.

## Appendix C: Semi-structured interview guide

*Introduction: Hello, \_\_\_\_\_. Thank you for your willingness to participate in this interview. As a PhD Candidate I am interested in exploring healthy retail interventions at Nova Scotia Health. The findings of this interview will inform my dissertation.*

*I will be recording the interview today. I will only be sharing the contents of this interview with my supervisor, Dr. Catherine Mah. This interview is for a dissertation and will be used for research purposes. I have received formal ethics for a formal interview process. Today I will be asking you some questions about the healthy retail intervention and Healthy Eating Policy at NSH Do I have your permission to audio record the interview? [wait for response]. Thank you. I will also be taking some notes throughout the interview.*

*Do you have any questions about the consent form? You are able to withdraw from the study at any time*

*Research Question: What are the organizational and policy processes and practices of CQI for health promotion in healthcare retail food services?*

### A. The role of the healthy eating policy in the practice of CQI.

1. Describe a typical day at your workplace
  - *What does your calendar look like?*
  - *Who do you interact with?*
  - *What are your responsibilities?*
  - *What internal processes do you rely on?*
2. What policies or processes guide your work?
  - *The healthy eating policy*
  - *Pricing SOP*
  - *Nutrition and food criteria*
  - *Canada's Food Guide*
  - *Food safety*
3. You mentioned \_\_\_\_\_, (e.g., Healthy eating policy) tell me about a time when this influenced your work or a decision you made
  - *How has this changed how you do things (aka status quo)*
4. Tell me more about the healthy eating policy. If you had to describe the policy to a new staff, what would you say?
  - *What's in scope? What's out of scope?*
  - *Are there sections of the policy you identify with more than others?*
  - *Who owns the policy?*

5. Tell me about a time the Steering committee made a decision that impacted your work (e.g., intervention, an event for nutrition week). What happened?
  - *You mentioned \_\_\_\_\_, tell me more about this*
6. Tell me about a time when you evaluated or examined the policy. What happened?
  - *Are there other changes you would make to the policy? If so, what?*

**B. CQI practices in Nutrition and Food Services**

7. Tell me about the Snacking Made Simple intervention
  - *When was it implemented?*
  - *Purpose?*
  - *Staff reaction?*
  - *What was your measure of success?*
  - *Where was it implemented? How did you decide to change the intervention by site?*
8. Now I'd like to talk about benchmarks. In previous discussion you've mentioned the 80/20 benchmark (80% of items sold are max/mod nutrition and 20% min nutrition). Tell me more about this benchmark.
  - *Where did it come from?*
  - *Are there other benchmarks? Goals?*
  - *Who sets the benchmarks?*
  - *Are there other benchmarks*
9. We've discussed the steering committee, tell me about a time you interacted with someone outside the steering committee.
  - *Tell me more about the interaction*
  - *Were they external or internal to the organization*

**C. Data collection for a healthy retail intervention on dietary purchasing**

10. Tell me about a time when you used information to inform a decision within Nutrition and Food Services. This could be feedback from staff or budgets etc.
  - *What did you do next?*
  - *How often you would collect this information?*
  - *Was it sufficient?*
11. You've mentioned \_\_\_\_\_, tell me about other types of information you use at Nova Scotia Health to inform changes?
  - *E.g., staff meetings, steering committee meetings, budget, sales data*
12. Tell me about a time when you didn't have all the information you needed to decide but had to make it.
  - *What happened?*
  - *How did this influence your decisions?*

13. What else do you need to know? What types of information are you not collecting?

- *You mentioned \_\_\_\_\_, tell me more about that. What would collect this look like?*

Thank you for participating in this interview. Please reach out if you have any questions. I may be in touch to clarify what was discussed today. Thank you for your contributions.

## Appendix D: Codebook

Codebook for data analysis developed using directed content analysis

Code Name	Description	Files	References
Benchmarks and indicators	The more traditional definition is "comparing indicators" and the newer definition is "to promote discussion among frontline professionals on their practices in order to stimulate cultural and organizational change within the organizations being compared. Ettorchi -Tardy A, Levif M, Michel P. Benchmarking: A method for continuous quality improvement in health. Healthc Policy. 2012;7(4):101-119.	3	4
Environment		6	16
Financial	A benchmark that meets/improves financial goals at individual/community/societal/policy levels Ettorchi -Tardy A, Levif M, Michel P. Benchmarking: A method for continuous quality improvement in health. Healthc Policy. 2012;7(4):101-119.	11	22
Food safety	Communicable disease related	3	5
Food waste	Managing, minimizing food waste	3	5
Local foods	Sourcing or purchasing foods from local (e.g., NS) vendors	1	2
Nutritional	A benchmark that meets/improves nutrition at individual/community/societal/policy levels Ettorchi -Tardy A, Levif M, Michel P. Benchmarking: A method for continuous quality improvement in health. Healthc Policy. 2012;7(4):101-119.	11	47
Context	Anything external to the intervention that may act as a barrier or facilitator to its implementation or its effects Moore GF, Evans RE. What theory, for whom and in which context? Reflections on the application of theory in the development and evaluation of complex population health interventions. SSM - Popul Heal. 2017;3(December 2016):132-135	0	0
Adaptation	People in the system adapting to changes. "Understanding how	6	12

Code Name	Description	Files	References
	[adaptation to the intervention] this took place and how the implementers responded are more important for implementation than the outcome evaluation conducted." Ramaswamy R, Reed J, Livesley N, et al. Unpacking the black box of improvement. Int J Qual Heal Care. 2018;30:15-19. doi:10.1093/intqhc/mzy009		
Organizational or historical	Any part of the intervention that influences the organization or culture; also any component of the organization (e.g., policy) that influences the intervention Ramaswamy R, Reed J, Livesley N, et al. Unpacking the black box of improvement. Int J Qual Heal Care. 2018;30:15-19. doi:10.1093/intqhc/mzy009	12	84
Policy	Context relating to the NSH Healthy Eating Policy, or past organizational policies	8	25
Ripples	Changes in one part of the system impact another part of the system Ramaswamy R, Reed J, Livesley N, et al. Unpacking the black box of improvement. Int J Qual Heal Care. 2018;30:15-19. doi:10.1093/intqhc/mzy009	10	18
Data		4	9
Data infrastructure	Systems that organize and collect data for Nutrition and Food Services	4	9
Difficulties	Challenges faced by staff as it relates to data	9	28
Lack of data	Not having enough data or collecting the wrong type of data	7	14
Outcomes	Results or measurements related to diet, sales, revenue	7	14
Partnerships	Collaborating with other stakeholders as it relates to data	4	4
Qualitative	Subjective data collection	9	20
Quantitative	Objective data collection	10	22
Retail interventions		0	0
Difficulties	Personal, organizational or intervention challenges with interventions involving PDSA cycles	10	28
Interventions	Interventions involving aspects of the PDSA cycle (P = planning; D =	12	70

Code Name	Description	Files	References
	doing or an intervention or change; S = study or lookin at data; A = act or a follow up action or inaction)		
Provincial or local	Could include scale up or staying local	4	4
Strategies for implementation new interventions		5	6
Tasks and responsibilities		0	0
Food access	Managing products on shelves	2	3
Healthy eating audits	Assessing the max, mod, min quality of foods	4	5
Helping staff	Lending a hand to other staff	7	11
In-patient tasks	Activities about in-patient food services	3	5
Ordering, suppliers, working with vendors	Ordering food products	3	6
Organizing retail space	Placing foods in different locations	2	2
Strategizing	Recognizing gaps, issues, developing tools	6	6
Theory		0	0
Elusive customers	Unlike CQI in clinical settings, in health promotion there is no specific customer. The customer is anyone who interacts with the environment Kahan B, Goodstadt M. Continuous quality improvement and health promotion: Can CQI lead to better outcomes? Health Promot Int. 1999;14(1):83-91	11	22
Gender_Sex		1	1
Healthy eating	Viewing healthy eating as the creation of a supportive environment, not “making healthy decisions” Monsivais P, Thompson C, Astbury C C, Penney T L. Environmental approaches to promote healthy eating: Is ensuring affordability and availability enough? BMJ 2021; 372 :n549 doi:10.1136/bmj.n549	11	70
Defining healthy food		1	1



Code Name	Description	Files	References
Values and goals		8	11
Collaboration	Stakeholders; partners; working together as a team Kahan B, Goodstadt M. Continuous quality improvement and health promotion: Can CQI lead to better outcomes? Health Promot Int. 1999;14(1):83-91	11	51
Efficiency	Providing a service that is financially responsible to the program	9	14
Empowerment	Shifting power from one person to another (informal or formal)	8	12
Evidence	Using research, best practice to improve current practices. Working with researchers. Kahan B, Goodstadt M. Continuous quality improvement and health promotion: Can CQI lead to better outcomes? Health Promot Int. 1999;14(1):83-91	9	18
Spirit of inquiry	Asking questions, engaging in reflection and wondering that could be. This could also involve challenging the status quo Kahan B, Goodstadt M. Continuous quality improvement and health promotion: Can CQI lead to better outcomes? Health Promot Int. 1999;14(1):83-91	9	23



