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Role of Middle Managers in Quality Improvement Implementation

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Role of Middle Managers in Quality Improvement Implementation

by

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Abstract

Limited consensus exists around the manager's role in QI project implementation as viewed by both managers and other stakeholders alike. The aim of this research is to investigate how middle managers in a Canadian critical care setting perceive their role and associated responsibilities in facilitating the implementation of a mandated QI project.

Interviews with eight critical care middle managers were conducted to understand how they viewed their role during the implementation of a mandated delirium screening and management QI project. Using Charmaz's (2014) approach to grounded theory, an explanatory framework is created demonstrating that managers perceive their role as ensuring or *building multi-faceted understanding* of the project amongst frontline staff members. Understanding assists in engaging staff during project implementation and helps to "make sense of the project". Barriers managers experience include prioritizing QI projects amongst competing priorities, leading the multidisciplinary team, and supporting the local context with limited QI knowledge.

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Dedication

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List of Abbreviations

MM	Middle Manager
QI	Quality Improvement
KT	Knowledge Translation
PDSA	Plan, Do, Study, Act
ICU	Intensive Care Unit
ICDSC	Intensive Care Delirium Screening Checklist

Glossary

Mandated Quality Improvement (QI) Project: Projects (that can encompass several initiatives) informed by evidence that are usually implemented in a hierarchical manner (strategized by senior and middle managers and operationalized by the frontline in a specified clinical setting). QI projects take on different forms such as local process improvement and clinical guideline implementation to help with the implementation of evidence based practice. All have, as their ultimate goal, QI, which according to the Donabedian Model can include changes to structure or processes or outcomes that improve aspects of quality, including efficiencies, effectiveness and safety (Donabedian, 1980).

Non-mandated QI Project: Projects similar to a mandated QI projects, but are usually local initiatives not implemented in a hierarchical manner. That is, projects can utilize the same forms of implementation, have the same goals, make similar changes, with the same metrics of efficiency, effectiveness and safety as mandated forms of QI projects.

Implementation: For this study, implementation involves the process of introducing QI projects to a defined clinical or department. Specifically, the project focuses on initial implementation efforts, in which projects and initiatives are first introduced to staff.

Middle Managers: The level of senior leadership that has direct contact and supervision of front line employees (Birken, Lee, Weiner, Chin & Schaefer, 2013; Floyd & Wooldridge, 1992). Middle managers in this context represent the first line of leadership; they hold administrative responsibilities, and do not have a clinical role. Synonyms for this level of leadership include: unit manager, nurse manager, frontline manager, and head nurse.

Chapter One: Introduction

Interest in improving the quality of care in the acute health care setting stems from reports such as "To Err is Human: Building a Safer Health System" (Institute of Medicine (IOM), 1999) and "Crossing the Quality Chasm" (Burston, Chayboyer, Wallis & Stanfield, 2011; IOM, 2001). Most health centers strive to adopt current, evidence-based practice that ensures a standard of care is consistently upheld with each client (Birken, Lee, Weiner, Chin & Schaefer, 2013; Dopson & Fitzgerald, 2005; Price et al., 2007). Often these centers adopt the most current evidence-based practice through the implementation of quality improvement (QI) projects (Birken et al., 2013). Implementation of QI projects in the acute clinical setting is complex and often not successful—the Institute of Medicine reports a 50% failure rate in QI implementation (Birken et al., 2013; Wilkinson, Nutely & Davies 2011). Given the need to adopt evidence-based practice, an investigation of why these QI projects fail seems warranted.

Several organizational and individual factors affect the implementation of QI projects (Pearson et al., 2005). Leadership ranks as one of the main facilitators in any QI initiative (Birken et al., 2013; Gifford, Davies, Edwards & Graham, 2006). Furthermore, the implementation of a QI project can require multi-level leadership in order to influence the practice environment and organizational infrastructure (Gifford et al., 2006; Øvretveit, 2004; Rycroft-Malone, 2008; Straus, Tetroe & Graham, 2009). Its importance notwithstanding, delineating leadership levels and describing their roles, especially associated with middle managers, receives little study (Birken et al., 2013; 2012; Øvretveit, 2004). Nevertheless, researchers would contend that middle managers influence behaviour in their practice environments. (Birken, Shoou-Yih & Weiner, 2012; Dopson & Fitzgerald, 2005; Gifford,

Davies, Edwards, Griffin & Lybanon, 2007; Kirchner et al., 2012; Squires, Tourangeau, Laschinger and Doran, 2010; Yang, Zhang & Tsui, 2010).

Despite their influence and unique juxtaposition between executive leadership and frontline staff, middle managers spend less than 3% of their time on QI activities (Drach-Zahavy & Dagan, 2002). One reason could be that that middle managers rank implementing and using research-based care practices as one of their lowest competencies (Udod & Care, 2004). The reason for their attitude remains unclear (Dopson & Fitzgerald, 2005; Jansson, Pilhamar & Forsberg, 2011; Pinnock, 2012; Savage & Scott, 2004; Wilkinson et al., 2011). If middle managers had a better understanding of their responsibilities in this context, they could be empowered to lead QI project implementation and use their influence to facilitate initiatives (Dopson & Fitzgerald, 2005). This perspective is supported by Wilkinson et al. (2011) whom identified that one of the main barriers in QI project implementation is a manager's uncertainty around implementing new practice.

Within the existing literature, there is limited consensus around the manager's role in QI project implementation as it viewed by both managers and other stakeholders alike. Furthermore, there are discrepant findings in the only two studies that examine how managers perceive their role in QI (Birken et al., 2013;Wilkinson, Nutley & Davies, 2011). There is also scarce empirical understanding around the barriers managers perceive in QI project implementation (Wilkinson et al. 2011). Additionally, to the knowledge of the researcher, there are no Canadian studies that have investigated how middle manager perceive their role in QI implementation and the barriers they face.

Consequently, there is an identified need to explore and describe how middle managers perceive QI project implementation. In response, the researcher investigates how middle

managers in a Canadian critical care setting perceive their role and associated responsibilities in

facilitating the implementation of a mandated QI delirium screening and management project.

Next, barriers that inhibit middle managers in fulfilling their role in QI implementation are

explored and discussed. Prior to describing what is currently known about the middle's

manager's role, background is provided.

1.1 Background

1.1.1 Several Strategies Exist for Facilitating QI Implementation

The implementation of QI projects requires an array of strategies (Cullen & Adams,

2012; Gifford, Davies, Edwards & Graham, 2006; Stetler et al., 1998). In their systematic

review, Grimshaw et al., (2004) identified over 230 studies that provided strategies for QI

implementation. Kitson, Harvey and McCormack (1998), in their conceptual framework,

describe implementation as a highly complex process, which includes synthesis, distillation and

appraisal, which differs with contextual conditions, including the administrative, economic, and

community environments (Kitson et al., 1998). Cullen and Adams (2012) outline an application-

orientated framework, in which the implementation process moves through four phases, with

different strategies at each juncture. The four phases include: creating awareness and interest,

building knowledge and commitment, promoting action and adoption, and pursuing integration

and sustained use (Cullen & Adams, 2012). Proposed strategies for each phase connect

clinicians, organizational leaders and key stakeholders, and build organizational system support

(Cullen & Adams, 2012). Sandström, Borglin, Nilsson and Willman (2011) create a tentative

explanatory model in regards to QI implementation by grouping three primary concepts. These

include: characteristics of the leader, organization, and of the culture (Sandström et al., 2011).

Although some authors focus using an application framework (as described by Cullen & Adams)

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and others look at characteristics of different levels (Sandström), all elude to the same principal; implementation is highly complex with numerous facilitators and conditions that need to be met.

1.1.2 Leadership: Main Facilitator in QI Implementation

While numerous frameworks and individual strategies exist in QI implementation, leadership, in different forms, consistently receives mention as one of the main facilitators in the literature (Gifford et al., 2006; 2007; Gunningberg, Brudin & Idvall, 2011; Ploeg et al., 2007; Sandström et al., 2011). Gifford et al. (2007) distinguish between leadership and middle manager, with the assumption that middle managers demonstrate leadership in their practice. Leadership and management theories remain intricately linked, and the assumption remains that leadership plays an integral part within the managerial role (Gifford et al., 2007).

Systematic reviews conducted by both Sandström et al. (2007) and Gifford et al. (2011) identify leadership as vital for facilitating implementation and influencing frontline nurses to integrate evidence into their practice. Gifford et al. (2006) believe that support from nursing managers and administrators remains crucial in convincing nurses to integrate research into their practice. Ploeg et al. (2007), who interviewed over 120 staff including administrators; nursing staff and project leads across 22 organizations after recent guideline implementation identified leadership as one of seven facilitators to guideline implementation across several disciplines.

Lastly, leadership is consistently identified as integral to research utilization as depicted in models such as the Ottawa Model of Research Use (OMRU) and the model of Promoting Action on Research Implementation in Health Services (PARIHS) (Gifford et al., 2006). Gunningberg et al. (2010) used the PARIHS framework and ultimately identified leadership as one of the primary factors in project implementation.

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1.1.3 Multi-Level Leadership is Required

Various levels of leadership exist in a ranked manner, each holding different values and realities, across various organizations (Klein & Sorra, 1996; Parker et al., 2007; 2009). Øvretveit, (2004) suggests that even if some practices appear similar across all levels of leadership, role tasks and responsibilities distinctly differ amongst different levels of leadership. In a thematic analysis of 89 interviews held with senior and team leaders of hospitals across Canada, one of the quintessential components of advancing the quality agenda in healthcare is leaders at all levels of the organization (White, Jackson & Norris, 2013).

Other authors have suggested that a multi-layered leadership approach can facilitate project implementation by influencing different levels of the organization spanning from the frontline environment to senior leadership level decision-making (Gifford 2006; Øvretveit, 2004; Rycroft-Malone, 2008; Straus, Tetroe & Graham, 2009). Aarons, Wells, Zagursky, Fettes and Palinkas (2009), and Kirchner, Parker, Bonner, Fickel, Yano & Ritchie (2010) research is congruent with White et al (2013), and Aarons et al. (2009) who interviewed 31 individuals amongst six different groups of stakeholders (spanning multiple levels of a large public sector mental health service). That is, multilevel leadership support of projects was reported as an important facilitator. Kirchner et al. (2010) interviewed 49 stakeholders across various levels of a healthcare organization also identified that the engagement of different levels of leadership is important and each level of leadership has a key role in facilitating the implementation process.

1.1.4 Levels of Leadership: Overlooking the Role of Middle Managers

Understanding the differences in roles and responsibilities for specific levels of leadership (in QI implementation) is scarce. For example, Cullen and Adams (2002) identify a conceptual framework that describes strategies for implementation; however, they fail to clarify

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what level of leadership is being discussed. Additionally, Gifford et al. (2006) propose a conceptual framework that depicts the activities and behaviours of leaders facilitating clinical guideline implementation. Despite different levels of leadership being identified (nurse managers, administrators and project leads), they are all are grouped together, without any regard for differentiating their respective tasks and responsibilities.

Similarly, Øvretveit's (2004) review of the literature revealed 10 common responsibilities of leaders in QI and safety. However, the review does not delineate the responsibilities across the different levels of leadership. Instead, Øvretveit's (2004) and Gifford et al. suggest that future research should include a multi-level approach for examining behaviours and activities of leaders.

Several researchers have delineated the roles and responsibilities of different levels of leadership. Conway and Monks (2010), after conducting and analyzing 48 semi-structured interviews with various levels of leadership, reported that senior leaders provide direction and communicate strategies, whereas middle management more effectively facilitate ownership amongst the frontline, by using clear and constant communication. Additionally, White et al. (2013) noted that a differentiation lies amongst levels of leadership and their associated roles. For example, executive leadership was described as holding strategic responsibilities by providing visionary direction whilst managers have a key role in communicating to frontline staff about upcoming initiatives (White et al., 2013).

Middle managers hold a unique position in healthcare organizations, as they are a pipeline of information between frontline staff and senior management (Conway & Monks, 2010; Wilkinson et al., 2011). Yet, literature that delineates the roles and responsibilities of middle managers amongst other levels of leadership in QI project implementation may not

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represent their perspective. Prior to analyzing what is described in the literature, it is important to explain the importance of examining leadership among middle managers.

1.1.5 The Need to Understand the Role of Middle Managers in QI implementation

Authors of several papers have suggested that middle managers hold great influence over the implementation process in healthcare organizations with flattened hierarchies (Birken, Shoou-Yih & Weiner, 2012; Dopson & Fitzgerald, 2005). Given their unique position, it is not surprising that authors such as Squires, Tourangeau, Laschinger and Doran (2010) start to explain the influence nurse managers have on frontline staff. For example, a cross-sectional survey study of 267 frontline registered nurses, the LMX 7 (Graen & Uhl-Bien, 1995) was used to assess leader-nurse relationship and self-reported medication errors. The study results suggest that middle manager leadership may influence medication errors (Squire et al, 2010).

The potential role of middle managers in the uptake of evidence and QI cannot be underestimated. Gifford et al. (2007) summarized empirical findings from four qualitative, exploratory and descriptive studies, identifying that middle managers are principal facilitators or barriers in evidence utilization amongst frontline. Similarly, through a literature review, Hutchinson and Johnston (2006) reveal that insufficient support from middle managers presents a significant barrier to introducing evidence-based practice. Additionally, Carney (2004) describes that middle managers should participate in the early stages of QI initiative in order to reduce the likelihood of any barriers that could create significant obstacles in the implementation process. Carney (2004) determined this through an analysis of 25 semi-structured interviews held with middle managers. Lastly, the consideration of managers as potential facilitators in project implementation is supported by Kirchner et al. (2012), where it is reported that according to

physicians, QI projects do not gain momentum and lose sustainability without the support of middle managers.

Despite literature showcasing the importance and influence middle managers hold, the gap in the literature is evident with minimal findings exploring their role in QI project implementation. This is disconcerting given that middle managers may not concern themselves with research utilization and evidence-based practice. Udod and Care (2004) report, from a survey of 117 first line managers that research utilization and evidence-based practice are not ranked as important. This is further echoed by Drach-Zahavy & Dagan (2002) who examined the work behaviour of 48 head nurses, and described that middle managers spend less than 3% of their time on QI activities. Consequently, it should come as no surprise that senior management perceive middle managers as a potential barrier to QI implementation because of perceived lack of engagement (Dopson & Fitzgerald, 2005). A literature review of 30 articles that used a 28-item Barrier to Research Utilization scale revealed that insufficient support from managers represents one of the greatest barriers to evidence-based practice (Hutchinson & Johnston, 2006).

Given the importance of their engagement in the process, it is critical to identify any factors that would lead middle managers to exclude themselves from QI projects. For example, Wilkinson et al. (2011) describes how managers felt their involvement in QI project implementation was challenging and often felt overwhelmed by such task. Furthermore, these managers felt unsure about their role and what strategies to use during such task (Wilkinson et al., 2011). As such, it is noted in the literature that any self-exclusion amongst middle managers (in QI project management) could result from a lack of understanding around role function (Dopson & Fitzgerald, 2005; Pinnock, 2012; Savage & Scott, 2004;Wilkinson et al., 2011). Jansson, Pilhamar and Forsberg (2011) demonstrate this further with interviews of 15 nurses

highlighting that one of the main facilitating factors in QI is when every stakeholder has a clearly defined role.

Despite the consensus that middle managers substantially influence QI projects as well as the agreement that their role requires more study, research in this area is scarce (Gifford et al., 2007). This oversight is possibly due to the fact that middle managers are often clustered under the broad umbrella of leadership (Bahtsevan, Willman, Stoltz & Ostman, 2010; Conway & Monks, 2010; Dopson & Fitzgerald, 2005; Kitson et al. 2011). Only two studies distinguished middle managers amongst other levels of leadership and describe their role from their perspective (Birken, Lee, Weiner, Chin, & Schaefer, 2013).

In conclusion, middle managers have an important role in QI, however their specific role remains largely under studied. This lack of research is troubling especially since they are often responsible for facilitating this process (Birken, Lee & Gifford et al., 2008; Hyrkäs, Koivula, Lehti & Paunonen-Ilmonen, 2002; Weiner, 2012). The limited time middle managers spent on QI activities, self-exclusion from projects (from lack of role understanding) and overall disengagement may be potentially creating potential barriers in QI project implementation. To what extent such barriers can explain the failure rate of 50% of such projects remains hypothetical. Less speculative is the belief that middle managers have an important role in any QI initiative. Consequently, it is critical to understand the managers' perspective of their role and those factors that facilitate or challenge them in fulfilling their role. One can certainly believe that with clearly defined roles, middle managers could feel empowered and facilitate QI initiatives (Dopson & Fitzgerald, 2005). In the following section the current state of knowledge about the role of middle managers in QI implementation is appraised.

Chapter Two: Literature Review

2.1 Search Strategy

This literature review, limited to the English language, took place between September 2012 and November 2014. In defining the scope of the literature review the researcher sought to examine what is known about the role of middle managers in QI implementation. The review included electronic databases, specifically CINAHL (EBSCO), Google Scholar, PsychInfo, Cochrane and Medline (OVID). The review focused on conceptual and empirical literature from 1980 to the end of March 2013. Reference lists of included literature were also examined for other articles. Functions of GOOGLE such as searching under "related literature" were also utilized. Appendix A and Appendix B contain the search strategy as well as the process for inclusion and exclusion of articles.

The search initially yielded 2473 articles. Full text articles were chosen if they met the inclusion criteria, specific for the purpose of this study. The inclusion criteria included: (I) description of middle management's role and/or influence in the organization, specifically in relation to QI implementation; (II) description of tasks, responsibilities and expectations of middle management in QI implementation/research utilization; (III) relationship between middle managers and their involvement in QI implementation. Synonyms associated with middle managers were also captured in the search terms and given consideration by the researcher. Articles were excluded if they did not meet the inclusion criteria. Editorials and commentaries were also not used. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2009 Flow Diagram was used to illustrate this process around how the articles were identified, and screened for eligibility (Appendix B). In total, 15 articles were identified to meet inclusion criteria and have been critically appraised in the following section.

Of the 15 articles, nine were empirical and six were conceptual. The conceptual literature was organized into two subcategories, if descriptions of the middle managers role were delineated from other levels of leadership or not (Appendix C). Within the empirical literature, studies were also divided into two subcategories, whether the findings preserved the perspective of middle managers or if they did not (Appendix C). In summary, only two of the 15 articles isolated the position and perspective of middle managers amongst other levels of leadership. All 15 articles were included in the review, and individual summary of the findings (meeting the inclusion criteria) are illustrated in Appendix C. Further appraisal of quality is identified in the summary findings of the empirical literature in a latter section.

2.2 Role of Middle Managers in QI Implementation: As Perceived By Everyone Else

Authors readily describe and emphasize the middle manager's distinct role in providing support to the staff, when directly involved in a project's implementation (Conway & Monks, 2010; Dopson & Fitzgerald, 2005; Gifford, Davies, Edwards & Graham, 2006; Gifford et al., 2007; Kirchner 2010; Kitson et al., 2011). However, in only two of the 15 articles reviewed is the middle managers perspective of their role descriptions in QI implementation described. Findings of the remaining articles are either conceptual descriptions of the manager's role or descriptions derived from perspectives shared across different organizational levels. Despite this combined perspective, the findings provide some insight around possible role descriptors as perceived by middle manager themselves. In the following section, the researcher describes some of the speculation in the literature about the role of middle managers.

The conceptual literature suggests that managers (in general) have the ability to influence culture in order to improve practice (Gifford et al., 2008) and create a capacity for change (Stetler et al., 1998). Gifford et al. (2008) takes a closer look at how the leadership behaviours of

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managers implement QI in their conceptual framework. Elements include: *relations orientated behaviours* such as *supporting* and developing staff, *change orientated behaviours* such as influencing culture and *task-orientated* behaviours such as planning structure and monitoring (Gifford et al. 2008).

The leadership behaviours described by both Gifford et al. and Stetler et al. (1998) closely align with other conceptual literature that explicitly describes and delineates the middle manager's role in QI implementation. According to Wilson's (2011) conceptual paper, middle managers, when involved in QI implementation, have four roles: *coordinator*, *communicator*, *campaigner* and *conflict manager.* Although derived anecdotally, the article provides a valuable, clear, and concise conceptual description of middle managers' role in QI implementation. Wilson's (2011) summative descriptors provide a general framework to help summarize current literature findings of the role of managers as perceived by everyone else.

Birken, Lee, and Weiner (2012) support Wilson's (2011) description of the middle manager as a *coordinator*. Birken et al. (2012) point out that as a result of their administrative position in the organization, middle managers can transfer information from the boardroom to the frontline in a timely, efficient manner (Birken, Lee & Weiner, 2012). In so doing, they could use appropriate language and strategies to accommodate a specific unit culture and local environment (Birken et al., 2012). Additionally, the middle manager can with the help of frontline input inform leaders or senior management about clinical conditions (Birken et al., 2012).

Further supporting the idea that middle managers have the role of a *coordinator*, Kitson et al. (2011) write that middle managers ultimately hold the responsibility in leading the multidisciplinary team (Kitson et al., 2011). For example, middle managers have responsibility

for supporting members of the staff and strengthening the role of frontline workers in QI

implementation (Dopson & Fitzgerald, 2005; Kitson et al., 2011). Alternatively, according to

Gifford et al. (2006, 2007), middle managers can provide and garner staff support for QI

implementation. That is, middle managers can choose how to allocate resources as well as

recognize and reward staff for assuming additional responsibilities (Gifford et al., 2007).

Acting as a *communicator*, middle managers play an important role in synthesizing

organizational strategies and translating them into day-to-day activities for the frontline

employees (Birken et al., 2012; Conway & Monks, 2011; Floyd & Wooldridge, 1992; Wilson,

2011). As with the role of *coordinator*, middle managers would use appropriate language and

strategies to help engage frontline personnel in projects (Conway & Monks, 2011;Wilson, 2011).

All in all, middle managers, when they are accessible and visible, rely on good communication to

gain support amongst frontline workers for QI projects (Gifford et al., 2006).

Middle managers also act as *campaigner* and champion the project when they justify the

need for implementation and provide clearly outlined objectives and responsibilities (Birken et

al., 2012; Floyd & Wooldridge, 1992; Hyrkäs et al., 2002; Wilson, 2011). For example, middle

managers can market an idea and make it relevant to frontline staff, fitting their values and

beliefs (Birken et al., 2012; Floyd & Wooldridge, 1992). Kirchner et al. (2010), after conducting

semi-structured interviews of 49 individuals involved in the implementation of a project,

described that middle managers promote programs by singling out the importance of an initiative

amongst competing demands (Kirchner et al.). In other words, middle managers are able to

prioritize and translate QI initiatives to align with other organizational strategies, thereby

upholding both organization level and frontline level priorities. The managers do so by

monitoring quality indicators and clinical outcomes and using appropriate QI evaluation

(Bahtsevani, Willman, Stoltz, & Ostman, 2010; Conway & Monks, 2010; Dopson & Fitzgerald, 2005; Gifford et al., 2006; 2007; Kirchner 2010; Kitson et al., 2011;).

In addition, middle managers can influence organizational structures and processes to ensure polices are implemented (Gifford et al., 2006; 2007). In a study of 48 managers in the Irish Health Service, Conway and Monks (2010) reported that middle managers demonstrated their support for change by enabling local champions, providing knowledge and communicating appropriately to staff. These empirical findings echoed those of Gifford et al. (2008) that described change-orientated behaviours of middle managers.

Lastly, middle managers act as *conflict managers* by building strong relationships between the multidisciplinary team and executive leadership and providing accountability when issues arise (Birken et al., 2012; Hyrkäs et al., 2002). Hyrkäs et al. (2002) interviewed 15 middle managers and concluded that peer supervision by nurse managers affected quality management. Specifically, middle managers had the responsibility of mediating and addressing any dissonance in the values and beliefs held by frontline staff and executive leadership (Hyrkäs et al., 2002). Close proximity to frontline staff enabled managers to be accountable for project implementation, and helped to mediate conflicts as they arose (Birken et al., 2012; Hyrkäs et al., 2002).

Although the conceptual work from Stetler et al. (1998) and Gifford et al. (2008) were limited in that they did not delineate middle managers when describing leadership roles, their findings supported other conceptual work that did (Floyd & Wooldridge, 1992; Wilson et al., 2011; Birken et al., 2012). Other limitations to findings arose in studies done by Kitson et al. (2011) and Gifford et al. (2007) where neither provided a clear definition of what is meant by a middle manager. This creates a potential to capture other types of management including

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administrative leadership, directors and head nurses. Lastly, both Floyd and Wooldridge (1992) and Wilson et al. (2011) findings were limited, as it did not outline how findings were derived. For example, both articles provided a list of roles they believed middle managers enact, but without any explicit explanation around how they came to these assertions.

2.3 Role of Middle Managers in QI Implementation: As They Perceive It

Two studies describe the middle manager's perspective of their role in QI implementation. Birken et al. (2013) examines the role of the middle manager in a large-scale American primary care context. Birken et al. conducted a mixed methods using secondary analysis of data collected for the evaluation of the Health Disparities Collaborative, surveying 120 middle managers. Birken et al. reported that middle managers described their role in QI implementation through an array of responsibilities and activities. These activities included making information relevant to staff, allocating appropriate resources, changing operations to help incorporate QI projects in every day work, acting as knowledge brokers, and translating broad strategies into actionable tasks. Other activities included compiling appropriate funding and selling innovation implementation as a priority amongst frontline staff (Birken et al.).

Using case-study methodology, Wilkinson et al. (2011) broadly examined the nurse manager's role in the implementation of evidence-based practice using documents (e.g. local policies and reports) and conducting 51 semi-structured interviews with nurse managers, in a Scottish acute care setting. Middle managers reported that they play a role in linking staff to certain responsibilities in the implementation process. Additionally, they believed that they played a role in empowering, facilitating and providing nurses with autonomy. Contrary to other findings, the middle managers in Wilkinson et al's study, they did not see themselves as program

champions but facilitated the implementation process, by assigning staff to certain responsibilities.

Wilkinson et al. (2011) also described the barriers faced by managers during QI implementation. Among them, few managers possessed knowledge regarding organizational priorities, hindering their own strategies for advancing the implementation process. In addition, managers experienced role overload, and with the exception of one nurse manager, all managers felt uncomfortable with the concept of implementation evidence, despite recognizing its value. Lastly, managers described that their personal interest and expertise played a part in how well they felt the implementation process preceded. In other words, those with keen interest in the project reported an easier trajectory in the implementation process (Wilkinson et al., 2011).

In summary, Birken et al. (2013) and Wilkinson et al. (2011) both describe middle managers as having a role in mediating between strategy and day-to-day operations, empowering frontline staff and giving them the tools to help successfully implement the project. However, Birken et al. also indicated that managers often have the role of selling innovation to staff. Conversely, Wilkinson et al. noted discrepant findings and explain that managers do not see themselves as program champions but rather as passive project implementers. Challenges arise in comparing the two studies as Wilkinson et al. provides limited project details and context of the study. The resulting ambiguity makes it difficult to compare results with Birken et al. (2013)'s study for the purpose of this study.

2.4 Discussion

Further comparison of the literature reveals some agreement exists around particular role descriptors of middle managers in this context. Wilson's (2011) summative descriptors of the *coordinator, communicator, campaigner* and *conflict manager* is supported by current literature

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findings that describe the role of middle managers as perceived by everyone else. The descriptors of *coordinator, communicator* and *campaigner* also align with the three consistent empirical findings reported by Birken et al. (2013) and Wilkinson et al. (2011) whose results capture the middle manager perspective. As a *communicator,* middle managers have a role in mediating between strategy and day-to-day operations (Birken et al.; Wilkinson et al.). As a *coordinator* and *campaigner* managers empower the frontline and give them tools to successfully implement the project (Birken et al.; Wilkinson et al.).

However, no general consensus exits amongst the literature to support Wilson's (2011) role descriptors. In addition, variances exist between findings from a combined stakeholder perspective as compared to Wilkinson et al (2011) and Birken et al. (2013) findings. For example, with regards to the middle manager's role in leading the multidisciplinary team, monitoring quality indicators was identified using the combined perspectives of multilevel leadership but not in the literature that solely reported on the middle manager's perspective (Bahtsevani, Willman, Stoltz, and Ostman 2010; Conway & Monks, 2010; Dopson & Fitzgerald, 2005; Gifford et al., 2006; 2007; Kirchner 2010; Kitson et al., 2011).

Additionally, literature using a combined stakeholder perspective revealed that managers have a role in leading and improving the knowledge of the multidisciplinary team (Dopson & Fitzgerald, 2005; Kirchner, 2010; Kitson et al., 2011). However, this was not demonstrated in either findings of Birken et al. (2013) or Wilkinson et al. (2011) who preserved the perspective of the middle manager. In contrast, the middle managers were seen to have a role in changing daily operations to align with strategic direction and "selling" innovation to staff (Birken et al., 2013). Differences within these findings may exist as a result of limited understanding around the specialized role of middle managers.

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Lastly, within the two empirical studies that considered the perspective of middle managers, discrepant findings exist. Birken et al. (2013) report that middle managers identify themselves as information brokers and champions of innovation. While other authors who have captured other stakeholder perspectives also assert the important role of middle managers in championing programs despite competing demands (Conway & Monks, 2010; Dopson & Fitzgerald, 2005; Gifford et al., 2006; Kirchner 2010; Kitson et al., 2011). Wilkinson et al. (2011) did not report similar findings.

In summary, despite their influence and unique juxtaposition between frontline staff and upper management, middle managers spend less than 3% of their time in QI activities (Drach-Zahavy & Dagan, 2002). As noteworthy, they do not rank research utilization and evidence-based practice as important (Udod & Care, 2004). The reason for their attitude remains unclear (Dopson & Fitzgerald, 2005; Jansson, Pilhamar & Forsberg, 2011; Pinnock, 2012; Savage & Scott, 2004; Wilkinson et al., 2011). However, Dopson & Fitzgerald (2005) suggest that if middle managers had clearly defined roles and responsibilities, would they have a clearer sense of their role in QI and concomitantly use their influence to facilitate initiatives.

Evidence describing the manager's role is limited in many ways including size and scope of investigation. Empirical findings that preserve the middle manager perspective are limited to an American primary care and Scottish acute care setting (neither well defined). Additionally, the gap in knowledge is evident with preliminary findings indicating that the manager's role in this capacity is multimodal, complex, and influenced by many variables that have not been investigated. These variables may include organizational structure and culture surrounding the project, clinical setting, nature of the project, and resources available.

Clearly there is a need for greater exploration of the role of the middle managers in QI project implementation. This qualitative study will contribute towards an in-depth understanding of the manager's role and the barriers and facilitators managers face when leading the implementation of a QI project. Lastly, inquiry about how prepared managers feel about the role and what factors would enhance their role has the potential to accelerate QI. Without more knowledge about the middle managers' role, future QI seems problematic.

Chapter Three: Research Method

The aim of the research is to gain understanding and explain how middle managers perceive and understand their role in QI project implementation. Primary and secondary research questions to structure and guide the research process.

3.1 Research Questions

The primary research question is:

What is the role of middle managers in the initial implementation of a mandated quality improvement project?

Secondary questions include:

- What activities and tasks do middle managers perform during the implementation of a QI initiative?

- What expectations do middle managers hold about their role in QI initiative implementation?

- How do middle managers describe the barriers and facilitators in implementing a QI initiative?

3.2 Study Design

As empirical knowledge around this topic is scarce, the researcher chose a qualitative, in-depth exploratory approach and grounded theory, specifically Charmaz's (2014), because it provides a systematic, flexible, and reflexive approach to qualitative data collection and analysis. Grounded theory provides a framework where data are constantly compared and coded. More specifically, Charmaz's approach to grounded theory allowed the researcher to have flexibility in determining data sources during preliminary analysis. By iteratively analyzing and collecting the

data, the researcher identified data sources that would potentially contribute to a deeper understanding of the manager's role.

Grounded theory also guided the researcher in gaining a richer understanding of the manager's role in QI implementation. That is, Charmaz's constructivist approach allowed the researcher to interact and interpret objects as well as capture objective truths. As a result, the researcher had considerable flexibility on how to interpret the data and how to incorporate any interpretations in the analysis, all the time remaining reflexive. This understanding should support future QI project implementation.

3.2.1 What is Grounded Theory?

Grounded theory provides a systematic approach to the collection and management of data and provides an outlined process to construct an explanatory framework (Starks & Trinidad, 2007). Grounded theory develops theoretical categories using inductive, comparative, and iterative and, in later stages, a deductive approach. In addition to constructing these categories, the process of refining and looking for variations and relationships among categories are central to grounded theory. Grounded theory encourages and emphasizes the iterative nature of the project (Charmaz, 2012).

Once initial data is collected, Charmaz's approach to grounded theory begins with coding the data. During this time, interview data, for example, are coded for general sensitizing concepts—using line-by-line coding, the approach labels each line of data (Charmaz, 2012). This helps to engage with the data and to identify processes that could otherwise prove elusive. To identify these processes, Charmaz encourages coding with the use of gerunds (noun form of verbs), if possible, to help build action into the codes. Coding can also take place with other forms of data, such as ethnographic observations and document reviews. These codes further

guide data collection and analysis by shaping interview questions or perspectives about observations, based on initial codes developed from data.

Although many other qualitative methods use similar strategies of coding and memo-writing, grounded theorists code data and write memos differently. Grounded theorists go beyond sifting, sorting, and summarizing data; instead they code processes, actions and meanings to help define connections among the data (Charmaz, 2012). Secondly, grounded theorists employ analytical questions during the initial stages of analysis that could include questions around what the data are suggesting and into what theoretical categories the data fit (Charmaz, 2010).

Although the intermediate step between coding and writing the first draft of the manuscript, memo- writing works from the very start of the research (Charmaz, 2012). Using the coded data, memo- writing guides the researcher to study the data and codes in new ways and starts employing thoughts and ideas that could challenge original perspectives (Charmaz, 2012). Action codes, for example, help the researcher identify and analyze processes; memo- writing is the action that documents this synthesis of data. During memo- writing, for example, the investigator compares data with codes and codes with codes, thereby analyzing the conditions under which the process arises, persists or changes (Charmaz, 2012). Further analysis of memos and codes helps the researcher identify theoretical categories and fill out these categories until saturation is reached. Theoretical sampling (cardinal to grounded theory) is the act of gathering data until no new properties of the theoretical categories emerge (Charmaz, 2012).

3.3 Setting

The setting of this study took place in 5 adult critical care units, located in a large Canadian city, operating under the same health authority. The critical care units vary slightly in

their respective patient populations, as some sites are considered level 1 trauma centers, and one of the centers is a specific cardiovascular critical care unit. Although the units vary in size and patient populations, patient-staff ratio and general organization of the units remain similar[1]. For example, each unit has at least one middle manager, and the nurse to patient ratio is either one nurse for every patient or one nurse for every two patients. Middle managers are defined as the level of senior leadership that has direct contact and supervision of front line employees (Birken et al., 2012; Floyd & Wooldridge, 1992). In this study the middle manager is the nursing manager and the assistant nursing manager of each critical care unit. Every unit in this study operates using the same charting system and is located in the same health region with a similar senior management organizational structure.

A QI committee representing all of the ICU sites was instructed (by executive level leadership) to develop a program that screened, treated, and prevented ICU delirium. This committee consisted of members across the city representing each ICU site and discipline including physicians, nursing, respiratory therapists, pharmacists and allied health professionals. The QI committee developed a delirium management program from a review of protocols developed by different centers across North America and through an integrative review of the literature. This program designed the Intensive Care Delirium Screening Checklist (ICDSC) and four protocols that provided frontline staff with processes to help prevent and/or treat delirium. Once the program was developed, the intent was to pilot the program at one ICU before recommending widespread adoption. Given the importance of environment in QI, differences

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[1] Some sites are considered a level 1-trauma center, and one of the ICU is referred to as a cardiovascular critical care unit (CVICU).

among the sites will be contextualized using the following data sources: descriptions of the

demographic data of the middle manager, observational data at each site, and culture as the

managers and the key informant describe it and observed/described processes of middle

managers during this time.

3.4 Sampling and Recruitment

Initially, a purposive sample of 7 critical care managers employed the following

participant criteria: 1) participants hold or have recently held a middle manager position in an

adult critical care unit 2) the critical care unit was responsible for implementing the described QI

delirium screening and management program. Additionally, through preliminary analysis and

initial coding of the interviews, a key informant was identified and recruited to participate. This

was the result of theoretical sampling (cardinal to grounded theory) whereby the researcher

gathers data until no new properties of the theoretical categories emerge (Charmaz, 2014). The

key informant was also a middle manager of a critical care unit. In addition to his/her managerial

role, the key informant was heavily involved in the development of the delirium QI project. The

focus of the research is to explore managers' role and responsibilities during implementation. All

participants were recruited *via* email, requesting their voluntary participation; those that agreed

received a written explanation of the study and provided a form to give written consent.

3.4.1 Sample description

During widespread implementation, middle managers were accountable (through

performance reviews) by executive level leadership to implement this project at their respective

ICU's. All eight (seven female, one male) middle managers were active managers during the

implementation of the delirium project. During the time of the interview, five out of the seven

participants were in their current managerial role for less than 2.5 years. All managers are

registered nurses with one holding a health related master's degree. In addition, no manager interviewed had formalized training in QI methodology.

After the project piloted at one ICU, the remaining ICU's implemented the program in similar fashion and timelines with the exception of the specialized cardiovascular critical care unit. This unit needed to further tailor protocols for their specialized patient population. Some differences in structure and function were identified and may have led to variation in culture amongst the ICU units. For example, all but one of the ICUs have operated for more than 20 years-the outlier has operated at the time of the study for less than 2 years. Although the staff training and experience were similar across the sites at the time of data collection, each ICU occasionally tended to specialized patient populations. Some examples included ethnically diverse, marginalized or low socio-economic status, trauma and neurologically injured, elective cardiovascular surgical, elderly, and bariatric patients.

3.5 Data Collection

Upon consent, the researcher collected initial data points by means of a semi-structured in- person interview with volunteer participants. This 30-45 minute interview gave managers the opportunity to explain their experience in implementing the mandated delirium screening and management QI project. Interviews were recorded and transcribed into a confidential, password protected digital format. During iterative analysis and interview data collection, the researcher identified a key informant and followed the same process. Amidst the interview process and iteratively analyzing the data, the researcher also identified project relevant documents data sources. Documents used in the analysis were formal project charters and meeting minutes from both a QI committee and leadership meetings. These were reviewed by the researcher and used in the analysis.

Using theoretical sampling, the researcher also selected meetings as important data sources. The researcher observed two meetings led by two different middle managers that were intended to aid in local project implementation. In addition, the researcher observed a larger meeting with a group of managers discussing their respective site progress on implementation. Field notes were taken during these three observations and used during analysis, including initial and subsequent coding. Three observations were deemed sufficient enough for this research, as the researcher believed that the theoretical categories identified during analysis had become saturated. A plausible explanation of this was that the researcher was somewhat involved in project implementation as both a frontline provider and QI consultant in the early stages of the project. In addition, as QI consultant for all the units studied, the researcher was familiar with the different environments of each ICU. Any personal insight the researcher had during this point was incorporated using memos (described further in 3.6 Analysis) and reflexivity to avoid bias.

3.6 Analysis

As previously mentioned, data collection and analysis took place concurrently, consistent with grounded theory methodology. For example, once an interview was completed, it was transcribed and analyzed (initially coded) prior to any further data collection. Using ideas emerging from initial codes, the researcher modified some of the questions accordingly. This process helped to guide the proceeding data collection to investigate any gaps in knowledge and to help deepen the analysis (Charmaz, 2014). In the midst of interviewing participants 3 and 4, the first two interviews were beginning to take on secondary or focused coding. This helped the researcher to identify an additional participant (key informant) and subsequently guide three more interviews. By modifying questions in future interviews and identifying a key informant,

the researcher developed tentative theoretical categories (raised from focused codes) (Charmaz, 2014).

During initial coding, the researcher coded line-by-line using gerunds instead of topics or themes (Charmaz, 2014). Gerunds are non-finite verbs, and coding using gerunds guides the researcher to look at the action and sequence to illuminate what is happening and how it is happening (Charmaz, 2014). Instead of coding using topics such as "conflict with doctor", the gerund version would be "taking action against MD". Initial codes were concrete and descriptive and with the use of gerunds, the researcher was able to avoid coding data into preconceived categories. This was especially important, as the researcher had been previously involved in some prior work to the research process. Field notes aided in this process by providing environmental perspective to what was said by managers. Reflexivity in grounded theory differs from other qualitative methodologies, as thoughts, feelings and ideas of the researcher are not dismissed. Instead, these thoughts, ideas and questions were written down as "memos" and used during secondary coding and deeper analysis of the data set (Charmaz, 2014). This process is known as memoing and allowed the freedom of thoughts and ideas held by the researcher to be integrated in future stages of the analysis (Charmaz, 2014).

To develop deeper understanding around the role of the manager, symbolic interactionism is used as a frame of reference. Symbolic interactionism describes that individuals act on meanings and interpretations, and the process of acting and interpreting exist concurrently (Charmaz, 2014). Meaning making does not precede action, but rather through acting, new meanings are constructed or old meanings are reconfirmed (Charmaz). The symbolic interactionism perspective helps to view managers as existing in a material world that precedes

them, whereby they engage with the environment through reciprocal processes of interpretation and action (Charmaz).

After initial coding, interviews were re-coded or coded for selective codes that the researcher interpreted as significant or frequent and that illuminated the data and built connections (Charmaz, 2014). During this time, subsequent field notes were coded and re-coded in a similar fashion, often helping to refine "memos". Although initial codes were descriptive and concrete, secondary or focused codes were more conceptual and reflected analytical connections the researcher began to formulate. With further examination and coding, similar concepts are grouped by fit and relevance into tentative theoretical categories. During this time, constant comparative analysis between initial codes, focused codes and data helped to ensure a fit and remain reflective of the data. The researcher continued descriptive memo writing during every step of the analysis, helping to build connections within the data and refine ideas. Some of these memos became researcher driven conceptual categories (Charmaz, 2006).

Tentative theoretical categories began to take shape during the coding and memo writing process (Charmaz, 2014). The researcher organized these codes and memos by writing them all down individually on sticky notes. She then pictorially arranged and clustered them into groups on poster paper helped to identify these emergent tentative categories. Using this graphic display, these sticky notes also helped to identify the relationships amongst and within them (Charmaz, 2014). Initial analysis was shared with peer reviewers to ensure the appropriate use of grounded theory. Simultaneous to interviewing, transcribing and coding this data, other sources of data were analyzed in a similar fashion. This included organizational documents such as formal project charters and meeting minutes from previous QI and leadership committee meetings.

As the relationships between the categories were identified and organized, a tentative theoretical framework began to take form (Charmaz, 2014). Constant comparative analysis continued and analysis deepened as memos began to take a conceptual form whilst the theoretical framework was revised and refined. Again, previous frontline experience and field notes helped to provide a context to analytical thinking. During this time, the core category of "building understanding" emerged. With this core component, memos were further refined and tentative categories re-organized. The data was then analyzed for any gaps in knowledge, when none were identified; the researcher decided that theoretical saturation was reached. The researcher felt at this time, the categories were robust in description; properties were defined and theoretical relationships between and within categories were identified (Charmaz, 2014). Subsequently, a theoretical explanatory framework describing middle management's role was finalized.

This theoretical explanatory framework uses the constructivist perspective with some properties of the objectivist lens of grounded theory (Charmaz, 2014). The objectivist approach identified a core concept of "building understanding". However, a constructivist approach attended to historical, social, and situational processes. The researcher developed the framework using the interpreted experience of managers and was not taken as the whole truth (Charmaz, 2014). The finalized framework that emerged illustrates that the role of the middle manager is to ensure that a multi-faceted understanding exists amongst frontline staff.

3.7 Rigor

Rigor in qualitative studies typically adheres to three criteria: credibility, auditability and fittingness (Cooney, 2011). Grounded theory methodology assists the researcher in maintaining rigor in both the method and its findings. Credibility of data occurs when the researcher

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successfully described the context so it resonated with the stakeholders (Cooney, 2011). In this study, the researcher shared codes with the participants after the completion of an internal review to ensure that the codes are strong and accurate. In this way, participants can ensure that the researcher constructed an explanatory framework reflecting their experience, thereby ensuring accuracy and credibility of the framework.

 To further ensure credibility, participants guided the inquiry; in other words, the researcher maintained their language in order to prevent misrepresentation of findings (Cooney, 2011). Through follow-up conversations, the researcher asked participants, to validate that any description as presented resonated with their perspectives about their role in QI implementation. Auditability maintains a comprehensive audit trail of findings and methodological decisions (Birks & Mills, 2011; Cooney, 2011). Although grounded theory does not explicitly describe the use of an audit trail, memo writing (depicting the researchers decisions, values, beliefs and assumptions) helps the researcher document decision-making and the reasoning behind them (Cooney, 2011). Memo-writing was useful in documenting assumptions held by the researcher that could influence data coding. Memo writing can also document the derivation and summarization of themes that maintain individual perspectives. These strategies helped the researcher maintain auditability and provide a way of reviewing analytical decisions when required. Lastly, fittingness juxtaposes the context with relevant demographic characteristics of participants, local policy documents, and any other pertinent characteristics of the setting (Cooney, 2011).

To help to maintain validity, any biases that the researcher held were documented. Any biases that could occur during analysis were explicitly stated through memo writing. Internal

validity was maintained when refined themes were brought to the participants for validation to ensure accuracy.

3.8 Ethics

In accordance with the policies and procedures set out by the University of Calgary Conjoint Health Research Ethics Board (CHREB), the researcher applied for and received ethics approval prior to any data collection. Ethical considerations in this study included maintaining the privacy and confidentially of any data collected. In so doing, the researcher insured that all participants remained unidentifiable. She obtained voluntary, written consent (see Appendix E) from all participants for access to any relevant documents, if required. The researcher reported that the participants, whom she has come to know, accepted the investigative efforts at face value because she does not hold a position of power. Participants also had the assurance that if at any time they would like to withdraw from the study, they would have the freedom to do so. Lastly, participants were assured that all data remained in a digital format, password protected and stored in a safe, private location. The following section describes the study's findings where pseudonyms are used to help maintain confidentiality when showcasing participant quotes.

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Chapter Four: Findings

In this chapter a core category, *building understanding,* and three other categories (i.e., multifaceted understanding, managers as the link and operationalizing the project) collectively form the explanatory theoretical framework. Through the construction of the framework, the researcher identifies how managers perceive their role in QI project implementation. The data strongly reflected that the role of the middle manager in project implementation is essential in building knowledge amongst frontline staff. Managers described their role in QI implementation as *building understanding* not only amongst themselves but also amongst frontline staff. Managers go on to define what multi-faceted project understanding means to them and how it is used during the implementation process. From the managers' perspective, they see themselves as acting as a link between executive leadership and frontline staff. In this way, by ensuring that staff understands and subsequently buys-into the project, the managers see themselves as critical to project implementation.

Managers enacted their role in building understanding through three phases that coincided with the theoretical categories (as depicted in the theoretical explanatory framework). These phases include I) Gaining project understanding II) Preparation for implementation and III) Project implementation. The phases in which managers enact their role in building understanding (core category) coincide with the conceptual categories. These conceptual categories illustrate how managers are incrementally working towards not only building understanding amongst themselves but the end-users of the project. The three conceptual categories and how they ultimately connect to the core category are described. Further exploration of the core category of *building understanding* is followed by discussion around how managers enact this role by moving through the theoretical categories in phases. Statements

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made by participants are identified via quotation marks and italicized font. Participants' initials have been changed to randomized letters to ensure anonymity. An illustration of this framework can be found at the end of this chapter (Figure 1).

4.1 Categories

Using Charmaz's (2014) Grounded Theory, three conceptual categories emerged: multifaceted project understanding, managers as the link, and operationalizing the project. The conceptual categories and their properties are detailed here.

4.1.1 Multifaceted Project Understanding

In their interviews, participants described a pragmatic appreciation around project implementation. From their statements, the category of multifaceted project understanding emerged and supported by properties of: knowledge around the initiative, the need for the initiative, and practical application of the initiative. Specifically they described the importance of project understanding existing amongst themselves and frontline end-users during QI project implementation. Prior to *building understanding* amongst frontline staff, managers must have understanding around the initiative. Managers described that project understanding refers to an individual having knowledge about all aspects of the project. Understanding is seen as multi-faceted, and that three essential elements must be understood. These elements include knowledge around *what* is the project about, *why* this project is needed, and *how* it will like in local context.

> *Teaching people how to use the tool [is not difficult]...people are brilliant, they know all*
> *of that stuff...the bigger challenge is truly getting them to appreciate why it's important*
> *to AB*

4.1.1.1 <u>What the project is about</u>

In their comments, the managers remarked that they would have preferred more time during the introduction to the project. That is, managers described how they first learned about the project in an in-depth manner when they were handed a *"package"* that included the Intensive Care Delirium Screening Checklist (ICDSC) and the three developed protocols for the management and prevention of ICU delirium. The managers described the project as "*landing on their desk"* and *"suddenly appearing on their to-do list."* They then had to figure out the purpose and outcomes for the protocols and tools. For example, many managers were interested in the decision to use the ICDSC versus other tools to screen for delirium. Managers found it challenging to obtain this knowledge without a project leader that could support them each site and connect them with the original delirium committee, who developed the delirium program. One manager explained:

> *We [managers] did ask for meetings with [original delirium committee], because we*
> *needed to find out more about this, [from]...the actual committee that was pushing this*
> *and did all the background work. KI*

There was consensus amongst both the managers and the original delirium committee, that the transfer of knowledge (from the innovators of the project) to each site manager was incomplete. This incomplete knowledge exchange left both parties feeling frustrated and resulted in feelings of disconnect and confusion. Managers felt unsupported and as a result had to "*figure things out as they went along"* CD.

4.1.1.2 <u>Why the project is needed</u>

Once managers understood the intention of the project, they could deduce the need for the project. Managers explained only with such knowledge could they *"sell the project"* and help

frontline staff to *"buy in"*. How the managers managed to gain the confidence of the staff as to the merits of the project depended on their use of several different strategies. The literature certainly proved useful in providing information about identifying, preventing, and treating ICU delirium. In addition, managers also relied on local clinical experiences around ICU delirium. For example, one manager shared with the staff her experience with a former patient, who believed that the nursing staff held him captive and tortured him in the ICU. Although not part of the packaged materials, recounting this case proved useful with the staff on one ICU in the study.

> *Before everything rolled with delirium, I had two incidents where patients came to me*
>
> *about how they had been treated. Well one was a family member and one was a patient.*
>
> *The [patient] said that it felt that [the patient] were tortured and abused…it didn't matter*
>
> *what I said…I kept thinking that if we were aware of how to manage delirium we might*
>
> *prevent these [traumatic memories patients experience OP*

It and similar patient cases provided a context for the project that the staff would otherwise lack.

4.1.1.3 <u>How the project will look within the local setting</u>

Lastly, managers described gaining project understanding around how the delirium initiative would materialize at their respective ICUs. *"[I had to figure out] how we are rolling it out, how we are making it into regular life, how do you educate, train"* AB.

Managers explained that comprehension around how to operationalize projects is complex and involves a two-tier level of understanding. Managers should understand how the project would look like in their setting (future state) and identify what procedural changes would move practices from the current state to the future state. At this point managers emphasized that a clear understanding of the future state/project objectives was needed prior before implementation.

One manager (CD) described that a QI consultant helped them to understand *"how"* to contextualize the project in their local setting. With the use of process mapping, managers illustrated and compared current practice to the desired future state. This helped the team to identify specific process changes that would transform the delirium initiative into current practice.

One manager described how knowledge around QI methodology helped them to understand *"how to implement"*. One manager stated:*"[QI knowledge] made me more efficient at being able to look at [the project] and implement the process, [know] how to measure what we're doing and how to make that measurement valuable"* GH

Another stated,

You've got some real theory to support that this is why we're doing what we're doing...that formal theoretical knowledge base you've got something to say ok...what are my first steps, what are my second steps, cause it's overwhelming as hell and if you don't have some of that background to direct you, you're struggling...CD

These statements illustrate how managers emphasized the importance of building project understanding prior to any advancement in through the conceptual framework, ultimately laying the groundwork for project implementation.

4.1.2 Managers as the link

This category includes connecting executive leadership and frontline staff, integrating strategic direction in local planning and the use of contextualization. In this conceptual category how managers continue to build on their project understanding, specifically around what the project is about and how the project will look like in their local setting is uncovered. Their link between executive leadership and frontline staff illuminates their pivotal role in translating

strategical direction into an operational project through the use of local strategical direction and project contextualization.

4.1.2.1 <u>Connecting executive leadership and frontline staff</u>

The managers had ultimate responsibility for implementing the initiative in their respective ICUs. With executive leadership sponsorship, the delirium project was introduced by the delirium QI group, with the expectation that managers would operationalize the initiative. The meaning of responsibility is voiced strongly by the participants*: " I absolutely [feel the accountability is on my shoulders] because people are looking at you and are asking you where's your unit at?" OP "I feel very much feel a sense of responsibility [about the way the delirium project was implemented]" KI* and *"Heads are going to roll if it [the delirium project] falls of on my end right?" MN* and finally *"The accountability [of project implementation is fully mine], because when it comes to good or bad or otherwise, it does come back to me" AB*

Managers embraced the notion described, that they represented the linkage between executive leadership and frontline staff. Managers continued to describe that their role is to ensure that the strategic direction of executive leadership was taken up in work at the frontline level. One manager described her role as that of an advocate or cheerleader for the project. *"To engage staff [I was like] a cheerleader. Let's go. We can do this…. One of the ways to be that cheerleader is communicating to the frontline…"OP*

4.1.2.2 <u>Integrating strategic direction in local planning</u>

Managers believed that they had an obligation to lead the efforts at preparing for QI project implementation. Managers described they did so by communicating the intention and direction of the project to staff at the outset. Responsibilities during planning included: establishing and maintaining timelines, identifying project champions, communicating

expectations and planning for project sustainability. Managers referred to this responsibility as "laying the groundwork" and "having a vision". Managers cited the importance of explicitly communicating the projects intention, including the expectations held of those involved:

> *I needed to have some degree of awareness of what was going on in every capacity, the delegation of tasks that was reported back to me…[setting expectations and communicating them is vital]. Here's how I see this going. Here's how I see your guy's role AB*

> *[it was required of me to] create that vision…create a timeline and getting [frontline] involved in that vision as well. So we want this rolled out. We want everybody to be aware of delirium, which I think is a huge thing OP*

One assistant manager explained that a senior manager's vision for the project was instrumental in mobilizing the frontline team in project planning:

> *As assistant managers, you don't have time to do what needs to be done [QI projects], just time for functional [tasks]…Her being engaged in what the vision is and to help push [us] in that direction and get me on board is key. To have her support in it...it's helpful to get it going MN*

Managers explained how they strived to sustain the strategic direction of the project by leading and being involved in local preparation efforts. This was done by coordinating and chairing regular project meetings, holding champions/early adopters accountable for action items, and refocusing efforts based on the needs of the local environment. One manager explained that being present on the unit and engaging staff in informal conversations about the work helped in the preparation process.

I am a big believer in conversations, those informal conversations….[The managers] would wander on the unit multiple times a day and really want to know what is happening with the staff....There was a lot of challenges...So it's having those information conversations that as a manager you start collecting the pieces of information and creating your own themes as where the challenges are lying with the frontline staff and trying to reduce those barriers EF

Open communication with frontline staff provided the manager with information about the progress of local project planning. It also helped to identify likely local barriers and facilitators of project implementation before they arose. Managers used this information to help remove barriers and capitalize on facilitators to ensure appropriate implementation of the project. For example, managers would early on identify the biggest practice changes associated with the implementation of the delirium project and then focus implementation efforts around those changes.

4.1.2.3 <u>Use of contextualization</u>

Managers described that they primarily form linkages between strategy and operations by ensuring the project is adapted to the local environment. One manager (IJ) described contextualization as *"creating a fit for the projects that align with frontline practice"*. Managers described that consideration of the unit culture and current practice is vital in any QI. This also includes identifying what process changes are required and who will be affected by these changes. Yet, given the uniqueness of each ICU, no one approach sufficed. Managers each took different approaches to tailor the project to their specific ICU settings.

Understanding around "how to implement" featured predominantly during this process of contextualization. For example, one ICU manager used process mapping (comparing current

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state to future state) to determine when the ICDSC scoring would occur and how it would be reported. At another ICU, the working group determined that the vocabulary within the protocol required modification to align with current practice. That is, whereas the intent of the protocol remained unchanged, the language better aligned with ideologies embedded in the unit culture. One manager explained: *"I think it's mostly connecting the dots for staff …to make sure they understand… and getting those things figured out and then making it practical for people to understand" MN*.

Managers explained that end-users are more engaged when they are informed on the practicalities of the project such as how these changes will affect their day-to-day work. One manager described this process as *"making it practical for people to understand it [while] making sense of everything" IJ*. Other managers explained tailoring the QI to local needs helped to engage more staff. For example, contextualizing education to fit the learning needs of the staff was used at one site to ensure project awareness amongst staff*; "trying to, how can we stream line this education the best so that we can get the message out and people are doing it" KI*.

4.1.3 Operationalizing the project

This category of operationalizing the project explains how managers take their project understanding they have built amongst themselves and start to build project understanding amongst the end-users of the project (frontline staff). This includes building understanding around what the project is about by "creating awareness", why the project is needed by "selling the project" and lastly how the project will look like by helping to "integrate project into daily practice" with the help of local champions and working groups.

4.1.3.1 Creating awareness

Once preparation was complete, managers next raised awareness about the project and its purpose, alongside all of its integrated components. Managers reported that they communicated any changes early to ensure their transparency—this helped staff feel prepared and confident about their level of project understanding. Managers believed that they held the ultimate responsibility for ensuring that staff is informed. One manager explained that her role is to *"make sure they understand and have the education and support to be able to do that and their job" KI.* Understanding or awareness about the project goes beyond communicating the information. Many times the material has to resonate with staff and all elements of the "what", "why" and "how" function to create engagement. One manager explained that this process is like "*entrenching that idea, that belief, that value that yes, this is why we should click the buttons" AB*

In order to do this, managers had to articulate their message in a way that resonated with end-users. The same manager stated:

> *We have those dialogues for weeks and months before we ever inform staff, and then you're right, all of a sudden I've got to translate those weeks and months of dialogue and thoughtful conversation into something [that we are doing]. And the buy in is my responsibility. Right...I've gotta sell it AB*

4.1.3.2 <u>Selling the project</u>

In order to operationalize the QI project, managers found strategies to "sell" the delirium project to staff. One manager described how using a real patient example helped frontline staff to identify the need for delirium management.

"We just had an incident with someone that was kicked by a patient, who had been delirious. I think it was partly alcohol withdrawal too, but very aggressive and very violent. So this [delirium initiative] really brings everything to light again and [helps to enlighten] how we manage delirium in the ICU" OP

Furthermore, many of the nursing managers used the literature to inform the end-users more fully about the purpose and need for the delirium project. Illustrating, both qualitatively and quantitatively, the long-term negative consequences of unmanaged ICU delirium, the managers used this to "sell" the project's purpose to staff. An example of this was a Power Point presentation, compiled by a few clinical leaders that used literary findings to describe why the delirium project was a necessary initiative. To the same end, another manager made use of clinical data drawn from the unit—the manager shared this ICU data with the staff to demonstrate the prevalence of patients at risk for delirium.

"Using audits we were able to encourage staff, to [educate staff] about what's behind the [audits] and the importance of [screening for delirium]….But it's just making sure the information is out there and trying to do reminders for the staff to keep it in their thought processes, to keep the ball rolling" MN

4.1.3.3 <u>Integrating project into daily practice</u>

Managers described that they implemented projects with operational emphasis. In other words, they emphasized how to integrate the project into current practice. Using the work done

around contextualization, managers mobilized their respective teams of clinical leaders, champions, and educators to encourage frontline staff to integrate strategies into a workable process. Managers attributed visibility on the unit as well as formal and informal dialogue critical to this purpose.

> *... because again there are competing priorities...you actually have to demonstrate that you want to hear what they have to say and then you can throw a remedy list.... and that helps staff to start to question also how to make these [delirium tools] better. It's conversation around [how you operationalize these delirium tools] EF*
>
> *I would walk around in the morning. I would ask [staff] about their delirium score...[make the initiatives simple and asking]. What are you doing to mobilize your patient today? Like I wouldn't even talk about delirium management prevention...[Instead] I would just to try to support [the delirium initiative using] conversations, you know for example mobility.... and being like a facilitator IJ*

4.1.3.4 <u>The use of local champions and working groups</u>

During contextualization and overall project implementation, managers would endeavor to include having end-user representatives of all disciplines. However, they described that individual communication across the entire team is unachievable, requiring the use of champions. Managers believed that local champions proved instrumental in implementing and sustaining the delirium initiative. Managers recognized, valued and respected the clinical expertise of frontline providers. Consequently, managers relied on them to provide frontline perspective to inform managers about current processes, practices, and culture. Managers made use of gathered frontline feedback to adapt initiatives to the local context, refocused project efforts and removed barriers. Managers also commented that having end-users involved in

project implementation built local ownership of the project, furthering engaging the frontline staff.

> *... I think mobilizing the team and identifying the right team is key in a big project ... to get the buy in of everyone else...get the right team members, to get them on board, to get them to sell it to people MN*
> *"[You must get] champions form the people are actually gonna do the work, so if you can't get 3-4 of your staff who are really engaged in it chances are it's not gonna be successful" GH.*

Another manager explained that it is important (with the help of frontline staff) to identify

> *"how does the [project] affect the people that are gonna do the work" IJ.*

Champions and members of the working group are identified and recruited by managers. They often consisted of individuals, whose professional philosophy aligns with the project, and who enjoy the respect of others on /or held by frontline staff. They typically include educators, other managers, and frontline staff from all disciplines. Managers often lead these working groups and held responsibilities such as identifying and communicating expectations, delegating responsibilities, and holding individuals responsible for action items. One manager stated,

> *Engaging those frontline workers in our core group, so it was led, it was monitored and supported and I gave direction, because I had a vision for what I thought the end product would be like, but really having the frontline staff, I had about 4 champions here that really did a ton of work. But I also gave them time away from the bedside duties to do that, so I brought them on….with no patient assignments so that they could spread the word, support their peers, get an understanding. GH*

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4.2 Core Category: Building Understanding

Amidst analysis, *building understanding* was the core category that kept re-surfacing and providing the foundation for a theoretical explanatory framework. Managers placed great value on project understanding at both the managerial level and the end-user level. For example, managers emphasized their journey in building their own multifaceted understanding of the project. They recognized the importance of not only the frontline staff understanding the content, but appreciated that they are the important link in ensuring it exists. Managers exemplified this through their description of tasks and responsibilities directed in building understanding around the project amongst frontline staff. Managers viewed that their primary role in project implementation was to ensure frontline staff have multi-faceted understanding of the initiative. This is highlighted in the interviews:

> *" People that are delivering [delirium prevention and treatment strategies] need to understand and have the education and support to be able to do that, and their job … my job [is] to make sure that happens." KI*

And other manager identified: "*[Description of their role]…make sure [frontline staff] have the education they need and resources they need to do their job…" MN*

In summary, managers play a role in educating their staff either directly or indirectly through the use of frontline champions and educators. Their role in this process is intricate, and involved in-depth preparation, and support for the staff during initial practice changes so they understood all of the components of the project. Properties that further supported this category are: end-user understanding is essential QI project implementation, using understanding to engage staff, and middle managers and their influence on frontline engagement.

4.2.1 End-User Understanding is Essential in QI project Implementation

Managers explained that multifaceted project understanding amongst all end-users is required in order for pathways and best practice to be integrated into current practice. This includes the intention, purpose and potential impact of the project. One manager remarked about the most influential facilitators in project implementation:

> *"[Staff] understanding what the goal of the project is, what are the timelines of the project, what resources are in place, existing within that project…helps to roll it out…what are the expectations of you within that project, hopefully that's articulated…."*
> *KI*

All of the managers spoke about the importance of staff understanding about how an initiative would appear in practice. Only when the appropriate contextualization of an initiative occurred, did the clinical staff understand how it fit into their day-to-day work. If full multi-faceted understanding does not exist around the developed protocols and their practice, confusion arose. One manager (AB) explained that because the intention of a certain tool was misunderstood initially, staff members were misinformed and this created disengagement towards certain protocols amongst frontline staff.

Managers also described that when staff has a better understanding about the measurable impact of a QI on patients and their families, barriers are reduced. Managers attributed greater engagement to project implementation when the staff re-focused their attention from their work constraints to the needs of patients and their families. *"You've got people on all levels of the organization looking to bring about change that's focused on patient safety or patient/family care needs" AB.* Another manager identified that *"[at our site] the project was not met with a lot of resistance, cause I think that it was really situated around what's best for the patients" EF.*

4.2.2 Using Multifaceted Project Understanding to Engage Frontline Staff

According to the managers, once staff understood the "why", "what" and "how" of the project, they were more likely to implement the project in their day-to-day practice. One manager discussed, *"I think [staff] just need to understand why…[then] they're more likely to engage… and speak to it from a really evidence-based perspective…." EF*

Managers recounted that some early adopters of the project often become champions of the project. Local champions often advocated for the project and its associated practice changes and became a resource to staff adjusting to the change. In turn, they engaged even more ICU staff to participate in the implementation.

Managers described the process of engagement was demonstrated when staff actively implemented the project into their daily practice and encouraged others to do so as well. Managers referred to these behaviours or actions as staff "buying-in" to the project or synonymously as engagement. Managers described that buy-in was enhanced when staff understood the "why" or when the initiative aligned with their individual beliefs, values, and perspectives. By having a greater purpose, the project became more than another addition to their workload, instead they understood that it helped to decrease variability in practice.

> *Its entrenching that idea, that belief, that value…We were focused on how this is going to go, how do we reach these vast number of people…. how we do we educate, how do we inform why we're doing what we're doing, why it's valuable…and it's not change for the sake of change AB*

Managers continued to explain that many ICU nurses knew about ICU related psychosis and the importance of mobilizing patients early and decreasing their sedation when appropriate.

In other words, managers built understanding around "why" by showing the staff that the delirium project was a formalized solution to an already identified problem: *"It's something that everyone recognized, we always talked historically about ICU psychosis…so delirium has been a recognized issue…"EF.* Another manager concurred:*" I don't believe we weren't doing it [delirium prevention and treatment], I just don't think we put a formal name to it…[now] we wanted to put...a bit more of formal process to it" GH.*

In summary, managers agreed that staff understanding about the project, specifically the "what" "why" and "how" of the project, remains fundamental in QI project implementation. Such understanding empowered staff to incorporate the project into their daily work and recognize the value in the changes. Building understanding, especially around the "why" of the project, can also help to engage staff. Building engagement is further enhanced when the project aligns with personal beliefs and values. Several managers described how having understanding around "why" and seeing the value in the project can provide a powerful impetus. The following statements express the significance of "why"

> *"Some of the [most successful] patient centered care initiatives come out of a strong belief [amongst frontline staff]" MN*

> *"Front line people that are absolutely invested in bringing about change that prevents those events [delirium] from occurring…it's not always the top [executive leadership] that is saying, ' hey we need to do something'." IJ*

4.2.3 Middle Managers' Project Understanding and Frontline Engagement

Managers explained that their influence stems from the structure of project implementation, where the frontline heavily relies on the manager to introduce and engage them

in the project. Managers emphasized how their understanding (of the project) is crucial to informing and engaging frontline staff of the project

> *"make sure you have a solid understanding, because I think that is key…It helps you fill*
>
> *questions…You really need to have that understanding of what you are trying to do and*
>
> *why, if you are going to engage staff." EF*

Another manager shared: *"I did absolutely feel a sense of failure...educating the staff [because we misunderstood some of the tools, as a result]…felt like we dropped the ball [disengaged staff]" AB* While another;*" If you're involved with [delirium] you're going to have a better understanding of why things are in place, why this decision was made and why we are going to do it that way" KI.*

In essence managers described that they have to "walk the talk" in terms of project understanding in order to engage frontline staff. Not only do managers need to understand all the project elements, managers emphasized the importance of demonstrating authenticity in project understanding and interest in the project if they expect frontline to the do same.

> *[My advice to other managers implementing projects is] …being informed on a regular*
>
> *basis…so that you feel confident in what you're doing and why you're doing it… [and]*
>
> *find something that you can believe in that so you are very authentic in the project OP*

On the other hand, managers can inadvertently cause disengagement during project implementation. Both AB and KI described how misinformation and misunderstanding about a project could present a significant barrier to engaging staff (in the project). As they described it, confusion arose (amongst frontline staff), during implementation, around the intent of certain tools and documents associated with the project. One manager (KI) described that they

(educators and managers) themselves also misunderstood the purpose of certain tools—this

caused confusion and even apathy towards the project at the frontline level.

Figure 1 Building Understanding

Phase III: Project Implementation

Multifaceted Understanding
- **WHAT:** Creating awareness
- **WHY:** Selling the project
- **HOW:** Integrating project into daily practice
- The use of local champions and working groups

Operationalizing the Project

Phase II: Preparation for Implementation

- Connecting both executive leadership and frontline staff
- Local strategical direction (**WHAT** the project is about)
- Use of project contextualization (**HOW** the project will look)

Managers as the Link

Phase I: Gaining Project understanding

How will the project look like

Why the project is needed

What the project is about

Multifaceted Project Understanding

Building Understanding
- End-User and Manager Understanding is Essential
- Project understanding is essential for engagement
- Middle Manager Project Understanding and Frontline Engagement

4.3 Role Enacted: Building understanding

In Figure 1 the process whereby managers build understanding about a project is pictorially represented. The red arrows, found alongside the left margin, depict the three phases of implementation. Managers enacted their role in building understanding through these three phases that coincided with the three theoretical categories. These phases include I) gaining project understanding II) preparation for implementation and III) project implementation. The first phase or step, according to the managers, was to build their multidimensional project understanding. For example, project understanding around "what" required further comprehension around the ICDSC screening tool and (three) guidelines to prevent, and manage ICU delirium. All managers placed heavy emphasis on the importance of Phase I because it proved foundational to building understanding and consequent knowledge uptake.

> *"[The first step] is understanding what the goal of the project is, what are the timelines"*
>
> *AB*
>
> *"[It is important] for me to understand, you know like to figure it out first… what my role would be in it" MN*
>
> *"[I felt] overwhelmed. It's a big project, and you always feel like you're maybe missing pieces….We're given these tools, but [we] also need the rationale… why did we decide to use these tools...We're asking what's important..." OP*

Once managers developed a comprehensive multidimensional understanding of the project, they were able to move forward in their preparatory efforts as depicted by the others phases of the framework. Phase II describes the preparatory steps managers took prior to introducing the knowledge or project to the frontline staff. Managers acted as the link during this stage of preparation because they are fully accountable for the work and ensuring strategic direction was

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maintained. Managers also link strategy to operations in this phase by beginning to contextualize or tailor the initiative to their respective units.

During the final phase, managers built understanding about the project through a variety of activities during project implementation. This phase operationalizes the project. Managers clarified that during this phase they built project awareness in a dialogue that made sense to staff, and did so in a timely manner. Of course, they continue to communicate project objectives and remained transparent about the impending changes. In addition, managers often spoke of "selling the project" to staff and emphasizing the "why" component of understanding to staff during this time. Furthermore, managers also spoke about transferring project knowledge with an operational emphasis. For example, using contextualization (in Phase II), managers introduced strategies to help frontline staff integrate the project in their daily work. Lastly, managers described the pivotal role local champions and working groups played during this phase.

In summary, the three phases (as depicted by the theoretical categories), are navigated both sequentially and at times iteratively as managers enacted their role in building multi-faceted project understanding amongst end-users (frontline staff). These theoretical categories provide descriptions about how the managers enacted their role in building understanding through different phases in project implementation. Some of these phases are enacted iteratively at times, such as contextualization and integrating project priorities into daily practice. Figure 1 not only explains middle managers' role in building understanding, but it also provides a roadmap of how and when managers enact these responsibilities during QI project implementation.

Before we proceed further, we should discuss certain assumptions made in development of Figure 1. The first assumption is that roles correspond to patterns or social behaviours and any expectation for behaviour by individuals (Biddle, 1986). In addition role theory tells us that

individuals embrace expectations of their own behaviours, and can vary amongst levels of leadership (Biddle, 1986; Birken et al. 2013; Wilkinson et al., 2011). Lastly, there is the assumption stemming from organizational theory that organizations are rational, task orientated and hierarchal (Biddle, 1986). In this universe, a project undergoes a hierarchal, mandated approach whereby senior leadership makes a decision and their managers take full responsibility for its total implementation. In regard to these, as with any assumptions, one should remain vigilant.

4.4 Barriers in Implementation as Described by Middle Managers

Managers described that because of limited resources, (including the presence of a project leader) and mandated timelines, obtaining multifaceted project knowledge was a time consuming process that left them "making sense of the entire project". Although managers did not identify the need to be a part of creating the protocols associated with the project, more time with the original delirium committee was necessary. One manager stated: *"I think it was a big barrier, I do believe that each manager should have been [more involved in the work of the original delirium committee]" GH*. Managers explained that because the original curators of the delirium project were at a different phase in implementation and with limited time and resources, the support they required was not available.

One of the biggest challenges faced by managers concerned their lack of experience in implementing a large scale QI project such as delirium program. Collectively, managers described that that they did not possess the formal QI training in project implementation and relied heavily on their limited experience with other smaller projects. They believed that they would have benefitted if they received some training. Managers also acknowledged that without a QI project leader to support them, they felt "overwhelmed by the project". As a result,

managers described that they often "*figured things out*" as they went and hesitantly gave priority to such projects. Involvement in QI projects is perceived as an added workload amongst managers and often left them feeling unprepared for such task. As a result, managers felt disengaged in taking on projects such as implementing a large-scale delirium screening and management initiative.

4.4.1 Identifying need for cohort physician leads at each site

Although managers often led the local working groups, they also thought that the work would have benefitted if they had local medical collaboration:

> "*I think that's a huge part of quality improvement, is that you need physician improvement and….to get involved and get excited about stuff*" OP
>
> "*…I believe if we had the docs on board [earlier] the project would have been easier to implement*" GH
>
> "*I need my MDs engaged or I am not going to get anything accomplished*" EF

4.4.2 Barriers in implementation by using a pilot site for demonstrative purposes.

The structure of having a pilot site for project implementation prior to staggered implementation across the other sites with the intention that any new learning's would be shared posed challenges for managers. In other words, the delirium initiative was piloted at one ICU whose manager was part of the original committee that developed the delirium program. Managers expressed that this method was the least helpful and expressed many barriers to this approach. Managers expressed that although it was good forum to gain insight about barriers, challenges, and successful implementation strategies, they felt some strategies would not translate back to their respective sites. One manager described that their local ICU was

incredibly different from the pilot site ranging from geographical layout, volume and differed in patient populations.

The use of a pilot site also left managers across the other non-pilot sites feeling that that they were introduced to the project at a later stage and felt immediately *"behind"*. In addition, the staggered implementation process across the sites led to confusion and the units felt unsupported. Managers who were not part of the pilot site described this experience. They stated:

> *"I was feeling I was hanging on to people's coat tail...what the heck is this all about?"* CD

> *"But I felt like I sorta came in and everyone had started a conversation and I came in half way through."* AB

> *"...that's what it felt like, everybody had done the warm up and I was still tying my shoes"* CD.

> *"I thought that was playing catch up initially, in terms of understanding of what work had to be done"* OP

4.4.3 Barrier: Competing priorities.

Managers also identified that they are constantly dealing with informational overload and an extremely high workload where *"a million other things need your attention"*. Managers described that their role in the delirium project is outlined in the project charter and job responsibilities. However, the interviews identified that QI projects tend to land *"off the side"* of the managers desk. In other words, managers may not have had the designated time to implement the project but had to find a way to do so. Managers are equally invested in multiple competing priorities and described that they are often *"drowning in priorities"*. Although managers felt supported by their leadership, they complained about a general lack of organizational support for

managers. It extended to how novice managers felt abandoned from whence they first assumed their role as managers. All managers interviewed attributed their struggles to the lack of organizational support such as formalized leadership and QI/project management training and mentorship programs. Although some education is available, it is self-directed, and/or is perceived as irrelevant. Novice and senior managers interviewed also attributed constant organizational restructuring to feeling further unsupported with increased workloads, responsibilities and overall span of control. One manager described their conundrum as: *"they keep giving you stuff to do, and taking away your help" KI*

As a result, although they recognized their role as project leaders, managers found it difficult to prioritize QI projects amongst competing priorities. With operational priorities taking precedence, they perceived QI projects as a lower priority in the context of their work. A contributing factor was the time sensitivity of these operational responsibilities, such as ensuring safe staff levels. One manager focused on the staffing problem explained:

> *"You may have a staffing crunch. It may be more important to actually get someone physically at the bedside to do the work than to worry about whether or not the work we're doing is meeting a standard." GH*

As a result, QI work is often seen as an added responsibility, where mandatory projects such as delirium implementation fall "off the side of their desk" or "activities I do in my spare time". One manager described QI to be *"a time consuming task that get in the way of other things I have to do" KI*

One manager describes that although the purpose of QI projects is highly valued; participating in such project is subsequently perceived negatively amongst managers.

Managers get so busy with day-to-day operations that the [QI work] sometimes get pushed aside because you don't have time do that. You need time for functional things…so [it is] tough to fit in with everything else MN.

Another manager echoed this statement by describing the implementation of QI projects,

"[QI project implementation is a] lengthy process…where the end result is not seen for a long time" KI. She goes on to say "*… I don't always embrace it because it [is] usually something extra added to my plate that I don't find usually helpful." KI*

The barrier of competing priorities is evident when managers recall that they felt *"behind in the project"* and unsupported in the initial introduction to the project. Through document reviews and interview material it was identified that attempts were made to engage managers and physician leads earlier, during project development (by the original delirium committee). This was done using established collaborative executive leadership team meetings as an agenda item to help create awareness about the project and inform managers of what was to come. However, competing priories and limited time to discuss the project in depth resulted this approach to be ineffective in engaging and informing stakeholders earlier in project development.

4.5 Summary of Findings

In summary, middle managers perceive their role in QI project implementation as ensuring that frontline staff members possess multi-faceted understanding of the initiative. This is highlighted by the core category of *building understanding*, where end-user understanding is seen as instrumental to staff engagement. Understanding is described as multi-faceted that includes (in this context) *what* the project is about, *why* the project is needed and *how* the project will be enacted at the local level. Understanding helps to engage staff during initial project implementation and "make sense of the project". As a result of organizational structure and the

mandated nature of the delirium initiative, managers link executive strategy to frontline operations. As managers provide a linkage between the two levels within the organization, they fulfill the role of knowledge brokers. With their multi-faceted understanding of the project, they enjoy a special place in facilitating the work of the project.

The study's findings indicate that managers take a three-phase approach in *building understanding* of a QI project amongst frontline staff (Figure 1). In Phase I, managers emphasize the importance of *building understanding* amongst themselves. This includes having knowledge around the aims of the project, why it is needed and how it will potentially look like on their local units. Phase II provides formal direction and intention to the project, including the development of materials that can be used by frontline staff. Lastly, in Phase III, managers actively ensure that a multi-faceted project understanding is transferred to frontline staff. During this time, managers turn to local champions and working groups to ensure that the new processes are contextualized to the local unit. This provides the frontline working group (including managers themselves) a better understanding about how the project will look like on the frontline level.

During this process, managers experienced many barriers, including the lack of a consistent project leader overlooking all sites whilst providing individual site-specific support. As a result, managers spent a large portion of their time "making sense of the project". Furthermore, managers were challenged by their limited knowledge around implementing a large-scale QI project. This left them feeling overwhelmed and hesitant around their capabilities in project implementation. As a result, managers had the potential of perceiving the delirium project as added workload, further becoming disconnected from its aims or disengaged from the work. Their problems were exacerbated when the organization failed to address identifiable

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barriers. These included contextual characteristics of the units such as competing priorities and

the lack of physician involvement with others on the local collaborative team.

Chapter Five: Discussion

5.1 Middle Managers: Local Project Leaders in QI Implementation

Using the study findings, the researcher is able to provide empirical evidence to support conceptual assumptions, and help to further empirical understanding around the role of the middle manager in this context. A comparison of the study's findings and current literature reveals that managers act as local project leaders in QI project implementation. The data that resulted in the development of the explanatory framework of the study provides empirical evidence to support that middle managers have a role as *the communicator, the coordinator, and campaigner* and *conflict manager* (Wilson, 2011). Middle managers act as local project leaders by continuously *building understanding* amongst themselves and frontline staff during QI project implementation.

The study's findings support the idea that middle managers provide important local project leadership in QI project implementation. Hyrkas et al. (2002), Kitson et al. (2011), and Floyd & Wooldridge (1992) explain that managers exercise primary responsibility for a QI project. Consistent with other literature (Birken et al., 2012; 2013; Dopson & Fitzgerald, 2005; Conway & Monks, 2010) study participants explained that they were held accountable by executive leadership for project implementation. Furthermore, study participants provided local leadership by supplying frontline staff with the necessary tools and resources for implementation, echoing managerial responsibilities described by Birken et al. (2012), Kirchner et al. (2010), Gifford et al. (2007) and Floyd & Wooldridge (1992). Middle managers as local project leaders are further described by the four sub-roles identified by Wilson (2011) (*communicator, coordinator, campaigner and conflict manager*). For example, in this research, managers explain that they led the project by establishing a vision, communicating it,

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establishing timelines and delegating responsibilities. This behaviour coincides with the sub-role

of the *communicator* when the manager translates the executive strategy into to day-to-day

activities on the unit (Birken et al., 2012; Conway & Monks, 2011; Floyd & Wooldridge, 1992;

Wilson, 2011). In addition, study findings are congruent with literature that describes the

manager's role in *communicating* feedback to executive leadership (Birken et al., 2013; 2012;

Dopson & Fitzgerald, 2005; Conway & Monks, 2010).

Managers also take on the role of *coordinators* of a multidisciplinary team. Although the

study participants exercised administrative responsibility for nurses, they helped coordinate

multidisciplinary team members in the QI implementation process. This is further supported by

findings from Floyd and Wooldridge (1992) and Kitson et al. (2011) where managers are

identified as a medium for linking groups together across disciplines and leading them. Study

participants described how they identified champions from different stakeholder groups and

relied on these champions to lead their respective disciplines at the site. For example, one

manager described that the main champions of the delirium project at their site came from

physiotherapy and occupational therapy—they helped to mobilize and lead the rest of the allied

health team.

5.1.1 *"Selling" innovation to local staff.*

As local project leaders, middle managers placed heavy emphasis on their role in building

understanding and engagement amongst the frontline during QI project implementation.

Managers described that much of their time was building understanding around *why* the project

is necessary amongst workers to help *sell* the project to staff or *campaign* for the project. This

echoes findings captured by Birken et al. (2013) where managers are described as the main

program champions. In order to sell innovation, managers played a role in empowering frontline

staff and giving them appropriate tools to aid implementation efforts (Birken et al., 2013; Wilkinson et al., 2011). Strategies to help sell the project to staff included ensuring project understanding was meaningful to them, and empowering project champions to strengthen their role in implementation (Wilkinson et al., 2011; Dopson & Fitzgerald, 2005; Conway & Monks, 2010; Floyd & Wooldridge, 1992).

Local leadership is further exemplified when study participants empowered staff by holding a close connection with the frontline using formal and informal dialogue and visibility in the clinical setting. Study participants built understanding of *how* the project could be implemented by speaking to staff around how the delirium initiative could be integrated into their daily practice. Managers mediated between strategy and day-to-day operations, with the use of contextualization, an important description of the manager's role in existing literature (Birken et al., 2013; 2012; Wilkinson et al., 2011; Gifford et al., 2007; Floyd & Wooldridge, 1992).

5.1.2 Contextualizing to the local environment.

Local project leadership provides a unique opportunity to help support the integration of evidence into practice. Tailoring project initiatives to the local environment may require the use of multiple PDSA cycles as managers *build understanding* around how the project will look like in the local environment (Strauss et al., 2013). This approach provides an opportunity to clarify expectations, identify new processes and structures, and re-examine changes to common practice, tasks and responsibilities. Birken et al. (2013) describes that an extensive amount of time goes into translating broad strategies to actionable tasks. Numerous authors describe the process of tailoring projects to the local environment. They indicate that managers synthesize information and make it relevant to the frontline staff, facilitating its adaptability and priority amongst the frontline team, congruent to study findings (Birken et al., 2013; 2012; Kitson et al.,

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2011; Floyd & Wooldridge, 1992). Birken et al. (2013) describes that sometimes managers must change day-to-day operations to achieve this. This coincides with acting as a *campaigner* and *conflict manager* of the project. As a *campaigner*, study participants justified the need for implementation by providing clearly outlined objectives and responsibilities (Birken et al., 2012; Floyd & Wooldridge, 1992; Wilson, 2011; Hyrkäs et al., 2002). In other words, as a *campaigner* and *conflict manager* managers build understanding around why the project is needed. Lastly, study participants acted as *conflict managers* by building strong relationships between the multidisciplinary team and senior management and providing accountability when issues arise (Birken et al., 2012; Hyrkäs et al., 2002).

Study participants further describe the important role of working groups in tailoring the initiative to the local environment (through PDSA cycles) to help frontline staff "make sense" of the project. In other words, managers (with the help of local champions) transformed the strategic direction of executive leadership into practice changes involving the frontline. This process helped *build* further *understanding* around *how* this project will actually look like at the local level not only amongst managers but end-users as well. One strategy used amongst the study participants to help contextualize projects to the local environment was changing the language of the protocol to suit the CVICU environment.

Study participants emphasize that project integration to daily practice relies on the perspective of frontline champions/working group members to help create a "fit" with newly proposed processes. For example, determining the appropriate time frame in which the delirium-screening tool was to be completed was highly reliant on feedback gathered from frontline providers. By *building understanding* around how this project would look like operationally,

middle managers as local leaders helped to identify and mitigate barriers. In turn, helping to facilitate full integration of the QI project into daily practice.

As alluded to by Straus et al. (2013), contextualization must be appropriately applied, as not to dilute the evidence supporting the practice. Although it is important to create a fit for new strategies in the local environment, the true essence of the evidence is not to be lost. The responsibility of ensuring this balance is likely to fall on the local leaders, in this case, middle managers. As local project leaders, managers were central in monitoring full evidence integration and using QI metrics, can ensure the quality of care is in fact improving.

5.2 Barriers Experienced by Middle Managers During QI Project Implementation

5.2.1 Prioritizing QI project implementation

Some barriers expressed by managers are all too common to the acute care setting such as the limited time available for such projects as a result of competing priorities. Study participants described that QI projects can be viewed as large time-consuming tasks amongst middle managers. This echoes findings by Drach-Zahavy & Dagan (2002) who identified the limited time managers spent on QI projects. Kitson et al. (2011) and Parker et al. (2009) explain that managers prioritize QI projects lower to other tasks they need to attend to such as time-sensitive unit issues (staffing, conflict resolution).

The compulsory nature of the delirium QI project created accountability for its ultimate implementation and mimics the approach taken on by many other health care systems including the VHA in the United States and National Health Service in the United Kingdom (Parker et al., 2009). Although the delirium project was mandated, requiring the participation of managers, other contextual factors may have affected the way managers prioritized project work. For example, at the microsystem level, prioritization of QI project work may have been affected by

the manager's motivation or value they placed on the project (Kaplan et al., 2012). Although the managers in this study found value in the project, they described that the lack of organizational support negatively affected their motivation to participate. Managers felt great discomfort in leading such a large scale QI project, where they were "often figuring things out" and hesitantly gave priority to such projects. In addition, study participants explained that their time spent on QI activities was further limited because of recent organizational changes. These included cost cutting measures leading to increased workloads, responsibilities, and an increase in overall span of control.

Given the potential for role overload, further exploration around the efficient and effective utilization of manager time is warranted. For example, identifying what QI support and project management support managers need to limit administrative responsibilities when implementing large-scale QI projects. Parker et al. (2009) goes on to suggest that a hybrid QI process where experts create a blueprint of the project and its potential process changes and managers and their staff to focus on local practice. During this time, open and constant dialogue is required between project designers and end-users (Parker et al., 2009). This approach may have freed up time for the manager heavily involved in the delirium committee work and potentially decreased the preparatory work all of the other managers described (specifically around *building* their own *multifaceted understanding* around the project). More exploration and research in this area is required and beyond the scope of this study.

5.2.2 Leading the multidisciplinary team

The research findings support Floyd and Wooldridge (1992) and Kitson et al. (2011) assertion that managers act as a medium for linking groups together across disciplines and leading them. Study participants in this study described that they helped to lead and coordinate

various discipline groups. Furthermore, they heavily relied on local champions amongst various

discipline groups to help lead the project. However, neither study that preserved the perspective

of the middle manager presented similar findings. In fact, Wilkinson et al. (2011) explains that

managers do not see themselves as program champions.

The use of local champions is often discussed QI literature, and is considered a pivotal

element in successful project implementation. In a systematic review of the literature aimed at

identifying contextual factors that influence QI projects, Kaplan et al. (2010) explains that

significant positive associations exist between project success and champions. In order for QI

projects to remain sustainable, Kirchner et al. (2012) describes that champions help to ensure

frontline buy in by helping to create a fit for the project in daily practice. This is supported

through findings where study participants described the important role of local champions during

the contextualization. Champions are effective in influencing behaviour amongst their colleagues

by marketing the project, reminding staff about its presence and value and serving as local

experts (Kirchner et al., 2012). This marketing can happen formally in forums such as staff

meetings or informally such as individual conversations on the unit (Kirchner et al., 2012).

Effective local champions must possess good leadership, communication and

interpersonal skills (Kirchner et al., 2012). Local champions are required to have some sort of

credibility amongst their frontline colleagues and must possess the ability to influence others

(Kirchner et al., 2012). It is important that champions are aligned with the strategical direction of

the project (Kirchner et al., 2012). Lastly, champions rarely act alone and are usually identified

by managers as a collective of individuals that help with the contextualization and

operationalization of the project (Kirchner et al., 2012). Managers may follow this criterion when

identifying appropriate candidates within their staff. However, Kirchner et al. (2012) notes that frontline staff prefer to be asked to volunteer than being told to participate in such role.

Additionally, study participants described that without the support from a local physician champion, implementing the project proved to be difficult. Although a physician lead existed in the original delirium committee, managers identified the need for a local physician lead. Managers explained that without a local physician champion, preparatory efforts for implementation were futile. This aligns with literature findings that explain how local physician leaders are pivotal to QI project implementation (Aagaard et al., 2010). Physician leads aid in project implementation through their contribution in innovation development and helping to identify and mitigate resistance (Aagaard et al., 2010). Moreover, Kaplan et al. (2010) found significant positive associations between physician leadership and successful QI projects. Given that the middle manager is ultimately accountable for the project's implementation, they may need to in turn ask executive leadership for help in engaging and identifying local physician champions.

5.2.3 Lack of QI knowledge

Study participants described that because the delirium project was a large-scale QI project, they were hesitant in their abilities to implement such an initiative. Collectively, none of the study participants possessed formal QI training and heavily relied on their limited experience with other smaller projects. As a result they often felt overwhelmed by the task and *"figured things out"* as they went along. This is supported by other literature findings that suggest managers experience role overload and general discomfort in the QI project implementation process (Wilkinson et al. 2011). Study participants often viewed the initiative as added workload and felt unprepared and became disengaged from the process at times. Dopson and Fitzgerald

(2005) explain manager disengagement can occur as a result of a lack of QI knowledge, echoing testaments made by study participants.

Although study managers described their limited experience and lack of formalized training created barriers in implementation, with the support of a QI leader, study participants identified that QI methods facilitated the project implementation. They go on to explain how QI methodology helped them to understand how they were going to operationalize the project within their local setting. This finding is supported by Kaplan et al. (2010) who reported that QI activities that were perceived successful were those that showcased the team's ability to learn "how to implement" best practices with the use QI methods such as PDSA cycles. It is clear that formalized QI education and/or QI support is needed during such work, or risk managers disengaging from the process.

5.2.4 Supporting the local context

A substantial amount of managers' time was focused on *building understanding* around *how* this project would look like in their local environment. In addition, study participants described that much of their work was around contextualization, using champions and QI processes to tailor initiative to their local ICU. Whilst supporting their own ICU, the use of a pilot site left managers feeling behind and confused on how to translate processes to their own environments.

Context is an important factor to consider when implementing evidence into practice as it has significant impact on uptake (McCormack, Kitson, Harvey, Rycroft-Malone, Tichen & Seers, 2002). Context refers to the characteristics of the organization, the environment and individuals involved (Kaplan et al., 2012). Kaplan et al. (2008) explain that amongst and within QI initiatives, variability in results exists because of the interplay of different factors such as

context (Kaplan et al., 2008; Kaplan et al., 2010; Bahtsevani et al., 2010; Dopson & Fitzgerald, 2005; Gifford et al., 2006). This is supported by this study where participants emphasized the importance of ensuring the local context of their ICU's is consistently considered.

Conceptually, it is suggested that variability in QI successes can be attributed to 25 contextual factors as identified by the conceptual Model for Understanding Success in Quality (MUSIQ) (Kaplan, Provost, Froehle & Margolis, 2012). Within the MUSIQ model, most contextual factors reside in three different levels of the healthcare system (microsystem, organizational or macro system and environment) (Kaplan et al., 2012). However, some factors such as QI support and capacity and characteristics of the QI team exist across all system levels (Kaplan et al., 2012). In a complex critical care setting, identifying contextual variables and their relationship amongst each other is crucial in guiding QI work. It can provide a deeper understanding around what actions are needed to influence QI project success.

Although the study participants identified contextual differences, they also recognized that possible similarities in contextual factors might exist amongst the ICU's, impacting implementation efforts. For example, the need for a local physician champion was identified at all of the ICU's as an important factor to consider in project implementation. As a result, study participants acknowledged the need for a forum where they can meet collectively to discuss strategies, share insights, and gain peer support when managing various contextual considerations. Study participants explained that they valued having a collaborative forum whilst recognizing individual unit differences. This is supported by Hyrkäs, Koivula, Lehti, and Paunonen-Ilmonen (2002) where managers described that the relationships in their peer group was reciprocal, comprehensive and seen as supportive in their QI project endeavours.

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Lastly, managers emphasized the need for a QI leader to help set priorities and provide support both at the collective/regional level and at the site-specific level. The QI leader helps managers to identify contextual factors at the microsystem level (unit level) and helps to strategize implementation around this. Furthermore, as the QI lead supports all units, they may identify meso-system level (regional) contextual factors more readily and bring forth those that require the attention of executive leadership.

5.3 Study contributions

Using the study findings, the researcher is able to provide empirical evidence to support conceptual assumptions, and help to further empirical understanding around the role of the middle manager in this context. The researcher provides an explanatory framework to empirically showcase how middle managers perceive their role in the implementation of QI projects (Figure 1). Middle managers perceive their role in QI project implementation as ensuring that frontline staff members possess multi-faceted understanding of the initiative. This is highlighted by the core category of *building understanding*, where end-user understanding is seen as instrumental to staff engagement. The representation of a Canadian critical care setting is a first and contributes to only two other articles that empirically explore how managers perceive their role in this context. With the help of the explanatory framework, the researcher is able to support conceptual assertions of the middle manager's role in this context with empirical evidence. The study provides empirical evidence to support the concept that middle managers as local project leaders use sub-roles such as the *communicator, coordinator, campaigner,* and *conflict manager* to continuously *build understanding* amongst frontline during QI project implementation (Wilson, 2011).

Only two empirical studies explore how managers perceive their role in QI implementation with only a few consistent findings (between the two). These findings included that middle manager have a role in mediating between strategy and day-to-day operations, empowering frontline, and giving them the tools to help successfully implement the project (Birken et al., 2013; Wilkinson et al., 2011). Although this study supports these findings, study participants describe that they have a role in leading and improving the knowledge of the *multidisciplinary* team, contrary to the findings by both Birken et al. and Wilkinson et al.

In addition, this study also contributes to the limited knowledge around what strategies and barriers managers identify in QI project implementation. For example, study participants describe that they used tactics such as marketing or selling initiatives to staff and contextualization to ensure multifaceted project understanding exists at the frontline. In this study the researcher provides an in-depth discussion around challenges managers describe such as prioritizing QI projects, leading the multidisciplinary team (including local physician champions), supporting the local context and limitations in knowledge around QI methodology and experience. These challenges align with the only other empirical article describing managers' struggle with their lack of QI expertise and role overload in this context (as they see it) (Wilkinson et al., 2011).

5.4 Implications for Executive Leadership

There is consensus that effective leadership, and the middle managers role impact local QI project implementation (Gifford et al., 2006; 2007; Gunningberg, et al., 2011; Ploeg et al., 2007; Sandstrom et al., 2011; Birken et al., 2012; Dopson & Fitzgerald, 2005; Gifford et al., 2007; Kirchner et al., 2012; Squires et al., 2010; Yang et al., 2010). Despite this consensus, managers reported variable involvement and descriptions of their role in such context. Managers

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identified they hold many competing priorities in their day-to-day work leaving them with feelings of *"drowning".*

As a result of fiscal restraints in health systems, changes to managers' workload to allow for QI projects may not be feasible. Instead, executive leaders need to look at creative strategies to help managers prioritize QI projects. Although making QI compulsory promotes accountability for implementation, projects may still be perceived as large, time-consuming task, resulting in disengagement. The first recommendation for executive leadership is to identify factors affecting managers' motivation to complete the QI project. Study findings reveal that managers express great discomfort in the QI process and are at times intimated by the size of the QI project. Executive leadership can help build capacity amongst managers by advocating for formalized training in QI methodologies or other approaches such as change management programs. Executive leaders should be aware of the emphasis study participants placed on the importance of a QI leader to help provide guidance and support in large-scale projects. A QI lead can also help managers build knowledge around QI methodology, and by working collaboratively, can help build QI capacity both at the managerial level and amongst frontline staff. Lastly, further conversations between the health system and education institutes might be helpful in building capacity of future managers. Possible ideas may include integrating content such as QI and change management into existing coursework.

The need for QI and project management support for managers to ensure the effective and efficient use of their time in project implementation is clear. This support can help alleviate workload related to administrative tasks such as booking meetings and overall project management. This is supported by the study findings whereby participants described the collaboration with a QI leader was invaluable when it was available. Without this support, many

managers felt unprepared, resulting in disengagement from the implementation process. Managers further described that such a project leader has the ability to support the units both collectively and individually, and helped to keep track of microsystem and meso-system contextual factors.

One of the biggest challenges managers faced was the lack of a local physician champion to help support the initiative. Although a physician lead existed for the project, implementation was difficult without the support from a physician lead at the unit level. Despite their administrative responsibilities to manage nursing staff, middle managers explain that they are a medium for coordinating and leading all disciplines in project implementation (Floyd & Wooldridge, 1992; Kitson et al., 2011). A recommendation is that executive leaders and managers should work collaboratively to ensure that all multidisciplinary leaders are mobilized for QI project implementation, including physicians. This may require executive leadership to consider implementing incentives for physician participation or having dialogue with regulatory bodies to identify strategies to help promote their involvement.

In addition, executive leadership may consider adopting a research utilization framework to help facilitate the transition of new evidence into practice (Stetler et al., 1998). The Knowledge to Action Cycle (KTA) cycle provides an in-depth detailed framework that can be used to evaluate past or guide current work or be used as a resource to strategize future knowledge implementation. Although knowledge translation (KT) and QI are distinct, there are several parallels that are applicable to this context. These include the assessment of barriers and facilitators to knowledge uptake, tailoring an implementation of a project to the local environment, and monitoring and evaluating the uptake of knowledge (Straus, Tetroe & Graham, 2013).

The final recommendation for executive leadership is creating a clear definition of the middle managers role. With guidance and mutual understanding of expectations, managers may identify their active role in QI projects more easily rather than viewing their involvement as extra-role behaviours. This in turn may prevent variable role expectations amongst the entire healthcare team. With clarity around their role, middle managers may use their influence to facilitate initiatives (Dopson & Fitzgerald, 2005).

5.5 Implications for Middle Managers

Middle managers reported their shortcomings in their proficiency surrounding QI methodology and frameworks and often relied on the QI leader. This could potentially create barriers to project implementation as managers described that much of their work is contextualizing strategic plans to local operations. Managers acknowledged that QI and change management frameworks aided in implementing, and sustaining new processes at the local level and relied on this. In other words, managers may utilize these frameworks to help build their understanding around *how* the project will look like in their local environments. For example, the use of process mapping can help to illustrate the current practice and envision a future, desired state of project implementation.

Future QI project considerations should include building QI and change management capacity amongst both managers and frontline staff. Middle managers as local project leaders may benefit from such education as it can help enhance their role through the utilization of tested strategies adopted from formal QI methodologies and theoretical frameworks. One quality framework that may be helpful is the Model for Improvement or otherwise known as the Plan-Do-Study-Act cycle (Langley, Moen, Nolan, Nolan, Norman & Provost, 2009). Several of the study participants acknowledged their familiarity with this framework, creating a potential

starting point in building QI capacity. The model provides a common sense approach that focuses on comprehensive local input and is aimed at adapting processes locally to help create change (Langley et al., 2009). The model begins by asking three key questions: what are we trying to accomplish, how will we know that a change is an improvement, and what change can we make that will result in the improvement? (Langley et al., 2009). The last question can be answered using the PDSA cycle that includes plan (preparation, setting objectives), do (take action), study (identify and analyze your action), and act (identify what changes should be made, make those changes) (Langley et al.).

Change management principles such as ADKAR (Hiatt, 2006) may help guide managers in "selling" a project and sustaining change. Some of these strategies were mentioned amongst study participants, including many components of the ADKAR change management model. ADKAR contains five elements building blocks to change management. These include: awareness of the need to change, desire to participate and support the change, knowledge on how to change, ability to implement required behaviours and skills and reinforcement to sustain the change (Hiatt, 2006). In the findings, managers explained that they created timely project awareness through informal and formal conversations held with staff (Hiatt, 2006). Managers also attempted to influence staff's desire to change by *building understanding* amongst staff around *why* the project is important to patient care. Lastly, during operationalizing the project, managers ensured staff had multifaceted knowledge around the project through their role in *building understanding*. Managers also looked at the ability element of ADKAR by ensuring staff were able to integrate project initiatives into daily practice, such as delirium screening (Hiatt, 2006).

Managers and frontline staff may benefit from both formal and informal education and awareness around QI methods, and strategies around project and change management. This education/training may come in the form of self-directed online seminars, or formalized classroom instruction. In addition, the QI leader may have a role in building capacity amongst middle managers by collaborating with managers in QI projects and supporting their learning through experience and exposure to QI work. These methods may also be applicable in engaging frontline end-users during for project implementation and in turn may help to build multifaceted project understanding.

5.6 Limitations

The writer acknowledges several limitations of this study, including the cross-sectional, retrospective nature of the study. This could have limited the richness of responses from managers as many of the sites had the delirium project already implemented for over 8 months at the time of the interview. As a result, participant responses could have omitted key thoughts and attitudes experienced in the earlier stages of the project. Secondly, due to the nature of the work, results and findings have limited transferability to other settings, even if they could inform our understanding around the role of middle managers. In addition, the study, limited to one regional setting, did not explore the perceptions of middle managers and their role in non-mandated QI projects. Lastly, the study only focused on the initial implementation of the QI project and did not explore how the role of managers in planning and sustaining the project post implementation.

5.7 Implications for Future Research

To further deepen understanding around middle managers' role in QI project implementation, further empirical research around their role perceptions in non-mandated QI projects could prove beneficial. Additionally, further empirical investigation and comparison of

how other stakeholders (executive leadership and frontline) view middle managers in the same context would improve our understanding. This could aid in identifying potential barriers to project adoption and implementation due to discrepancies or assumptions in roles and responsibilities. Lastly, examination of the middle manager's role in all stages of a QI project could further develop understanding of their role. For example, middle managers' level of participation in constructing a QI project could affect their role in project implementation and sustainability. Future research around middle managers' role in project sustainability could also help to identify further barriers and facilitators in sustaining QI work at the frontline.

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Table 1 Search Strategy

Search Concept A: Quality Improvement Implementation	Search Concept B: Patient Care Managers
Search terms • Quality Improvement (k) (sh) • Program Implementation (sh) • Innovation implementation (k) • Evidence based practice implementation (k) • Research utilization (k) • Practice guidelines (sh) (k) • Clinical practice guidelines (k)	Search terms • Unit manager (k) • Patient Care Manager (k) • Nurse Managers (sh) (k) • Ward manager (k) • Nursing management (sh)(k) • Middle manager (k) • Middle Management (k) • Frontline manager (k) • Leadership (k)(sh) • Nursing administration (k) (sh) • Nursing administrators (k) • Nurse administrators (k) *Clinical nurse leaders not searched as do not hold administrative responsibilities.*

- K denotes keyword, SH denotes subject heading
- Boolean "or" was used within each of the two search concepts. Final results were captured by combining the categories using "and"
- Limited to peer reviewed articles in an electronic format, limited to the English language

Inclusion criteria:

(I)   Description of middle management's role and/or influence in the organization, specifically in relation to QI implementation/research utilization

(II)   Description of tasks, responsibilities and expectations of middle management in QI implementation/research utilization

(III)   Relationship between middle management's involvement and QI implementation. Synonyms used to identify middle management in literature (as health regions are organized differently) included nursing leadership, frontline management, ward managers, unit managers, and patient care managers and nursing managers, nurse administrators and were captured with the search terms. **Definition of middle manager upheld**

(IV)   Other synonyms used in the search for "QI implementation" included program implementation, innovation implementation, evidence based practice implementation, research utilization, and practice guidelines.

Exclusion criteria:

- Clinical nurse leaders were not identified as being relevant in the search as per definition used in the study's aim (i.e. do not normally administrative responsibilities).
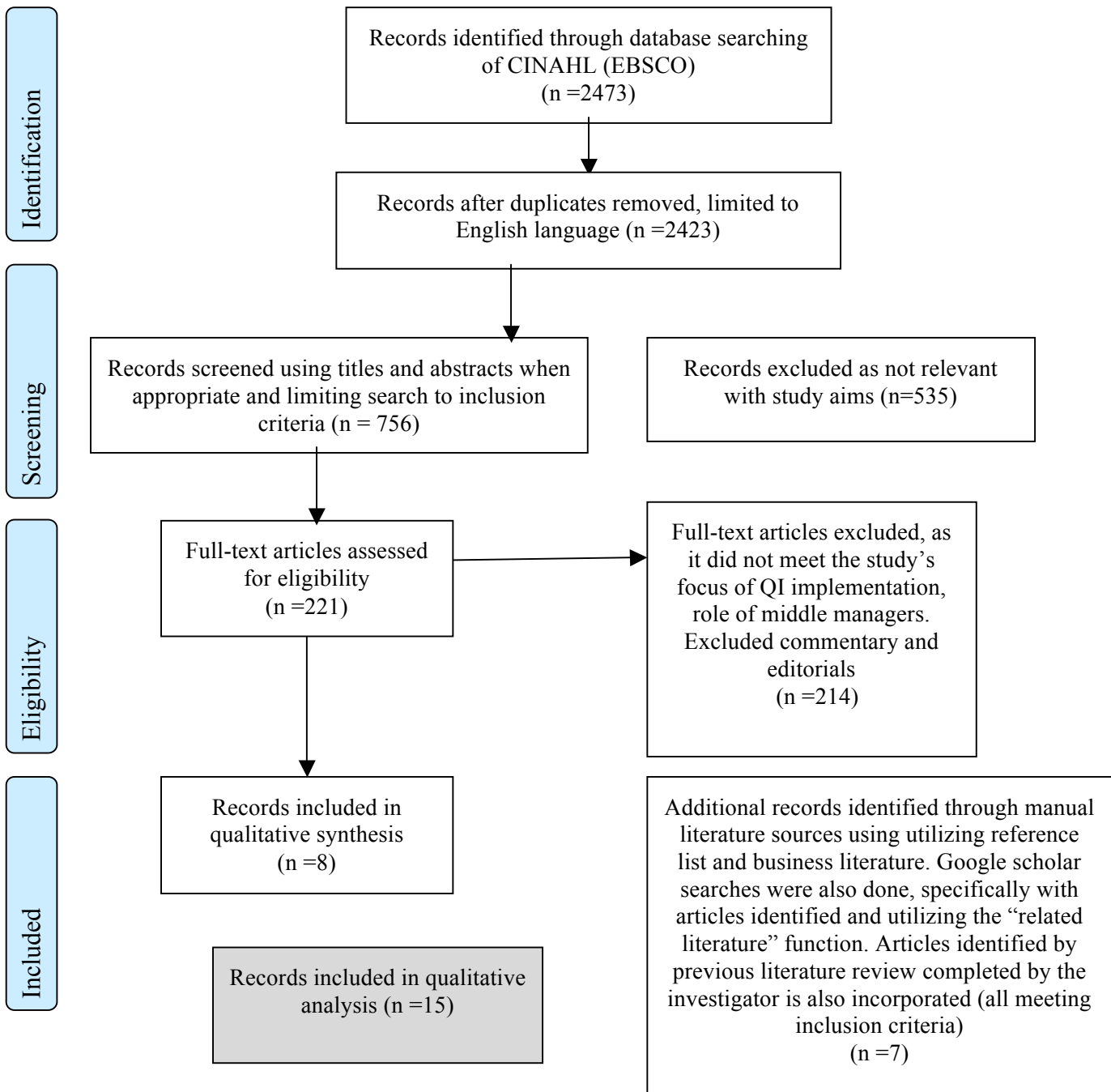- Editorials and commentaries

Appendix B

Figure 2 Prisma 2009 Flow Diagram
Adapted from www.prisma-statement.org/

Appendix C

Table 2 Summary of Literature Findings

Role descriptors of Middle Managers in QI implementation			
Conceptual		Empirical	
Middle management level of leadership not delineated	**Middle management level of leadership delineated**	**Perspective of middle management preserved**	**Perspective of middle management not preserved**
Middle managers showcase behaviours that can be classified in 3 groups: relations orientated, change orientated and task-orientated Managerial tasks include facilitating individual staff, creating milieu of best practices (ultimately influencing the practice environment/work culture), shapes structures and processes influencing organizational infrastructure Gifford, W. A., Davies, B., Graham, I. D., Lefebre, N., Tourangeau, A., & Woodend, K. (2008).	• Diffusing information to who it is relevant to • Synthesizing information by making it relevant to the frontline and aid with its proper prioritization amongst other competing demands • Mediating between strategy and day to day activities: by supplying the necessary tools to implement innovations and encouraging their effective utilization • Marketing innovations to both senior management and frontline staff. Birken, Lee, & Weiner, (2012)	• Making information relevant to staff, sometimes changing day to day operations to achieve this • Giving frontline appropriate tools to implement strategies • Extra-role behaviours such as changing operations and soliciting grant funding • MM viewed themselves as information brokers • Large portion of their role consumed on the task of translating broad strategies to actionable tasks • Selling the innovation to staff Birken, Lee, Weiner, Chin, & Schaefer (2013)	• Demonstrating the importance of process through appropriate evaluation of the project Bahtsevani, C., Willman, A., Stoltz, P., & Östman, M. (2010) • Identifying local champions • Dealing with pressures of balancing top down change and instigating change from below • Dismantling barriers and structures • Communicating effectively • Providing employees the appropriate knowledge they require for change • Crucial to the change process because of their intermediate position in the organization. Allows their role to act as mediators between departments. Conway, E., & Monks, K. (2010).
Nursing leadership can create major change and can be conceptualized and summarized into three activities 1) Establishing the culture 2) Creating the capacity for change 3) Sustain and reinforce change via infrastructure by recognizing what changes need to be made in certain infrastructures and processes to harness new evidence. Stetler, Brunell, Giuliano, Morsi, Prince & Newell-Stokes (1998)	• Dismantled hierarchies and decentralized decision-making has led to increased responsibility and accountability for patient care and quality management on the nurse manager Hyrkäs, K., Koivula, M., Lehti, K., & Paunonen-Ilmonen, M. (2002)	• Nurse managers did not see themselves as program champions • Nurse managers play a role in linking staff to certain responsibilities of the implementation process • They considered that they play a role in empowering, facilitating and providing nurses autonomy to help involve them in the implementation process As perceived by others • Nurse managers are champions of the program and primary leaders of the project (alongside the nurse directors) Wilkinson, J. E., Nutley, S. M., & Davies, H. T. (2011).	

Role descriptors of Middle Managers in QI implementation	
Conceptual	Empirical

• A medium for linking groups
• Mediating and interpreting connections between several levels of management
• Championing new programs by evaluating them and justifying their need for implementation and redefining initiative using strategic context
• Further championing programs by synthesizing information to frontline employees, ensuring adaptability at the local level
• Organize and utilize appropriate resources in an efficient and effective manner appropriate to strategy implementation
 	
In summary, the typology of middle management's involvement in strategy is the following:
  1. Championing strategic alternatives
  2. Facilitating adaptability
  3. Synthesizing information
  4. Implementing deliberate strategy
 	
Floyd & Wooldridge (1992)
	• Identifying professional boundaries that might lead to barriers in knowledge dissemination
	• Critical in spanning communication across different disciplines using complex interactions
	• Leaders themselves provide support and empower individuals to strengthen their own roles in QI development
	
	Dopson, S. U. E., & Fitzgerald, L. (2005).

	Activities of "managers" in relation to the implementation of QI projects • Administrative support such as allocation of resources • Policy revisions: help organizations engage in EVP • Monitory quality indicators using a structured QI system Gifford, W., Davies, B., Edwards, N., Griffin, P., & Lybanon, V. (2007).

Middle managers are essential for communication and the flow of information in a hierarchal organization. This makes them the key links to facilitating QI projects. Their role includes being the:
  1. Communicator
  2. Campaigner
  3. Coordinator
  4. Conflict Manager
 	
Wilson (2011)
	Facilitate staff to use the guidelines, provide support, be accessible and visible, communicate well
	
	Create a positive milieu of best practices, reinforce goals and philosophy, influence change, role-model commitment
	
	Influence organizational structures and processes, ensures education and policies, monitors clinical outcomes, supports the development of clinical champions
	
	Gifford, Davies, Edwards & Graham (2006).

Role descriptors of Middle Managers in QI implementation	
Conceptual	Empirical
	• Managers need to support the process from beginning to end • Can help promote programs with their strategical planning responsibilities by promoting the rank of the project by demonstrating that the organization values the program • Promote the program at the local setting by providing the concrete resources it requires • Recognizing and rewarding the staff of upholding additional responsibilities that these programs often entail Kirchner, J. E., Parker, L. E., Bonner, L. M., Fickel, J. J., Yano, E. M., & Ritchie, M. J. (2010).
	• Role tasks that were identified looked at the managers focus on contextualization of the local implementation project into a "bigger picture view" • Supporting clinical nurse leaders, however a barrier to this was the primary job function of managing increasingly complex and demanding wards • Take on a leadership role for the cross-functional multidisciplinary team Kitson, Silverston, Wiechula, Zeitz, Marcoionni & Page (2011).

Appendix D

Table 3 Comparison in Findings amongst Records: Role of Middle Manager in QI

Implementation

Similarities	Differences	
	Identified by MM	Identified by **Everyone** Else
• Huge responsibility and accountability for leading the process such implementing the strategy and delegating responsibilities (Hyrkas et al., 2002; Kitson et al., 2011; Floyd & Wooldridge, 1992) • Supplying the necessary tools and resources for effective implementation (Birken et al., 2012; Kirchner et al., 2010; Gifford et al., 2007; Floyd & Wooldridge, 1992; Wilkinson et al.). • Diffusing information to who it is relevant to, in turn seeing themselves as knowledge brokers (Birken et al., 2013; 2012; Dopson & Fitzgerald, 2005; Conway & Monks, 2010) • Supported and empowered individuals to strengthen their role in the QI implementation process. Examples such as building local champions (Wilkinson et al., 2011; Dopson & Fitzgerald, 2005; Conway & Monks, 2010; Floyd & Wooldridge, 1992)	• Altering daily operations to meet strategical direction of project (Birken et al., 2013) • Selling innovation to staff (Birken et al., 2013) • Managers did not see themselves as program champions (Wilkinson et al., 2011)	• Transcending inter-professional boundaries, by leading the multi-disciplinary team in project implementation (Dopson & Fitzgerald, 2005, Kirchner, 2010; Kitson et al., 2011).

Consent Form for Interview

UNIVERSITY OF CALGARY

TITLE: Middle Managers: An Integral Stakeholder in Quality Improvement Implementation

SPONSOR: N/A

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This consent form is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Take the time to read this carefully and to understand any accompanying information. You will receive a copy of this form.

BACKGROUND

Quality improvement (QI) project implementation in the acute care setting remains challenging and involves many different factors in its facilitation. There is a consensus in the literature that middle managers have a substantial influence in QI project implementation, however, little is known. Moreover, the lack of empirical evidence that preserves the perspective of middle managers is identified as a critical research gap. This study hopes to gather the perspectives of 7 purposively sampled middle managers, across at least 4 centers. Semi-structured interviews will

inform the research in the hope to gather the perspectives of managers, and how they perceive their role in a mandated QI project. Grounded theory will guide the analytic portion of this study.

WHAT IS THE PURPOSE OF THE STUDY?

This study will examine the role of middle managers in the implementation of quality improvement initiatives. More specifically, the researcher will identify how managers perceive and describe their role in implementing a mandated QI project on their unit. Additionally, the study will explore the factors that support or inhibit the middle managers' role in implementation of such projects.

WHAT WOULD I HAVE TO DO?

You will be asked to participate in a semi-structured interview held by the researcher that aims to describe how you, as a middle manager, perceive your role in the implementation of mandated QI projects, specifically the delirium initiative. Some demographic data will be asked of you, such as previous nursing experience, previous QI work, type of ICU that you are managing etc. Some questions will ask you to describe your thoughts, beliefs and views about QI in general and asked to compare your experience to other projects you may have been involved in. Interviews will be tape recorded for analytical purposes. The interview will require approximately 30-45 minutes of your time.
Possible follow-up conversations before June 2014 might be required of participant either through direct conversation, phone or email. Participation in the follow up is completely voluntary and should not take more than approximately 15-30 minutes of your time.

WHAT ARE THE RISKS?

There are no foreseeable risks to this study if you shall choose to participate

WILL I BENEFIT IF I TAKE PART?

The indirect benefit of participating in the research is the opportunity to contribute empirically to the understanding around this topic, specifically preserving the middle manager perspective. There is hope that in the long term, based on the results of this study, patient care can be improved.

DO I HAVE TO PARTICIPATE?

Participation in any portion of this study is completely voluntary, and you may refuse to participate altogether. You may also refuse to participate in parts of the study, or decline to answer any and all of the questions. You may withdraw from the study at any time without any penalty just by contacting any individual from the research team by phone, email or in person. The decision to not participate will remain anonymous.
If new information becomes available that might affect their willingness to participate in the study, you will be informed as soon as possible.

WILL I BE PAID FOR PARTICIPATING, OR DO I HAVE TO PAY FOR ANYTHING?

Neither you (the participant) nor the research team will have incurring costs for this research project.

WILL MY RECORDS BE KEPT PRIVATE?

Participation is completely voluntary, anonymous and confidential. You are free to discontinue participation at any time during the study. No one except the transcriptionist, the researcher and her supervisor will be allowed to see or hear any of the answers to the interview. Identifying factors such as organization details will not be used. All identifying factors of the information will be removed, and pseudonyms will be used to ensure anonymity. All information will be stored in a safe, private and password protected location with primary access only available to the primary researcher. The University of Calgary Conjoint Health Research Ethics Board will have access to the records. The anonymous data will be stored for five years on a computer disk, at which at that time will be permanently erased. Although the highest regards for privacy and anonymity will be maintained throughout the project such as removing all identifiable factors, it is possible for the participant to be potentially identified by others through opinions and quotes by colleagues or other counterparts. If you have any questions or concerns about this, please do not hesitate contacting the researcher. In the case a participant withdraws from the study, all data the participant contributed to the study will be destroyed. It is not feasible to destroy information the research paper is submitted to the University of Calgary for final review and defense.

SIGNATURES

Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project and agree to participate as a participant. In no way does this waive your legal rights nor release the investigators or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time without jeopardizing your health care. If you have further questions concerning matters related to this research, please contact:

<div align="center">

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If you have any questions concerning your rights as a possible participant in this research, please contact the Chair, Conjoint Health Research Ethics Board, University of Calgary at 403-220-7990.