

**The Influence of Organizational Culture and Strategy
On Implementation of Evidence-based Practice Within a Clinical Environment**

by

Nicole Allison Grimm

Dip. Theatre, Ryerson University, 1993

Dip. Gen. Mgt., College of the Rockies, 1998

BCom, Royal Roads University, 1999

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University of Victoria

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Supervisor: Jochen R. Moehr, MD, PhD

ABSTRACT

Introduction

Organizational culture is the shared values, beliefs and norms within an organization, and is the foundation from which strategy emerges. In order for strategy to receive sustained support, it must be aligned with organizational culture. Quality improvement initiatives are a component of an organization's strategy and sustaining them requires a culture supportive of change. Evidence-based practice (EBP) is considered the "gold standard" for improving patient care and is based on embracing and sustaining change; therefore it is important to understand the underlying assumptions embedded in an organization's culture and strategy.

Research Design

This research addresses the question, "How do organizational culture and strategy influence implementation of evidence-based practice within a clinical environment?".

The research was conducted February – March 2005 within the Neonatal Intensive Care Unit (NICU) at Children's and Women's Health Centre, Vancouver, BC. Full- and part-time/casual NICU employees received the Quality Improvement Implementation Survey II. The survey is based on the Competing Values Framework, where an organization's culture is defined by employee perceptions of the emphases between flexibility and stability, and internal and external foci. Interviews were conducted with NICU employees representing a variety of professional roles (nurses, neonatologists,

administrators and other health care professionals). The interviews consisted of ten probes to characterize employee perceptions of the organizational culture, strategy and barriers and facilitators to change within the environment. Eighteen interviews were conducted, and 78 surveys collected. Interview summaries were qualitatively coded and statistical profiles were created for the surveys.

Results and Discussion

Survey results characterize the NICU culture as having a strong internal focus and a tendency towards stability, which is not typically supportive of sustained change initiatives. Analysis of interviews indicate that the ability to achieve EBP within the NICU might be limited by the disparity between the desire to work in teams to achieve excellence in quality of care, and the provision of resources to achieve this goal in practice. Each stakeholder group (e.g., nurses, neonatologists) has a unique perspective, rooted in values and priorities, on the ability to achieve change within the environment. Facilitators for change include: a strong commitment to provide quality of care; and the desire to work on teams. Barriers to change include lack of: resources (e.g., time, funding); multi-disciplinary collaborative teamwork; and consistent communication between professions.

Supervisor: Jochen R. Moehr, MD, PhD, (Department of Human and Social Development)

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Dedication

To Chad and Abigail for their love and support.

To Mom, Dad and Sa for helping me through the transition from dance.

1. INTRODUCTION

This thesis describes the influence of organizational culture and strategy on implementation of evidence-based practice (EBP) within a clinical environment. The research questions explore in the context of quality improvement: the organizational culture within the clinical environment; the organizational strategy within the clinical environment; the barriers and facilitators to change within the clinical environment; and how these results compare to what we know about achieving sustainable EBP according to the literature review and conceptual framework.

Organizational culture consists of the values, beliefs and norms within an organization. Culture is the foundation from which strategy emerges and can facilitate or impede change. Strategy is also influential and has the potential to strengthen both positive and negative aspects of culture, and encourage or discourage support for change.

Evidence-based practice is the “gold standard” for providing the best patient care possible using the best available evidence. Despite the attention EBP has received over the years, a gap continues to exist between research and practice. EBP requires an aligned culture and strategy supportive of change in order for initiatives to be sustained. It is important, therefore, to understand the environment within which EBP is being implemented. This begins with an assessment of the organizational culture and strategy, in the context of quality improvement initiatives, and an examination of the barriers and facilitators to change.

Chapter 1 of this thesis begins with an explanation of the research opportunity and provides background to the specific site within which this research occurs. Chapter 2

presents the literature review on organizational culture. Chapter 3 describes the conceptual framework and research questions. Chapter 4 follows with a detailed account of the materials and methods used, including information about the participants, methodologies, data collection and analyses, as well as issues related to ethics and confidentiality. Chapter 5 presents the results of the organizational culture, strategy and barriers and facilitators to change within the environment. Chapter 6 begins with a methods critique; this is followed by a discussion of the results in terms of the conceptual framework. Chapter 7 concludes the report.

A description of the research opportunity and site follows.

Opportunity

This thesis explores the influence of organizational culture and strategy in the context of quality improvement initiatives on support for evidence-based practice within a clinical environment.

This research complements a recent enquiry of the barriers and facilitators to change within 13 Canadian Neonatal Intensive Care Units (NICUs) affiliated with the Canadian Neonatal Network (CNN) and Evidence-based Practice Identification and Change (EPIC) programs. The research led to the desire to address additional questions related specifically to organizational culture and quality improvement initiatives within the NICU. I was approached by the principal investigator for CNN and EPIC, and Director of the University of British Columbia (UBC) Centre for Healthcare Innovation and Improvement, Dr. Shoo Lee, to complete this component of the research. The research

provides the pilot NICU, located within Children's and Women's Health Centre of BC, with baseline site specific information on the influence of their organizational culture and strategy on the ability to implement evidence-based practice within their environment.

Background

Children's and Women's Health Centre of British Columbia (C&W)

Children's and Women's Health Centre (C&W) is located in Vancouver, BC and is part of the Provincial Health Services Authority (PHSA). In 1997, BC Children's Hospital, BC Women's Hospital and Health Centre, and Sunny Hill Health Centre for Children merged to create Children's and Women's (C&W) Health Centre of BC. The Children's and Women's Hospitals, though co-located, remain to a certain extent separate entities, with separate Presidents and Program structures. During the merger, the NICU ("Special Care Nursery") was relocated from Children's Hospital to Women's Hospital.

Women's Hospital provides primary, secondary and tertiary services to the province, and is the only facility in BC devoted primarily to newborns, families and women [1]. It is the lead tertiary perinatal provider in BC and is responsible for the Provincial Tertiary Perinatal and BC Reproductive Care Programs. In addition, Women's Hospital cares for hundreds of very high risk pre-term and term newborns in its intensive care nurseries each year [2].

The Special Care Nursery

The Special Care Nursery (SCN) operates in partnership with Children's Hospital and "serves as the main tertiary nursery in the province and is the only nursery to provide

quaternary specialty services to assist critically ill premature and term newborns for the entire province of British Columbia” [3]. The SCN employs a multi-disciplinary team of neonatologists, nurses, clinical assistants and fellows, allied health professionals, and administrative personnel, among others. It consists of 2 nurseries which accommodate 60+ beds. Its interdisciplinary structure offers a collaborative approach to care and supports best and evidence-based practice within a family-centred environment [3].

Organizational Structure

The Special Care Nursery (SCN) belongs to the Newborn Care Patient Based Care Unit (PBCU). Its organizational structure is supported by two entities, medicine and nursing, represented by Figures 1 and 2 respectively. The figures are devised on the basis of interviews.

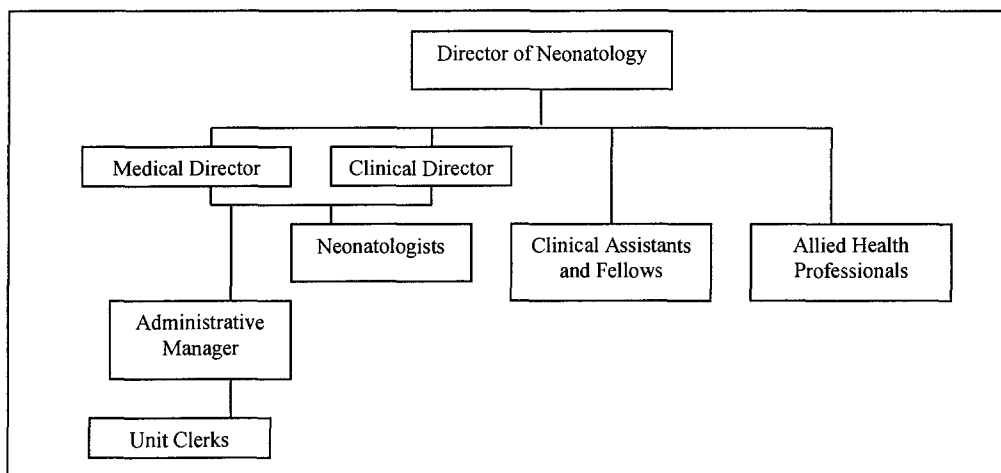


Figure 1: Newborn Care PBCU organizational structure – Medicine

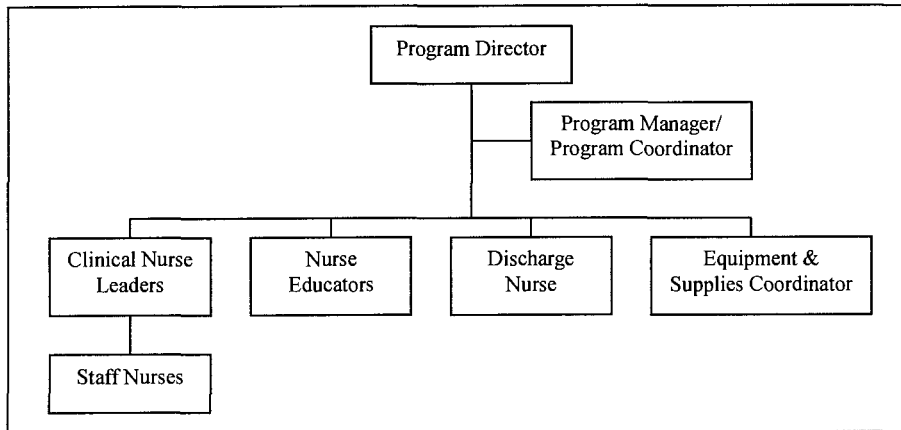


Figure 2: Newborn Care PBCU organizational structure – Nursing

The SCN is located within Women’s Hospital, with the Maternity Department across the hall, Children’s Hospital to one side, and the Division of Neonatology/Newborn Care Program offices located to the other side.

The SCN is the lead institution for the Canadian Institutes of Health Research (CIHR) funded Canadian Neonatal Network (CNN). It is also one of 13 NICU sites across Canada belonging to the CIHR-funded Evidence-based Practice Identification and Change (EPIC) program.

In 1995, the Canadian Neonatal Network was created to link NICUs across Canada. The CNN aims to examine the effectiveness of different medical practices within NICUs to improve care and outcomes, and provides evidence for developing practice guidelines and planning policy. The CNN’s mission is:

“To be a network of Canadian researchers who conduct leading multidisciplinary, collaborative research dedicated to the improvement of neonatal-prenatal health and health care in Canada and internationally” (p. 2)[4].

The CNN has a vested interest in understanding the influence of organizational culture and strategy on implementation of evidence-based practice. Since 1995, the CNN has [5]:

1. Created a standardized national NICU database for research and described outcomes;
2. Evaluated important clinical practice guidelines;
3. Developed risk adjustment instruments to permit valid comparison of NICU outcomes;
4. Used these risk adjustment instruments to examine variations in NICU outcomes and practices;
5. Identified practices associated with variations in outcomes for potential intervention;
6. Used CNN data for policy and planning; and
7. Created the EPIC system for quality improvement.

The Evidence-based Practice Identification and Change (EPIC) system for quality improvement brings quantitative analysis to Continuous Quality Improvement (CQI) methods to measure specific changes made to the treatment of newborns within CNN-affiliated hospitals. The goal of the EPIC program is to identify the best available evidence to improve quality of care for mothers and babies. As a graduate student trainee in the CIHR-funded Neonatal/Perinatal Interdisciplinary Capacity Enhancement (NICE) Program, the author of this thesis is affiliated with the CNN and EPIC groups.

Literature was reviewed on organizational culture, quality improvement and evidence-based practice in order to better inform the research study, and to locate a quantitative measurement instrument that could be applied within the NICU. Detailed information on the conceptual framework and instrument selection is presented in Chapters 3 and 4 respectively

2. LITERATURE REVIEW

Full-text, English Language databases¹ were searched through the University of Victoria (UVic) Library with the following terms: “(organizational or organisational) and culture and hospital or health”, “(organizational or organisational) and culture and quality improvement”, “(organizational or organisational) and culture and evidence-based practice”, “evidence-based practice and hospital or health”, “evidence-based practice or research and use”, “research and neonatal intensive care units”, “quality improvement and health or hospital or neonatal intensive care unit”, and “quality improvement and evidence-based practice or research and use”. As articles were reviewed, targeted searches were conducted through the Web-of-Science and specific journals including Pediatrics, Journal of Postgraduate Medicine, Journal of Organizational Behaviour, and the British Medical Journal. When articles were unavailable online, hard copies were located through the UVic Library and interlibrary loan. A total of 389 articles were retrieved, of which 81 form the basis of this literature review. Concepts were added, selecting from the total articles, to the point of saturation.

Organizational Culture

Organizational culture is the shared beliefs [6-10], values [6, 9, 10] and norms [6, 7, 9, 11] within an organization.

[It] denotes a wide range of social phenomena, including an organization’s customary dress, language...symbols of status and authority, myths, ceremonies

¹ ABI Inform Complete, Academic Search Elite, IEEE Xplore, ACM Digital Library, Health Source: Nursing/Academic Edition, Ingenta, MEDLINE

and rituals, and modes of deference and subversion; all of which help to define an organization's character and norms. (p.925)[12]

Work practices are the most visible symbols of culture [13]; Norms underlie practices and are derived from values that are imbedded within the organization [13]; Values most directly influence behaviour and often operate at a subconscious level [7, 8]. Davis states, "although the observable aspect of organization culture are most obvious, the deeper aspects are most important" (p. 366)[14].

Individuals are brought together into work groups based on their roles and corresponding tasks. An example of how culture can exert itself within a group follows:

The role of each member of the group is shaped through a reoccurring exchange of expectations, which are sent by work group members and received by the role incumbent, and receiver behaviors. That is, work group members attempt to influence individuals to conform to group expectations about how roles should be enacted. In turn, the individual in a role (i.e., the incumbent) perceives and interprets the role expectations sent by the work group based on her or his perceptions and beliefs. Therefore, the role of any individual member of the work group reflects that person's perceptions and beliefs as well as those held by the group. If the role expectations of the work group are perceived as congruent with the person's perceptions, beliefs, and experience, it will influence and motivate her or his behavior in a manner consistent with the work group's intent. However, if the role expectations of the work group are perceived to be incongruent, illegitimate, or coercive, the individual may strongly resist meeting the work group's expectations. (p. 2 or 18)[15]

The above example illustrates the potential for organizations to have more than one culture. Though a dominant culture usually exists [16], subcultures emerge between, among others, geographic location and profession [8]. Whilst some subcultures enhance the core values within an organization, others can cause conflict and misunderstandings due to competing interests or differing values and norms. Counter-cultures directly

challenge the dominant culture's values and expectations [17] and can cause further differentiation and possible fragmentation within the organization.

Strategy

Strategy is defined as “a plan of action...intended to accomplish a specific goal”². While an organization's strategy is comprised of a myriad of interrelated and/or isolated goals, for the purpose of this literature review, it is limited to the context of quality improvement. Quality improvement can mean many things. In order to achieve quality improvement (an outcome), it requires a strategy and process. These will become apparent in the section below.

Quality Improvement

Quality improvement strategies have the potential to drive organizations to continuously assess their internal and external environments and adapt behaviour accordingly. As a component of an organization's strategy, they require a culture supportive of change [18], a shared mindset or vision [14, 19], in order for improvements to be sustained [18]. A change in practice can change behaviour, but not imbed it [13]; therefore, knowledge of organizational culture is important for planning and implementation of quality initiatives [10], as is recognizing the possibility of having to change aspects of organizational culture or strategy in an effort to align them to create sustainable change.

Achieving quality improvement, requires a strategy for quality improvement [20]. Rapid cycle improvements are promoted by the Institute of Healthcare Improvement (IHI.org)

² <http://dictionary.reference.com>

as the standard model for quality improvement teams in hospitals, including Neonatal Intensive Care Units [21-24]. The Plan Do Study Act (PDSA) approach to quality improvement consists of first asking the questions: What are we trying to accomplish?; How will we know that change is an improvement?; and What changes can we make that will result in an improvement? [25, 26]. Once these questions are answered, an improvement team can test small, manageable, measurable rapid cycles of changes to inform practice [24, 27]. These tests become the basis of future rapid cycle tests. The PDSA approach has the potential to be safely tailored to the local organizational culture [21] and improve uptake of evidence-based practice [24] by “establish[ing] momentum and facilitat[ing] implementation” (p. e426)[22].

The ability to successfully sustain quality initiatives is particularly applicable to health care organizations, where the goal is to provide the best quality of care using the best available evidence [28]. This model, called Evidence-based Medicine (EBM), is considered the “gold standard” approach to patient care [29]. EBM is defined as:

“the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients...evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research.” (p. 71)[30]

Evidence-based practice is a type of quality improvement; therefore, it requires a strategy, and is both a process and an outcome. EBP is iterative. Like the PDSA approach, it entails identifying a problem, critically appraising a solution, testing the solution, and evaluating the decision [29, 31-34]. Despite its importance, a gap exists between evidence and practice. Therefore, it is important to understand the potential barriers and facilitators to achieving change in practice [11, 35].

Barriers and Facilitators to Change

Culture and context, organizational support, and leadership and communication have the potential to facilitate change. The absence of the facilitators described below is perceived as a barrier to evidence-based practice.

Culture and Context

A culture supportive of change [36, 37] is at the heart of sustained quality improvement initiatives. “Culture exerts its influence most strongly when the organization tries to implement new practices that are inconsistent with the existing culture; conflict is the result” (p. 365)[14].

It has been argued that the context within which evidence-based practice is to be implemented impacts success of uptake [38-40]. The context is the environment or setting [39, 41] in which patients receive health care and gives an organization its character and feel [41].

The importance of the organization as a lever of change to improve quality lies in the organization’s ability to provide an overall climate and culture for change through its various decision-making systems, operating systems, and human resource practices...identifying receptive contexts for change may be more important than identifying effective levers for change that might work across all contexts” (p. 287)[42]

It is important to understand the existing culture and context before deciding what changes are to be made [8].

Organizational Support

Organizational support, in terms of access, education, protected time and opportunities for collaboration, impacts implementation of evidence-based practice. In order for

informed decisions to be made on the best available evidence, employees require access to research findings [32, 43, 44]. For instance, the Cochrane Collaboration³, an international, non-profit organization, provides healthcare practitioners with access to evidence. The Cochrane Collaboration was established in the early 1990s to:

help people make well-informed health care decisions by preparing, maintaining, and promoting the accessibility of systematic reviews of the effects of health care interventions. Its work is based on ten principles; fostering collaboration, building on the enthusiasm of individuals, avoiding duplication, minimizing bias, keeping up to date, striving for relevance, promoting access, ensuring quality, maintaining continuity, and enabling participation. (p. 71)[45]

Employees also require the necessary skills to locate [32] and synthesize [46] findings through skills development [44, 47], training [47] and mentorship [48]. Providing protected time [19, 49-51] to develop research practice [31, 32, 37] and reflections [25], builds strength for quality improvement initiatives. Collaboration, through interprofessional [37, 52], multidisciplinary [23] teams, has the potential to identify more successful implementation strategies for individual sites [43], accelerate evidence-based practice, reduce duplication and increase shared successes, while learning from failures [22, 53].

Leadership and Communication

Commitment to change by practitioners and administrators is a key success factor [44, 46, 51, 52, 54, 55]. Leadership at all levels is required to create a sense of shared purpose and vision [19, 51], which in turn has the potential to “strengthen the desirable elements

³ <http://www.cochrane.org>

of the healthcare culture, while modifying outdated assumptions, procedures, and structures” (p. 51)[51].

Clear communication and employee involvement reduce uncertainty and increase buy-in to the process [31, 36, 43, 44, 52, 55]. Clear statements about vision and mission [56] transmitted via cultural communication, e.g., memos, ceremonies, rewards [19], help build support and recognition of the importance of change. Feedback [43] and dissemination [31, 48] of results assist in modifying behaviour and are central to the quality improvement process [57].

Discussion

Organizational culture is pervasive; it is the foundation from which strategy emerges. Shared assumptions [7, 8, 58] underlie how an organization defines mission, vision, goals, processes, structures, authority, and rewards [58]. In order for strategies to receive sustained support, they must be aligned to the organizational culture [10, 21, 31, 59]. In order to explore the influence of these interrelated concepts on EBP, it is desirable to examine each of these within the organization. This analysis includes determination of support for quality initiatives through consideration of: the norms, values and beliefs represented by the dominant, sub- and counter-cultures that may exist within the environment, the strategy, and the barriers and facilitators to achieving evidence-based practice.

Conclusion

Before exploring the influence of organizational culture and strategy, in the context of quality improvement initiatives, on support for evidence-based practice within the clinical environment, it is desirable to create a conceptual framework from which to derive research questions. This is the topic of Chapter 3.

3. Conceptual Framework and Research Questions

Conceptual Framework

The conceptual framework, Figure 3 below, was created based on the results of the literature review (Chapter 2), and should be read in the context of EBP.

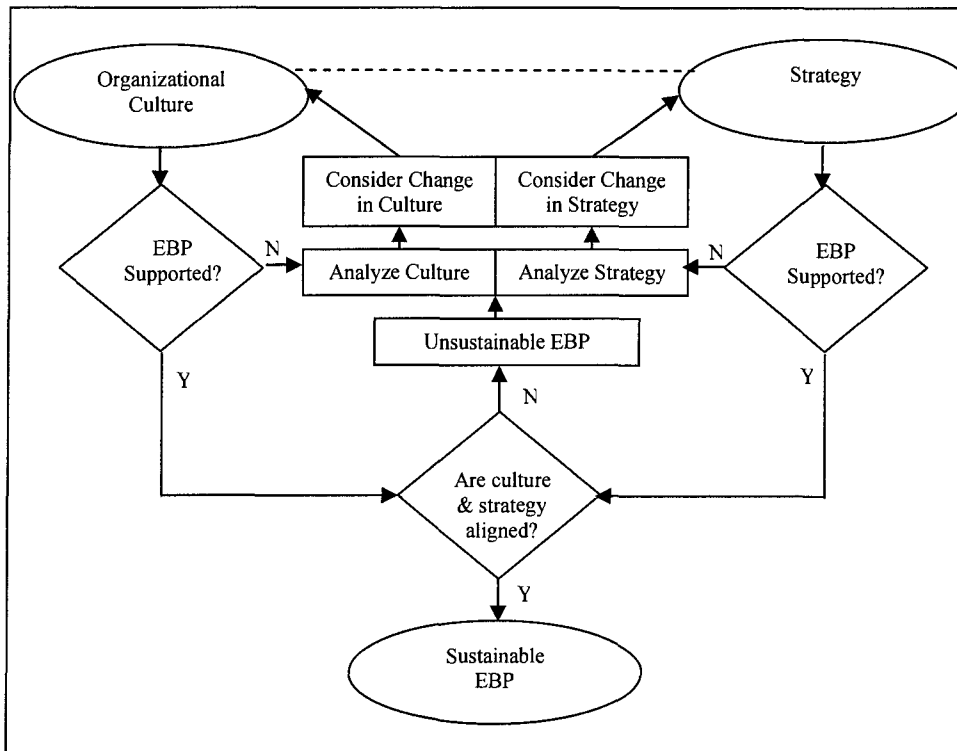


Figure 3: Conceptual Framework

Achieving sustainable EBP requires an understanding of the organization's culture and strategy; both should support quality improvement initiatives in the form of EBP and be aligned with each other. Components of an organizational culture which could be explored are norms, values and beliefs towards EBP and could include such constructs as leadership and communication. Components of an organizational strategy which could be explored are how EBP could be embedded in mission, vision and value statements and organizational support in terms of access, education, protected time and opportunities for

collaboration. Lack of support and/or alignment, requires a considerate look at the organization's culture, the strategic plan, or both, paying particular attention to the barriers and facilitators to achieving the change required for successful EBP, and consideration of changing the culture, the strategy, or both [60]. Failure to align culture and strategy leads to unsustainable initiatives.

The following provides a simplified example of how this framework could be used to determine the ability to sustain EBP within a clinical environment.

1. The organizational culture supports EBP through a belief that it is accomplished through individual effort.
2. The organizational strategy supports EBP through a mandate that it is accomplished through team effort.
3. Both the organizational culture and strategy support EBP, but they are not aligned due to the disparity between individual- and team-driven efforts. Therefore, the organization's efforts towards EBP are unsustainable.
4. It is recommended that the organization analyze the culture and strategy, and align efforts towards achieving sustainable EBP.

This research is limited to exploring the existing organizational culture and strategy, in the context of quality improvement, and determining if it is possible, given the current state, to implement evidence-based practice within the clinical environment. This exploratory research is reflected in the research questions presented below.

Research Questions

The overall study research question is: "How does organizational culture and organizational strategy influence implementation of evidence-based practice within a clinical environment?" To inform the overall research question, sub-questions were

formulated, and allow conclusions to be drawn in terms of the conceptual framework.

The questions are:

- What is the organizational culture within the clinical environment?
- What is the organizational strategy within the clinical environment?
- What are the barriers and facilitators to change within the clinical environment?
- How do these results compare to what we know about achieving sustainable EBP according to the literature review and conceptual framework?

These questions allow working through the model to either analyze the organizational culture or organizational strategy, in the event one or both do not support evidence-based practice, or move forward to analyze if culture and strategy are aligned.

In the event the organizational culture and/or the organizational strategy do not support EBP, or are not aligned, the culture and/or strategy should be analyzed. Identifying barriers and facilitators to change allows strengths and weaknesses to be identified.

Strengthening desirable elements, while minimizing weak ones, form the basis of altering organizational culture and strategy within a clinical environment.

In the context of the research that is pursued within the Special Care Nursery at Children's and Women's Health Centre of BC, the analysis is limited to understanding the influence of organizational culture and organizational strategy on EBP within the clinical environment, and identifying the barriers and facilitators to change. The results will form the basis of future enquiry into quality improvement initiatives and targeted research of how to change culture and strategy within the clinical environment.

4. MATERIAL AND METHODS

Research Question

This research explores the question: “How do organizational culture and strategy influence implementation of evidence-based practice within a clinical environment?”

Details of the research question are in the previous chapter.

Site

This research was conducted within the Special Care Nursery (SCN) Neonatal Intensive Care Unit (NICU) at Children’s and Women’s Health Centre of British Columbia (C&W), Vancouver, BC.

Participants

The participants are full- and part-time/casual employees within the SCN at C&W. Professions within the SCN include: neonatologists, nurses, clinical assistants and fellows, allied health professionals, and administrative personnel.

Methodologies

This discovery-driven research used a mix of quantitative and qualitative research methodologies, in the form of surveys, interviews and document review, to inform the research questions.

Quantitative Organizational Culture Instrument Selection

Understanding organizational culture begins with assessment [14, 52, 54, 61-63]. There is no shortage of literature on organizational culture; however, selecting an instrument presents its challenges. The literature largely describes non-healthcare environments, and

those articles that do refer to healthcare environments, often do not provide a full description of the instrument within the paper. With this in mind, a search was conducted for a quantitative measurement instrument for organizational culture.

Full-text, English Language databases⁴ were searched through the University of Victoria (UVic) Library with the following terms: “organizational or organisational and culture and assessment or instrument or measure or survey”. As articles were reviewed, targeted searches were conducted through the Web-of-Science. When articles were unavailable online, hard copies were located through the UVic Library and interlibrary loan. Twenty-five articles form the basis of this literature review.

If there is one common thread that ran through the literature, it is that no one quantitative instrument appears yet to exist that can measure the full complexity of organizational culture within a health care environment. While some researchers employ one instrument, others use several to address perceived gaps. In addition, mixed methodologies are recommended [64, 65] to triangulate data. Each of these instruments is based on a particular framework.

The following frameworks were identified from the articles:

- Organizational Culture Profile (OCP) [66-68];
- Hospitality Industry Culture Profile (HICP) [69];
- Hospital Culture Scale (HCS) [70];
- Competing Values Framework (CVF) [9, 12, 18, 36, 71-73];

⁴ ABI Inform Complete, Academic Search Elite, IEEE Xplore, ACM Digital Library, Health Source: Nursing/Academic Edition, Ingenta, MEDLINE

- Organizational Culture Inventory (OCI) [16, 74-82];
- Organizational Culture Survey (OCS) [83, 84];
- The School Quality Management Culture Survey (SQMCS) [85]; and
- Nursing Unit Cultural Assessment Tool (NUCAT-2) [80].

Scott et al.'s [12] review of quantitative organizational culture assessment instruments for use in the health care industry was consulted, in order to better understand the benefits and limitations of organizational culture instruments. Of the 13 instruments they examined closely, all examined employee perceptions about their work environment, but only a few, including the CVF and OCI, tried to examine the values and beliefs that informed the views [12]. The literature review on organizational culture (Chapter 2) describes values as being the most embedded within the organization's culture, and the most influential in influencing behaviour. Therefore, the CVF and OCI were subjected to further scrutiny based on desired criteria:

- Validity;
- Use in the healthcare industry;
- Low or no cost;
- Ability to maintain control over the collection and analysis of data; and
- Time requirement for completion of the instrument.

The results of the OCI and CVF as applied to the criteria are presented in Table 1 below.

The CVF met all criteria.

	Valid Instrument	Use in Healthcare	Low or no cost	Control over data	Short completion time	Questions included	Analysis included
Competing Values Framework (CVF) [9, 12, 18, 36, 71-73]	√	√	√	√	√	X	X
Organizational Culture Inventory (OCI) [16, 74-82]	√	√	X	X	?	X	X

Table 1: Review of Quantitative Organizational Culture Instruments and Criteria.

X = No (e.g., no questions included), √ = Yes (e.g., used in healthcare industry), ? = Unspecified (e.g., article does not specify completion time)

The CVF has been used in both healthcare and non-healthcare organizations. There are 4 culture types within the CVF: Group, Developmental, Hierarchical and Rational. Each culture type is located between flexibility and stability, and internal and external foci. Group and Developmental culture types are considered desirable for supporting sustainable quality improvement initiatives [86]. Table 2, summarizes key characteristics of each.

The Quality Improvement Implementation Survey II [86], based on the CVF, was selected to assess organizational culture within the C&W NICU environment. This instrument not only met all of the desired criteria, including previous use in healthcare environments [9, 12, 18, 36, 71, 72], but in a 2003 review of quantitative measurement instruments for organizational culture in health care [12], it was also deemed to be a useful tool for organizations looking at evidence-based practice because of its section on quality improvement initiatives.

		Flexibility				
Internal Focus		Group		Developmental		
		<ul style="list-style-type: none"> ● <i>“The extent to which the respondent perceives the culture to be based on norms and values associated with affiliation, teamwork, and participation” (p. 5)[86].</i> ● Managerial communications focus on trust-building [87] ● Participatory, decentralized decision-making [87] ● Concerned, supportive [88] ● Training and development [87] ● Flexibility [88] ● Collaboration [7] 		<ul style="list-style-type: none"> ● <i>“The extent to which the respondent perceives the culture to be based on risk-taking innovation and change” (p. 5)[86].</i> ● Growth, resource acquisition, external support [87] ● Adaptability, readiness [87] ● Transformational management communications to stimulate change [87] ● Adaptive decision-making [87] ● Informal coordination and control [87] ● Proactive strategic orientation [87] 		
		<ul style="list-style-type: none"> ● High levels of trust, morale, leader credibility [87, 88], cohesion [88] ● Low levels of conflict and resistance to change [87] ● Horizontal communications [87] ● Collaboration [7] ● Teamwork [7, 87] 				External Focus
		Hierarchical		Rational		
	<ul style="list-style-type: none"> ● <i>“The extent to which the respondent perceives the culture to reflect the values and norms associated with bureaucracy” (p. 5)[86].</i> ● Stability and control attained through precise and organized communication and information management [87, 88] ● Formal coordination and control [87] [88] ● Vertical communications [87] ● Formal rules and regulations [87] ● Conservative and cautious [88] 		<ul style="list-style-type: none"> ● <i>“The extent to which the respondent perceives the culture to emphasize efficiency and achievement” (p. 5)[86].</i> ● Productivity and efficiency [87, 88] ● Goal-setting and planning [87, 88] ● Instructional, directive communications [87, 88] ● Formal coordination and control systems [87, 88] 			
	<ul style="list-style-type: none"> ● Low levels of trust, morale, leader credibility [87] ● High levels of conflict and resistance to change [87] ● Centralized decision-making [87, 88] 					
		Stability				

Table 2: Competing Values Framework [89]. Numbers in brackets refer to literature references.

Permission was granted to use the Quality Improvement Implementation Survey II [86] (Appendix A) by the creator, Dr. Stephen Shortell, UC Berkeley. The instrument was adapted for the Special Care Nursery by changing references of “hospital” to “NICU”.

The survey consists of two parts: organizational culture (20 questions), based on the CVF, and quality improvement (58 questions), adapted from the Baldrige National Quality Program criteria. However, only the first section of the survey was distributed to participants as per the recommendations of SCN administration. This allowed reducing the anticipated survey completion time from approximately 20 minutes to less than 5 minutes.

Interviews

To triangulate the survey data, interviews, consisting of ten probes, encouraged participants to characterize the organizational culture, organizational strategy and quality improvement initiatives within the environment. Interview questions (Appendix B) were adapted from Shortell's Quality Leaders and Members site visit questionnaire [90], which has been used previously by Shortell in conjunction with the Quality Improvement Implementation Survey II. Permission to use the questions was granted by the creator.

The Quality Leaders and Members questionnaire consists of 56 questions in six sections:

- Section I Overall Hospital Environment (Questions 1 – 3)
- Section II The Role of Quality at the Hospital (Questions 4 – 19)
- Section III Hospital Structures/Training for Quality Initiatives (Questions 20 – 27)
- Section IV Project Specific Activities (Question 28 – 47)
- Section V MD Involvement in Quality Initiatives (Questions 48 – 51)
- Section VI Results of Quality Initiatives (Questions 52 – 56)

Given issues of confidentiality and the small sample size, the specific questions selected for this research were not profession-specific beyond leadership roles. In order to limit the interview time to 20 – 30 minutes, ten questions were selected from Sections I and II

(Questions 1, 2, 4, 5, 10, 11, 13 – 16). In addition, Shortell's question 49 regarding the presence of champions became an addendum to a leadership question, and a question was added regarding rewards and recognition.

The topic and rationale for each of the selected questions is presented below. Each is based primarily on the literature review:

1. Organizational culture in the hospital or NICU – Organizational culture is essential for supporting quality improvement initiatives. Interviewees were encouraged to describe the organizational culture.
2. Management/leadership style in the hospital or NICU – Leadership is essential for successful quality improvement initiatives.
3. Definition of quality and the role of quality in the various functions – A shared vision of quality improvement is important for EBP.
4. Leadership commitment to quality, communication of quality initiatives, and the presence of champions – Leadership commitment and communication are essential for successful quality improvement initiatives.
5. The focus of quality on prevention of problems versus correction of problems – EBP requires identification of a problem and working through an iterative process of improvement. This question clarifies whether quality efforts are proactive or reactive.
6. The primary focus of quality efforts – Quality initiatives require a shared vision and united efforts. This question explores if employees share the same focus, or if they differ, e.g., based on professional groups.
7. Communication of the hospital's strategic plan and perception of the link of the strategic plan to quality initiatives – Not only should the strategy support quality improvement, but also be communicated to employees.
8. Facilitators for implementing quality improvement initiatives – Identification of facilitators for change are important for understanding success factors for quality improvement initiatives.
9. Difficulties implementing quality improvement initiatives – Identification of barriers for change are important for understanding factors that impede quality improvement initiatives.
10. Most important lessons for quality improvement initiatives – Barriers and facilitators to change broaden the understanding of factors that aid or impede quality improvement initiatives implementation.

Data Collection

Introduction to the environment

The researcher was issued photo identification by C&W Security as a student in Newborn Care. Anne Synnes, Neonatologist and Head of the EPIC group at C&W sent e-mail notifications regarding the surveys and interviews to the Respiratory Therapists, Clinical Assistants and Fellows, and Clinical Nurse Leaders. Dr. Synnes gave a tour of the SCN, at which time the researcher was introduced to employees, and familiarized with the physical layout, and infection control procedures. After this orientation, the researcher was allowed to enter the SCN freely in order to collect and distribute surveys and conduct interviews.

Surveys and Interviews

Table 3 presents a breakdown of surveys and interviews by profession, and compares them to the approximate number of employees in the environment during the data collection period. The nurse category includes nurse educators and nurse leaders. Administration and other health professions include administrative staff, research assistants, clinical assistants and physician trainees, respiratory therapists and unit clerks.

Profession	Surveys	% of Total	Interviews	% of Total	Approx Total
Neonatologist	8	80	3	30	10
Nurse	56	36	9	6	156
Administration and Other Health Professionals	14	34	6	15	41
Total	78	46	18	9	207

Table 3: Number of surveys and interviews by profession

Surveys

Surveys were placed in the neonatologists', and clinical assistants' and fellows' boxes, and copies were given to the Clinical Nurse Leaders for distribution to staff nurses.

Additional surveys were given in person to people working within the SCN. Two folders were posted to the SCN entry bulletin board to distribute and collect surveys. Of the 153 surveys that were distributed within the Special Care Nursery, 78 were completed and returned during the data collection period (February 7 – 11, 2005); a 51% return rate.

Frequencies were calculated for gender, profession, age and number of years worked in the NICU. They are summarized in Tables 4 – 7 respectively.

Gender	Frequency	Percentage
Unspecified	2	2.6
Male	7	9.0
Female	69	88.5
Total	78	100.0

Table 4: Survey Frequency – Gender

Profession	Frequency	Percentage
Neonatologist	8	10.3
Administration and Other Health Professions	14	17.9
Staff Nurse	56	71.8
Total	78	100.0

Table 5: Survey Frequency – Profession

Age	Frequency	Percentage
Unspecified	2	2.6
18 - 24	1	1.3
25 - 35	25	32.1
36 - 44	22	28.2
45 - 54	21	26.9
55 +	7	9.0
Total	78	100.0

Table 6: Survey Frequency – Age

Time worked in NICU (years)	Frequency	Percentage
< 1 year	6	7.7
1 - 2 years	4	5.1
2 - 5 years	19	24.4
5 - 10 years	9	11.5
10 + years	40	51.3
Total	78	100.0

Table 7: Survey Frequency – Number of years worked in NICU

Of the 78 respondents, 88.5% are female, 71.8% are nurses, 87.2% are between the ages of 25 and 54, and 51.3% have worked in the SCN for greater than 10 years.

Interviews

Purposeful sampling was used to interview employees representing a variety of professional roles. Eighteen interviews, 12 – 42 minutes in length, were conducted from February 7 – March 24, 2005. Interviews were scheduled in person through informal introductions. Interview questions were provided to the participants before the interview occurred. Nine interviews were scheduled in advance, while the other nine interviews occurred shortly after approaching the interviewees. For every twelve-hour shift, there was a recommended two-hour time period that could potentially lead to the greatest success of obtaining an interview (after rounds, breaks, patient transfers). Bedside nurses

were the most difficult to secure interviews from, given the nature of their role and patient acuity. Seventeen interviews were recorded and transcribed. Fifteen interviews occurred on site in the Special Care Nursery, and three were conducted via phone. Interview summaries were created and returned to the participants via e-mail (16) and courier (2); participants were given the opportunity, within a specified time period, to confirm the content of the interview notes before incorporation into the study. Six participants approved the original interview notes or provided revisions via e-mail. Remaining interview notes were incorporated after the deadline date passed.

Documents

C&W documents and web-pages were opportunistically reviewed in order to better understand the strategic plan and hospital resources to support implementation of evidence-based practice. Online searches were made through the C&W website with the following search terms: “strategic plan”, “Risk Management and Quality Promotion”, “employee rewards”, and “quality improvement”. In addition, documents were obtained from SCN employees.

Data Analysis

Surveys

Professional profiles were created based on survey demographics. Professions were rolled up into three categories: Neonatologists, Nurses, and Administration and Other Health Professionals to protect survey respondent anonymity. Bar charts were created for age and length of time worked in the NICU (years) by profession.

In terms of the Competing Values Framework, the instrument differentiates between four fictional NICUs: NICU A (Group), B (Developmental), C (Hierarchical) and D (Rational). The survey consists of 5 groups of four statements describing characteristics (character, managers, cohesion, emphases, rewards) of each of the fictional NICUs. The participant distributes 100 points among each of these groups of statements. The more alike the statement is to their particular work environment, the more points are assigned to the fictional NICU. The CVF results are determined by calculating the mean (e.g., all statements related to NICU A divided by 5) for each of the fictional NICUs.

Shortell's instructions [86] on how to analyze the organizational culture results looked specifically at the mean and range for each of the organizational culture types at a broad organizational level. This is consistent with studies that use the Competing Values Framework as a diagnostic tool, with the intent to use the high level results as a basis for discussion [91, 92].

For this research, the mean and range was calculated for each of the CVF organizational culture types. CVF score distributions are presented as histograms. Organizational culture characteristics are further explored by calculating the mean for each of the characteristics by organizational culture type (Group, Development, Hierarchical and Rational) and summarizing the statements that are most like and least like the organizational culture.

Handwritten participant notes made on the survey are presented verbatim.

Interviews

Interview results were initially grouped by specific question; from these subgroups were formed. Individual question subgroups were then matched with other identical or similar subgroups across all interview results. Themes were identified and assigned to one of three broad result categories: organizational culture, strategy and barriers and facilitators to change. An example of this process is given below for 3 interview responses (summarized excerpts) to the question, “What particular difficulties, if any, has this hospital had in implementing quality initiatives to date?”

- Excerpt1: Major fiscal restraints are a barrier to implementing quality initiatives. There are budgetary constraints, not only in terms of dollars, but in terms of resources that are equivalent to dollars (e.g., nurses).
 - Subgroup(A): Barrier – Resources – Fiscal Restraints (Funding & Staff)
- Excerpt 2: Resistance to change is a barrier to implementing quality initiatives. When a new policy is being introduced, there are people for and against it. This requires promoting buy-in by explaining why the change is necessary.
 - Subgroup(B): Barrier – Resistance – Divided Opinions – General
 - Subgroup(C): Facilitator – Employee Involvement and Communication
- Excerpt 3: An example of a recent quality initiative is changing the visiting policies for families so that they can come in to visit their babies without asking permission at the front desk. Unfortunately, the nursing population is divided, possibly due to beliefs and habits.
 - Subgroup(D): Barrier – Resistance – Example – Parenting in Nursery – Divided Opinions – Nursing – Culture

Themes are then grouped across responses:

- Barriers to Change = (A)(B)(D)
 - Resources – Fiscal Restraints (funding and staff) = A
 - Resistance to Change = (B)(D)
 - Divided opinions – General (B)
 - Example – Parenting in Nursery – Divided Opinions – Nursing – Culture (D)
- Facilitators for Change = (C)
 - Employee Involvement (C)
 - Communication (C)

All interview responses went through a similar process for grouping themes as they emerged. Primary themes emerged for organizational culture (quality of care, nursing,

morale, leadership, rewards and recognition, and empowerment), organizational strategy (quality efforts and prevention versus correction) and barriers and facilitators to change (resistance to change, leadership, resources, workload, communication and feedback, employee involvement, skills and education).

Information unrelated to the interview questions and “off-the-record” statements were excluded from the study. Results are rolled into a broad organizational perspective in order to preserve confidentiality (see “confidentiality” at the end of this chapter).

Documents

Documents in the form of strategic plans, newsletters, planning documents and webpages were opportunistically reviewed for information on organizational culture and strategy, in the context of quality improvement initiatives. Document review provided the opportunity to identify organizational support for quality improvement initiatives within the hospital and Special Care Nursery and compare the results to the interviews and survey data. The following documents were reviewed:

- The strategic plans for Women’s and Children’s Hospitals, available online, were reviewed for information on the vision, mission and goals.
- The Risk Management and Quality Promotion website was recommended by SCN interviewees and the Risk Management and Quality Promotion Department, and reviewed for information related specifically to quality initiatives at the hospital-level.
- Formal employee rewards were identified through the C&W website and through hallway postings.
- The Roadmap to Quality of Care was obtained from the SCN Administration and reviewed for information on the quality improvement strategy at the SCN-level.
- The SCN’s “NeoNews” newsletter, produced by the nurse educators, was obtained from the nurses, and reviewed for content related to quality improvement initiatives and organizational culture.

- The C&W library was visited and handouts collected to review services, availability of online databases and hours of operation.

Themes from these documents are grouped and appear primarily in the strategy section of Chapter 5.

Ethics

This research was granted ethical approval from both the Human Research Ethics Committee at the University of Victoria (UVic) and the Clinical Research Ethics Board (CREB) at the University of British Columbia (UBC) and C&W. The research underwent the UVic ethical review process as a new project; whereas UBC/C&W reviewed the research as an addendum to an existing project (EPIC).

Confidentiality

Research participants are not identified by name or role. Surveys are anonymous and interviews are confidential. To help preserve respondent anonymity, professional profiles have been rolled up into three categories: neonatologists, nurses, and administrators and other health professionals.

The majority of the interviewees expressed a strong desire for the sources of the interview content to be kept as confidential as possible. Interview results are therefore presented as a broad organizational perspective. Descriptions of professional roles and responsibilities, communication patterns, etc., are formed from multi-professional perspectives. Participants were assigned a random identification number, which is used for quotes.

5. RESULTS

5.1 What is the ORGANIZATIONAL CULTURE?

This section begins with a description of the dominant culture, a professional sub-culture, morale and leadership in the Special Care Nursery, based on employee interviews. It is followed by the organizational culture survey results presented as professional profiles and the Competing Values Framework (CVF).

Interview Perspectives

The Quality Culture

The nursery is a multi-cultural environment, with Canadian and international staff; it can take a while for employees with different cultural beliefs, backgrounds or experience to integrate into the nursery. Despite this individuality, employees at all levels are committed to providing excellence in quality of care. Employees enter the SCN with their own core set of personal values and beliefs. This mind set forms the basis of every patient, parent and employee interaction.

The dominant culture embraces quality. Quality is multi-dimensional and practiced on a day-to-day basis in the SCN. Despite commitment to quality, people at all levels struggle with the concept, defining what it is and how it works. ‘Quality’ is “a broad term that is probably used too loosely” (Participant 17).

Employees define quality of care as providing the best treatment you can for patients and their families. It is a joint effort accomplished by individual and collaborative work and functions within and between professional groupings, and is guided by the Roadmap to

Quality Care (See Section 5.2 Strategy) through evidence-based practice. Professional groups (e.g., of neonatologists, nurses, administrators, and other health professionals) form professional subcultures within the environment that support quality of care; however, hospital and SCN administrators are sometimes perceived by employees to represent a counter-culture to this value due to the imposition of budgetary restrictions.

Teamwork is an essential part of day-to-day operations. The SCN is a multi-disciplinary environment within which various professions work collaboratively to provide care.

Communication occurs within and between the formal SCN nursing and medical structures (Chapter 1 – Background). The matrix below summarizes communication patterns between nursing and medicine, as identified by interviewees.

		NURSING						
		Program Director	Program Manager/ Program Coordinator	Clinical Nurse Leaders	Nurses	Nurse Educators	Discharge Nurse	Equipment & Supplies Coordinator
MEDICINE	Director of Neonatology	X	X					
	Medical Director	X	X	X	X	X	X	X
	Clinical Director	X	X	X	X	X	X	X
	Clinical Assistants & Fellows			X	X	X	X	X
	Allied Health Professionals	X		X	X	X	X	X
	Neonatologists			X	X	X	X	X
	Administrative Manager	X	X	X				
	Unit Clerks	X	X	X	X	X	X	X

Table 8: Communication patterns between formal nursing and medicine structures

As Table 8 illustrates, there is a lot of cross-over of communication between the nursing and medical groups. At a high level, the Directors (“administrators”) discuss shared nursery issues with each other. SCN administrators have an open-door policy, and therefore are accessible to discuss nursery issues with employees. The Medical and Clinical Directors are both neonatologists and provide patient care along with the other administrative neonatologists, clinical assistants and fellows and allied health professionals. These groups work collaboratively with the Clinical Nurse Leaders (CNLs), staff nurses, discharge nurse and nurse educators, who provide nursing leadership, family-centred care and education. CNLs are a primary contact within the nursery as they manage the nursing teams and are an immediate resource for the unit clerks when an issue arises. The unit clerks relay messages for the professional groups. Despite the communication patterns within and between nursing and medicine, communication is considered a challenge. This is explored further in Section 5.3 “Communication and Feedback”.

In addition to the dominant culture, there are professional subcultures (e.g., neonatology, administration, nursing) rooted in training, experience, responsibilities, and priorities, among others. Of these, the nursing sub-culture was described in some detail during the interviews and is described below.

Nursing Sub-Culture

Nursing is the predominant profession in the Special Care Nursery. The nursing culture is one of guidance, mentorship and support. The majority of new staff has no neonatal experience when they are hired, but are taught neonatal basics in a compressed timeframe

of eight weeks and are then placed with a preceptor (nursing mentor) for approximately one month. Education and expectations are fairly well defined for new staff, which helps them to measure their own progress against what they should be doing.

As the healthcare system has become increasingly leaner over the last ten years, the middle layer of nursing has disappeared. This means that there is a gap in mentorship, as there are fewer nurses to bounce ideas off of, seek advice from, or discuss a difficult day with. The nurses rely on the nurse educators for guidance; however, some indicated that it is also desirable to have someone with advanced neonatal nursing skills to model new procedures. For the most part, the nurses in the SCN are considered the neonatal nursing experts for the Province of BC. However, most of the SCN nurses have only worked in their particular environment, some for more than twenty years, and could use some hands-on guidance for new procedures. Unlike other Canadian NICUs, the nursery does not have a Clinical Nurse Specialist on staff to synthesize evidence and demonstrate new procedures. The SCN will, however, be introducing one Nurse Practitioner (NP) into the environment within the next few months; this new role will likely impact communication within and between the medical and nursing structures, as the NP responsibilities will overlap with both areas.

There are additional sub-cultures within the nursing sub-culture. There are nine teams of 12 – 18 nurses within the SCN, each led by a Clinical Nurse Leader (CNL). Every CNL has a different leadership style which impacts the culture and makes the teams unique entities. Each team is like “their own country” (Participant 8), and offers differing levels of support. Some teams have a closed system or niche, which can make it difficult for

new people to integrate into them. “The teams are as different as the number of people” (Participant 15). Some teams are top-heavy in seniority, while others have a lot of junior staff.

The nursing culture has changed over the years. Over time, nurses have been given more power and their relationship with physicians has changed to become more collaborative. In addition, seasoned nurses initially received training to be advocates for the baby (patient); whereas new nurses are now trained to be advocates for the family (family-centred care), where parents are active participants on the patient care team.

The SCN was once part of BC Children’s Hospital and became part of Women’s Hospital after the merger of the two institutions in 1997. Both hospitals have distinct cultures. The Presidents of the Children’s and Women’s Hospitals are a nurse and a physician respectively, and have different, but complementary, leadership styles. The amalgamation created some uncertainty about what it now means for the nurses as hospital leadership shifts from a nursing culture (Children’s Hospital) to a physician culture (Women’s Hospital). In addition, a number of interviewees in different professional roles feel a greater connection to the Children’s Hospital and characterize it as a more cheerful environment with greater emphases on fund raising and socializing than experienced within Women’s Hospital.

Morale

Though the atmosphere is described by some as supportive, comfortable and efficient, and morale as good and cohesive, there are also signs of stress in the environment.

Morale is generally low as funding cutbacks have increased workload and responsibilities. Expectations are high:

“There are a lot of concerns from individuals in part because people feel that they are being asked to do a lot more than they feel they should be capable of doing given the constraints of time... The culture on the one hand is wanting to provide the best, but on the other hand, is antagonistic towards responding in a positive manner to being asked to do more than they think they should be doing”.
(Participant 1)

Others feel they are unable to catch up.

“It’s [easy] to take on way too much and feel yourself floundering and feel that you’re not doing as good a job as you should be doing, because there are so many things that need to be done.” (Participant 12).

Some staff feel torn by conflicting priorities. It is difficult to reconcile budgetary demands with clinical care, and this is what many perceive SCN administration to be doing. SCN administration has risen through the ladders of advancement in the nursery over the years and is made to operate with the limited budget and communication that occurs at higher hospital levels. The SCN tries to work with the hospital in an effort to ensure those things that are important to the nursery become priorities at a higher level. There have been a number of changes in recent months and many key departments have undergone business process reviews. Some feel the hospital finance department operated in isolation. Redesign of care and business processes is a hospital initiative, and many departments within the hospital feel that budget cuts are made without consultation with those who will be impacted most.

Decreased resources result in fewer employees who are then asked to wear many hats in order to accomplish work within the intensive care environment. Days are defined by what is clinically occurring in the nursery. Some groups resent their role as they are

asked to address clinical issues while at the same time asked to become gatekeepers and squeeze additional efficiency from the system (e.g., through restricting usage or accepting less patients). These are contradictory values which are difficult to reconcile since it goes against the priority of caring for patients.

“There is a tension...because people’s expectations about what they should be doing [differ from] what they are being asked to do.” (Participant 1)

There is desire throughout the SCN leadership levels to spend more time with patients and to become better resources for employees. However, it can be difficult to get out of the office. Leadership does not necessarily have a clinical place and a lot of time can be lost on process and structure. For those who wear multiple hats, it is unknown how much time has to be spent on a particular aspect of one’s job description. A finite amount of time is spent between clinical, research and administrative duties. Resistance results as people find their time spent in ways that are not necessarily aligned to what they believe they should be doing, and being asked to implement things that they do not necessarily agree with.

There is a strong team ethic, which is necessary given the nature of the work. This multi-disciplinary approach assists people in providing support to each other by sharing challenges. However, teamwork can be impeded due to stress, overwork, the intensive care environment, and co-worker and leadership demands.

“We do so many things well, but sometimes we’re forced to accept something second rate because there is so much volume for what we have to do.”
(Participant 12)

“Essentially, there is going to be a breaking point. There [are] little cracks in the structure all over the place.” (Participant 13)

At times, patient acuity can also increase the sense of urgency and decrease morale.

Often there is a patient on the verge of dying, and dealing with the patients and family members can be very stressful. Personal issues surface as to how long a patient should receive care, and at times conflict with family wishes. These feelings can feel like a “tug-of-war” within employees.

The SCN was completely renovated in the last two years. Though the facility has been enhanced, the new layout has “definitely impeded...efforts to provide the fastest care, the best response and the most effective coverage” (Participant 2). It can be tiring to cover patients in a larger amount of territory and takes additional time to reach patients; this in turn impacts the ability to provide quality care.

The interviews indicate that low morale can also be caused by differences in opinion between professions, misunderstood roles, conflict in working relationships, and lack of: opportunities for advancement, teamwork, recognition for accomplishments, consistency in decision-making, guidance, and support for projects that support the SCN’s vision.

Leadership

There are many levels of leaders, from bedside nurses, nurse educators, Clinical Nurse Leaders, neonatologists and other health professionals, to managers and administrators at the SCN and hospital levels. Leadership style depends on the individual. Each leader appears to differ in approach, which means that leadership can change day-to-day and patient-to-patient. Leaders generally strive to be team-oriented and inclusive; however, the ability to create a sense of “teamness” with others depends on an individual’s

perception of their particular role, e.g., being part of a team, or being someone teams report to. This leadership style requires integrating different disciplines and approaching care from a multi-disciplinary viewpoint. However, at the end of the day, it is not a democracy; a decision is made by those empowered to do so.

Leadership is generally focused and strong; however this too is individual specific. There are clearly defined objectives, which are followed to ensure goals are being met. In addition, leadership is made stronger in part due to the formalized structure. There is a hierarchical structure to the leadership, which is particularly felt at the hospital level. The hospital is a complex administrative environment; this makes the hospital leadership feel more distant and less directive than experienced within the SCN. The size of the organization makes it more difficult to effect change and less clear about who makes the final decisions.

The level of leadership formality depends on the individual, the team, the context, and the hierarchical level the employee works in. On the one hand, leadership is formal as there are formal structures, processes, policies and procedures in place, guidelines to follow, etc. On the other hand, there is also an attempt to make the leadership informal and as personal as possible within the more formal environment. This can be seen in the form of mentorship and role modeling.

Rewards and Recognition

The SCN does not appear to have formal mechanisms built in to the system to celebrate accomplishments. Lack of rewards and recognition within the SCN has become a source

of frustration for some of the employees. The practice of recognizing contribution or success is informal and depends on the individual. In general, people are unable to devote the amount of time they would like to recognize individual and group achievements. Most recognition that occurs within the SCN is in the form of:

- Verbal communication (a simple thank you from families, leaders or peers);
- Written communication (newsletter, e-mail);
- Providing funding to pursue initiatives (e.g., education, quality improvement project); and
- Being given more work and respect from colleagues and leaders.

The perceived value of rewards and recognition depends on individual preferences:

“There is a bit of disparity between what the organization thinks is reward and what the individual...thinks should be reward. It’s quite a difference there.”
(Participant 11)

For some staff, rewards and motivation come from parent and patient interactions rather than from leadership and peers. Some employees feel satisfied with being able to go home at the end of a shift knowing they did a good job for the patient. However, not everyone is able to create that sense of accomplishment for themselves.

Empowerment

Though one of the SCN leadership goals is to empower employees, they often do not feel empowered. Individuals are encouraged to be leaders within their particular roles and are responsible for their actions. Employees indicate that empowerment depends on:

- The length of time an employee has worked in the nursery;
- The group of people an employee works with;
- Working relationships with people across all levels;
- Position and rank; and
- The willingness to embrace empowerment.

Empowerment is limited to a certain extent because one has to get through bureaucracy to make changes.

“There is a set of parameters within which one feels empowered. Beyond that there are also limitations to what an individual in the system can and cannot do, partly because of the way that it is a multi-professional nursery where the views of each member of the team are taken into account...no one member is completely empowered to do whatever they want.” (Participant 16)

There is a deliberate attempt to try to keep patient care for the same diseases relatively similar for each patient because to do differently is very confusing and leads to therapeutic mistakes. To that extent, individuals do not have total freedom to be able to make whatever decisions they want. Though employees may wish for more autonomy, it can be difficult to give.

Surveys

Professional Profiles

Professional profiles were created in terms of age and length of time worked in the SCN. They are based on survey demographic data and are presented in Figures 4 and 5 below.

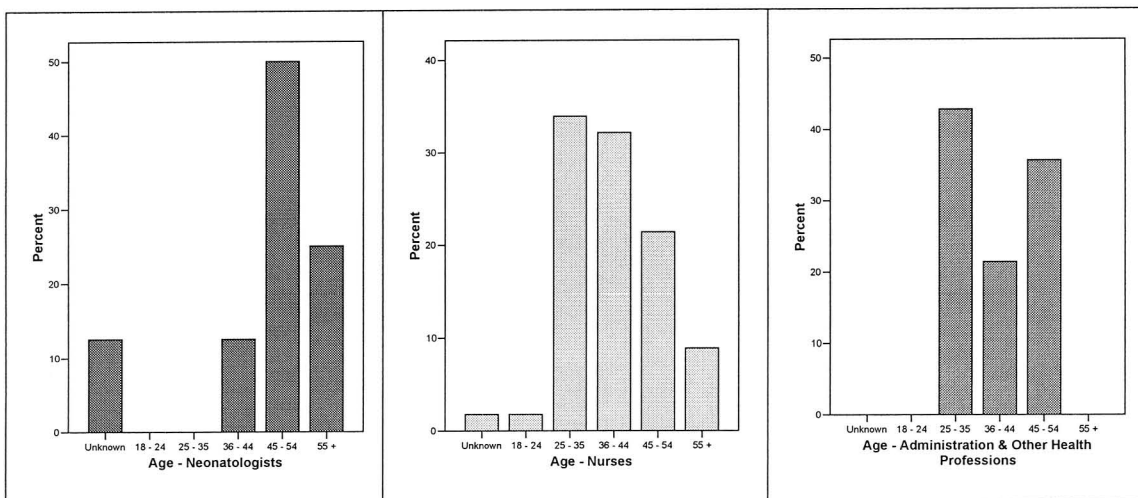


Figure 4: Survey Demographics – Age by Profession

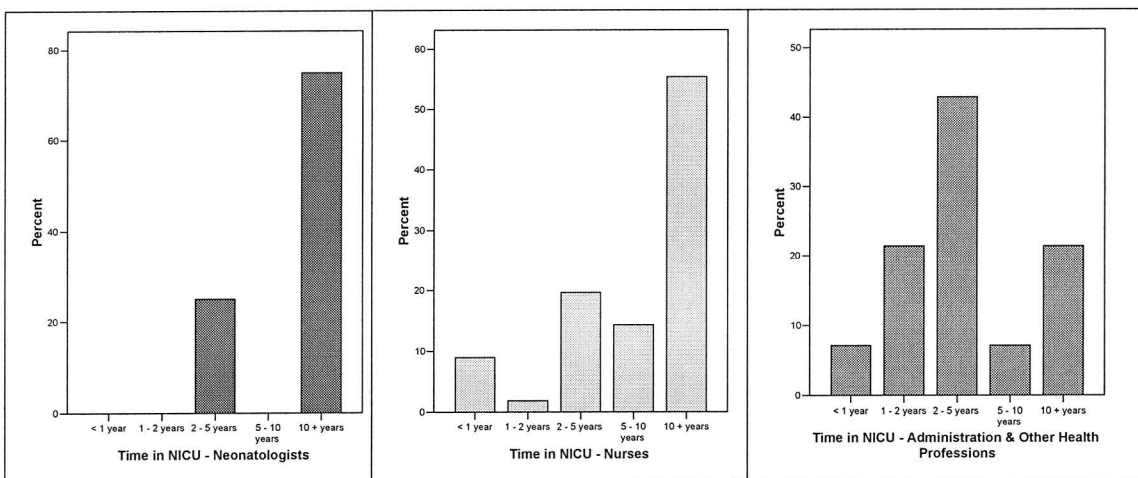


Figure 5: Survey Demographics – Length of Time in NICU (Years) by Profession

As Figures 4 and 5 illustrate, the majority of: neonatologists are 45 – 54 years old and have worked in the SCN for greater than 10 years; nurses are 25 – 44 years old, and have worked in the nursery for greater than ten years; and administration and other professionals are 25 – 35 years old, and have worked in the SCN for 2 – 5 years.

Competing Values Framework (CVF)

Survey scores place the SCN’s culture within the context of the Competing Values Framework (CVF). Histograms were created, and the mean and range were calculated

for each of the CVF culture types – Group, Developmental, Hierarchical and Rational.

They are presented in Figures 6 and 7 below.

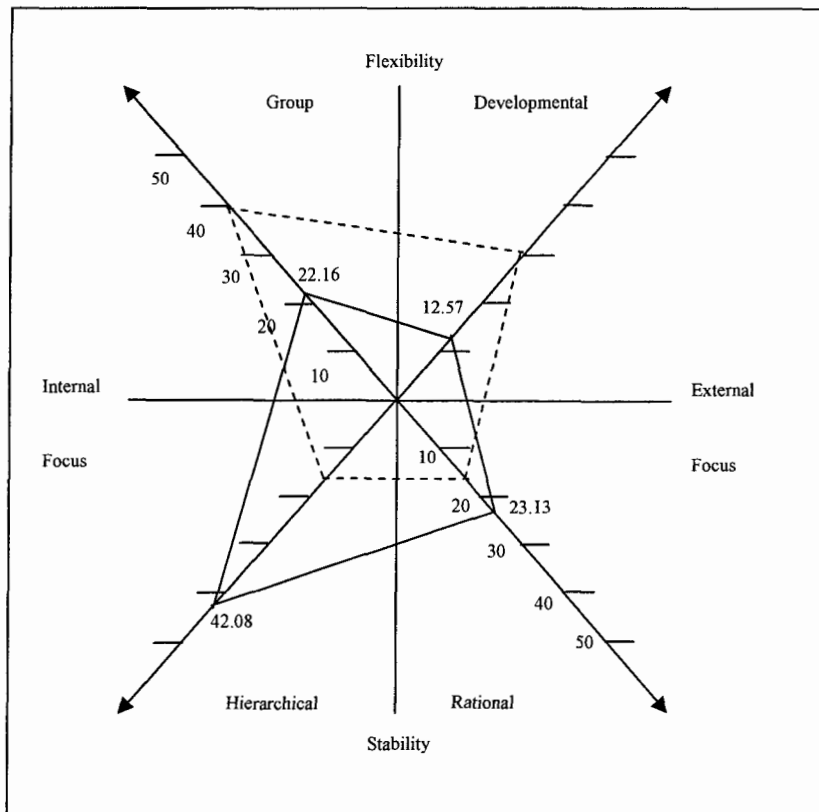


Figure 6: Competing Values Framework – Mean Scores at the Organizational Level. The solid line represents the actual mean for the SCN; whereas, the dotted line represents a theoretical example of a culture that could support change through a strong emphasis on group and developmental culture types.

At an organizational level, the organizational culture within the SCN is perceived by survey respondents to be predominantly hierarchical (Mean: 42.08), followed by Rational (Mean: 23.13), Group (Mean: 22.16) and Developmental (Mean: 12.57).

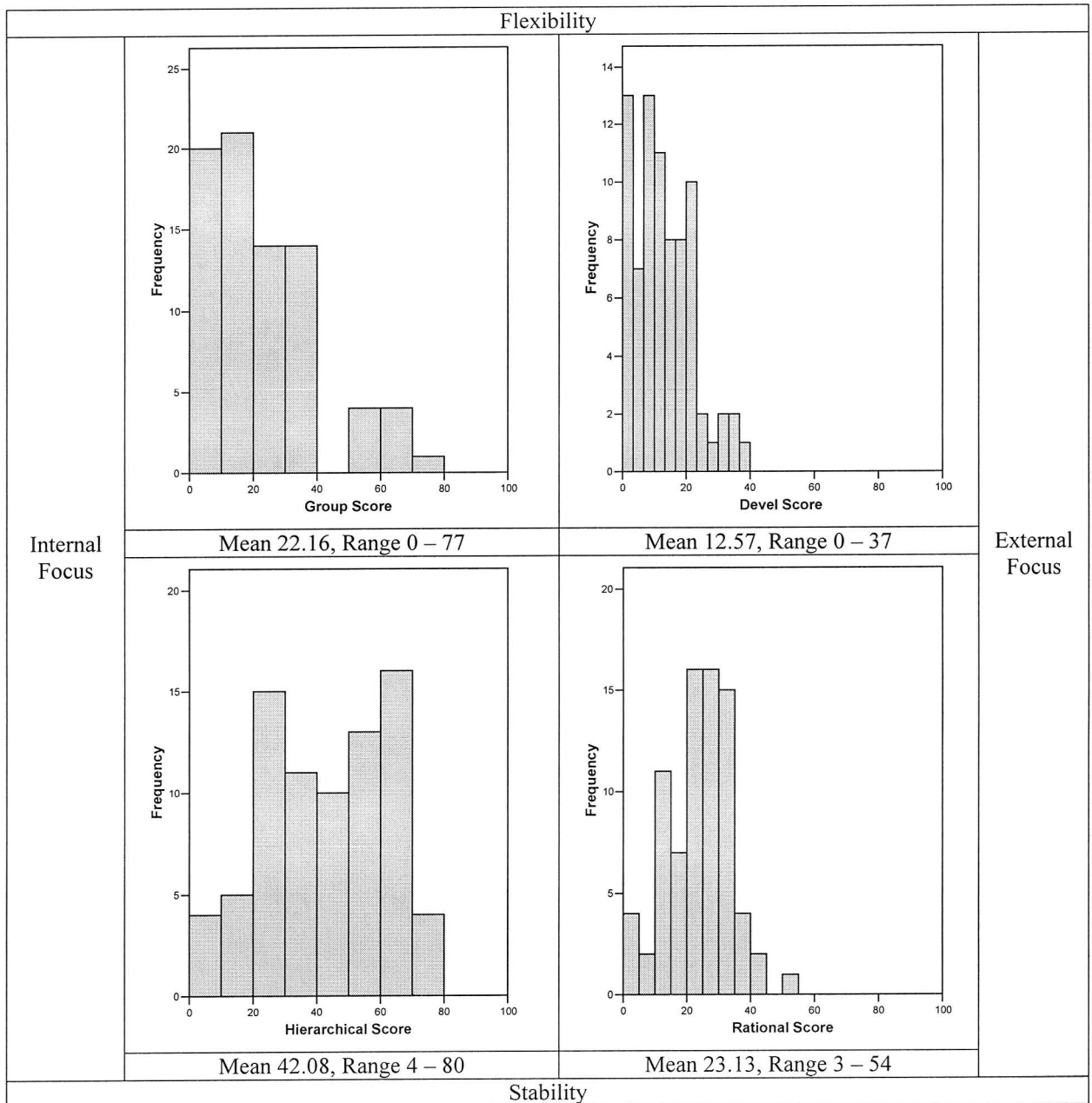


Figure 7: The Competing Values Framework, Mean and Standard Deviation (SD)

As Figure 7 illustrates, the mean and range for each of the organizational culture types differ. Both group and developmental scores have a low score of ‘zero’. Developmental and group cultures have the lowest and highest ranges of scores respectively. Survey

scores for hierarchical and rational types are fairly evenly distributed; whereas group and developmental scores are generally scored low, with a small number of high scores that pull the results to the right. The surveys characterize the SCN as having a predominantly hierarchical organizational culture, which has an internal focus and emphasizes stability. Hierarchical culture is bureaucratic, and includes formal rules and regulations, vertical communication, stability and control, and precise information management. The hierarchical culture score is followed by Rational, Group and Developmental scores, ranked 2nd, 3rd and 4th respectively.

Mean CVF scores were also calculated for: length of time in NICU, profession and age, and are similar to organization-wide calculations. All categories within length of time in NICU (n=78, <1 year to >10 years), all professional groups (n=78) and the 25-54 and undeclared age groups scored hierarchical culture highest. The 18-24 and 55+ age groups (n=8) scored group culture highest. All of the above groups scored developmental culture lowest.

Scores for each of the CVF culture types are calculated as the mean of 5 characteristics: Character, Managers, Cohesion, Emphasis and Rewards. Table 9 breaks down the mean for each culture type by characteristic.

Character/ Mean	Group	Rank	Develop mental	Rank	Hierar chical	Rank	Rational	Rank
Character	31.54	2	11.38	4	37.51	1	19.44	3
Managers	18.24	3	4.46	4	51.15	1	24.99	2
Cohesion	21.79	3	10.00	4	40.90	1	26.03	2
Emphases	18.28	4	22.01	2	38.50	1	19.67	3
Rewards	20.60	3	14.74	4	37.99	1	24.07	2
Overall Mean	22.16	3	12.57	4	42.08	1	23.13	2

Table 9: Culture type mean by characteristic

The hierarchical culture scores highest for each of the characteristics. Rational and group cultures have the greatest mix of characteristic ranks, whereas the developmental culture characteristics rank predominantly last.

The statements applicable to the characteristics most and least like the SCN's organizational culture are presented below.

Characteristic	Statements most like the organizational culture	Statements least like the organizational culture
Character	[The] NICU is a very formalized and structured place. Bureaucratic procedures generally govern what people do. (H)	[The] NICU is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks. (D)
Managers	Managers in [the] NICU are rule-enforcers. They expect employees to follow established rules, policies, and procedures. (H)	Managers in [the] NICU are risk-takers. They encourage employees to take risks and be innovative. (D)
Cohesion	The glue that holds [the] NICU together is formal rules and policies. Maintaining a smooth running operation is important here. (H)	The glue that holds [the] NICU together is commitment to innovation and development. There is an emphasis on being first. (D)
Emphases	[The] NICU emphasizes permanence and stability. Efficient, smooth operations are important. (H)	[The] NICU emphasizes human resources. High cohesion and morale in the organization are important. (G)
Rewards	[The] NICU distributes rewards based on rank. The higher you are, the more you get. (H)	[The] NICU distributes its rewards based on individual initiative. Those with innovative ideas and actions are most rewarded. (D)

Table 10: Statements describing organizational culture characteristics most and least like SCN organizational culture [86] H=Hierarchical, D=Developmental, G=Group

These statements illustrate the differences in perception between the organizational culture survey participants perceive the SCN to be most and least like. The hierarchical culture characteristics emphasize formality, structure, stability, rules, policies and procedures; unlike the developmental and group culture characteristics which emphasize entrepreneurship, risk taking, high cohesion and morale, innovation and development.

Five participants wrote additional notes within the emphases and rewards sections of the organizational culture survey. Their comments are presented in Table 11.

ID	Comment
	<i>Emphases</i>
6	Q13 – NICU Emphases. Underlined “morale in the organization” and assigned 0 points
37	Q13 – NICU Emphases. Circled “cohesion” and “morale” and assigned 0 points.
	<i>Rewards</i>
8	Q17 – 20. Assigned 0 each for NICU Rewards with the comment, “This is a very poor choice of questions/statements”.
34	Q17 – 20. Assigned 0 each for NICU Rewards with the comment, “No such thing”.
77	NICU Rewards – wrote, “What Rewards???”

Table 11: Survey participant comments

Survey participant comments increase the understanding of how morale and rewards are perceived by some individuals within the SCN.

The following section explores the organizational strategy.

5.2 What is the ORGANIZATIONAL STRATEGY?

This section reviews organizational strategy in the context of quality improvement initiatives. The first part presents information taken from strategic plans, web pages and other documents; the second part presents interview perspectives.

Documents and Web-pages

Strategic Plan

BC Women's and Children's Hospitals merged in 1997 to become Children's and Women's Health Centre (C&W). Though they remain to a certain extent separate entities, they work in partnership to provide care.

BC Women's (BCW) Hospital is the lead perinatal provider in BC and offers prenatal consultation, diagnostic and interventional services. Each year, Women's Hospital cares for hundreds of very high risk newborns in its intensive care nurseries. Women's Hospital's strategic plan states:

“Several BC Women's programs, including the Newborn Care program (intensive care nurseries)...are essentially integrated with BC Children's Hospital...The close partnership with Children's is an important part of the BC Women's identity”. (pg3) [2]

The BC Children's (BCC) Hospital strategic plan lists neonatal intensive care as one of their services and states:

“While this is a strategic plan for BC Children's Hospital, it is important to specifically acknowledge BC Children's Hospital's close working relationship with BC Women's Hospital & Health Centre as we advance care for children and youth. One of our greatest strengths in support of this mission is the co-location of BC Children's Hospital with BC Women's Hospital & Health Centre, particularly in the interface between maternity and newborn care. It is critical that

we support and foster this relationship if we are to have the best opportunity to achieve our goals”. (pg8) [93]

The vision, mission, values and strategic directions for BC Women’s Hospital & Health Centre and BC Children’s Hospital are presented in Table 12. The strategic plans provide different levels of detail. The hospitals have their own specific initiatives, but share overall strategic directions. BCW Hospital’s initiatives include the development of the “Pocket Neo”, a wireless patient management system for the intensive care nursery, and telehealth initiatives connecting nurseries to support best practice. The Women’s Hospital strategic plan outlines specific strategic goals; whereas the Children’s Hospital strategic plan describes key assumptions. Internal and external influences for BCW include an increased birth rate in the coming years, an aging workforce and technological advances. In addition, BCW outlines enabling strategies, an example of which follows:

“a recent operational analysis of the fetal maternal and newborn programs...concluded that these programs meet North American standards for efficiency of staff deployment and resource utilization.” (p. 11) [2]

Nevertheless, processes will be redesigned to ensure optimal length of stay. External influences mean that Programs might face budgetary challenges [2].

Vision	
BCW	<ul style="list-style-type: none"> • “Improving the odds: better health for all women. • Leading the way to best practice for women, infants and their families” (pg1) [2]
BCC	<ul style="list-style-type: none"> • “Better health for children and youth, achieved with partners who work together to ensure access to the best care in the best setting” (pg1) [93]
Mission	
BCW	<ul style="list-style-type: none"> • “To lead the way to best practice for women, infants and their families” (pg1) [2]
BCC	<ul style="list-style-type: none"> • “Be a provincial and regional resource providing child and youth health care and services. • Integrate our role as an academic health centre – so that excellence in care is driven by learning and applying new knowledge; this quest for new knowledge is driven by clinical questions, and continual learning is driven by passion for what we do. • Provide provincial and regional leadership in assessing and meeting health care needs by working with partners to ensure children, and youth throughout BC have access to excellent care. • Support, respect and value our people, recognizing they are the heart and soul of the work we do.” (pg2) [93]
Values	
BCW	<ul style="list-style-type: none"> • Women- and family-centred approaches • Accessibility/diversity/ inclusiveness • Comprehensive and holistic approaches • Evidence-based quality • Accountability • Mutual Respect
BCC	<ul style="list-style-type: none"> • “Strive for excellence in providing the best possible quality patient care, education and research using our resources and assets creatively, effectively and efficiently. • Demonstrate respect for each other’s unique qualities, interests, life experiences and choices while working thoughtfully together to resolve differences and negotiate competing priorities. • Be open and honest in order to be trustworthy in our relationships. • Work cooperatively and collaboratively with each other, those we serve and our other partners. • Act with compassion and empathy to support all people in pursuing balanced and healthy lives. • Be optimistic, courageous and innovative in our efforts to improve the health and well-being of children and youth, and their families. • Be accountable and ensure our actions are consistent with our words, using self-assessment, respectful feedback and continuous learning to achieve positive change. • Be just and fair with people and act with a social conscience.” (pg 7) [93]
Strategic Directions	
BCC/ BCW	<ul style="list-style-type: none"> • Operational excellence; Knowledge and Innovation System-wide Improvements; Prevention, promotion, protection
Strategic Goals	
BCW	<ul style="list-style-type: none"> • Strengthen the clinical, educational and research platforms • Enhance women’s health research • Develop and implement strategies to identify and address key emerging health and health system issues for women, infants and their families • Establish partnerships and networks to improve the health of women and their families • Improve the health of aboriginal women and their families • Support development of appropriate strategies to address population health issues
Key Assumptions	
BCC	<ul style="list-style-type: none"> • Service Pressures (includes decreased demands, advances in technology, increased survival rate) • Service Model (collaboration with newborn services, HR shortages, employee involvement) • Financial (includes disparity between demand for services and availability of finances, redesign).

Table 12: BC Women’s (BCW) and BC Children’s (BCC) Hospitals’ Strategies [2, 93]

C&W shares resources to promote quality. The most visible is the Risk Management and Quality Department.

Risk Management and Quality Department

The core services provided by C&W's Risk Management and Quality Department are to:

1. Support process improvement and re-design initiatives;
2. Support quality improvement education and training;
3. Mobilize improvement teams;
4. Establish accountability related to sustained improvement;
5. Support program and project based evaluation;
6. Coordinate evidence-based clinical practice tools;
7. Participate in accreditation preparation;
8. Facilitate benchmarking initiatives;
9. Provide risk assessment services;
10. Support and maintain policy manual system;
11. Share information; and
12. Measure satisfaction by listening to customers. [94]

Incident reports are a method of tracking potential harm (e.g., error, omission, patient outcome). All incident forms go to the Quality Promotion and Risk Management Department to determine what follow up is required. Critical incidents are reviewed and the Program Director tracks reports to identify trends [94].

The Quality Promotion Department recommends the following types of incidents be reported: those that have occurred, have been prevented, and might happen [95]. This data helps to:

- “Identify trends and patterns of avoidable incidents and root causes.
- Develop solutions and models of good practice.

- Support and guide education and training.” [95]

The Risk Management and Quality Department offers educational resources and pamphlets (e.g., clean hands poster, patient safety handbook). The Department also offers Quality Improvement courses including “Continuous Quality Improvement, Evaluation and Research”, offered to physicians, nurses, therapists, managers and researchers, and includes an introduction to the Cochrane Collaboration.

The Risk Management and Quality Internship Program first began in August 2002 and “provides an innovative approach to engaging clinical leaders in developing their skills and knowledge related to patient safety, quality and risk management”. (p1) [90] The program runs two days a week over a 12 week period. The internship program:

“recognizes that leaders within the clinical Programs who have formal responsibility for quality activities are in the best position to influence and effect meaningful, sustained practice change. These leaders are familiar with their Programs issues, have credibility with Program staff, and are part of Program culture.” (p3) [94]

The benefits of the Internship Program, as identified by interns, include increased knowledge of continuous quality improvement tools and processes, understanding of the incident reporting system, and opportunity to build collaborative relationships with the Risk Management and Quality Department staff [94].

The Quality Promotion Department recognized the importance of communication in its Quality Matters publication:

“Evidence is emerging that a commitment to clear communication between all members of the healthcare team, as well as with patients and families, is part of the foundation of safe, quality care...A culture of safety depends much more on open and effective communication than it does on technology or policy.” (p1) [90]

Information about quality initiatives is communicated through various newsletters including the C&W Risk Management and Quality Departments “Quality Matters” quarterly publication, BC Women’s Hospital’s “Length of Stay Collaborative”, and the SCN’s “NeoNews”. Though some of these documents are available online, they are also distributed in hard copy for those without access to computers.

In addition, awards recognize safe practices (e.g., Safety Recognition Award) and family-centred care. The Summer 2004 issue of Quality Matters [90] recognizes an individual from the Special Care Nursery with the Safety Recognition Award, for reporting near miss events in the work area. C&W offers the Family Centred Care Awards [94], presented by Partners in Care, Parent Advisory to BC Children’s Hospital and BC Children’s Hospital Foundation. Parents can recognize a health professional who demonstrates any of the following:

- Regards patients/families as equal partners on the health care team;
- Honours the values, beliefs and preferences of patients/families;
- Communicates openly and freely with patients/families; and
- Builds confidence by supporting and teaching patients/families.

C&W also has yearly preceptor awards⁵. Preceptors are nominated by employees for their commitment to mentorship.

Patient Based Care Units (PBCUs) and Programs belong to C&W Quality of Care Committees. The Newborn Care PBCU belongs to the Maternal, Fetal and Newborn

⁵ Hallway postings, Call for Preceptor Nominations, C&W, February 2005.

Health subcommittee. In addition, the Special Care Nursery belongs to the Mortality Review Committee.

Clinical Quality Advisors (CQAs) are linked to a specific group of Patient Based Care Units (PBCUs) or programs and provide guidance for quality improvement and risk management initiatives. Their responsibilities are to:

- “Develop and monitor the effectiveness of policy and procedures, and standards of care.
- Support the Program Teams in continuous quality improvement initiatives.
- Assist and facilitate Program Teams in the development, implementation and monitoring of clinical guidelines and pathways.
- Assist in linking program staff to quality and clinical research resources.” [96]

In addition, CQAs review and analyze Incident Reports in partnership with Program Directors and the Risk Manager.

Access to Research Findings

The hospital intranet has evidence-based links including the: BC Association for Quality in Health Care, BC Health Care Risk Management Society, Canadian Medical Association Infobase, Centres for Health Evidence, Cochrane Child Health Field, Cochrane Collaboration, Institute for Healthcare Improvement, and Pediatrics Journal.

The Eric Hamber Library, a branch of the UBC Library, is located on the second floor of BC Children’s Hospital. The library consists primarily of computer terminals and medical journals. Reference assistance is available 9 – 5, Monday to Friday. It is possible to search the major health databases (Evidence-based Medicine Review,

MEDLINE, EMBASE, CINAHL (major nursing, allied health, etc.), and Health & Psychosocial Instruments (HAPI)) [97].

The library is open Monday – Thursday 8 am – 9 pm, Friday 8 am – 5 pm, Saturday 12 – 5 pm, and is closed on Sunday. In the event of a clinical emergency, after hours access is available by calling C&W security and showing hospital identification and a current UBC Library card [98].

Quality Accreditation

C&W is accredited by the Canadian Council on Health Services Accreditation (CCHSA).

The CCHSA:

“offers health organizations a voluntary, impartial, external peer review to assess quality by developing national standards, assessing compliance with those standards, and sharing information from accreditation reviews and decisions.” (pg.1) [99]

The CCHSA reviews four aspects of quality (responsiveness, system competency, client/community focus and worklife) within health care organizations through a process of self-assessment, on-site surveys and follow-up [99]. C&W’s objectives for participating in this process are:

- “To foster continued partnership and collaboration with universities and other learning institutions through demonstrations of academic strengths, research and student training.
- To use the accreditation process and quality improvement cycle as a means of assessing and planning for ongoing implementation and changes throughout the organization.
- To obtain external validation of the organizational strengths and opportunities for improvement, acknowledgement of established provincial networks, specialized services and best practices.” [100]

Roadmap to Quality Care

Quality improvement efforts within the SCN are guided by the “Roadmap to Quality Care” (see Figure 7). This initiative is specific to the SCN and consists of 7 committees considered to be essential for improving quality of care within the nursery: Transport; Nutrition; Pharmacy & Therapeutic; Critical Care; Infection Control; Family Centred; and Outcome.

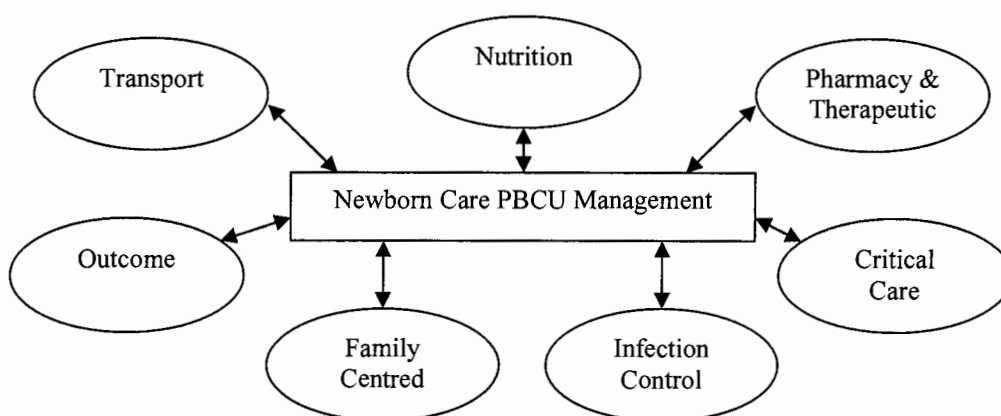


Figure 8: The Roadmap to Quality Care. Adapted from [101].

The committees report regularly to the Newborn Care PBCU management to share information and to discuss next steps.

The interviews expanded on quality efforts within the SCN.

Interviews

Quality Efforts

Quality efforts are multi-faceted and supported by different individuals with various interests on multidisciplinary committees. Some interests have to do with clinical endpoints, while others are more technical in nature. Over the years, specific quality initiatives have changed focus. At times, there can be a number of initiatives implemented at the same time within the nursery. C&W and the SCN aim to use rapid improvement cycles (Plan, Do, Study, Act (PDSA) Approach) to improve quality within the environments.

Prevention versus Correction

Quality efforts are focused both on the prevention of problems and the correction of problems after they occur. A lot of baseline neonatal nursing and neonatology is prevention and focuses on anticipating what is going to happen and preventing adverse outcomes. People have to think proactively about what they are doing and whether it will have a consequence for the patient; management plans and protocols are drawn up with that in mind. Standard care plans, guidelines and clinical pathways are in place in the SCN.

Prevention has been learned over time. Every year, more is known about the types of treatment and technology available. The SCN Program is over twenty years old and is constantly updating and trying to ensure that it is remaining clinically current and maintaining excellence in quality of care.

In terms of correction, the SCN tries to adhere to best practices, but when things do not go very well, attention is paid to correct the matter. Sometimes changes occur after problems receive media attention, e.g., if a baby cannot be born at C&W because of lack of beds. Problems are reviewed and corrections made as much as possible through, e.g., protocols and task forces. Incident reports provide an opportunity to identify problems and work towards improvements. Correction of problems cannot occur unless staff are made aware of them. Though there are good feedback mechanisms for critical incident reports at every level, and which lead to modifications in patient management, feedback mechanisms for non-critical incident reports are lacking. One of the challenges of discussing incident reports with staff is that many believe it is punitive and there is a tendency to respond emotionally.

The hospital's strategic business plan is not communicated well to employees; though some staff are aware of the hospital's vision and mission, what is communicated primarily relates to budgetary items. It is perceived that almost every change that is done in the nursery has some beginnings in finance. Decisions about quality initiatives are governed by the budget, which is impacted by the hospital trying to downsize and decrease costs. Budgetary information is ordinarily communicated during staff education days, held five times a year, and leader and administrative meetings. There is usually a deficit that requires recovery of the funds somewhere.

In general, information is not pursued by employees. Staff have a tendency to focus on their own "little world" once they enter the nursery, and are generally too busy in their day-to-day clinical life to think about politics.

“We don’t care to hear about that. We’re the ones at the bedside...Just get us staff.” (Participant 8)

It can be difficult to filter through all of the information to keep up to date. For the information that is known, it is felt that there tends to be a disconnect between what is written on paper as strategy and the reality of practice.

The SCN requires evidence that a change is going to work and will be beneficial. On the nursing side, if a patient comes into the unit with needs that require some investigation, nurse educators assist them with finding information. The evidence is brought to the CNLs, who are then expected to spread information to their teams. The physicians have more organized activities (e.g., academic days, division meetings, rounds) where information is introduced and efforts are made to motivate change. Some people may be persuaded, while others might not; this may result in different practices.

The next section provides an overview of barriers and facilitators to change within the SCN.

5.3 What are the BARRIERS AND FACILITATORS TO CHANGE?

This section presents an example of resistance to change, followed by the barriers and facilitators to change. It is based entirely on interviews.

Resistance to Change

The Roadmap to Quality of Care committees are a formal route for introducing evidence into practice. Multi-disciplinary committees investigate issues related to their particular quality care focus, conduct literature reviews, present evidence, and try to initiate change within the environment. However, quality initiatives implementation can be difficult to achieve.

An example of employee resistance is the Family-Centred Care committee's recent initiative to introduce a new policy of allowing parenting in the nursery. Essentially, this requires changes in culture and strategy where a parent is no longer required to ask permission to enter the nursery to see his/her infant. This initiative was brought to the nurse educators by the CNLs, who indicated they wanted to change the policy. It was then sent to the Family-Centred Care committee, at a time when the committee was just finishing a literature review on the same topic. The changes were presented to staff during the Fall 2004 staff education days, but the response was not as expected. It was assumed that since the initiative originated with the CNLs, that they had discussed the proposed changes with their teams. This was not the case for all teams. There was such an overwhelming response against the proposed change, that the CNLs were asked to return to their teams to discuss the initiative and to determine how to proceed. It was decided that the initiative would continue after a predetermined cooling off period, during

which time literature supporting the change was photocopied for the CNLs for distribution to the employees, to give employees time to reflect on the changes and pose questions before the policy's implementation February 14, 2005. The policy continues to meet with resistance, and some employees have suggested that the policy be temporarily suspended to allow further time to accept the idea.

Some of the reasons given for resisting this change in policy include differing values within and between professional roles and teams, lack of communication and feedback, and lack of employee input. Staff members appeared to have divided opinions according to age, training, and team dynamics. It was speculated that the older staff have been through the many changes in evolution of nursing and had to work for empowerment and respect from other professions. Younger nurses do not necessarily appreciate the gains made by the nursing profession over the years. This new visitation policy takes some control away. New nurses have been taught the significant advantages of family-centred care and are advocates for the family; whereas seasoned nurses were trained to be advocates for the baby. Teams were also divided, where some employees or teams expressed their views against the policy, whereas other employees and teams only expressed their support for the policy away from those with a negative response. As this example illustrates, it can be difficult to initiate evidence-based quality improvement changes in the environment.

Employees indicated that not everyone will like change, though most will accept change in the end. If, however, change keeps happening 'to' employees, they begin to see themselves as victims of the organization. They start to feel that no one is listening and

that their opinion does not matter. Though their opinions are welcome, they cannot necessarily be acted upon. There is disparity between day-to-day clinical requirements and administrative long-term considerations. Many times, changes are resisted by those people who will be the most affected by the change (e.g., frontline employees), or feel they have had decisions made for them rather than with them. Different values, beliefs and experiences play a part in accepting or resisting the adoption of new quality improvement initiatives. Quality initiatives implementation is a very unique and challenging area of practice. It is ongoing, ever-evolving and always has room for improvement.

Barriers and Facilitators to Change

The following pictures of: leadership; resources; workload; communication and feedback; employee involvement; strategy; and skills and education arise from the interviews.

Leadership

Strong opinion leaders demonstrating commitment and action are required to lead change. There are champions within each team and across disciplines; they include nurses, CNLs, nurse educators, neonatologists and administrators. Champions have their own area of expertise, or niche, and try within limited time and funding to take on quality improvement projects. The role of “champion” can become diluted when individuals wear multiple hats. Everyone has a different way of thinking, even though they are united to help patients. Working on the front lines with patients is an entirely different concept than working away from the nursery. It is therefore important to have

knowledge and understanding of the different professional roles within the SCN, in order to better understand the challenges different professions have in improving quality.

At times, it can be difficult for leaders to change. Resistance surfaces when leaders do not demonstrate an active commitment to change ('walk the talk'). There is a gap between words and actions. For instance, the hospital might state their commitment is to provide the best quality of care through nursing, and then cut nursing numbers.

“Some of the incident reports tend to show that resource issues are important. [There are] more incident reports when the nurse-patient ratio tends not to be optimal; and therefore the conclusion should be to be careful not to play with those variables. Whereas, because of the budgetary constraints, the administration of the hospital is always trying to limit and decrease resources. So there are two conflicting message: one is to keep the quality and try to improve it; [and the other is to] give you less resources to do so.” (Participant 17)

The other side of quality efforts is more bureaucratic. Quality efforts in the hospital can be perceived as focused on cosmetics. The hospital is required to show that they are engaged in quality efforts to improve quality of care – committees, protocols, procedures, etc. The reality is that implementation is somewhat poor. Most people are not aware that these quality initiatives exist. Quality efforts appear then to be done more to show the regulators that the hospital is involved in quality efforts. The hospital accreditation committee is provided with documents to demonstrate quality efforts are underway, but at the same time, the quality initiatives are not really communicated throughout the different levels.

“The good work that is being done doesn't get filtered down as it should to the PBCU, and it certainly doesn't get filtered down...to the front-line workers.” (Participant 18)

Resources

Interviewees stated that resources in terms of time, equipment and supplies, staff and funding are required in order to understand, implement and achieve change.

“Things go out of our control from time, lack of resources, and that’s heartbreaking...I think we all aim for phenomenal control for quality of care but I can’t honestly say that we always have the time or the resources to achieve it. But the heart is in the right place.” (Participant 5)

Lack of funding might be the greatest barrier to implementing initiatives within the SCN.

This is true as well for the follow-up clinic, and audit with other Canadian neonatal nurseries, as it is always a struggle to know how they will be funded. When resources are used for these initiatives, those resources are no longer available for other nursery initiatives.

Workload

Employees performing tasks in the nursery concentrate on their individual tasks and clinical assignments, unlike the leadership group, which has a broader organizational perspective. It is desired to have some way to bridge this gap; however, it might be very difficult given the nature of the work that occurs at two different levels. Large workloads require activities to be divided. It is difficult to maintain a visible presence whilst at the same time meeting other responsibilities.

“When the people designated to do the job also have numerous other responsibilities...how do you keep that quality initiative on the top of your priority list?” (Participant 3)

Staff participation on committees is limited because individuals are paid to attend meetings, but not for the work required as a result of the meeting (e.g., literature review).

This also reflects on the quality of the work environment:

“There is a bit of disparity between what professional ideology would say is quality and what individual workers would say depicts quality” (Participant 11).

Communication and Feedback

Employees recommend that the evidence base (e.g., literature review) be presented in a format that is easy for employees to understand what the change is, why it is being done, and what they hope to achieve. Communication before, during and, most importantly, after implementation allows employees to get and give feedback, evaluate the change, and revise plans, if necessary. The SCN is a large program, and it is difficult to communicate with everyone. Because of the number of people, and the way things are organized, the system does not work very well because the whole team does not actually appear on the same day. The large number of casual employees may mean that someone might only work two or three times a month in the unit; therefore, getting the message out is not easy as it is inconsistent and takes a long time. The intranet is used to try to solve the problem, but results in a large number of e-mails to deal with each day. Not all employees have ready access to computers.

“When you are trying to achieve quality...you say something [in one place], and by the time it gets down to the very end of the spectrum...days later, it has always changed a little bit.” (Participant 14)

There is a gap communicating quality information to frontline staff. There is information in the form of bulletins, etc., for people to see, pick up, read and absorb if they have time. In addition, the nurse educators keep an update book on hand for employees to review, e.g., after returning from a vacation. However, it is generally believed that messages are not successfully transferred.

“They don’t have a good way of communicating initiatives to people, and the result is that it is not properly communicated to all the staff down the line. People

either aren't aware of it, or haven't thought enough to buy in to it because the communication system for doing that has been poor." (Participant 1)

There is a lack of feedback in the environment. Employees are not necessarily provided with information on the quality initiatives being pursued. There is a difference in perspectives between those who do the "hands on" work and the administration; communicating between the two levels is a challenge.

Employee Involvement

There is an intent, at least on paper, for staff to be involved early in the process and to feel that they have an evaluative voice "because the backlash for change is incredible" (Participant 9). However, because it is a large unit, the system for gaining buy-in from people does not always work very well as it is difficult to have everyone involved in the decision-making process.

Management tries to motivate change by persuading people that they ought to do something, rather than forcing them; they do so by producing the evidence and persuading people that it is the right approach. This leads to a certain amount of inconsistency in practice because some people believe it should be done another way. Generally, management does not try to impose change, but rather tries to get people to collaborate.

Getting buy-in from everyone has become a barrier, because initiatives have to go through committees. It can take months from the time something is proposed, to the time it is approved and ready for implementation. Management tries to standardize changes by having protocols for key items; however, protocols are formed by consensus, so it

requires negotiation to come up with something that everyone can agree to. It is desirable to have information posted about some of the future quality initiatives before literature review begins, in order to provide employees with the opportunity to provide input right from the beginning, and forewarn them of future projects.

Strategy

Employees recommend to make and communicate a plan for change and see changes through in an organized manner. It is important to implement quality initiatives in smaller cycles by breaking a larger project down into incremental steps. The hospital has a strong focus on processes, which slow down the ability to introduce change. Too much time lapses between gathering staff feedback and implementation, which increases the chances that staff will forget the information, or will not feel involved in the process.

SCN committees work towards achieving excellence in quality care. However, at times committees appear to have conflicting priorities, which then impede the ability to implement change in a timely manner. For instance, the SCN was one of two NICUs across Canada that did not allow sibling visitation. This became a Family-Centred Care committee initiative; however, after completing the literature review, consulting family-centred care institutions, and benchmarking Canadian and US NICUs, the Infection Committee raised concerns that were consistent with their particular quality interests. These issues had to be addressed before the initiative could move forward. The number of committees results in a corresponding number of quality agendas, and can cause things to look disjointed or unfocused, and add to the bureaucracy in the environment.

Checkpoints need to be in place to ensure quality.

“You have to measure it all the time...it’s an ongoing thing. You can’t just assume quality happens.” (Participant 4)

It is unknown if change results in an improvement. This leads to frustration. Employees “tend to carry on doing some things and [left] wondering...if it is really worthwhile” (Participant 12).

The Risk Management and Quality Department can provide guidance and assistance for incident reports. The SCN would like more assistance to move initiatives forward; however, the Department is not very visible unless there are critical incidents to address. Their services are somewhat unevenly distributed, though if you ask for their help you’ll receive it. There seems to be greater focus on some Women’s Hospital departments than others. A number of people who work in the Department tend to gravitate towards those units within which they have expertise. Newborn care and neonatal nursing is not a strength for many people outside the SCN, and this is perceived as a deficit.

One of the key strategies in terms of outcome measures is the SCN’s affiliation with the Canadian Neonatal Network (CNN). The SCN has one of the best measures of evaluation of patient outcomes than any of the patient services in the health care system. There is a detailed neonatal follow-up; data is collected in great detail on diagnoses, complications and outcomes of all patients in the nursery. This information can be assessed, analyzed and compared with other SCNs across Canada. On the basis of those measurements, change can be implemented to improve clinical practice. Outcome measures are particularly important since the nursery has to justify at the limit of viability

that the care patients receive helps them survive. However, the CNN is a physician-driven initiative, and nurses do not have meaningful access to the collaborative at this time. CNN-related initiatives are not always communicated to the nursing structure, which increases the potential that research efforts are being duplicated.

Skills and Education

Employees require change management tools and instruction to manage change. It takes skilled people to make sense of quality initiatives implementations and to ensure that the wrong conclusions are not being drawn. There are employees within the SCN trained in quality control (e.g., data handling, analysis, interpretation and conclusions). At times, staff members are able to attend a conference or workshop and receive partial reimbursement.

Staff education days are organized five times a year and are valued by staff. Presenters (e.g., nurses, neonatologists, administrators, guest speakers) discuss topics such as neonatal resuscitation, infection control, budget items and policy changes. There is a challenge arranging these days, as there are a lot of topics that could be discussed.

The Internet has made the world a lot smaller. Individuals can now access computers in the nursery, pull up statistics, talk to individuals at various locations and get instant information. The hospital has an intranet though which information is available, e.g., on drug medications and doses. The younger employees are better at accessing information because of increased familiarity with computers. Constraints to this approach are that there are not a lot of terminals, nor is there much time. The information is potentially

available for those who can use their time wisely, and access the computers and information without having to relearn the process.

This chapter presented a synthesis of survey, interview and document results regarding organizational culture, strategy and barriers and facilitators to change within the Special Care Nursery. The next chapter explores what these results mean for implementation of evidence-based practice.

6. DISCUSSION

Chapter 5 presented the results to the questions: What is the organizational culture? What is the organizational strategy? and What are the barriers and facilitators to change?

However, what do these results mean in terms of what we know about achieving sustainable evidence-based practice according to the literature review and conceptual framework?

Culture and strategy are linked. While culture is the foundation from which strategy emerges and can facilitate or impede change, strategy is also influential and has the potential to strengthen both positive and negative aspects of culture, and encourage or discourage support for change [10, 58].

This chapter begins with a critique of the methods used to find the results. It is followed by an overview of the SCN's organizational culture and strategy, and their implications for the ability to sustain evidence-based practice in the environment according to the conceptual framework. It then reviews barriers and facilitators for change, and offers suggestions on how the SCN could strengthen support for evidence-based practice.

Critique of Methods

This research experienced some challenges related to access, confidentiality, interview questions and survey, and ethical considerations. These are discussed below.

Access

During the data collection period, 18 interviews occurred from a total group of over 200 employees. Purposeful sampling was used to ensure a wide range of professional groups

were represented by the interviews. However, access to employees was restricted to a certain extent. During a 12-hour shift, there was a 2-hour time period recommended by the SCN as being preferable to approach employees for interviews (after rounds, breaks, transfers, etc.). This time period, however, did not guarantee that someone would be available. Bedside nurses represent the largest group of employees within the environment, but were the most difficult to obtain interviews from, given patient acuity, and therefore are under-represented in the interviews.

Confidentiality

To address confidentiality issues, interviews were rolled up to represent a broad organizational perspective. However, this meant that specific relationships between professions were difficult to explore. This is also true for the surveys, where the combination of demographic data with detailed professional roles meant that there was a potential for individuals to be identified. As a consequence, for both interviews and surveys, professions were rolled up into three professional categories: Neonatologists, Nurses, and Administration and Other Health Professionals.

Interview Questions

The interview questions were not pre-tested; this might have changed the selection of questions within the clinical environment.

Survey

The survey in its original two-part form was considered by the SCN to take too long to complete (e.g., 20 minutes). There were a number of considerations taken into account

when deciding to shorten the survey to its first part (a stand-alone instrument). If the survey was perceived as too lengthy:

1. It might not have a high return rate;
2. Individuals might rush through both parts, without giving considerate thought to the answers;
3. Individuals might complete the first part (5 minutes to complete), but not the second. This could mean that
4. There might not be enough surveys completed to do a full analysis of the data. This would mean that the individuals who did complete the second part of the survey might have done so needlessly.

Because of these reasons the survey was shortened. Unfortunately, this meant losing the Quality Improvement section of the survey, which was one of the attractive components considered during initial selection.

Demographic information was collected for the surveys. However, it is unfortunate that an additional question related to the team individuals work on was not included. Nurses and other employees (e.g., unit clerks), work on one of nine teams. Since the surveys are confidential, there was no way of tracking if some teams completed the surveys, while others did not. This would have been an interesting demographic to explore, as it might have provided information on sub-cultures in terms of teams (e.g., differences in perspectives of organizational culture, age, length of time worked in NICU, etc.).

Participants generally provided positive feedback about the length of time required to complete the survey, and the format. However, the survey was also considered by some to not truly represent the nature of the intensive care environment. For instance, three interviewees indicated that the use of business terms (e.g., entrepreneurial) was misleading for a healthcare organization. In addition, two participants indicated that they

agreed with one part of a statement but not the other, which made it difficult to confidently assign points.

The survey was used to measure the current perception of organizational culture. However, respondents could have completed the survey a second time to indicate their perceptions of the desired state of organizational culture within the environment. This would give additional information on, among others, satisfaction within the environment, and complement future research strategies for improving or changing the organizational culture.

Ethics

The research went through the ethical approval process with both the University of Victoria, as new research, and the University of British Columbia (UBC), as an addendum to an existing project. As it happens, once introduced to the environment and with interviews underway, other interesting opportunities surfaced which could not be explored. These included:

- The inclusion of the team demographic question (see above);
- The opportunity to observe the staff education days, in which quality improvement initiatives would be discussed; and
- Discussing quality initiatives with the Risk Management and Quality Department.

Given the timing of the onsite visit, these opportunities were not pursued, as they would have had to undergo ethical approval at both UVic and UBC before proceeding.

It is recommended that the discussion that follows be placed in the context of the methodological challenges described above.

Organizational culture

The dominant and professional subcultures within the SCN value quality of care.

However, morale is generally low as employees feel they are unable to meet their expectations to provide quality of care, in part due to lack of resources, in terms of time and funding, and a corresponding increase in workload and responsibilities. Multiple and at times competing roles and responsibilities can make it difficult to give quality improvement initiatives the appropriate priority in competing tasks.

In addition, competing values between professions lead some groups to be considered to represent a counter-culture to providing quality of care, despite interviews to the contrary.

“Healthcare is a values-driven profession, particularly in the patient care areas. These values of concern for the patient, working together as a team to serve the patient, and concern and support for employees influence the actions of nurses, physicians and hospital staff. But, to survive, hospitals need to act more like a business, which means attention to goals, competition, markets, and the legal/regulatory environment. These competing values of concern for the patient and concern for the bottom line require a holistic approach to ensure a desirable level of quality while providing for organizational survival.” (p. 27) [102]

It is possible for different professions to be united to achieve the same goal through different means, though this is not communicated to or recognized by all staff. While some professions have clinical priorities, others have financial considerations. It is desirable to communicate competing values so that employees feel united to achieve the same goal.

The survey results confirm the presence of competing values within the environment.

The SCN has components of each of the organizational culture types within the Competing Values Framework (CVF): Group, Developmental, Hierarchical and Rational.

Group and developmental culture types are required for sustained quality initiatives [86]; however, the survey results may most appropriately be classified as predominantly hierarchical, focused on internal processes and stability. Hierarchical culture is associated with bureaucracy with:

- formal rules and regulations, coordination and control and vertical communication;
- Centralized decision-making;
- Low levels of trust, morale and leader credibility; and
- High levels of conflict and resistance. [87, 88]

Within this formal structure, employees and leaders also strive for informal and collegial relationships characterized by teamwork, support, participation and collaboration [7, 87, 88]; these are elements associated with group organizational culture. Despite these efforts, change initiatives are generally resisted.

It is possible, however, that the SCN culture will transform over time and become more accepting of change. Culture is dynamic.

“Professional identities are changing under the strain of environmental changes to the health system, and associated cultural changes. Professions are not static.” (p. 9) [103]

The majority of SCN staff has worked in the nursery for more than 10 years, and many for more than 20 years. Human resources is likely to change the culture over the coming years as the baby-boomers retire and are replaced with new staff. Younger employees will come into the SCN with less experience, and will have to find alternate resources for mentorship and modeling. Over time, employees have received different training. The introduction of new employees into the SCN might facilitate change because they bring in new ideas and different attitudes towards practice. New roles, e.g., the Nurse

Practitioner, have the potential to change the patterns of communication between medicine and nursing, and change practice. In addition, the SCN is a multi-cultural environment in which individuals come from other hospitals or countries for training in neonatology. As the culture changes, so too can values and behaviours, which in turn can help or hinder change initiatives.

Strategy

Women's and Children's Hospitals work in partnership to provide quality of care through best practice, family-centred care, evidence-based quality and education. However, at the hospital level quality accreditation is perceived to address mostly cosmetic issues, without attacking the core of the quality issues, and at the nursery level, quality initiatives are perceived by employees to be budget driven. The budget is not tied to clinical goals, leading employees to hear two conflicting messages: the expectation to provide quality of care, and the provision of less resources to do so.

Process redesign is part of C&W strategy. The Women's Hospital acknowledges that despite the fetal maternal and newborn Programs being the North American standard for staff deployment and resource utilization, processes will be redesigned in an effort to increase efficiencies. The strategic plan acknowledges that external factors, like increased birthrate, aging workforce and technological advances, might mean Programs will face budgetary challenges. However, it is up to Programs to determine how to proceed within these limitations.

Resources are allocated by the hospital administration, which in turn requires further allocation by SCN administration.

“Teams and management need to recognize how much resources, work, and supporting conditions are needed to make improvements and to achieve all the objectives.” (p. 347) [104]

Employees require solutions to how to improve quality of care with limited resources. Communicating a plan for change in the context of the strengths and limitations of the budget, can help build support for change.

The Plan Do Study Act (PDSA) approach to quality improvement is promoted by the Risk Management and Quality Promotion Department. The PDSA approach recommends testing changes in small cycles. However, the SCN’s focus on process slows down the ability to implement initiatives in a timely manner. Too much time lapses between initial research and implementation; this means that projects can lose momentum and people can forget about initiatives.

“Quality” is a difficult word for employees to define as it is integrated into all aspects of providing care. Quality efforts are focused both on prevention of problems and correction of problems after they occur. Multi-disciplinary teams collaborate on quality initiatives within the committee-driven SCN Roadmap to Quality Care. The committees, however, appear to operate in silos under the Roadmap umbrella, meeting with the SCN PBCU management regularly, but separately. Some of the committees have overlapping issues, which, once communicated, can delay implementation in order for committee(s) to provide input. For instance, the Family-Centred Care initiative to introduce sibling visitation was delayed in order to address Infection Control committee concerns. It might

be desirable to have all committee chairs meet at one time to discuss upcoming initiatives to see if anyone has suggestions. Some committees might choose to work together on particular initiatives to help ensure different areas are covered, and to address any concerns, endorse change, and increase buy-in, among others. This might be a way to provide more focus to the quality improvement efforts, increase communication, and avoid duplication.

Despite similarities between the strategic plans for Women's and Children's Hospitals, some employees feel a greater connection to Children's Hospital, having been part of it before the merger. Children's Hospital is characterized as a more cheerful environment, with greater emphases on fund raising and socializing than Women's Hospital. The SCN could explore with employees how to increase support within the environment, and provide outlets that increase morale, e.g., through internal celebrations (see Rewards).

Conceptual Framework

Organizational Culture

In terms of the conceptual framework, the culture contains elements that both support and hinder the ability to implement evidence-based practice. On the one hand, there is strong support from each of the professional groups to provide quality of care. This is a core value of the dominant and sub-cultures. Values most directly influence behaviour [7, 8]; so valuing quality of care is promising for evidence-based practice, which is to provide the best quality of care using the best available evidence [28]. In addition, employees and leaders work together on teams to provide patient care. The introduction of new employees into the environment brings the potential of new ideas and increased skills to

access information. These collaborative efforts are also promising components of sustainable evidence-based practice [53].

However, on the other side, the SCN operates within a complex administrative environment, characterized by bureaucracy and formal processes. It can be difficult to introduce change initiatives in a timely manner within the hierarchical structure and new initiatives may cause resistance by what is perceived as still more demands [31]. As baby boomers retire, knowledge and experience is lost. The nursing profession, in particular, relies on guidance and modeling for new procedures. This means that new sources of support will have to be located for employees.

Strategy

As with the organizational culture, the strategy also contains elements that both support and hinder the ability to implement evidence-based practice. On the one hand, the hospital strategic plan supports evidence-based quality of care [2]. The hospital also provides educational resources to learn about the PDSA approach to quality improvement [94]; this iterative approach has the potential to accelerate uptake of evidence-based practice [22, 24]. In addition, the SCN is guided by the multi-disciplinary Roadmap to Quality Care, where teams work on individual improvement projects.

On the other hand, quality efforts are largely perceived to be impeded by lack of resources. This not only increases workloads and responsibilities, but sends a message to employees that is contrary to their perception of providing quality of care. Though the PDSA approach is promoted through the Risk Management and Quality Promotion

Department, it is difficult to practice within the bureaucratic structure, within which quality efforts can take over a year to implement. While the SCN committees devote time to pursuing initiatives, employee participation on committees is limited, as much of the work is unpaid and completed on their own time. In addition, committees can have competing values or priorities, which cause delays in implementation.

Alignment

The organizational culture and strategy support EBP to a certain extent; however, the efforts are not aligned and can be perceived at times to represent two conflicting messages in pursuit of the same goal. For instance, both the organizational culture and strategic plan value quality of care. The means to achieving quality of care, however, differ. From the organizational culture side, people work together on multi-disciplinary teams to improve care for the patient. From the strategy side, process redesign is meant to increase efficiencies in the system. In response, the culture resists change by what is
l J.</style></author></authors></contributoosite of what the strategy is trying to accomplish.

The following discussion of barriers and facilitators to change offers suggestions on how to build on the strengths of organizational culture and strategy, and better align efforts, in terms of implementing EBP within the clinical environment.

Barriers and Facilitators to Change

Resistance to Change

Aspects of organizational culture and strategy influence acceptance or rejection of change efforts. Therefore, it is helpful to examine successes and failures of quality improvement initiatives to better understand barriers and facilitators for change.

Organizational culture exerts itself most strongly when something is implemented contrary to the values and beliefs within the environment. According to Lorenzi and Riley,

“It is easy to change the things that nobody cares about. It becomes difficult when you start to change the things that people do care about – or when they start to care about the things that you are changing.” (p. 121) [105]

The SCN is no exception; individuals, professional groups, and teams, among others, can have differing viewpoints about what is or is not acceptable to change within the environment.

The Family-Centred Care Committee’s initiative to allow parenting in the nursery (Section 5.3) illustrates the opportunity to learn from resistance to change. In theory, this initiative should be supported. It is consistent with the hospital’s and nursery’s strategies [2, 101] to support family-centred care and is supported by evidence through a comprehensive literature review and consultation with family-centered and other organizations. However, it has met with strong, and ongoing resistance. From the example, a number of barriers to change can be identified including: lack of communication and feedback; lack of resources; differences in training; and differing values between and within teams, among others. In addition, there is also a loss of

control within the intensive care environment within which profession groups try to manage.

Resistance to change is not always a negative outcome, as it can act as a check for initiatives that should not be pursued [31]. Those initiatives that should be pursued require persistence.

“Perseverance is often required to effect change because most change requires substantial time to become embedded into the NICU culture” (p. e435) [43]

It can take time for people to become accustomed to new practice. This should be considered when planning for change.

Barriers and facilitators to change are explored below in an effort to better understand the ability to achieve evidence-based practice within the nursery.

Leadership

There are leaders at all levels within the SCN. Leaders try to be informal within the hierarchical structure; however, leadership style is individual specific, which means that leaders have a tendency to differ in approach. Resistance surfaces in part due to lack of visible commitment to change of leadership. At times, leaders have conflicting roles and responsibilities (competing values) which mean they might be asked to support initiatives they do not necessarily believe in. Leadership support is essential for managing change [52]; therefore, understanding and addressing leadership resistance is an important step towards successfully receiving employee support for change initiatives.

Leaders can also create a sense of shared vision for the employees. As it currently stands, “quality” is a word that is not easily defined. Employees could be brought together to

define quality; this could lead to a discussion of how to achieve quality given the competing priorities in the environment, and in turn, unite employees to achieve focused objectives.

Communication and Feedback

Though the nursery is characterized by vertical and horizontal communication patterns within and between the medicine and nursing structures, lack of communication was listed as one of the greatest barriers to quality improvement initiatives within the nursery. It could be that the content of the communication is a factor. In general, people tend to work in silos. The large number of full-time and casual employees makes it difficult for information to consistently filter down to the different professions.

Communication has the potential to:

“obtain individual buy-in; obtain commitment to the change; minimize resistance; reduce personal anxiety; ensure clarity of objectives; share information/vision; challenge the status quo; obtain clarity; [and] minimize uncertainty.” (p. 226) [106]

People do not necessarily have the time to review information or the inclination to take information home to review.

“The way in which organizations communicate with their employees during a change programme has been shown to have significant effects on the success of change initiatives, in particular on individual commitment, morale and retention.” (p. 217) [106]

Evidence should be easy to understand and communicated effectively and consistently to employees in a way that will help bridge the challenge of having a large number of full-time and casual employees.

Feedback can help to modify behaviour and build support for change.

“The outcomes from the feedback stage may be twofold: changes in performance (to correct perceived deficiencies) and further data collection (as a basis for comparison when the process is repeated in the future).” (p. S63) [57]

However, feedback is not necessarily communicated to employees, once a change initiative is implemented. This leaves employees to wonder if their efforts actually result in an improvement. The SCN and hospital expect incident reports to be completed for near misses, possible problems, and actual incidents [94]. However, incident reports are not necessarily followed up, and those that are often occur one-on-one with the employee and have the potential to be viewed negatively and emotionally. Establishing a trend of collecting incident reports, tracking changes, addressing issues, and providing feedback in a meaningful way might assist the SCN in not only improving quality over time, but achieving buy-in for change as employees are able to see how their efforts impact nursery issues.

Employee Involvement

Employee involvement helps build support for change.

“Staff find it easier to ‘buy-into’ the ideas if they can see the relevancy and benefits of the changes to their practice.” (p. 402) [107]

A number of employees are involved in quality improvement initiatives through participation on the Roadmap to Quality Care committees. However, employees outside of committees are not necessarily consulted before a change initiative is being implemented and do not necessarily see the value.

Politics plays a part in organizational decision-making.

“Political processes may take the form of explicit bargaining and consensus building, or they may involve direct or indirect uses of power through which

individuals influence decisions by their willingness to invest in issues, their skills in persuading others, their use of resources, their expertise, or simply through their formal authority.” (p. 89) [108]

Employee involvement takes some manoeuvring. On the one hand, compromise and consensus is required for implementing complex change [43], and is seen to a certain extent within the nursery to, for instance, agree on new clinical guidelines. Participation will potentially allow better communication of the competing values within the SCN, which could lead to a more holistic understanding of the various reasons behind change.

Participation is:

“believed to make the political realities of the organization more salient and thus lead to choices that are based on political as well as socio-technical considerations.” (p. 194) [109]

To achieve agreement between parties, teams could meet separately and as a group to discuss with management concerns and to agree on shared goals [104].

On the other hand, consensus requires time and negotiation.

“The risk of ‘paralysis by analysis’ ...is highest when participation in decisions is widespread, power is dispersed, opinions are divergent, and leadership is diffuse.” (p. 93) [108]

Achieving consensus can be difficult within the SCN; opinions can be divergent, and leadership is distributed throughout the levels. The SCN could consider to what extent consensus is necessary for a particular change initiative. For instance, if a change initiative is deemed consistent with the values, mission and goals within the SCN, then it might be better to discuss the proposed change with representative employee groups and work on an implementation plan, rather than delay the project indefinitely while trying to have employees reach consensus.

Skills and Education

There are processes in place within the SCN for education and skill-building. In nursing practice, understanding and utilizing research is a collective, rather than an individual practice [110]. Nurses rely primarily on informal guidance, mentorship and staff education days within the nursery, while physicians have more formal opportunities to learn, e.g., through meetings and workshops. As people retire, new staff will have to look to other sources for knowledge and experience.

The Risk Management and Quality Department offers the opportunity for education, skills and training through their website resources and workshops. In addition, the SCN supports nursery leaders to be enrolled in the internship program, which allows employees to learn skills in continuous quality improvement. It is desirable to continue enrolling employees in this program, as the Risk Management Department does not employ experts in neonatal care; therefore, SCN employees enrolled in the program can bring their skills back to the environment. The 3 month program requires a commitment of 2 days per week, during which time employees can engage in a quality improvement project meaningful to the particular environment they work in. During this time period, positions should be backfilled in order to allow individuals to focus on learning, and to not place an additional workload burden on them [111]. Completion of the program could be recognized and celebrated by the SCN (see Rewards).

Protected Time

Evidence-based practice requires protected time for learning and reflection. A learning practice develops when learning is prioritized at every level every day [107].

“Structures for learning must be carefully designed and made to happen, otherwise as staff are busy and clinical practice is prioritized, learning will not happen. So too with reflective practice, the working day does not naturally lend itself to ‘time-out’ to reflect...It is likely to have a greater impact if the reflective practice remains to a degree an informal process able to be effected when needed most. Informal work-shadowing and mentorship might be useful.” (p. 402) [107]

The SCN offers mentorship to their employees, e.g., in the nursing profession. Time and resources are precious and releasing employees to attend conferences increases costs through backfilling of positions, travel, conference fees, etc. Employees able to attend workshops are often only partially reimbursed. Video- and web-conferencing options [111, 112] could be explored, which could enable a larger number of employees to connect to education sessions, reduce costs, and require less time away from regular duties. These tools could also be employed to build collaborative networks of care (see Collaboration).

Access to research findings

Evidence-based practice requires access to research findings. The hospital Intranet provides access to the Cochrane Collaboration and other medical databases. However, not all employees have access to computers, and those who do might lack the reflexes to look the information up on the Intranet. In addition, the Eric Hamber Library within Children’s Hospital offers access to and assistance with locating research findings. However, the Library is not always open, which means that access is limited. Though the library can be opened for clinical emergencies, this appears to be an unrealistic solution for an urgent problem. Time is a factor for employees:

“Although [library] resources may be seen as ‘good’ by management staff, their situation in relation to the clinical practice areas is not ideal as nursing staff would

have to leave the cotside and cover for their absence to be able to utilize their resources.” (p. 352) [113]

It would be helpful to look at the barriers and facilitators for accessing research findings, the resources currently used, and explore other areas (e.g., video- and web-conferencing, laptop computers), which could provide additional options for employees, including those at the bedside.

Collaboration

There is a strong team ethic within the SCN. Professions collaborate with each other on patient care. However, it is also desirable to increase collaboration between institutions in order to share and learn from implementation strategies and decrease duplication (e.g., share literature reviews) [22, 53]. This is particularly important given the reduced resources and increased workloads experienced within the nursery.

The SCN is the lead institution for the Canadian Neonatal Network (CNN) and could therefore explore building upon an existing network of Canadian and International Neonatal Intensive Care Units. At this time, the CNN appears to be physician-driven; however, it might be possible to expand to the nursing community. This not only has the potential to improve uptake of quality initiatives, but also become an educational resource for employees (see Skills and Education).

Rewards and Recognition

Rewarding desired behaviour has the potential to strengthen its importance and send a message to employees that the SCN supports certain conduct. Current rewards and recognition within the nursery are informal and often inconsistent, and this has become a

source of frustration for employees. There are no formal mechanisms in place to celebrate accomplishments within the SCN, and hospital awards are largely unknown to employees. The value of rewards depends on individual preference. For instance, being rewarded or recognized for accomplishments by being given more work and responsibility might be satisfying for some, but perceived as a burden for others. It is desirable to determine what types of rewards are meaningful to employees. Rewards should not only be set aside for individual performance, but also for team- and SCN-performance as a whole [114]. In this way, the SCN can celebrate and build support for desired behaviour (and desired culture), which can include embracing change in the form of quality improvement initiatives.

7. Conclusion

Exploring organizational culture, organizational strategy, and barriers and facilitators to change, through multi-method enquiry, and analyzing results in terms of the conceptual framework, has the potential to offer a revealing picture of a clinical environment's ability to implement evidence-based practice. This is a starting point for aligning organizational culture and strategy, and can assist in long-term planning.

The research provides baseline information to the pilot site (the SCN), which is currently unable to achieve sustainable EBP. Though both the organizational culture and strategy support aspects of EBP, there are also limitations to its support. It is therefore recommended that the culture and strategy be examined closer and a change considered to one or both in order to increase support for change. By exploring barriers and facilitators to quality improvement initiatives, both within the organizational culture and the organizational strategy, the nursery has an opportunity to build on strengths, and address weaknesses. Aligning efforts could enable the SCN to work towards achieving sustainable evidence-based practice.

These results have broader implications for health care organizations in general. The C&W Neonatal Intensive Care Unit (NICU) is the administrative lead for the national Canadian Neonatal Network (CNN) and the Evidence-based Practice Identification and Change (EPIC) program, and collaboratively focuses on improving quality of care for mothers and babies using the best available evidence. However, despite these rich projects and national and international networks, there are some barriers to achieving sustainable EBP, which may not be easily overcome.

In principle, each organization differs. However, if one considers the environment within which the SCN is located as being similar to other healthcare environments located across Canada, then one might speculate that if the C&W SCN is unable to achieve sustainable EBP, then other NICUs across Canada might be faced with the same types of challenges.

One could be left to wonder whether the theory of sustainable EBP is possible to achieve within a real world intensive care environment. In the literature review (Chapter 2), evidence-based medicine is defined as the integration of individual clinical expertise for the care of individual patients [30]. An example of this could be an individual physician researching the evidence to provide the best treatment to an individual patient. However, people and organizational issues are multiplied when EBP is brought into a complex administrative intensive care environment, within which every procedure can have implications for the patient. It is worthwhile exploring how to build clinical environments, such as the SCN, into learning organizations. Providing employees with opportunities to access, collaborate and reflect on research findings, and offering practical learning solutions for employees who are currently limited to the bedside, could help build long-term sustainable support for EBP.

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Appendix A

Quality Improvement Implementation II Survey

QUALITY IMPROVEMENT IMPLEMENTATION SURVEY II

CONDUCTED BY:

Nicole Grimm, BCom
MSc Program in Health Informatics
School of Health Information Science,
University of Victoria

**YOUR RESPONSES TO THIS SURVEY ARE CONFIDENTIAL
TO PRESERVE ANONYMITY, PLEASE
DO NOT WRITE YOUR NAME ON THIS SURVEY.**

Individual respondents will not be identified by name in any analyses or reports. Responses will be aggregated and reported as summary statistics only.

FOR QUESTIONS PERTAINING TO THIS SURVEY, CONTACT:

- **NICOLE GRIMM**, SCHOOL OF HEALTH INFORMATION SCIENCE, ngrimm@uvic.ca, 250.472.5131
- **DR. ANNE SYNNE**S, CHILDREN'S & WOMEN'S (C&W) HEALTH CENTRE OF BC, asynnes@cw.bc.ca, 604.875.2135

**PLEASE RETURN THE SURVEY IN THE ENVELOPE
PROVIDED TO THE SPECIAL CARE NURSERY FRONT DESK.**

YOUR ASSISTANCE IS VERY MUCH APPRECIATED.

**Please contact Nicole Grimm if you are interested in participating in an interview.
Information is available at the Special Care Nursery Front Desk.**

Please provide the following information about yourself to assist in the analysis of the data.

REQUIRED:

- A. How long have you worked for or been associated with this NICU? (Circle one number)
- Less than one year 1
 One to two years 2
 Two to five years 3
 Five to ten years 4
 Ten or more years 5
- B. How long have you worked for or been associated with this hospital? (Circle one number)
- Less than one year 1
 One to two years 2
 Two to five years 3
 Five to ten years 4
 Ten or more years 5
- C. Approximately how many hours a week do you work within this NICU? _____
- D. Which health profession are you associated with? (Check one)
- Neonatologist
 - Physician Trainee
 - Clinical Assistant
 - Staff Nurse (includes clinical nurse leaders, nurse educators and first line nursing supervisors)
 - Respiratory Therapists
 - Other Health Care Professionals (OT, PT, lactation consultants, dietician, etc.)
 - Support Staff (housekeeping, etc.)
 - Administrative Staff
 - Other (please specify)
- _____

OPTIONAL:

- E. What is your gender? (Circle One)
- Male Female
- F. What is your age? (Circle One)
- under 18 18-24 25-34 36-44 45-54 55+

THANK YOU. Please complete the NICU Culture Survey

NICU CULTURE

Instructions: These questions relate to the type of Neonatal Intensive Care Unit (NICU) that your department is most like. Each of these items contains four descriptions of NICUs. Please distribute 100 points among the four descriptions depending on how similar the description is to your NICU. None of the descriptions is any better than the others; they are just different. For each question, please use all 100 points.

For example: In question 1, if NICU A seems very similar to mine, B seems somewhat similar, and C and D do not seem similar at all, I might give 70 points to A and the remaining 30 points to B.

NICU Character (Please distribute 100 points)

1. _____ NICU A is a very personal place. It is a lot like an extended family. People seem to share a lot of themselves.
2. _____ NICU B is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.
3. _____ NICU C is a very formalized and structured place. Bureaucratic procedures generally govern what people do.
4. _____ NICU D is very production oriented. A major concern is with getting the job done. People aren't very personally involved.

NICU Managers (Please distribute 100 points)

5. _____ Managers in NICU A are warm and caring. They seek to develop employees' full potential and act as their mentors or guides.
6. _____ Managers in NICU B are risk-takers. They encourage employees to take risks and be innovative.
7. _____ Managers in NICU C are rule-enforcers. They expect employees to follow established rules, policies, and procedures.
8. _____ Managers in NICU D are coordinators and coaches. They help employees meet the NICU's goals and objectives.

NICU Cohesion (Please distribute 100 points)

9. _____ The glue that holds NICU A together is loyalty and tradition. Commitment to this NICU runs high.
10. _____ The glue that holds NICU B together is commitment to innovation and development. There is an emphasis on being first.
11. _____ The glue that holds NICU C together is formal rules and policies. Maintaining a smooth running operation is important here.
12. _____ The glue that holds NICU D together is the emphasis on tasks and goal accomplishment. A production orientation is commonly shared.

NICU Emphases (Please distribute 100 points)

13. _____ NICU A emphasizes human resources. High cohesion and morale in the organization are important.
14. _____ NICU B emphasizes growth and acquiring new resources. Readiness to meet new challenges is important.
15. _____ NICU C emphasizes permanence and stability. Efficient, smooth operations are important.
16. _____ NICU D emphasizes competitive actions and achievement. Measurable goals are important.

NICU Rewards (Please distribute 100 points)

17. _____ NICU A distributes its rewards fairly equally among its members. It's important that everyone from top to bottom be treated as equally as possible.
18. _____ NICU B distributes its rewards based on individual initiative. Those with innovative ideas and actions are most rewarded.
19. _____ NICU C distributes rewards based on rank. The higher you are, the more you get.
20. _____ NICU D distributes rewards based on the achievement of objectives. Individuals who provide leadership and contribute to attaining the NICU's goals are rewarded.

<p>THANK YOU. Please return the survey in the envelope provided to the Special Care Nursery Front Desk.</p>

Appendix B

Interview Questions

I. OVERALL HOSPITAL ENVIRONMENT

1. Organizational culture is defined as the shared norms, values and beliefs within an organization. How would you characterize the organizational culture at this hospital? What is it like to work around here? (e.g. what behaviors are rewarded or encouraged, what values do people have, how do people know how they are supposed to behave)?
2. How would you characterize the management style at this hospital? Does leadership tend to be collegial, team-oriented, hierarchical, non-existent?
 - a. Is it formal or informal?
 - b. Is there continuity to the leadership?
 - c. Does the leadership seem strong or weak?
 - d. Is it focused (that is, consistent in purpose)?
 - e. Do people feel empowered?
 - f. Are people rewarded or recognized for their contribution? How?

II. THE ROLE OF QUALITY AT THE HOSPITAL

3. What does "quality" mean at this hospital? What is the role of quality in the various functions in your hospital?
4. Are the leaders of this hospital seriously committed to quality? What leads you to conclude this?
 - F Do the leaders in this hospital communicate a commitment to quality? How?
 - F Are their "champions" for the quality improvement efforts? If yes, how do they encourage change?
5. To what extent do your quality efforts focus on the prevention of problems versus the correction of problems after they occur?
6. What has been the primary focus (focuses) to date of the quality efforts?
7. To what extent are decisions about quality initiatives governed by this hospital's strategic business plan? Is the link between quality initiatives and the hospital's strategic business plan communicated to hospital employees? If so, how?
8. What have been the facilitators for quality initiatives at this hospital?
9. What particular difficulties, if any, has this hospital had in implementing quality initiatives to date?
10. What are the most important lessons about quality initiatives implementation that you have learned to date?

III. DEMOGRAPHICS

11. How long have you worked for or been associated with this NICU?
12. How long have you worked for or been associated with this hospital?
13. Which health profession are you associated with? (Check one)