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Clinical Nurse Specialists' Role in Promoting Evidence Based Practice in Saskatchewan's Health Care Settings

by

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Abstract

Background: Nursing is a practice discipline and patients expect nurses will use the best evidence available to improve outcomes. A major challenge to the implementation of best practice is the complexity of organizational and social environments in which nurses' work. One method to keep nurses informed of best practice is to employ change agents; nurses with clinical expertise and familiarity with research who can transfer the evidence to those in clinical settings. It has been suggested that the clinical nurse specialist (CNS), as an educator, consultant, clinical expert, researcher, and leader is well situated to promote evidence-based practice in the workplace.

Purpose: The purpose of this explanatory mixed methods study is to gain a deeper understanding of the CNS role, as it pertains to promoting evidence-based practice. The research question guiding this research is: What is the role of the CNS in promoting evidence-based practice in acute care and community settings in Saskatchewan?

Methods: This study used Creswell and Plano Clark's sequential explanatory mixed methods design that focused on an initial collection and analysis of quantitative data (telephone survey) followed by a collection and analysis of

qualitative data (semi-structured face to face interview). The survey data was analyzed using SPSS 18. The transcribed interviews were reviewed for recurrent themes regarding the CNSs' role in promoting evidence-based practice. The PARiHS framework provided the broad structure to identify themes. Interpretive description was used to analyze the themes.

Findings: To carry out their role as facilitators of EBP, CNSs rely on their: master's preparation, clinical expertise, and people/communication skills. In order to streamline processes to increase efficiencies, share their expert knowledge with staff and patients, and provide leadership, CNSs need to work in supportive contexts and have access to high quality evidence. The primary source of written evidence used by CNSs was the internet at work and the primary source of "people" evidence was the CNS's personal experience. Lack of role clarity and leadership were barriers to carrying out their roles in an effective manner.

Conclusion: CNSs can improve patient outcomes by using best evidence in the provision of care, but to do so, they need to work in supportive contexts.

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CHAPTER 1: Background & Rationale for the Study

The purpose of this study was to gain a deeper understanding of the role of the Clinical Nurse Specialist (CNS) in promoting evidence-based practice in their work environments. The thesis is organized into five chapters. Chapter one provides the background and rationale for the study. Chapter two details the literature review. Chapter three outlines the methods for gathering and analyzing the data. Chapter four presents the findings. And chapter five offers a discussion of the results, the implications for future research, education, practice, and policy as well as the conclusions reached at the end of the study.

Despite much effort to improve the quality of patient care, there remains a fundamental gap between the generation of evidence and the application of those findings in practice (Ginsburg, Lewis, Zackheim, & Casebeer, 2007; Grimshaw, Eccles, & Tetroe, 2004; Grol, 2001). Although high quality evidence is available in some areas to direct patient care, it is not always used in health care environments. As an example, there is a considerable amount of research which has led to the development of clinical practice guidelines regarding the treatment of pressure ulcers (Ehrenberg & Estabrooks, 2004). When patients with pressure ulcers are adequately assessed and have preventative measures employed,

research has shown that the incidence of pressure ulcers can decrease by 50%. One study found that only 4.6% of patients who were at risk for, or had pressure ulcers, received appropriate intervention (Clark, Bours, & Defloor, 2002). Clinical practice does not always correspond to the available practice knowledge and not all patients are afforded equal access to an appropriate quality of care (Ehrenberg & Estabrooks, 2004).

In the early 1990's the concept of evidence-based medicine was introduced into the healthcare culture by Guyatt and others from McMaster University (DiCenso, Guyatt, & Ciliska, 2005). Evidence-based practice (EBP) has not been uniformly defined, but its roots are in evidenced-based medicine (DiCenso et al.; Estabrooks, 1998). Generally EBP de-emphasizes practice that is based on tradition and encourages the use of research findings as well as other credible sources of information (Stetler, 2001). A well-known definition of EBP is

> the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. It integrates evidence from systematic research with the proficiency and judgment of clinical expertise and the rights and preferences of the patient, enabling the individual and health care practitioner to decide upon the option which is best for the individual. (Sackett, Rosenburg, Gray, Haynes, & Richardson, 1996, pp.71)

From medicine, the EBP principles were adopted and adapted by other health disciplines, including nursing. DiCenso et al., (2005) describe evidence-based nursing practice as the

> conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. Evidence-based clinical practice requires integration of individual clinical expertise and patient preferences with the best available external evidence from systematic research, and consideration of available resources. (pp. 555)

EBP de-emphasizes practice that is based on tradition and encourages the use of research findings as well as clinical experience, patient preference, and information from the local context to inform clinical decision-making (Rycroft-Malone, et al., 2004). The concept of evidence-informed practice has also entered the discussion. According to Bowen and Zwi (2005) this term reflects a broader utilization of available evidence and knowledge for both clinical situations and policy development. Evidence and sources of knowledge to inform policy and practice include histories and experience, beliefs, values, competency/skills, legislation, politics and politicians, protocols, as well as research results (Bowen & Zwi, 2005). For the purposes of this paper the term EBP is used and is operationally defined as the integration of individual clinical expertise, patient

preferences, and the best available external clinical evidence from systematic research to be used in consideration of available resources (DiCenso et al., 2005).

In 2004, the Canadian Nurses Association (CNA) released a position statement regarding nurses' responsibilities in implementing EBP. It asserts that individual nurses need to "position themselves to provide optimal care by acquiring competencies for evidence-based nursing practice; generate researchable questions and communicate them to researchers; and evaluate, use and promote evidence-based nursing practice" (CNA, 2004, p. 2). The CNA recommends that nursing employers need to reduce barriers and enhance those factors that promote EBP within the organization as well as provide nurses with opportunities for continuing education to maintain and increase competence related to implementing EBP. On a provincial level, the practice standards of the Saskatchewan Registered Nurses Association (SRNA, 2007), state that registered nurses are to promote EBP by proactively seeking new information and knowledge and to utilize best practice in the provision of nursing care. The Saskatchewan Union of Nurses (SUN), which represents over 8,000 registered nurses in Saskatchewan primarily exists to enhance the social, economic and general well being of their union members (SUN, 2011). SUN lists quality health

care for the people of Saskatchewan as one of its values, but it does not specifically address EBP. Despite the CNA's and SRNA's positions, nurses continue to face barriers in their attempts to locate, access, adopt and implement EBP.

The Role of the CNS in EBP

Since the 1970s the CNS has become established in institutions, communities, and independent practice. The role of the CNS is comprised of five interrelated components: practice, consultation, education, research, and leadership (CNA, 2009; Kring, 2008). As a clinician the CNS provides expert client care based on in-depth knowledge. In the consultant role, the CNS uses advanced knowledge and skills to improve client care. The CNS is an educator who supports other nurses in promoting EBP. As a researcher, the CNS is knowledgeable about the research process, can conduct research, and is able to translate research findings so these can be implemented into clinical practice with the goal of improving client-centred care and associated health outcomes. As a clinical leader, researcher, and agent of change, the CNS bases his/her care on evidence-based knowledge of nursing as well as other relevant sciences (CNA, 2009).

A primary role of the CNS is to make research findings more user-friendly so that nurses are more likely to base their practice on the findings and recommendations from research (Rasool, 2005). CNSs are perceived as an important information source as nurses prefer the experiential/clinical knowledge of their co-workers over research article based knowledge (Aherns, 2005; Ferguson, Milner, & Snelgrove-Clarke, 2004; Sears, 2006; Thompson et al., 2001a). Nurses in a study by Thompson et al. were more likely to discard research in the form of systematic reviews but welcomed the trusted, focused, and translated services of CNSs. The CNS has become a prominent liaison between researchers and clinicians as a general conduit of knowledge and facilitator of change (Ferguson et al., 2004; Mackay, 1998; Ohman, 1996). CNSs have the potential to be leaders in promoting the use of research evidence, the development of clinical practice guidelines, the provision of expert support and consultation, and facilitators of system change (Harvey et al., 2002; Kring, 2008).

Evidence-based Practice and Related Concepts

EBP implies a process where research findings, in consideration of clinical experience, and patient preferences, are accessed, translated, and implemented into clinical practice or policy environments. The process of moving research

knowledge into practice is described using numerous terms, all with slightly different definitions or interpretations. In the EBP literature the terms knowledge translation, knowledge utilization, and research dissemination are at times used interchangeably and thus warrants clarification (See Table 1).

Table 1: Definitions of Knowledge Translation, Knowledge Utilization, and Research Dissemination

Term	Definition
Knowledge translation	Is "the exchange, synthesis and ethically-sound application of knowledge – within a complex system of interactions among researchers and users—to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products, and a strengthened health care system" (Canadian Institute of Health Research [CIHR], 2007,¶ 6). Generally includes terms such as evidence-based decision-making, research utilization, innovation diffusion, knowledge transfer, and research implementation (Estabrooks, Thompson, Lovely, & Hofmeyer, 2006). Research utilization provides the foundation for research-related actions that when employed and sustained result in EBP (Stetler, 2001).
Knowledge utilization	The research, scholarly and programmatic activities that are designed to increase the use of knowledge to solve human problems (Estabrooks et al., 2006).
Research dissemination	The transfer of knowledge from those who have the knowledge to those who do not and involves identifying the appropriate audience for the research findings, and tailoring the message for them (CIHR, 2009a). An active process whereby the information needs of groups working in specific contexts are accessed, and information is modified to increase awareness and acceptance of the lessons learned from science (Kerner, 2008).

Dissemination activities include, but are not limited to: briefings for stakeholders; educational sessions with patients, practitioners and/or policy makers; engaging knowledge users in developing and executing dissemination/ implementation plans; conference presentations and article publication; and media engagement (CIHR, 2009b). According to CIHR (2009b,) the interest in knowledge translation coincides with the growing engagement in the EBP approach. It is clear that EBP is not just about the research, but it is also about the social milieu in which healthcare professionals practice. In this thesis the term EBP will be used to encompass knowledge translation, utilization, and dissemination activities. The CNSs' use of EBP will be examined at the clinical practice level with patients and other members of the health care teams with whom they work.

An EBP Framework

The Promoting Action on Research Implementation in Health Services (PARiHS) framework (Kitson, Harvey & McCormack, 1998) was chosen as the theoretical framework to guide this study and was used without adaptations. This framework was developed to "represent the complexity of the change process involved in implementing EBP" (Rycroft-Malone, 2004, p. 98). It continues to be

refined in order to capture the complexity of implementing EBP and is currently in its third phase of development (Kitson et al., 2008). According to Kitson et al., this framework has been "a useful, practical and conceptual heuristic for many researchers and practitioners in framing their research or knowledge translation endeavours" (2008, p. 2). The PARiHS framework conceptualizes evidence, context, and facilitation and describes their relationship (Rycroft-Malone, 2004).

Evidence.

The PARiHS framework's concept of evidence represents both codified and non-codified sources of knowledge which include research based evidence, clinical experience, patient preferences, and local information (Kitson et al., 2008). In order for research to be considered as a component of evidence it must be produced from well designed and executed research, relevant to the clinical question posed, and viewed with a certain amount of scepticism. For clinical experience to be considered as evidence it needs to have been reflected upon and found credible amongst similar groups, viewed as one part in the decision-making processes, and its importance needs to be weighed. To consider the patient experience as evidence, practitioners need to understand that there may be multiple responses to similar situations, it is to be considered in partnership with others, and understood as one part of the evidence.

Using evidence in practice is a team process which involves development of a shared understanding about the advantages and disadvantages of the new evidence over the old. A comparison of the nature of evidence, detailed on a low to high continuum, is outlined below in Table 2. Permission to use this framework for this study was granted by Dr. J. Rycroft-Malone and Dr. A. Kitson (personal communication, July 12, 2011).

Table 2: PARiHS Framework Conceptualization of Evidence (Rycroft-Malone, 2004)

	Low	**High**
Evidence		
Research	- Poorly conceived, designed, and/or executed research	- Well-conceived, designed, and executed research, appropriate to the research question
	- Seen as the only type of evidence	- Seen as one part of a decision
	- Not valued as evidence	- Valued as evidence
	- Seen as certain	- Lack of certainty acknowledged
		- Judged as relevant
		- Importance weighted
		- Conclusions drawn
Clinical Experience	- Anecdotal, with no critical reflection and judgment	- Clinical experience and expertise reflected upon, tested by individuals and groups
	- Lack of consensus within similar groups	- Consensus within similar groups
	- Not valued as evidence	- Valued as evidence
	- Seen as the only type of evidence	- Seen as one part of the decision
		- Judged as relevant
		- Importance weighted
		- Conclusions drawn
Patient	- Not valued as evidence	- Valued as evidence
	- Patients not involved	- Multiple biographies used
	- Seen as the only type of evidence	- Partnerships with health care professionals
		- Seen as one part of a decision
		- Importance weighted
		- Conclusions drawn
Local data/ Information	- Not valued as evidence	- Valued as evidence
	- Lack of systematic methods for collection and analysis	- Collected and analyzed systematically and rigorously
	- Not reflected upon	- Evaluated and reflected upon

The evidence in EBP is the knowledge gained from a variety of sources that has been subjected to scrutiny and considered credible. Rycroft-Malone (2004) emphasizes the centrality of the patient relationship as nursing is mediated through contacts and relationships between individual practitioners and their patients. The centrality of the relationship complements the role of scientific evidence and suggests that evidence is larger than scientific research and includes: research, clinical expertise, patient preferences, and information from the local context. The CNA (2004) asserts that evidence is information derived through scientific evaluation of practice and includes experimental and non-experimental studies, expert opinion in the form of consensus documents and commission reports, and historical or experiential information. Loiselle, Profetto-McGrath, Polit, and Beck (2011) place a greater emphasis on evidence from disciplined research than that derived from tradition, intuition, and trial and error.

Research. It is vital to nursing as an art, science, and profession that it be grounded in research in order to support interventions that have demonstrated positive patient/health outcomes (Berggren, 1996; Booth, 1996; DiCenso, Cullum, & Ciliska, 1998; Ehrenberg & Estabrooks, 2004; Hunt, 2001; MacKay, 1998; Stetler, 2001). Estabrooks (1998) stated that research utilization, or use of

research, aids the nursing profession in deciding best support intervention. According to DiCenso et al. (2005), because there are limitations to unsystematic clinical observations, hierarchies of evidence have been developed that acknowledge that certain types of evidence are superior to others when considering which interventions or programs are the most effective or demonstrate clinically and statistically significant differences amongst a population being studied. In terms of effectiveness studies, there is no one absolute hierarchy, but a variety of hierarchies published in the literature share some commonalities. Systematic reviews of randomized controlled trials predominantly form the peak of the hierarchy, followed by a single randomized trial, then systematic reviews of observational studies, single observational studies, physiologic studies, unsystematic clinical observations, with qualitative research studies forming the base. However, definitive studies are quite rare and the production of research is often a social as well as scientific construct (Rycroft-Malone, 2004). Research is not acontextual or static. The most that can be said is that this is what the research shows us for now. Often the complex academic research language can be difficult to understand so there is a need to translate and

particularize evidence in order to make sense of it in context (Rycroft-Malone, 2004).

Clinical experience. Another component of evidence is clinical experience. One of the primary objectives of clinical reasoning is to make decisions to resolve problems. Clinical experience is also known as practical knowledge and has a prominent place in the evidence-based lexicon. Researchers have found that not only do nurses act primarily on their own tacit knowledge, but they also draw on the experience of their co-workers as well (Estabrooks, 1998; Estabrooks, Chong, Brigidear, & Profetto-McGrath, 2005; Rycroft-Malone, 2004; Thompson et al., 2001a).

Fonteyn and Ritter (2000) defined clinical reasoning that comes from experience as "the cognitive processes and strategies that nurses use to understand the significance of patient data, to identify and diagnose actual or potential patient problems, to make clinical decisions to assist in problem resolution, and to achieve positive patient outcomes" (p. 107). Estabrooks et al. (2005) found that of the 16 knowledge sources that nurses preferred to inform their practice, the top two sources were individual patient information and personal experience in

nursing. However, clinical decision-making based solely on experience is not without its own issues of credibility.

Concerns regarding clinical reasoning are that the nature of nurses' clinical reasoning remains unclear as it has not been well documented, is subject to bias, and lacks credibility (Fonteyn & Ritter, 2000; Thompson, 2003). Thompson recognized these concerns and purports that with reliance on experience; nurses take cognitive shortcuts also known as heuristics. Although these shortcuts may be an efficient method to make clinical decisions, he has argued that experience does not always provide sufficient background information and this omission can introduce bias and lead to unwarranted overconfidence in decision making. He states that nurses do want to make the best possible decisions for their patients, but a problem they face is how to make good quality decisions when primarily drawing on experiential knowledge (Thompson, 2003). He is concerned that reliance on experiential knowledge for decision-making leads to shortcuts, which may lead to less than ideal outcomes.

For clinical experience to be credible it needs to be "explicated, analysed, and critiqued" in the same manner as evidence from clinical trials (Rycroft-Malone, 2004, p. 84). Evidence from research is more influential and more easily

utilized when it matches nurses' clinical experience. Just as research evidence is not always clear in terms of changing practice, neither is clinical experience clear as a source of evidence. This suggests that improving practice is best achieved by integrating research with existing clinical practice frameworks (Rycroft-Malone, 2004).

Patient rights and preferences. The third component of evidence involves consideration of patients' rights and preferences (Rycroft-Malone, 2004). Much has been written regarding research and clinical reasoning however the issue of patient rights and preferences is the least examined and researched component of EBP (Rycroft-Malone, 2004). Bergum (2004) stated that in health care the respect for differences or choice does not come easily; this is a dilemma in EBP. Bergum stated that when professionals become grounded in their own perspective, as backed up by research and clinical experience, it is difficult to realize that the patients have their own perspectives, and "in fact they may have it right" (p. 495). This raises a number of questions – What counts as 'right'? Who decides? And, what criteria are used to determine that the patient is right?

While knowledge gained through research is important, it needs to be placed in the context of the individual. Gathering and incorporating information

about the patient into practice is a complex issue and melding this with the other sources of evidence requires expertise (Rycroft-Malone, 2004). Take for example the case of the postpartum mother and her newborn; the research evidence and the clinical practice experience of doctors and nurses point to breastfeeding as the optimum method to feed a newborn, but if breastfeeding is not the method chosen by the new mother then the research and clinical experience are moot points. Conversely, if the research indicates that a medication has little therapeutic value, as may be the case for the use of anti-depressants for mildly to moderately depressed individuals, but appears to be therapeutic for individual patients; can a clinician in good conscience withhold the medication based on the findings of a systematic research? As Thorne (2008) stated, in caring for patients there is an inherent "interplay between objective and subjective information" (p. 25).

Local data/information. Rycroft-Malone et al. (2004) have included local data and information as a component of their EBP framework. In order to improve practice, clinicians may draw on information from the local context: audit and performance data; patient stories and narratives; knowledge about the culture of the organization; social and professional networks; and feedback from stakeholders (Rycroft-Malone et al., 2004). These aspects of the framework are

the least understood, relevant to the types of evidence, and thus warrants further exploration. The potential contribution of the evidence needs to be understood and examined in relation to the research, clinician experience, patient preference, and local information.

Context.

Context refers to the health care setting where evidence is to be implemented. These settings can be complex and dynamic workplaces with some contexts more conducive than others for the implementation of EBP (Rycroft-Malone, 2004; Kitson et al., 2008). Context in the PARiHS framework includes three core elements: an understanding of the prevailing culture, the nature of the leadership, and the organization's approach to measurement or evaluation. A comparison of context, on a continuum between low and high is detailed below in Table 3.

Table 3: PARiHS Conceptualization of Context (Rycroft-Malone, 2004)

	Low	High
Context		
Culture	- Unclear values and beliefs - Low regard for individuals - Task-driven organization - Lack of consistency - Resources not allocated	- Able to define culture(s) in terms of prevailing values/beliefs - Values individual staff and clients - Promotes learning organization - Consistency of individual's role/Well integrated with strategic goals - Relationship with others; Teamwork; Power and authority; Rewards/ recognition - Resources (human, financial, equipment) allocated - Initiative fits with strategic goals and is a key practice/patient issue
Leadership	- Traditional, command, and control leadership - Lack of role clarity - Lack of teamwork - Poor organizational structures - Autocratic decision-making processes - Didactic approaches to Teaching, learning, & managing	- Transformational leadership - Role clarity - Effective teamwork - Effective organizational structures - Democratic-inclusive decision-making processes - Enabling/empowering approach to teaching/learning/managing

Evaluation	- Absence of any form of feedback - Narrow use of performance information sources - Evaluations rely on single rather than multiple methods	- Feedback on individual, team, & system performance - Use of multiple sources of information on performance - Use of multiple methods: Clinical Performance, Economic

In the late 1990s, organizational and cultural influences came to be recognized as more influential in the research uptake process and the use of EBP compared to individual determinants (Dobbins, Ciliska, & Mitchell, 1998). Dobbins et al. prepared a research development and implementation model for the Canadian Nurses Association's Dissemination and Utilization Model Advisory Committee. In the process of developing the model, the authors found that the most important determinants of research utilization were organizational factors such as the provision of time and resources to access research. They concluded that although the individual nurse has the choice to implement a new practice, much of what precedes uptake of information is culturally and organizationally determined. Titler (2007) stated that innovation may be met with varying degrees of success when applied to different contexts and because of this implementation strategies need to address the perspectives of the organization as well as the individual clinician. A culture of learning and proactive leadership that promotes

the sharing of knowledge is important for creating a context that is receptive to innovation (Titler, 2007). Basic organizational structures as well as processes, facilities and staffing need to be in place to support the implementation of EBP (National Institute for Health and Clinical Excellence [NICE] 2007).

Meijers et al. (2006) examined the relationship between contextual factors and research utilization based on a systematic review of the literature. They found six contextual factors that were statistically significant in predicting a relationship between context and research utilization: nurses' roles, access to resources, organizational climate, support, time for research activities, and provision of education.

Facilitation.

Facilitation improves the likelihood that EBP will be implemented (Kitson et al., 2008). Facilitation refers to how a person makes things easier for others by helping to change their attitudes, habits, skills, and ways of thinking and working (Rycroft-Malone, 2004). It examines the purpose, role, and skills and attributes of those in the facilitation process. The facilitator has many roles and is required to determine the readiness of an individual or team to accept and understand evidence. The facilitator also needs to determine receptivity of the workplace environment

regarding resources, culture and values, leadership style, and evaluation processes. The difference in facilitation, whether low or high, is presented in table 4.

Table 4: PARiHS Framework Conceptualization of Facilitation (Rycroft-Malone, 2004)

	Low	**High**
Facilitation		
Purpose	Task	Holistic
Role	Doing for others - Episodic contact - Practical/technical help - Didactic, traditional approach to teaching - External agents - High intensity – limited coverage	Enabling others - Sustained partnership - Developmental - Adult learning approach to teaching - Internal/external agents - Low intensity – extensive coverage
Skills and Attributes	Task/doing for others - Project management skills - Technical skills - Marketing skills - Subject/technical/clinical credibility	Holistic/enabling others - Co-counselling - Critical reflection - Giving meaning - Flexibility of role - Realness/authenticity

Facilitation is the third component required for promoting EBP (Rycroft-Malone, 2004). It is required because people are generally resistant to change and will retain practices based on tradition because these cause less anxiety than new practices (Rycroft-Malone; Schein, 1992).

When change happens people have various responses. Rogers (1995) developed a five stage diffusion of innovations model to explain the process used by individuals when confronted with an innovation or new practice. Initially an individual becomes aware of a new practice and then forms a favourable or unfavourable attitude toward the new practice. The decision to either adopt or reject the new practice follows. Implementation occurs when a person uses the new practice on a regular basis which involves a behaviour change. For ongoing use the person requires reinforcement for the practice decision made.

Schein (1992) and Senge (1990) concentrated on the personal and organizational responses to change. New ideas and innovations "fail to get put into practice because they conflict with deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting" (Senge, 1990, p. 175). Resistance to change is normal and even expected as it requires us to re-examine and possibly change some of the more stable portions of our cognitive structure (Schein, 1992). It has been found that those in knowledge management and organizational learning are merging around the idea that the knowledge production in an organization occurs in its social networks. Knowledge generation is a social phenomenon that is produced in personal

relationships (Senge, 1990). Rogers (1995) stated that an important factor in facilitating the spread of innovations is the use of a change agent; a person or persons who facilitate the linkage between research and practice. Aherns (2005), Thompson et al. (2001a), and Sears (2006) assert that the CNS is an ideal person to act as a change agent or a conduit between research and practice.

The authors of the PARiHS framework hypothesize that in order to successfully implement research into practice "there needs to be a clear understanding of the nature of evidence being used, the quality of the context in terms of its ability to cope with change and type of facilitation needed to ensure a successful change process" (Kitson et al., 1998, p. 152). In the initial iterations of the framework each of the concepts were measured on a low to high continuum. When each concept is mapped high on the continuum, this framework predicts that EBP is likely to be implemented. Successful implementation (SI) is represented as a function (f) of the nature and type of evidence (E), the qualities of the context (C), and how the process is facilitated (F); SI = f (E, C, F) (Kitson et al., 2008). As the framework characterizes an idealized theoretical conceptualization of successful implementation, it will be used as a backdrop and guide for the analysis of the survey and interview data. In particular I am

interested in the elements and sub-elements of evidence and context and how these influence the promotion of EBP by CNSs who are positioned to be facilitators.

Barriers to Promoting EBP

The nursing literature is replete with accounts of barriers nurses face when they attempt to implement EBP. Funk, Champagne, Weise, and Tournquist (1991) developed the Barriers to Research Utilization Scale (BARRIERS Scale) in order to determine the reasons why nurses were not using research in their practice. It was based on Roger's Diffusion of Innovations model (Rogers, 1995). In the introduction to the BARRIERS scale, the authors stated that "If we are to increase the utilization of research findings, as we must if we are to improve practice, it is important to determine clinicians' perceptions of the barriers to utilization" (1991, p. 40). Funk et al. stated that by using the self-report questionnaire, if and when barriers were identified, there could be interventions developed to reduce or eliminate barriers or at least influence the nurse's perception of them. The BARRIERS Scale has been used in over 40 studies in the intervening 17 years and although it has been useful in consistently identifying common barriers faced by nurses, Carlson and Plonczynski (2008) found no evidence to indicate that the

identification of barriers to nurses' use of research has influenced nursing practice.

Thompson, McCaughan, Sheldon, Mulhall, and Thompson (2001a) summarized many of the barriers nurses have encountered when they wanted to access and use research in their decision-making. The first barrier encountered by nurses was interpreting and using research because of its complex academic language. The second barrier was the lack of organizational support when nurses tried to use research. The third barrier was that the research produced did not meet their needs as it lacked clinical credibility and clinical direction. And lastly, some nurses lacked the skills and motivation to use research. Thompson et al. also found that nurses preferred a third party, such as CNSs, to read the relevant research and translate it for them for use in practice.

Advanced Practice Nursing: The CNS

In Canada, advanced nursing practice is "an umbrella term describing an advanced level of clinical nursing practice that maximizes the use of graduate educational preparation, in-depth nursing knowledge and expertise in meeting the health needs of individuals, families, groups communities and populations" (CNA, 2008, p. 9). Internationally, advanced practice roles have developed in

three general directions: the nurse practitioner (NP), the CNS, and a variety of roles and titles that are health care organization specific (CNA, 2008).

Discussions in the international literature regarding the purpose and need for advanced practice roles are plentiful. American authors claim that the primary purpose of advanced practice roles is to contain health care costs by improving patient care (Henderson, 2004; Ingersoll, McIntosh, & Williams, 2000). Australian authors state that advanced practice nurses are responding to the need for new models of care delivery to meet the diverse health needs of the community in light of shortages in the healthcare workforce (Gardner Chang, & Duffield, 2007; Royal College of Nursing Australia, 2006). Due to rising costs, a shortage of professionals, an aging population, new technology, and difficulties accessing care, the CNA (2008) believes that there is a pressing need for nurses in advanced practice to meet the clients' health needs.

Advanced practice nursing was initially developed in the early 1900s in the United States in response to socio-political and professional forces in healthcare primarily in the field of maternal-child care (Fitzgerald & Wood, 1997; Mantzoukas & Watkinson, 2006). High infant mortality rates were attributed to unregulated, untrained, and unlicensed midwives. The Sheppard-Towner Act of

1921 provided funds to standardize the education, practice, and registration of midwives (Fitzgerald & Wood, 1997). At the same time, public health nurses were educated to work with midwives to provide services to poor and underserved populations in the United States. The introduction of these registered and standardized roles resulted in a 40% decrease in infant mortality. In 1929, organized medicine lobbied to have the Sheppard-Towner Act repealed to stop the funding for these non-physician programs. However, in the 1930s, the Metropolitan Life Insurance Company perceived value in continuing with maternal-child programs and this brought support to the advanced practice nursing roles (Fitzgerald & Wood, 1997).

From the 1970s through to the 1990s the concept of advanced practice nursing developed outside the U.S. in such countries as the United Kingdom, Canada, Holland, Australia, and Brazil (Mantzoukas & Watkinson, 2006). In Canada, there are two advanced nursing practice roles that are recognized by the CNA (2008), the NP which has title protection, and the CNS, which does not. The CNS role first emerged in the 1970s in response to complex client needs. Their role was developed to promote EBP and they do this through their five domains of practice. In the United States, Magnet status is awarded to hospitals that are able

to recruit and retain highly qualified nurses; a precursor for the achievement of excellence in nursing practice. In a study of Magnet hospitals, 87% to 92% of administrators stated that CNSs were instrumental in achieving and maintaining Magnet status in their institutions (Walker, Urden, & Moody, 2009).

According to DiCenso and Bryant-Lukosius (2010a), the role of the APN in the Canadian healthcare system has "never been stronger" (p. 18). However, most of this expansion has been made in the NP role that has title protection in provincial legislation. The same cannot be said for the CNS role which lacks protected role titling and credentialing, and has lost approximately 500 positions across Canada between 2004 and 2006 (DiCenso & Bryant-Lukosius, 2010a). It has been suggested that the CNS role has "lost favour" with the rise of the NP role (p. 18). Concurrently there is a growing body of research evidence regarding the NP role but there has been limited research to advance our understanding of the impact of the CNS (Bryant-Lukosius, 2010). Between 1970 and 2009 in Canada, 124 articles were published concerning the NP role while only 10 published articles concerned the CNS role. Reasons for this discrepancy have not been identified but Bryant-Lukosius believes this may be due to lack of funding

opportunities, a limited supply of PhD-prepared CNSs or investigators interested in the CNS role.

Facilitators and barriers to implementing the CNS role.

The CNS role has continued to formally exist over the past 40 years; however budget cutbacks in the 1980s and 1990s have led to the eradication of many CNS positions across Canada (DiCenso & Bryant-Lukosius, 2010b). In the early 2000s there was a re-emergence of the CNS role. The intent of this re-emergence was to bring clinical leadership back in to the workplace and to promote EBP amongst staff nurses. As knowledge brokers, CNSs ensure patient care standards and routine care are underpinned by scientific evidence. According to Avery and Schnell-Hoehn (2010) "bridging research with clinical practice remains the stronghold for CNS practice" (p. 76).

In a systematic review, Lloyd Jones (2005) found that positive personal attributes which facilitated the acceptance of those in advanced practice roles were: confidence, adaptability, stamina, assertiveness, flexibility, negotiating skills, motivation, optimism, creativity, consistency, and political astuteness. Personal barriers were lack of confidence and emotional over-involvement with patients. With regard to experience, it was noted that the advanced practice nurse

needed to have substantial clinical experience, clinical expertise, and a history with their employing organization. Lack of experience and lack of networks were also perceived as barriers (Lloyd Jones, 2005).

Positive managers and growth orientated organizations facilitate the work done by CNSs (Lloyd Jones, 2005). However, Lloyd Jones also found that CNSs worked with managers and in organizations that posed barriers to their practice. Managerial and organizational facilitators that helped CNSs in their work included a positive culture of the institution and clear role definitions and boundaries. Barriers regarding organizational culture included: the size of the organization, the issue that organizations were slow to change, and a general lack of long term planning.

The barriers related to roles included issues regarding the lack of clear role definition and boundaries, unclear and incompatible expectations, work overload, lack of autonomy, increase in administrative tasks, and unrealistic expectations of the role (Lloyd Jones, 2005). As for relationships with others, barriers and facilitators depended on whether or not the advanced practice nurses received support from colleagues and managers. Those who worked with supportive

colleagues faced fewer barriers in their work than those who worked with unsupportive colleagues.

The implementation of the CNS role as facilitator and promoter of EBP has not been without its challenges. Role ambiguity and the nature of the relationships with other staff groups are important factors that have influenced the implementation of this advanced practice role (Bryant-Lukosius, DiCenso, Browne, & Pinelli, 2004; Daly & Carnwell, 2003; Gardner et al., 2007; Lloyd Jones, 2005). In order for EBP to exist, certain system mechanisms need to be in place and complex social and organizational factors need to be considered (Harvey et al., 2002; Hickey, 1990; Kitson et al., 2008; Profetto-McGrath, Bulmer Smith, Hugo, Taylor & El-Hajj, 2007). Facilitating and supporting EBP requires system change and currently there is a lack of knowledge about which approaches are effective, who is best to guide this change, and what type of contexts are conducive to change (Kitson et al., 2008). While there are many studies that examine the relationship between research use and nurses' practice, there are few focused on how CNSs promote EBP in their complex organizational contexts. Furthermore there is a "paucity" of literature describing the CNS role in Canada

(DiCenso & Bryant-Lukosius, 2010b). The current study attempts to fill this gap by gaining additional insights as to the role of CNSs in promoting EBP.

CHAPTER 2: Literature Review

Although the CNS role has existed in Canada for over 40 years, there is a dearth of research on the CNS role in Canada (DiCenso & Bryant-Lukosius, 2010b). The majority of CNS focused research has been done in the United States and illustrates the CNS as leader in a system level improvements in the quality, safety and cost-effectiveness of patient care (Fulton & Baldwin, 2004; Gurzick & Kesten, 2010; LaSala, Connors, Pedro, & Phipps, 2007; Muller, Hujcs, Dubendorf, & Harrington, 2010; Tuite & George, 2010). More recently in Canada there has been acknowledgement of the potential contributions advanced practice nurses, both CNSs and NPs, can make to the health of Canadians as reported in the June, 2010 issue *of Canadian Journal of Nursing Research* and the December, 2010 issue of *Nursing Leadership* being wholly dedicated to advanced practice nursing roles in Canada.

The purpose of this chapter is to present an overview of the literature focused on how CNSs promote EBP in their workplaces and the importance of transformational leadership in this process. Initially the sources of evidence that CNSs use to inform their practice will be presented. This will be followed by a review of how CNSs' use of evidence to inform their practice. Finally the

literature review will examine how CNSs have promoted EBP in various settings. The importance of leadership to transform cultures so they are amenable to the promotion of EBP is also included. To begin, the search strategy used to guide this literature review is presented.

Search Strategy

To determine the sources and use of evidence used by CNSs to inform their practice I conducted a search of CINAHL and MEDLINE databases without a year restriction, using the combined terms: 1) "clinical nurse specialist" and "evidence" and 2) "clinical nurse specialist" and "research utilization". CINAHL revealed 64 articles using the first set of terms and nine articles using the second set of terms. MEDLINE revealed 67 articles using the first terms, 42 of which were duplicates of CINAHL and six using the second set, all of which were duplicate studies. Although most studies described ways in which CNSs instituted change in their work environment or discussed how CNSs might implement EBP, only one study by Profetto-McGrath, Ehrenberg, Young, and Hill (2008) primarily addressed their sources of practice knowledge.

CNSs' Use of Evidence to Inform Their Practice

The CNS's role in advancing EBP is to make research findings more user-friendly so that nurses are more likely to base their practice on the findings and recommendations of research (Rasool, 2005). According to Thompson, McCaughan, Sheldon, Mulhall, and Thompson (2001b), CNSs were perceived to be the most useful information source as nurses prefer the social aspect of experiential/clinical knowledge over written research-based knowledge. As master's prepared clinical experts, CNSs are expected to provide clinical guidance and leadership to nursing staff and to promote EBP in order to improve the quality of care. CNSs are the ideal conduit as they work to improve quality care and ensure that the care provided is based on sound scientific evidence. In this review I first discuss sources of evidence used by CNSs and then present overviews of articles which includes a discussion as to how CNSs have promoted EBP in their work settings.

Sources of evidence used by CNSs.

In a study by Profetto-McGrath et al. (2007), CNSs reported using various sources of evidence. The sources were determined from questions raised by nurses, clinical nurse educators, peers, university researchers, and others. When

questions were raised CNSs considered multiple sources of evidence such as research, peers, clinical experience, and at times, context. The internet was used as a starting point to sort through vast amounts of information. Some sought the assistance of a librarian while others completed their own searches. They preferred the use of on-line resources because they considered textbooks to be outdated.

How CNSs promote EBP.

In order for CNSs to improve patient outcomes, Hickey (1990) outlined a five element framework to encourage EBP: "1) assessment of system readiness; 2) design a research utilization plan; 3) implement the utilization process; 4) evaluate innovation and revise as necessary; and 5) report findings for replication and further research to clinical nurses and nurse researchers" (p. 95). Each element of the framework has sub-elements that incorporate some lofty goals. For example, the first sub-element of element one states "If support is not received, plan to change attitudes through valid data which present the implications of research-based practice" (Hickey,1990, p. 95). A key message in this framework is that CNSs cannot work alone; they need support from people in key leadership positions as well as the nurses with whom they work.

Ohman (1996) stated that although the CNS is in a prime position to promote research utilization in the practice setting, most CNSs "may not have the time to assume the major responsibilities related to research utilization" (p. 3). Ohman suggested strategies for the CNS to promote research utilization that may not take as much time: make research findings available, develop a newsletter, have nurse researchers present their research to nurses, and form a nursing research committee. Again the importance of collaborating with nurses and nurse leaders was presented as a pivotal component of getting research evidence into the workplace to improve client care.

LaSala et al., (2007) wrote about their CNS peer work in a Magnet hospital in the United States which employed 50 CNSs at any given time. The CNSs used various approaches to disseminate clinical practice information to other health care providers. On a yearly basis the CNSs completed a survey regarding their perceptions of their practice environment and common patient care problems encountered. From the list of responses a plan of priorities was established for the upcoming year. They met bi-weekly to discuss new guidelines and development of standards, created programs, discussed their involvement in projects, and introduced new practice challenges. The CNSs who work at this

hospital identified three components required for successful collaboration in their organization: a common vision regarding organizational goals and philosophy; professional recognition of each other's skills and contributions; and effective communication. The clinical units are conceptualized as communities and the goal with each patient is to form a relationship which will lay the foundation for the establishment of a safe and healing place for patients and their families.

Krom and Bautista (2010) in their search of the literature found that no one had published how the CNS acts "as a facilitator for an EBP program, particularly, his/her role to design, implement, and evaluate an EBP program" (p. 55). They demonstrate how CNSs, in collaboration with health science librarians, were able to develop unit based EBP committees to promote the use of EBP. The EBP committees were formed as the unit nurses did not have the skills to apply the EBP process despite their educational background which included courses in nursing research and statistics. The EBP committees developed a three part program to promote EBP in their hospital. In part one, the CNS introduced the importance of EBP to the staff nurses and explained the Iowa model; this led to the development clinical questions by the staff nurses. In part two, after clinical questions were developed, the nurses met with a librarian to search the literature.

Part three entailed the CNS teaching the nurses how to critique and synthesize evidence and to make decisions regarding practice changes. After several years of educating the staff nurses, the CNS and health sciences librarian reviewed the outcomes of the program. They found that nurses who had attended the classes were unable to successfully search the literature to find answers to their questions for application to their clinical practice areas. Krom and Bautista concluded that many of the questions addressed by the EBP committees did become CNS led quality improvement projects that resulted in practice changes. They also stated that staff nurses cannot be expected to implement EBPs on their own and that they needed to collaborate with individuals, such as CNSs, who possess the tools to promote EBP.

Muller et al. (2010) state that to attain American Nurses Credentialing Centre's Magnet designation, it is necessary to employ CNSs. CNS graduates are able to link complex clinical data with multidisciplinary partnering and an understanding of organizational systems. In their institution the authors implemented a champion model as they found that there was a synergy between EBP and improved patient care outcomes and increased nurse satisfaction. The champion model used was the Six Sigma program which was developed to

strategically improve organizational performance through focusing on cost, capacity, and customer service (Muller et al.). With this program, the champion is responsible for dissemination of recommendations, auditing compliance, and reporting outcomes to their peers. The champion groups meet regularly and their outcomes are posted on the institution's Web-based nursing home page. Muller et al. state that CNSs are successful in implementing EBP because of their multidisciplinary collaborations and their understanding that organizational change cannot occur until there is an appropriate strategy in place to support cultural change.

According to Tuite and George (2010) in the United States, the federal government which is responsible for Medicare and Medicaid, decided in 2009 to reimburse institutions for improvements in the quality of care and it has also decided not to reimburse hospitals for additional care that occurred from preventable complications. To address this issue and other EBP concerns the authors describe the development of a Rules of Evidence (ROE) committee to improve outcomes at their institution. The ROE committee was initially formed in 2002 when nursing and critical medicine realized that quality improvements were being addressed separately and they could accomplish more by working together.

The committee was composed of CNSs, nursing staff representatives, a nurse administrator, critical care physicians, infection control practitioners, and respiratory therapists. The committee met monthly at a regular time and day for approximately 60 to 90 minutes. Tuite and George outlined the role of the CNS in a new Head of Bed (HOB) initiative that aimed to improve patient outcomes and was mandated by the ROE committee. In phase one, the CNS presented data to show why the initiative was needed and demonstrated through an audit that current practice was not meeting current best practice recommendations. The CNS created educational tools, a communication process, and educated staff on practice change so that staff nurses could better understand why there was the need for a practice change, rather than just telling them to do it. In phase two, the CNS identified unit nurses to become EBP champions and to be involved in the project work. The CNS also helped to build the nurses' confidence and skill in the EBP process. In phase three, the CNS further expanded the role of staff nurses in the HOB and other EBP initiatives. Tuite and George found that challenges to implementation continue to exist at each stage of the process due to general opposition to practice change. They do report success with the following strategies: supportive nursing administration, a multi-disciplinary approach,

nursing faculty collaboration, and shared leadership between nursing and medicine to maintain their goal of quality improvement.

In an annotated bibliography of 70 studies Fulton and Baldwin (2004), found that units utilizing CNSs' skills were able to reduce the length of hospital stays, readmissions, emergency room visits, and overall health care costs. They also found that CNS practice had a positive influence on staff nurses' knowledge, quality of life, and patient satisfaction. Earlier literature regarding CNS led change emphasised the solitary role of the CNS (Hickey, 1990; Ohman, 1996). It was up to the CNS to change culture and make it amenable to implementing EBP. Current literature indicates that health care environments are very complex and they require multi-disciplinary teamwork and a supportive context to improve patient outcomes by using EBP (Krom & Bautista, 2010; LaSala et al., 2007; Muller et al., 2010; Tuite & George, 2010). CNSs are in a position to promote and implement EBP when they work in supportive contexts. And although culture is a main determinant of whether or not EBP will be implemented, Pepler et al. (2005) argue that leadership is an important component of cultures that promote new practices successfully.

Leadership to Support EBP

There is a difference between leaders and managers. Schein (1992) argues that leaders create and manage culture as they understand and work with culture. The difference between leaders and managers is that leaders create and change cultures, while managers live within them. Leaders are positioned to facilitate the use of research in the workplace and are instrumental in fostering cultures that promote EBP (Scott-Findlay, 2007). According to Scott-Findlay, leaders are critical to developing workplace cultures where EBP is expected, and where resources, including time and space, are allocated so that nurses have the opportunity to embark on EBP endeavours. To do this leaders need to actualize three leadership strategies that foster EBP and these are: "Facilitating the incorporation of research into practice by addressing individual nurse concerns and being accessible to staff; creating a work environment that emphasizes best practice and; affecting organizational policies in a way that fosters EBP" (Scott-Findlay, 2007, p. 251).

Halm (2010), a CNS, also agrees that leaders shape the work context to be receptive to EBP. In her clinical evidence review, Halm examined six studies that reviewed the leadership behaviours that created EBP contexts. These behaviours

included role modeling/expectation for research use, encouraging clinical inquiry, staff development, performance appraisal expectations, basing policies on best evidence, and auditing practices to ensure that staff adheres to EBP standards. All these behaviours were associated with improving staff attitudes towards EBP. Current knowledge regarding how leaders influence cultures where EBP thrives is in its preliminary stages. However, preliminary evidence does link positive leadership with increased use of research (Halm, 2010). With increased use of research, there may come a time when patients do not receive unnecessary or potentially harmful treatments but are provided with treatments based on the best evidence (Halm, 2010).

In Sweden RNs "are required by law to perform care based on research findings and best experiences" (Johansson, Fogelberg-Dahm, & Wadensten, 2010, p. 70). However, these authors found that although a majority of head nurses expressed positive attitudes towards EBP, a large number strongly disagreed that they had time to read research reports and share them with staff members. Their disagreement was likely reflective of managers' heavy workloads and not on their unwillingness to implement EBP. This study also found that head nurses who had immediate supervisors who stressed the

importance of, and were positive about using EBP, reported higher degrees of research utilization than those who had less supportive supervisors. These authors go on to suggest that head nurses take more courses in research methods and learn how to perform EBP related activities in order to increase EBP on their units. Another suggestion was to hire CNSs to champion EBP endeavours.

It is evident from the literature that there is diversity within and across this APN role; no two CNSs are alike. They perform their roles and responsibilities in various patterns and in various contexts to meet the changing patient health care needs and their own practice priorities. For APNs to thrive they need leadership that advocates and is supportive of this diverse role. According to Bryant-Lukosius (2010)

> CNSs have played an important part in the delivery of advanced nursing services in Canada. However, their full integration into the health-care system will require high-quality research evidence. Over the next decade, research will play a critical role in forecasting the evolution, needs-based deployment, and impact of the CNS role in Canada. (pp. 23)

Purpose

The purpose of this explanatory mixed methods study was to gain a deeper understanding of the current CNS role, as it pertains to promoting EBP in the Saskatchewan healthcare context. For the purposes of this study EBP is

operationally defined as the integration of individual clinical expertise, patient preferences, and the best available external clinical evidence from systematic research to be used in consideration of available resources (DiCenso et al., 2005).

This research study will serve as the basis for my program of research which will include further research regarding the most effective facilitative approaches, perceptions of CNSs role in EBP by nurses, other health care professionals, and administrators/employers and aspects of contexts that are conducive to promoting and implementing EBP. At this juncture, the role of the CNS in the EBP literature has been overlooked despite the fact that CNSs can potentially have a fundamental role in facilitating EBP.

Research Questions

Among Saskatchewan based CNSs:

1) How do CNSs describe their role in promoting EBP in healthcare settings where they work?
2) What sources of evidence do CNSs access?
3) What attributes and skills do CNSs believe they need to facilitate EBP?
4) How do CNSs describe their workplace context and its effect on their ability to promote EBP?
5) How do CNSs describe their contributions to positive patient outcomes?

CHAPTER 3: Methodology

Research Design - Mixed Methods

The purpose of this study was to gain a deeper understanding of the current CNS role, as it pertains to promoting EBP. A mixed methods approach was chosen to guide the collection, analysis, and integration of quantitative and qualitative data in a single study (Creswell & Plano Clark, 2007). The rationale for using mixed methods is to investigate complex phenomena, so that a better understanding of the phenomena is derived from multiple data sets than from one data set alone (Creswell, 2003). A primary assumption underlying the use of this approach is that qualitative or quantitative method in isolation would be insufficient in understanding the research issue, and that the mixing of the methods results in a more comprehensive understanding of the research problem (Creswell & Plano Clark, 2007).

The purpose of using a sequential explanatory participant selection mixed method design (Creswell & Plano Clark, 2007) was to collect and analyze the descriptive quantitative data from participants in the first phase of the study and then follow up with a subset of the participant group to explain those results in more depth using Thorne's (2008) interpretive description to guide the data

collection and analysis. In the first phase, data were collected from participants through a telephone survey to gather information regarding the roles of evidence, context, and facilitation in promoting EBP in CNSs' workplace. The participant selection model was used and the demographic data from the survey assisted me in identifying and selecting the participants for the interviews in the qualitative phase. In the second phase, qualitative semi-structured interviews were used to explain and expand on some of the results obtained in the survey. The two data sources were connected in the intermediate phase of the study and were compiled in the findings chapter using the PARiHS framework as the guide to organize the data. The basis of this approach is that the analysis of the quantitative data provides a general understanding of the broad research issues and the qualitative data further "enriches and explains the quantitative results in the words of the participants" (Creswell & Plano Clark, 2007, p. 34).

The research questions were addressed in both phases of the study. The survey data provided a general understanding of the sources of evidence that CNSs access, the skills and attributes that CNSs need to facilitate EBP, facilitators, barriers, and challenges CNSs face in promoting EBP in their workplace. The qualitative data and their analysis explained the quantitative

results in more depth and they also explained the participant's views regarding their role in promoting EBP in their work settings and contributions to positive patient outcomes.

With using the explanatory participant selection model I was able to determined which cases would provide the best insights into the quantitative results using the demographic data regarding educational attainment. Figure 1 illustrates an adaptation of Creswell and Plano Clark's model used in this study.

Figure 1: Sequential Explanatory Participant Selection Mixed Methods Design (Creswell & Plano Clark, 2007)

Study Phase	Method	Results
Quantitative Data Collection ⇩ Quantitative Data Analysis and quantitative results	Phone survey	N = 23 Numeric data
	SPSS 18 - frequencies, means, SD	- Descriptive statistics - Proportion of time spent on 5 domains of practice
⇩ QUALITATIVE participant selection ⇩	- Selection of participants for qualitative data collection - Selection of participants based on Master or PhD education and working as a CNS	N = 11
QUALITATIVE Data Collection ⇩	- Semi-structured interviews -- Minutes from Dec. 2010 CAAPN meeting	11 interview transcripts
QUALITATIVE Data Analysis and Results ⇩	Interpretive description - immersion in transcripts - compare interview data - questioning - reflective techniques - critical examination	Three themes and seven sub-themes
Interpretation of Quantitative and Qualitative data	Integration and interpretation of Quantitative and Qualitative data	- Discussion of each theme - Implications for practice, education, and future research

Quantitative Method: Survey

The quantitative method utilized in this study was a survey. Surveys are a form of self-report used to elicit information that can be obtained through the written or verbal responses of the participants (Loiselle et al., 2011). They can be used any non-experimental descriptive or correlational study. Information regarding the activities, beliefs, preferences, and attitudes is gathered by direct questioning. The information obtained is similar to that obtained by interviews, but the questions and answers tend to have less depth. The questions are presented in a consistent manner and there is less opportunity for bias than there is in an interview (LoBiondo-Wood & Haber, 2009).

Qualitative Method: Interpretive Description

Many of the qualitative studies that have been done in the discipline of nursing have been informed by methodologies from other disciplines (Thorne, 2008). Examples are found in grounded theory from sociology, ethnography from anthropology, and phenomenology from philosophy which are anchored in the theoretical and empirical problems of those disciplines rather than the practical problems that need to be addressed in nursing. Interpretive description, developed by Thorne, Reimer Kirkham, and MacDonald-Emes (1997), is

considered a non-categorical method and was chosen as the qualitative method for this portion of the study because it examines methodological issues in consideration of the general objectives of nursing science instead of following the methodological rules of other disciplines. The goal of interpretive description is to answer specific questions related to practical aspects of the discipline of nursing (Thorne, 2008).

With regard to philosophical alignment, interpretive description originates from an interpretive naturalistic perspective (Thorne, Reimer Kirkham, O'Flynn-Magee, 2004) as it acknowledges the constructed and contextual nature of human experience, and at the same time allows for shared realities. Interpretive description reflects the philosophical and theoretical foundations of nursing as it has evolved as a qualitative approach to clinical description with "an interpretive or explanatory flavour" (Thorne et al., 2004, p. 3).

Sample size in interpretive descriptive studies can be of any size but these studies are generally built upon relatively small samples from five to thirty (Thorne, 2008). Interpretive description uses a wide variety of data-collection and analytic strategies from the traditional methods. However Thorne states that adhering to a traditional methodological position is considered a limitation to

answer nursing's clinical questions in a meaningful manner. Interpretive description is generated through questioning, using reflective techniques, and critical examination. According to Thorne, et al., (2004) and Thorne (2008), the product of an interpretive description approach is a coherent conceptual description of common themes and patterns related to the topic of interest. As a research method which is grounded in nursing, interpretive description was used to describe and explain CNSs role in promoting EBP in various healthcare contexts within Saskatchewan.

Study Setting and Population

The study took place in Saskatchewan, Canada. It is a province of one million people with 42.7% of the population residing in the two largest cities; Saskatoon with 234,000 inhabitants and Regina with 198,000 inhabitants (Marchildon & O'Fee, 2007). There are thirteen communities classified as cities with populations of over 5,000 and this represents just over half of the provincial population (Statistics Canada, 2005 as cited in Marchildon & O'Fee). Populations in the large urban centres, far northern communities and First Nation reserves have grown rapidly in contrast to small urban centres that have been declining since 1981 (Marchildon & O'Fee, 2007). From 1992 to 2002 there were 32 Health

Districts which were reduced to 13 Health Regions in 2003 (Marchildon & O'Fee, 2007).

The Saskatchewan Registered Nurses Association (SRNA) is the professional, self-regulatory body for the province's 9,100 registered nurses. The SRNA's mandate is to set standards of education and practice for the profession and registering nurses to ensure competent nursing care for the public (SRNA, 2008a). Although the SRNA's 2008 Annual Report includes a number of entries regarding NP activity in the province, there is no mention of the activities of CNSs (SRNA, 2008b). However, 78 registered nurses in Saskatchewan identified themselves as CNSs in the 2008-2009 registration year (SRNA, 2009).

Sample, Sampling Strategy, and Recruitment

According to Creswell and Plano Clark (2007) the sampling strategy and sample sizes for the two methods of data collection are often different in mixed methods research. For the quantitative component (survey) of this study, all registered nurses registered with the SRNA who identified themselves as CNSs in their 2009-2010 registration year were asked to participate. Registration renewal was November 30, 2009 and in this registration time frame, 78 nurses identified themselves as CNSs. Of these 78, 42 indicated on their registration that they could

be contacted for research purposes. Of the 42 that were contacted by mail, 19 responded and four were recruited through snowballing, for a total sample of 23 (See Figure 2). According to Creswell and Plano Clark (2007) it is common practice for mixed methods researchers to select the same individuals for both the qualitative and quantitative data collection so the data can be more easily converged.

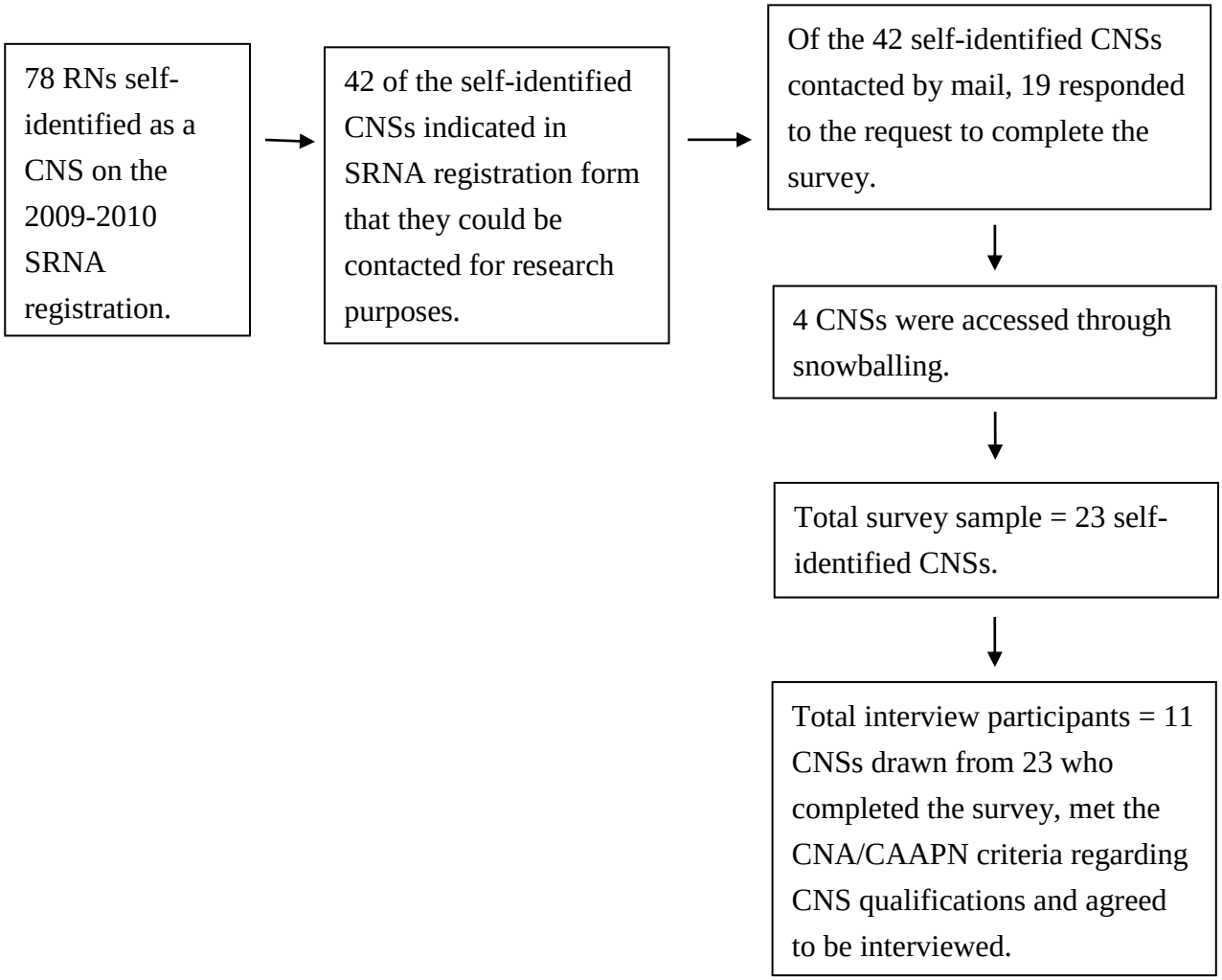
In the qualitative interview portion of the study, a purposive sampling approach was used. Purposive sampling provides subjects who are selected because they are considered typical of the population under study (LiBiondo-Wood & Haber, 2009). The ideal participants in an interpretive description study will be those within the population who observe and reflect upon their situations, rather than simply living them so that the eventual findings will have the potential of seeming reasonable to the intended audience (Thorne, 2008).

The demographic data from the survey was used to identify CNSs who met the CNA/CAAPN criteria for the CNS role. The 11 who met the criteria were then invited to participate in the interview phase of the study. The sample for the interviews consisted of a cross-section of CNSs who were master prepared and who practiced in acute and community care in provincially funded institutions, in

First Nations communities with Health Canada, and in academic settings. The sample for the qualitative portion was chosen to expand on the survey results and to better understand the various settings and ways in which CNSs promoted EBP in Saskatchewan.

Thorne (2008) states that "representation is rarely achieved by the mere fact of numbers, since there is no common basis upon which we could agree what the appropriate denominator ought to be" (p. 88). Any sample size will reflect a certain kind of perspective whose nature and boundaries can be acknowledged and addressed. In order to determine sample size in qualitative inquiry, Thorne suggests that the researcher consider three points: what is the knowledge needed?, what options are there for getting as close to it as we reasonably can?, and how one can enact an inquiry that is respectful and consistent with ethical research guidelines and practice? The inclusion of MN prepared CNSs ensured the homogeneity of the sample and maintained conceptual consistency with the literature and the professional associations' position of master level preparation.

Figure 2: Sample for the Survey and Interviews



Following approval by the University of Alberta Health Ethics Review Board (Health Panel B and found in Appendix A) and adherence to the SRNA Information Management Policy (Appendix B) the SRNA was contracted to send invitations to all CNSs registered with SRNA and who had indicated a willingness to be contacted for research purposes on their 2009 annual registration. The package sent to the CNSs included: a brief letter of introduction (Appendix C), an

information sheet for prospective participants (Appendix D), and a $5.00 Tim Horton's gift card incentive. Past research has shown that response rates for surveys can be increased from 15-20 percentage points by the inclusion of incentives (Dillman et al., 2008). CNSs interested in participating in the phone survey were asked to phone or email me. A reminder postcard (Appendix E) was sent three weeks following the initial mail-out (Dillman, et al., 2008). Based on the demographic data from the telephone survey and the invited CNSs' willingness to take part in the interview, I scheduled interviews with eleven CNSs at a mutually convenient time and place. The interviews were conducted in a number of different settings in the cities where they lived: in offices where the CNSs worked, in their homes, and in coffee shops. Consent forms (Appendix F) were completed prior to the start of each interview.

Data Collection

Survey instrument.

In the quantitative phase of the study was completed during March to May, 2010. I used the survey (Appendix G) developed by Profetto-McGrath et al., (2008). The development of the survey was guided by the literature, qualitative findings from a pilot study by Profetto-McGrath et al. (2007), reviewed by experts

and pilot-tested with graduate students and faculty members at the University of Alberta (Profetto-McGrath et al., 2008). The survey contains 113 questions grouped into several sub-categories aimed at measuring: evidence sources, use of evidence, facilitators, barriers, challenges of the CNS role, overall beliefs, capacity to access, use, and disseminate evidence, and demographics. The majority of questions included a Likert Scale of 1-5 (never to very often OR strongly disagree to strongly agree). Other questions were dichotomous in nature (Yes/No), open ended, or other formats.

The questions in the demographic portion of the instrument were used to gather information such as the CNSs' level of education, years of practice as a CNS, and work settings. Each of the seven survey component was informed by and is reflective of the concepts in the PARiHS framework and adds to the knowledge base concerning the evidence (1 & 2), the context (3, 4 & 5), and the facilitation roles (6 & 7) that CNSs confront in their work. Profetto-McGrath et al. (2008) found two significant correlations. Higher levels of education were significantly correlated with the use of evidence to improve practice and accessing evidence tailored to their practice. There were weak correlations

between higher level of education and use of Clinical Practice Guidelines (CPG) and use of other sources of evidence.

The survey took an average of 32 minutes to administer based on the administration process of the University of Alberta Population Research Lab using trained interviewers at computer-assisted telephone interviewing workstations (Profetto-McGrath et al., 2008). In this study the phone surveys took between 25 and 90 minutes. The reason for the difference in survey administration time was determined by the participant's response style.

To be considered a valid and reliable measure, the survey must meet certain criteria. A tool or survey that is not reliable cannot be valid; however, a tool can be reliable without being valid (Loiselle et al., 2011). Measurement involves guidelines for attributing numeric values to *qualities* of objects to designate the *quantity* of the attribute even though no attribute intrinsically has a numeric value; human beings invent the rules to measure concepts. The prime attribute of measurement is that it removes guesswork in gathering data and allows the researcher to obtain reasonably accurate information. However, even with the best measurements there is a certain amount of error and data are at risk to measurement error from a number of sources (Loiselle et al., 2011).

Reliability of the survey. Reliability is the consistency or dependability with which an instrument measures the attribute (Loiselle et al., 2011). The stability of a measure is the extent to which the same scores are attained with the same people on separate occasions is also known as test-retest reliability. According to Loiselle et al. reliability coefficients higher than .70 are satisfactory, but coefficients in the range of .85 to .95 are preferable.

The internal consistency is the extent to which the subparts of an instrument are all measuring the same attribute, as a measure of the instrument's reliability (Loiselle et al., 2011). Loiselle et al. state the indexes of internal consistency range from .00 to 1.00, and the higher the reliability co-efficient, the more internally consistent or accurate the measure. And according to Allerd et al. as cited in LoBiondo-Wood and Haber (2009), an alpha co-efficient of at least .70 is adequate for an instrument in the early stages of development.

For the survey used in this study, the authors established internal consistency using the Cronbach Alpha's reliability index. The overall instrument had an alpha of .81, and the alpha for the subsections of the tool dealing with evidence sources, use of evidence, facilitators, barriers, challenges of the CNSs' role ranged from .77 to .87 (Profetto-McGrath et al. 2008).

Validity of the survey. Validity is the degree to which a tool or instrument measures what it is supposed to be measuring (Loiselle et al., 2011). There are a number of approaches to establish validity. Three of the more important approaches to validity are content validity, criterion-related validity, and construct validity (Loiselle et al., 2011).

Content validity is concerned with the scope of the content area being measured and it is quite relevant for tests of knowledge. It is based on judgment as there are not totally objective methods for ensuring the full scope of the content coverage of a tool. Often the content is taken from practice knowledge, literature reviews, results of qualitative inquiry, and consultation from experts. In the end, the author has to make subjective decisions to decide on the content (Loiselle et al., 2011). Criterion-related validity establishes the relationship between the scores on the tool and some external criteria (Loiselle et al., 2011). The tool is said to be valid if its scores correspond strongly with the scores on some criterion. Construct validity is concerned with the degree to which an instrument measures the construct under examination. There is always an emphasis on testing a relationship based on theoretical considerations. Several approaches can be used

for construct validation including known-groups technique and factor analysis (Loiselle et al., 2011).

Profetto-McGrath et al. (2008) used face and content validity. Items for the survey were developed by Profetto-McGrath and her team and were based on the findings from a pilot study and further refined using expert review from an interdisciplinary panel. The survey was subsequently pilot-tested with graduate students and faculty.

Face to face interviews.

In the qualitative phase of this study 11 CNSs were asked to take part in a single semi-structured interview, lasting approximately 60-90 minutes, at a location of their choice. These interviews took place from May 18th to June 20th, 2010. Face-to-face techniques are best used when the researcher is interested in obtaining more detailed information from respondents (Lobiondo-Wood & Haber, 2009). Eleven questions were asked during the semi-structured interviews. The interview questions incorporated many of the same concepts that were explored in the survey and the interviews provided the CNSs with an opportunity to clarify, confirm, and further explore preliminary findings from the survey. The interview included questions regarding how they used evidence, the context in which they

worked, and how they were able to facilitate EBP in their workplace. Generally, in the interviews, the participants were able to more fully explain their work organization and culture, how they have affected patient outcomes by using EBP, facilitators and barriers they have encountered in their work, the mediums they found helpful in promoting EBP, and the issues they would like to discuss with policy-makers about the CNS role in implementing and promoting EBP. The interview guide is in Appendix H.

Reliability and validity of the interview data.

According to Morse, Barret, Mayan, Olson and Spiers (2002) when using naturalistic inquiry, reliability and validity are appropriate concepts that can be attained to ensure rigor. In the 1980's Guba and Lincoln used the term trustworthiness as a parallel concept to reliability and validity (Guba, 1981). They maintained that by adopting the following four criteria: credibility, transferability, dependability, and confirmability, one can attain trustworthiness of a study. When first developed, Guba stated that these criteria were primitive and would need to evolve. Morse et al. have since proposed that to ensure rigor in a study, the investigator needs to be responsive to unanticipated changes in the evolving study and they need to employ a set of verification strategies that can be

used as a self-correcting mechanism throughout the course of the study. The four verification strategies include methodological coherence, theoretical sampling and sampling adequacy, an active analytic stance, and saturation. Verification is the process used for the duration of the study to ensure reliability and validity of a study and in turn its rigor (Morse et al., 2002).

Investigator responsiveness.

Throughout the course of this study investigator responsiveness was reflected in my creativity and flexibility in developing the proposal, collecting the data, and writing the findings. Initially I had considered answering my question about CNS practice using a case study method. Upon further reflection, development of my research questions, and in consultation with my supervisor, it was determined that a mixed methods approach would be the best approach to answer my inquiries as the two methods would allow for a better understanding of the CNS role than could be derived from only one data set. In organizing my findings, I initially reported the quantitative findings followed by the qualitative findings, but this made for awkward reading and in consultation with my supervisor, we decided that the format needed to reflect the conceptual framework that helped to guide the study. I remained open to suggestions throughout the study and was able to

relinquish any ideas I could not support. Lack of responsiveness is the greatest hidden threat to validity (Morse et al., 2002).

Verification strategy: Methodological coherence.

Methodological coherence is apparent when there is congruence between the research questions and the components of the method (Morse et al., 2002). This study was a sequential explanatory participant selection mixed methods design whose aim was to address the research questions: (a) How do CNSs describe their role in promoting EBP?, (b) What sources of evidence to CNSs access?, (c) What attributes and skills do CNSs believe they need to facilitate EBP?, (d) How do CNSs describe their workplace context and its effect on their ability to promote EBP?, and (e) How do CNSs describe their contributions to positive patient outcomes? According to Creswell & Plano Clark (2007) the intent of this design was to select participants from the quantitative phase to inform the qualitative phase and have the qualitative data build on the initial quantitative results in more detail. In this study CNSs were able to further explain their reasoning behind their survey answers rather than using a Likert Scale or other dichotomous responses to do so. This design was used in order to use quantitative

participant characteristics to guide the purposeful sampling of the interview phase (Creswell & Plano Clark, 2007).

During the defence of my then proposed research, members of the committee were curious as to why I had chosen an explanatory design over an exploratory design. Exploratory studies are based on the premise that exploration is needed when there is no guiding framework or theory to guide the study. I proposed utilizing the PARiHS framework to guide the study; hence another reason for my use of an explanatory design. The basis of this approach is that the analysis of the quantitative data provides a general understanding of the broad research issues and the qualitative data further "enriches and explains the quantitative results in the words of the participants" (Creswell & Plano Clark, 2007, p. 34).

Verification strategy: Appropriate sampling.

Appropriate sampling is evident when the sample consists of participants who best represent the research topic (Morse et al., 2002). Of the 23 who were surveyed, 11 met the Canadian Association of Advanced Practice Nurses (CAAPN) criteria to be called a CNS. All 11 agreed to be interviewed. Saskatchewan has a relatively small population and these specialty positions are

well known by CNSs throughout the province. Through informal channels, I became aware of three other RNs who called themselves and meet the CAAPN CNS criteria, but who did not participate in the study. One is a former co-worker who stated she may not have checked off the CNS designation on her SRNA renewal registration form and would not have been contacted. Another is a current co-worker of mine who works at another site and the third works in an ICU in one of the tertiary care hospitals in the province. At the time of data collection I was confident that I was able to survey and interview 11 of the possible 14 participants, for a response rate of 79% which would likely be representative of the CNSs in the province.

Verification strategy: Collecting and analyzing the data concurrently.

This verification strategy "forms a mutual interaction between what is known and what one needs to know" (Morse et al, 2002, p. 12). As I reviewed the survey data and interviews, I began to identify patterns in responses and I was curious to learn how strongly these were reflected in the PARiHS framework and in the literature. I began to organize my findings in relation to the PARiHS framework, and as I had anticipated, there was a fit between the findings and the framework.

The transcribed interviews were sent back to participants for verification that each transcript reflected what each participant had wanted to say. Once the transcripts were approved and returned by the participants the analysis of each of the transcripts began. Thorne (2008) does not recommend member checks, whereby you go back to the participants to confirm your interpretations. She cautions that member checks done this way can lead to false confidence if the members agree with you and they could also possibly derail your good analytic interpretation if they disagree with you. According to Thorne, the researcher is not simply the vehicle through which the participants speak, but the interpretive instrument capable of making sense of the data.

Data Preparation and Analysis

According to Creswell and Plano Clark (2007) there are three stages for the sequential explanatory mixed methods data analysis: 1) complete the quantitative data analysis, 2) use the quantitative results to identify significant findings, and 3) apply selected quantitative results, in this case the demographics, to select cases for the qualitative phase and to provide a more detailed explanation quantitative phase results.

The raw data from the survey were converted into a form useful for data analysis (Creswell & Plano Clark, 2007). The data were cleaned, coded and exported into the statistical computer software SPSS 18. Descriptive statistics (mean, standard deviation, frequency, and distribution) were calculated and summarized to establish the general trends in the data. In this study the CNSs demographic data indicating level of nursing education, were used to determine who was contacted for the qualitative phase (interviews).

When using interpretive description, the collection of qualitative data and the analysis occur concurrently (Thorne, 2008). To do this Thorne suggests that the researcher become immersed in the transcripts. The qualitative data from the tape-recorded interviews were transcribed into Microsoft word files for analysis and checked for accuracy. Initial exploration of the data involved reading all the transcripts thoroughly to develop a general understanding (Creswell & Plano Clark, 2007) and to compare and contrast what each of the CNS's were saying (Thorne, 2008). The interview data and brief memos regarding my impressions of the interview, were referred to when making decisions about data analysis. Initial analysis of the qualitative data took place by listening to the interview recordings and reading and re-reading the transcripts (Thorne, 2008) as I attempted to gain an

understanding of experiences of CNSs in promoting EBP. By using interpretive description I was aiming for a series of intellectual operations that would allow me to know my data intimately so that I could consider the similarities and differences in the interview data (Thorne, 2008).

Interpretive description gives the researcher the freedom to either utilize coding approaches from other forms of qualitative research methods or to use alternative to coding such as cutting and pasting into electronic files with descriptive titles that capture the nature of the collecting without first implying meaning (Thorne, 2008). Initially the interview transcripts were typed with wide-margins to allow for the inclusion of written codes. According to Morse and Field (1995) coding is "the process of identifying persistent words, phrases, themes, or concepts within the data so that the underlying patterns can be identified and analyzed" (p. 241). I placed codes in the left margin and broader themes were placed in the right margin. However, I found I was starting to lose track of the questions guiding the study and instead, I began to use the interview guide to format the responses. I colour-coded each interview and then I compiled each answer under a file with a descriptive title that captured the nature of the collection (Thorne, 2008). Once this was done, the transcripts were examined to

form broad categories of themes that were congruent with the theoretical framework. The theme of an interview typically runs through the data and the discovery of themes is a process of abstracting beyond a topic or concept (Thorne, 2008).

The next step is to combine and record related patterns into sub-themes by questioning and using reflective techniques to critically examine the data. Themes that surfaced from the participants' interviews were gathered together to form a clearer picture of the participants collective experiences. And in using an interpretive approach, the researcher asks questions such as, "what is happening here?" and "what is new about this situation?" in order to determine how different ideas fit together in a meaningful way (Thorne et al.,1997). And what starts as random bits of data, gradually through continual critical reflection and examination takes shape into order and organization.

As the authors of the PARiHS framework (Rycroft-Malone et al., 2004) were interested in understanding the components needed to enact EBP, their framework provided structure to help organize the data into themes. However the data that fit outside the PARiHS confines were also used in the consideration of thematic development. The development of themes from the framework and from

the data allows the researcher to know the data intimately and to consider the similarities and differences with respect to the diversity among the participants in the sample. The object of interpretive description is typically a thematic summary. A thematic summary reflects an "ordered representation of initial groupings and patterns" (Thorne, 2008, p. 164). In this study, the thematic summary resembled many of the concepts described in the PARiHS framework.

Ethical Considerations

The research proposal was submitted for ethics review to the University of Alberta Health Research Ethics Board (HREB) Panel B. There were no amendments to the original ethics application. Ethical approval was received from the University of Alberta. As a faculty member of the University of Saskatchewan, I also obtained ethical approval from its HREB.

Survey portion of the study. Initial notification and invitation for volunteers to participate in this study was made via mail through the SRNA as the Association holds the database with CNS contact information. The contents of the mail-out included a letter of introduction, an information letter, and an incentive to participate. The information sheet was developed in accordance with the University of Alberta HREB Guidelines for Informed Consent (Appendix F). It

included my name and that of my supervisor, the title of the proposed research, and my contact information. No one was expected, coerced or required to participate. Potential harms and benefits from participating in this study were outlined in the information letter. After reading the information letter, interested participants were asked to contact me to indicate their willingness to participate in the study. The initial phone call by the CNS participant also provided the opportunity for him/her to ask any questions regarding the study and indicate consent to participate.

Interview portion of the study. The consent form for the interview portion of the study (Appendix F) was developed in accordance with the University of Alberta HREB Guidelines for Informed Consent and was completed for each interview. The consent form for this study was based on and included information pertaining to the participants' involvement and outlined their rights to participate, not to participate, or to withdraw from the study at any time. No personal identifying information about the participants was included in the transcripts. For the purpose of the study, only members of my supervisory committee and I had access to the transcripts.

Data Security and storage. Completed surveys, interview tapes, and typed transcripts, and any other related documents are stored in a locked filing cabinet in my locked office at the University of Saskatchewan, Regina Site. Participants' anonymity and confidentiality has been protected. Anonymity exists when the participants' identity cannot be linked to his or her individual responses. In this study SRNA staff mailed out the information package to those who identified themselves as CNSs on their 2009-2010 registrations; therefore, I did not know the names of those who received the mail-out. For those who contacted me to participate in the survey, their names and phone numbers were kept separate from the data collected so that the two could not be linked. Confidentiality means that individual identities will not be linked to the information they provide and will not be publicly divulged (LoBiondo-Wood & Haber, 2009). Once participants agreed to take part in the study, each survey was assigned a code number (i.e., cns20 for survey participants and CNS1 for interview participants) and no names or places of work were reported to protect anonymity.

CHAPTER 4: Findings

The purpose of this study was to gain a deeper understanding of the current CNS role in Saskatchewan, as it pertains to promoting EBP. The purpose of this chapter is to answer the five questions that guided this explanatory mixed methods study:

1) How do CNSs describe their role in promoting EBP in healthcare settings where they work?
2) What sources of evidence do CNSs access?
3) What attributes and skills do CNSs believe they need to facilitate EBP?
4) How do CNSs describe their workplace context and its effect on their ability to promote EBP?
5) How do CNSs describe their contributions to positive patient outcomes?

The PARiHS framework which conceptualizes the concepts of evidence, context, and facilitation and their inter-relationships in promotion of EBP, was used to organize the study findings. In order to promote and implement EBP, CNSs need to find and use credible evidence and work in contexts that are receptive to change; as well their CNS role needs to be organizationally defined and they need to have the skills and attributes to facilitate the transfer of knowledge into the workplace. So, how are the CNSs practicing in the province of Saskatchewan able to promote and implement EBP in local health care settings? The combined findings from the survey and interviews provide an in-depth

understanding of CNSs' role in EBP in a variety of practice settings in Saskatchewan.

The data illustrates that there are variations in each CNS's practices and this variation is primarily dependent on the contexts in which they work. The following findings describe: the demographics of the survey population and their work responsibilities; the CNSs' beliefs regarding the role of evidence in their practice; the sources of evidence CNSs locate and use in their practices; how they view their work contexts with respect to their ability to promote EBP; and how they operationalize their roles as facilitators of EBP. This is the second known Canadian provincial survey to study the self-reported behaviours and attitudes of CNSs; the first study took place in Alberta (Profetto-McGrath et al., 2008).

Demographics

A total of 23 CNSs participated in the first phase of the study, completing the survey conducted to explore the evidence, the context, and the facilitative issues that CNSs confront in their work. A summary of the participants' demographic characteristics is provided in Table 5. The sample was predominantly female (87%) with 69.6% in the age range of 41-60 years, and no participants in the 20-29 year range. The majority had a master's degree or higher

(47.8% and 8.7% respectively) which is a requirement to work in an advanced practice role (CNA, 2008)., Twenty-six percent who self-identified themselves as a CNS had a baccalaureate degree and 17.4% had a diploma. The length of years as a RN ranged from 11 to 42 years, with a mean of 25.57 years and a standard deviation of ± 10.45 years. The years in their particular practice setting ranged from 1 to 28 years with a mean of 8.37 years. The mean years as a CNS was 6.33 years which indicates that some of the CNSs had worked in their particular practice setting as a RN prior to taking on a CNS role. The average number of hours worked per week was 41.87 (SD ± 11.89 hours). One participant worked part-time, which indicates that many of the CNSs were working long hours. The majority of the CNSs worked in two of the larger Saskatchewan health regions. Fifty-two percent of the participants worked in acute care hospital settings, 18 % in academic settings, 8.6 % in home care, 8.6% in business or occupational health settings, 8.6% as government employees, and 4.3% in continuing care and rehabilitation centres.

Table 5: Sample Demographics (N = 23)

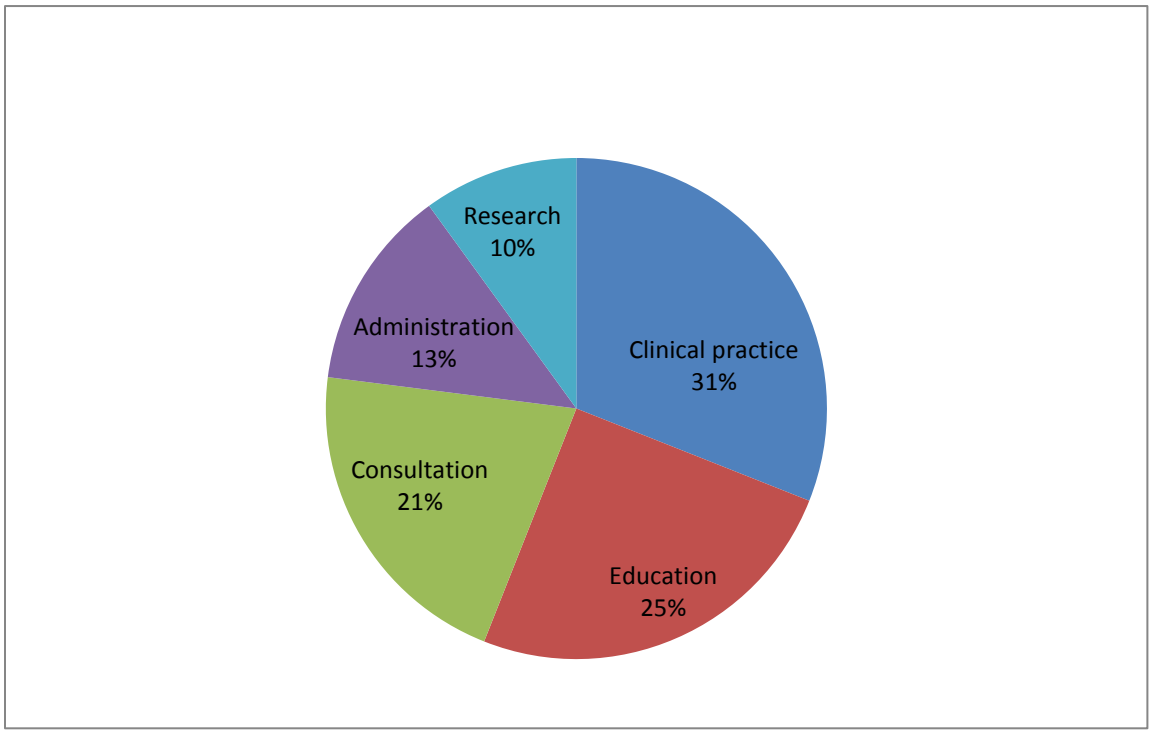
		N (%)
Sex	Male	3 (13)
	Female	20 (87)
Age	20-29	
	31-40	4 (17.4)
	41-50	8 (34.8)
	51-60	8 (34.8)
	>60	3 (13)
Highest level of education	Diploma	4 (17.4)
	Baccalaureate	6 (26.1)
	Masters	11 (47.8)
	Doctorate	2 (8.7)
Years as a RN		Mean 26.57 ± 10.45
		Range 11-42 years
Years as a CNS		Mean 6.33 ± 5.14
		Range 1-19 years
Years in current practice setting		Mean 8.37 ± 6.28
		Range 1-28 years
Work hours/week		Mean 41.87 ± 11.89
		Range 10-60 hours/week
Work Setting	Acute Care	12 (52%)
	Academic	4 (18%)
	Community/HC	2 (8.6%)
	Bus./Occupational Health	2 (8.6%)
	Government	2 (8.6%)
	Continuing Care & Rehab.	1 (4.3%)

Work Responsibilities

Figure 3 illustrates, from the survey findings, the percentage of time CNSs spent on the five components of their practice. On average, CNSs reported

spending 31% of their work day in clinical practice, 25% in educational activities, 21% in consultation, 13% in administrative duties, and 10% in research activities. When recording the participants' responses during the survey, this question required some clarification because some of the work responsibilities overlapped, and it was difficult to consider them as discrete entities. The research component of their work was the one that was attended to the least which led to some frustration for the survey participants, most whom were keen to engage in more research activities.

Figure 3: Percentage of Time Spent in the Five Domains of CNS Practice



The Role of Evidence

The PARiHS framework conceptualizes evidence as both codified and non-codified sources of knowledge which includes research based evidence, clinical experience, patient preferences, and local information (Kitson et al., 2008). In the survey portion of the study the participants were asked about what sources of evidence they commonly used and the reasons they chose to use these in their practice. This data answers research question number two: What sources of evidence do CNSs access? Those who were chosen for the interview portion of the study further described situations in which they used evidence to improve patient outcomes.

Beliefs regarding the role of the CNS and evidence.

The participants who completed the survey all agreed that using evidence *can influence positive change, is an expectation of their position, enhances their practice, and increases positive patient outcomes*. There was some variation in the statement regarding the primary role of the CNS whereby 74% of the CNSs agreed that their primary role was to facilitate the transfer of information while 22% disagreed with this statement. Of the 22% who disagreed, most believed that

their primary role was to help improve patient outcomes when asked (See Table 6).

Table 6: Beliefs Regarding the Role of the CNS & Evidence

Beliefs	Yes n (%)	No n (%)	Missing* n (%)
You believe your primary role is to facilitate information	17 (74)	5 (22)	1 (4.3)
You believe you can influence positive change by employing research evidence	23 (100)	0 (0)	0 (0)
Using evidence in daily practice is a job expectation of your role as a CNS	23 (100)	0 (0)	0 (0)
Overall, you believe that your practice in enhanced or improved when you use research	22 (95.7)	0 (0)	1 (4.3)
Overall, you believe that positive patient outcomes are increased by using evidence	23 (100)	0 (0)	0 (0)

Missing data* occurred when participants chose not to answer a particular question.

Sources of evidence.

In the survey, sources of evidence were categorized into written sources and people-based sources. The top five written sources of evidence used were *the internet at work, clinical practice guidelines, general internet searches, literature tailored to specialty,* and *computerized databases such as CINAHL and PUBMED.* The five least accessed sources of evidence were *textbooks and bulletins, original studies in subscribed journal, libraries,* and *popular media such as radio, television, and newspapers* (See Table 7).

The top five people-based sources of evidence accessed by CNSs were *personal experience, clinical experience on previous/current unit, what has worked for years, physicians,* and *other health professionals* as presented in Table 8. The five people-based sources of evidence that were least used were *Clinical Nurse Educators, Managers, Unit Rounds, Other Experts, and Journal Clubs.* Interestingly, participants accessed other CNSs only some of the time, primarily as they often work in isolation from others in similar roles or were the only CNS working in a particular setting.

Table 7: Most to Least Commonly Accessed Written Evidence on a Monthly Basis

Written Evidence	N	Mean
Internet at work	23	4.35
Clinical practice guidelines	23	4.26
General internet searches (Google, Yahoo etc)	23	4.26
Literature tailored to specialty	22*	4.05
Computerized databases (CINAHL, PUBMED etc)	23	3.78
Other websites – relevant to area of practice	23	3.61
General medical literature	23	3.52
General nursing literature	23	3.48
Research journals available at work setting	23	3.39
Benchmarking documents	23	3.35
Textbooks	23	3.17
Bulletins and newsletters	23	3.17
Original studies in subscribed journals	23	3.04
Libraries affiliated with your institution	23	2.96
Libraries, including search services & librarians	23	2.87
Popular media (radio, tv., newspapers)	23	2.65

Missing data* occurred when participants chose not to answer a particular question.

Table 8: Most to Least Commonly Accessed People-Based Evidence on a Monthly Basis

People – Based Evidence	N	Mean
Personal experience	*22	4.73
Clinical experience on previous/current unit	23	4.61
What has worked for years	23	4.52
Physicians	23	4.22
Other health professionals	23	4.22
Nurses working in your clinical setting	23	4.09
Educational programs completed	*20	3.85
In-services, seminars, workshops	23	3.83
Patients/ family	23	3.74
Other CNSs	23	3.57
Conferences	23	3.48
Clinical Nurse Educators	23	3.35
Managers	23	3.22
Unit rounds	23	3.04
Other experts	23	2.57
Journal clubs	23	1.74

Missing data* occurred when participants chose not to answer a particular question.

Use of evidence.

Evidence is used in many aspects of the CNSs' practice (see Table 9). It is often used for *discussion and consultation with nurses, health professionals, patients and/or their families, and peers* in order *to improve patient care.* Evidence was frequently used *to learn about new developments, to develop strategies for conveying knowledge into the practice setting, to develop new policies and procedures,* and *for discussion with management.* At times it was

used *to develop technical tools and resources*, as well as to *propose and or develop research proposals*. The open-ended question elicited three responses from participants who reported use of evidence to orientate new staff, publication of journal articles, and to educate student nurses.

Table 9: Most to Least Commonly Reported Uses of Evidence

Use of Evidence	N	Mean
For face to face discussions and consultations with nurses	23	4.57
For face to face discussion and consultations with health professionals	23	4.52
For face to face discussion and consultations with patients/families	23	4.48
To facilitate improvements in patient care	23	4.48
For face to face discussions and consultation with peers	23	4.43
To learn of new developments	23	4.30
To develop strategies for conveying knowledge into the practice setting	23	4.17
To assist in the development of policies, procedures and protocols	*22	4.05
For face to face discussion and consultations with management	23	4.00
To develop technical tools	23	3.91
To develop resources for colleagues, allied health professionals or management	*22	3.86
To develop resources, such as pamphlets which to provide information to patients	*22	3.82
To propose further research ideas	23	3.39
To develop new research proposals	23	3.04

Missing data* occurred when participants chose not to answer a particular question.

How evidence use improved patient outcomes.

During the interviews, CNSs were asked to share a story of how CNSs changed patient outcomes by using evidence. This data answers research

questions number one and five: How do CNSs describe their role in promoting EBP in healthcare settings where they work? And how do CNSs describe their contributions to positive patient outcomes? There were three broad categories of stories. The first category included stories that illustrated how standardizing orders on admission to their facility cut down on delays in patients receiving their diagnosis, treatment, and discharge. In the second category, CNSs described how they identified research-practice gaps in their work and then used the literature to develop protocols for addressing and closing the gap. The third category depicts a situation where the CNS was aware of best practice but had to covertly implement it because she did not have support from her inter-disciplinary team.

Standardizing orders based on best practice guidelines.

Many of the CNSs shared stories of how they streamlined processes in order to make the time spent in hospital more efficient for their patients. They identified problems with the flow of information in their units. By standardizing orders based on clinical practice guidelines, CNSs were able to make their units more efficient for their patient populations. CNS1 found that in one of her clinics, the patients would see their general practitioner first and then a specialist, however, it appeared that no one was reviewing the patients' blood-work. Furthermore, she

reviewed the prescriptions being written by physicians, the lipids ordered, and the blood pressure medication they were taking. She found that patients were "... going home the same way they came in, with no further information or respective management" (p. 28). Based on her assessment and clinical practice guidelines, CNS1 presented her findings to the physicians who were somewhat receptive but somewhat resistant to a nurse working outside her traditional role in implementing clinical practice guidelines.

> …after that the practice changed totally.... So now the patient gets a lot more than what they did. But it was just like, "you can't be doing that because that's not your role." Like, once it becomes our role it will just become old hat, right? So, it's just little things like that, and I just think, "Ahhh, stop being so ridiculous". You have to go through a song and a dance to get it done. (pp. 28)

CNS4 found that when patients were admitted to her unit from the emergency department, each physician/patient dyad was following different routines to obtain standardized diagnostics and treatments. "… when I started my role, our length of stay in emerg[ency], was 24 to 36 hours.... we're down to seven hours, from when a bed's called for, to [a] patient getting on the floor, in seven hours. I think that's phenomenal; you don't find that on many services" (p. 10). CNS4 was able to accomplish this by standardizing the orders on admission

and developing standardized care plans for each patient for the nurses to follow based on clinical practice guidelines.

> I standardized the orders for admission, so nothing was missed on admission, I standardized the care plans for the nurses, a pathway, so they knew what to expect every day of that patient's admission for the different diagnosis. And then we have mandatory rounds with the physicians. So they have to round, from 9 till noon so everything is taken care of between 9 and noon… Patients aren't just left there just to languish around until the physician chooses to come up, or isn't too busy to come up, and then when they are ready to go, they aren't waiting for any tests because we have a standardized method that we work through, which is all evidence based. It's based on the guidelines from the American heart and CCS and ... the time frame that people should be doing things. So, that's how I achieved that and basically it was just bringing all that evidence. (pp. 12)

As a result of CNS4's standardization of orders, patients' stays on her unit decreased by 50% which is in line with national guidelines. However, the occupancy rate on that unit remains at 99.9%, which decreases wait times for new patients to the unit.

Addressing gaps in the literature.

Other CNSs provided examples of finding gaps in the literature regarding situations that were predominant in their practice; they then reviewed the literature to develop best practice protocols. For example, CNS5 found that there was a gap about sexual health education for children and adolescents with

developmental disabilities. This led to a need assessment for this population and CNS5 found what they were getting was "really nothing and we went further, and found out there was very little at home either" (p. 2).

> And yet the rate of sexual abuse is extremely high, it's like sixty to eighty percent. And part of that is because they don't realize that what's happening to them is wrong, they don't know that they can say no, they don't understand the correct names for body parts. They're not, you know, credible witnesses on the witness stand. It's their word against a perpetrator's word, so that population was being extremely underserved. Once we started the project, actually, going in and teaching sexual health; correct names for body parts, respect, how to say no, how to protect yourself, how to recognize inappropriate touching or behaviour, then we started getting feedback from parents from teachers. And now the demand for the program is much higher than we can even come close to. So, we have requests not only in the city but in the province, even out of province, other countries.... it's just sort of a brief story in terms of... evidence based practice, I guess, changing how we do practice, how we look at people with developmental disabilities, how it hopefully it promotes health and prevents abuse. But in a lot of ways, has changed the lives of these kids because I think their future looks very different now, knowing that they can in fact protect themselves if they need to. (pp. 2-3)

CNS8, who practiced primarily in settings with older adults, found that in her practice she needed to keep up with the latest literature to remain current in her clinical practice. Her work was disseminated from her home institution to the health region at large.

> I'll start with bladder management.... And one of the very early things I worked on with the physiatrist, who was working with the program at that time, was bladder retraining program. When a Foley catheter is removed, if

> it's been in there longer than a couple of weeks, a lot of peoples' bladders don't just bounce right back, and if it's not managed properly, they'll end up in retention. And the Foley goes back in, and you may be familiar with that story.... But certainly over the years I've researched it several times in revision and keep on top of the literature, at least once a year, that I go in and I see if there's anything new about, and I've written the self-catheterization teaching booklet for patients, based on the research. And defended it many, many times. (pp. 5-6).

Covert best practice.

Of the CNSs interviewed, all found that the goal to improve patient outcomes by using best practice was not always supported due to general resistance to change and at times actively resisted by health team members. CNS10 covertly circumvented the resistance by one team member but felt she should not have to "sneak around to do what the evidence is supporting" (p. 14). She found this situation to be quite frustrating.

> We have lots of people with PICCs…, and other vascular devices and when something goes wrong with a PICC in this facility, the radiology technician comes up, takes heparin and shoves in and out of the PICC till he dislodges whatever is at the end of it. And obviously it's embolized. In my other facility, nurses would go through a logarithm about what you were supposed to do: a chest x-ray, check for placement …, and you would use cath-flow, and you know, I'm not allowed to do that. Because that's not how it's done here. I do it all the time. Because I can either take the patient and I can take them over to clinic and have it done properly, or I can sneak the cath-flow over from the clinic and do it up here. So, that's what I do. But … you shouldn't have to sneak around to do what the evidence is supporting. And you know, I've requested some time to sit down with the head of radiology … and you know, they're not excited about having me intervene or change practice or whatever because, frankly cath-flow is

> expensive, and whose budget is that going to come from? So, it's bizarre, it makes me crazy. (pp. 14)

CNS10 also stated that to introduce a change based on the evidence she may have to wait for a change in team members. "I mean sometimes you just know, that until the player changes, or unless there's some critical incident that you can utilize, there's no point in flogging that one. So, you just better re-group and wait" (p. 15).

To implement EBP in their practice settings, the CNSs reviewed the codified and non-codified sources of evidence. Even though evidence may have supported a change in practice there were also contextual components to consider in promotion activities. Many of the CNSs who were interviewed met resistance from some health care team members who were comfortable with traditional practices and did not believe the change was needed to improve patient outcomes.

The Role of Context

According to the National Institute for Health and Clinical Excellence (2007) basic organizational structures as well as processes, facilities and staffing need to be in place to support the implementation of EBP. The evidence needs to be credible and the context needs to be amenable to innovation. In the PARiHS model the role of context includes three core elements: an understanding of the

prevailing culture, the nature of the leadership, and the organization's approach to measurement or evaluation. If each of these elements are in the high end of the continuum, there is a greater chance for EBP to be promoted and implemented. This section describes the contexts in which the CNSs work in Saskatchewan and answers research question number four: How do CNSs describe their workplace context and its effect on their ability to promote EBP?

First, I present survey results which describe contextual elements that facilitate and challenge the CNSs efforts to promote EBP in their work settings. Secondly, I provide excerpts from the interview data regarding the prevailing culture and the nature of the leadership in their workplaces. I conclude this section on context with survey and interview data which describes the common barriers found in CNSs workplaces regarding the use and dissemination of evidence.

Facilitators for the use and dissemination of research.

The sample of CNSs surveyed found their practice was facilitated by: 1) *being present in the practice setting;* followed very closely by 2) *communication skills*; and *own knowledge and skills as a nurse*; 3) *credibility with front line nurses*; and *tailoring information to recipients*; 4) *conferences et cetera to learn new information*; and 5) *having an organizational culture that supports EBP*. The

means for these facilitators were between 4.48 and 4.7 indicating a strong social or personal aspect to the facilitation of CNS practice. Aspects that facilitated their work most often, with means between 4.0 and 4.39, were *access to e-mail* and *the internet, management support, questions raised by nurses,* and *nurses who understand the importance of EBP. Journal club*s were almost never used and *librarians* were rarely used (See Table 10).

Table 10: Most to Least Commonly Reported Facilitators for Use & Dissemination of Evidence

Facilitators	N	Mean
Being present in the practice setting	23	4.70
Communication skills	23	4.65
Your own knowledge & skills as a nurse	23	4.65
Your credibility with front line nurses	23	4.61
Tailoring information to recipients	23	4.61
Conferences, work-shops, and in-services to learn about new information	23	4.57
An organizational culture which supports evidence- based practice	23	4.48
Having e-mail	23	4.39
Settings where front-line nurses have access to the Internet	23	4.35
Management support (providing time and space for education etc)	23	4.30
Questions raised by nurses in your setting	23	4.26
Nursing staff who understand the importance of EBP	23	4.09
Ed. Programs focused on building evidence based knowledge or skills	*22	4.00
Team meetings	23	3.96
MD support	23	3.91
Internet	*22	3.73
Clinical Nurse Educators	23	3.52
Other CNS	22	3.32
Librarians	23	2.30
Journal clubs	23	1.48

Missing data* occurred when participants chose not to respond to an item.

Challenges.

A challenge is a stimulating way to test someone's abilities. *Balancing the demands associated with my role as a CNS* was the biggest challenge faced by the CNSs in this study. The mean of 4.26 indicates that they agreed (4) or strongly agreed (5) with this statement. *Balancing shifting priorities* and *dealing with the volume of information required for a varied program* were statements that they agreed with as well. They have not found it challenging to identify complex patients who require CNS intervention as indicated by a mean of 2.61 (See Table 11). The open-ended question in the survey regarding challenges garnered responses from 14 participants and included issues that deal with 4 broad themes: Role ambiguity, general lack of support, large portfolios, and time and resource constraints.

***Role ambiguity*.**

Many of the CNSs who were surveyed stated that often the doctors and nurses with whom they worked did not understand the CNS role and as one stated that "There is a lack of understanding with regard to the role of the nurse in the expanded role" (cns21, p. 82) and often found themselves "articulating your role to other health care providers and having MDs think you are a physician

assistant" (cns14, p. 82). A number of CNSs reported that their title "threatened" the Clinical Nurse Educators with whom they worked.

A lack of support and resources.

CNSs who were surveyed also shared a number of issues regarding the support they received or did not receive in the workplace. For some, such as cns22, it was "dealing with a supervisor who is not on-board" and "working with people who are not educated to the level they are working" (p. 82). There were also issues with general resistance to change as CNSs found themselves "dealing with bedside nurses who are negative and resent change" (cns4, p. 82). One participant suggested that the CNS title itself was a bit of a lightning rod and that the "CNS title gets peoples' backs up" (cns11, p. 82). As cns10 stated, "you can't have a bad day and everyday you need to prove your worth" (p. 82). CNSs were also viewed as "victims of changing political influences" (cns11, p. 82).

Large portfolios.

Many of the CNSs had multiple roles to fulfil and some had to travel outside their home institution as part of their work responsibilities. Some of the CNSs found it difficult to have "a huge portfolio and large geographical region to service" (cns19, p.82). A number of CNSs reported that multiple roles led to

"role conflict." The breadth of the CNS role was a challenge as it encompasses so many things. Some felt they were "balancing patient needs with professional needs, as both are priorities" (cns1, p. 82).

Table 11: Most to Least Commonly Reported Challenges of the CNS Role

Challenges	N	Mean
Balancing the demands associated with my role as a CNS	23	4.26
Balancing shifting priorities based on changing clinical & program needs	23	3.83
Volume of information and knowledge required for a large and varied program	23	3.83
Critically appraising the rapidly changing information in a complex area of care	*22	3.77
Interpreting and communicating &/or transferring research based findings to a diverse group of professionals	23	3.74
Maintaining clinical expertise across a wide variety of med/nsg subspecialties	23	3.65
Interpreting current clinical practices and relating them to changing clinical needs	23	3.57
Lack of understanding of my role in comparison to the role of CNEs	*22	3.45
Lack of information about clinical quality indicators	23	3.26
Indentifying complex patients and families who require CNS intervention	23	2.61

Missing data* occurred when participants chose not to respond to an item.

The 11 interview participants were asked to briefly describe the settings where they worked in terms of organization, culture, leadership, and resources. The answers to this request were quite complex as the four components of interest were often intertwined. The culture and leadership sub-sections of Context as described in the PARiHS framework were used to organize the findings.

Organization.

The 11 participants worked in a cross-section of settings. Seven of the CNSs worked in two of the larger provincial health regions in acute care specialty based units. The remaining four worked in community-based settings. Often the CNSs reported being involved in the care of clients in multiple settings within their organization or within the province. As a result of this practice they found themselves balancing differing organizational norms.

> ... I really see a pretty significant dichotomy between where I work and where I work, right? I'm based out of the office here and the office is one type of a setting, and the field, the different communities, is a different type of a setting. So, I find often sometimes that [in] the office there's a lot of bureaucracy, (pause). Stability is an issue in terms of leadership and staffing and a lot of staff turn-over, uhm, communication can be tough. Communication can be tough in communities as well, but in communities I find that people are quite pragmatic. They're not as much into titles and posturing and this and that. They're into getting the job done. And relationships are valued a lot more in communities then they are in this organization, in my opinion. (CNS 2, pp. 3)

Nine of the CNSs worked as the lone CNS in their speciality area. For some, this felt as if there was no one else with whom to consult or learn:

> ... when I started this job, I was the only CNS in, no that's not true, I was the only CNS in acute care. And there was one in long term care. And since then there have been some more that have come into acute care but because everybody's area is very different, there isn't a lot of resources available to work with other CNSs to use evidence, to do that sort of stuff" (CNS3, pp. 2).

Culture.

The PARiHS framework contains culture which is described as the paradigm in which people operate; it is reflected in the "way things are done around here." Culture is something that the organization is, rather than something that it possesses (Schein, 1992). In the workplace culture is reflected in the prevailing values and beliefs, how it values staff and clients, whether or not it promotes learning and teamwork, how it allocates human, financial, and equipment resources, and whether or not it's initiatives fit with strategic goals (Rycroft Malone, 2004). In terms of workplace culture the qualitative findings from this study point to similarities as well as differences in the cultures in which the CNSs worked.

Defined institutional values and beliefs.

Several CNSs were able to articulate the values and beliefs of their employing agency, although some reported a discrepancy between the institutional mission statements and practice on their units. CNS11 stated that in her Regional Health Authority there was an understanding of and agreement with their revised set of guiding values,

> ... our RHA and our senior management also came up with a new set of values, to direct our vision. And it's an acronym: CARES becomes the acronym.... And I think I have them out here 'cause I can't remember: Safety, Compassion, Respect, Accountability, Excellence. Those are the

> words. I have to look at my thing there to remember them all 'cause it's brand new.... And you know the staff are really uhm, they are seeing that as being part of us, as who we are. So there's been good buy-in with that particular set of values. (pp. 3)

CNS4 explained that there was some discrepancy between what her health region vision statement proclaimed and the support given to their unit to enact the vision.

> They talk a very good talk, but when you get right down to it, and scratch the surface, you know it's all talk. But within our little corner of the world we are definitely trying to keep it up you know, keep up our patient centeredness and improvement and evidence based practice but, not with a lot of support sometimes. For example, they wanted us, they mandated us, to come up with a "patient and family centered committee", and so we've started this, and were trying to find patients to sit on this committee with us, to tell us how their experience was, and what should we be doing and how can we change things. So they said change all your signage so it's more family-centered and we wrote a beautiful sign.... You know who paid for that? Me, because there's no money in the budget. I chose to have it, I love the sign, it's up there. And you know, you don't have to pay me for it, but don't tell me how patient centered you are, if you won't even put up a 200 dollar sign. So it's probably really not what you wanted to hear because it really is not about my CNS role is it (laughs)? (pp. 11)

Values of individual staff and clients.

Several CNSs stated that due to workload and budgetary issues, they did not believe that client welfare was the priority on their unit. Compounding the workload and resource issues was a general misunderstanding and at times undervaluing of the CNS role by other members of their health care team. CNS9 shared

> ... because it's very hierarchal where the physician is on top and the patients are on the very bottom, you have these little fiefdoms that are created throughout the different health professions. So, you know with nursing, nobody's talking to anybody else; there is a lack of collaboration. There certainly is no patient centeredness, there's no pathway, there's no …patient-identified goals that they need to have addressed before they go home. (pp. 4)

According to CNS9 the lack of patient centeredness was reflected in a number of ways and included: 1) performing nursing functions for the benefit of the staff to the detriment of the patient, 2) not making attempts to get at the root of issues like incontinence or cognitive impairment and dealing then with the symptom, but not the cause, and 3) the use of the team nursing model which diffuses the responsibility for the patient.

> But again all they wanted me to do, and still want me to do is, is acclimate to their way of doing things, shut up, don't say stuff, and just help out with the work load because it's immense right? We have to put diapers on all of our patients because it makes it easier for us because we have so many patients and they're so high acuity and you know what? It's everywhere. But people don't diaper cognitively okay people, like even if you know if they're having some issues with cognitive impairment don't just diaper them, figure out what's going on because they weren't like that when they were walking and talking and coming into emerg. This is a big difference. Don't just acclimate to the differences, pick up on those differences, ask questions about why they are having these things. But in a team nursing approach, it doesn't happen because there's diffusion of responsibility. So, it's unsafe. (Pause) It's almost therapeutic talking to someone about this actually. (CNS9, pp. 18)

CNS 10 related that patients' trust that those in the healthcare system will look after them based

on best practices and they do not understand the inefficiencies in the system.

> Yeah, so even though the patients, of course patients don't get that, and they don't care about that I mean they just want to know that people are going to look after [them], they don't understand, I mean we have two different charts, theirs is on computer; I am not allowed [to] access it because I don't work for that unit anymore, the docs have access but I don't. And that is a bone of contention. The nurses here don't have access to it, so I am constantly phoning and thinking - you print me off this because I know it exists, they wouldn't even know that any of that information exists.... Which is about as archaic and ridiculous as you can get because this is if this isn't circle of care I don't know what is ....I still have weeks where I feel like this is ridiculous, I don't know what I am doing, I don't know why I am killing myself, this is insane, nobody cares, nobody knows what I do, nobody cares what I do. (pp. 9-10)

Promotes a learning organization or task-driven organization.

A few CNSs stated that they had the support and opportunity to further

their own growth in their position while others did not. CNS8 felt that learning

was promoted in her workplace,

> We did have the opportunity, fairly early on, within the first year, to go to Toronto together and were able to arrange interviews with CNSs in Toronto and that's really how we figured it out, what a CNS does. That's how it all evolved.... And it was very reassuring, uhm, and I'm so glad that they made that arrangement for us, to go to Toronto, because we did learn that every CNS role is different. And you just, I mean there are the commonalities in terms of the broad role categories. But within that, there is great variation in terms of how much emphasis each role gets and exactly what individual CNSs are doing. That was really nice, because then it let us adapt to the facility and pursue some of our own interests. (pp. 2)

CNS1 found that, “this position doesn’t allow me to grow anymore than what the general culture on the unit is” (p.10). She went on to indicate that the general culture was somewhat supportive but static. CNS9 was frustrated in her role as she felt her work culture lacked a professional focus.

> The whole discourse of professional practice does not exist here. They don’t understand it. So, that’s again another, they don’t, it’s not, it’s in the team nursing approach, it’s task based nursing. …it’s very union concentrated, so there’s no understanding or appreciation of professional practice. (pp. 6)

Some of the CNSs stated that they found their workplaces quite task-driven with little regard for client welfare and attributed this in part to the unionization of nurses. CNS10 stated that because CNSs’ work cannot always be measured by the tasks they do, they would likely be the first positions to be eliminated if there were staff cutbacks. CNS10 stated that much of nursing is measured in tasks and this was an issue in CNS positions as it is difficult to quantify what they do.

> But I also think that we are at risk, the CNSs right now with the cutbacks, [be]cause nobody really knows what we do. And it’s hard to qualify and quantify what we do and show that’s a benefit in any way shape or form to direct patient care or to.... I can see that as a potential, in these cutbacks, that we would lose our jobs. And, you know I’m qualified to do something, I’m pretty sure I’ll get another job, but it is a bit [worrisome]. And we are unionized, which bugs me. I’ve never been good with unions. I mean, whatever, works for me, doesn’t work for me. I’m going to do my own thing anyway. So, whatever, but I haven’t benefited from union up to this point so we’ll see what happens. But I can see that’s an easy layer of expensive nurses that they could get rid of. (pp. 29-30)

CNS role well integrated with strategic goals.

Although a few CNSs did articulate the strategic goals of their organizations, a number of them could not. However, most CNSs did comment on how they viewed their positions in relation to the general goals articulated by administration. CNS9 and CNS10 believed that the health region's vision and mission were not articulated in their workplaces and at times the visions were in conflict.

> So, in many ways that's in contrast to Health Region's vision, missions, values that we are trying to bring in and through this role I'm trying to make sure what we do on the unit is in alignment with that but, and we're working in the same direction, but, certainly the current structure is not. I mean it has to be gutted. Really, if you are looking at processes and structural pieces of this system; it needs a complete overhaul. (pp. 3-4)

According to CNS10,

> ... his [the director's] view is that my priority should be to decrease length of stay, so I need to figure out some way to get these people out of hospital as fast as possible. That's not my priority. So, I'm not saying there aren't ways to trim things up.... the level of care and our performance and what we do for patients and whether this is the right thing to do. That's my priority. (pp. 8-9)

The CNS role is poorly understood by healthcare workers across the province, and as a result it has never been effectively integrated or embraced by those in the system.

> And so when we are trying to bring in the clinical nurse specialist she had a very specific idea of what that CNS was supposed to look like, which was basically as far as I can tell, she [the physician] was looking for a physician assistant … for … that role. She wasn't looking for someone to so much advance nursing, as she was looking for someone to support her in what she did. (CNS3, pp. 1-2)

Relationships with others and teamwork.

A number of the CNSs had very good working relationships within their inter-disciplinary team whereas others found they spent the first few years in their positions trying to "win over" their colleagues. Those who had experience in their specific work setting prior to becoming a CNS were more readily accepted by co-workers than those who came from the "outside".

CNS1 had an extensive history with her unit and had good relationships with co-workers.

> … on the unit we're very autonomous primary care nurses, so I think the culture is very autonomous and there's definite respect between physicians and nurses and you know you have discussion, and your clinical decision making is very collaborative. (CNS1, pp. 9)

CNS4 had also worked on her unit for years before obtaining a master's degree with a CNS focus before she returned to Saskatchewan to take up her CNS role.

> The culture I personally work in is very multi-disciplinary. I work in a very good team atmosphere, which compared to, when I listened to some of the other CNSs, I am so fortunate, you know, that the culture that I get to practice in is a lot better then they do....So they know me, we have a history, and we've been able to all grow together …. All of the specialists, well not all of them 80% of the specialists that are working now, came up from like

> little baby doctors. So I've known them from when they didn't know a thing, until now that you know, and they treat me actually as their peer. So I don't feel anything less than that.... So I feel really, really honoured to have that respect from them...., and I'm just going to work very hard to make sure that, I keep that because that makes everything work better. (pp. 5–6)

CNS5 also had extensive experience with her team members but at times she found that there were some tensions based on professional designation.

> We have a lot to learn in terms of inter-professional practice yet. I mean we give it really good lip service, but there's still, maybe people that think that they should be the leader, but more importantly there's certain professions that feel somehow that they should be the leader and I think that really comes through in inter-professional teams. (pp. 1)

CNS3 was aggressively recruited into her position and she spent three years trying to win over team members. At the end of three years, she felt as if she had one ally.

> I came in as somebody they didn't know, and here I was, a clinical nurse specialist, and they had an idea that I thought that I was better than they were and that I didn't, they didn't know what I had to offer. And so rather than try to find out, they basically shut me out. I felt like I had no colleagues there except for the clinical nurse educator, was very much, very accepting of the role and she got the role, she understands it, which is really nice. So we worked together. We did some things together. And she certainly was one of the reasons I stayed as long as I did, was because she was a colleague, but she was the only one in the whole group. The longer I stayed there, the more they started to accept me as a person, but I still don't think that they accepted the CNS role. I think mostly it was because they didn't understand what I did, and they felt like I was an imposter or whatever because I hadn't grown up there. And they didn't, I hadn't had a chance to show them what I knew. (CNS3, pp. 4)

Rewards, recognition and pay.

With regard to rewards and recognition, a number of issues caused some conflict for the CNSs. The issues included union classifications, pay levels, and educational requirements for those in APN roles in the province. There were classification and pay discrepancies between health regions for CNS positions and there were pay discrepancies between the NP and CNS roles despite differing educational requirements.

Although CNSs were covered by the same Saskatchewan Union of Nurses (SUN) contract, CNSs in one health region were classified and paid differently than CNSs in another health region. Currently there are three classifications: Nurse A, Nurse B, and Nurse C. According to the April 2011 Contract, Nurse A on step 1 of the pay scale would earn $34.25 per hour and $44.46 per hour on step 6. Nurse B on step 1 would earn $37.33 per hour and $46.56 per hour on step 6. Nurse C would earn $40.70 per hour on step 1 and $49.85 on step 6 (SUN, 2008).

In her health region, CNS6 is classified as a Nurse B and offered this comment about the classification.

> In another health region, it is my understanding that [CNSs] are more of a level C, which doesn't seem fair, if it's the same kind of job that you're doing in one region to the other region is paid differently.... It's different, and financially there's no incentive to be in this position. (CNS6, pp. 6)

As well, several of the CNSs who were classified as Nurse C stated that compared to those in NP positions, they were not fairly remunerated. The pay discrepancy was keenly felt due to the differing educational requirements for the two ANP roles. A CNS needs to have a Master's degree and at this point there are many NPs in Saskatchewan who have various educational backgrounds.

> I'm classified as a nurse C. So … basically [the] CNS is the only nurse C that we have within our region, and the NP. However I don't get the six dollar stipend shift diff[erential] that the NPs get on top of their level C wage.... And yet … [NPs] don't even have the educational qualifications. (CNS4, pp. 15)

CNS4 stated that in Saskatchewan, NPs could have a nursing diploma, a baccalaureate, or a Master's degree plus NP certification. "To compare master's prepared NP with a diploma-certificate prepared NP, how do you how do you even measure those two as the same?" (CNS4, pp 16).

According to Dr. G. Donnelley (Associate Professor, College of Nursing, University of Saskatchewan, personal communication, June 30th, 2011) this discrepancy in NP education occurred in Saskatchewan when in 1992, the provincial NDP government closed 52 rural hospitals and turned them into wellness centres as part of a shift from institutional care to community based care. Understandably the citizens of the communities where the closures occurred were

angry. The provincial government promised the people in these communities that they would have access to health services provided by nurses with advanced skills. These advanced skills courses were offered at Saskatchewan Institute of Applied Technology (SIAST) in Regina, Saskatchewan. Until 2010, the requirement to attend the advanced skills course was a diploma when SIAST changed the requirement for entry to a baccalaureate degree. In Saskatchewan nurses with diplomas and baccalaureate degrees along with advanced skills preparation can call themselves NPs and be paid more than CNSs with a master's preparation. The University of Saskatchewan has offered a Master based NP program since 2009.

Resources.

According to the PARiHS framework, for EBP to be operationalized those facilitating its implementation need to have access to human, financial, and equipment resources. There is less potential to implement EBP if resources are not allocated. When initially hired into CNS positions the majority of the CNSs who were interviewed stated that they had been well resourced. They had access to budgets to make improvements, they were able to obtain work-related materials such as glucometers, scales, display materials, and they were encouraged to attend

and present at conferences to learn and to network. However over time, only one of the CNSs interviewed continue to have access to resources they need while others found that deficit budgets derailed some of their plans to improve patient outcomes and their own professional development.

CNS2 initially had access to funds for work related travel and professional development, but over time the budget did not allow for these same activities.

> Although it's changed from when we first started up, I remember my old boss saying to me, "You know you're a clinical leader in this area, you're a resource to communities, you're expected to go to at least three professional development opportunities in a year". This year, it was one. And it couldn't be too pricy. (CNS2, pp. 5)

Similarly CNS4's initial access to the required resources dwindled over time, when they had deficit budgets.

> Resource-wise, you know, when I was first starting in the role, the resources were all there. … If we wanted to start things, there was money there for it and you know what, we made great strides. And now… we're in a deficit year and there's no money for anything. You know, so something that is simple is, I'm really trying to prevent falls or work on falls on our ward. And so we are trying to start a red slipper club for our people who have fall risks. Trying to get red slippers; which I mean in the grand scheme of things cost nothing. I am having to jump through so many hoops.... We're just putting these new ET tubes on our crash carts, which are 80 dollars a tube, you know, yeah no problem. But I can't order a slipper that may prevent a fall that could prevent four days of hospital stay, or a broken hip, or somebody's death. Are you kidding me? Let's see the rationale here and then you come next to me and you say, you gotta get your patient days down, you know. We're on a budget, and if you don't get them down we'll

> make you get them down by cutting your beds. …threats never work. (pp. 7-8)

CNS7 never had a budget and this made her dependent on other units for resources.

> So essentially I have no budget for any kind of education.... I can get stuff once in a while, but there are virtually no resources that aren't owned by the units and the bigger part of the region. So there's no resources tied specifically to this, I do not have any kind of budget, to do regional workshops, to do anything. (CNS7, pp. 8)

CNS1 was positive about her ability to access both equipment and human resources to carry out her work.

> We have a good unit, actually, we have an educator and then me, the clinical nurse specialist, we have neuromodulation, so we have clinic nurses over there, and then we have all of our unit nurses, we have a resource nurse and we have another older senior nurse that's on accommodation [be]cause she hurt her shoulder. So we have lots of different resources, people walking around (CNS 1, pp. 9). Yeah, I would say, I have a really good workplace. (pp. 13)

CNS4 who was initially hired by a health region at the outset had her salary paid through the physicians' budget on her unit until she demonstrated positive results in her clinical practice. Once her CNS position was found to be effective in terms of improved patient outcomes and decreased costs, the health region took responsibility for her salary. Physician funding of a nursing role from their budget is a sign of a cohesive work team but it is an indication of a lack of nursing leadership.

Leadership.

According to the PARiHS framework, those who work in contexts which are led by transformational leadership have role clarity, effective teamwork, effective organizational structures, democratic decision-making processes, and an empowering approach to the workplace are more likely to promote EBP than those who lack these same elements. When asked to describe the leadership in their workplaces, participants had varied experiences. Many of the CNSs had lived through multiple changes in leadership. Some felt quite supported in their roles, while others felt quite isolated. As CNS2 reported,

> Leadership has been changing lots. … in the past year and a half, we've had … four. …And all of them have very very different leadership styles and very different \communication styles. So it's been…challenging… [and] interesting. At times it's been very frustrating. (pp. 4)

Some of the CNSs stated that they did not have nursing leadership in their health region and as a result they felt they had no one to turn to for guidance and support when faced with challenging situations. CNS4 captures this lack of leadership as follows,

> Well we don't really have nursing leadership, you know. They hired [a] nursing leader and she lasted three months and she's gone. We don't have a professional leader for nursing. So from a nursing perspective, I have a manager who is very strong and is very supportive and I can go to her for anything and she's there for me. But as a culture of nursing within this building, I don't see any professional leadership at all.… I believe that I'm a

> leader for the staff nurses…but I don't see a leader for myself. So that's just the way I feel with that....But here at work, no. I feel like I'm always the go to person. I don't have anyone to go to. So it gets a little, so if you went across something it's just like okay, you know, so then you've, it's a lot of work to try to figure out all by yourself. So that's why I [am] really excited about this CNS association of Canada … we can connect and I'll find somebody I can bounce things off of. But right within the culture I work I don't feel I have a leader to go to, other than my manager, but nobody to get me any further. (pp. 6)

CNS7 expressed her concerns by stating,

> Oh lord, I'm very much on my own. I link over to a lot of the clinical people there but I essentially work fairly much in isolation, which isn't my favourite part of the job. ...I can make recommendations, but, depending on who, on the management level is, depends on whether or not it will ever be implemented. (pp. 5)

A few had front-line managers with whom they could discuss challenging issues. Others explained that their managers were unsure what the CNS role entailed which led to challenges in defining the scope of their role. At times, the CNSs used the terms manager and leader interchangeably as though they expected that their managers would also fulfil the role of leader. CNSs also found themselves reporting to various levels of management which at times led to some confusion concerning their roles. CNS8 found that the Vice President of Nursing in her organization was very supportive of the CNS role but the CEO of the same organization viewed the CNS role as "a management role. And you know, 'go out

there and find out what's wrong and come back and tell me who's...' he wanted the dirt" (p. 7).

CNS4 stated that when posting CNS positions, human resource and nursing management did not appear to understand the CNS role and how it might be operationalized. She believed that this lack of understanding could lead to unwarranted optimism regarding what one CNS might be able to accomplish.

> For example they had posted four CNS positions here. And one was a CNS for ENT, urology, and plastics. I'm sorry, no such CNS exists because those are three distinct specialties. So you're not going to get a CNS that has those qualifications. So that tells me right then and there that you're not looking for a CNS, you're looking for somebody to assist the physicians, right? Like it's a flow, or a patient flow, or something that you don't want a CNSs skills for.... That's the problem when nobody understands the roles, so then how do you post for it? (CNS4, pp. 2)

In addition to her CNS role, CNS6 also had management responsibilities. She stated that she met with her manager weekly to provide her with a general overview of what was happening on the unit, and to determine if there were challenges with staffing, various clinics, or physicians. CNS6 reported that the meetings were helpful because it allowed her to be involved in decision-making processes that affected her work environment. Other CNSs had to contend with multiple levels of bureaucracy and needed help from an executive site director to accomplish minor goals. CNS4 found that in order to get whiteboards for her

office she had to deal with materials management and was told "that they'd get around to hanging my white boards in nine months" (p. 7). With the help of her executive site director, CNS4 was able to get her whiteboards within a month because the executive director "is so much on my side, and she champions things for me, and if I didn't have her, I would be lost in my tracks, I would be stopped in my tracks (p. 7).

According to CNS10, hospital administrators in her health region saw positive outcomes based on CNSs' work and expected that every CNS follow that same path, although they did not understand the dynamics of the different CNS roles.

> … after I was hired they [hospital administrators] decided that we should have more CNSs, this is going good apparently. I think mostly [be]cause of what other CNSs managed to accomplish on their units. This was going to be great and they posted other positions, but obviously they didn't know what they were doing because they posted the positions as, to us initially it looked like they were looking for physician assistants or someone to act as a physician. (CNS10, pp. 11-12)

The CNSs' answers to question one in terms of organization, resources, and leadership were quite diverse and covered a range of experiences. The PARiHS framework's components of Culture and Leadership were helpful in organizing the data. Many of the CNSs faced significant contextual challenges in

their day to day work and yet were generally motivated to continue improving client outcomes in their respective practice domains. Prior to the start of the study, one participant did leave her CNS position because she lacked support from management which made her situation untenable. She currently works in nursing education. Also, since I completed data collection two other CNSs have changed their career paths.

Contextual barriers to promoting EBP.

In addition to encountering facilitators and challenges in the workplace, CNSs also faced barriers which made operationalizing their positions difficult. A barrier is something that obstructs or blocks access. At times CNSs did overcome the barriers and the difficulties presented. At other times they realized they would have to wait for "the players to change" (CNS10, p. 14) before they could progress with implementing EBP. In the section that follows I present the survey results on barriers, with related excerpts from the interviews to further illustrate the impact these barriers had on CNS practice.

***Barriers to using and disseminating research*.**

The major barrier to using and disseminating research were the *multiple roles fulfilled by the CNSs* (X = 4.35). This was followed by *heavy workload* (X =

4.26) and *time constraints* for both the *front line nurses* (X = 4.17) and *for those in the CNS role* (X = 3.96) which indicates these are common barriers. Barriers to *accessing libraries*, *resistance of managers*, or *working in unionized environment* were rarely reported (See Table 12). In the open-ended questions nine participants reported other barriers in their work settings. These were lack of respect for their knowledge base, lack of respect for nurses in general, having a program manager who is not a clinician, being unable to put good ideas into practice due to budget constraints, working with front-line nurses who did not understand the CNS role, staffing levels, working in multiple jurisdictions which led to difficulties in accommodating differing needs, lack of money, RNs' understanding of their scope of practice as well as giving away nursing procedures to others "giving away the farm," and a lack of understanding of the expanded role of the nurse by co-workers.

Table 12: Most to Least Commonly Reported Barriers for the Use & Dissemination of Evidence

Barriers	N	Mean
Multiple roles as a CNS	23	4.35
Heavy workload	23	4.26
Time constraints for front line nurses in clinical setting	23	4.17
Time constraints in your daily practice	23	3.96
Lack of resources (e.g., physical, human, education & financial)	23	3.61
The autonomy perceived by nurses in the clinical setting	23	3.52
Organizational complexity and/or bureaucracy	23	3.48
The value placed upon research findings by front-line staff	23	3.39
Poor understanding of your role as a CNS by other staff	23	3.39
Staff difficulty in understanding content of published research	23	3.26
Inadequate collaboration between the practice setting and educational institutions	22	3.23
New evidence conflicts with current practice in your area	23	3.17
Resistance of staff at various levels	23	3.17
Not having enough authority to effect relevant changes to policies	23	3.04
Lack nursing literature pertinent to your area of specialty	23	2.65
The unionized environment	22	2.45
Resistance of mangers at various levels	22	2.45
Difficulty accessing libraries	23	2.17

Missing data* occurred when participants chose not to respond to an item.

When interview participants were asked about the kinds of barriers that influenced their practice, particularly around implementation of EBP, they offered varied responses that fit in three broad categories. The first category was role ambiguity. Many of the CNSs stated that the people with whom they worked really did not know what the CNS role entailed. Some worked with managers, physicians, and co-workers who did not understand the contributions CNSs could

make in their workplace. The second category of barriers was bureaucracy. Many of the CNSs felt that their organizations' bureaucratic structures contributed to the slow and unwieldy processes that made implementing any change difficult. The third broad category was availability of resources. Each CNS faced budgetary constraints and when practice change required funding, it was difficult to impossible to implement.

No power to change anything.

CNS3 stated that she had a "limited ability to implement change – lots of times the CNS will have a good idea but not have the power within her role to change anything" (p. 8). CNS9 repeated a similar sentiment, but added the element of resistance to change from the nurses with whom she worked, "I'm just providing them with opportunities to enhance practice, which they want no part of it. And there's more of them than me and I don't have the authority to design and change things" (p.19).

Role ambiguity.

Because no two CNS positions are alike and the balance of the five domains of CNS practice may vary, it is difficult for CNSs to define exactly what their role as a CNS entails (DiCenso & Bryant-Lukosius, 2010b). This leads to

role ambiguity and all of the CNSs interviewed stated that many people in their workplace did not understand the advanced skills and expert level clinical knowledge they possessed. Some CNSs believed they did not have the power to change practices in their areas. Others dealt with hostility from co-workers who may have understood the CNS role, but did not value their potential contribution.

CNS1 reported that even though she had worked with the same general group of people for several years, she perceived that these colleagues were still reluctant to utilize her knowledge and skills. Based on these experiences, she believed that " if it [CNS role] was well written and well documented that this is what you did, then that would be a lot better than what it is now, because if no one knows what you do, then they'll be reluctant to, and these are people that I've worked with forever" (p. 19). CNS10 also struggled with role ambiguity and similar to her co-workers, at times she felt her role was undefined.

> I still have weeks where I feel like this is ridiculous, I don't know what I am doing, I don't know why I am killing myself, this is insane, nobody cares, nobody knows what I do, nobody cares what I do. And then I'll have a moment where OK, that was worth it. And that will have to carry you for quite some time, because honestly, it is such an undefined role, and I feel bad. (pp. 9)

CNS4 stated that the lack of understanding as to how CNSs accomplish their goals on various units, led management to posting CNS positions in their institutions without understanding the scope of CNS practice.

> So they're just plucking people off, and putting them in, but if they don't have the skill set to be a CNS, or to be a CNS in the area that they've put them in, or if they don't really want a CNS, if they think that, well we've gotten is, I'm not sure what they're thinking. I think they want the results that we've gotten but they don't understand how I achieved them, right? I didn't just achieve them, you know. I achieved them because I'm a CNS, and I've used all of the roles, but I also have that background of what I'm working with, you know? So that's what I find really frustrating. (pp. 3)

CNS4 also talked to other CNSs in her facility about their managers who only wanted them to relieve nurses for coffee breaks. "So what job satisfaction is that, you know?... But to have her sit there and baby-sit and relieve for breaks, come on that's insulting" (p. 10). CNS3 and CNS9 reported physicians' lack of understanding of their role. As CNS3 expressed,

> … when we are trying to bring in the clinical nurse specialist, the physician had a very specific idea of what that CNS was supposed to look like, which was basically as far as I can tell, she was looking for a physician assistant …. She wasn't looking for someone to … advance nursing, as she was looking for someone to support her in what she did. (pp. 1-2)

CNS9 shared,

> The physicians look at me like a police officer. They don't understand the role, but they also look at me as... she's not a nurse, like a floor nurse, so she's not a person I can tell what to do. I don't know if I'm accountable. It's hierarchal right? I'm not kidding. So I can't give her orders.... but they are

> not really sure what I do, but they know I'm not happy with the practice. Uhm, that I have issues with safe patient care, so, so they're like, I can't do anything to her. (Laughs). She's not under my fiefdom. Sooooo, what are we going to do with her? (pp. 4-5)

For CNS8 the biggest barrier has been

> people who didn't understand the CNS role and didn't value it. And that was both, you know, management, physicians, uhm, I wouldn't say nurses. I mean they were sometimes hostile or sceptical, but I wouldn't say they were barriers, the way a physician, who is really blocking you, can be. (pp. 9)

CNS7 was the second nurse to practice as a CNS on her unit. The first CNS was unaware of the CNS roles developed by the CNA. So not only are managers and physicians unclear about what the role entails, the same is true of some CNSs.

> I still think there needs to be an understanding of all of the roles, you know.... I had shown her the CNA document (regarding CNS competencies) at one point in time, and she had never seen it before, so she did have some experience of what the job entailed, but not the scope of what the job could be. (pp.4)

Regarding barriers in her practice, CNS7 stated, "… there is a general lack of understanding of the CNS role in the whole region and in the whole province...." (p. 18).

Hostility towards the role.

A number of CNSs discussed the barriers they experienced fitting into the culture of their units when they first started as CNSs. For some the transition took

six months to several years and for others there was a feeling that they were never going to be accepted. CNS8 expressed the following:

> There were two nurse managers there, I think one of them … is a very friendly warm kind of person and I didn't have problems with her. The other one, I sensed definite hostility. You know, "who does this degree nurse think she is? Coming in and she's going to tell us what to do." And certainly some of the nursing staff that was a problem for many years too, because there were very few, in fact I may have been the only degree, like BSN nurse. If there were any others, they weren't very obvious, so a university education was certainly not welcomed by an identifiable proportion.… I really did feel I had to be very careful about how I approached things and you know, I certainly didn't, I was conscious of not holding myself above them. It was an issue. (pp. 4)

Similarly, CNS3 recounts the following about the role.

> I would try to explain the role as best as we could, but [it] wasn't just that they didn't understand the role... they didn't accept the role and I don't know exactly why, although I know some of it. Many of the nurses that had been there were brand new nurses who started in here 20 years, 25 years, 28 years before and were very, very competent and very skilled nurses. And I came in as somebody they didn't know, and here I was, a clinical nurse specialist, and they had an idea that I thought that I was better than they were and that I didn't, they didn't know what I had to offer. And so rather than try to find out, they basically shut me out. I felt like I had no colleagues there except for the clinical nurse educator, [who] was … very accepting of the role and she got the role, she understands it, which is really nice. So we worked together. We did some things together. And she certainly was one of the reasons I stayed as long as I did, was because she was a colleague, but she was the only one in the whole group. The longer I stayed there, the more they started to accept me as a person, but I still don't think that they accepted the CNS role. I think mostly it was because they didn't understand what I did, and they felt like I was an imposter or whatever because I hadn't grown up there. (pp.5)

Bureaucracy.

At times, the institutional or the bureaucratic processes that were in place in different health care organizations were barriers to implementing EBP. The barriers were in various forms. Sometimes it was the processes used by the purchasing or house-keeping departments, while at other times it was a general institutionalized resistance to change. Several CNSs had supervisors who lacked a health care background and without a healthcare background, CNS2 believed it was like they were speaking different languages and this was also a barrier to implementing best practices.

Many of the CNSs had stories regarding members of the bureaucracy who blocked attempts to improve practice. Sometimes it was by health care team members who withheld their expected contributions and at other times it was the institutional processes that created the barriers. For example, CNS1 recalled a situation where she wanted to get a department head to attend unit meetings. CNS1 would remind him that he was invited to unit meetings and that he had a place for updates on the agenda. He would find excuses not to attend the early morning meetings at 0700h because these were "not physicians' hours.... I don't

start till 10:00" (p. 19). CNS1 stated that nothing she did pleased the department head to the point [that] she did not want to work with him any longer.

CNS4 was attempting to decrease stays by assessing patients on her unit who were at risk for falls. In order to decrease falls on her unit she wanted to get slippers with grips for those patients at risk. She found the bureaucratic process to attain the slippers to be a big barrier.

> So we're trying to start a red slipper club for our people who have fall risks. Trying to get red slippers, which I mean in the grand scheme of things cost nothing. I am having to jump through so many hoops. Like I had to clear with, uhm, so I sent off, I had my manager send off the request to get them and I gave them the two companies that supply them. Just to give me a quote for them. They won't even give me a quote until I clear it with material management manager. And then, from that person no, you need to get permission from OH & S [Occupational Health & Safety]. So why do I need permission from O H & S? Well what if they're slippery? They've got grips on the bottom. Well what if a staff member falls? Well staff aren't wearing them. So I'm having to justify stuff like that to people that I don't feel I should have to justify it to. Frustration to the max. I mean are you kidding me? (CNS4, pp. 7)

Resistance to change.

Many CNSs found that resistance to change was a barrier to implementing EBP. CNS9 had attempted to change the format of the medication binders to decrease the number of medication errors on her unit but met with resistance from her co-workers.

> … what would be really useful would be having a binder for every patient with some pertinent information, their vital sheets, you can track their trends with their medication sheets. Oh my gosh, mutiny, absolute mutiny. Well, it will fall off the chart, it will go missing, how could you have all, it would be too much work, we'll be running around looking for the information for the patients. Like, are you kidding me? They have issues, they've given the wrong medications to patients because sometimes they go from front to back in the binder and sometimes back to front in the binder and sometimes when you go from back to front, because it's not a normal way of reading, bed A gets bed B's medications. Because you've got them all in the same binder and you're going the wrong way, instead of having the patient's binder with you when you are doing these things. It's just so frustrating. All of these things that are just so apparent, so obvious, so easy to change, and they are so resistant to even small [ones], the binder, honestly, mutiny. Oh, we had to have a staff meeting. Because how dare I, as the CNS, decide to implement something, even as a test. (CNS9, pp. 19)

CNS11 found resistance to be a component of a larger cultural norm as reflected in the following example.

> That resistance to change, you know, its people will say we've always done it like [this], why are we going to change it? We've still got smaller centres that don't want to change from the days when they were their own unique little entity. They weren't part of this bigger organization, so even showing them this is best practice, even you know that's like I say really valid, that this is the best practice, we're not doing this because we're the big bad organization coming out to take you over. But we're doing this because technically, this is what's best for the population in general, but no, they don't see it that way. (pp.21)

Supervisors with no clinical background.

A number of CNSs worked with supervisors who they believed had been promoted beyond their level of competence and because of this they were

perceived as defensive when they put forth ideas. The lack of understanding of a healthcare context was a barrier as illustrated by the following excerpt.

> And when I say, no background, I'm not saying, "Oh they don't have the letters behind their name and they haven't worked blah, blah, blah, blah." These are people who do not have health care backgrounds. … One of them I don't think has a degree at all. Another one is a human justice, social work. These people have never worked in healthcare settings; they aren't health professionals. So when you see things like this, I'm not trying to vilify anybody, but you're almost speaking two different languages. Now to compound this, if you have folks who don't have a clinical background and they don't have a cultural background, where do you start? I'm not saying you can't start somewhere, you have to start somewhere, but if you have a level of resistance and defensiveness then it's an up-hill battle. I'm really trusting you with this. (CNS2, pp. 12)

Resources.

CNS1 felt that her position was well resourced, but the remaining ten CNSs who were interviewed believed that lack of access to resources was a barrier to implementing best practice. Budgets were one component of the scarcity of resources, and as a result they believed that the nature of their positions led to role strain.

Budgets.

In healthcare tight budgets are an on-going issue and most of the CNSs stated that they were asked to do more work with smaller budgets. CNS7 was employed by a large health region which encompassed a large rural component,

but she did not have a budget for rural travel which meant she could only travel to rural facilities if they paid her travel expenses. CNS8 found that there was not only a lack of money for equipment, but there was also a lack of resources for on-going professional development.

> Well resources and budget, well, the fact that this issue is so pervasive and that I'm one person in this educational portfolio for a region of 300,000 people, that could be a little bit of a barrier. Distance: it's a 250 km size, the region is, [and] we now have no rural travel budget. We do have tele-health. I'm hoping to expand on that.... Now when that's going to happen, if in my lifetime, I don't know. But those are the kinds of things that should be happening [and] they're not. (CNS7, pp. 17)

Other barriers, according to CNS11 included government policies which lead to uncertainty about monetary resources. She also saw shrinking budgets as an opportunity to become creative with carrying out the work of the health region by thinking outside the box.

> So in some ways the barriers can be government policy. Now, right now, I'm sure that there's health regions around the province especially with this reduce the overtime, reduce the sick time, reduce your disabilities, stuff like that, I'm sure those regions are just pounding their heads against the wall, I think again it goes back to the people. The ones here are saying, well lets rise to the challenge. They're looking at it from the angle of yeah, let's see what we can do you know. But they're also recognizing there can be a negative side if we don't rise to that challenge, if we don't meet that challenge. So there's the potential for a barrier because, who knows what the government here's going to say if we don't meet that particular standard, or that jump, if we don't get over that bar that they've set for us. So that is the potential. Money of course is always a barrier, you know money is always the challenge. But again it's a case of how you use it,

> what's the best, we've got X number of dollars, what can we do? And sometimes it's like I say, some creativity, let's think outside that box. (pp. 21)

With a lack of resources for professional development, CNS8 lost the opportunities for professional growth and networking with others,

> You know, there's never enough money to, ...let you go to a conference just because it's good for your professional development and networking and so on. And I see that as a barrier because the ability to discuss with colleagues in other settings and centre and to network across the country is very important with this kind of a role. Again, that's been one of the things, that when we had the opportunity, it certainly fed us. And I've used my contacts. I keep the attendee lists from the conferences I've been at and I do phone people, I have the business cards. And then when I run into something, you call them. Sometimes it seems like you are re-inventing the wheel as they may be doing the same thing in another place. You'd like to know if somebody else has done this already. (pp. 15)

Role strain/time management.

The CNS role has five domains and each CNS was able to determine the percentage of time they allotted to each domain. Most worked overtime in attempts to complete the work they deemed necessary. This led to role strain. CNS7 wanted to spend more time in the clinical domain so she could better understand the practice environment of her co-workers.

> The other issue I have is that I have very little time to do any clinical, hands on clinical. And I spend a lot of time doing education preparation and I'm now starting to do a little more of the clinical component, but what I've found that I have to do, and what I've found works, in order to, because if I'm going to actually teach to a group of nurses and be relevant to their practice, I essentially have to know what the practice environment is.....But

> that's the time commitment, is an incredible barrier, and without doing that, it's, I don't think you can make it relevant. You come in there and parachute in until everybody reads you're this and you're that, but if I don't know all of the equipment in your environment, and I don't know what some of the barriers are in your workplace, how can I ask you to integrate these things in practice, so it's obtaining that into knowledge and it's the time, and I find if you don't do that you're pretty much useless. (CNS7, pp. 14-15)

CNS7 also found that determining how to integrate or disseminate evidence into the workplace was difficult as the new evidence was competing with other broader health region mandated initiatives.

> So that's the biggest barrier, is actually figuring out how to reach people to have them actually absorb and take in information and actually translate that into practice. Sometimes you do, if you, hopefully the managers are interested she can help. He/she can help. And there's also 15 other projects going on. Patient First, and medication management reduction projects, and electronic charting projects and there's a lot of competition for the spotlight. (CNS7, pp. 16)

Some of the CNSs worked extended hours which were either compensated with time off or considered voluntary and not reimbursed.

> Well, so I work 6-2:30, that is what my hours are supposed to be, that's what I'm scheduled for, but I usually work 6:00 to 4:00 or 5:00, sometimes 6:00, so yeah that's why I think I'm getting tired. You could definitely have two people in this role. There's way too much going on, that I'm trying to implement, and then just you know keeping up with the other stuff that we have, and yeah it's a lot of... Because once you achieve something, then there's more to move on to. But you still have to be there to kind of keep the other stuff going along right? So yeah, and you know, I want to keep moving forward because I don't want to get stale, but its tiring, so. (CNS4, pp. 4)

When asked if the overtime was compensated, CNS4 gave the following response,

> I bank some of it. Some of it I just don't even bother because it's just, I bank some of it if I have to do, if like I'm getting a report together for somebody, or if I'm doing something that has to be done, sometimes I just leave it because I'm being there for my psyche. So I think well why am I paying them for my psyche, you know. If I was a different person, I could maybe leave it and say no I'll do that tomorrow, but if I'm getting into something, let me just finish it. So that's and that's my personal choice. (pp. 4)

CNS8 found that including various stakeholders in decision making processes often delayed implementation processes.

> There's a multiplicity of roles and just trying to do everything you can see, that you would like to be doing. Another one, the nature of some of the things that we did, that are long-range that just the length of time that it might take, from conception to completion, maintaining both your interest, and not getting side-tracked or derailed, and that's a barrier.... Or just that you have to take it to so many stakeholders and get approval from them, or buy in from other people. It all takes a lot of time and derails so easily. Like summer-time, everybody is off at the lake, so okay, you have wait 3 months for people to regroup again. So, a project that you might think is going to take 6 months, takes 2 or 3 years. And the conflict between different stakeholders timelines too, "Well why haven't you got it done yet?" Well, because... (pp. 9-10)

The Role of Facilitation

According to the PARiHS framework, facilitation refers to how a person makes things easier for others by helping to change their attitudes, habits, skills,

and ways of thinking and working (Rycroft-Malone, 2004). In order to determine whether the facilitation process will be successful, one needs to examine the purpose, role, and skills and attributes of those who work as facilitators, such as CNSs. Those who work as facilitators have many roles and they are required to determine the readiness of an individual or team to accept and understand evidence in the workplace (Rycroft-Malone, 2004). The facilitator also needs to determine receptivity of the workplace environment with regard to resources, culture and values, leadership style, and evaluation processes. This section addresses research question number three: What attributes and skills do CNSs believe they need to facilitate EBP?

Within this section I first present findings regarding purposes and roles that are deemed necessary by the PARiHS framework such as: sustained partnership, presence in the practice setting, use of a developmental approach to teaching, co-worker support, and effective transfer mediums. The remaining section includes a presentation of the skills and attributes necessary for facilitators to implement change including educational preparation, clinical expertise, and communication and people skills.

Purpose and roles.

Those CNSs who had worked in their practice area prior to accepting a CNS role found that their work was facilitated by the history they had with their co-workers. CNS7 found that having worked in her setting prior to becoming the unit CNS facilitated her practice and consequently helped to improve the practice of her co-workers,

> I've worked exclusively in my practice area now for about 10 years.... I actually developed a resource team in home care, and as part of that, I developed relationships with other nurses around me, and with a lot of that, the physicians in the community. We had a lot of interaction with physicians and trying to change their practice and we were fairly self-directed. (pp. 12)

CNS4 explained "[I] worked in my specialty for all 14 years that I've been here. So they know me, we have a history, and we've been able to all grow together" (p. 5). CNS1 also had a sustained partnership with her co-workers, "I have a very good working relationships with my colleagues... and I think that that I worked out on the unit for 10 years before I, and then I'm also very visible" (p. 17).

CNSs stated that a constant presence in their workplace facilitated their CNS practice and implementation of EBP by staff nurses. As mentioned previously, CNS1 had sustained a long-term partnership with her co-workers and was consistently present on her unit. This aspect is captured by CNS4 who stated,

> Oh yeah you have to be present on the ward. You can't just dictate it, "I declare that you should do this because the evidence is there". No one's going to do it because I declared it. Go out there to have to prove it to them. You know, if that means standing at the bedside with them, to do it, that's what it means. But for some people, that's how it is. (pp. 18)

CNS10 indicated that her presence on the unit facilitated her ability to see if the EBP she was promoting was being implemented. "Because I'm out there on the ground, [be]cause I probably spend ¾ of my day out on the floor, I can watch to see that it's [EBP] actually being implemented" (p. 17). As a rule for CNSs who worked in acute care settings, a physical presence did facilitate their interactions with co-workers.

A developmental approach as opposed to a didactic approach was more helpful in facilitating the implementation of EBP. This approach, which considers and respects everyone's opinions as they co-construct the implications of the evidence into practice, was very important in the implementation process. As CNS10 recounts,

> the gentle nudging on the spot works so much better, than the directive from the classroom sort of thing. So I just find that being there and saying, let's try it this way, or you know the new policy says we're supposed to do it this way and do you know why? ... When you can give more background is the way to get change. Not just directly sending out memos from afar, so that doesn't usually work. (pp. 16)

CNS7 expressed the

> …need to have mutual respect and so you build up that rapport by recognizing that they may not know all of the best practice guidelines, but what you do over time is you teach them how you can improve on their patients. And all of them want to see success with their patients. They don't necessarily want to know how we got there, but they want to see success. And so, by not getting in their face, and by trying what they suggest and then making some nice quiet recommendations, I can, there haven't been too many doctors I haven't gotten along with, and you know that whole respect issue has been huge in facilitating practice. I mean, that's probably the only thing that's facilitated anything actually. (pp. 12–14)

The CNSs stated that a developmental or adult learning approach during interactions with co-workers was needed to promote EBP. They found that didactic approaches were not nearly as effective.

The CNSs also talked about the importance of having supportive co-workers. CNS8 was the only one in the entire study to have a CNS for a colleague, "So just the fact that there were two of us, and we could share, and we talked a lot about what was going on and how we're going to approach or handle things, [and] develop some joint expertise. So having a colleague…was a big thing" (p. 9). CNS11, who was employed in a rural health region, worked predominantly with co-workers who were proponents of EBP.

> I think we're fortunate because we've got two nurses on senior management team who are both, they have very strong opinions about, let's use best practices… when we're providing patient care. And they've got a strong enough voice to support nursing in using that. So I think we're fortunate. We've also got a number of people, like say in that director, manager level,

> they're going yeah, let's use best practices. The educators, the clinical educators, really are strongly attuned to let's use best practice. (pp. 18)

Many of the CNSs discussed how they needed to "win over" co-workers prior to being able to facilitate EBP in their work-place.

When asked what transfer medium would be the most practical for CNSs to promote EBP CNSs had two common responses: personal interactions and making best practice information available in written form. Both of these approaches were implemented formally and informally. The personal interactions included being at the bedside with nurses, participating in rounds, in-services, workshops, conferences, and weekly teleconferences. Making best practice information available included highlighting best practice guidelines or relevant research articles and leaving them in the work area in binders, on bulletin boards, or in the coffee room for perusal.

CNS3 stated that it was important to be "on the ground" with nurses while they were attempting to change practice in order to demonstrate best practice and to trouble-shoot challenges nurses may have with new practice. CNS7's practice covers a number of facilities that limits nurses' access to her skill set. In order to promote EBP given her limited contact hours and when she goes to rural Saskatchewan she said to the nurses, "'We're going to go out and we're going to

see these clients... and I talk to the nurses about what I'm seeing, what I think, how they could change their practice, and that visual seems to speak volumes" (p. 17). CNS4 also scheduled daily rounds on her unit to make sure patients' issues were addressed in a timely manner and were not left to languish.

CNS2 found that workshops were the best medium to promote EBP. "I'm sure there [are] things that I can do better and I'm doing better as I go, but I pride myself in having some good back and forth discussion, and not shutting the door when the workshop is over" (p. 14). The workshops facilitated the dissemination of EBP guidelines and interaction with the participants during and after the workshop. CNS6 held "popcorn in-services" where popcorn and soda were served mid-afternoon while topics of interest were presented and discussed. CNS1 found that while in-services were helpful not every nurse who attended was interested in learning,

> Then I get in-services always, even if people are sleeping through [them], I think they absorb some.... And people will put up a lot of resistance. I say fine, don't listen, we're just having coffee here, you just have your coffee over there in the corner and they often go, and they go, "so what was that?" So I think … I'm going to be here anyway, so if you don't want to listen that's fine, just go off and zone out. But this is what I have to do, and this is what we're doing today. … You complain constantly, [that] you don't get any information or education, but you're too tired to participate. And I can appreciate that everyone needs their down time. (pp. 23)

Conferences were considered helpful as a medium to promote best practices because they provided a venue where people could meet, share experiences, and network. CNS5 stated "we're just planning a conference coming up in 2011, and you know I always think when you bring advanced practice nurses together, in one environment, and begin … sharing your stories … that's truly effective" (p. 5). Others also found conferences helpful to keep up to date with current evidence but they noted that when resources were scarce, money to support conference attendance was difficult to access. According to CNS8 conference attendance

> is financially tied to what is happening in the province at the time, and it always seems to be tough times. You know, there's never enough money to ... let you go to a conference just because it's good for your professional development and networking and so on. (pp. 15)

In CNS11's health region they used weekly teleconferences as a medium to promote best practice. "... people can go on there and... if there is a topic of the day, or a hot topic or whatever, and I've utilized that a couple of times to say, Hey here is some info I want to share with you guys" (p. 24). The CNSs stated that personal interaction was a very effective transfer medium to promote the use of research evidence. These opportunities were made possible by visiting individual units, participating in rounds, taking part in workshops and in-services, as well as attending conferences and teleconferences.

All of the CNS participants used clinical practice guidelines to promote EBP in their workplace. CNS1 found best practice guidelines very effective because someone else has taken all of the evidence and figured out what's best practice. She found "quick, succinct and … available evidence is there" (p. 21). CNS8 used consensus statements and guidelines from such sites as the RNAO website. The CNSs take the guidelines, highlight the points they want their co-workers to notice and then, depending on the workplace, they post them on bulletin boards, place them in a unit binder, put them on the computer desktop, or place them in the coffee room so anyone who is looking for information can find it with relative ease.

The CNSs also use academic journals to inform their practice but they did not find the formatting was conducive to their audience's understanding. To facilitate their co-workers' use of EBP, CNSs highlighted the information in the journals that they thought were to be most relevant. CNS10 reported that she provided a synopsis of articles she reviewed that were applicable to the nurses in her practice area. In addition she would underscore the important points that she wants nurses to understand and integrate into practice.

Skills and attributes required to facilitate EBP.

According to the PARiHS framework, in order to effectively facilitate EBP a facilitator needs to have particular skills and attributes. Initially this section includes the findings from the survey participants who were asked what influenced their ability to access, use, and disseminate research. The CNSs in the survey identified *dedicated time* and *assistance/support from others* as key factors influencing their practice. They were less inclined to agree that they needed additional formal or informal education. These results are summarized in Tables 13, 14 and 15. Afterwards, the CNSs who were interviewed they asked what skills and attributes were needed and their responses were somewhat different than the survey participants with regard to added formal and informal education.

Table 13: Factors Influencing CNSs' Capacity to Access Research

Factors for Accessing Research	Yes n (%)	No n (%)
Further informal education	12 (52.2)	11 (47.8)
Dedicated time	22 (95.7)	1 (4.3)
Assistance/support from others	20 (87)	3 (13)
Additional formal education	6 (26.1)	17 (73.9)

Table 14: Factors Influencing CNSs' Capacity to Utilize Research

Factors for Utilizing Research	Yes n (%)	No n (%)
Further informal education	9 (39)	14 (60.9)
Dedicated time	21 (91.3)	2 (8.7)
Assistance/support from others	22 (95.7)	1 (4.3)
Additional formal education	5 (21.7)	18 (78.3)

Table 15: Factors Influencing CNSs' Capacity to Disseminate Research

Factors for Disseminating Research	Yes n (%)	No n (%)
Further informal education	8 (34.8)	15 (65.2)
Dedicated time	23 (100)	0
Assistance/support from others	22 (95.7)	1 (4.3)
Additional formal education	7 (30.4)	16 (69.6)

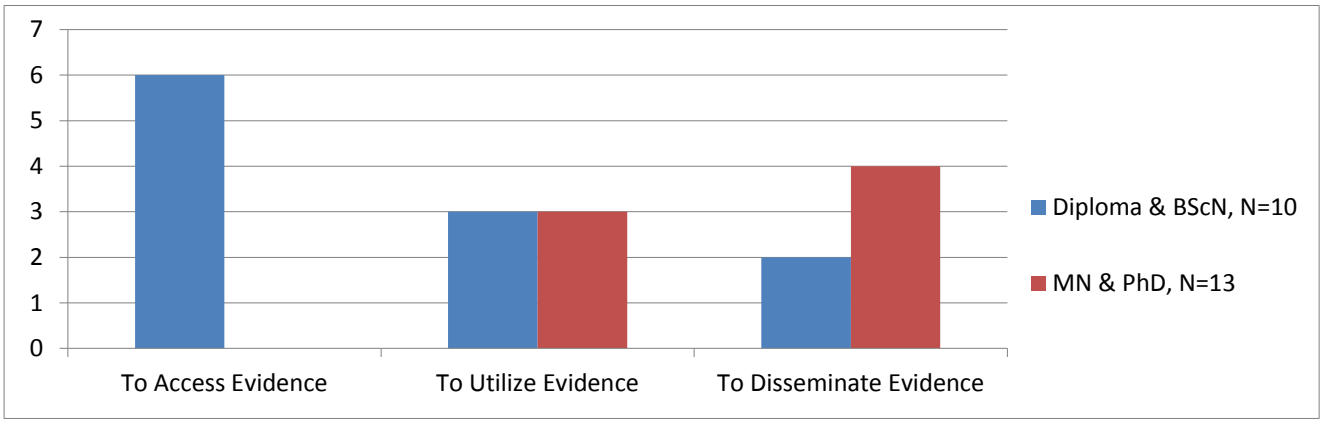
When asked during the interviews what knowledge and skills CNSs need to facilitate/promote EBP, their responses had many commonalities and some differences. Each CNS who was interviewed stated that in order to call oneself a CNS, the minimum educational requirement must be a master's degree. This differed from the survey where 43.5% of the sample was prepared at a Bachelor or Diploma level. Most CNSs from the survey stated that to be considered for a CNS position, the nurse needs to have clinical experience in the area where he/she worked in order to have credibility with co-workers. One CNS disagreed with this

position and stated that the educational preparation would ready a nurse to be a CNS in more than one clinical area. People skills, communication skills and continuing positive relationships with their respective co-workers were also high on their list of knowledge and skills needed by a CNS to facilitate/promote EBP.

Educational preparation.

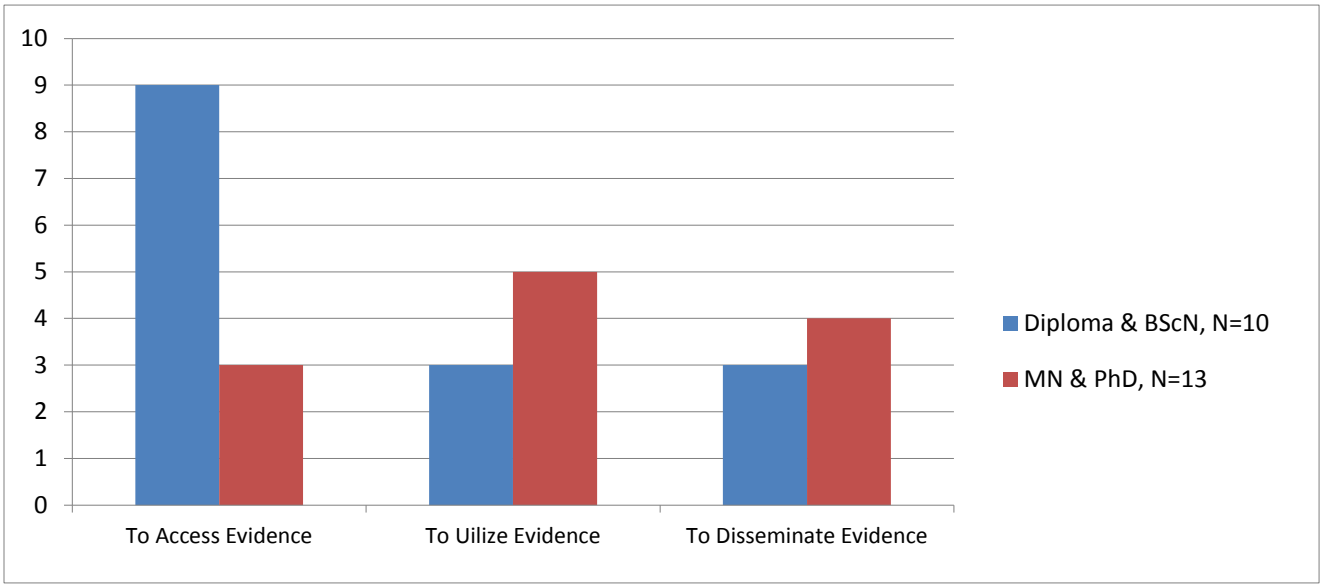
In the survey portion of my study, 78% of the self-identified CNSs stated they did not need any further formal education in order enhance their capacity to access or utilize research, whereas 70% stated they did not need any further formal education to disseminate research. With regard to informal education, 52% stated it would be helpful to learn how to access research, 40% stated it would be helpful to learn how to utilize research, and 35% stated it would be helpful to learn how to disseminate research. Figure 4 provides a breakdown of CNS responses based on their educational preparation.

Figure 4: Perceived Need for Formal Education to Access, Utilize or Disseminate Evidence by Educational Preparation



The participants with MNs and PhDs did not perceive that they needed any more formal education to learn how to access research, but a few of these CNSs would be interested in more formal education to utilize and disseminate evidence. More than half of the diploma and BScN prepared participants believed they would benefit from additional formal education to access evidence. But most did not think they needed any more formal education to utilize or disseminate evidence. Figure 5 illustrates the CNSs' perceived needs for informal education to access, utilize, or disseminate evidence based on their reported educational levels.

Figure 5: CNSs' Perceived Need for Informal Education to Access, Utilize or Disseminate Evidence by Educational Preparation



A minority of MN and PhD prepared CNSs do think they would benefit from further informal education to learn how to access, utilize, and disseminate evidence. Of the diploma and baccalaureate educated participants, most believed they would benefit from informal education with regard to accessing evidence, but they were less likely to think they needed more education regarding utilizing and disseminating evidence.

In terms of formal education, all the CNSs who were interviewed agreed that in order to be a CNS a nurse required a minimum educational preparation of a master's degree. They believed that CNSs needed more exposure to the research process than their undergraduate degree allowed. A master's education also

provided a global perspective of the workplaces where they practiced and provided a background for their clinical practice. CNS4 stated, "Oh, you have to be master's prepared, absolutely. I don't think you learn enough in the basic program, to prepare you for this role. Not in the least" (p. 13). CNS3 stated that prior to taking her master's degree she was not fully aware of EBP, and that the graduate degree filled that gap. CNS2 also agreed that understanding research as taught in graduate studies was important, "I think you have to have an eye for research and understand how to obtain research, understand research, how to disseminate it, and as well, how to put it into context that matters for the people that you're serving" (p. 6).

The CNSs interviewed believed a master's degree provides CNSs with a comprehensive view of their practice environments, an understanding of organizational process change, and the background to connect clinical issues with research. According to CNS1 the master's degree

> gives you a very global perspective. It takes you away from just looking at the nuts and bolts of the day, and gives you a better organizational picture, so that you can appreciate why best practice isn't implemented, why there's resistance, and it sort of gives you a better mind set on how to deal with all of those sorts of things. (pp. 13)

CNS7 discussed issues with regard to understanding and making the connections between research and the people with whom she worked. She believed that to be a CNS, a master's degree is needed.

> to understand research, and they have to understand the application of it clinically. And if they don't understand the clinical perspective, then they are not going to be able to apply research very effectively.… I think they have to have done research, recognize the difficulties within it.... because it is very, very difficult to change practice and to demonstrate that what is being done in... a research based setting, actually has implications in practice. And I think unless you've actually done research, participated in it, and actually read a lot of research based studies you're never going to make that transition. It's that critical thinking piece and the application. (CNS7, pp.10)

CNS5 was more particular about the need for a master's degree as a minimum requirement. As she asserted,

> I may be shot for saying you should do a dissertation, but I think that's really important in terms of doing a master's for a clinical nurse specialist, … you get a really good grasp with that research piece that you're going to be practicing in.... I know people are just … thinking a one year master's course-based, is such a wonderful thing because you can do it so quickly. But you know, if you truly have an area and you want to be a clinical nurse specialist, I think you really need to do the thesis based option.... (pp. 4-5)

Clinical expertise or not?

In addition to needing a master's degree, the majority of the CNSs stated that they must be clinical experts as CNSs in order to be credible with one's co-workers. CNS7 stated, " So, I do think you need to have a strong background and

you have to have worked exclusively in that area for a good period of time in order to make that jump, I think" (p. 11). Some of the participants asserted that in order to be a CNS, one needs several years of practice to develop a particular expertise and did not think that one year of practice followed with a master's degree would be sufficient. According to CNS8,

> I really do think a CNS needs to be an expert in a clinical field she has chosen and you can't do that fresh out of school. I think you do need to be in the practice setting and that also really helps in, you know, you're going to be an agent of change. And you have to understand the setting before you can change, you know. And if you don't understand the dynamics of that particular setting, you can make some terrible mistakes and damage your credibility. Looking back, I'm certainly glad I was, at that point, 15 years post-graduation. You don't need that much, but 2 or 3 years as a bare minimum, and 5 doesn't hurt. (pp.8)

CNS4 introduced the novice to expert model to illustrate why she thought a CNS needed a number of years of experience prior to gaining clinical expertise since the first few years are spent figuring out the basics.

> And if you haven't figured out the basics, which how do you that in one year when you spend the first six months of your career just trying to get your feet wet, and figuring out how to give your meds properly, and on time. And then you try to get your organizational skills, on top of that, for the next six months. So really, how have you ever become an expert in the field that you're supposed to be working in because you've just starting to get yourself to competencies as a nurse, if you think of novice to expert. So then to just have one year experience and then to go into a master's program, a CNS program, I don't believe that nearly qualifies you to do it, sorry. (pp. 15)

However, CNS9 stated that often one comes across patients who do not precisely fit one's speciality, or they may be admitted with co-morbidities and a master's degree would provide the tools to find pertinent resources. "I'm not an expert in addictions, but I'm pretty sure I know what resources to look through and get a good handle and then I am very good at connecting the dots and coordinating services to best support the patient's needs" (p. 9). CNS6 thought that the master's degree provides sufficient background to realize that related clinical areas and expertise in one's speciality was not completely necessary.

> I think there's different ways to look at it, I think that ideally, you would be effective in that if you are a CNS in your specialty area, and I think you, but I think you could be a CNS and so have the masters of nursing education, understand the role of clinical nurse specialist, but may not have that expertise in the clinical setting. But knowing that you could gain that expertise, and it think it would be a hard road to take, in some ways but I think with that the other skills that you bring, it might not be as big a requirement that the masters of nursing requirement. (CNS6, pp. 12)

Communication/people skills.

People and communication skills were also considered necessary for a CNS's practice base. As CNS1 offered, "I think you'll also have to have the ability to pass on the knowledge, like we have some people that we work with that are very well educated and very knowledgeable but have difficulty

communicating that, so you're not a very resourceful person" (p. 16). CNS2 also agreed that

> people skills and relationship skills are extremely important …. I think in addition to your clinical skills, I think you need to have some experience as well with client advocacy, in terms of whether it's volunteer work, whether it's family experience, whether it's, you know what I mean? (pp. 9)

CNS4 believes that CNSs need these skills as an adjunct to a good knowledge base. CNSs do not need to know all the answers, but they have to be able to find the answers their colleagues want or their credibility will suffer.

> You always have to communicate. That's you know, if you're not a communicator as a CNS, that's got to be your downfall....So yes, excellent communication skills. They have to know how to read people... You have to have a strong knowledge base. Because if they come to you with anything, and you don't know the answer, of if you try to fudge it, then they're going to call you on it, right…. So you have to you have to have good communication skills and you have to have the knowledge to back you up, in your role. (pp. 13)

CNS5 describes the knowledge and skills required to be an effective CNS in the following paragraph.

> I think you have to be very clear in terms of what your expertise is. Because I think you need to have that clarity, but you also have to have that depth of knowledge. So you know, to guide your practice, you need to be involved in research, you need to know what research is out there, you need to know sort of who the people are out there, where the gaps are. You know where things are sort of coming undone, those kinds of things. So I guess it's sort of that interplay again of practice, research, and education. (pp. 3)

According to the PARiHS framework, facilitation refers to how a person makes things easier for others by helping to change their attitudes, habits, skills, and ways of thinking and working (Rycroft-Malone, 2004). With regard to roles and purpose many of the CNSs who were interviewed believed that having a history with those in their work-places, a presence amongst those they were facilitating, support from co-workers, as well as using a number of methods to disseminate EBP facilitated their practice. With regard to knowledge and skills needed to be an effective facilitator many of the CNSs who were surveyed reported that they did not need any extra formal or informal education to access utilize or disseminate research. In contrast, all of the CNSs who were interviewed stated that a master's degree needed to form the basis of the CNS practice along with clinical experience and people/communication skills. At the end of the interviews, participants were asked to reflect on what they would like to tell policy makers or decision makers about the CNS role.

What Policy Makers Need to Know About the CNS Role

The participants identified several topics they would like to discuss with policy makers and decision makers. Primarily CNSs aspire to explain the potential contribution CNSs can make to healthcare. CNSs would also prefer to have clear

distinction between the two ANP roles and promote the CNS role. CNSs also desire indicators to illustrate the impact of their work in streamlining inefficient processes and improving patient outcomes.

Understanding the potential of the CNS role.

The CNSs have created improvements in their respective workplaces by streamlining processes, creating algorithms, and providing clinical leadership to co-workers. CNSs want their role understood and expanded so that their expertise can benefit more clients in healthcare. CNS4 suggested policy makers become familiar with the role by reading the CNA guidelines and then talking to CNSs to see the improvements they have made in patient outcomes. CNS9 stated,

> Based on the literature, we know that in areas where there is a CNS [there are] improved outcomes for patients and it's more cost effective healthcare. So, a focus on the CNS role would be helpful, helpful slash timely. It's value added to healthcare system and it's one of the characteristics of a magnet hospital. Why wouldn't everyone want to move towards that because it's cost-effective? You are getting better outcomes, better bang for your dollar, you're not tying up the system with unexpected admissions because you didn't address them the first time they were in. You're providing exceptional service, you're abiding by what we are trying to, giving lip service to, but you are walking the walk at the same time. (pp. 15-16)

CNS3 hoped that CNSs could enhance their autonomy/authority in order to actively introduce and direct change without being second guessed about their decisions and their worth. CNS10 stated

> Ohhhh. I'd like to say, "just leave them alone." … I'm pretty sure you're not in a CNS role for the money. You're not in it for the glory. It is hard enough as it is, like just trust that they're the experts in their area. Let them deal with the issues that they need to deal with and leave them alone. …They should be professional enough to do the work they need to do...support them. And there should be more of them. I mean the way healthcare … is so specialized and so, we're getting so compartmentalized, there needs to be way more of them. (pp. 26)

CNSs would like to educate policy makers in government and in the health regions about their potential contributions. As well, CNSs would also like to make improvements in their work settings without impediments by bureaucratic structures such as materials management and house-keeping. They understand budgets will always pose challenges but they are willing to work within those constraints unless these impact too greatly on patient care.

Differences in APN roles.

Discussion regarding the differences between the two ANP roles came up frequently during the interviews and CNSs would like policy makers to know the differences between the two roles. Some of the CNSs stated that they felt as though they had been abandoned by their professional nursing organizations who

have favoured the promotion of the NP role over the CNS role. Others were more conciliatory and felt the two groups could work together to improve patient outcomes. One CNS wondered if she had picked the least advantageous ANP role as NPs are paid more than CNSs despite differing educational requirements.

> Even the CNA, you know they too are guilty of going strictly NP. Which is my problem with the nursing profession, because we're fixers, you know, nurses always want to go in and fix, and so when the nursing, and this is just my beliefs, so when the medical problems started, when we didn't have enough doctors or anything, well, nurses are going to fix that, we're going to become NPs. But you know what? We're selling our soul, to fix something that medicine should fix.... So why do we have to be mini-doctors? Be proud of being a nurse. So that's my last thing, (laughs). You know like, why can't we be proud of who we are, you know. "I'm just a nurse", or you know you guys you're not just a nurse….This system wouldn't function without nurses, so you're not just a nurse, you're the backbone of this entire system. (CNS4, pp. 24)

CNS5 stated that NPs and CNSs needed to work together to clarify issues in advanced practice nursing.

> People struggle with, and I mean we talk about it in advanced practice nurses and I think, we need to continue to do that because otherwise, there's the split between nurse practitioners and a clinical nurse specialist, you know. And what is the difference and what does that mean... so how do we distinguish between the two? How do we bring them together? How do you know what that is? What do we mean by advanced practice nursing? Is it just nurse practitioners and clinical nurse specialists? So all of that ... needs to be sorted out. (pp. 7-8)

One CNS questioned whether she should have become an NP for the increased monetary benefits,

> I think there's been too much of delineation between. [There is] more credibility [given] to the nurse practitioner role than the CNS role. And sometimes I look back and think…should I have done the CNS role? Should I have done it in that way? Or should I have gone in to be a nurse practitioner because the monetary benefits are much better then what I get now. However this is the part of nursing, because I see it, as true nursing. (CNS6, pp. 18)

Indicators regarding the impact of their work.

CNS2 stated that they were often required to justify the work done in the CNS role. However, at this time CNS2 also pointed out that indicators to measure the impact on outcomes are not readily evident or available. CNS2 asked if it is enough to count the number of people who show up at a workshop or can we somehow measure deeper learning which contributes to improvement in client or patient outcomes. Change can also take a long time if its base is client-centred as opposed to top down as CNS2 reflects,

> The other thing is we've been doing things, and it takes forever to do things that are client-centred and to consult with, and things like that, but we've seen how things work when it comes to First Nations, when it comes to health care provision. We've seen how it works when it's top down. And it doesn't work. But it's quick and there's a false sense of security with it though, right? (pp. 17)

CNSs would like to tell policy makers and decision makers that they improve patient outcomes, they have a different and equally important role as the NP, and

they would like to be evaluated with reliable indicators, not just numbers. However, they did not discuss how this could be done at this point.

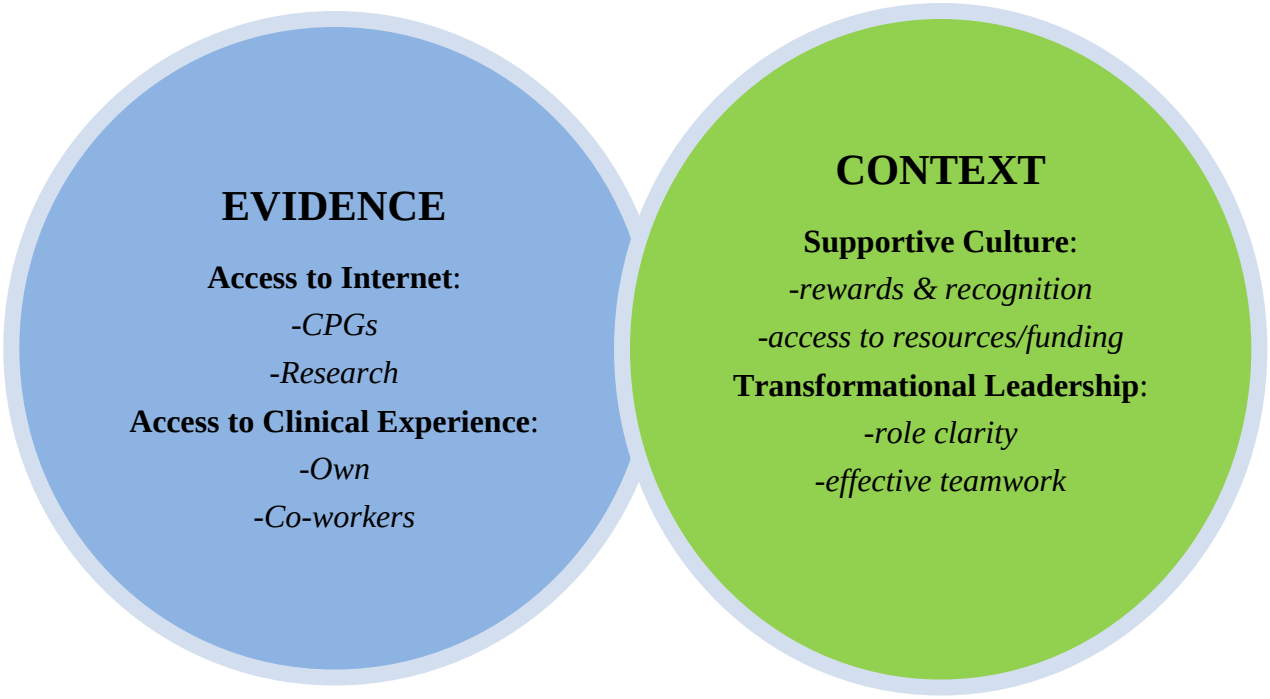
Summary of Findings and Illustration of Themes

CNSs are champions of change. They use best evidence to improve patient care and outcomes. They do their best work in contexts and cultures that value individual staff and clients, that promote learning, have been well resourced and supported by management and co-workers. In their roles as facilitators they build partnerships, are flexible, present, and reflective. Their work and outcomes suffer when they work in task driven contexts with a lack of resources and little support from management and co-workers who may not understand the CNS role. One of the greatest barriers they face is role ambiguity which makes enacting the CNS role difficult. Their greatest attributes are reflected in their tenacity to improve outcomes for clients despite contextual barriers. They would like their numbers to expand in order to improve outcomes for patients in the health care system.

The survey and interview data confirm the PARiHS framework's contention that the ability of the CNS to promote EBP is influenced by three interrelated factors: evidence, context, and their role as a facilitator. Figure 6 illustrates the three broad themes and seven sub-themes that emerged from the

data. The facilitator chooses what evidence to use in each situation and modifies it to fit the context, so in this sense, the facilitator is able to their exert influence on the evidence and the context. Two findings from the interview data that weren't evident in the PARiHS framework were the covert best practice regarding the PICC line flushing, which could be an indicator of powerlessness to change practice, and the level of annoyance that was expressed by the CNSs regarding discrepancies in union classification and pay levels. The themes and sub-themes will be further analyzed in the discussion section.

Figure 6: Factors That Influence the Ability of the CNS to Promote EBP



CHAPTER 5: Discussion

The purpose of this study was to gain a deeper understanding of the current CNS role as it pertains to promoting EBP in Saskatchewan health care settings. The numbers of CNSs in Saskatchewan are small compared to that of provinces such as British Columbia, Ontario, and Quebec where some hospitals may employ upwards of 50 CNSs at one time (O'Connor & Ritchie, 2010). As a former

CNS in Saskatchewan, I could identify with the barriers and challenges faced by those who have chosen to work in these solitary positions. This research study serves to increase the awareness of the factors that support CNSs in their roles as they attempt to facilitate EBP at the bedside.

Participation in this mixed methods research study, which focused on CNSs role in promoting EBP, allowed the respondents to share their experiences

in their workplaces. By sharing their experiences CNSs articulated that to promote EBP to their co-workers within their health care settings, they need to have access to good quality evidence, a context that is supportive and receptive to new practices, a defined role, and specific knowledge and skills. In this chapter, the questions that guided my research study are revisited and the study findings discussed in relation to the relevant literature and the PARiHS framework. The discussion begins with an explanation of the sources of evidence that CNSs access, followed by a review of the enormous effect that context has on their work. Furthermore, I examine the attributes and skills that CNSs reported are necessary to facilitate EBP and descriptions of CNS contributions to practice. The discussion concludes with an examination of study limitations, plans for disseminations of findings and implications for nursing education, research, practice and policy.

Sources of Evidence

In order to promote EBP to improve patient care, CNSs need to integrate their individual clinical expertise and patient preferences with the best available research evidence (DiCenso et al., 2005). However, this was not quite the situation for the CNSs in this study. The CNSs did use various sources of

evidence and they drew upon their own and co-workers experience, but patient preferences did not seem to be given as much consideration as one of their first two sources. The reasons for not considering patients' preferences as primary sources of evidence were not evident and were not pursued as part of this study.

In the survey portion of the study, the top five written sources of evidence used by CNSs were: the internet at work which includes the health region's intranet, clinical practice guidelines, general internet searches (e.g., Google, Yahoo), the literature tailored to specialties, and computerized databases such as CINAHL and PUBMED. Access to the internet is imperative for CNSs to locate the best written evidence. The top five people-based sources of evidence accessed by CNSs were personal experience, clinical experience on previous/current unit, what has worked for years, physicians, and other health professionals. These results are very similar to those reported by Profetto-McGrath et al. (2007) and Profetto-McGrath, et al. (2008). However, these findings differ somewhat from those of Gerrish et al. (2011) who in a British study found that APNs primarily utilize 1) national guidelines, 2) information learned in post-registration education, and 3) local protocols to support nurses at the bedside. This indicates that the APNs in the Gerrish et al. study relied heavily on evidence that had

already been synthesized as opposed to original published research reports. The fourth and fifth most heavily used sources of evidence were "personal experience of caring for patients over time" and "information I get from attending conferences/study days" (Gerrish et al., 2011, p. 5). These APNs ranked information obtained from the internet/world wide web as 13th, which again differs from my study and the study by Profetto-McGrath et al. (2008).

The authors of the PARiHS framework postulate that patients are an important source of evidence (Rycroft-Malone, 2004). This framework does not rank the sources of evidence based on importance, yet in the framework, "patient" is listed third behind research and clinical experience. Oberle and Allen (2001) suggest that the client as an expert in their own experience should be considered an equal partner in their health/illness experience. In this study, and each of the studies by Profetto-McGrath et al. (2008), "patient input" was approximately the ninth source considered as a source of evidence and in the Gerrish et al. (2011) study "information that I gain from patients/clients and carers" was ranked 12th. These findings suggest that patient experience may not be viewed highly as a valuable source of practice knowledge. This is notable in light of the fact that EBP is concerned with using best evidence to improve patients' outcomes

although the patients' input is not considered priority evidence. However, the survey questions in the above studies were not specific regarding what type of decisions the participants were being asked to make and in the absence of this information they may have viewed patient input as a lower priority.

The differences between the studies in Canada and England may be attributable to differing educational preparation of nurses and differing priorities by their nursing organizations. In Canada in 2009, 37% of nurses had a baccalaureate degree and 3.7% had a master or PhD (CIHI, 2010). According to a 2005 Royal College of Nursing's (RCN) survey of English nurses, 22 % of the nursing workforce was degree qualified (n.d.). In contrast to the CNA, the RCN as a nursing union does not have a policy regarding the use of evidence based or best practice and this may have implications for what sources of evidence nurses use despite the fact that nursing academics from the U.K. are at the forefront of developing EBP nursing models such as the PARiHS framework.

Context

The PARiHS framework incorporates the concepts of culture, leadership, and evaluation into their description of workplace context (Rycroft-Malone, 2004). The sub-themes that emerged in my study were supportive culture and

transformational leadership as important aspects of context which contribute to the uptake of evidence. Evaluation was only briefly alluded to by the participants when they discussed the need for tools to evaluate their positions to illustrate the impact they had on their workplaces. With regard to the sub-theme of supportive culture, first the term culture and its impact on a CNSs' inclusion in the workplace will be discussed, then the allocation of rewards and recognition and access to resources that were major concerns expressed by the participants are examined. Because the sub-theme of leadership helped to define the culture and is an important part of work context, it too will be discussed. It is important that those in leadership positions promote learning in their organizations, provide role clarity for CNSs, and encourage effective teamwork amongst co-workers in order for CNSs to work to their potential.

Supportive culture.

According to Schein (1992) the concept of culture is used to "indicate the climate and practices that organizations develop around their handling of people or to refer to the espoused values and credo of an organization" (p. 3). When culture is examined, it helps us to understand the hidden and complex aspects of an organization. Several barriers to promoting EBP that the CNSs encountered

were due to bureaucratic processes that at times bordered on the irrational (e.g., unable to get slippers to prevent falls and having to "sneak" patients cath-flow for blocked picc lines). Schein states that in some cultures individuals often encounter resistance to change at a level that seems illogical. Resistance to change occurs because the human mind demands cognitive stability and any challenge to this stability will release feelings of anxiety and defensiveness. Much of the knowledge transfer work in health care has focused on dissemination methods without consideration of how this knowledge may interact with the adopter or the system culture to which it is being introduced (Lemieux-Charles & Barnsley, 2004). And because health care cultures can be very complex, innovations need to be tailored to those who are going to be responsible for its implementation (Lemieux-Charles & Barnsley, 2004).

During the study, it became evident that some CNSs had a better understanding of their work culture than others and as a result these CNSs were more accepted in their work place cultures than those who came from outside the organization. The two most evident examples of CNSs growing from within the culture were CNS1 and CNS4. CNS1 had a 10-year history with her unit and she worked there prior to becoming the CNS. She felt that there was respect between

the nurses and physicians, decision-making was very collaborative, and her unit was well resourced. CNS4 also worked on her unit prior to obtaining her master's degree and she stated that she also worked with a very good team. Positioned with a master's degree, years of experience, a presence on their unit, and a history with their co-workers, CNS1 and CNS4 were more readily able to promote EBP in their settings. The two most evident examples of CNSs coming from outside the organization were CNS3 and CNS9. CNS3, who was aggressively recruited into a CNS position by the health region, left her position after three years of working in a climate where co-workers did not accept her. CNS9 was recruited with a goal of improving nursing practice on a particular unit. As she reported, her co-workers wanted her to acclimate to their way of doing things and were unwilling to implement EBP, so she also left that CNS position. Both CNSs had master's degrees, years of experience, and a presence on their units but they were unable to formulate relationships to penetrate the work culture to make even the smallest changes. For the CNSs on these two units, there were likely a number of issues to consider regarding their leaving their positions but an inability to penetrate that unit culture was a factor.

Bryant-Lukosius and DiCenso (2004) developed the PEPPA framework to address common barriers to the introductions of APN roles. PEPPA is an acronym for *participatory, evidence-informed, patient-centred process for advanced practice nursing role development, implementation and evaluation.* The framework was developed to provide guidelines for the introduction and evaluation of APN roles. The goals of the framework are to design and deliver best practice or model of care that meets the needs for a specific population (DiCenso & Bryant-Lukosius, 2010a) and to determine whether a new APN role is needed in a particular setting and whether it will be effective (CNA, 2008). The framework is comprised of a nine-step process that focuses on establishing role structures (steps 1 to 6), establishing role processes, which includes the introduction of the APN role (step 7), and includes short and long-term evaluations of the APN role and a new model of care to assess the progress and sustainability in achieving goals and outcomes (step 8 & 9). The PEPPA framework has been used by regional health authorities to develop policies to guide the implementation of CNS roles as well as by researchers to assess the integration of APN roles in various settings (Charbonneau-Smith, McKinlay, & Vohra, 2010). Culture fits into step 5 of PEPPA, "define new model of care and

APN role by gaining stakeholder consensus about the fit between goals, new model of care and APN roles" (Dicenso & Bryant-Lukosius, 2010a, p. 46). A process is needed to determine if workplaces are amenable to including a CNS position because to allocate a CNS to a unit that is not amenable to change is often a waste of time and resources.

Rewards and recognition.

CNSs identified some issues that they believe need to be addressed including classifications in the SUN contract, pay levels, and educational requirements for those in ANP roles in the province. There were classification and pay discrepancies for CNSs between health regions and there were pay discrepancies between the NP and CNS roles despite differing educational requirements. DiCenso and Lukosius-Bryant (2010a) found that NPs also identified wage disparity among APNs and they recommended a change in health funding models to ensure wage parity among APNs with other allied health professionals. These authors also report that hospital administrators stated that APN salaries were "not attractive considering the role responsibilities" (p. 41).

Rhynes, Gerhart and Minette (2004) found that in the majority of situations people are more likely to under report than to over report the importance of pay as a motivational factor.

According to these authors "... pay is a very important motivator, despite employee self-reports and persistent articles in practitioner journals that suggest otherwise" (p. 385). Rhynes et al. suggest that pay issues should not be ignored unless the employer is not interested in retaining their staff. There is a need for organizational policy to correct the pay issues and classifications unless employers in Saskatchewan are not interested in retaining their CNSs. A standardized position description to be developed and shared by the various health regions may help to correct the discrepancies.

Access to resources and funding.

Ten of the eleven CNSs interviewed stated that their access to resources was directly related to the budgets of the health regions or government agency for whom they worked. For the past number of years, budgets have been limited as many regions found themselves in funding deficits. CNS9 who has a large rural area to cover has no budget for rural travel. CNS2's budget to attend conferences in order to network and learn new knowledge with regard to his specialty, was cut

by over 66% and he also needs written permission for travel prior to any visits to communities where the clients are located. CNS4 cannot get funding to buy ten dollar slippers that may prevent a fall and in turn a broken hip leading to extended hospitalization. CNS10 cannot access cath-flow which is the best practice route when picc lines become embolized. CNS1 was the lone CNS who felt she was adequately funded and resourced. Meijers et al.'s (2006) systematic review of the literature examined the relationship between contextual factors and research utilization. Access to resources was one of the contextual factors they found that was statistically significant for research utilization to occur. The authors of the PARiHS framework contend that a lack of resources contributes to a weak context and makes it less likely that EBP can be promoted and implemented (McCormack et al., 2002).

In hospitals, global budgets supply the funding for CNS positions (DiCenso & Bryant- Lukosius, 2010a). Hospital administrators often had inconsistent funding for their programs and in order to fund CNS positions, they had to allocate funds from other roles and this was not considered sustainable approach to employing CNSs. Given current funding restraints, administrators find it difficult to justify funding for non-direct patient care roles such as CNS

(DiCenso & Bryant-Lukosius, 2010a). Unfortunately the lack of funding for APN positions is a recurring theme in the APN literature (CNA, 2008; DiCenso, 2008; DiCenso & Bryant-Lukosius; Lachance, 2005).

Transformational leadership.

The authors of the PARiHS framework contend that a requisite for implementing EBP is transformational leadership (Rycroft-Malone, 2004). It is vital that nursing leadership introduce and integrate the CNS role within health organizations (DiCenso & Bryant-Lukosius, 2010a). To fully incorporate the CNS into the various health settings, senior nursing administrators need to be involved in seeking sustainable funding for CNS positions and linking CNSs to organizational priorities to improve nursing practice, as well as patient and health system outcomes.

Nurse leaders may not be aware of the potential contributions CNSs could make to improve patient outcomes in Saskatchewan. This may be due to lack of capacity in the nursing leadership sphere. CNS2 stated that in their organization they had four different leaders in 18 months and each had very different leadership and communication styles. This change in leadership made working in that organization challenging, interesting, and frustrating. CNS9 had worked with

a number of managers in a short time and her current manager was interim and they were going to have another interim manager for an additional two months leaving the unit without consistent leadership. CNS9 felt that a lack of professional nursing leadership meant that the RNs on her unit were heavily influenced by the nursing union which she felt detracted from professional nursing practice. In 2004, approximately 27% of registered nurses in the United States belonged to a nursing union (Buerhaus, Donelan, Ulrich, Norman, & Dittus., 2005). Furthermore in a national survey of 4,108 registered nurses Buerhaus et al., asked about the effect of unionization on both the nursing profession and on the quality of patient care. More registered nurses perceived mostly or somewhat positive effects of unionization on the nursing profession (44% in 2004) than those who felt union's effects were mostly or somewhat negative (18% in 2004). Also, approximately the same percentages of RNs perceived that unionization has had a mostly or somewhat positive effect on the quality of patient care (Buerhaus et al., 2005). Perhaps nursing leadership has a larger effect on nurses' perceptions than the issue of unionization.

Everett and Sitterding (2011) described the influence of using leadership principles in injecting "nurse autonomy, authority, and accountability into an

otherwise lethargic practice environment and set the stage for improved outcomes in quality, finance, and patient satisfaction" (p. 401). The leadership used Magnet hospital standards in conjunction with the American Organization of Nurse Executives [AONE] to form a framework for a professional practice environment needs assessment. In this needs assessment it was found that many of the CNSs had shifted under the direction of physicians and were engaged in tasks that did not require the expertise of a CNS. Based on the needs assessment, reporting structures changed resulting in the CNSs reporting to directors of nursing and practice quality. This leadership change led to the expansion of CNS competencies at the system level which resulted in increased nurse-led EBP and research. Results of changes at systems level included: 100% decrease in stage 4 hospital acquired pressure ulcers; 65% decrease in catheter-associated blood-stream infections and; exceeding the benchmark in restraint utilization (Everett & Sitterding, 2011).

CNS2 echoed the same concern about being supervised by non-nurses. It is not uncommon for CNSs to be supervised by non-nurses who have health or business backgrounds (DiCenso & Bryant-Lukosius, 2010b). Mayo et al. (2010) in their study of CNS reporting structures also found that they lacked a common

reporting structure for CNSs and that 12.8% of CNSs reported to physicians, 11% reported to directors of nursing, 9.5% reported to directors of education, and 8% were self-employed. The remaining 36.3% reported to deans, associate deans, or directors of nursing school programs. Often CNSs found themselves responding to specific organizational needs and as a result had to adjust their priorities accordingly. "The result has contributed to intrarole and internal role conflict as CNSs attempt to satisfy numerous stakeholders" (Mayo et al., 2010, p. 61).

Role clarity.

All of the CNS interviewed stated they had issues with role ambiguity or role clarity amongst their co-workers. Role ambiguity can cause severe stress, increased tension, dissatisfaction, and withdrawal, as well as reduced commitment and trust in others (Cummings & Worley, 1997). The interview participants believed that staff nurses, managers, and physicians were unclear about what the CNS role entailed and this lead to contradictory expectations and the CNSs found they could not satisfy the different demands which made promoting EBP difficult.

In the healthcare system titles and activities typically delineate roles and people know what to expect from a particular position. In advanced practice nursing there is confusion regarding APN titles and a lack of clarity about the

roles and how they overlap (DeGrasse & Nicklin, 2001; Donald et al., 2010). Based on the survey data I would support Donald et al.'s assertion that in nursing there is confusion regarding the CNS titles and roles. This confusion results from the lack of specifically titled CNS graduate education programs and a lack of credentialing (Donald et al., 2010). Credentialing is a core component of "self-regulation where members of a profession set standards for practice and establish a minimum requirement for entry, continuing professional development, endorsement and recognition" (Australian College of Mental Health Nurses, 2012, ¶2). Credentials serve two purposes they: 1) designate that an individual has met a set of established standards, and 2) recognize that individuals are qualified to carry out specific tasks (Goudreau & Smoleski, 2008). This makes it difficult for CNSs to promote EBP as co-workers do not understand the CNS role and may confuse it with the NP role. NPs know they are NPs because they have taken courses in a NP based curriculum and they have written a NP credentialing exam. Canada has only one educational program that offers specifically titled CNS courses (Donald et al., 2010) and there is no credentialing process. Adding to the confusion regarding APN status, "CNSs are authorized to perform the same controlled acts as a RN. However, NPs have expanded clinical functions and have

legislated authority to perform additional activities traditionally performed by physicians" (Donald et al., 2010, p.193). The CNS title lacks the same type of credentials and boundaries.

Of the survey respondents 26.1% had a baccalaureate degree and 17.4% had a diploma. Three of the CNSs interviewed had master's degrees in disciplines other than nursing. Two of the CNSs who were interviewed worked in a clinical specialty but had other titles. In the absence of CNS specific graduate programs and given the lack of title protection there has been resultant confusion whereby nurses with graduate education and a clinical specialty are working with titles other than CNS and conversely others who did not have CNS qualifications called themselves CNSs. This leads to role confusion and lack of role clarity (Donald et al., 2010) as was evident with participants in my study, leads to a dilution of the role, and consequently, difficulty in promoting EBP.

Ross-Kerr (2003) states those nurses who possess specialized knowledge base have the foundation for the process of credentialing. However, there are a number of milestones that need to be met prior to obtaining a credentialing status: 1) recognition for standardized educational programs; 2) securing the qualified staff for the areas of specialization; 3) establishing local, then national standards;

and 4) ensuring that practitioners have continued to update their knowledge and maintain their competence throughout their careers (Ross-Kerr, 2003). Eventually, legal protection is sought to protect the title. To be credentialed means an individual has met established standards. This has occurred in the realm of NP practice, but at this point there is no provincial or national consensus of what would constitute a standardized educational program for a CNS other than the requirement of a master of nursing (CNA, 2009) or other related master degree (CAAPN).

In the United States there are some of the same issues regarding the lack of role clarity for CNSs, which is one of their four APN roles. However on a national level they have developed some core competencies regarding APN education (personal communication with K. Goudreau, past president of the National (American) Association of Clinical Nurse Specialists, September 28, 2011). In the United States the Advance Practice Registered Nurse (APRN) Task Force has determined that by 2015, an APRN needs to have advanced courses in physical assessment, pathophysiology, and pharmacology. They will be required to also have a population foci and specialty competencies. It is beyond the scope of this study to fully describe the American model but with their implementation

of educational standards and a national organization, they are able to provide CNS credentials in some American states. At a meeting of the CAAPN CNS Interest Group on September 28, 2011, which was attended by two executives from the National Associations of Clinical Nurse Specialists, it was determined that CAAPN will form a partnership with their American counterparts. This may start a dialogue on how to begin a CNS credentialing process and role clarity for the CNS in Canada. With greater clarity, the vision of the CNA (2008) regarding this advance practice role in meeting the health needs of individuals, families, groups, communities, and population could be realized. The integrity and role effectiveness of APNs is "shaky" without role clarity and a framework (DeGrasse & Nicklin. 2001).

During a Canadian Association of Advanced Practice Nurses (CAAPN) Clinical Nurse Specialist Teleconference Meeting in December, 2010 one of the participants asked if erroneous self-identifying and use of CNS title could be considered fraud. The CAAPN president Bev McIssac responded that the problem is due to self-reporting and it is difficult for regulators to check on everyone's response. New Brunswick is the only province that currently confirms MN preparation prior to authorizing the use of the term (McIssac, Struthers, & Miller,

CAAPN CNS Meeting Minutes, December, 2010). The erroneous self-identification likely resulted from a lack of knowledge about the role requirements and not an attempt to be fraudulent.

The CAAPN association evolved from the Canadian Clinical Nurse Specialist Interest Group in 1991 and became the national voice for CNSs in Canada. CAAPN then expanded and to include NPs (McIssac, Struthers, & Miller, CAAPN CNS Meeting Minutes, December, 2010). At their 2005 Biannual General Meeting in New Brunswick the membership passed a motion to include non-Masters prepared NPs. Prior to 2010, there were approximately 250 CNSs in CAAPN. As of December 2010, there were ten CNS members and 527 NP members. This reduction in CNS members was directly linked to the withdrawal of the British Columbia and the Ontario CNS groups from CAAPN in late 2009. There are two councils within CAAPN: The active NP council and the inactive CNS council (CAAPN CNS Meeting Minutes, December 2010) and at this time there is no national body or organization that represents CNSs. There are some provinces that have provincial CNS associations, but Saskatchewan has not formed one. Donald et al. (2010) quote a healthcare administrator which seems to sum up the current CNSs situation, "And so from a policy perspective, at the

government table, people know what an NP does. I don't think they even know that the CNS exists" (p. 193). This lack of role clarity was a challenge for some of the CNSs interviewed to work in multi-disciplinary teams as co-workers did not always understand their role or utilize their expertise and this made it difficult to promote EBP. CNS3 stated, "They didn't know what I had to offer. And so rather than try to find out, they basically shut me out" (p. 4).

Effective teamwork.

CNS participants had various experiences working with members of their health care teams. Some worked in very good team atmospheres while others faced continual struggles with their co-workers as participants described tensions based on professional designation. The importance of organizational, nursing, and physician support for the CNS role was emphasized by both the participants and the literature (Cummings & McLennan, 2005; DiCenso & Bryant-Lukosius, 2010a; Mayo et al., 2010). Using their CNS Activity Survey, Mayo et al. found that the top four activities performed by CNSs were: 1) consulting with other disciplines (91%); 2) attending meetings (91%); 3) teaching staff (90%); and 4) consulting to support staff (88%). These activities reflect the multi-disciplinary aspect of the CNS role, as they consistently work in multi-disciplinary team

settings. Yet, as the interview participants alluded to, working as a team member has its challenges.

In the *Clinical Nurse Specialist and Nurse Practitioners in Canada – A Decision Support Synthesis* report, authors DiCenso and Bryant-Lukosius (2010a) report on a scoping review of the literature and interviews with key informants and focus groups. In the section entitled "Intra-Professional and Inter-Professional Relationships" they described many of the issues regarding working in these relationships. They examined relationships between NPs and CNSs, APNs and other healthcare teams, and APNs and physicians. They report that the relationship between NPs and CNSs has been strained. From the perspective of the CNSs who were interviewed some of this strain has to do with the wage disparity and some of the strain was due to the attention given to the NP role. According to DiCenso and Bryant-Lukosius, CNSs felt vulnerable due to the legislated title protection and significant budgetary attention given to the primary care NPs. While the NP role is expanding, the recent economic downturn has resulted in the loss of CNS positions. CNSs also reported greater NP than CNS representation at policy and decision making tables. All of these issues combined have strained the relationship of these two groups. CNS5 was hopeful about APN

relationships and stated that when you bring advanced practice nurses together to share experiences, the outcome could lead to improved practice. The CNA (2008) stated that APNs, with their education, clinical expertise, leadership qualities, and understanding of health systems, are posed to play an important role in client and health-care system outcomes now and in the future.

In the Canadian literature DiCenso and Bryant-Lukosius (2010a) found only one article, which was in French, which focused on the CNS relationship with physicians and described physician resistance to the CNS role. The article by Charchar, LeMay, and Bolduc (2005), stated that CNSs found it difficult to work effectively when there was a lack of collaboration on the part of particular cardiologists who were too busy, absent, or otherwise unavailable to consult with CNSs regarding certain patients. The potential for conflict within and between health team members can impede team functioning, decrease team effectiveness, and impact patient care (Brown et al., 2011).

Facilitator

Facilitation improves the likelihood that EBP will be implemented (Kitson et al., 2008). The PARiHS framework uses the term facilitation to describe how a person makes things easier for others by helping to change their attitudes, habits,

skills, and ways of thinking and working (Rycroft-Malone, 2004). In my study, I use the term facilitator instead of facilitation as I am interested in describing the skills and attributes needed by CNSs to promote EBP.

CNS attributes and skills necessary to promote EBP.

When interview participants were asked what skills and attributes were necessary for a CNS to facilitate the promotion of EBP, the CNSs all agreed that a master's degree was necessary along with communication/people skills. There wasn't full agreement on clinical background; ten of the CNSs stated that a strong clinical background in a specific specialty was warranted whereas one CNS stated that the MN prepared the CNS to find the necessary information and background for the area to which they were hired.

Educational preparation.

The recommended standard for CNSs in Canada and internationally is a master's degree from a graduate nursing program (CNA, 2009; DiCenso & Bryant-Lukosius, 2010a). Graduate education provides the necessary background for the characteristics and core competencies of APN. Seventeen percent of the

survey sample was prepared with a diploma and 26% had a baccalaureate and this has some implications for CNS practice. Kring (2008) states that because the expertise to transform knowledge from research findings to a usable commodity is not typical of a nurse's skill set, a master's level education is needed to understand and implement the competencies required for promotion and implementation of EBP. Krom and Bautista (2010) reported similar findings and concluded that a master's prepared CNS is perfectly positioned to promote EBP. They found that staff nurses within their institution who had enrolled in an institutionally sponsored EBP program and had several years of education about EBP were unable to successfully search the literature to find evidence to support clinical questions, despite the additional education. Although baccalaureate prepared nurses completed courses in research and statistics, this background would not be sufficient to fully understand and implement the processes to access, utilize, and disseminate research. Gerrish et al. (2011) found "statistically high differences between those nurses with Master's qualifications and above and those with a bachelor degree or below" (p. 7). As there is no credentialing mechanism in place for CNSs in Canada, nurses can identify themselves as CNSs

even if they lack the required graduate education and expertise in a clinical specialty (Bryant-Lukosius et al, 2010).

According to Goudreau (2011) in the United States the APRN Alliance and the National Council of State Boards of Nursing came together between 2006 and2008 to start a dialogue regarding the standardized education for APNs. Changes to how APRNs are educated will include courses in three core role competencies: pharmacology, pathophysiology, and physical assessment. There is an expectation that there will be consistent education/curriculum across the United States. To become an APRN a nurse will need to write a certification exam as a measure of entry level competency and they will also require a second license to practice in an advanced practice role (Goudreau, 2011). There will be ongoing communication between licensure, accreditation, certification, and education components for APRN regulation. The target date for implementation is 2015. The National Council of State Boards of Nursing has fully endorsed the model and they are working toward education of the state boards of nursing regarding implementation. Various state boards of nursing have begun to work through the legislative process or the rule-making process (Goudreau, 2011).

Clinical expertise.

Ten of the interview participants in this study stated that CNSs needed a clinical grounding in their speciality area in addition to the master degree preparation. In order to be a CNS, a nurse needs several years of practice to develop a particular expertise and CNS8 did not think that one year of practice followed with a master's degree would be sufficient. CNS4 talked about Benner's novice to expert theory to illustrate why she thought a CNS needed a number of years of experience prior to gaining clinical expertise since the first few years are spent figuring out basic nursing skills.

Patricia Benner's (2001) novice to expert theory describes experiential learning as a necessary adjunct to a sound educational base in nursing. This theory also seeks to define excellence in nursing practice and it differentiates between different levels of nursing practice. Benner sought to explore the concept of experiential knowledge, which is learned through clinical experience in a specific discipline. In her examination of clinical knowledge, Benner applied the Dreyfus Model of Skill Acquisition (as cited in Benner, 2001) to nursing practice and delineated several characteristics of practicing nurses with various levels of experience to examine the type of learning and thinking that evolves as a nurse

develops his/her practice. Benner identified levels of nurses as: novice; advanced beginner; competent; proficient; and expert.

According to Benner, "the novice or beginner has had no experience in the situations in which they are expected to perform" (2001, p. 20). The novice learns about practice situations in terms of objective attributes, they exhibit rule-governed behaviour that is limited and inflexible, and rules must be given to guide performance. These behaviours are evident in student nurses and new graduates. The advanced beginner can demonstrate a marginally acceptable performance in the clinical setting and has coped with enough practice situations to understand the recurring relevant aspects of the situation. The advanced beginner continues to rely on rules, takes in little of the situation, needs support in the clinical setting to set priorities, and requires support if care of patients' needs. According to Benner the competent nurse has been in the same position for two to three years and is able to consider his/her own actions in terms of long-range goals. These goals help establish a perspective based on considerable conscious, abstract and analytic contemplation of the whole situation. The competent nurse lacks the speed and flexibility of the proficient nurse but he/she has the ability to cope with many of the changing conditions in the clinical area. The proficient nurse perceives

situations as wholes rather than as discrete parts. The proficient nurse has learned from experience about typical events and those events which are modifiable, he/she has an improved decision-making processes, considers fewer options and is able to detect the accurate reason for problems. The proficient nurse is able to recognize early warning signs and this level of proficiency is usually found in nurses who have worked with a similar population for three to five years (Benner, 2001).

According to Benner (2001), the expert nurse no longer relies on analytic principles to connect understanding of a situation to appropriate action. The expert relies on a considerable background of experience, has an intuitive grasp of each situation, and is able to focus on the accurate reason(s) for problems without wasteful consideration of a large range of alternative diagnoses and solutions. Unlike the proficient level, Benner does not provide an exact time frame to reach an expert level of nursing competency. Given that the time frame to gain proficiency is three to five years, it could be extrapolated that to reach an expert level a nurse would take at least that long. Benner also notes that some nurses, no matter how much time they spend in a setting, are not able to reach the expert

level as they are unable to meet the criteria that would place them in the expert category.

One of the CNSs interviewed stated that often one cares for patients who do not precisely fit one's speciality, or they may be admitted with co-morbidities and a master's degree would provide the skills needed to find pertinent resources. As CNS 9 shared, "I'm not an expert in addictions, but I'm pretty sure I know what resources to look through and get a good handle and then I am very good at connecting the dots and coordinating services to best support the patient's needs" (p. 9). CNS6 stated the master's degree provides sufficient background for figuring out issues in related clinical areas and actual experience in a specialty was not completely necessary.

In Alberta a nurse using the title "specialist" is required to have three years of experience in a specialty and a graduate degree in an applicable area of practice (College and Association of the Registered Nurses of Alberta, 2006). Oberle and Allen (2001) also agree that the nurse in the APN role must be an expert practitioner whose role is based on well-developed practical knowledge and pattern recognition skills which is informed by graduate education. However, they also argue that "thinking of the nurse as an expert leads to objectification and

oppression of clients" (p. 148) and true nursing expertise unfolds in relational communication. The objective of advanced practice nursing is human flourishing which is exhibited by a practice that is generative and creative and is able to transform problems into possibilities (Oberle & Allen, 2001).

Communication and people skills.

In their work settings each of the CNSs who were interviewed saw the need for, and experienced, the integration of tacit, experiential, and relational knowledge within their social interactions with their co-workers. They described the relational knowledge as communication/ people skills that they needed in order to transfer/translate evidence into the workplace. It was stated that if a person could not communicate their knowledge and expertise they would not be viewed as a resourceful person.

According to Senge (1990) and McWilliam, Kothari, Ward-Griffen, Forbes and Liepert (2009), those in knowledge management and organizational learning are merging around the idea that the knowledge production in an organization occurs in its social networks. Knowledge generation is a social phenomenon that is produced in personal relationships.

> They're merging around this simple idea that the knowledge of an organization is in its social networks, in the networks of relationships. If

> people do not trust each other, there is less knowledge. If people cannot turn to somebody for help, there is less knowledge. If people cannot talk openly about a difficulty, there is less capacity to learn. Knowledge is a social phenomenon. We generate and live our knowledge in networks of personal relationships. (Senge, 2001, n. p.)

Throughout the study it became evident that those CNSs who were able to promote EBP in their workplaces with the least amount of resistance were those who had a history with their organizations. They had relationships with the RNs, LPNs, physicians, and other staff whose input could affect their work. Those CNSs who had more difficultly, or were unable to overcome barriers, had come from outside the organizations in which they were trying to promote EBP. This speaks largely to the influence of the context of each of the workplaces and the ability of the CNS to demonstrate their own skills and attributes and their ability to accommodate to its culture and leadership styles.

Positive Patient Outcomes

According to the CNA (2009), CNSs have the potential to make significant contributions to the health of Canadians through nursing interventions. Although there have been only four studies in Canada (Carr and Hunt, 2004; Forster et al., 2005; Hogan & Logan, 2004; Lasby, Newton & Von Platen, 2004) that examined the impact on patient outcomes based on CNSs interventions, there

are many examples where CNSs have been instrumental in changing practice to benefit patient care (Fulton & Baldwin, 2004). The participants in this study had utilized numerous avenues of practice to ensure their patients were receiving treatment and care based on EBP. The CNSs identified problems with the flow of information in their units. By standardizing orders based on clinical practice guidelines, CNSs were able to make their units more efficient for their patient population. As CNS8 expressed, CNSs have the potential to improve practice, but they cannot do this in isolation.

Other CNSs provided examples of finding gaps in the literature regarding situations that were predominant in their practice; they then reviewed the literature to develop EBP protocols. For example, CNS5 found that there was a gap about sexual health education for children and adolescents with developmental disabilities. This led to a need assessment for this population and CNS5 found that the adolescents were getting "really nothing and we went further, and found out there was very little at home either" (p. 2). CNS8, who had worked primarily in rehabilitation settings, found that in her practice she needed to keep up with the latest literature to remain practice current for her client base. Her work on bladder management was disseminated from her home institution to

the health region at large. CNS10 covertly implemented an EBP as well as circumventing resistance by one team member, but felt that she should not have to do so.

Even though these CNSs found evidence to support a change in practice there were also contextual components to consider in EBP promotion activities. Unfortunately in Canada there is a paucity of research on the effectiveness of the CNS role (Bryant-Lukosius et al., 2010a) and as a result we cannot base human resource decisions on the results of Canadian evidence. When commenting on how CNSs were utilized, participants in the DiCenso-Bryant-Lukosius (2010a) decision support synthesis stated that once the roles were introduced, CNSs were generally well received. As one participant commented, "there are pockets of them, and when they are there, they are very effective" (Bryant- Lukosius et al., 2010a, p. 149).

To date, there have been four Canadian studies that have reported CNS role outcomes. Carr and Hunt (2004) reported that nurses who worked with CNSs felt renewed, engaged, empowered, and motivated to improve their practice. Forster et al. (2005) found no differences in hospital readmission rates, deaths, or adverse outcomes with CNS led care as compared to standard RN care, but the

patient ratings of quality care were higher in the CNS led group. CNS led care resulted in improved team member perceptions of knowledge, family centeredness, and ability to intervene with families (Hogan & Logan, 2004). Lasby et al. (2004) reported longer duration of breast milk provision, decreased demand on health care resources, and enhanced maternal confidence with a CNS led neonatal transitional care team. CNSs need to publish the outcomes of their work as this would help their cause around the policy decision making tables of government and hospital administration.

Despite the dearth of Canadian studies regarding CNS effectiveness, there is a growing body of international literature about CNS effectiveness. Fulton and Baldwin's (2004) annotated bibliography of 70 studies which was completed for the National Association of Clinical Nurse Specialists, an American organization, found that hospital units which utilized CNS skills were able to reduce the length of hospital stays, readmissions, emergency room visits, and overall health care costs. They also found that CNS practice had a positive influence on staff nurse knowledge, quality of life, and patient satisfaction. This could be a reflection of their ability to answer clinical questions and it could also be a reflection of their communication/ people skills in solving these same clinical questions.

Study Strengths and Limitations

The purpose of this mixed methods study was to gain a deeper understanding of the current CNS role in Saskatchewan as it pertains to promoting EBP and I believe this goal was accomplished as it adds to a limited body of knowledge that illuminates further the importance of this role. The use of an explanatory sequential mixed methods design was a strength as it allowed me to explore and explain the experiences of CNSs in Saskatchewan health care settings using two sets of data which allowed for the convergence of findings from the surveys and interviews. The PARiHS framework which conceptualizes evidence, context, and facilitation and their interrelationship as a prerequisite for the implementation of EBP, was instrumental in guiding the overall study and organizing the study findings. This study illustrates that the conceptual framework is useful and practical model for research.

The interviews provided an opportunity for CNSs to elaborate on the findings of the surveys and to share their experiences with the researcher. The use of interpretive description is also a strength of this study. As the qualitative research method chosen to guide the sampling, data collection, and to direct the analysis of the interviews, interpretive description is philosophically aligned with

interpretive naturalistic orientations that are common in nursing (Thorne et at., 2004). The purpose of interpretive description is to articulate the patterns and themes in relation to various clinical phenomena. The outcomes of research using interpretive description are capable of informing disciplinary understanding as it extends beyond description and moves into the domain of "so what" that drives all applied disciplines (Thorne, 2008). As a novice researcher I likely talked during the interviews more than was necessary to gain the participants' perspectives and may be viewed as a limitation. However, my experience as a CNS was a strength, as I could relate to the challenges the participants faced.

The main limitation of this study was obtaining the sample through the SRNA's database as their database used self-identification as the only criteria to be considered a CNS. Self-identification is not a reliable criterion as there is a general misunderstanding of the need for a master degree and clinical expertise. Also, if RNs did not check off the correct box during registration, as one of my former CNS co-worker neglected to do, then they were excluded from the sample. The SRNA would not allow me to contact CNSs directly if they had indicated they were available for research purposes. The CNSs received a letter and a reminder through the SRNA which requested that they contact me and this may

have limited some from participating. However, through snowballing and my experience as a CNS in the Saskatchewan context, I am confident that I was able to contact the majority of the CNSs in the province for the interviews.

The sample size for the survey was too small for any statistical analysis other than basic descriptive statistics. A larger sample size would be needed to carry out multiple regressions which are done to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. It would have been interesting to examine the relationships between variables such as education level and sources of evidence used, years as a CNS and perceptions of facilitators and challenges. With regard to generalizability, one requires a sample that is reflective of the population, but with the CNS title confusion, this is difficult to ascertain. However, I am confident that my survey sample of 23 included the majority of CNSs in Saskatchewan and therefore the results would be generalizable to the CNS in Saskatchewan with caution. With regard to those chosen as the qualitative sample, Thorne (2008) states that interpretive descriptive studies can be of any size, but these studies are generally built upon relatively small samples from five to thirty. In a future study using mixed methods I could also adopt an evaluation framework as this would assist

researchers in evaluating the mixed research study results (Leech, Dellinger, Brannagan, & Tanaka, 2009).

Plans for Dissemination of Findings

As an assistant professor at the College of Nursing at the University of Saskatchewan, I will use this dissertation as a foundation and catalyst to build my evolving program of research. There is also the expectation is that these research results will be disseminated to the appropriate audiences (CIHR, 2007). My findings will be widely disseminated and started with an oral presentation to NPs, CNSs, and healthcare policy makers and administrators at the September, 2011 CAAPN Biennial Conference in Saskatoon, Saskatchewan where I was asked by the editor of the Clinical Nurse Specialist journal to submit a manuscript based on my research (personal communication with Janet Fulton, September 29, 2011). The research findings will be summarized into a short, reader-friendly format and sent to each of the study participants. The results of this research will also be shared with the Chief Nursing Officer of Saskatchewan who is interested in finding out more about how the CNS role could further positively impact patient outcomes and lower healthcare costs. Additional copies in of the reader-friendly study synopsis will be available to any other interested individuals or

organizations as the creation of new knowledge, such as this study, often does not, by itself, lead to its widespread adoption or impact health (CIHR). Manuscripts are being developed for publication in high impact peer reviewed journals. The dissemination of study results will add to the current knowledge base regarding the CNS role in promoting EBP and will influence the evolution of this role in Saskatchewan.

Implications for Practice, Research, Education, and Policy

There are significant challenges faced by CNSs in Canada including understanding of the role, lack of title protection, limited Canadian CNS research (Bryant-Lukosius & DiCenso, 2010a), and limited access to CNS-specific graduate education.

Practice.

According to DiCenso and Bryant-Lukosius (2010a) CNS roles are not well understood by government policy-makers or health-care administrators and when decisions need to be made about the need for APNs, CNSs may not be considered due to their lack of visibility. It will be contingent on the CNSs to become more involved at policy levels to increase their visibility so that policy

makers and administrators are aware of the improvements they could potentially make in the lives of patients and in streamlining processes. CNSs would likely make the most impact if they could demonstrate decreased costs associated with CNS care resulting in lower patient readmission rates and decreased length of stay. The CNSs have the skills and knowledge to do this; however, they need to demonstrate what improvements they could make to policy-makers. CNSs could partner with researchers to conduct studies of patient outcomes that result from CNS intervention compared to standard care. According to Donald et al. (2010) strong recommendations by NPs and CNSs need to be directed at professional nursing associations to develop communications strategies to educate nurses, healthcare workers, the public, and health care employers about the roles, responsibilities, and improvements in patient care that can result from employing APNs.

It would be best not to randomly assign CNSs to problem units and expect them to change the culture on their own. The PEPPA (participatory, evidence-informed, patient-centred process for advanced practice nursing role development, implementation and evaluation) framework developed by Bryant-Lukosius and DiCenso, (2004) should be utilized to ensure there is a match between the setting

and the CNS. It was designed to provide guidance for APN researchers, health-care providers, administrators, and policy-makers to optimally develop and implement APN roles (Charbonneau-Smith et al., 2010). It concerned me to hear some of the CNSs stories about how people on their units reacted to the CNS-led initiatives so I would also advocate for the inclusion of health team members in the hiring process as this could potentially increase awareness and acceptance of the role.

There is a need to strengthen the CNS's role by standardizing the regulatory requirements at the national level; these requirements need to include graduate education and expertise in a practice area. This standardization would enhance understanding of the role and minimize role ambiguity which is the most important factor influencing role implementation (Lloyd Jones, 2005). Consistent application of regulatory requirements would ensure that those who hold CNS positions are appropriately qualified. A first step could be to follow the practice of the Nurses Association of New Brunswick whereby those who identify themselves as CNSs are cross-referenced to ensure they have a master's degree. In Alberta, in order to use the title Specialist, one must have worked in a clinical specialty for at least three years. If there is a desire to clarify the role boundaries,

standardizing the requirements is necessary. In future it may also be advantageous to have certification exams modeled on the NP exams or the CNA certification exams.

When reflecting on what motivates people in their work place Jack Welch, former chairman and chief executive of General Electric Co., stated, "You have to get rewarded in the soul and the wallet. The money isn't enough, but a plaque isn't enough either. . . . you have to give both" (Hymowitz & Murray, 1999, p. B1). Rhynes et al., make a number of suggestions that administrators need to consider regarding the importance of pay: 1) employees concerns regarding pay should not be ignored unless of course you do not want to retain an individual; 2) most of the best employees want a strong pay for performance relationship; and 3) evaluate current pay systems with respect to the strength of pay for performance relationships. These pay and classification discrepancies should not be ignored if employers want to retain their CNSs. At this time across Canada, remuneration processes need more work to ensure fair compensation across professions (DiCenso & Bryant-Lukosius, 2010a).

Research.

There is a paucity of CNS research in Canada, and if this continues, the full benefits of the CNS role for patients will not be actualized and some suggest the role could stagnate or disappear altogether (O'Connor & Ritchie, 2010). According to Bryant-Lukosius (2010) American research has demonstrated the value added to patient outcomes when CNSs are engaged in their care. However there are also differences in how Canadian and American CNSs are educated, regulated, funded, and deployed (Bryant-Lukosius, 2010). We need further research to examine the effectiveness of the CNS role in the Canadian context. It is not known why there is such a low output of CNS-related research but Bryant-Lukosius states it may be due to lack of funding opportunities, a limited supply of PhD prepared CNSs, or lack of investigators interested in developing a program of research regarding this role. If the current trend of limited CNS research continues, the CNSs will remain vulnerable to budget cutbacks and they will be replaced by other roles for which there may be better evidence. It is time for academics and CNSs to publish with regard to the effectiveness of their work and disseminate it to those who benefit from, work with or supervise CNSs to understand their perspectives about their role or CNS numbers will continue to decline.

Education.

The recommended educational criterion for APNs in Canada is a master's degree from an accredited NP and/or graduate nursing program (DiCenso & Bryant-Lukosius, 2010a). DiCenso and Bryant-Lukosius state that specialty education is important to develop the CNS role both for the APNs' confidence and job satisfaction as well as establishing clinical competency necessary to operationalize the role. According to the CNA (2009), universities are responsible for providing curricula based on the competencies of APN practice. In Canada, there are 25 NP programs offered by 33 educational institutions and exit credentials include: three post-RN certificate/diploma programs, two post-BScN certificate/diploma programs, 15 master's programs, four master's or post-master's diploma/certificate programs, and one post-master's certificate (Martin-Misner et al., 2010). However, there are no formal graduate education programs specifically targeting CNSs (Kaasalainen et al., 2010) although the University of Manitoba offers a Master of Nursing which focuses on cancer care for APN roles (Martin Misner et al., 2010). The lack of formal graduate CNS programs coupled with no title protection means that any nurse with a generic master's degree in nursing can call themselves a CNS (Martin-Misner et al., 2010).

Because there is limited access to specialty education in Canada, CNSs "may be practicing in areas in which they initially lack specialized knowledge and skills" (DiCenso & Bryant-Lukosius, 2010a, p.31). There is also a lack of qualified faculty, preceptors, and clinical placements to educate prospective CNSs (DiCenso & Bryant-Lukosius, 2010a). If we want to base care on best practice these formidable challenges need to be overcome. In Canada, we need to develop a collaborative national approach to APN educational standards and requirements. As well, given the geographical challenges of such a large country, additional educational opportunities need to be developed through distance delivery to enable nurses to access specialty education.

Policy.

Policies are responses to problems (Pal, 2006). Policymaking is about trying to solve problems. Problem structuring is central to the development of policy development. "At the most extreme, if a problem is not widely recognized at all, there will be little or no policy response" (Pal, 2006, p. 97). And the lack of standardization regarding the CNS role is a problem. Currently the CNSs in Canada do not have a united voice, and until they do, policy development will be stalled. If the CNSs from Ontario and British Columbia were able to resolve their

differences and reunite with CAAPN, there could be a national voice for CNSs and a process of credentialing could begin. The four required steps for credentialing are recognition for standardized educational programs, securing the qualified staff for the areas of specialization, establishing local, then national standards, and ensuring that practitioners have continued to update their knowledge and maintain their competence throughout their careers (Ross-Kerr, 2003). Until this happens, the current piecemeal approach will maintain the current ambiguity which threatens the existence of this role in many of the smaller provinces such as Saskatchewan.

Conclusion

CNSs can be leaders in transforming the health care. According to Grimshaw, Eccles, and Tetroe (2004) 25% of patients receive unnecessary care or care that is potentially harmful and another 30-40% of patients do not get treatments of proven effectiveness. Promotion of EBP by CNSs would further ensure that patients are offered treatments based on best evidence. EBP is a team effort and as the findings and the literature indicate, the CNS as a team member and as a facilitator of EBP can improve patient outcomes by using the best evidence and streamlining processes, but they need access to evidence and they

need to work in a supportive context to do so. Based on my research study findings, I believe that this role is not well understood or received in some of the settings where CNSs work. I propose that political lobbying and research documenting the effectiveness of the role are two ways to increase the profile of this advanced practice role. I would also recommend the use of the PEPPA framework to assess which areas could benefit from the deployment of APNs. National standardized regulatory CNS requirements would also help to clarify the role for nurses, healthcare workers, and the public as there will be no progress in advancing the CNS role if the current role ambiguity continues.

Nursing exists because it is a practice discipline that is sanctioned by citizens who expect that nurses will use the best practice or evidence available to improve client outcomes. This study has illustrated that the clinical nurse specialist (CNS), as an educator, consultant, clinical expert, researcher, and leader is well situated to promote EBP in the workplace when they have access to evidence and work in supportive contexts.

References

Aherns, T. (2005). Evidence-based practice: Priorities and implementation strategies. *AACN Clinical Issues: Advanced Practice in Acute & Critical Care, 16*(1), 36-42.

Australian College of Mental Health Nurses. (2012).What is credentialing? Retrieved on August 30, 2012 from http://www.acmhn.org/credentialing/what-is-credentialing.html

Avery, L., & Schnell-Hoehn, K. (2010). Clinical nurse specialist practice in evidence-informed multidisciplinary cardiac care. *Clinical Nurse Specialist, 24*(2), 76-79.

Benner, P. (1984/2001). *From Novice to Expert: Excellence and Power in Clinical Nursing Practice* [commemorative edition]. Upper Saddle, NJ: Prentice Hall.

Berggren, C. (1996). Swedish midwives' awareness of, attitudes to and use of selected research findings. *Journal of Advanced Nursing, 23,* 462-470.

Bergum, V. (2004). Relational ethics in nursing. In J. Storch, P. Rodney, and R. Starzomski (Eds.). *Toward a moral horizon: Nursing ethics for leadership and practice* (pp. 485-503). Toronto: Pearson Education Canada.

Buerhaus, P., Donelan, K., Ulrich, B.,; Kirby, L. Norman, L., & Dittus, R. (2005). Registered nurses' perceptions of nursing. *Nursing Economics, 23*(3), 110-118.

Booth, A. (1996). In search of the evidence: Informing effective practice. *Journal of Clinical Effectiveness, 1*(1), 25-29.

Bowen, S., & Zwi, A. (2005). Pathways to "evidence-informed" policy and practice: A framework for action. *PLos Medicine, 2*(7), e166. Retrieved June 30, 2011 from http://www.plosmedicine.orgarticle/info:doi/10.1371/journal.pmed.0020166

Brown, J., Lewis, L., Ellis, K., Stewart, M., Freeman, T. & Kasperski, J. (2011). Conflict in interprofessional health teams: Can it be resolved? *Journal of Interprofessional Care, 25,* 4-10.

Bryant-Lukosius, D. (2010). The Clinical Nurse Specialist role in Canada: Forecasting the future through research. *Canadian Journal of Nursing Research, 42*(2), 19-25.

Bryant-Lukosius, D., Carter, N., Kilpatrick, K., Martin-Misener, R., Donald, F., Kaasalainen, S. et al. (2010). The clinical nurse specialist role in Canada. *Nursing Leadership, 23* Special Issue, 140-166.

Bryant-Lukosius, D., DiCenso, A, Browne, G., & Pinelli, J. (2004). Advanced practice nursing roles: Development, implementation and evaluation. *Journal of Advanced Nursing, 48*(5), 519-529.

Canadian Institute for Health Information. (2010). *Regulated Nurses: Canadian Trends, 2005-2009.* Ottawa: Author.

Canadian Institute of Health Research. (2009a). Knowledge translation at CIHR. Retrieved May 28, 2009 from http://www.cihr-irsc.gc.ca/e/ documents/knowledge_translation _at_cihr_general_ slide_deck_internet_english_2009_04_20.pdf

Canadian Institute of Health Research. (2009b). More about knowledge translation at CIHR. Retrieved May 29, 2009 from http://www.cihr-irsc.gc.ca/e/29484.html

Canadian Institute of Health Research. (2007). Knowledge Translation at the Canadian Institutes of Health Research: A Primer. Technical Brief # 18. Retrieved on October 10, 2008 from http://www.ncddr.org/kt/products/ focus/focus18/

Canadian Nurses' Association. (2009). *Position statement: Clinical nurse specialist.* Ottawa: Author.

Canadian Nurses Association. (2004). Evidence-based decision-making and nursing practice: CNA Policy Statement. Retrieved November 10, 2006 from http://www.cna-nurses.ca/CNA/ about/mission/default_e.aspx

Canadian Nurses' Association. (2008). Advance nursing practice: A national framework. Retrieved May 1, 2008 from http://www.cna-aiic.ca/ CNA/documents/pdf/ publications/ANP_National_Framework_e.pdf

Carlson, C., & Plonczynski, D. (2008). Has the BARRIERS Scale changed Nursing practice? An integrative review. *Journal of Advanced Nursing, 63*(4), 322-333.

Carr, M., & Hunt, P. (2004). *Acute Care Geriatric Network Report.* Submitted to

the Nursing Directorate, British Columbia Ministry of Health.

Champagne, F., Lemieux-Charles, L., & McGuire, W. (2004). Introduction: Towards a broader understanding of the use of knowledge and evidence in health care. In L. Lemieux-Charles and F. Champagne (Eds.). *Using knowledge and evidence in health care: Multidisciplinary perspectives.* (pp. 3-17). Toronto: University of Toronto Press.

Charbonneau-Smith, R., McKinlay, R. J., & Vohra, J. (2010). Resources to facilitate research in advanced practice nursing. *Canadian Journal of Nursing Research, 42*(2), 105-111.

Charchar, F., Le May, S., & Bolduc, L. (2005). Expérience d'un suivi systématique post hospitalisation chez une clientèle ayant subi un Syndrome Coronarien Aigu. *L'infirmière Clinicienne, 2*(1), 11-24.

Clark, M., Bours, G., & Defloor, T. (2002). Summary report of the prevalence of pressure ulcers. *EPUAP Rev, 4,* 49-57.

College and Association of Registered Nurses of Alberta. (2006). *Standard for Use of the Title"Specialist"*. Retrieved from http://www.nurses.ab.ca/Carna/index.aspx?WebStructureID=320

Creswell, J. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (2nd Ed.). Thousand Oaks, CA: Sage Publications.

Creswell, J., & Plano Clark, V. (2007). *Designing and conducting mixed methods research.* Thousand Oaks, CA: Sage Publications.

Cummings, G., & McLennan, M. (2005). Advanced practice nursing: Leadership to effect policy change. *JONA, 35*(2), 61-66.

Cummings, T. & Worley, C. (1997). *Organization Development and Change* (6th ed.). Cincinnati, OH: South-Western College Publishing.

Daly, W., & Carnwell, R. (2003). Nursing roles and levels of practice: A framework for differentiating between elementary, specialist and

advancing nursing practice. *Journal of Clinical Nursing, 12,* 158-167.

DeGrass, C. & Nicklin, W. (2001). Advanced nursing practice: Old hat, new design. *Canadian Journal of Nursing Leadership, 14*(4), 7-12.

DiCenso, A. (2008). Roles, research & resilience: The evolution of advanced practice nursing. *The Canadian Nurse, 104*(9), 37.

DiCenso, A., & Bryant-Lukosius, D. (2010a). *Clinical Nurse Specialists and Nurse Practitioners in Canada: A Decision Support Synthesis.* Retrieved on June 10, 2010 from http://www.chsrf.ca/final_research/commissioned_research/dicenso/10-CHSRF-0362_Dicenso_EN_TRUE%20Final.pdf

DiCenso, A., & Bryant-Lukosius, D. (2010b). The long and winding road: Integration of Nurse Practitioners and Clinical Nurse Specialists into the Canadian health-caresystem. *Canadian Journal of Nursing Research, 42*(2), 3-8.

DiCenso, A., Cullum, & Ciliska, D. (1998). Implementing evidence-based nursing: Some misconceptions. *Evidence-Based Nursing 1*(38), 38-39.

DiCenso, A., Guyatt, G., & Ciliska, D. (2005). *Evidence-Based Nursing: A Guide to Clinical Practice.* St. Louis, MO: Mosby.

Dickinson, H. D. (2004). A sociological perspective on the transfer and utilization of social scientific knowledge for policy-making. In L. Lemieux-Charles and F. Champagne (Eds.). *Using knowledge and evidence in health care: Multidisciplinary perspectives,* (pp. 41-69). Toronto: University of Toronto Press.

Dillman, D., Phelps, G., Tortora, R., Swift, K., Kohrell, J., Berck, J. & Messer, B. (2008). *Response rate and measurement differences in mixed mode surveys using mail, telephone, interactive voice response and the internet.* Retrieved June 18, 2009 from http://www.sesrc.wsu.edu/

dillman/papers/ResponseRateandMeasurement.pdf

Dobbins, M., Ciliska, D., & Mitchell, A. (1998). Dissemination and use of research evidence for policy and practice by nurses: A model of development and implementation strategies. Ottawa: Canadian Nurses Association.

Donald, F., Bryant-Lukosius, D., Martin-Misener, R., Kaasalainen, S., Kilpatrick, K., Carter, N. (2010). Clinical nurse specialists and nurse practitioners: Title confusion and lack of role clarity. *Nursing Leadership, 23* special issue, 189-210.

Ehrenberg, A., & Estabrooks. C. (2004). Why using research matters. *Journal of Wound,Ostomy and Continence Nursing, 31*(2), 62-64.

Estabrooks. C. (1998). Will evidence-based nursing practice make practice perfect? *Canadian Journal of Nursing Research, 301,* 15-36.

Estabrooks, C., Chong, H., Brigidear, K., & Profetto-McGrath, J. (2005). Profiling Canadian nurses' preferred knowledge sources for clinical practice. *Canadian Journal of Nursing Research, 37*(2), 118-140.

Estabrooks, C., Thompson, D., Lovely, J., & Hofmeyer, A. (2006). A guide to Knowledge translation theory. *The Journal of Continuing Education in the Health Professions, 26*(1), 25-36.

Everett, L., & Sitterding, M. C. (2011). Transformational leadership required to design and sustain evidence-based practice: A system exemplar. *Western Journal of Nursing Research, 33*(3), 398-426.

Ferguson, L., Milner, M., & Snelgrove-Clarke, E. (2004). The role of intermediaries: Getting evidence into practice. *Journal of Wound, Ostomy and Continence Nursing, 31*(6), 325-327.

Fitzgerald, S., & Wood, S. (1997). Advanced practice nursing: Back to the future. *JOGNN, 26,* 101-107.

Fonteyn, M., & Ritter, B. (2000). Clinical reasoning in nursing. In J. Higgs & M. Jones (Eds.), *Clinical reasoning in the health professions*, (pp. 107-115). New York: Butterworth.

Forster, A., Clark, H., Menard, A., Dupuis, N., Chernish, R., Chandok, N. et al. (2005). Effect of a nurse team coordinator on outcomes for hospitalized medicine patients. *American Journal of Medicine, 118*(10), 1148-53.

Fulton, J., & Baldwin, K. (2004). An annotated bibliography reflecting CNS practice and outcomes. *Clinical Nurse Specialist, 18*(1), 21-39.

Funk, S., Champagne, M., Wiese, R., & Tournquist, E. (1991). BARRIERS: The barriers to research utilization scale. *Applied Nursing Research, 4*(1), 39-45.

Gardner, G., Chang, A., & Duffield, C. (2007). Making nursing work: Breaking through the role confusion of advanced practice nursing. *Journal of Advanced Nursing, 57*(4), 382-391.

Gerrish, K., Guillaume, L., Kirshbaum, M., McDonnell, A. Tod, A., & Nolan, M. (2011). Factors influencing the contribution of advanced practice nurses to promoting evidence-based practice among front-line nurses: Findings from a cross-sectional survey. *Journal of Advanced Nursing, 67*(5), 1079-1090.

Ginsburg, L., Lewis, S. Zacheim, L., & Casebeer, A. (2007). Revisiting interaction in knowledge translation. *Implementation Science,2*(34). Doi: 10.1186/1748-5908-2-34.

Goudreau, K. (2011). *What is happening next door? The Advanced Practice Registered Nurse (APRN) Consensus Model in the US: What is it and how might it impact Canada*. Presentation at CAAPN conference September 28-29, 2011 Saskatoon, Saskatchewan.

Goudreau, K. & Smolenski, M. (2008). Credentialing and certification: Issues for

Clinical Nurse Specialists. *Clinical Nurse Specialist, 22*(5), 240-244.

Grimshaw, J., Eccles, M., & Tetroe, J. (2004). Implementing clinical guidelines: Current evidence and future implications. *Journal of Continuing Education in the Health Professions, 24,* S31-S37.

Grol, R. (2001). Successes and failures in the implementation of evidence-based Guidelines for clinical practice. *Medical Care, 39*(8) supplement 2, II-46-II-54.

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communications and Technology,* 29(2), 75-91.

Gurzick, M. & Kesten, K. (2010). The impact of clinical nurse specialists on clinical pathways in the application of evidence-based practice. *Journal of Professional Nursing, 26*(1), 42-48.

Halm, M. (2010). "Inside looking in" or "inside looking out"? How leaders shape cultures equipped for evidence-based practice. *American Journal of Critical Care, 19*(4), 375-378.

Harvey, G., Loftus-Hills, A., Rycroft-Malone, J., Titchen, A., Kitson, A., McCormack, B. & Seers, K. (2002). Getting evidence into practice: The role and function of facilitation. *Journal of Advanced Nursing, 37*(6), 577-88.

Henderson, S. (2004). The role of the clinical nurse specialist in medical-surgical nursing. *MEDSURG Nursing, 13*(1), 38-41.

Hickey, M. (1990). The role of the clinical nurse specialist in the research utilization process. *Clinical Nurse Specialist, 4*(2), 93-96.

Hogan, D., & Logan, J. (2004). The Ottawa Model of Research Use: A guide to clinical innovation in the NICU. *Clinical Nurse Specialist, 18*(5), 255-61.

Hunt, J. (2001). Research into practice: The foundation for evidence-based care. *Cancer Nursing, 24*(2), 78-86.

Hymowitz, C., & Murray, M. (1999). Boss talk: Raises and praise or out the door—How GE's chief rates and spurs his employees. *Wall Street Journal*, p. B1. Retrieved July 7, 2011 from http://proquest.umi.com.login.ezproxy.library.ualberta.ca/pqdlink?index=0&sid=2&srch mode=1&vinst=PROD&fmt=3&startpage=1&clientid=12301&vname=PQD&RQT=309&did=42519115&scaling=FULL&ts=1310074876&vtype=PQD&rqt=309&TS=1310074885&clientId=12301&cc=1&TS=1310074885

Ingersoll, G., McIntosh, E., & Williams, M. (2000). Nurse-sensitive outcomes of advanced practice. *Journal of Advanced Nursing, 32*(5), 1272-1281.

Johansson, B., Fogelberg-Dahm, M., & Wadensten, B. (2010). Evidence-based practice: The importance of education and leadership. *Journal of Nursing Management, 18*, 70-78.

Kaasalainen, S., Martin-Misener, R., Kilpatrick, K., Harbman, P., Bryant-Lukosius, D., Donald, F., DiCenso, A. (2010). A historical overview of the development of advanced practice nursing roles in Canada. *Nursing Leadership, 23,* 35-60.

Kerner, J. (2008). Integrating research, practice, and policy: What we see depends on where we stand. *Journal of Public Health Management & Practice, 14*(2), 193-8).

Kitson, A., Harvey, G., & McCormack, B. (1998). Enabling the implementation of evidence based practice: A conceptual framework. *Quality in Healthcare,7,* 149-158.

Kitson, A., Rycroft-Malone, J., Harvey, G., McCormack, B., Seers, K., & Titchen, A.(2008). Evaluating the successful implementation of evidence into practice using the PARIHS framework: theoretical and practical challenges. *Implementation Science, 3*(1) Retrieved March 9, 2009 from

http://www.implementationscience.com/content/pdf/1748-5908-3-1.pdf

Kring, D. (2008). Clinical nurse specialist practice domains and evidence-based practice competencies. *Clinical Nurse Specialist, 22*(4), 179-183.

Krom, Z., & Bautista, Z. (2010). A unique collaborative nursing evidence-based practice initiative using the Iowa Model. *Clinical Nurse Specialist, 24*(2), 54-59.

Lachance, K. (2005). Are advanced practice nurses here to stay? The APN in the Oncology setting. *Canadian Oncology Nursing Journal, 15*(2), 96-100, 106.

Lasala, C. A., Connors, P., Pedro, J., & Phipps, M. (2007). The role of the clinical nurse specialist in promoting evidence-based practice and effecting positive patient outcomes. *The Journal of Continuing Nursing Education, 38*(6), 262-270.

Lasby, K., Newton, S. & Von Platen, A. (2004). Neonatal transitional care. *Canadian Nurse, 100*(8), 18-23.

Leech, N., Dellinger, A, Brannagan, K., & Tanaka, H. (2009). Evaluating mixed Research studies: A mixed methods approach. *Journal of Mixed Methods Research, 4*(1), 17-31. Doi : 10.1177/1558689809345262

Lemieux-Charles, L. & Barnsley, J. (2004). An innovation diffusion perspective. In L. Lemieux-Charles and F. Champagne (Eds.). *Using knowledge and evidence in health care: Multidisciplinary perspectives,* (pp. 115-131). Toronto: University of Toronto Press.

LoBiondo-Wood, G., & Haber, J. (2009). *Nursing Research in Canada: Methods And Critical Appraisal for Evidence-Based Practice.* Toronto, ON: Elsevier Canada.

Loiselle, C., Profetto-McGrath, J., Polit, D., & Beck, C. (2011). *Canadian essentials of nursing research* (3rd ed.). New York: Lippincott Williams & Wilkins.

Lloyd Jones, M. (2005). Role development and effective practice in specialist and advanced practice roles in acute hospital settings: Systematic review and meta-synthesis. *Journal of Advanced Nursing, 49*(2), 191-209.

MacKay, M. (1998). Research utilization and the CNS: Confronting the issues. *Clinical Nurse Specialist, 12*(6), 232-7.

Mantzoukas, S., & Watkinson, S. (2006). Review of advanced nursing practice: the international literature and developing generic features. *Journal of Clinical Nursing, 16,* 28-37.

Marchildon, G., & O'Fee, K. (2007). *Health Care in Saskatchewan: An Analytical Profile.*Saskatoon, SK: Houghton Boston.

Martin-Misener, R., Bryant-Lukosius, D., Harbman, P., Kaasaliainen, S., Carter, N., Kilpatrick, K., & DiCenso, A. (2010). Education of advanced practice nurses in Canada. *Nursing Leadership, 23*, 61-84.

Mayo, A., Agocs-Scott, L., Khaghani, F., Moti, N., Voorhees, M., Gravell, C., & Cuenca, E. (2010). Clinical nurse specialist practice patterns. *Clinical Nurse Specialist, 24*(2), 60-68.

McCormack, B., Kitson, A., Harvey, G., Rycroft-Malone, J., Titchen, A. & Seers, K. (2002). Getting evidence into practice: The role of context. *Journal of Advanced Nursing, 38*(1), 94-104.

McIssac, F, Struthers, C., & Miller, L. (2010, December). *CAAPN Clinical Nurse Specialist Teleconference Meeting Minutes.* Conducted at the meeting of CAAPN executive and CNS participants via teleconference.

McWilliam, C., Kothari, A., Ward-Griffin, C., Forbes, D., & Leipert, B. (2009). Evolving the theory and praxis of knowledge translation through social

interaction: a social phenomenological study**.** *Implementation Science, 4*(26), doi:10.1186/1748-5908-4-26

Meijers, J., Janssen, M., Cummings, G., Wallin, L., Estabrooks, C., & Halfens, R. (2006). Assessing the relationship between contextual factors and research utilization in nursing: Systematic literature review. *Journal of Advanced Nursing, 55*(5), 622-635.

Meerabeau, E. (2001). Back to the bedpans: The debates over preregistration nursing education in England. *Journal of Advanced Nursing, 34*(4),427-435.

Morse, J., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Research, 1*(2), 1-18.

Morse, J., & Field, P. (1995). *Qualitative research methods for health professionals (*2nd ed.). Thousand Oaks, CA: Sage Publications.

Muller, Jujcs, M., Dubendorf, P., & Harrington, P. (2010). Clinical nurse practice and magnet designation. *Clinical Nurse Specialist, 24*(5), 252-259.

Munro, B. H. (2001). *Statistical methods for health care research* (4th ed.). New York: Lippincott.

National Institute for Health and Clinical Excellence. (2007). *How to change practice:Understand, identify and overcome barriers to change.* London, UK: National Institute for Health and Clinical Excellence.

Oberle, K, & Allen, M. (2001). Nature of advanced practice nursing. *Nursing Outlook, 49,* 148-153.

O'Connor, P., & Ritchie, J. (2010). Commentary. *Canadian Journal of Nursing Research, 42*(2), 26-28.

Ohman, K. (1996). Expanding collaborative research CNS efforts for research

utilization. *Clinical Nurse Specialist, 10*(2), 58-62.

Pal, L. (2006). *Beyond policy analysis: Public Issue Management in Turbulent Times*(3rd ed.). Toronto, ON: Nelson.

Pepler, C., Edgar, L., Frisch, S., Rennick, J., Swidzinski, M., White, Brown, T., & Gross, J. (2005). Unit culture and research based nursing practice in acute care. *Canadian Journal Nursing Research, 37*(3), 66-85.

Polit, D. (1996). *Data analysis and statistics for nursing research.* New York: Prentice-Hall.

Polit, D., & Tatano Beck, C. (2008). *Nursing research: Generating and assessing evidence for nursing practice.* New York: Lippincott, Williams, & Wilkins.

Profetto-McGrath, J., Ehrenberg, A., Young, S. & Hill, W. (2008). *CHSRF/CIHR Final Report: Clinical nurse specialists' role in selecting and using knowledge to improve practice and develop practice based policies designed to promote optimum patient outcomes*.

Profetto-McGrath, J., Bulmer Smith, K., Hugo, K., Taylor, M., & El-Hajj. (2007). The nature and sources of evidence used by clinical nurse specialists in their practice: A pilot study. *WORLDviews on Evidence-Based Nursing, 4*(2), 86-96.

Raja-Jones, H. (2002). Role boundaries – research nurse or clinical nurse specialist? *Journal of Clinical Nursing, 11*, 415-420.

Rasool, G. H. (2005). Dissemination of nursing knowledge: The application of the Model of change. *International Nurses Society on Addictions, 16,* 79-82.

Rhynes, S. L., Gerhart, B., & Minette, K. (2004). The importance of pay in employee motivation: Discrepancies between what people say and what they do. *Human Resource Management, 43*(4), 381–394.

Rogers, E. (1995). *Diffusion of Innovations* (4th ed.). New York: Free Press.

Ross-Kerr, J. (2003). Credentialing in nursing. In J. Ross_Kerr & M. Woods (Eds.).*Canadian Nursing Issues and Perspectives (*4th ed.) (pp. 416-427). Toronto: Mosby.

Royal College of Nursing. (n.d). *Our mission*. Retrieved March 11, 2007 from http://www.rcn.org.uk/aboutus/mission.php

Royal College of Nursing, Australia. (2006). Position statement: Advanced practice nursing. Retrieved May 16, 2008 from http://www.rcna.org.au/UserFiles/advanced_practice_nursing_revised _2_2006.pdf

Rycroft-Malone, J. (2004). The PARIHS framework: A framework for guiding The implementation of evidence-based practice. *Journal of Nursing Care Quality, 19*(4), 297-304.

Rycroft-Malone, J., Kitson, A., McCormack, B., Seers, A., Titchen, A., & Estabrooks, C. (2002). Ingredients for change: Revisiting a conceptual framework [Electronic version]. *Quality and Safety in Health Care, 11,* 174-181.

Rycroft-Malone, J., Seers, K., Titchen, A., Harvey, G., Kitson, A., & McCormack, B. (2004). What counts as evidence in evidence-based practice? *Journal of Advanced Nursing, 47*(1), 81-90.

Sackett, D., Rosenburg, W., Gray, J., Haynes, R., & Richardson. W. (1996). "Evidence-based medicine: What it is and what it isn't." *British Medical Journal*, 312, 71-72.

Saskatchewan Union of Nurses. (2011). *Mission and Vision.* Retrieved on October 10, 2011 from http://www.sun-nurses.sk.ca/mission.php

Saskatchewan Union of Nurses. (2008). *Collective Agreement Between Saskatchewan Association of Health Organizations and the Saskatchewan Union of Nurses*. Retrieved May 9, 2011 from http://www.sun-nurses.sk.ca/Negotiations/Agreements/SUN%20SAHO%20COLLECTIVE%20AGREEMENT%20APRIL%202008%20TO%20MARCH%202012%20%20Final%20.pdf

Schein, E. (1992). *Organizational Culture and Leadership* (2nd ed.). San Francisco: Jossey-Bass.

Scott-Findlay, S. (2007). Fostering evidence-based practice: Strategies for nurse leaders. *AWHONN, 11*(3), 250-252.

Sears, S. (2006). The role of information technology in evidence-based practice. *Clinical Nurse Specialist, 20*(1), 7-8.

Senge, P. (1990). *The Fifth Discipline: The art and practice of the learning organization.* Toronto: Doubleday.

Senge, P. (2001, November). The learning organization today. *Highlights of the closing address at The Learning Summit.* Retrieved on April 28, 2003 from http://leadership.gc.ca/static/dayinthelife/learning/features/summit/senge_peter_e.shtml

SRNA. (2007). Standards and foundation competencies for the practices of registered nurses. Retrieved May 28, 2009 from http://www.srna.org/nurse_resources/standards_competencies.pdf

SRNA. (2008a). *About Us.* Retrieved May 1, 2009 from http://www.srna.org/about/about_us.php

SRNA. (2008b). *Environmental Scan.* Retrieved May 1, 2009 from http://www.srna.org/communications/pdf/2008_enviro_scan.pdf

SRNA. (2009). SRNA Newsbulletin. Retrieved May June 1, 2009 from

http://www.srna.org/images/stories/pdfs/communications/newsbulletin/bulletin_apr_09.pdf

Stetler, C. (2001). Updating the Stetler model of research utilization to facilitate evidence-based practice. *Nursing Outlook, 49,* 272-9.

Thompson, C. (2003). Clinical experience as evidence in evidence-based practice. *Journal of Advanced Nursing, 43*(3), 230-237.

Thompson, C., McCaughan, D., Sheldon, T., Mulhall, A., & Thompson, D. (2001a). The accessibility of research-based knowledge for nurses in United Kingdom acute care settings. *Journal of Advanced Nursing, 36*(1), 11-21.

Thompson, C., McCaughan, D., Sheldon, T., Mulhall, A., & Thompson, D. (2001b). Research information in nurses' clinical decision-making: What is useful? *Journal of Advanced Nursing, 36*(3), 376-388.

Thorne, S. (2008). *Interpretive description.* Walnut Creek, CA: Left Coast Press.

Thorne, S., Reimer-Kirkham, & O'Flynn-McGee, K. (2004). The analytic challenge in Interpretive Description. *International Journal of Qualitative Methods, 3*(1), Article 1.Retrieved June 15, 2011 from http://www.ualberta.ca/~iiqm/backissues/3_1/pdf/thorneetal.pdf

Titler, M. (2007). Translating research into practice. *AMJ, 107*(6), 26-33.

Tuite, P. & George, E. (2010). The role of the clinical nurse specialist in facilitating evidence-based practice within a university setting. *Critical Care Nurse, 33*(2), 117-125.

Walker, J., Urden, L., & Moody, R. (2009). The role of the CNS in achieving and Maintaining Magnet status. *Journal of Nursing Administration, 39*(12), 515-523.

Appendix A

APPROVAL FORM

Date:	December 22, 2009
Principal Investigator:	Joanne Profetto-McGrath
Study ID:	Pro00010204
Study Title:	Clinical Nurse Specialists' Role in Promoting Evidence Based Practice in Saskatchewan's Health Care Settings
Approval Expiry Date:	December 21, 2010

Thank you for submitting the above study to the Health Research Ethics Board (Health Panel). Your application, along with revisions submitted December 22, 2009, has been reviewed and approved on behalf of the committee.

A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.

Approval by the Health Research Ethics Board does not encompass authorization to access the patients, staff or resources of Alberta Health Services or other local health care institutions for the purposes of the research. Enquiries regarding Alberta Health Services administrative approval, and operational approval for areas impacted by the research, should be directed to the Alberta Health Services Regional Research Administration office, #1800 College Plaza, phone (780) 407-6041.

Sincerely,

Glenn Griener, Ph.D.
Chair, Health Research Ethics Board (Health Panel)

Note: This correspondence includes an electronic signature (validation and approval via an online system).

Appendix B

SASKATCHEWAN REGISTERED NURSES ASSOCIATION

ADMINISTRATIVE STANDARDS

POLICY NAME: INFORMATION MANAGEMENT Facilitation of External Research or Developmental Initiatives **NUMBER:** AS-4.3

DATE OF ORIGIN: April, 2004

POLICY TYPE: Administrative Standards **DATE REVISED:** January, 2008

APPROVED: **REVIEW DATE:** January, 2012

SRNA recognizes its public interest responsibility in advancing health human resource planning and nursing knowledge in a manner that protects the confidentiality of nurse members, and is consistent with legislation, practice standards and Council policy.

1. As SRNA has an obligation under privacy laws to use identifiable member information only for the purpose for which it was given.
   1.1. SRNA will not provide identifiable member information that was provided for registration purposes to external parties seeking to conduct research, solicit sales or publicize developmental opportunities.

2. In order to advance the knowledge-based discipline of nursing. SRNA will
   2.1. Facilitate contact between approved researchers and/or providers of developmental opportunities with registered nurse members by affixing mailing labels to provided packages and delivering the packages to the post office.

2.1.1. RN members who have, through an election on their annual registration application, refused involvement in research mailings will be excluded from facilitated research samples drawn that year.

2.1.2. To ensure appropriate sample structure, researchers will be informed of nurse members' right to exclude themselves from research contact.

2.2. Extract data that is not traceable to specific individuals or institutions from the SRNA member database and provide it to approved researchers

3. Research and/or developmental initiative requests must be submitted to the Director of Communications and Corporate Services and must include

3.1. The party requesting the data or RN member contact

3.2. The purpose/benefit of the project and, for research projects, a brief statement of the research question

3.3. For research projects requiring member contact, the procedures to be followed, including length of time for any interviews, questionnaires, and other data gathering activities

3.4. The level and list of any data being requested

3.5. The analysis to be performed on any data

3.6. The nature and intent of any data linkages

3.7. The means by which the researcher will ensure the security of any data

3.8. A description of how and when any data will be disposed

3.9. The names and titles of all individuals who will have access to any data

3.10. A copy of any ethical committee review of the project

3.11. Sources of funding for a research request and proposed analysis

3.12. The definition of the RN population requested

3.13. The project time frame, including any follow-up mailings

3.14. Any publications expected to result from research data analysis and how they will be distributed

3.15. Commitment to provide SRNA with summary research project findings

3.16. Commitment to provide summary research project findings upon participant request

4. All research and/or developmental initiative requests will be jointly reviewed by the Director of Regulatory Services/Registrar and the Director of Communications and Corporate Services.
   - 4.1. Approved research or developmental initiatives must
     - 4.1.1. Extend the body of nursing knowledge
       - 4.1.1.1. All sales promotion requests will be denied
     - 4.1.2. Have relevance to the profession of nursing
     - 4.1.3. Lie within the current capabilities of SRNA information systems
     - 4.1.4. Not make undue demands on SRNA human resources
     - 4.1.5. Present manageable timelines
   - 4.2. Director approval of project requests shall be documented in writing.

5. Researchers will be alerted to Canadian Institute for Health Information (CIHI) services.

6. Before mailing will be facilitated an approved researcher requesting contact with members must provide SRNA with
   - 6.1. A signed letter of agreement defining the project and the fee structure
   - 6.2. A copy for SRNA of the research tool being mailed
   - 6.3. Prepared recipient packages, including pre-stamped return mail envelopes if they are being used
   - 6.4. A copy of covering letter to members which must include
     - 6.4.1. A description of the project
     - 6.4.2. Assurance of participant anonymity and privacy
     - 6.4.3. A statement that participation is voluntary
     - 6.4.4. Instructions about how to learn of project results
   - 6.5. A signed non-disclosure agreement including assurance that
     - 6.5.1. The researcher will use the data only for the stated purpose
     - 6.5.2. No attempt will be made to link or otherwise identify a data subject other than as divulged
     - 6.5.3. To include only aggregate data in publications or reports
     - 6.5.4. To restrict access to the named individuals, maintain the data's electronic and/or physical security, and dispose of the data as specified
     - 6.5.5. To not disclose the data to others

6.5.6. To acknowledge SRNA and/or SRNA members as the data source in any publication or report

7. A researcher requesting facilitation of member contact must agree to inclusion of a letter from SRNA to its members stating that
   7.1. Member names and addresses have not been released to the researcher
   7.2. Participation in the project is voluntary and that they may choose to withdraw at any time.

8. Researchers who violate conditions for disclosure, or who misrepresent the nature of the data supplied to them, will be subject to sanctions, which may include
   8.1. A written complaint to the sponsoring organization
   8.2. Refusal of future access to data or facilitation of member contact
   8.3. Legal action

9. Approved research requests will be subject to the following fees:

9.1. Internal consultation and programming: (Min. $300) (for sample definition and extraction)	$150.00 per hour
9.2. External programming for sophisticated sampling:	at cost
9.3. Clerical time for labelling and mailing/emailing:	$40.00 per hour
9.4. Labels:	$0.03 each
9.5. Adhesive postage strips for large envelopes:	$0.10 each
9.6. Explanatory letter on SRNA letterhead:	$0.07 each
9.7. Postage and delivery to post office:	at cost

10. Approved developmental initiatives shall
    10.1. If processed entirely by SRNA employees, be subject to the research fee structure.
    10.2. If processed by a combination of SRNA employees and an external mail preparation service, be subject to a flat fee of $500 payable to SRNA plus all distributor costs. Distributor costs may be invoiced directly to the initiator by the distributor.
11. An approved researcher or developmental initiator may negotiate an in kind contribution from SRNA that reduces or waives fees.

Appendix C

Letter of Introduction

(University of Alberta Letterhead)

To Potential Participant,

My name is Diane Campbell and I am a doctoral candidate at the Faculty of Nursing, University of Alberta. My supervisor is Dr. Joanne Profetto-McGrath.

I am conducting a study entitled the *Clinical Nurse Specialists' Role in Promoting Evidence Based Practice in Saskatchewan's Health Care Settings* to understand how this role is operationalized in Saskatchewan. An Information Sheet is enclosed to fully explain the study. A token of appreciation is also included for your time.

If you are a currently working as a CNS or have been within this past year and would consent to complete a survey by phone, please contact me at 306-787-1022 or by e-mail address diane.campbell@usask.ca. Please provide the following information in your correspondence.

Name
Phone Number
Best days of the week
Best time of day (i.e., morning, afternoon, and/or evening)

Thank you for considering participation in this study.

Yours truly,

Diane Campbell, RN, MN

Appendix D

(University of Alberta Letterhead)

INFORMATION SHEET FOR PROSPECTIVE PARTICIPANTS

Title of Research Study**: Clinical Nurse Specialists' Role in Promoting Evidence-based Practice in Saskatchewan's Health Care Settings**

Principal Investigator: Diane Campbell RN, PhD (c)

Supervisor: Dr. Joanne Profetto-McGrath RN, PhD

Background: Patients in our care expect that nurses will use the best practice or evidence available to improve their outcomes. A major challenge to the implementation of best practice is the complex environments in which nurses' work. It has been suggested that the clinical nurse specialist (CNS), as an educator, consultant, clinical expert, researcher, and leader is well placed to promote evidence-based practice (EBP) in the workplace. However there are barriers that nurses continue to experience in their attempt to find and implement best practice.

Purpose: The purpose of this proposed explanatory mixed methods study is to add to our understanding of how CNSs perceive their role in promoting EBP and their contribution to positive patient outcomes in the Saskatchewan healthcare context.

You have been asked to participate as you have indicated on your 2009 SRNA registration that you are a clinical nurse specialist and that you are willing to participate in research studies.

Procedures: Participation in this study will involve:

a) A telephone survey that will take approximately 40 minutes to complete.

b) Following the survey some participants will be invited to take part in a face to face interview lasting approximately an hour to an hour and a half at a mutually convenient time and at a place of your choice to further discuss questions relevant to the CNSs' role in promoting evidence-based practice in Saskatchewan.

c) The survey results will be analyzed using a variety of statistics and the interviews will be taped recorded, transcribed and then analyzed to determine common experiences and recurrent themes.

Possible Benefits: Possible benefits to you for participating in this study are that you have an opportunity to share your knowledge about your role as a CNS in SK, and in so doing have an opportunity to reflect on your contribution to health care.

Possible Risks: It is not expected that you will suffer any risks from participating in this study. Your employment will not be jeopardized by non-participation or withdrawal from the study.

Confidentiality: Research data collected about you during this study will only be identified using a code number. Your name will not be disclosed to anyone. Any publication or presentations stemming from this study will not identify you by name or employer.

Voluntary Participation: Your participation is completely voluntary. You are free to withdraw from the research study at any time. If you do choose to withdraw, any data derived form your participation until your withdrawal will be retained as data in this study.

Reimbursement of Expenses: There will be not cost to you for your participation in this study.

Contact Names and Telephone Numbers:
If you have concerns about your rights as a study participant, you may contact the Health Review Ethics Board representative at the University of Alberta: Susan Babcock (780) 492-6561 or susan.babcock@ualberta.ca

If you have any questions or concerns please contact any of the individuals listed below:

Diane Campbell RN, PhD Candidate @ diane.campbell@ualberta.ca or (306) 787-1022

Dr. J. Profetto-McGrath, Professor - Faculty of Nursing @ joanne.profetto-mcgrath@ualberta.ca or (780) 492-1597

Appendix E

Reminder Post-Card

Side 1

Hello,
A short while ago the SRNA sent you a package about a study regarding the role of the CNS in Saskatchewan. If you are a currently working as a CNS or have been within this past year and would consent to complete a survey by phone, please contact me at 306-787-1022_or by e-mail address diane.campbell@usask.ca. Please provide the following information in your correspondence.
Name
Phone Number
Best days of the week to be contacted
Best time of day to be contacted (i.e., morning, afternoon, and/or evening)

Looking forward to your response,

_____
Signature

Side2

Stamp

Address Label

Appendix F

CONSENT FORM

Part 1 (to be completed by the Principal Investigator):

Title of Project: The CNS Role in Promoting Evidence-Based Practice in Saskatchewan' s Health Care Settings

Principal Investigator: Diane Campbell RN. PhD(c) Phone Number: (306) 787 - 1022

Co-PI: Dr. Joanne Profetto-McGrath RN PhD Phone Number: (780) 492 - 1597

Part 2 (to be completed by the research subject):

	Yes	No
Do you understand that you have been asked to be in a research study?	☐	☐
Have you read and received a copy of the attached Information Sheet?	☐	☐
Do you understand the benefits and risks involved in taking part in this research study?	☐	☐
Have you had an opportunity to ask questions and discuss this study?	☐	☐
Do you understand that you are free to withdraw from the study at any time, without having to give a reason and without affecting your future medical care?	☐	☐
Has the issue of confidentiality been explained to you?	☐	☐

Who explained this study to you? _____

I agree to take part in this study: YES ☐ NO ☐

Signature of Research Subject _____

(Printed Name) _____

Date: _____

Signature of Witness _____

I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate.

Signature of Investigator or Designee _____ Date _____

THE INFORMATION SHEET MUST BE ATTACHED TO THIS CONSENT FORM AND A COPY GIVEN TO THE RESEARCH SUBJECT

Appendix G

Survey Questions

(Profetto-McGrath, Ehrenberg, Young, & Hill, 2005)

Before we start, I would like to remind you that your participation in completing this survey is completely voluntary. If there are any questions that you do not wish to answer, proceed to the next question. You have the right to stop answering the survey at any time.

The information we are requesting in this interview is protected under the Freedom of Information and Protection of Privacy Act (FOIPP) and will be used only for research purposes.

If you have any questions about this study, you may call Health Ethics Research Office at (306) 780-1022.

[*Interviewer directions and prompts*]

Q: EVID (Written, online sources)

To begin, think about all the sources of written evidence you use in your work. Some examples are journals, internet sites or the media. We want to find out how often you use certain sources. The following is a list of sources of written evidence. Please rank them on a 5 point scale, with 1 being never and 5 being very often.

On a monthly basis, how FREQUENTLY do you access the following sources of written evidence?

EVID1

The Internet at work, at home or in your spare time?

1.....2.....3.....4….....5 8 0

never rarely sometimes often very often don't know NR (no response)

EVID2

...computerized literature search databases? Examples: Medline, CINAHL, and PUBMED.

1.....2.....3.....4….....5 8 0

EVID3

...general internet searches for information, like Google, Yahoo?

1.....2.....3.....4….....5 8 0

never rarely sometimes often very often don't know NR (no response)

On a monthly basis, how FREQUENTLY do you access the following sources of written evidence?

EVID4

...other websites or databases that deal directly with you area of practice or expertise [*In case they need a prompt, e.g., Joanna Briggs, CNA Nurse One*]?

1.....2.....3.....4….....5 8 0

never rarely sometimes often very often don't know NR (no response)

EVID5

…Popular press/media? Examples: newspapers, radio, television?

1.....2.....3.....4….....5 8 0

EVID6

…Libraries, including library search services and librarians?

1.....2.....3.....4….....5 8 0

EVID7

…Affiliated Libraries in your health institution or at your local University / College?

1.....2.....3.....4….....5 8 0

EVID8

…Nursing Literature - general?

1.....2.....3.....4….....5 8 0

EVID9

… Medical Literature - general?

1.....2.....3.....4….....5 8 0

EVID10

…Literature tailored to your specialty/clinical practice?

1.....2.....3.....4….....5 8 0

never rarely sometimes often very often don't know NR (no response)

On a monthly basis, how FREQUENTLY do you access the following sources of written evidence?

EVID11

…Original studies reported in on-line journals or original studies reported in journals to which you subscribe?

1.....2.....3.....4….....5 8 0

EVID12

…Research journals?

1.....2.....3.....4….....5 8 0

EVID13

…Bulletins and newsletters?

1.....2.....3.....4….....5 8 0

EVID14

…Textbooks?

1.....2.....3.....4….....5 8 0

EVID15

…Clinical Practice Guidelines?

1.....2.....3.....4….....5 8 0

EVID16

…Benchmarking documents? Examples are pamphlets, manuals.

1.....2.....3.....4….....5 8 0

Q: EVIDENCE OTHER (EVIDOTH)

Are there any other 'literature or database' sources of evidence that I have not presented and that you have used in the past month?

1 yes **2** no **8** don't know **0** no response

EVIDOTHa

Please specify what those sources of written evidence are. [*If more than one is given, list numerically 1, 2, etc.*]

EVIDOTHb

How often do you use that/those source(s)?

[*If more than one is given, list numerically 1, 2 etc. and use same 5 point scale where 1=never and 5=very often*]

Q: EVIDENCE (PEOPLE-BASED SOURCES)

Now I want you to think about 'people-based' sources of evidence you use in your work. Some examples are other nurse specialists, patients, conferences or your own experience. [*Read the list of sources of evidence and ask the CNS to rank them on a scale from 1 to 5, with 1 being never and 5 being very often*].

On a monthly basis, how FREQUENTLY do you access the following sources of 'people-based' sources of evidence?

EVID17

Other Clinical Nurse Specialists?

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

EVID18

…Clinical Nurse Educators?

1.....2.....3.....4.....5 8 0

EVID19

… Nurses working in your clinical setting?

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

EVID20

…Patients / family members?

1.....2.....3.....4.....5 8 0

EVID21

…Other health care professionals? Examples are physiotherapists, nutritionists, pharmacists.

1.....2.....3.....4.....5 8 0

EVID22

… Physicians?

1.....2.....3.....4.....5 8 0

On a monthly basis, how FREQUENTLY do you access people based sources of evidence….

EVID23

… Managers?

1.....2.....3.....4.....5 8 0

EVID24

...other experts? Examples are Legal or Public Relations.

1.....2.....3.....4.....5 8 0

EVID25

…In-services, seminars, workshops?

1.....2.....3.....4.....5 8 0

EVID26

…Conferences?

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

EVID27

…Literature clubs / journal clubs?

1.....2.....3.....4.....5 8 0

EVID28

…Unit/Patient Rounds?

1.....2.....3.....4.....5 8 0

EVID29

…Educational programs you've completed? [*Examples are Certificate programs*]

1.....2.....3.....4.....5 8 0

EVID30

…Your personal experience? By access to personal experience we mean how FREQUENTLY do you use your past experiences as a source of evidence.

1.....2.....3.....4.....5 8 0

EVID31

…What has worked for you for years? How FREQUENTLY do you use what has worked for you for years as a source of evidence?

1.....2.....3.....4.....5 8 0

EVID32

…Your experience on a previous/current unit?

1.....2.....3.....4.....5 8 0

EVID33

Are there any other 'people-based' sources of evidence that we have not discussed that you have used in the past month? Answer yes or no.

1 yes 2 no 8 don't know 0 no response

EVID33a

Please specify what those other 'people-based' sources of evidence are. [*If more than one is given, list numerically 1, 2, etc.*].

EVID33b

How often did you use that/those source(s)? [*If more than one is given, list numerically 1, 2, etc. and use same 5 point scale where 1=never and 5=very often*].

USE

I am going to ask you several questions about HOW you use evidence in your practice. Using the same 5 point scale, with 1 being never and 5 being very often..

USE1

Do you use evidence to assist you in the development of policies, procedures and protocols?

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

USE2

Do you use evidence to develop resources such as pamphlets which provide information to patients?

1.....2.....3.....4.....5 8 0

USE3

Do you use evidence to develop resources such as binders with materials which provide information to colleagues, allied health professionals or management?

1.....2.....3.....4.....5 8 0

USE4

Do you use evidence to develop technical tools? [*An example is assisting with the administration of patient care*.]

1.....2.....3.....4.....5 8 0

USE5

Do you use evidence to learn of new developments in your practice area(s) and/or field of expertise?

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

USE6

Do you use evidence to develop strategies for conveying knowledge into the practice setting?

1.....2.....3.....4.....5 8 0

USE7

Do you use evidence to facilitate improvements in patient care?

1.....2.....3.....4.....5 8 0

USE8

Do you use evidence to develop new research proposals?

1.....2.....3.....4.....5 8 0

USE9

Do you use evidence to propose or suggest further research ideas?

1.....2.....3.....4.....5 8 0

USE10

Do you use evidence to assist you with face to face discussions and consultations with patients and families?

1.....2.....3.....4.....5 8 0

USE11

Do you use evidence to assist you with face to face discussions and consultations with nurses?

1.....2.....3.....4.....5 8 0

USE12

Do you use evidence to assist you with face to face discussions and consultations with peers?

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

USE13

Do you use evidence to assist you with face to face discussions & consultations with other health care professionals?

1.....2.....3.....4.....5 8 0

USE14

Do you use evidence to assist you with face to face discussions & consultations with management or administration?

1.....2.....3.....4.....5 8 0

USE15

Are there any other ways in which you use evidence that we have not discussed? ***Answer yes or no***.

1 yes 2 no 8 don't know 0 no response

USE15a

Please specify other ways you use evidence in your practice. [*If more than one is given, list numerically 1, 2, etc*.].

USE15b

How often do you use them? [*If more than one is given, list numerically 1, 2, etc. and use same 5 point scale where 1=never and 5=very often*].

****

Q: FACILITATORS

For this next section I want you to think about things and people that facilitate your use and dissemination of evidence. I will list sources. Using the same 5 point scale where 1 is never and 5 is very often, please tell me ***how often these sources helped you to use and disseminate evidence into practice.***

FAC1

Clinical Nurse Educators.

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

FAC2

Other Clinical Nurse Specialists.

1.....2.....3.....4.....5 8 0

FAC3

Settings where front line nursing staff have access to the internet.

1.....2.....3.....4.....5 8 0

FAC4

Librarians.

1.....2.....3.....4.....5 8 0

FAC5

Your own knowledge & skills as a nurse.

1.....2.....3.....4.....5 8 0

how often these sources helped you to use and disseminate evidence into practice.

FAC6

Your credibility with front-line nurses.

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

FAC7

Being present in the practice setting.

1.....2.....3.....4.....5 8 0

FAC8

Communication skills.

1.....2.....3.....4.....5 8 0

FAC9

Tailoring the information to recipients.

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

FAC10

The existence of team meetings.

1.....2.....3.....4.....5 8 0

FAC11

Journal clubs.

1.....2.....3.....4.....5 8 0

FAC12

Nursing staff who understand the importance of evidence based practice.

1.....2.....3.....4.....5 8 0

FAC13

Having e-mail.

1.....2.....3.....4.....5 8 0

How often these sources helped you to use and disseminate evidence into practice.

FAC14

Educational programs focused on building evidence based knowledge or skills.

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

FAC15

An organizational culture which supports evidence based practice.

1.....2.....3.....4.....5 8 0

FAC16

Conferences, workshops, and in-services to learn about new information.

1.....2.....3.....4.....5 8 0

FAC17

Questions raised by nurses in your setting.

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

FAC18

Management support. [*If prompt needed use example of providing time and space for education or supporting new initiatives*]

1.....2.....3.....4.....5 8 0

FAC19

Physician support.

1.....2.....3.....4.....5 8 0

FAC20

Do any other facilitators come to mind that helped you to use and disseminate evidence into practice? Answer yes or no.

1 yes **2** no **8** don't know **0** no response

FAC20a

Please specify the other facilitator(s).

[*If more than one is given, list numerically 1, 2, etc.*]

FAC20b

How often did you use the stated facilitator(s)?

[*If more than one is given, list numerically 1, 2, etc. and use same 5 point scale where 1=never and 5=very often*.]

****

Q: BARRIERS

Now think about things and people that impede your use and dissemination of evidence. Using the same 5 point scale where 1 is never and 5 is very often, please ***indicate how often those sources impeded you in using and disseminating evidence into practice.*** [*List sources*]

BAR1

Time constraints in your daily practice.

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

BAR2

Time constraints for front line nurses in clinical settings.

1.....2.....3.....4.....5 8 0

BAR3

Heavy workload.

1.....2.....3.....4.....5 8 0

BAR4

Multiple roles.

1.....2.....3.....4.....5 8 0

BAR5

Poor understanding of your role as a CNS by other staff.

1.....2.....3.....4.....5 8 0

BAR6

Lack of resources. Some examples are physical, human, education and financial.

1.....2.....3.....4.....5 8 0

How often has this source impeded you in using and disseminating evidence into practice?

BAR7

Lack of nursing literature pertinent to your area of specialty.

1.....2.....3.....4.....5 8 0

BAR8

Difficulty accessing libraries.

1.....2.....3.....4.....5 8 0

BAR9

Resistance of managers at various levels.

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

BAR10

Resistant staff at various levels.

1.....2.....3.....4.....5 8 0

BAR11

Not having enough authority to effect relevant changes to procedures, policies and protocols.

1.....2.....3.....4.....5 8 0

BAR12

Staff difficulty in understanding content of published research.

1.....2.....3.....4.....5 8 0

BAR13

New evidence in the form of research conflicts with current practices in your area.

1.....2.....3.....4.....5 8 0

BAR14

The value placed upon research findings by front-line nurses.

1.....2.....3.....4.....5 8 0

How often has this source impeded you in using and disseminating evidence into practice?

BAR15

The autonomy perceived by nurses in the clinical setting.

1.....2.....3.....4.....5 8 0

BAR16

Organizational complexity and/or bureaucracy.

1.....2.....3.....4.....5 8 0

never rarely sometimes often very often don't know NR (no response)

BAR17

Inadequate collaboration between practice setting and educational institutions.

1.....2.....3.....4.....5 8 0

BAR18

The unionized environment.

1.....2.....3.....4.....5 8 0

BAR19

Do any other barriers come to mind that impeded you using or disseminating evidence in practice? Answer yes or no.

1 yes 2 no 8 don't know 0 no response

BAR19a

Please specify what that/those other barrier (s) is/are. [*If more than one is given, list numerically 1, 2, etc.*]

BAR19b

How often did they occur? If more than one is given, list numerically 1, 2, etc. and use same 5 point scale where 1=never and 5=very often.

****

Q: CHALLENGES

For this next section use a 5 point scale, where 1 means "Strongly Disagree" 2 "Disagree" 3 "Neither Agree nor Disagree" 4 "Agree" and 5 "Strongly Agree". ***I want to know how much you agree or disagree that the following aspects are the most challenging part of your role***.

CHAL1

Maintaining clinical expertise across a wide variety of medical and nursing sub-specialties.

1….....2.....3.....4.....5 8 0

Strongly Agree | Disagree | Neither Agree or Disagree | Agree | Strongly Agree | don't know | NR (no response)

CHAL2

The lack of information about clinical quality indicators.

1….....2.....3.....4.....5 8 0

CHAL3

The lack of understanding of my role in comparison to the role of the Clinical Nurse Educator.

1….....2.....3.....4.....5 8 0

CHAL4

Identifying complex patients and families who require Clinical Nurse Specialist intervention.

1….....2.....3.....4.....5 8 0

CHAL5

The volume of information and knowledge required for a large, varied program.

1….....2.....3.....4.....5 8 0

CHAL6

Balancing the demands associated with my role as a CNS.

1….....2.....3.....4.....5 8 0

CHAL7

Critically appraising the rapidly changing information in a complex area of care.

1….....2.....3.....4.....5 8 0

I want to know how much you agree or disagree that the following aspects are the most challenging part of your role…

CHAL8

Balancing shifting priorities based on changing clinical and program needs.

CHAL9

Interpreting, communicating and/or transferring research based findings to various professionals.

1….....2.....3.....4.....5 8 0

Strongly Agree | Disagree | Neither Agree or Disagree | Agree | Strongly Agree | don't know | NR (no response)

CHAL10

Interpreting current clinical practices and relating them to changing clinical needs.

1….....2.....3.....4.....5 8 0

CHAL11

Are there any other challenging aspects of your position?

1 yes 2 no 8 don't know 0 no response

CHAL11A

Please specify what those other challenging aspects are. [*If more than one is given, list numerically 1, 2, etc.*]

****

Q: BELIEFS

For these next questions, please answer yes **or** no to each statement.

OVER1

You believe that your primary role is to facilitate information.

1 yes 2 no 8 don't know 0 no response

OVER2

You believe that you can influence positive change by employing research evidence.

1 yes 2 no 8 don't know 0 no response

OVER3

Using evidence in daily practice is a job expectation of your role as a clinical nurse specialist.

1 yes 2 no 8 don't know 0 no response

OVER4

Overall, you believe that your practice is enhanced or improved when you use evidence.

1 yes 2 no 8 don't know 0 no response

OVER5

Overall, you believe that positive patient outcomes are increased by using evidence.

1 yes 2 no 8 don't know 0 no response

****

Q: CAPACITY

Please answer yes **or** no to EACH item as it applies to you.

***To increase your capacity to access evidence, you would need*:**

CAP1a

Further informal education 1 yes 2 no 8 don't know

CAP1b

Dedicated time 1 yes 2 no 8 don't know

CAP1c

Assistance / support from others 1 yes 2 no 8 don't know

CAP1d

Additional formal education 1 yes 2 no 8 don't know

CAP1e

Other (please specify) _____ 1 yes 2 no 8 don't know

CAP2

Please answer yes **or** no to EACH item as it applies to you.

***To increase your capacity to utilize evidence, you would need*:**

CAP2a

Further informal education 1 yes 2 no 8 don't know

CAP2b

Dedicated time 1 yes 2 no 8 don't know

CAP2c

Assistance / support from others 1 yes 2 no 8 don't know

CAP2d

Additional formal education 1 yes 2 no 8 don't know

CAP2e

Other (please specify) _____1 yes 2 no 8 don't know

Please answer yes **or** no to EACH item as it applies to you.

***To increase your capacity to disseminate evidence, you would need*:**

CAP3a

Further informal education 1 yes 2 no 8 don’t know

CAP3b

Dedicated time 1 yes 2 no 8 don’t know

CAP3c

Assistance / support from others 1 yes 2 no 8 don’t know

CAP3d

Additional formal education 1 yes 2 no 8 don’t know

CAP3e

Other (please specify) _____1 yes 2 no 8 don’t know

****

Q: DEMOGRAPHICS

These final questions will give us a better idea of who participated in this study.

DEMO1

- Gender [*No need to ask directly unless unable to determine based on name and voice*]

  1 Male 2 Female

DEMO2

- What is your age range? **99** refused

  DEMO a = 20-30,
  DEMO b = 31-40,
  DEMO c = 41 – 50,
  DEMO d = 51- 60,
  DEMO e = 60 and over

REGIS

- How many years have you been a registered nurse? _____

  0 less than one year 99 refused

CNS

- How many years have you been working as a Clinical Nurse Specialist?

  _____

  0 less than one year 99 refused

PRACT

- How many years have you been working in this clinical practice setting?

  _____

  0 less than one year 99 refused

PROFAS

- In addition to being a member of SRNA and CNA, are there any other professional associations you belong to? [List associations or Circle 'None' if no additional associations **or** 'No response' if they do not answer]

HIEDUC

- What is your HIGHEST level of nursing education? [*Circle one response only*]

1 Bachelors of Science
2 Masters
3 Doctorate
4 Nursing Diploma

0 No response **or** refused

YEARGRAD

- What year did you graduate from your highest level? [*Enter all 4 digits*]

__ __ __ __ 8 Don't know 99 No response or refused

WKHRS

- What is the average number of hours you work each week?

_____ hours per week 8 Don't know 99 No response or refused

RHA

- Who is your primary employer? [*Circle one response only*]

1 Regina Qu'Appelle Health Region
2 Saskatoon Health Region
3 Other Health Region (please specify) _____
4 Health Canada – First Nations and Inuit Health SK Region
5 Educational Institution (please specify) _____
6 Other (please specify) _____
7 Don't know
8 No response or refused

WORKSET

- What is your work setting with your primary employer?
  [*Select ONE response only. If necessary, prompt with categories. If the person says they work in more than one setting, have them select the one they spend the most time in*.]

1 Hospital
2 Rehabilitation Hospital
3 Home Care Agency
4 Nursing Home/ Long-term care
5 Community Health Agency
6 Community Nursing Clinic (Nursing Station)
7 Physician/ Dentist/ Family Practice Unit
8 Business/ Industry/ Occupational Health
9 Educational Institution
10 Association/ Government/ Regional Office
11 Mental Health Centre
12 Private Nursing Agency
13 Self-Employment
14 Other (please specify) _____

15 Don't know 0 No response

PRIME

Now, I want you to think about dividing your work responsibilities into 5 different areas like a pie so the total equals 100%. We just need a general percent ending in a 5 or 0. For example, 35%, not 33%. Say 'none' if the area does not apply to your work responsibilities.

I will first list all the 5 areas for you, then read them again one at a time. The 5 areas are:

1 Clinical Practice (i.e., Direct patient and/or family work),
2 Administration,
3 Education and Teaching,
4 Consultation, and
5 Research.

Out of 100 percent, how much of your work responsibilities is devoted to the following areas?
Read each one and write a number between -1 and 100. Type 0 if respondent says none for an area and -1 for refused or don't know. If any are -1, total will not show.]

(**PRIME1**)	Clinical Practice	___ percent
(**PRIME2**)	Administration	___ percent
(**PRIME3**)	Education/ Teaching	___ percent
(**PRIME4**)	Consultation	___ percent
(**PRIME5**)	Research	___ percent
	TOTAL	___ percent

Now I would like to know…

…What is the most important research question you would like to see addressed regarding CNSs' implementation of evidence into practice? [*Do not leave blank. Type 'No response' if they have no comment*]

And finally, do you have any additional comments? [*Type response* or indicate '*No response' if they have no comment*]

We've reached the end of the survey. I would like to thank you very much for your time and participation in this telephone survey!

Appendix H

Interview Guiding Questions

1. Briefly describe the setting where you work in terms of organization, culture, leadership and resources.
2. Please tell me about your work as it relates to EBP. If you were to craft a story of how EBP changed patient outcomes in your practice, what would this include?
3. What knowledge and skills do you believe are needed by CNSs to facilitate/promote EBP?
4. What facilitates your practice, particularly around implementation of EBP?
5. What kinds of barriers influence your practice, particularly around implementation of EBP?
6. What and/or whom provide support for your practice, particularly around implementation of EBP?
7. Findings from previous studies (e.g., Profetto-McGrath, et al., 2008) suggest that academic journals may not be the most useful format and transfer medium where research evidence is concerned. What medium would be the most practical for you as a CNS to promote EBP?
8. Findings from a previous study (Profetto-McGrath, et al.) involving CNSs suggest that due to time constraints using evidence for clinical decision making supersedes using evidence for the development of research questions and/or proposals. What is your perspective on this finding?
9. If you had the opportunity, what would you like to say to policy-makers and decision-makers about the CNS role in implementing and promoting EBP?
10. Is there anything you think I should know that we haven't talked about?
11. Is there anything you would like to ask me about this study before we end this interview?

If I need to clarify anything, do I have your permission to call you again?

Note: Additional questions for the interview will be developed based on the analysis of the data from the survey. Ethical approval for the updated interview guide will be obtained.

Appendix I

1 PAYMENT 2 REVIEW 3 CONFIRMATION

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