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Development and Testing of a Questionnaire to Measure Nurses' Intent to Practice Patient and Family-Centered Care During Bedside Rounds

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Development and Testing of a Questionnaire to Measure Nurses' Intent to Practice Patient and Family-Centered Care During Bedside Rounds

by

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Abstract

Nurses are committed to providing safe patient and family-centered care (PFCC) in part through nurses' contributions to multidisciplinary, patient, and family-centered bedside rounds. The **purpose** of this study was to develop a questionnaire to measure nurses' intent to practice PFCC during bedside rounds. Using the Theory of Planned Behavior the questionnaire aimed to capture nurses' attitudes, subjective norms, and perceived behavioral control as predictors of nurses' intentions. This is part of a larger study that will measure the effect of professional development workshops for healthcare professionals (HCPs) including nurses, physicians and allied health professionals on the family experience of PFCC during bedside rounds, and attitudes and practices of HCPs regarding bedside rounds. Feedback from 20 nurses was used to make revisions to the questionnaire, which will be used as the primary nursing outcome measure in the larger study.

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List of Abbreviations

ACH Alberta Children's Hospital

PFCC Patient and Family-Centered Care

HCP Health Care Professional

PICU Pediatric Intensive Care Unit

TPB Theory of Planned Behavior

CVI Content Validity Index

Chapter 1

Overview and Statement of Purpose

Background

Multidisciplinary patient and family-centered bedside rounds (hereafter referred to as *bedside rounds*) are "interdisciplinary work rounds at the bedside in which the patient and family share in the control of the management plan as well as in the evaluation of the process itself" (Sisterhen, Blaszak, Woods, & Smith, 2007, p. 320). Bedside rounds are critically important to improve outcomes for children who are hospitalized, and to improve family satisfaction with care (Mittal et al., 2010). Bedside rounds are a priority in pediatric medical institutions because they increase communication (Jacobowski, Girard, Mulder, & Wesley, 2010; Klieber, Davenport, & Freyenberger, 2006) and active participation with family members (Latta, Dick, Parry, & Tamura, 2008; Rosen, Stenger, Bochkoris, Hannon, & Kwoh, 2009). Through collaboration, parents and health care professionals (HCPs) can develop the best treatment plan to optimize the health and safety of the child.

Complex challenges exist in the development of bedside rounds due to a number of factors including a strong history of physician-driven and medical education-focused rounds. The American Academy of Pediatrics and Institute for Family-Centered Care note that the perspectives of children and families are valuable in clinical decision making to improve patient outcomes and recommend that bedside rounds with the family present be standard practice (Committee on Hospital Care, 2003).

Osler, a pioneer in medical education, recognized the bedside as the preeminent location for teaching and learning medicine (Osler, 1982). Traditionally, the primary purpose of the rounding process within a teaching hospital was to create a context where

the medical plan could be developed or updated in conjunction with providing medical education for training physicians (Osler, 1982). While physician teaching remains a focus, new value has been placed on the multidisciplinary team to improve patient care, as well as the importance of having involved, informed parents as a means to providing safe and competent care (Mittal et al., 2010). As a result, several recent studies of the rounding process have been conducted where a multidisciplinary perspective was considered and parents were involved (McPherson, Jefferson, Kissoon, Kwong, & Rasmussen, 2011; Mittal et al.; Muething, Kotagal, Schoettker, Gonzalez del Rey, & DeWitt, 2007; Rosen, Stenger, Bochkoris, Hannon, & Kent, 2009; Voos, Ross, Ward, Yohay, Osorio, & Perlman, 2011).

In working towards excellence in patient and family centered care (PFCC), HCPs caring for inpatients at the Alberta Children's Hospital (ACH) are committed to improving bedside rounds. The goals of bedside rounds at the ACH, as put forward by the ACH hospital pediatricians, are to improve (a) partnerships and collaboration between families and HCPs, and (b) the overall experience of children and their families with the ultimate aim of improving patient outcomes (C. Barnard, personal communication, April, 2011). With the intention of shifting away from physician only participation in rounds to multidisciplinary team participation, nurse participation in rounds has been implemented to varying degrees on the ACH inpatient units.

Researchers have suggested that nurse participation in rounds is essential because nurses have frequent interactions with families where they have influence to encourage families to attend rounds (Jacobowski et al., 2010). Nurses have the most up-to-date information and are frequently the initial responder to parent questions (Mittal et al., 2010). Additionally, efficiency of care is improved when nurses provide information

regarding the patient's condition and progress towards discharge goals (Muething et al., 2007). Despite the potential contributions that nurses can make through participation in bedside rounds, nurse participation at rounds remains inconsistent (Dr. C. Barnard, Unpublished raw data). To date, there have been limited efforts to evaluate nurse participation in bedside rounds. This is due, in part, to the lack of reliable and valid measures. Developing a measurement tool to assess factors that influence nurses' intentions to practice PFCC during bedside rounds may help to identify why current nursing practices occur.

Significance

While the focus of this Master's thesis research was directed towards development of a questionnaire relating to factors that influence nurses' intentions to practice PFCC during bedside rounds, it is important to examine the multiple aspects that influence the way in which bedside rounds are practiced. Understanding the complex dynamics associated with conducting bedside rounds is essential to developing a tool to assess nurses intentions to practice PFCC during bedside rounds. First, the infants and children and their families who are cared for on the inpatient units at the ACH, as well as the HCPs create a learning environment for many rotating medical students and physicians in training. These trainees, at different stages in their learning, step into a complex environment and must balance their learning needs with their efforts towards providing PFCC. Second, individual nurses, hospital pediatricians, and allied health care professionals working on the inpatient units have varying backgrounds, priorities and experiences to approaching bedside rounds. Third, complex relational dynamics among varioys HCPs impact the way in which communication and interaction occur within the rounding

process. In order to effectively implement bedside rounds among HCPs, a standardized approach to rounds that is developed and shared by all participants while maintaining the ultimate goals of bedside rounds is important. A standardized approach could help ensure that all participants in bedside rounds are aware of, and confident in, their roles in making bedside rounds as beneficial to children and families as possible.

A current standardized template for HCP participation during bedside rounds exists at the ACH, yet limited education has been provided to HCPs regarding the use of the template and the implementation of bedside rounds in general. In order to improve bedside rounds at the ACH, HCPs including nurses, hospital pediatricians, training physicians and allied health professionals will require standardized educational opportunities related to bedside rounds.

Bedside rounds are an integral element in implementing ACH's principles of PFCC in which "families participate in treatment decisions, post-operative and ongoing care plans as members of multi-disciplinary teams" (Alberta Children's Hospital, 2011). As an institution, the ACH considers collaboration to be a key element of providing PFCC where families work with HCPs to make treatment decisions. Nurses and other HCPs need to develop skills in collaboration and the provision of PFCC. This thesis work is part of a larger project at the ACH that includes the provision of educational workshops to nurses (See Appendix A for Workshop Agenda) and other HCPs regarding bedside rounds and subsequent measuring of the effects of these educational interventions on PFCC in the context of rounds at the ACH. The findings from this work may inform nursing leaders, administrators and nurse educators at the ACH in future educational initiatives to improve

the health and safety of children and their families. This information may also assist in promoting the transition of nurses towards more active participation in bedside rounds.

Research Purpose

As described briefly above, this thesis work is part of a larger study that will measure the effect of an educational workshop for HCPs (nurses [RNs and LPNs], hospital pediatricians, medical trainees [residents and clinical clerks], and allied health professionals [pharmacists and others]) on the family experience and perceptions of PFCC during bedside rounds, as well as the attitudes and practices of HCPs regarding bedside rounds. For the larger study, observational audits of bedside rounds will be conducted prior to and following workshops for HCPs. Following informed consent, HCPs will be surveyed about their attitudes, beliefs, and experiences regarding bedside rounds before, and about 4 weeks after the workshop. In addition to a multidisciplinary questionnaire, to measure the effect of the workshops, nurses will also be asked to complete the questionnaire developed from this thesis. Following informed consent, parents/caregivers will be surveyed about their bedside rounds experiences during time periods both before and after the HCPs (on their child's unit) participate in the workshop. To measure sustainability of effects, 6 months following the implementation of the workshops, observational audits of bedside rounds and surveys of a different group of parents/caregivers will be conducted. The larger research project entitled, *Family-Centered Care during Bedside Rounds: Effects of an Educational Workshop for Multidisciplinary Hospital Pediatric Teams,* has been funded by the ARC Family Centered Care Award through the Alberta Children's Hospital Research Institute (See Appendix B for Letter of Support). The **purpose** of my thesis portion of the larger study was to develop

and test the feasibility of a questionnaire to assess nurses' attitudes, beliefs, and intentions to practice PFCC during bedside rounds.

Theoretical Framework for the Study

Nurse participation in bedside rounds occurs within a complex context where (a) a history of hierarchical structures exist, (b) nurses experience multiple demands upon their time (from various family members, patients, timed tasks and other HCPs), and (c) nurses have varying levels of education and experience. Thus, determining the reasons for nursing behavior within the context of bedside rounds is difficult. The Theory of Planned Behavior was used to develop the measurement tool for this study. The TPB is a model of psychological behavior that was developed by Ajzen (1988), which evolved from Fishbein's (1967) Theory of Reasoned Action (Francis et al., 2004). The Theory of Reasoned Action was developed as a way to describe the relationship between attitudes and behaviors with Fishbein positing that the best predictor of behavior is one's intention to behave. According to Fishbein, the two major factors that influence intention are attitudes towards the behavior, and subjective norms (how much the person feels social pressure to do it). The TPB builds upon the Theory of Reasoned Action by including the additional factor of perceived behavioral control (Ajzen, 1988). The TPB has become one of the most frequently cited models for the prediction of human social behavior (Ajzen, 2011). In a recent article by Ajzen (2011), a Google Scholar search that he conducted for the 'theory of planned behavior' and 'theory of planned behaviour' generated 4550 citations as of 2010.

Applying the TPB to a particular area, such as nurse participation in rounds, can provide valuable information to help understand current behaviors and/or implement interventions that may be effective in changing behaviors (Ajzen, 1991). Archer, Elder,

Hustedde, Milam, and Joyce (2008) used the TPB as a model in medical education for integrating professionalism training. Two components from the TPB that Archer and colleagues identify as being important to professionalism training included the development of not only professional skills, but professional attitudes, as well as the importance of reinforcing social and subjective norms of professionalism throughout the institutional culture. The TPB has been used widely to increase the uptake of clinical guidelines by HCPs as well as to develop strategies for people to implement healthy behaviors.

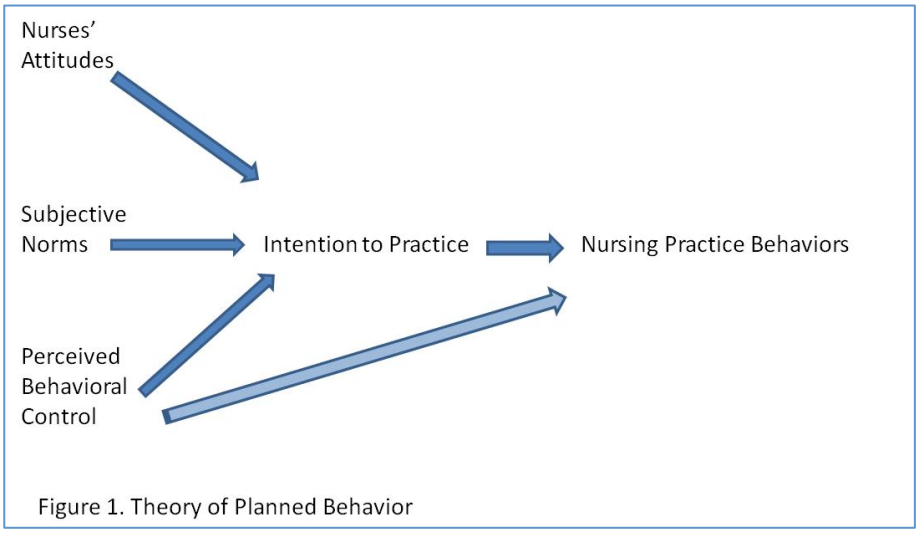

Figure 1. Theory of Planned Behavior

Note. Adapted from The Theory of Planned Behavior (1991).

The objectives of this study were to:

1. Develop a questionnaire using the TPB
2. Test psychometric properties using content validity, and internal consistency reliability
3. Determine the feasibility of using the questionnaire

Research Questions

1. What was the content validity of the questionnaire?
2. What were the preliminary estimates of internal consistency reliability of the subscales of the questionnaire (on the direct, not the indirect items)?
3. What was the feasibility of using the questionnaire?
    a) What was the average time taken to complete the questionnaire?
    b) What were nurses' perceptions of respondent burden (i.e., Did the questionnaire feel too repetitive? Did it feel too long? Did it feel too superficial? Were there any annoying features of the wording or formatting?)
    c) Did nurses understand the questions being asked?
    d) Were there any inconsistent responses on reverse scored items?

Definitions of Terms

Children are individuals between the ages of 1 and up to 18 years. (Hockenberry & Wilson, 2009). **Infants** are individuals under the age of 1 year (Hockenberry & Wilson, 2009).

Conference room rounds occur when physicians discuss the patient and develop a plan of care in a physical environment apart from the infant/child and family with or without the presence of other HCPs.

Family is "a combination of two or more persons who are bound together over time by ties of mutual consent, birth and/or adoption or placement and who, together, assume responsibilities for variant combinations of some of the following: (a) physical maintenance and care of group members, (b) addition of new members through procreation or adoption, (c) socialization of children, (d) control of members, (d)

production, consumption, distribution of goods and services, and (e) affective nurturance – love" (The Vanier Institute of the Family, 2004, p. 1).

Family-presence rounds occur when one or more family members of the patient are present at rounds, but HCPs do not specifically intend to provide a patient and family-centered environment (see Table 1).

Healthcare professionals are regulated under the Alberta Health Professions Act (Alberta Health and Wellness, 2002).

Multidisciplinary care occurs when professionals from varying disciplines work collaboratively to achieve a unified care plan (Sisterhen, Blaszak, Woods, & Smith, 2007).

Multidisciplinary family-centered rounds are "interdisciplinary work rounds at the bedside in which the patient and family share in the control of the management plan as well as in the evaluation of the process itself" (Sisterhen, Blaszak, Woods, & Smith, 2007, p. 320).

Nurses are healthcare professionals with the designation of either 'Registered Nurse' or 'Licensed Practical Nurse' under the Alberta Health Professions Act (Alberta Health and Wellness, 2002).

Patient and family-centered care (PFCC) is a process of care characterized by "beliefs and practices that treat families with dignity and respect; individualized, flexible and responsive practices; information sharing so that families can make informed decisions; family choice regarding any number of aspects of program practices and intervention options; parent-professional collaboration and partnerships as a context for family-program relations; and the provision and mobilization of resources and supports

necessary for families to care for and rear their children in ways that produce optimal child, parent, and family outcomes" (Dunst, Boyd, Trivette, & Hamby, 2002, p. 139).

Patient and Family-Centered Care (PFCC)

Defining PFCC is a complex task as the conceptualization of PFCC varies widely among authors. Letourneau and Elliott (1996) described PFCC as an enabling approach rather than a medical model of helping. Thus, practicing PFCC demands a complex shift away from a reliance on the medical model. The medical model can be defined as "the treatment and cure or disease" (Engel, 1977, p. 129). For the purposes of this study an exploration of PFCC was necessary in order to ensure that the questionnaire items measured nurses intentions, attitudes and beliefs about practices consistent with PFCC.

Ideas consistent with the concept of PFCC within the hospital setting were introduced in the 1940's and 1950's from British researchers Bowlby and Robertson who studied the impacts of maternal separation during hospitalization and noted the harmful effects of social isolation on developing children such as separation anxiety and poor attachment (Alsop-Shields, & Mohay, 2001). Since the 1970's, and the consumer revolution, the definition, philosophy, principles and benefits of PFCC have been studied (Petersen, Cohen, & Parsons, 2004). Descriptions of PFCC often included elements of respect, parental participation, and improved satisfaction for the family and patient (Petersen et al.). Dunst and colleagues (1988) stated that the elements of PFCC were based on principles designed to promote self-determination, decision-making capabilities, control and self-efficacy. Some of the key elements of Shelton, Jeppson, and Johnson's (1987) seminal work which defined attributes of PFCC in the context of children with special healthcare needs that were particularly relevant in conducting bedside rounds included:

- Recognition that the family is the constant in the child's life while the service systems and personnel within those systems fluctuate,
- Facilitation of parent/professional collaboration at all levels of health care,
- Sharing of unbiased and complete information with parents about their child's care on an ongoing basis in an appropriate and supportive manner, and
- Recognition of family strengths and individuality and respect for different methods of coping.

Shelton and colleagues (1987) attributes demonstrated a strong mutuality between family and healthcare professionals as well as the healthcare system (Hutchfield, 1999). In a secondary analysis of interviews conducted with parents of children with chronic health conditions, parents explained multiple instances where healthcare professionals did not recognize the important role parents had in coordinating and providing their child's care (Ray, 2003).

Consistent with the ongoing challenges associated with implementing bedside rounds, providing PFCC in all domains of patient care remains a complex task. A review of qualitative studies completed by Bamm and Rosenbaum (2008) found that partnership was one attribute most often identified by patients and families, yet it was not even mentioned by healthcare professionals. Eckle and MacLean (2001) stated that it is vital that parents play a central role in decision making in part so that the whole family can experience a sense of ownership and involvement in treatment plans and care for their child. In contrast, MacKean and colleagues (2005) presented the possible consequences of inappropriately applying PFCC principles and concluded that families did not want PFCC to include a shifting of care, care management and advocacy responsibilities to families.

Rather, parents wanted to work in truly collaborative relationships with HCPs in making treatment decisions and on implementing a dynamic care plan that would work best for the child and family. MacKean and colleagues also noted that families often find their growing responsibilities to induce large amounts of stress and confusion as they navigate through the healthcare system. When considering families of children with chronic health conditions, Ray (2005) found that parents became very attuned to their child when assessing worrisome symptoms. Recognition of this ability is highly important for HCPs caring for children with chronic health conditions. The complexities associated with applying PFCC in a way that positively impacts children and families needs to be considered when developing a questionnaire assessing nurses intentions, attitudes and beliefs about practicing PFCC during bedside rounds. Chapter 2 descibes a detailed review of the literature related to PFCC during bedside rounds.

Chapter 2

Literature Review

Search Strategy

A comprehensive electronic search of data bases including Medline (coverage from 1950), CINAHL (coverage from 1937), EMBASE (coverage from 1980), PsycINFO (coverage from 1803), and Proquest (coverage from 1989) was completed. Keywords within the searches included 'bedside rounds', 'rounds' and 'family-cent(e)red care'. Medical Subject Headings (MeSH) and CINAHL headings searched included 'Professional-Family Relations', 'Professional-Patient Relations' and 'Patient Care Team'. No relevant MeSH or CINAHL terms were identified for 'rounds' therefore 'rounds' was only searched as a key word. Limitors for the searches included pediatrics and English articles only. Additionally, a review of reference lists of selected papers was completed to search for further articles. Articles were excluded from the review for the following reasons: (a) articles focused primarily on the educational component of bedside rounds for residents, (b) articles not within the pediatric context, and (c) non-research based articles, (with one exception of an article defining bedside rounds [Sisterhen et al., 2007]). A total of 16 articles were included in the review.

Types of Rounds

All studies included in this review that included a comparison group (see Appendix C for study design types) examined the difference between rounds conducted at the bedside and rounds conducted away from the patient. Not all of these studies used the term 'patient and family-centered rounds'. See Table 1 for types of rounds.

Table 1

Types of Rounds

Types of Rounds		Studies
Parental presence	No parental presence	Cameron et al., 2009; Landry et al., 2007; Phipps et al., 2007
Open rounds	Closed rounds	Klieber et al., 2007
Family-centered multidisciplinary rounds	Non-family-centered rounds	Mittal et al., 2010;
Bedside case presentation	Conference room case presentation	Landry et al., 2007
Family-centered multidisciplinary rounds	Conventional rounds	Rosen et al., 2009
Family-centered rounds	Traditional rounds	Voos et al., 2011

For the purposes of this literature review the term 'standard rounds' has been applied to all cases where rounds occurred away from the bedside. 'Family-centered rounds' is used when the intent of the study was to provide family-centered rounds. 'Family-presence rounds' is used when rounds were conducted with family presence but no significant indication of intent for rounds to be patient and family-centered either by using the term itself or by considering characteristics of PFCC. Finally, the term 'bedside rounds' has been used when studies looking at 'family-centered' and 'family presence'

rounds are grouped together in the discussion. Detailed descriptions of the various rounding formats will be given in the next section.

Family-presence rounds. A review of the literature revealed that research aimed at exploring bedside rounds may or may not include a focus on providing PFCC. Sisterhen et al. (2007) stated that the key difference between traditional bedside teaching and patient and family-centered rounds was the "active participation of the patient and family in the discussion" (p. 320). Notably, five studies within this review completed in a pediatric intensive care unit (PICU) used the term 'parental presence,' or 'open' versus 'closed' rounds without inclusion of the concept of PFCC (Aronson, Yau, Helfaer & Morrison, 2009; Cameron et al., 2009; Kleiber et al., 2007; Landry et al., 2007; Phipps et al., 2007). The investigators described rounds in these contexts stating that rounds were conducted in the usual fashion except that parents were present. In most cases the authors stated that parents were given the opportunity to ask questions following rounds (Aronson et al.; Cameron et al.; Jacobowski et al., 2010; Kleiber et al.; Landry et al.). In some cases it was indicated that physicians summarized the discussion for family members in lay language (Jacobowski et al.; Landry et al.). In a recently published before-after study researchers surveyed families within a PICU prior to and after the implementation of a family-presence component of the already existing interdisciplinary rounds. The family-presence component of rounds included family presence, a summary by the physician that used lay language, and the opportunity for families to ask questions that could be addressed within a few minutes (Jacobowski et al.). In these family-presence rounds, only two members of the family were allowed at the bedside and opportunities were not given for the family to contribute to the plan of care. This research demonstrates an example where healthcare

professionals were involving families in rounds in a way that was only partially family-centered because it narrowly defined the families' involvement. It also demonstrates the inherent challenges of involving families in the planning process in a complex medical environment and presents the question of whether the tenets of PFCC can be practiced within a PICU setting. The omission of other elements of rounds consistent with PFCC principles may be due to reluctance of HCPs to facilitate active participation by families' due to the high level of acuity within the PICU.

While bedside rounds have become the gold standard in many tertiary pediatric hospitals throughout Canada and the United States, some researchers do not clearly depict elements that are being practiced within the rounding setting to provide PFCC despite using the term 'family-centered'. Mittal et al. (2010) in their non-experimental/observational study, which collected data from a Pediatric Research in Inpatient Settings (PRIS) Network Pediatric Hospitalist Triennial Survey of 377 pediatric hospitalists from the United States and Canada, posed a question about categories of rounds practiced within the participants' place of work. The following options were included: (a) sit-down in a common room on the ward, (b) hallway immediately outside patients' rooms, (c) family-centered in patients' rooms or (d) other. The assumption made here was that if rounds occurred in the patient's room then they must be family-centered without the consideration of whether the healthcare team had provided an opportunity for active participation by family members. It is important that researchers define elements of PFCC if their aim is to measure the occurrence of PFCC.

Patient and family-centered rounds. Within much of the research, details of rounding elements consistent with PFCC principles were included in the explanation of

bedside rounds. Lewis and colleague's (1988) work was one of the first published studies that explored the differences perceived by patients, parents, and physicians in regards to family-centered rounds versus standard rounds in the pediatric setting. Using a quasi-experimental, prospective approach (alternating 2-week blocks of standard versus bedside rounds) with surveys completed by parents of children admitted to hospital (n = 28), children (n = 23), and physicians (n = 9), the researchers looked at several potential outcome differences including impact on: communication, parent and patient trust of the physician and overall satisfaction with care. While the authors did not use the term 'family-centered' within their work, a commitment to enhancing communication, trust and satisfaction for parents, all attributes of PFCC, was evident. One aspect of the rounding process within this work that showed the need for further development of a family-centered approach was that families were told that the purpose of bedside rounds was for the physicians, social workers, and nurses to make management decisions. A more progressive approach, which was evident in more recently published research, included the involvement of the family and the multidisciplinary team members in the decision making process (Latta, Dick, Parry & Tamura, 2008; Muething et al., 2007; Rosen et al., 2009).

Other authors described several components that were important to enhancing bedside rounds. Examples included providing explicit, open invitation to parents (Latta et al., 2008; Muething et al., 2007; Rosen et al., 2007; Sisterhen et al. 2007; Subramony, Schwartz & Hametz, 2012; Voos et al., 2011) and in some cases also emphasizing the importance of providing families with the choice to join or opt out of the rounding event (Muething et al.; Voos et al.). At the Cincinnati Children's Hospital parents were given a

card that they could place on the patient's door indicating whether or not they wanted to participate in rounds (Muething et al.). Voos and colleagues also stated that it was important that families were aware that the medical team was available at other times besides rounds to speak with them, so that families did not feel 'guilty' about not attending rounds. Muething and colleagues also stated that providing introductions of HCPs participating in the rounding event enhanced partnerships with families. Aronson and colleagues (2009), in their observational study, found that introductions of the medical team were completed only 11% of the time. Rosen and colleagues stated that the patient and family were invited to interrupt during the case presentation if there was any information that the family wanted to add. Some researchers cited the use of lay language to summarize the rounding discussion as an important element to enhance communication (Jacobowski et al., 2010; Latta et al.; Lewis et al., 1988; Muething et al.; Phipps et al., 2007; Subramony et al.).

One group of researchers, emphasizing the complexity of issues inherent when including families in rounds within the PICU sought to develop an understanding of the physical, professional, and interpersonal contexts of a Canadian quaternary care PICU in order to develop a suitable approach to including families during rounds (McPherson et al., 2011). This group, in seeking to change practice to include families, sought to consider aspects such as, consistent and reliable communication, addressing issues of confidentiality and considering the role of parents during rounds and well as considering how HCPs can facilitate the role of parents.

Answering questions from family members during rounds was often seen as an integral component regardless of the emphasis placed on the provision of PFCC (Cameron

et al., 2009; Jacobowski et al., 2010; Landry et al., 2007; Muething et al., 2007; Rosen et al., 2007). Muething and colleagues, and Rosen and colleagues, included actively seeking input from families and the active participation of families in decision making as an important element of bedside rounds. Sisterhen and colleagues (2007) stated that the significant difference between standard rounds and family-centered rounds was the absence or presence of active participation by family members. Sisterhen and colleague's statement provides a summary of the primary aim of the strategies detailed above that have been used by HCPs to provide PFCC during bedside rounds.

Characteristics of Rounds

Quality time and communication. Several researchers explored family perceptions of the quality and quantity of communication with physicians (Jacobowski et al., 2010; Klieber at al., 2006; Landry et al., 2007; Latta et al., 2008; Mittal et al., 2007; Rosen et al., 2009). Jacobowski and colleagues found that parents' experienced higher satisfaction regarding frequency of communication with physicians and support during decision-making by physicians during family-presence rounds, but satisfaction was decreased regarding time for decision-making. Landry and colleagues found that parents perceived that the amount of time physicians spent with them was significantly better with family-presence rounds compared to standard rounds. Researchers also reported that staff members believed that communication with families was improved during bedside rounds when compared to standard rounds (Rosen et al.; Voos et al. 2011). The theme of 'communication' emerged from Latta and colleague's qualitative study. Communication leading to understanding was categorized in 86% of the communication responses with use of lay terminology being identified as an important approach. Cameron and colleagues

(2009) identified enhanced transparency as a benefit to communication with conducting bedside rounds (Latta et al.). In contrast, McPherson and colleagues (2011) stated that 83% of HCPs who were interviewed were concerned that parental inclusion in rounds would result in inhibition of difficult discussions.

While most discussion regarding communication focused on the parent-physician relationship, Latta and colleagues (2008) stated that including nurses in rounds was identified as an approach that improved communication as parents frequently looked to nurses to further explain what they had heard during rounds and to increase understanding regarding the plan for the day. Klieber and colleagues (2006) reported on a quality improvement initiative where a policy that did not allow parents to be present at medical rounds was reviewed because it was believed that communication between parents and physicians was lacking. This lack of communication was resulting in nurses feeling "caught in the middle" as families desired more information regarding the medical plan of care, while nurses were not in a position to provide all the information parents desired. When standard rounds where changed to family-presence rounds, the nurses' sense of being caught in the middle was decreased and communication between physicians and family members was enhanced. While an intermediary role of the nurse between the family and physicians can be useful, it also poses the potential for miscommunication, and therefore the benefit of a context where all parties can participate in open communication as occurs during bedside rounds can improve the nurses' ability to function in his or her role as a facilitator of communication (Klieber et al.).

Efficiency. Within the healthcare system time is a finite and valuable resource and efficiency must be considered when changes in practice are made (Aronson et al., 2009;

Cameron et al., 2009). To measure efficiency many of the researchers collected data on the difference in time to complete rounds when comparing standard rounds with bedside rounds. Researchers found no difference in time to complete rounds when comparing the two formats (Aronson et al.; Cameron et al.; Klieber et al., 2006; Mittal et al., 2010; Phipps et al., 2007; Rosen et al., 2009, Voos et al., 2011). Aronson and colleagues found that a rounding event took 10.6 minutes with family presence compared to 9.5 minutes during standard rounds (p = .12). Cameron and colleagues found that a rounding event took 10 minutes (+/- 5 minutes) with family-presence compared to 9 minutes (+/- 5 minutes) during standard rounds (p = .74).

While time to conduct rounds was the primary means of measuring efficiency, factors of efficiency associated with bedside rounds embody a much larger scope than the duration of rounds. Sisterhen and colleagues (2007) stated that bedside rounds improved efficiency of discharge planning and coordination of services. Muething and colleagues (2007) were one group who looked at discharge timelines as a component of improved efficiency when conducting bedside rounds. These authors cited that the change to bedside rounds significantly improved discharge timelines with an increase in the number of discharges during the first shift (7 am to 3 pm) after the rounding format was changed. Before the transition to bedside rounds 40% of discharges occurred during the first shift and following the transition over 60% occurred during the first shift. Early discharge times allowed for better flow of patients waiting in the emergency department for a bed on an inpatient unit. Unfortunately, no inferential statistics were completed and these data do not account for other factors that may have changed discharge times. Nurses also described a decreased need to page training physicians to clarify orders, staff were better

equipped to prepare for discharges and families had fewer questions regarding the plan and were more confident in the decision for their hospitalized infant or child to be discharged (Muething et al.). Subramony and colleagues (2012) assessed family knowledge of discharge plans when medical teams conducted bedside rounds. Families with a projected discharge time within 24 hours were surveyed. While families correctly identified discharge goals 70% of the time, only 41% correctly identified the patients' discharge day. In Jacobowski and colleagues' (2010) survey of resident perceptions of bedside rounds, only 28.6% of residents perceived that bedside rounds enhanced efficiency. Yet, 60.7% of residents reported fewer requests for care plan clarifications from families and nurses following bedside rounds. A limitation of Jacobowski and colleagues' study was that it was a simple observational survey, and therefore no group comparisons could be completed.

One reason additional elements of efficiency have not been studied may be due to the difficulty in measuring outcomes of efficiency. Additionally, HCPs who are concerned with the length of bedside rounds may not be appropriately considering spin-off efficiencies. Potential areas of efficiency that could be measured in future research could include the time of day that physician orders were implemented—potentially improving patient outcomes, total length of stay of patients in hospital, and HCPs' time spent communicating with families following rounds.

Confidentiality. Confidentiality was frequently considered in the implementation of bedside rounds. Mittal and colleagues (2010), found that 33% of physicians perceived maintaining confidentiality to be a barrier to conducting bedside rounds and 77% of HCPs interviewed in McPherson and colleagues (2011) research had worries about maintaining

confidentiality in their mostly open unit. Yet most parents mostly did not hold this view (Aronson et al., 2010; Klieber et al., 2006; Phipps et al., 2007). In fact, in one study parents indicated that confidentiality and intimacy were enhanced when family-presence rounds were practiced (Landry et al., 2007).

Family Characteristics

Parental and caregiver satisfaction. Multiple researchers measured overall satisfaction of families in relation to family-centered rounds and parental presence rounds. Lewis and colleagues (1988) found that parents had an overall positive attitude towards bedside rounds with 86% of parents who experienced both rounding formats preferring bedside rounds. Latta and colleagues (2008), in their qualitative design, reviewed interview transcripts (n = 18) to identify overall satisfaction of parents with bedside rounds and reported that all participants described rounds as being positive, except for one parent who expressed nervousness regarding participation.

Landry and colleagues (2007) stated that parents reported increased overall satisfaction and residents perceived parents to have increased satisfaction with parental presence rounds compared to standard rounds. Parent respondents within Landry and colleagues' research indicated an overall very high level of satisfaction with mean satisfaction ranging from 92% to 96% for both standard rounds and parental presence rounds. This overall high satisfaction level, as indicated by the authors, may have been a result of parents being hesitant to complain due to the often highly distressful environment within the PICU. The authors stated that the clinical significance of the differences in satisfaction is unknown, despite statistical significance, due to the relatively small percentage difference in satisfaction between the two rounding formats. Aronson and

colleagues (2010), while not having a comparison group within their design, found that 98% of parents preferred to be present at rounds. Cameron and colleagues (2009), whose research examined rounds in a context where parents were invited into the hallway to be present for rounds, reported that 83% of parents who attended rounds stated that their participation increased their satisfaction with their child's care. Rosen and colleagues (2009), in their quasi-experimental study comparing parents and patients who experienced standard rounds (n = 14) and those that experienced family-centered rounds (n = 22), found no significant differences in satisfaction between parents encountering the two varying rounding forms. Jacobowski and colleagues (2010) also found that overall satisfaction scores did not differ between families who attended rounds and those that did not. Rosen and colleagues, and Jacobowski and colleagues, both noted that differences may not have been detected due to small sample sizes (Type II error). The majority of studies indicated that parents had an increased level of satisfaction with family-centered and parental-presence rounds, yet some of the data did not support a claim of overall increased satisfaction.

Hospitalized children. Only two studies collected data from hospitalized children (Lewis et al., 1987; Rosen et al., 2009). In Lewis and colleagues' study, children did not report that bedside rounds were significantly more upsetting than standard rounds, yet parents perceived bedside rounds to be more upsetting than standard rounds for their children. Children also reported that the physical exam portion of bedside rounds made them unhappier than the discussion component. Additionally, the most common response from children in the standard rounds group when asked what they would like to change about rounds was that they would like to hear rounds. Unfortunately, in Rosen and

colleagues' study parent and patient surveys were combined when analyzing the data, therefore children's responses could not be deciphered from those of parents. An additional limitation of Rosen and colleagues' study was that in giving the same surveys to children and their families the surveys were not uniquely created to suit the varying needs of children and adults. A paucity of literature exists measuring hospitalized children's perceptions of rounds. The vulnerability of hospitalized children and subsequent ethical implications may be one reason that more studies have not been conducted. One must also contemplate whether researchers and HCPs are considering the impact of bedside rounds on children.

Family perceptions of the medical team (attending and training physicians). Several researchers surveyed families regarding their perceptions of the medical team when comparing bedside rounds and standard rounds. Parents viewed training physicians to be more competent during family-presence rounds while preferring that doctors discussed their child and conducted teaching for training physicians in front of them as opposed to at a distance (Landry et al., 2007). Ninety-one percent of parents had more confidence in the medical team when they participated in family-presence rounds (Aronson et al., 2010). In Lewis and colleagues' (1988) study, 65% of parents stated their impression of the physicians had changed "somewhat" or "greatly" due to participating in bedside rounds. Sixty-four percent of these parents stated that physicians were more compassionate and caring than expected. These data contrast with physician perceptions that parental-presence during bedside rounds can erode parental confidence in the medical team (Cameron et al., 2009).

Family contributions. Bedside rounds have the potential to allow for improved clinical decision-making (Committee on Hospital Care, 2003) due to contributions made by the family during and following rounds. Cameron and colleagues (2009) reported that at least one HCP learned something new in 57% of rounding events with the most significant contributions by parents being the correction of misinformation. Rosen and colleagues (2009) found that in 90% of bedside rounding events, the input of patients or parents had an impact on the plan of care discussion. Cameron and colleagues also stated that family involvement in rounds may expedite intervention and discharge plans due to increased awareness of theses plans by family members. Additionally, Rappaport and colleagues (2010) found that 67.9% of training physicians perceived an increase in the families' role in medical decision-making during bedside rounds, and 39.3% of training physicians perceived that bedside rounds improved patient safety.

Healthcare Professionals

The research conducted on bedside rounds often included the involvement of a multidisciplinary team (Aronson et al., 2010; Cameron et al., 2009; Jacobowski et al., 2010; Klieber, et al., 2006; Latta et al., 2008, Muething et al., 2007; Phipps et al., 2007; Rosen et al., 2009; Voos et al., 2011). While some markers of satisfaction are similar across disciplines, there are also distinctive needs and desires within disciplines.

Training physicians. One unique element of the physician's role during rounds was the educational emphasis for training physicians during the rounding process. Satisfaction for training physicians and their educators during rounds was therefore at least partially contingent on the quality of education evident during the rounding experience.

Bedside rounds improved history and physical exam skills, allowed medical professionals to discuss ethics, demonstrate effective patient communication, model professionalism at the bedside (Sisterhen et al., 2007), and model effective team communication (Mittal et al., 2010). When training physicians were asked in which environment, the bedside or the conference room, they felt most comfortable being taught, they stated that they preferred the conference room (Landry et al. 2007; Lewis et al., 2008; Muething et al., 2007). Landry and colleagues, in their survey of training physicians, found that there were no significant differences in satisfaction with case presentation or comfort during standard and bedside rounds. However, training physicians were more comfortable asking questions and being asked questions during standard rounds. Fear of losing respect for trainees due to exposing knowledge gaps was cited by 37% of participants as being a perceived barrier to bedside rounds in Mittal and colleague's survey of pediatricians. Cameron and colleagues (2009) found that 40% of attending physicians agreed that they limited teaching on rounds to avoid exposing gaps in the knowledge of training physicians. Thus, Cameron and colleagues speculated that parental presence "likely erodes the educational component of rounds" (p. 526). However, the assertions made by Cameron and colleagues were based only on assumptions made by both training physicians and attending physicians. These authors also neglected to account for knowledge gained through observation of attending physician-patient encounters and physical examinations. Making a change from the absence to presence of parents during rounds would require an adjustment by all HCPs, but this may not be reflective of an erosion of the educational experience in the long term. Sisterhen and colleagues (2007) stated that the most commonly cited barrier to bedside teaching was training physicians "feeling performance

pressure" (p. 32) to be the perfect practitioner. Training physicians ought not be concerned with how parents view them during bedside rounds because parents actually have more confidence in training physicians when rounding is conducted at the bedside (Cameron et al.; Landry et al.; Muething et al.). Landry and colleagues stated that parents found the training physicians to be more competent during beside rounds suggesting that bedside rounds gave families an increased awareness of the global competence of training physicians.

Young and colleagues (2012) took a unique approach to exploring the complexities of carrying out bedside rounds by evaluating self-efficacy of medical students with family-centered care during bedside rounds. The researchers looked at three family-centered care tasks including relationship building, information exchange, and decision making. For their study, surveys were collected pre (n = 172) and post (n = 162) clerkship, which assessed medical students self-efficacy in carrying out family-centered care during bedside rounds while under various stressors that may occur in the clinical context. Authors found that observing role models and practicing for self-mastery enhanced student's self-efficacy while receiving feedback did not impact self-efficacy. While Young and colleagues looked at key elements of PFCC, they did not consider self-efficacy with practicing in a multidisciplinary team, an integral element in the implementation of effective bedside rounds.

On the whole, research in the area of bedside rounds and training physicians is suggestive of a commitment to developing an environment within bedside rounds where training physicians can develop assessment and clinical decision making skills as well as skills in communication and in some cases practicing PFCC. Research demonstrated that

training physicians also have the potential to contribute to the overall health care team's practice of PFCC during bedside rounds.

Nurses. Several researchers examined the significance of the nurses' role in the context of bedside rounds. Mittal and colleagues (2010) found that there was a significantly greater perception by physicians of nurse participation in bedside rounds compared to standard rounds. The authors speculated that bedside nurses were crucial members of the multidisciplinary team because they (a) had up-to-date patient information, (b) were frequently asked questions by parents, and (c) worked closely with physicians. This suggested that nurse involvement in bedside rounds had the potential to significantly improve patient outcomes. Rosen and colleagues (2009) found that nurses had a higher level of satisfaction during bedside rounds compared to standard physician only rounds and contributed this improved satisfaction to improved communication and collaboration with physicians.

Despite evidence that nurse presence at bedside rounds is beneficial, the role of the nurse during bedside rounds remains unclear. Muething and colleagues (2007), in describing the improved efficiency of bedside rounds, stated, "nurses and other key ancillary staff…contribute valuable information" (p. 830). Similarly, Rappaport and colleagues (2010) repeatedly use the term 'ancillary' when referring to HCPs other than physicians. The use of the term 'ancillary' is suggestive of the fact that other members of the team have a subordinate role. Ancillary taken from the Latin ancillaris (1660s) refers to maidservants and can also be defined as meaning subordinate or subservient (Harper, n. d.). While Muething and colleagues intended to show the value of other HCPs, their statement also revealed possible tensions inherent in the hierarchical structure that often

exists within the rounding context. In two studies of the adult population relating to interdisciplinary care, hierarchical structures were viewed as a barrier to non-physician HCPs effectively collaborating with physicians (Uhlig et al., 2002; Vazirani, Hays, Shapiro, & Cowan, 2005). Additionally, in a survey of physicians, 28% of study participants (n = 265) perceived that a barrier to conducting bedside rounds was the negative impact on nursing unit workflow (Mittal et al., 2010). While the leadership role of physicians during bedside rounds is vital, defining a clear and valuable role for nurses during bedside rounds may mitigate negative opinions of nurses who feel that they are being taken away from other important nursing work due to bedside rounds.

Potential roles for nurses within bedside rounds included highlighting the purpose and structure of rounds for parents, helping parents develop questions for HCPs during rounds, facilitating the asking of the questions, and following up to ensure that parents understand the information and plan provided during rounds (Latta et al., 2008; Lewis et al., 1988; Muething et al., 2007). In Latta and colleagues' study, parents stated that they liked being asked to participate in bedside rounds with one parent stating that the nurse "drew her into the circle" (p. 294), which she found to be "warm, inviting, and encouraging" (p. 294).

Allied health care professionals. Typically bedside rounds include physicians, nurses, and a multitude of allied healthcare professionals including pharmacists, social workers, dieticians, and therapists. Despite this, allied healthcare professionals were surveyed in only one study (Rosen et al., 2009). In Rosen and colleagues' study a single survey was completed by HCPs from varying disciplines and the data were aggregated. Unfortunately, by aggregating the data the researchers were unable to identify unique

perceptions of bedside rounds held by HCPs from specific disciplines. The lack of research relating to allied health care professionals within rounds demonstrates an area where further research is required.

Teamwork. Rosen and colleagues (2009) asserted that bedside rounds offer an environment where all team members can meet together at the same time with the family so that all points of view are heard and family concerns can be addressed simultaneously. This system effectively fostered teamwork (Rosen et al.). Latta and colleagues (2008) identified three elements within the content theme of teamwork: (a) seeing the team working together, (b) hearing the discussion of their child by the team, and (c) participating in the team. In Mittal and colleagues' (2010) study, 72% of physicians perceived enhanced team communication to be a benefit to bedside rounds. Voos and colleagues (2011) found that HCPs (including fellows and nurse practitioners) had a significant increase in their staff collaboration satisfaction score, while attending physicians had a slight (not significant) decrease in their staff collaboration satisfaction score when practicing bedside rounds. Overall, the majority of data collected related to parents' relationships with physicians, and nursing relationships with physicians. However, if nurses are to have an important role in bedside rounds, it is important to understand the relational dynamics of the whole HCP team and specific nursing contribution to the team.

Summary of the Limitations in the Literature

Within the literature on bedside rounds in pediatrics there is a general understanding that a paucity of research exists (Cameron et al., 2009; Klieber et al., 2006; Phipps et al. 2007; Rosen et al., 2009). Limitations exist in four key areas including

measurement tools, limited outcome measurement, methods, and analysis, and research directed towards nurses, allied health professionals, and children.

First, nearly all of the survey tools were constructed by study investigators, and utilized by individual research groups with none being used repeatedly or outside of the particular research groups in which they were developed. Latta and colleagues (2008) were the only researchers who used a qualitative approach (content analysis) to compare standard rounds to bedside rounds; and their research provided strong contextual details about parents' responses to rounds. Yet, qualitative results cannot be generalized to other populations and contexts. The one exception where a validated tool was used was by Jacobowski and colleagues (2010) who used the 'family satisfaction in the ICU' tool (Wall, Engelberg, Downey, Heyland, Curtis, 2007). Klieber and colleagues (2006) stated that their quality improvement team searched for published parent, nurse, and physician surveys on parental presence during rounds and when none were located, the team members designed original questions for their study. Only Landry and colleagues (2007) provided a description of the development of their tool, which was constructed based on literature relating to patient, parent, and physician satisfaction surveys, research on patient-physician communication, bedside teaching, and parents' experiences in the PICU. Also, Landry and colleagues were the only authors who discussed validity of their tool, and stated that two parents of patients within the PICU reviewed the family survey, and two training physicians reviewed the resident survey, which provided limited content and face validity.

Second, the only outcomes that were measured were: (a) perceptions of families (Aronson et al., 2009; Cameron et al., 2009; Jacobowski et al., 2010; Klieber et al., 2006;

Landry et al., 2007; Latta et al., 2008; Phipps et al., 2007; Rosen et al., 2009; Voos et al., 2011), (b) perceptions of HCPs (Aronson et al.; Cameron et al.; Klieber et al.; Landry et al.; Rappaport et al., 2010; Rosen et al.; Voos et al.), (c) length of rounds (Aronson et al.; Cameron et al.; Klieber et al.; Mittal et al., 2010; Phipps et al.; Voos et al.), (d) time of day of discharge (Muething et al.,2007), (e)some rounding observations (i.e., number of questions asked by parents) (Aronson et al.; Cameron et al.; Phipps et al.; Rosen et al.), (f) self-efficacy of medical students in providing PFCC during bedside rounds (Young et al., 2012), and (g) parental awareness of discharge goals, discharge day, and discharge medications (Subramony et al., 2012). No outcomes such as length of stay, cost of hospitalization, cure rates, complication rates, medical error rates, or efficiency of treatment implementation were measured. Several of the previously mentioned outcomes could be considered a measurement of overall patient safety. Yet, pediatric researchers did not measure patient safety in relation to bedside rounds and did not state it as a primary goal of bedside rounds. In an attempt to expand the search of the literature in this area, adult population literature was explored. An adult cardiology unit conducted a quality improvement project where a team-based collaborative rounds process was instituted with the intention of improving patient safety. Following implementation, mortality rates of Concord Hospital's cardiac surgery patients decreased significantly from expected rates (Uhlig, Brown, Nason, Camelio, & Kendall, 2002). Conducting future research that measures the effect of pediatric bedside rounds on patient safety is important.

Third, descriptive statistics, as opposed to inferential statistics, were conducted for several studies limiting the ability to assign significant differences within the data due to small sample size (Klieber et al., 2006; Muething et al., 2007), or lack of a comparison group

(Aronson et al., 2011; Cameron et al., 2009; Phipps et al., 2007). Cameron and colleagues compared the results of surveys completed by families who either chose to be present for rounds or happened to be present with those who chose not be present or happened not be present at rounds. A significant limitation of comparing these two groups was that the groups were non-equivalent and differences between the two groups of parents were not accounted for, thus introducing bias into the results. Phipps and colleagues also chose not to have a comparison group stating that the lack of need to notify parents of the study (due to not having to ask them to either stay of leave) as well as not needing to notify the medical team of the study hypotheses as factors limiting bias. Phipps and colleagues believed that if parents and HCPs were unaware of the study, the way in which the rounds functioned would not be influenced and rounds would evolve as they normally did. While Phipps and colleagues did not survey parents who were not present for rounds, the findings of their survey could not be generalized to all parents since there was selection bias inherent due to differences in parents who were, and were not present for rounds.

Fourth, there was limited research examining the nursing and allied healthcare professionals' role, as well as the child's role in bedside rounds. The discussion here will focus on the nursing research. Mittal and colleagues (2010) did state that physicians perceive increased participation in bedside rounds compared to standard rounds but no researchers collected data related to frequency of nurse participation in rounds. Multiple studies focused on the impact of bedside rounds on training physicians, especially in terms of educational needs (Aronson et al., 2009; Landry et al., 2007; Phipp et al., 2007; Rappaport et al., 2010), yet only one study looked at the impact on nurses (Klieber et al., 2006). Klieber and colleagues identified the specific impact on nurses of decreased feelings

of being caught in the middle due to family presence rounds, yet these authors, nor any others, examined particular nursing practices utilized that added benefit to bedside rounds. While some family surveys included questions about HCPs in general (Phipps et al.; Rosen et al.), the majority focused on the families' perceptions of attending and training physicians (Aronson et al., Jacobowski et al., 2010; Landry et al.; Lewis et al. 1987). Moreover, none of the literature reviewed explored the effect of providing nurses with education directed towards informing nurses in their roles as participants in bedside rounds.

In summary, researchers have provided some guidelines as to how to best practice bedside rounds and data suggest bedside rounds result in improved satisfaction among family members of hospitalized infants and children. However, researchers have not measured the effect of providing healthcare professionals with educational workshops prior to implementing the complex change from a standard rounding format to bedside rounds. Unless rounds are completely restructured when transitioning from standard rounds to family presence rounds, the use of medical jargon and parental confusion due to parental misunderstanding will persist (Cameron et at, 2009). While physicians, nurses, and allied healthcare professionals at the ACH have been working towards bedside rounds for several years, nurse participation has been sporadic and it remains unclear as to whether families are benefiting from the new rounding format. Defining what makes rounds family-centered and ensuring that bedside rounds are indeed patient and family-centered are two necessary steps in the move towards developing improved quality care within the rounding context. When one can reasonably say that a PFCC method for providing bedside rounds is being used, then, a more accurate assessment of the impact of

bedside rounds on the family, patient and HCPs can be conducted. Additionally, validated tools for assessing family-centered practices by HCPs as well as the perception of family-centered practices by families are needed in order to accurately assess the provision of PFCC. While the current research provides a springboard towards understanding both what constitutes bedside rounds as well as the impact of such rounds, additional research is strongly needed as practitioners continue on a journey to providing safe PFCC during bedside rounds.

Chapter 3

Method

Research Design

For this Master of Nursing thesis the initial phases of development and testing of a new questionnaire called Nurses Attitudes and Beliefs About Rounds (NABAR) was completed. To this end, (a) a content validity index (CVI), (b) the feasibility of using the new instrument and, (c) preliminary internal consistency reliability of the subscales of the NABAR were assessed. As outlined in the literature review, there were no suitable measures available for assessing nurses' intention to practice PFCC during bedside rounds. Developing this questionnaire was necessary for the completion of the larger study, which will, in part, measure the differences in nurses' intention to practice PFCC during rounds before and after an educational workshop on bedside rounds.

Participants

CVI participants. Lynn (1986) recommended that a minimum of three experts rate each scale item when conducting content validity. Five graduate prepared nurses with expertise in family-centered care completed a CVI for the NABAR. The nurses had a wide breadth of clinical practice experience including working as clinical nurse specialists or nurse practitioners in the neonatal intensive care environment, pediatric neurosurgery, and general pediatrics. The nurses also had experience participating in multidisciplinary bedside rounds. In addition, two of the experts had experience with questionnaire development.

Questionnaire completion and feedback participants. Francis and colleagues (2004) suggested that about five respondents complete a TPB questionnaire and comment

on the items for the initial stage of development of the questionnaire. In order to complete a more rigorous study, a convenience sample of 20 nurses (RNs or LPNs) with pediatric inpatient experience and at least minimal experience with bedside rounds was recruited to complete the NABAR and provide written feedback. In order to protect the sample intended for the subsequent study that includes nurses from inpatient units 2 and 3 at the ACH, other pediatric nurses were located to complete the NABAR. These other nurses were recruited through networking within the graduate program at the University of Calgary and networking with nurses in Alberta and Saskatchewan.

Measurement

An original 85-item self-report paper and pencil questionnaire capturing nurses' intention to practice PFCC during bedside rounds was evaluated for this study (See Appendix D for the draft NABAR). The theory of planned behavior (TPB), initially developed by Ajzen in 1985, and a manual for constructing questionnaires based on the TPB was used to develop the NABAR (Francis et al., 2004). Within the TPB questionnaire development framework, 7-point bipolar and unipolar likert scales were used following each stem item (e.g., 1 [*strongly disagree]* to 7 [*strongly agree*], and - 3 [*easy*] to + 3 [*difficult*]. The TPB manual provided explicit instruction for scoring the items from each section of the questionnaire.

Ajzen's (1991) TPB described several factors that predict whether individuals will practice particular behaviors. Intention, the primary factor in determining behavior, was impacted by three conceptually different determinants: attitudes, subjective norms and perceived behavioral control. Methods for creating direct and indirect items were provided within the TPB manual to develop items related to each TPB construct that

determined a behavior (Francis et al., 2004). The following sections provide further detail into the development of items relating to bedside rounds and nursing intentions, attitudes, subjective norms, and perceived behavioral control.

Defining the behaviors. The first step in developing items for the NABAR questionnaire was to clearly define the clinician behaviors that the intervention would target (Francis et al., 2004). The behaviors were defined in terms of their Target, Action, Context, and Time (TACT) (Francis et al., 2004). Six nursing behaviors that occurred either, before, during, or following bedside rounds, which were identified in the literature, were included in the NABAR. These nursing behaviors, which are identified as 'rounding constructs' throughout the rest of the thesis, included:

a. Providing up to date information on the patient's condition (Mittal et al., 2010; Muething et al., 2007).
b. Helping families ask questions during bedside rounds (e.g., help prepare questions for rounds, prompt parents during rounds to ask questions, or ask questions on behalf of the parent) (Mittal et al., 2010; Muething et al., 2007).
c. Telling families about rounds before they occur (Jacobowski et al., 2010).
d. Providing up to date information on the patient's progress towards meeting discharge goals (Muething et al., 2007).
e. Engaging in open communication with those present at bedside rounds (Latta et al., 2008; Rosen et al., 2009).
f. Following up with families to ensure that parents understand the information and plan provided during bedside rounds (Latta et al., 2008).

To define each nursing behavior, the TACT approach was used. As an example in applying the TACT approach to the first nursing behavior listed, the Target was those present at rounds (i.e., patient, family, and healthcare professionals), the Action was providing up to date information on the patient's condition, the Context was bedside rounds, and the Time was during rounds.

For each TPB construct in the NABAR (i.e., behavioral intention, attitudes, subjective norms, and perceived behavioral control), items were generated to capture each of the rounding constructs. Various 7-point Likert scales were used for the items and these were arranged with a mix of positive and negative points to decrease response bias. In the next section the TPB constructs are defined, and examples of questionnaire items for each construct are provided.

Behavioral intention. The individual's intention (i. e., how hard were they willing to try, and how much effort they would put forth to practice a particular behavior) was viewed as a central factor in predicting whether a behavior would occur (Ajzen, 1991). Francis and colleagues (2004) provided three stems for items relating to intention. Using the first rounding construct as an example (Providing up to date information on the patient's condition.), the items included:

a. I expect to provide up to date information on the patient's condition *(strongly disagree/strongly agree)*.
b. I want to provide up to date information on the patient's condition *(strongly disagree/strongly agree)*.
c. I intend to provide up to date information on the patient's condition *(strongly disagree/strongly agree)*.

Attitudes. An individual's attitude toward a behavior consisted of the person's overall evaluation of the behavior. The overall evaluation was composed of beliefs about the consequences of the behavior and parallel positive or negative judgments or outcomes of practicing the behavior (Francis et al., 2004). Individuals therefore learned to have favorable attitudes towards behaviors for which there were favorable consequences while forming unfavorable attitudes towards those behaviors resulted in negative consequences (Ajzen, 1991). To directly measure attitudes, bipolar adjectives were used to evaluate particular behaviors. An example of this was, "Providing up to date information on the patient's condition" is "*harmful*/*beneficial*; *pleasant*/*unpleasant*; *good*/*bad*" and "*worthless/valuable"*.

Subjective norms. Subjective norms were the extent to which individuals perceived that 'important others' approved or disapproved of a particular behavior, and the motivation of individuals to comply with the beliefs of the 'important others' (Ajzen, 1991). Examples of items relating to direct measurement of subjective norms were:

a. Most physicians, nurses and families think that *I should* / *I should not* provide up to date information on the patient's condition.
b. It is expected of me that I provide up to date information on the patient's condition (*strongly disagree*/*strongly agree*).
c. I feel under institutional pressure to provide up to date information on the patient's condition (*strongly disagree*/*strongly agree*).

Perceived behavioral control. When considering intention, the individual's actual control over the behavior must also be considered (i. e., their ability to practice the behavior based on resources such as time, skills and the cooperation of others). However,

Ajzen (1991) considered the individual's perception of control over his/her behavior to be more highly predictive of actual behavior. Perceived behavioral control was determined by control beliefs about the power of situational and internal factors that influenced the practice of the behavior (Ajzen, 1991). Items regarding perceived behavioral control relate to two factors, self-efficacy and controllability. Examples of self-efficacy items included:

a. I am confident that I could provide up to date information on the patient's condition if I wanted to (*strongly disagree*/*strongly agree*).
b. For me to provide up to date information on the patient's condition is (*easy/difficult)*.

Examples of controllability questions included:

a. The decision to provide up to date information on the patient's condition is beyond my control (*strongly disagree*/*strongly agree*).
b. Whether I provide up to date information on the patient's condition or not is entirely up to me (*strongly disagree*/*strongly agree*).

Indirect measurement of attitudes, subjective norms and perceived behavioral control. In addition to **directly** measuring the predictor variables within the TPB model, **indirect** items were developed. Francis and colleagues (2004) recommended the use of direct and indirect items for TPB questionnaires because scores are expected to be positively correlated. Developing indirect items was more onerous because an elicitation study of nurses was required to obtain commonly held beliefs relating to the construct. As part of my clinical work, and in collaboration with Dr. C Barnard, an elicitation study related to nurse presence at rounds was completed with 48 nurses, using open-ended questions in a semi-structured interview format. The intent of the elicitation study was to

identify commonly held beliefs among nurses about bedside rounds. Some of the questions asked included: (a) In what ways is it helpful for your practice to attend bedside rounds? (b) What are the potentially negative impacts of being present at rounds? and (c) Do you have any suggestions to make attending bedside rounds easier? Content analysis of responses into themes (Polit & Beck, 2008) was conducted and derived themes guided several indirect items. Some of the themes that emerged were that: (a) nurses appreciated when bedside rounds were collaborative, (b) nurses believed that work load impacted their ability to be present at rounds, (c) an invitation to rounds made it easier to attend, and (d) receiving a warning as to when rounds would start for their patients helped them to organize their time in way that would help them be present at rounds. To indirectly measure **attitudes** towards participation in rounds the items developed were:

a. I am doing something positive for my patient when I am present at rounds (*unlikely/likely*).
b. Doing something positive for my patient is (*extremely undesirable/extremely desirable*).
c. Being present for rounds makes me feel as though I am a part of a multidisciplinary team (*unlikely/likely*).
d. Being a part of a multidisciplinary team is (*extremely undesirable/extremely desirable*).

Indirect measurement of **subjective norms** included the items:

a. Other nurses *(are/are not)* present at rounds.
b. Physicians think that (*I should/I should not*) be present at rounds.
c. Parents think that (*I should/I should not*) be present at rounds.

d. Doing what other nurses do is important to me (*not at all/very much*).

e. What physicians think I should do matters to me (*not at all/very much*).

f. Parents' approval of my work is important to me (*not at all/very much*).

The following questions were created to indirectly measure **perceived behavioral control**:

a. I am too busy doing other nursing work to attend rounds (*unlikely/likely*).

b. When I feel busy it is (*much more difficult/much easier*) to be present at rounds.

c. I am usually invited by someone from the rounding team (e.g., attending physician, resident physician) to attend rounds (*strongly disagree/strongly agree*).

d. When I am invited to rounds it makes it (*much more difficult/much easier*) to attend rounds.

e. I am usually provided with a 5 to 10 minute warning as to when rounds will occur (*strongly disagree*/*strongly agree*).

f. When I am not provided with a 5 to 10 minute warning as to when rounds will occur for my patient, I am (*less likely/more likely*) to be present at rounds.

To score the indirect items, for each of the TPB constructs the items are paired and multiplied. The resulting scores are summed to create overall scores for each TPB construct (Francis et al., 2004). For example the formula for scoring the items for perceived behavioral control is: PBC = (a x d) + (b x e) + (c x f)

Socio-Demographic Items. Socio-demographic items were developed to capture participant level of education, age, years of practice as a nurse, hours of work per week, and hours of continuing education per month. Responses were used to describe the sample.

Procedures

Several different types of data were collected in developing the NABAR. In the following section the procedures for completing the content validity index and feasibility and item development are described.

Content validity index (CVI). In the first stage of completion of the CVI, the NABAR was sent to five graduate prepared nurses with expertise in family-centered care. The experts rated each individual item on a 4-point ordinal scale using the item continuum that was recommended by Davis (1992). The CVI scores for each item were compiled (further detail is provided in the data analysis section) and items with an Item-CVI of less than .78 were revised using the written and oral feedback. Polit and Beck (2008) stated that items must have a minimum Item-CVI of .78 to be considered to have satisfactory validity.

In the second stage of completion of the CVI, the experts were asked to score the revised items. Polit and Beck (2008) suggested that when there is disagreement regarding items it may be necessary to provide further explanation regarding the items to the respondents. Further information on the TPB was provided to the experts (e.g., items that measure perceived behavioral control should reflect people's confidence that they are capable of performing the target behavior) along with 10 revised items. Three items that were not changed were also given to the experts to be rescored in light of the additional information provided to them regarding the TPB.

Feasibility and item development. Both written and oral feedback were sought to provide two types of data to assess feasibility of the NABAR. For the written feedback, questionnaire packages included a (a) cover letter with a summary of the study and instructions to complete the NABAR, (b) NABAR and (c) five follow up questions about the

NABAR. Packages were distributed to nurse participants via either hand or mail delivery and they were returned to the research office in the same way. Mail-delivered questionnaire packages included a self-addressed, postage paid envelope to facilitate return of the questionnaires. Following completion of the NABAR, nurses were instructed to answer a series of follow-up questions on their perceptions of the process to complete the NABAR (See Appendix H). Nurses were also requested to monitor the approximate time taken to complete the NABAR. In addition, two nurses completed the NABAR while being digitally tape-recorded. The nurses were asked to 'think aloud' as they read and scored items to provide information regarding their understanding of the items, ease of completion relating to formatting, and any other reactions they had to the NABAR. The 'think aloud' method can be a unique method for gathering data because it generates "direct data on the ongoing thought processes during task performance" (Jaspers, Steen, Cor van den Bos, & Greenen, 2004, p. 782). The 'think aloud' method has been used in other studies that assessed how people complete questionnaires (e.g., Boeiji & Janssens, 2004; French, Cooke, McLean, Williams, & Sutton, 2007; Oort, Schroder, & French, 2011).

Data Analysis

Data analyses were completed for the content validity index and data from the nurse participants completing the NABAR. For the completed NABARs, data were entered into the Statistical Package for the Social Sciences (SPSS) version 20.0. Up to 25% missing values were replaced with the mean for the subscale for that participant. Except for intention and subjective norm subscales, were up to 33% of missing values were replaced because these subscales had only 3 items each (for each rounding construct).

Content validity index. To assess content validity a CVI for items was completed (Lynn, 1986). Two types of CVIs were computed, first, the content validity of individual items, and second, the content validity of the NABAR (Polit & Beck, 2008). For the item-level CVI, the items were rated on a 4-point ordinal scale using the item continuum that was recommended by Davis (1992). It is as follows: *1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, 4 = highly relevant*. To compute the item-level CVI, each item score was computed as the number of experts giving the rating of either 3 or 4 (to dichotomize the ordinal scale into relevant and not relevant) and dividing this by the total number of experts (Polit & Beck). Several different methods of scoring the CVI of the overall questionnaire (Scale-CVI) exist (Polit and Beck, 2006). Polit and Beck's (2006) recommendation to use the approach of averaging the item-CVIs for the entire questionnaire to establish a scale-CVI was used. An alternative method that could have been used was to divide the items that received universal agreement from the experts by the total number of items. Polit and Beck (2006) stated that requiring universal agreement may be too stringent and that this method has the disadvantage where, as the number of experts increases, the likelihood of universal agreement decreases with the scale-CVI also decreasing.

Internal consistency reliability of subscales for direct items. Cronbach's alpha was used to calculate internal consistency reliability on preliminary data on the direct items. Internal consistency reliability was not used for the indirect items because people can hold both positive and negative views about the same behavior (Francis et al., 2004). For example, nurses may believe that it is easier to attend rounds when they receive an invitation, and they may also believe that they do not regularly receive an invitation to

rounds. While Francis and colleagues suggested a Cronbach's alpha coefficient of .60 was acceptable for a TPB questionnaire, for this study the goal was to achieve a coefficient of .70, as recommended for a new scale by Kazdin (2003). Item-to-total correlations, and subscale to total correlations were also calculated.

Feasibility. The mean time taken by the participants to complete the questionnaires was calculated as part of the feasibility assessment. The data collected from the open-ended questions (Appendix E) that the nurses completed following the questionnaire were sorted into themes. For this research theme was defined as "mean[ing] something akin to the content, or topic, or statement, in a piece of data; expressed more simply, what the data segment is about" (Tesch, 1988, p. 231). This helped the data interpretation through better understanding of the nurses' experiences with completing the questionnaire (including if they understood the questions being asked).

Ethical Considerations

Approval from the Conjoint Health Research Ethics Board (CHREB) was given prior to the commencement of the research (Ethics ID number 24409). Participants were provided with information regarding the purpose of the broader study and information also instructed them that they would be involved in testing the NABAR. Participants were asked to not write their name on the surveys to ensure that their responses remained anonymous (See Appendix I for the information sheet). Questionnaires were assigned a research identification number upon receipt in the research office. Nurses were given a 10 dollar gift card to acknowledge their contributions to the study.

Chapter 4

Results

The results have been divided into four sections. The first section includes socio-demographic characteristics of the participants who completed the NABAR, along with the time taken to complete the NABAR. Second, results for internal consistency of the subscales are provided along with scores for indirect items. The third section consists of Phase I of NABAR development CVI scores and written and think aloud feedback and the fourth section includes Phase 2 revision of the NABAR along with the second set of CVI scores. Qualitative and quantitative data were considered collectively to determine revisions.

Socio-Demographic Characteristics of Participants that Completed the NABAR

The participants that completed the NABAR represent a somewhat diverse group of nurses. A total of 20 nurses completed the NABAR. One case was deleted due to greater than 25% missing values. Table 2 provides socio-demographic data of the participants. Additionally, while licensed practical nurses where approached about participating in completing the NABAR, none participated.

Length of Time to Complete the NABAR. Given that feedback was requested for the NABAR and the Health Care Provider Questionnaire together for the larger study, time taken to complete the questionnaires was measured as one total. Ideally time taken to complete the NABAR would have been done separately, however it was believed that it would be too onerous for participants to monitor the amount of time taken for each questionnaire separately. The mean time to complete these questionnaires was 25 minutes with a range from 12.5 to 60 minutes.

Table 2

Characteristics of Nurses Completing the NABAR

Variable	*N* [a]	*M(SD)*	*(%)*
Age in years	18	33.44 (9.95)	
Years of practice	19	12.21 (11.15)	
Hours of practice per week	19	32.68 (7.71)	
Hours of continuing education per month	16	5.09 (4.44)	
Nursing Education			
RN Diploma	2		(10.5)
RN Baccalaureate	14		(73.7)
RN other	3		(15.8)
Total	19		

[a]
Note. Sample size varies due to missing data.

Internal Consistency of Subscales

Overall, the NABAR showed satisfactory internal consistency (Cronbach's alpha) with three of the subscales attaining an alpha of .83 or greater. The subjective norms subscale had an alpha of .67. Table 3 shows the internal consistency reliability of the subscales for the direct items as well as the item means for each TPB construct and the mean of the sums for each TPB construct. Table 4 shows the overall scores for the indirect items using the formula from Francis and colleagues (2004) manual for constructing TPB

questionnaires. As stated previously, Francis and colleagues recommend against calculation of Cronbach's alpha, means and standardized deviation for indirect subscales.

Table 3

Internal Consistency Reliability of Subscales for Direct Items

			Item	Sum	
TPB Construct	Number of items	*N*	*M (Range)*	*M (SD)*	α
Intention	18	19	6.24 (1.76)	112.37(11.25)	.85
Attitudes	20	19	6.4 (1.32)	128.68 (8.80)	.83
Subjective Norms	17	19	4.6(2.41)	78.24(10.61)	.67
Perceived Behavioral Control	24	19	4.7 (2.93)	116.08(23.09)	.89

Note. The items for each TPB rounding construct include the items from each rounding construct. The sum mean was calculated by adding the sum of all items for each TPB construct and dividing this by the number of items for each construct. The theoretical maximum scores for each TPB construct sum were: Intention = 126, Attitudes = 140, Subjective Norms = 119, Perceived Behavioral Control = 168.

Table 4

Scores for Indirect Items

TPB Construct	*N*	*Range*	*M(SD)*
Attitudes	*19*	*30*	*37.37(7.72)*
Subjective Norms	*18*	*74*	*37.72 (21.50)*
Perceived Behavioral Control	*18*	*43*	*-6.58(12.55)*

Note. Total scores for each participant were calculated using the following formulas where the numeric refers to the item number. Overall Attitude score, A = (02 x 11) + (03 x 31). Overall Subjective Norms score, SN = (78 x 70) +(75 x 71) + (79 x 82). Overall Perceived Behavioral Control, PBC = (13 x 83) + (17 x 84) + (21 x 77). The theoretical range of scores for Attitudes was -42 to +42; for Subjective Norms it was 1 to 147; and for Perceived Behavioral Control it was -63 to +63.

Inconsistent Responses to Reverse Scored Items

Data for reversed scored items were examined for inconsistent responses to assess if participants completing the NABAR quickly did not notice the changing direction in response endpoints. While it cannot be determined with certainty that participants did not intend to provide the scores they gave on the NABAR, an examination of the data suggests that some participants did provide unintended scores for some reverse scored items. Ten of the attitude items were reverse scored. By comparing the similar non-reverse scored items for the attitude items, some inconsistent scoring could be seen (e.g., a rating of 7 was given for both of the anchors corresponding to *harmful/beneficial*, and *pleasant/unpleasant*, suggesting that the participant found the rounding construct to be

both beneficial and unpleasant). For four participants, each had one attitude item that was scored inconsistently. In addition, one participant provided scores for a series of six reverse scored items that all appeared to be unintended. These items had the anchors of *I should/I should not* or *are/are not.* An example of one of these items was "Physicians think that *I should/I should not* be present at rounds." A score of 7 was given indicating that the participant believed physicians thought nurses should not be present at rounds. It is possible that more unintended scores were given to items, but due to the wide range of answers for other items, it was difficult to assess whether participants had divergent views or they mistakenly scored the items.

Phase One –Initial Version

CVI. The scale-CVI for the draft NABAR had a score of .82. Polit and Beck (2008) suggest that in order for a scale to be judged as having excellent content validity the scale-CVI ought to be .90 or higher. In addition, 20 of the 85 items had an item-CVI score of less than .78, which Polit and Beck suggest ought to be the minimum CVI score for each item. The majority of the items with low CVI scores could be placed in the following categories:

Items with the use of the term 'institutional pressure.' The items pertaining to subjective norms that had a stem containing the term 'institutional pressure' had an item-CVI score of less than .78 for five of the six items (83%).

Items with the rounding construct: Telling families about rounds before they occur. For this construct the item-CVI scores were less than .78 for five of 11 items (45%) using the construct.

Items with the rounding construct: Providing patient information on progress towards meeting discharge goals. For this construct the item-CVI scores were less than .78 for four of the 11 items (36%) using this rounding construct.

Items using indirect measurement to measure the rounding construct: Being present at rounds. Five of the 19 items (26%) using indirect measurement had CVI scores of less than .78.

Three additional items had CVI scores of less than .78. Each of these items measured an aspect of perceived behavioral control, but no other pattern as to why the CVI scores were low was identified. These items included; (a) For me to provide information on my patients condition during rounds is (*easy/difficult)*, (b) The decision to follow up with families to ensure that they understand the information and plan provided during rounds is beyond my control *(strongly disagree/strongly agree)* and, (c) For me to follow up with families to ensure that they understand the information and plan provided during rounds is (*easy/difficult)*.

Written feedback. Numerous themes emerged from the written feedback provided by the nurse participants. A summary of the feedback is provided in this section with a comprehensive table of the feedback provided in Appendix G.

NABAR length and repetition. One prominent theme that emerged was that the questionnaire was too long and repetitive. Most nurses commented on at least one of these aspects. Comments written by nurses included, “Many of the questions seemed redundant/repetitive and there were too many questions,” “Nurses attitudes survey needs to be shorter,” and “Lots [of the questions] were so similar they were too hard to differentiate.”

NABAR organization. Several nurses commented on the organization of the items and provided suggestions in two areas. First, some nurses suggested that questions be categorized with one nurse stating, "Perhaps you could have headings when changing topics, e.g., communication, family participation – to improve flow of the questions." Second, several nurses felt that having variance in the direction of the scales added confusion. One nurse stated that it, "would be helpful if all the positive adjectives were on one side."

NABAR formatting. A few of the nurses commented on the general formatting of the NABAR. Two nurses commented on questions being split on 2 pages, which made it difficult for them to read the questions. One nurse also thought that the font was small and that Section 1 was "a bit cramped." Another nurse wrote, "Easy to read and complete, nice format, I like the shading between the sections." Two nurses also suggested providing space for narrative answers. One nurse stated it this way, "Leave a place for comments. Sometimes you feel the need to explain why you say something."

NABAR wording. The feedback provided suggested that some nurses found some of the items confusing due to the way they were worded. One nurse summed this up by writing, "The way that some are worded, make them confusing, you have to read them a couple times even to understand what is being asked." The nurses also provided more specific feedback on some of the wording that they found confusing. Francis and colleagues (2004) recommended the statement, "Whether I [the rounding construct is placed in the center of the statement] or not is entirely up to me". Several nurses found these statements confusing—in particular the 'or not' within the statement. One nurse wrote, "'or not' isn't needed-confusing questions!" A couple of nurses also found the statement, "The decision to

[the rounding construct is placed in the center of the statement] is beyond my control" confusing and in particular the ending. A nurse stated, "'beyond my control' can be interpreted in so many ways."

Items with the use of bipolar adjectives. Several nurses provided a wide range of feedback for the items that used bipolar adjectives (e.g., *harmful/beneficial*). Some nurses believed that having four different sets of adjectives was too repetitive. An example of this was a nurse who stated "…would like the question to be reduced to *harmful/beneficial* and *pleasant/unpleasant*—the other two are too repetitive." In other instances, it was the adjectives themselves that the nurses did not like. Statements by nurses included: "use of *pleasant* related to care doesn't seem appropriate in a hospital setting," "What is meant by *good/bad*?" and "I found this question a challenge with respect to wording… consider—not valuable/valuable to match *pleasant/unpleasant*, *Good—Bad* –is there other words you could use?"

Use of term 'institutional pressure.' The term 'institutional pressure' was used within the stem of six items. The term was confusing to some nurses with one nursing asking to "define 'institutional pressure'" and another nurse stating she "wasn't sure from where within the institution" the item was referring to.

Feedback for items with the stem "Most physicians, nurses and families think that." Some nurses found these items to be problematic. Comments made by nurses included, "When you ask about physicians, family members and nurses-they are three different perspectives…so they might think differently in response to your questions," and "Do you want an answer for each or as a whole?"

Feedback for the rounding construct, "Telling families about rounds before they occur." Nurses found the items related to this construct confusing and most nurses that commented on the items demonstrated that they misinterpreted the intention of the question. Nurses wrote statements such as "[I] never know the timing of rounds", "I would like to [tell families about rounds before they occur] but they are too unpredictable." Some nurses were unsure how to interpret the item. An example of this was a nurse who wrote, "Does this mean right before rounds … or tell them during the admission process?"

Feedback for the rounding construct, "Providing patient information on progress towards meeting discharge goals." One nurse suggested that, "Sometimes discussion of discharge is not relevant to the discussion, when [the] patient is acutely ill." Another nurse stated that they did not have "true discharge goals" at her place of work and she suggested the use of the term "discharge planning" instead.

Feedback for 'indirect' items. Nurses provided a significant amount of feedback for six of the items that used indirect measurement for assessing the attitudes, subjective norms and perceived behavioral control of nurses pertaining to the rounding construct of being present at rounds. For the item, "I am usually invited by someone from the rounding team (e.g., attending physician) to attend rounds," one comment that was made was "Why do you need an invitation????? If you're part of the team, its expected isn't it?" For the item, "Being present at rounds makes me feel as though I am a part of a multidisciplinary team," a nurse wrote "It's not about how I feel but how I can advance care by contributing." For the item, "Doing something positive for my patient is…" a nurse wrote, "This question seems a bit obvious."

'Think aloud' feedback.

General feedback provided by both participants. Several general observations were made by the two nurse 'think aloud' participants. First, participant 1 suggested that the items seemed repetitive stating, "Some of the questions just seem a bit repetitive, is a thought that comes to mind." Participant 2 suggested that the direction of the scales ought to be consistent saying, "it is easy to get mixed up" when scale direction is not consistent. Participant 2 also suggested providing space for nurses to provide narrative comments. She stated, "It would be good to have an opportunity to provide some narrative to provide more depth to the answers provided. For example it may be difficult to provide information if you only met the family a few minutes prior to rounds occurring."

Feedback from participant 1. Participant 1 provided only a small amount of feedback with most of her comments being positive with statements such as, "This is a good question." The participant did need to read over a few of the items twice that may suggest that the items were somewhat difficult to understand. An example of an item that she found confusing was, "Providing information on the patient's condition is… with four bipolar adjectives (e.g., *harmful/beneficial*)." The participant stated "to who, the people at rounds, to the parents?"

Feedback from participant 2. Participant 2 provided a critique of some of the stems of the items that were provided in Francis et al.'s (2004) manual for constructing questionnaires based on the TPB. She suggested removing, "if I wanted to," from several items including the item, "I am confident that I could provide information on my patient's condition during rounds if I wanted to." She also provided constructive feedback for

several items with the stem "I expect to." On one occasion she said the wording was awkward and stated, "use better words such as plan to."

Participant 2 commented on the use of the term 'institutional pressure' on five occasions. She stated that she was unsure of the definition of institutional pressure and on one occasion she also stated, "I don't feel pressure. It should be easy to share—so I am not sure where that is coming from?"

In addition, participant 2 provided feedback related to the rounding construct of telling families about rounds before they occur. The participant interpreted the items to mean that the nurse would tell families about the time at which rounds would occur, which was not the intent of the question. This was evidenced by the participant's statement, "Telling the time of rounds may be challenging, it just depends on the situation. It may be challenging because one may not know until they [rounds] are just about to occur." The participant also made the comment, "Is this pre-meeting or generally speaking?"

Participant 2 commented on several of the indirect measurement items. For the item, "I am usually invited by someone from the rounding team (eg. attending physician, resident physician) to attend rounds" participant 2 stated, "this … implies that the rounding team does not include the nurse. Also being invited implies that it is a privilege to be there versus integral to the care of the patient." For two of the items about providing a 5 to 10 minute warning to nurses prior to rounds, participant 2 had questions about the choice of the amount of warning time. In one instance the nurse stated, "I question the 5-10 minute warning pre rounds. Why is it such a short time frame?" The participant asked if the wording could be changed for two items relating to the nurse being 'too busy' to attend rounds stating, "I think the 'busy' part needs to be qualified or clarified—that busyness part

is perhaps poor word usage." In addition the participant expressed confusion regarding four other items developed using indirect measurement of the variables. In regards to one of the items she stated, "I am not sure what the question is? I'm not sure what we're asking on that?"

For the rounding constructs of, "Following up with families to ensure they understand the information and plan provided during rounds" as well as, "Helping families have their questions answered', participant 2 felt that several of the items implied that this was the sole responsibility of the nurse. She disagreed with this and stated, "[E]verybody should help, it is not the sole responsibility of nursing being the advocate and being responsible for that."

Phase 2: Revising the NABAR and Repeating the CVI

The data from the CVI, written and oral feedback were synthesized in order to make decisions regarding revisions and deletion of items. Refer to Appendix H for the revised NABAR.

Removal of items. The decision to remove thirty items for the revised version of the NABAR was made due to several factors. The majority of feedback suggested that the NABAR was too long resulting in a large respondent burden. Because the construction of the NABAR was based on the TPB manual (Francis et al., 2004) which required specific items for each rounding construct, items could not be deleted in isolation because this would affect the ability to provide scores for the rounding constructs.

The 11 items that measured the rounding construct, "providing patient information on progress towards meeting discharge goals" were deleted for several theoretical reasons. First four of the 11 items measuring this construct had CVI scores of less than .78. Second,

written feedback suggested that discharge goals may not be pertinent in all discussions that occur during bedside rounds (e.g., if the patient is acutely ill). Third, it was determined that the construct of providing patient information could include discharge information when pertinent. For example, a nurse may share the patient information that the patient has been successfully weaned from oxygen to room air, an important step towards discharge and important general clinical information about the patient.

The decision was made to delete the 19 items that used indirect measurement. While Francis and colleagues (2004) do recommend the use of both direct and indirect methods for tapping the same construct due to the expectation that the scores for both methods would be positively correlated, the authors also state that direct items may be used when constructing briefer forms of a TPB questionnaire. The indirect items proved to be somewhat problematic for nurses reviewing the items. Twenty six percent of the indirect items were given unsatisfactory CVI scores. Six of the indirect items were viewed as problematic by some of the participants providing written feedback. One of the participants who provided 'think aloud' feedback also provided a critique of several of the indirect items. The problems identified related to nurses having different expectations of what should occur in order for nurses to be present at rounds. For example, some nurses believed that being invited to rounds implied that it was a privilege to attend rounds as opposed to an expectation of providing comprehensive care for their patient, while others found an invitation to be helpful.

Revision of items and second phase CVI scores. The stem for the items that used the term 'institutional pressure' required revision due to low CVI scores and an uncertainty regarding the definition of the term expressed in the written and oral feedback. The

original stem was modified from the TPB questionnaire manual (Francis et al., 2004). The item was seeking to identify how much a person feels social pressure to behave in a particular way (a 'subjective norm'). For example, if a person with moderate hypertension came into see their family practitioner, would the family practitioner prescribe an ACE inhibitor? Social pressure in this instance could include: whether the patient wanted an ACE inhibitor, if other professional colleagues approved of prescribing it, and if the health care system encouraged prescribing it. In the TPB manual the stem used is, "I feel social pressure to…" and for the draft NABAR the stem was changed to "I feel institutional pressure to..." Two options for the revised items were sent to the CVI nurse experts to be scored. For the option, "I feel pressure from the health care system" the CVI scores for the five items were less than .78 (there was a total of five items instead of six because the item measuring the rounding construct related to discharge planning was deleted). For the option, "I feel social pressure (from either, families, other nurses, physicians, or the healthcare system)" the CVI scores from the nurse experts were all greater than .78. The items were therefore revised to the second option, "I feel social pressure (from either, families, other nurses, physicians, or the healthcare system)."

The second set of items that required revision related to the construct of telling families about rounds before they occur. Again, these items were given low CVI scores and the feedback suggested that the participants did not understand the intention of the items. The items were being interpreted in relation to time (e.g., the nurse will tell the family that rounds are occurring in 1 hour). The intention of the items were in fact that families were educated about the structure and function of rounds (e.g., A multidisciplinary team will come to the room to discuss the diagnosis, plan of care and discharge plans if pertinent

with the family. The family is invited to participate, have questions ready and contribute any information they may wish to share). The wording of this rounding construct was changed to, "educating families about rounds (structure, function, goals, participation)." The second phase CVI scores were greater than .78 for four of the five items measuring this construct. While not rescored by the experts, the additional six items measuring this construct were also revised to include the new wording for the construct. The item, "Most physicians, family members, and nurses think that I should/should not educate families about rounds (structure, function, goals, participation)," had a CVI score of .6 despite the revision. This item was retained because it is required to score the subjective norms subscale.

For the three items with low CVI scores that measured perceived behavioral control for varying constructs, additional information regarding the intention of the stems (taken from Francis et al.'s [2004] TPB manual) was provided to the experts. The experts were then asked to rescore the items. Two of the three items had CVI scores of greater than .78 while the item, "The decision to follow up with families to ensure that they understand the information and plan provided during rounds is beyond my control" had a CVI score of .4.

The revised NABAR had a scale-CVI of .88 (See Appendix I for CVI scores of revised items). Polit and Beck (2008) recommended that a scale-CVI be equal to or greater than .9 to be considered as having excellent validity.

Some additional changes were made to NABAR items. While the items with the stems, "Most physicians, nurses and families think that I *should/should not"* had adequate CVI scores, the items were changed based on the written feedback that indicated that the items were triple-barreled. The stem for these items was changed to, "Most people in my

workplace who are important to me think that *I should/should not.*" A minor change that was made was that the 'or not' was removed from the items with the stem, "Whether I [the rounding construct is placed in the center of the statement] or not is entirely up to me," because several participants commented that they found the 'or not' confusing. It was determined that the 'or not' would not alter the overall meaning of the items. Another set of items that were modified used four sets of bipolar adjectives. The items were reduced to having two sets of adjectives due to participant feedback suggesting the items were too repetitive. Additionally the anchor adjectives of *pleasant/unpleasant* were changed to *rewarding/frustrating* because a participant stated that she thought that the use of pleasant related to care did not seem appropriate in a hospital setting. Despite the changes made to these items, an instrumental item (whether the behavior achieves something e.g., *harmful/beneficial*) and an experiential item (how it feels to perform the behavior e.g., *rewarding/frustrating*) remained in the NABAR as recommended by Francis and colleagues (2004).

Revision of NABAR item organization and format. The organization of the items was adjusted to address feedback of nurses who suggested organizing items into categories (e.g., "Engaging in open communication" and "Providing Information on my patient's condition"). Francis and colleagues (2004) suggested that items pertaining to attitudes, subjective norms and perceived behavioral control be mixed through out the questionnaire. Therefore by organizing questions based on the five rounding constructs, logical flow was provided to the participants completing the questionnaire and Francis and colleagues' recommendation of mixing up TPB constructs was upheld.

To further address feedback regarding nurses' comments that the NABAR was repetitive, a brief explanation of the repetitive nature of the NABAR was added to the preamble for the questionnaire. The addition was as follows, "Sometimes the questions seem to be asked twice. There are slight differences in wording that are intended to help us understand what nurses' think about bedside rounds. Please read and answer each question the best that you can."

Some nurses desired to provide narrative feedback regarding some of the items. It was therefore decided to provide space at the end of the NABAR for three open-ended questions that were as follows:

1. What do you believe are the advantages of participating in rounds (for yourself, the healthcare professional team, and the family)?
2. What do you believe are the disadvantages of participating in rounds (for yourself, the healthcare professional team, and the family)?
3. If you would like to elaborate on your response to any of the items within the questionnaire please do so in the space provided below.

Addressing feedback that did not result in changes to the NABAR. Several nurses believed that having variance in the direction of the scales was confusing. The questionnaires themselves, also showed reverse scored items where nurses initially circled an opposite response and crossed through the response in order to change their response. While varying scale direction may slow the pace of the completion of the questionnaire and has the potential to confuse participants, Francis and colleagues (2004) recommended that item direction vary in order to decrease acquiescence response bias. It was decided to maintain variance in the direction of the scales.

Some participants found the stems with the terms, “beyond my control” and “if I wanted to” confusing. This was in keeping with confusion regarding the stem, “Whether I [the rounding construct is placed in the center of the statement] or not is entirely up to me.” These stems all relate to the TPB construct of perceived behavioral control. Alternatives to these items were difficult to develop while maintaining the assessment of the participant’s confidence that they were able to perform the targeted behavior. These items were therefore not changed.

Chapter 5

Discussion

Strength of Using the TPB for Development of the NABAR

Given that no scales to measure PFCC of bedside rounds could be located, this study is the first to develop and test a questionnaire to measure nurses' intent to practice PFCC during bedside rounds. The NABAR shows promise as a measure to assess nursing attitudes and behaviors towards bedside rounds. The use of the TPB (Ajzen, 1991) in the development of the NABAR provides strong theoretical underpinnings for the questionnaire. The rounding constructs have been gleaned from literature on bedside rounds providing a foundation based on research (Jacobowski et al., 2010; Latta et al., 2008; Mittal et al., 2010; Muething et al., 2007; Rosen et al., 2009). The results of this study provide the first step in the development of a scale that can assess nursing attitudes and behaviors related to bedside rounds and provide a basis for educating and supporting nurses in transitioning to practice within bedside rounds.

The results of this study suggest that the NABAR has acceptable preliminary psychometric properties for a new scale. The NABAR subscales showed satisfactory internal consistency (Cronbach's alpha greater than .83) for the TPB constructs, except for the subscale for subjective norms (Cronbach's alpha = .67). The Cronbach's alpha coefficients should be used with caution due to a limited sample size for this study. Strong content validity was established with an overall scale-CVI of .88. With revisions to the NABAR, 53 of the 55 items of the revised NABAR had item-CVI's that were satisfactory (item-CVI greater than .75 is considered to be satisfactory [Polit & Beck, 2008]).

The TPB (Ajzen, 1991) is useful in explaining the complexities of human behavior as it can tap constructs that may otherwise not be revealed using a different approach to a questionnaire. For example, questionnaires may often ask their participants if they engage in particular behaviors without seeking to understand why they engage in particular behaviors. Through assessing intention, attitudes, subjective norms and perceived behavioral control, an increased understanding as to why nurses practice in their current form can be gleaned and inform education and support provided to nurses. An approach to implementing practice changes for nurses where the TPB is considered also mandates that other HCP's and the broader institution are integrated into a culture that is conducive to having nurses actively contribute to bedside rounds.

Challenges of Using the TPB for Development of the NABAR

Through the process of developing the NABAR, it became increasingly evident that developing a measure to assess nursing attitudes and behaviors related to bedside rounds was complex due to the corresponding complexity of implementing a standardized approach to bedside rounds that is multidisciplinary and family-centered. Multidisciplinary family-centered bedside rounds are a relatively new phenomenon (Mittal et al., 2010; Rappaport et al., 2010; Rosen et al., 2009) and nurses along with other HCPs have divergent views on the constructs underlying this type of practice. The feedback from the nurses completing the survey as well as from experts completing the CVI also suggested that nurses had differing attitudes towards the value of bedside rounds along with the importance of the various rounding constructs that were assessed.

Given some of these complexities a number of challenges emerged when using the TPB to develop the NABAR. The lack of clear understanding by nurses, HCPs and

healthcare institutions of how bedside rounds should function added considerable challenge to developing items to assess nursing attitudes and behaviors using the TPB. Francis and colleagues (2004), in their manual for constructing questionnaires based on the TPB, use the example of determining whether family doctors referred patients with lower back pain for an x-ray using TPB questions. Understanding what was entailed in a referral for x-ray as well as benefits and barriers to x-ray referral was much less complex than determining what occurred within the dynamic environment of bedside rounds. While family doctors must have considered many factors when determining whether they would refer a patient with low back pain for an x-ray, what occurred during the x-ray itself was quite clear. In contrast, the literature on bedside rounds and feedback provided in the development of the NABAR demonstrated that the operationalization of bedside rounds remains unclear.

Nurse Participants Were Engaged in Knowledge Generation

Differing views from nurses on how to provide an environment where they contributed to bedside rounds were evident in the feedback related to the indirect items of the NABAR. The deletion of the indirect items was a difficult decision because these items attempted to explore beyond the behaviors considered in the rounding constructs and look at factors that may influence nurse participation. Conversely, a greater understanding of nurses attitudes and behaviors related to the rounding constructs explored may need to be developed before including indirect items in the NABAR.

Despite conducting an elicitation study, it was apparent that some of the indirect questions did not resonate with the participants. The indirect items were developed using information from nurses on unit 2 and 3 at the ACH who participated in bedside rounds.

These nurses were asked about things that would help them to be able to be present at bedside rounds. The items were developed directly from frequently provided suggestions. When these items were presented in the NABAR however, some nurses were opposed to the idea that these things would promote nurse participation during bedside rounds. For example, for the item "When I am invited to rounds it makes it *much more difficult/much easier* to be present at rounds," one of the nurses providing verbal feedback stated that being invited by someone from the rounding team implied that the rounding team did not include the nurse. Another nurse wrote, "Why do you need an invitation????? If you're part of the team, its expected isn't it?" For this item, the average score on a -3 to +3 scale was 1.7, with six participants scoring the item at zero, and 8 participants scoring the item at +3. This indicates that some nurses believed an invitation had no impact on their presence at rounds, while others believed it to be very important.

Additionally, nurses believed some of the indirect items were not relevant. For example, the item "doing something positive for my patient is *extremely undesirable/ extremely desirably"* was given a CVI score of .2 from the nurse experts and one nurse commented that, "this question seems a bit obvious." This comment reflects that the nurses were engaged in why they were being asked the questions. It speaks to the sophistication of the nurse participants.

French and colleagues (2007) found that participants completing TPB questionnaires queried how sensible some of the items were. For example in a TPB questionnaire related to binge drinking, answers related to the consequences of drinking depended upon what the participant was drinking and who they were drinking with. The participants believed they needed further information to properly answer some of the

questions. Participants completing the NABAR had some similar difficulties. For example, when asked if being present at rounds made participants feel as though they were a part of a multidisciplinary team one nurse stated that it, "depends if the team lets [the] nurse talk/asks for info." Young, Lierman, Powell-Cope, Kasprzyk and Benoliel (1991) explained a similar phenomenon and stated that when a person was expected to score certain items, the person must hold an absolute opinion about the item regardless of the context (i.e., nurses would feel a part of a multidisciplinary team by attending rounds regardless of the opportunity they had to participate). The issues that were revealed when examining TPB questionnaires further highlight the complex nature of developing scales that assess dynamic constructs such as the rounding constructs within the NABAR.

The impatience from the nurses with the repetitive nature of many of the items also suggested that the nurses were engaged in the process and unsure whether the items on the NABAR would generate knowledge that they believed would be valuable. Darker and French (2009) suggested that explaining the need for multiple items to assess the same constructs to participants may be beneficial because it could decrease irritation by the participants and help them to be more focused on answering the questions themselves. As stated in the results section, an explanation of the repetitive nature of the NABAR was provided in the revised version.

Nurses' Views on Providing Information About Meeting Discharge Goals

One rounding construct that nurses had differing views of was providing information on progress towards meeting discharge goals. Discharge time is one quantifiable measure for assessing the benefits of bedside rounds compared with traditional conference room based rounds (Mittal et at., 2010; Muething et al., 2007).

Additionally, healthcare institutions must prioritize efficiency within their institutions making discharge time a priority when considering how rounds are conducted (Aronson et al., 2009; Cameron et al., 2009). Nurses however, who spend the majority of their time at the bedside, may not view discharge time and meeting discharge goals as a priority, instead placing higher values on the immediate concerns for the patient and family. This may be one reason why some nurses did not see the relevance of having items for the rounding construct of providing information towards meeting discharge goals. In addition, nurses may currently not believe that they have a significant role in determining or influencing discharge times through their practice and therefore do not see their contribution to discussing progress towards meeting discharge goals as highly relevant during bedside rounds.

A part of meeting discharge goals can often include aspects of patient and family teaching such as nasal-gastric tube feeding. London (2004) discussed opportunities for nurses to prepare families for discharge and referred to the commonly held adage that "discharge teaching begins at admission." London claimed that novice nurses often saw discharge teaching as distinct and time intensive work, that was separate from other nursing work. She claimed that a shift in awareness regarding how discharge education could occur was needed for nurses who aimed to incorporate discharge teaching into their broader practice. This may be consistent with a need for nurses to further consider how the discussion of discharge goals can be incorporated into bedside rounds. Therefore, while the discharge items were removed from the NABAR, future research on nursing practices during bedside rounds should consider the element of working towards discharge goals.

Comparing the TPB Constructs

A pattern was identified between the CVI scores and the mean scores for the participants who completed the NABAR in relation to the four TPB constructs. The direct items developed from the TPB constructs of subjective norms and perceived behavioral control were shown to be most problematic for the experts who completed the CVI. Of the subjective norms and perceived behavioral control items, both TPB constructs had six items with unacceptable CVI scores for a total of 12 items and 63% of all the items with low CVIs. In contrast one Intention item and one Attitude item had unacceptable CVIs, which was equal to 11% of the items with unacceptable CVIs. Additionally, the means for the subjective norms items (4.6) and perceived behavioral control items (4.7) were significantly different than those of the intention items (6.24) and attitude items (6.4). Darker and French (2009), in a think-aloud study that assessed individuals abilities to make sense of a TPB questionnaire on walking habits stated that participants found subjective norm items to be most problematic, also, the authors stated then when participants found a question to be problematic for the subjective norms and perceived behavioral control items, they were more likely to select the middle option (i.e., 4) for that item. Darker and French postulate that the participants chose the middle option, not because they held a neutral position but rather to avoid the difficult mental processing associated with assigning a score to the item. Thus, the low CVIs for the subjective norms and perceived behavioral control items, along with the means (4.6 and 4.7), which approached the middle option would be consistent with Darker and French's findings and indicate that the items related to subjective norms and perceived behavioral control were more problematic that those of the other two TPB constructs.

Limitations

Representativeness of the sample. According to the College and Association of Registered Nurses of Alberta (CARNA) (www.expertcaring.ca?page_id=4, n.d.), 58% of registered nurses in Alberta are 41 years of age or older. The participants who completed the NABAR do differ considerably from the CARNA statistical information in that the average age was 33.44 years. In regards to education level, the participants also differ from the statistical information provided by CARNA where 50.4% of nurses had a baccalaureate degree compared to 73.7% of nurses who completed the NABAR These differences may be due to chance, or that a younger, more highly educated group of nurses work in acute pediatric care compared with other work environments. Additionally, due to the small sample size, it is probable that the mean for years of practice was unstable as demonstrated by the large standard deviation, which was likely a result of the broad range in years of practice.

CVI. A concern with using a CVI to establish content validity was that it could be viewed as simply an index of inter-rater agreement that could also be exaggerated by chance factors (Polit & Beck, 2006). Similarly, there was a chance that disagreement may be exaggerated due to chance factors. For example, if two experts rated the relevance of an item, by chance alone they would be expected to agree 25% of the time (Polit & Beck). To provide a sufficient level of control for chance agreement Lynn (1986) stated that a minimum of five experts be utilized. Therefore five experts rated the NABAR.

Davis (1992) provided a stringent process for choosing a panel of experts when reviewing a scale and stated that one of the first decisions that an investigator must make is defining the necessary expertise for panel members. The group chosen for the NABAR CVI

did have both clinical backgrounds in bedsides rounds, as well as graduate nursing education and expertise in PFCC. However, one limitation of this group of experts was that the nurses did not have expertise in the TPB and Davis recommends that when instruments are developed from a specific theoretical framework that the panel members have expertise of the framework. Ideally, it would have been beneficial to provide the nurse experts with more information on the TPB prior to having them complete the CVI. While not possible for this study, having experts with both, knowledge of the TPB as well as expertise in PFCC would have bolstered the findings of the CVI. It could be expected that providing more information on the TPB for the second phase of the CVI improved the experts understanding of the revised items.

Reverse scored items. Reverse scored items caused some confusion to participants completing the NABAR. Reverse scored items remain in the revised version of the NABAR to prevent acquiescence response bias, but there is risk that these items will be incorrectly scored by future nurses completing the NABAR. Three changes to the NABAR will help reduce the risk of items being incorrectly scored by participants. First the number of items in the NABAR has been decreased from 85 to 55, reducing the response burden for participants so that they may have increased concentration for the items they complete. Second, in the preamble for the NABAR the statement, "It is important that you look closely at the direction of the scale for each question as they change direction in terms of being negative and positive" has been put in bold font for emphasis. Third, the organization of the items has been improved to help participants better navigate through the questionnaire. Ajzen (2002) states that care ought to be taken in constructing items

with both positive and negative endpoints, and given his expertise in TPB questionnaire construction his method was followed.

Subjective norms subscale. While three of the four TPB subscales had satisfactory Cronbach's alpha values, the subscale for subjective norms had an alpha of .67. Item to total correlations were examined along with alpha values if an item was deleted and there was no indication that any particular item primarily contributed to the low alpha score on the subjective norms subscale. Of the three subjective norm stem items (each repeated five times for the rounding constructs) one of the stems was changed significantly in the revised NABAR from "I feel institutional pressure to…" to "I feel social pressure (from either, families, other nurses, physicians, or the healthcare system) to…" This change may help improve the alpha when the NABAR is used in the upcoming study. All alphas will be repeated when the NABAR is used in the upcoming study.

Implications for Nursing Practice

Transforming the bedside rounding culture. Developing a tool to assess attitudes and behaviors about bedside rounds is an important step towards improving how bedside rounds function for nurses, other HCPs, and most importantly for families of hospitalized infants and children. For the upcoming study: *Family-Centered Care during Bedside Rounds: Effects of an Educational Workshop for Multidisciplinary Hospital Pediatric Teams,* the NABAR will provide a framework for identifying modifiable variables that could predict how nurses practice during bedside rounds. Two strengths of the upcoming study are the multidisciplinary approach and support from hospital administrators to promote enhanced bedside rounds. Studies that used the TPB to better understand complex practices such as those associated with teaching professionalism (Archer et al., 2008),

referral of cancer patients for psychosocial support (Kam, Knott, Wilson & Chambers, 2012), and HIV and work intentions of public health nurses (Tessaro & Highriter, 1994) all indicated that a broader cultural transformation within their associated institutions was required in order to change behavior. Tessaro and Highriter stated that a part of changing cultural norms and attitudes included continuing education for nurses that involved other HCPs and nonprofessionals in the workplace. According to Ajzen (1991), for nurses participating in bedside rounds, perceived behavioral control over the various rounding constructs could often be measured as a substitute measure for actual control (given that perceptions are realistic). Additionally, perceived behavioral control, as part of the regression model, impacts intention and ultimately behavior. Thus, interventions aimed at improving nurse participation in rounds, must work to improve nurses perceived behavioral control in part by changing the rounding culture.

Reducing the barriers to effective participation in bedside rounds. The NABAR is a tool that can help to identify barriers for nurses to effectively participate in bedside rounds. Archer and colleagues (2008) proposed the use of the TPB as a predictive model for identifying factors that influenced professionalism training in medical education. Archer and colleagues stated that two barriers to successful professionalism training included a lack of a unifying theoretical model to facilitate incorporation of professionalism development into educational activities along with no clear definition of professionalism. In the implementation of bedside rounds, parallels with these same barriers are evident. Two features of the NABAR seek to reduce these barriers. First, a strong theoretical basis is provided when assessing nurses' attitudes and behaviors towards bedside rounds using the NABAR, and can therefore provide a foundation for education of nurses to improve

their proficiency during bedside rounds. Second, within the NABAR five discrete nurse rounding constructs are identified and assessed, with the aim of providing shape and form to nursing practice during rounds. Nurses need to continue to be engaged in defining the function of bedside rounds, especially in how nurses can contribute to making rounds a valuable experience for patients and families.

Altering attitudes about bedside rounds. The implementation of bedside rounds is often contingent on the attitudes towards bedside rounds by HCPs (Mittal et al., 2010). Nurses, in their role as a teacher and family advocate (Klieber et al., 2006), desire to participate in rounds in order to facilitate the provision of PFCC. Concurrently, tensions exist as nurses navigate in a new role as regular participants in bedside rounds that are transitioning from being physician-centered to family-centered. Muething et al. (2006), found that physicians who were uncomfortable with uncertainty were also uncomfortable with bedside rounds. A similar parallel may be drawn with nurses participating in bedside rounds. Given that the operationalization of rounds remains unclear, different rounding teams continue to practice rounds in divergent ways at the ACH. Nurses entering into this rounding environment may experience uncertainty as to how bedside rounds will unfold for both the nurse and family. Fostering a standardized approach to rounds that is family-centered will help ensure that nurses can develop positive attitudes towards participating in bedside rounds. The NABAR will be a useful tool for establishing baseline nurse intentions, attitudes, subjective norms and perceived behavioral control for bedside rounds. A thorough understanding of nurses' experiences with rounds, as will be sought from using the NABAR, can provide a foundation for initiatives for nurse education, other

HCP education as well as policy development for creating an environment where bedside rounds can thrive.

Future Research. Future research is required to determine whether the NABAR is sensitive to change for nurses who experience education and other initiatives aimed at changing bedside rounding practices of nurses. Psychometric testing of the NABAR using a larger sample size will help further establish reliability of the questionnaire. Additionally, the completion of CVI for the revised NABAR in its entirety would contribute to validity. In the upcoming study as well as other future studies using the NABAR, a regression model will be utilized with intention as the dependent variable, and attitude, subjective norms, and perceived behavioral control as the predictor variables (Francis et al., 2004). Further elicitation from nurses about their attitudes and beliefs about bedside rounds may allow for indirect items to be used in a future version of a TPB questionnaire. Prior to the development of indirect items for a nurse questionnaire, the nurses' role may need to be more clearly defined and established. The development and use of a TPB questionnaire for attending and training physicians and allied health professionals who practice bedside rounds would help increase understanding of attitudes and beliefs about bedside rounds for the team as a whole.

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List of Appendices

Appendix A

Multidisciplinary Family-Centered Bedside Rounds Nursing Workshop Agenda

5 min	*Welcome and refreshments*
20 min	Nursing Attitudes and Behaviors Questionnaire A 'primer' for discussion throughout the workshop
20 min	Guest: parent story of bedside rounds experience
15 min	Introduction to bedside rounds including: a) Review of feedback from nursing surveys conducted in January 2011 b) Timeline/history of rounding practices at ACH and transition to current rounding format c) Evidence for improved patient care and patient safety when conducting bedside rounds with outline of 6 primary nursing practices that contribute to improved PFCC
45 min	4) Bedside rounds video with pauses for discussion throughout (Video 10-15 min, Discussion 30min)
15 min	*Break with refreshments/food*
45 min	Breakout stations with interactive small groups including; (Three 15minute stations) a) Skills in organizing nurses communication within the rounding context b) Appreciative inquiry—sharing experiences of benefit to the patient and healthcare team during bedside rounds participation c) Discussion of a rounding scenario
15 min	Wrap-up and evaluation of workshop (total length = 3hours)

Appendix B

Letter of Support

Alberta Children's Hospital

9 August 2011

ARC Award in Family Centred Care Selection and Review Committee
Alberta Children's Hospital Research Institute (ACHRI)
Room 293, HMRC
3330 Hospital Drive NW
Calgary, AB. T2N 4N1

Dear ARC Award in Family Centred Care Selection and Review Committee

I wish to express my support of the application for the ARC Award in Family Centred Care: **Family-Centred Care during Bedside Rounds: Effects of an Educational Workshop for Multidisciplinary Pediatric Hospital Teams.**

Due to the potential impact on patient care and patient safety, multi-disciplinary family-centered (MDFC) bedside rounds is a key area for further research at the Alberta Children's Hospital (ACH). The project is fully aligned with the philosophy of family centered care (FCC) at ACH and this proposal has been developed in consultation with key stakeholders at multiple levels to ensure that the best expertise is brought together to support the project. Therefore, as the Executive Director for inpatient care at ACH I support this project.

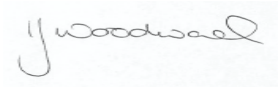
In addition to supporting the project at administrative team meetings I will contribute with in-kind resources as follows:

- Support the managers of Units 2 & 3 to provide remunerated time for nurses to participate in the educational workshop and pre-workshop survey completion

- Support the Clinical Nurse Educators on Units 2 & 3 to provide communication to nurses regarding the importance of participation in the workshop and surveys and help distribute the follow-up on-line survey and certificates to nurses for continuing competency programs (CARNA & CLPNA)

I believe that the information gained from this study will help the inpatient areas at ACH improve patient care, safety and family centered care. I look forward to a successful review of this proposal.

Yours sincerely



Jill Woodward

Appendix C

Literature Review Table

First Author, Year	Method	Rounding Format	Objectives	Outcome Measurement	Location
Aronson P., 2009	Prospective observational study of a convenience sample	Family presence rounds	Determine impact of family presence during PICU rounds on: family satisfaction, resident teaching, length or rounds	-Observation checklist (*n* = 411) -Original family questionnaire (*n* = 100) -Original resident questionnaire (*n* = 33)	PICU (45 beds)
Cameron M., 2009	Prospective observational study of a convenience sample	Family presence rounds -parents invited into hallway outside patient room	To comprehensively evaluate the effect of parental presence on PICU rounds	-Observation of rounds (by single investigator) -Original surveys completed by HCPs related to one rounding event (*n* = 375) -Qualitative interviews with parents (36 who joined rounds and 16 who elected not to join) -Qualitative written surveys from HCPs (63 nurses, 39 doctors)	PICU (32 beds)

First Author, Year	Method	Rounding Format	Objectives	Outcome Measurement	Location
Klieber C., 2006	Quality improvement: Single group pre-test, post-test before and six months after the implementa-tion of family presence rounds	Family presence rounds -In guidelines provided to families rounds were called "Doctors' rounds"	Quality improvement to meet parental needs for communication with physicians and alleviate nurses' discomfort with 'feeling caught in the middle'	-Original parent questionnaire (pre *n* = 36, post *n* = 48) -Original nurse questionnaire (pre *n* = 23, post *n* = 16) -Original staff physician questionnaire (post *n* = 5) -Measurement of length of rounds using a stopwatch	PICU (12 beds)
Landry M., 2007	RCT	Family presence rounds -'Bedside case presentation and conference-room presentation'	Assess effect of standard versus family presence rounds on satisfaction and comfort for parents and for residents in training	-Original parent questionnaires (face validity provided by 2 pediatricians and 2 parents) -Original resident questionnaires (face validity provided by 2 pediatricians and 2 residents)	PICU (7 beds)

First Author, Year	Method	Rounding Format	Objectives	Outcome Measurement	Location
Lewis C., 1988	Quasi-experimental design (alternating 2-week blocks of standard versus bedside rounds during a 4 month study)	Family-centered rounds -'standard versus bedside rounds'	Provide data to guide physicians regarding the extent to which children and families should be involved in decision making discussions	-Original parent questionnaire (*n* = 40) -Structured interviews with children (*n* = 22) -Original staff physician questionnaire (*n* = 9)	Inpatient pediatric oncology unit
McPher-son G., 2011	Mixed Method-Survey based and prospective qualitative	Transitioning to parental inclusion during rounds	Develop an understanding of the physical, professional and interpersonal contexts on a PICU unit in order to develop an appropriate approach to parental inclusion	-Original 10 item HCP survey (*n* = 79) -Original 10 item parent survey (*n* = 32) -In depth interviews with HCPs (*n* = 13)	PICU at quarter-nary care center (22 beds)
Mittal V., 2010	Survey based observational study	Family-centered rounds Limited descriptions of qualities associated with family-centered approaches	Examine pediatric hospitalist practices in the United States and Canada	The Pediatric Hospitalist Triennial Survey of Pediatricians (*n* = 265)	Hospital-ists from the PRIS network represent ing 45 US states and 2 Canadian provinces
Mueth-ing S., 2007	Case Report of a quality improvement project	Family-centered rounds	Report experiences as a potential model to improve family-centered care and teaching-	-Informal feedback from parents, residents, nurses and attending physicians -Record or time of day for discharges	Inpatient units at a pediatric hospital

First Author, Year	Method	Rounding Format	Objectives	Outcome Measurement	Location
Phipps L., 2007	Prospective, blinded, observational study	Family presence rounds	Assess effect of parental presence during rounds on time of rounds, medical team teaching/education, staff satisfaction, family member stress, patient privacy	-Standardized observation form (including time for patient presentation) (*n* = 105) -Original medical team questionnaire -Original parent questionnaire	PICU (12 beds)
Rappaport D., 2010	Survey based observational study	Family-centered rounds	Assess resident staff opinions of structure, teaching and patient care with family-centered rounds	-Original 22-item multiple choice questionnaire for residents (*n* = 78) (35.9% response rate) -To establish content validity residents and attending physicians familiar with FCR implementation developed the questionnaire and pilot tested the questionnaire	General pediatric inpatient units
Rosen P., 2009	Quasi-experimental design -1 week with each rounding format	Family-centered rounds -'conventional rounds' versus 'family-centered multidisciplinary rounds'	Determine the impact of family-centered multidisciplinary rounds on: the patient and family experience, hospital staff satisfaction, length of rounds	-Standardized observation form -Original patient and parent satisfaction questionnaire (data collected together with CR *n* = 14 and FCMDR *n* = 22) -Original staff questionnaire (CR survey	Inpatient adolescent ward

First Author, Year	Method	Rounding Format	Objectives	Outcome Measurement	Location
Rosen continued				nurses *n* = 15, resident n = 1, medical student n =2) (FCMDR surveys nurses n = 18, attending physicians *n* = 4, residents *n* = 2, medical students *n* = 5, pharmacist *n* =1, allied health *n* = 5)	
Subra-mony, A., 2012	Survey based observational study	Family-centered rounds	Determine family knowledge of discharge goals, discharge day and discharge medications	Original family survey (*n* = 118) and chart review	Large, urban, academic medical center
Sisterhen L., 2007	N/A	Family-centered rounds	Provide a definition of family-centered rounds based on a review of literature on bedside teaching, family-centered care	Literature review	N/A
Young, H., (2012)	Survey based observational study	Practicing family-centered care during bedside rounds	Develop an understanding of factors that support self-efficacy in family-centered care	Pre- (*n* = 172) and post clerkship (*n* = 162) surveys	Free standing children's hospital in Midwest-ern United states (88 beds)

Appendix D

Nurses Attitudes and Beliefs About Bedside Rounds **[Test Version]**

Multidisciplinary bedside rounds are important to patient outcomes. As part of a patient safety initiative we are conducting a study of healthcare providers (including nurses, physicians, and allied healthcare professionals) and their practices related to rounds at the Alberta Children's Hospital. We are interested in the reasons why nurses do and do not engage in particular practices related to bedside rounds. We would appreciate your responses to the questions below. It is important that you look closely at the direction of the scale for each question as they change direction in terms of being negative and positive. There are no right or wrong answers. Please tell us what you really think.

The questionnaire will take about 15 minutes to complete. Thank you so much for taking the time to fill it out!

Section 1

About your BACKGROUND

A) Are you an LPN ____ RN diploma ____ RN baccalaureate___ RN other (please specify) ___

B) How old are you (years)? _____

C) How many years have you been practicing as a nurse? _____

D) How many HOURS (on average) do you work per week? _____

E) How many HOURS (on average) of continuing education do you complete per month? _____

Section 2

Each question in this section refers to nursing practices related to rounds

1	The decision to provide information on my patient's condition during rounds is beyond my control	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
2	I am doing something positive for my patient when I am present at rounds	Unlikely	1	2	3	4	5	6	7	Likely
3	Being present at rounds makes me feel as though I am a part of a	Unlikely	1	2	3	4	5	6	7	Likely

	multidisciplinary team									
4	For me to tell families about rounds before they occur is	Easy	1	2	3	4	5	6	7	Difficult
5	Whether I help families have their questions answered during rounds or not is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
6	I am confident that I could provide information on my patient's condition during rounds if I wanted to	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
7	I am confident that I could provide patient information on progress towards meeting discharge goals during rounds if I wanted to	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
8	Telling families about rounds before they occur is	harmful	1	2	3	4	5	6	7	beneficial
		pleasant	1	2	3	4	5	6	7	unpleasant
		good	1	2	3	4	5	6	7	bad
		worthless	1	2	3	4	5	6	7	valuable
9	I **expect** to tell families about rounds before they occur	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
10	I **intend** to be present at rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
11	Doing something positive for my patient is	Extremely undesirable	-3	-2	-1	0	+1	+2	+3	Extremely desirable
12	I **want** to provide patient information on progress towards meeting discharge goals during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
13	I usually receive a 5 – 10 minute warning before rounds start on my patients	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
14	I **expect** to help families have their	Strongly	1	2	3	4	5	6	7	Strongly

	questions answered during rounds	Disagree								Agree
15	I **want** to engage in open communication during bedside rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
16	It is expected of me to tell families about rounds before they occur	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
17	I am usually invited by someone from the rounding team (eg. attending physician, resident physician) to attend rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
18	Providing information on the patient's condition is	harmful	1	2	3	4	5	6	7	beneficial
		pleasant	1	2	3	4	5	6	7	unpleasant
		good	1	2	3	4	5	6	7	bad
		worthless	1	2	3	4	5	6	7	valuable
19	I **want** to provide information on my patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
20	I feel institutional pressure to help families have their questions answered	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
21	I am too busy doing other nursing work to attend rounds	Unlikely	1	2	3	4	5	6	7	Likely
22	Whether I provide patient information on progress towards meeting discharge goals during rounds or not is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
23	Helping families have their questions answered during rounds is	harmful	1	2	3	4	5	6	7	beneficial
		pleasant	1	2	3	4	5	6	7	unpleasant
		good	1	2	3	4	5	6	7	bad
		worthless	1	2	3	4	5	6	7	valuable
24	I feel institutional pressure to tell families about rounds before they	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

	occur									
25	I am confident that I could engage in open communication during rounds if I wanted to	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
26	For me to help families have their questions answered during rounds is	Easy	1	2	3	4	5	6	7	Difficult
27	I am confident that I could tell families about rounds before they occur if I wanted to	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
28	I **want** to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
29	The decision to help families have their questions answered during rounds is beyond my control	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
30	Whether I provide information on my patient's condition during rounds or not is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
31	Being part of a multidisciplinary team is	Extremely undesirable	-3	-2	-1	0	+1	+2	+3	Extremely desirable
32	I **intend** to engage in open communication during bedside rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
33	I **expect** to provide patient information on progress towards meeting discharge goals during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
34	The decision to provide patient information on progress towards meeting discharge goals during rounds is beyond my control	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
35	I am confident that I could help families have their questions answered during rounds if I wanted to	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

36	Providing patient information on progress towards meeting discharge goals during rounds is	harmful	1	2	3	4	5	6	7	beneficial
		pleasant	1	2	3	4	5	6	7	unpleasant
		good	1	2	3	4	5	6	7	bad
		worthless	1	2	3	4	5	6	7	valuable
37	For me to provide information on my patient's condition during rounds is	Easy	1	2	3	4	5	6	7	Difficult
38	I **expect** to follow up with families to ensure that they understand the information and plan provided during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
39	Whether I tell families about rounds before they occur or not is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
40	It is expected of me to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
41	For me to provide patient information on progress towards meeting discharge goals during rounds is	Easy	1	2	3	4	5	6	7	Difficult
42	The decision to engage in open communication during rounds is beyond my control	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
43	I feel institutional pressure to provide patient information on progress towards meeting discharge goals during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
44	It is expected of me to provide patient information on progress towards meeting discharge goals during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
45	I feel institutional pressure to engage in open communication during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

46	Whether I engage in open communication during rounds or not is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
47	I **expect** to be present at rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
48	I am confident that I could follow up with families to ensure that they understood the information and plan provided during rounds if I wanted to	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
49	I **expect** to engage in open communication during bedside rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
50	I **intend** to provide patient information on progress towards meeting discharge goals during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
51	The decision to follow up with families to ensure that they understand the information and plan provided during rounds is beyond my control	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
52	For me to engage in open communication during rounds is	Easy	1	2	3	4	5	6	7	Difficult
53	I **intend** to follow up with families to ensure that they understand the information and plan provided during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
54	The decision to tell a family about rounds before they occur is beyond my control	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
55	I feel institutional pressure to follow up with families to ensure that parents understand the information and plan provided during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
56	For me to follow up with families to	Easy	1	2	3	4	5	6	7	Difficult

	ensure that they understand and support the information and plan provided during rounds is									
57	I **want** to tell families about rounds before they occur	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
58	It is expected of me that I provide information on the patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
59	I **intend** to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
60	I **expect** to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
61	I **want** to be present at rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
62	I **expect** to provide information on the patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
63	I **intend** to provide information on the patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
64	I **want** to follow up with families to ensure that parents understand the information and plan provided during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
65	I **intend** to tell families about rounds before they occur	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
66	It is expected of me to engage in open communication during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
67	I feel institutional pressure to provide information on the patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
68	I **intend** to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

69	Whether I follow up with families to ensure that they understand the information and plan provided during rounds or not is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
70	Doing what other nurses do is important to me	Not at all	1	2	3	4	5	6	7	Very much
71	Families' approval of my work is important to me	Not at all	1	2	3	4	5	6	7	Very much
72	What physicians think I should do matters to me	Not at all	1	2	3	4	5	6	7	Very much
73	Following up with families to ensure that they understand the information and plan provided during rounds is	harmful	1	2	3	4	5	6	7	beneficial
		pleasant	1	2	3	4	5	6	7	unpleasant
		good	1	2	3	4	5	6	7	bad
		worthless	1	2	3	4	5	6	7	valuable

74	Most physicians, family members, and nurses think that	I should	1	2	3	4	5	6	7	I should not	tell families about rounds before they occur
75	Parents think that	I should	1	2	3	4	5	6	7	I should not	be present at rounds
76	Most physicians, family members, and nurses think that	I should	1	2	3	4	5	6	7	I should not	help families have their questions answered during rounds
77	When I feel busy it is	Much more difficult	-3	-2	-1	0	+1	+2	+3	Much easier	to be present at rounds
78	Other nurses	are	1	2	3	4	5	6	7	are not	present at rounds

79	Physicians think that	I should	1	2	3	4	5	6	7	I should not	be present at rounds
80	Most physicians, family members and nurses think that	I should	1	2	3	4	5	6	7	I should not	provide information on my patient's condition during rounds
81	Most physicians, family members and nurses think that	I should	1	2	3	4	5	6	7	I should not	provide patient information on progress towards meeting discharge goals during rounds
82	Most physicians, family members and nurses think that	I should	1	2	3	4	5	6	7	I should not	engage in open communication during rounds
83	When I do not receive a 5-10 minute warning before rounds start on my patients I am	Less Likely	-3	-2	-1	0	+1	+2	+3	More Likely	to be present at rounds
84	When I am invited to rounds it makes it	Much more difficult	-3	-2	-1	0	+1	+2	+3	Much easier	to be present at rounds
85	Most physicians, family members and nurses think that	I should	1	2	3	4	5	6	7	I should not	follow up with families to ensure that parents understand the information and plan provided during rounds

Appendix E

Follow-up Questions for Surveys

Thank you again for taking the time to complete the questionnaire. We would appreciate your time to complete the following questions about the questionnaire so that we can determine if this questionnaire is 'user friendly' and so that we can make improvements.

1) Are any of the questions ambiguous or difficult to answer? If yes, please indicate which ones.

2) Does the questionnaire feel too repetitive?

3) Does it feel too long? About how long did it take for you to complete the questionnaire?

4) Are there any annoying features of the wording or formatting? (Feel free to indicate directly on the questionnaire any issues with formatting)

5) Do you have any additional comments?

Appendix F

Information Form for Test Participants

Telephone: 403-220-2294
Fax: 403-284-4803
Email: benzies@ucalgary.ca

November 16, 2012

Dear Pilot Test Participant:

Re: *Family-Centred Care during Bedside Rounds: Effects of an Educational Workshop for Multidisciplinary Pediatric Hospital Teams* Ethics ID # 24409

As part of a patient safety initiative at the Alberta Children's Hospital, we are conducting a study of healthcare provider practices related to bedside rounds. Before we start the study, we need to pilot test the surveys that will be used to measure healthcare providers' experiences and ideas about bedside rounds.

We want your help to pilot test the surveys. Please fill out the surveys pretending that you are a participant in the study. At the same time, think critically about the questions on the survey. We would like to know:

- Do the questions make sense to you?
- Could you give more than one answer to a question?
- Would you object to answering any of the questions?

If you wish, please write your thoughts about the questions directly on the surveys. After you fill out the surveys, we want you to answer a few more questions about the surveys.

When you have filled out the surveys and additional questions, seal the documents in the enclosed self-addressed postage-paid envelope and mail back to us. The information from the pilot test surveys will not be included in the dataset for the study. To ensure that your responses are anonymous, please do not write your name on the surveys.

Thank you for helping us to pilot test the surveys. To recognize your time, we have included a ten dollar gift card to Tim Horton's. Please contact us if you have any questions.

Sincerely,

Lara Montgomery RN BN MN Student
403-289-9220
lara.montgomery@albertahealthservices.ca

Karen Benzies, PhD, RN, Professor, Faculty of Nursing;
Adjunct Research Professor, Department of Pediatrics
403-220-2294
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Appendix G

Organization of Written Feedback into Themes

Theme	Feedback
Length and repetition for questionnaire	- *Lots of repetition.* ID#3 - *Lots were so similar they were too hard to differentiate. I am unsure of the difference between intend, expect (question 59/60). Question 8 seemed repetitive, probably only need harmful/beneficial & pleasant/unpleasant-not all 4.* ID#4 - *Many of the questions seemed redundant/repetitive and there were too many questions.* ID #6 - *Repetitive.* ID #8 - *Many questions too similar to one another.* ID #9 - *Repetitive but all easy to understand.* ID#10 - *I felt I answered the questions 3+ times each on 1st questionnaire.* ID #11 - *Worded very similar thought I had answered questions already.* ID #12 -*Many seem repetitive.* ID #15 - *It was the same few ?'s over + over again*. ID#1 -Suggestion: *Short, concise questions.* ID #5 -Suggestion: *Make them as short & concise as possible.* ID #7 -Suggestion: *Less questions, so much repetition was confusing.* ID #9 -Suggestion: *Less questions?* ID #10 - Suggestion: *Reduce number of questions.* ID #15 - *Lots were repetitive* ID#1 -Suggestion: *Remove repetitive questions* ID#1 - *Too many questions, they felt repetitive.* ID #4 - *Nurses attitudes survey needs to be shorter.* ID #6 - *Healthcare provider survey was easier to follow and easier to interpret questions. The shorter length was appreciated as well.* ID #17 - *?28 and 29 redundant, did I answer this question already? Also #44, 49.* ID #6 -*?14 seems like question #5.* ID #6
Organization of Items including the direction of the scales and categorizing of questions	-*Categorize rather than repeat ideas throughout survey.* ID#3 - *It would be easier to complete the 'nurses attitudes' survey if the questions were grouped according to topic i.e. open communication, discharge planning.* ID #6 -*I feel that some of the questions were asked twice in a different way. Perhaps you could have headings when changing topics ex. Communication, family participation-to improve flow of questions.*

	ID #14 - *Having all the negative scales on one side ie question #8 have pleasant/good on the same side as beneficial/valuable.* ID #4 - For an item with bipolar adjectives and scale direction variation the participant made markings indicating that pleasant and good should be switched with unpleasant and bad so the direction of the scales within the question are the same. ID#4 - Item 56 (this item has a scale with easy = to 1 and difficult = 7, the scale direction is opposite to the items above and below the question with strongly disagree and strongly agree. *Again would like direction of scale switched.* ID#4 - *Would be helpful if all the positive adjectives were on 1 side.* ID #16
General Formatting	- *Small font.* ID #16 - *Section 1 was a bit cramped.* ID #16 - *Formatting needs to be improved-don't split questions up on 2 pages.* ID #4 - *Some of the q's on the first split pages making it harder to read.* ID #11 - *Easy to read and complete, nice format, I like the shading between questions.* ID#2
Wording of Questionnaire	- *The way that some are worded make them confusing, you have to read them a couple times even to understand what is being asked.* ID#5 - *Quite a few questions on the nurses' attitudes towards rounds survey were confusing, mostly due to wording*. ID #6 - *I don't understand what this is asking.* ID #7
Provide Space for Narrative Answers	- *Leave a place for comments. Sometimes you feel the need to explain why you say something.* ID#5 - *Allow area for free hand comments in each section.* ID#3
Lack of clarity for the use of the term institutional pressure	- *Define institutional pressure.* ID#3 - *The questions about "institutional pressure" wasn't sure from where within the institution.* ID#2
Feedback for item #1: The decision to provide information on my patient's	-*the way this is worded is a little confusing.* ID #5 - *questions/wording is a bit unclear-by being present at rounds I have decided to provide info, however the <u>ability</u> to provide info is often controlled by the doctor running rounds.* ID #6 - *I'm unsure as to what this question is asking? I don't get to voice my opinion? vs I have to participate in rounds.* ID #7

condition during rounds is beyond my control		
Difficulty understanding the construct of 'telling families about rounds before they occur'	- *Not that morning, during their first visit we discuss the general times.* ID #17 - *Never know the timing of rounds.* ID #8 - *Note: Is it about telling then when rounds will occur or engaging them in rounds, truly partnering with them, and orienting them to participating in rounds, so they can manage their own time and participate… rather than waiting for someone to tell them.. It's a subtle difference but important. The nurse isn't the middle person, rather the facilitator for parents in the early phases until they understand how to participate.* ID #18 - *Difficult because sometimes rounds take so long, it could be at 09 or 13:00 and often rounds don't go in order of pt. rooms.* ID #6 - *Unable to know when MD team coming around.* ID #7 - *Never know the time that they occur as it is inconsistent.* ID #8 - *I could phone them if I wanted before we started but generally they know the time we start each morning so how I would 'tell' them is a bit confusing. Do you mean something specific?* ID #17 - *I would like to* (tell families about rounds before they occur) *but they are too unpredictable* ID#2 - *Tell families about rounds- Does this mean right before rounds i.e. or tell them during the admission process.* ID #17	
Feedback regarding the construct of 'providing patient information on progress towards meeting discharge goals	- *We don't have true 'discharge goals'.* ID #17 - *Sometimes discussion of discharge is not relevant to the discussion, when patient is acutely ill.* ID #18 - *can't answer-no discharge goals.* ID #17 - *Discharge planning" may be better than "discharge goals.* ID #17	
Feedback for the use of various stems provided in the TPB manual	Stem	Feedback
	Use of bipolar adjectives	- *repetitive* written next to parts a-d on item #8. ID#4 - *What is meant by good/bad?* (also indicated on ?18, 23, 36) ID #5 - *Note – I found this question a challenge with respect to wording Harmful or beneficial, pleasant or unpleasant, good bad, etc to whom? The team,*

		the nurse, the family??? Consider - Not valuable/valuable to match pleasant/unpleasant Good – bad – is there other words you could use… subjective ID. #18 - Item 36 *would like ? to be reduced to harmful/beneficial and pleasant/unpleasant - the other 2 are too repetitive.* ID#4 - *I didn't like the questions that had words like: harmful vs beneficial, pleasant vs unpleasant, good vs bad b/c it didn't give a detailed description enough of what I felt about the question.* ID #7 - *Use of pleasant related to care doesn't seem appropriate in a hospital setting.* ID #15
	Whether I… or not is entirely up to me	-*"or not" isn't needed-confusing questions!* ID #17 - *I don't feel comfortable with the questions that use 'is entirely up to me' They feel awkward for some reason.* ID #5 - *The questions with "is entirely up to me" seem too personal. I think it makes me feel uncomfortable to answer them.* ID#5 - *This 'not' makes it confusing.* ID #6
	Most physicians, family members and nurses think that	-*Do you want an answer for each or as a whole?* ID #5 - *Very long winded question*. ID #7 - *Note: In the following questions when you ask about physicians, family members and nurses – they are 3 different perspectives….so they each*

		might think differently in response to your questions. ID #18
	The decision to…is beyond my control	-*"beyond my control"-I just can't figure this out!* ID #17 - *I find this unclear. Does "beyond my control" refer to my prof. obligation, what's in pts best interest, or something else?* ID #17 -*"Beyond my control" can be interpreted in so many ways.* ID #17 - *Confusing wording.* ID #5
Feedback for indirect measurement items	Item	Feedback
	I am usually invited by someone from the rounding team (e.g. attending physician, resident physician) to attend rounds	-*Why do you need an invitation????? If you're part of the team, it's expected isn't it?* ID #18 - *not invited, but required, ie-no choice.* ID #6
	Being present at rounds makes me feel as though I am a part of a multidisciplinary team	- *depends if the team lets nurse talk/asks for info.* ID #6 - *It's not about how I feel but how I can advance care by contributing.* ID #18
	Doing something positive for my patient is…	- *This question seems a bit obvious.* ID #6
	Doing what other nurses do is important to me	- *Vague*. ID #7
	I usually receive a 5-10 minute warning before rounds start on my patients	- *No true warning, I just visualize what pt. they are with.* ID #17
	I am too busy doing other nursing work to attend rounds	- *I want to provide info, but often am too busy too attend rounds. Rounds also often happens during nurse's break, finally done all morning care/meds/ assessments. Then*

		break and break is priority over rounds. ID #6

Appendix H

Nurses Attitudes and Beliefs About Rounds [**Revised Version**]

Multidisciplinary bedside rounds are important to patient outcomes. As part of a patient safety initiative we are conducting a study of healthcare providers (including nurses, physicians, and allied healthcare professionals) and their practices related to rounds at the Alberta Children's Hospital. We are interested in the reasons why nurses do and do not engage in particular practices related to bedside rounds. We would appreciate your responses to the questions below. **It is important that you look closely at the direction of the scale for each question as they change direction in terms of being negative and positive.** Sometimes the questions seem to be asked twice. There are slight differences in wording that are intended to help us understand what nurses' think about bedside rounds. Please read and answer each question the best that you can. There are no right or wrong answers. Please tell us what you really think.

The questionnaire will take about 10 minutes to complete. Thank you so much for taking the time to fill it out!

Section 1

About your BACKGROUND

A) Are you an LPN ____ RN diploma ____ RN baccalaureate___ RN other (please specify) ___

B) How old are you (years)? _____

C) How many years have you been practicing as a nurse? _____

D) How many HOURS (on average) do you work per week? _____

E) How many HOURS (on average) of continuing education do you complete per month? _____

Section 2

Open Communication During Bedside Rounds										
1	I **want** to engage in open communication during bedside rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
2	I am confident that I could engage in open communication during rounds if I wanted to	Strongly Disagree								Strongly Agee
3	For me to engage in open communication during	Easy								Difficult

	rounds is									
4	I **intend** to engage in open communication during bedside rounds	Strongly Disagree								Strongly Agee
5	The decision to engage in open communication during rounds is beyond my control	Strongly Disagree								Strongly Agee
6	I feel social pressure (from either, families, other nurses, physicians, or the healthcare system) to engage in open communication during rounds	Strongly Disagree								Strongly Agee
7	Whether I engage in open communication during rounds is entirely up to me	Strongly Disagree								Strongly Agee
8	I **expect** to engage in open communication during bedside rounds	Strongly Disagree								Strongly Agee
9	It is expected of me to engage in open communication during rounds	Strongly Disagree								Strongly Agee
10	Engaging in open communication during rounds is	Harmful								Beneficial
		Rewarding								Frustrating

11	Most people in my workplace who are important to me think that	I should	1	2	3	4	5	6	7	I should not	engage in open communication during rounds

Providing Information on my Patient's Condition										
12	The decision to provide information on my patient's condition during rounds is beyond my control	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
13	I am confident that I could provide information on my	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee

	patient's condition during rounds if I wanted to									
14	Providing information on the patient's condition is	Harmful	1	2	3	4	5	6	7	Beneficial
		Rewarding	1	2	3	4	5	6	7	Frustrating
15	I **want** to provide information on my patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
16	Whether I provide information on my patient's condition during rounds is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
17	For me to provide information on my patient's condition during rounds is	Easy	1	2	3	4	5	6	7	Difficult
18	It is expected of me that I provide information on my patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
19	I **expect** to provide information on the patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
20	I **intend** to provide information on the patient's condition during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
21	I feel social pressure (from either, families, other nurses, physicians, or the healthcare system) to provide information on the patient's condition during rounds	Strongly Disagree								Strongly Agee

22	Most people in my workplace who are important to me think that	I should	1	2	3	4	5	6	7	I should not	provide information on my patient's condition during rounds

Educating Families about Rounds

23	For me to educate families about rounds (structure, function, goals, participation) is	Easy	1	2	3	4	5	6	7	Difficult
24	Educating families about rounds (structure, function, goals, participation) is	Harmful	1	2	3	4	5	6	7	Beneficial
		Rewarding	1	2	3	4	5	6	7	Frustrating
25	I **expect** to educate families about rounds (structure, function, goals, participation)	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
26	I am confident that I could educate families about rounds (structure, function, goals, participation)	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
27	It is expected of me to educate families about rounds (structure, function, goals, participation)	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
28	I feel social pressure (from either, families, other nurses, physicians, or the healthcare system) to educate families about rounds (structure, function, goals, participation)	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
29	Whether I educate families about rounds (structure, function, goals, participation) is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
30	I **want** to educate families about rounds (structure, function, goals, participation)	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
31	The decision to educate families about rounds (structure, function, goals,	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee

	participation) is beyond my control										
32	I **intend** to educate families about rounds (structure, function, goals, participation)	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee	

33	Most people in my workplace who are important to me think that	I should	1	2	3	4	5	6	7	I should not	educate families about rounds (structure, function, goals, participation)

Helping Families Have Their Questions Answered										
34	Whether I help families have their questions answered during rounds is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
35	I **expect** to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
36	I feel social pressure (from either, families, other nurses, physicians, or the healthcare system) to help families have their questions answered	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
37	Helping families have their questions answered during rounds is	Harmful	1	2	3	4	5	6	7	Beneficial
		Rewarding	1	2	3	4	5	6	7	Frustrating
38	For me to help families have their questions answered during rounds is	Easy	1	2	3	4	5	6	7	Difficult
39	I **want** to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
40	The decision to help families have their questions answered during rounds is	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee

	beyond my control									
41	I am confident that I could help families have their questions answered during rounds if I wanted to	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
42	It is expected of me to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
43	I **intend** to help families have their questions answered during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee

44	Most people in my workplace who are important to me think that	I should	1	2	3	4	5	6	7	I should not	help families have their questions answered during rounds

Following up with Families to Ensure that they Understand the Information and Plan Provided During Rounds										
45	I **expect** to follow up with families to ensure that they understand the information and plan provided during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
46	I am confident that I could follow up with families to ensure that they understood the information and plan provided during rounds if I wanted to	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
47	The decision to follow up with families to ensure that they understand the information and plan provided during rounds is beyond my control	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
48	I **intend** to follow up with families to ensure that they understand the information	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee

	and plan provided during rounds									
49	I feel social pressure (from either, families, other nurses, physicians, or the healthcare system) to follow up with families to ensure that they understand the information and plan provided during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
50	For me to follow up with families to ensure that they understand the information and plan provided during rounds is	Easy	1	2	3	4	5	6	7	Difficult
51	I **want** to follow up with families to ensure that parents understand the information and plan provided during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
52	Whether I follow up with families to ensure that they understand the information and plan provided during rounds is entirely up to me	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee
53	Following up with families to ensure that they understand the information and plan provided during rounds is	Harmful	1	2	3	4	5	6	7	Beneficial
		Rewarding	1	2	3	4	5	6	7	Frustrating
54	It is expected of me to follow up with families to ensure that parents understand the information and plan provided during rounds	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agee

55	Most people in my workplace who are important to me think that	I should	1	2	3	4	5	6	7	I should not	follow up with families to ensure that parents understand the information and plan provided during rounds

Section 3

1. What do you believe are the advantages of participating in rounds (for yourself, the healthcare professional team, and the family)?

2. What do you believe are the disadvantages of participating in rounds (for yourself, the healthcare professional team, and the family)?

3. If you would like to elaborate on your response to any of the items within the questionnaire please do so in the space provided below.

Thank you for your participation

Appendix I

Content Validity Index Scores for Revised Items of the NABAR

Item Number	Content Validity Index Score	Item Number	Content Validity Index Score
1	.8	45	.8
4	.8	46	.8
5	1.0	48	.8
6	1.0	49	.8
8	1.0	51	.4
9	.8	52	.8
14	1.0	53	1.0
15	1.0	54	.8
16	.8	55	.8
18	.8	56	1.0
19	1.0	57	1.0
20	.8	58	1.0
23	.8	59	1.0
24	.8	62	1.0
25	1.0	63	1.0
26	.8	64	1.0
27	.8	65	1.0
28	1.0	66	.8
29	1.0	67	.8
30	1.0	69	.8
32	1.0	73	1.0
35	1.0	74	.6
37	1.0	76	.8
38	.8	80	.8
39	.8	82	1.0
40	.8	85	.8
42	1.0		

Note. Item number refers to item number on first draft of NABAR